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Pratt institute monthly

Pratt Institute

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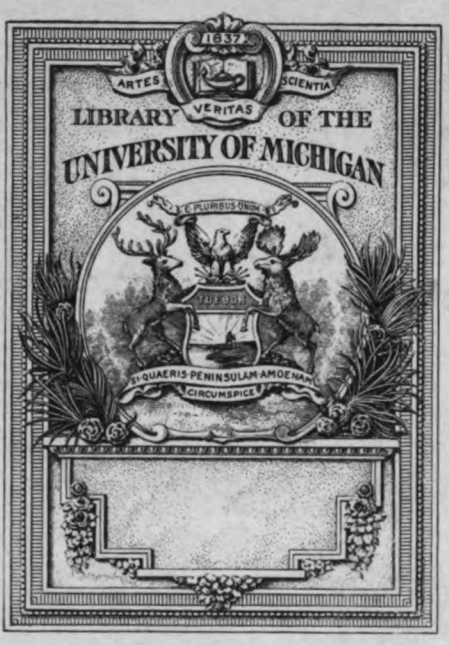

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PRATT INSTITUTE MONTHLY

PUBLISHED BY

PRATT INSTITUTE

215 RYERSON STREET
BROOKLYN, N. Y.

VOLUME X

NOVEMBER, 1901—JUNE, 1902

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INDEX TO VOLUME X.

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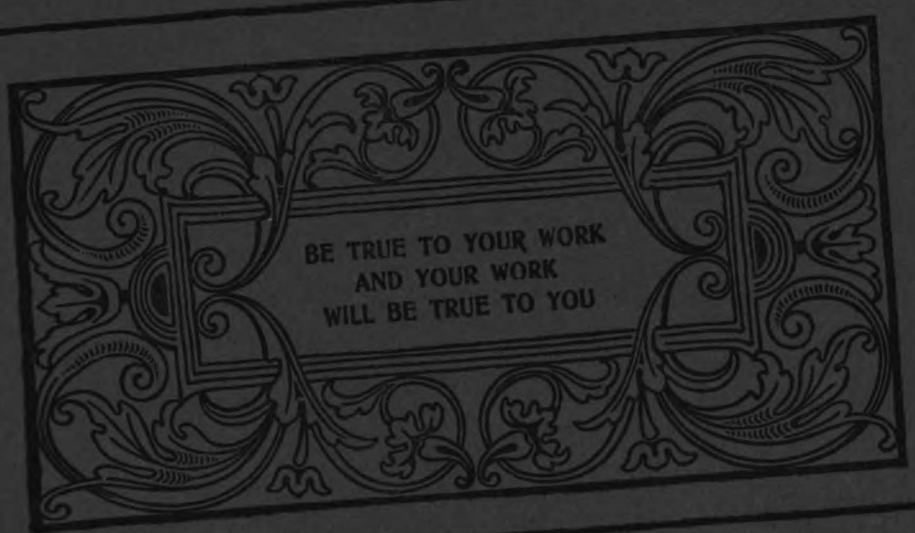
FOUNDER'S DAY NUMBER

PRATT INSTITUTE MONTHLY

November, 1901



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Pratt Institute Monthly

Volume X. NOVEMBER, 1901 Number 1

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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Jamaica, Queensborough, New York

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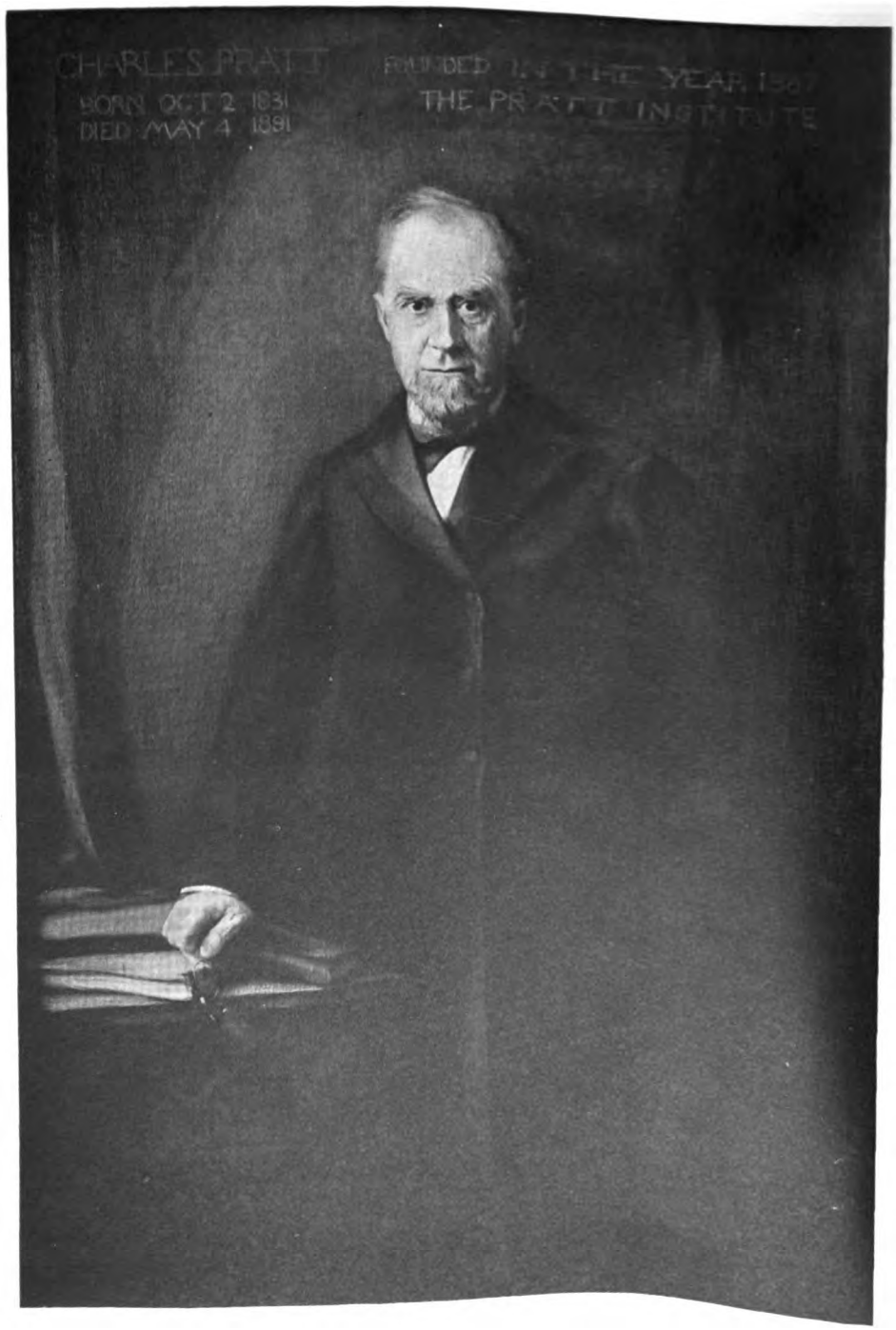

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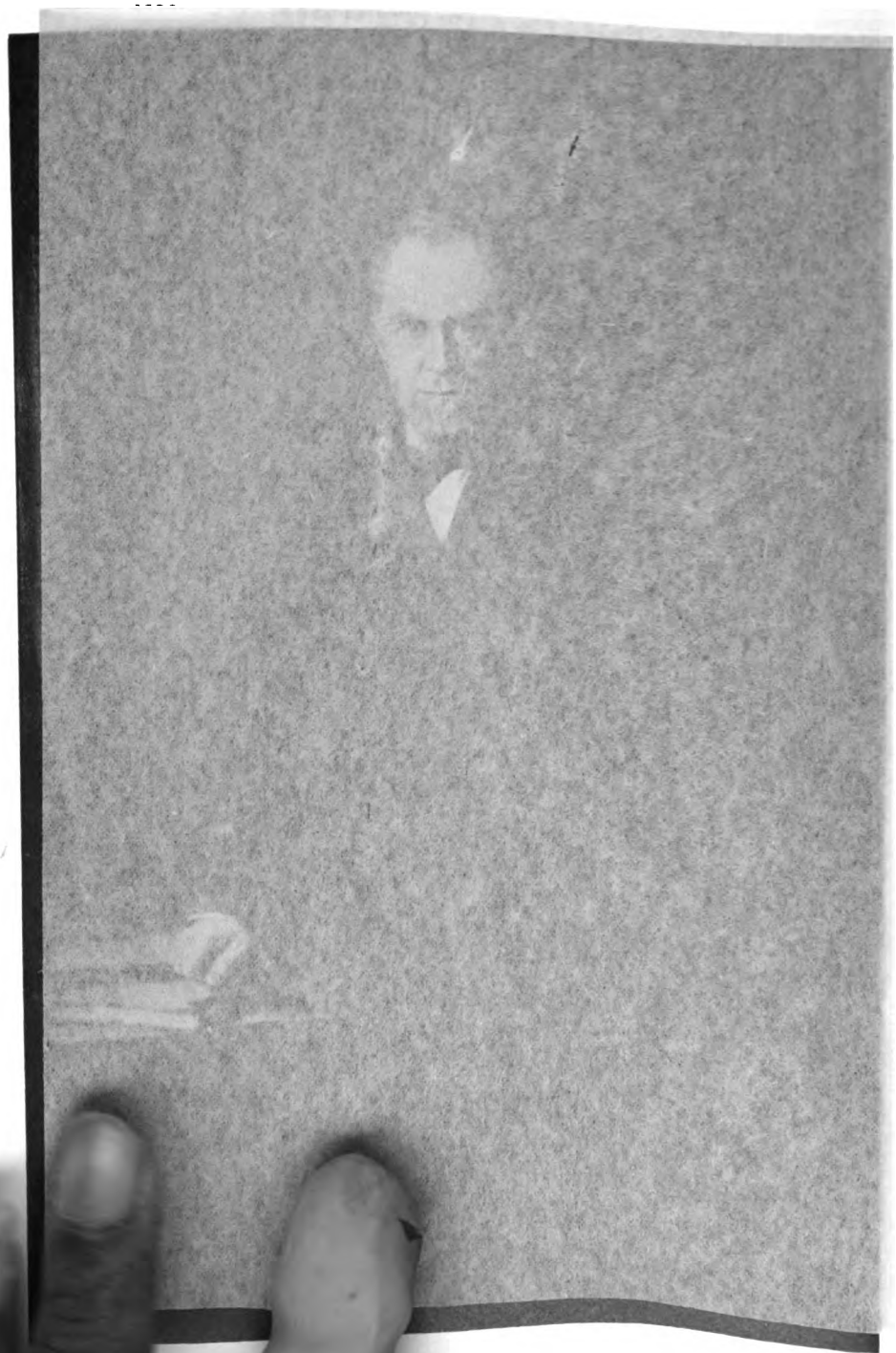
NOVEMBER, 1901 Number 1

The Founder.

CHARLES PRATT was born at Watertown, Massachusetts, on October 2, 1830, and died in New York on May 4, 1891. His opportunities for education [illegible] circumstances of his childhood, but his earnest [illegible] knowledge and training led him to [illegible] make good the losses of his youth. [illegible] the bench. With his early [illegible] Academy, and [illegible] every opportunity that [illegible] series of successes. He [illegible] to everything that he [illegible] he spent but little time in doing [illegible] of no avail. Though generously [illegible] for the betterment of [illegible] interest was concentrated on the [illegible] experience [illegible] that the [illegible] commonplace [illegible] of [illegible] American [illegible] some [illegible] and [illegible] he had [illegible] Pratt Institute. [illegible] his practical [illegible] gift. Much as Pratt Institute owes to its present Board of Trustees, to the intelligent and loyal service of its directors and teachers, it owes most to Charles Pratt, who gave to it "the only gift that counts,—the gift of one's self."



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Pratt Institute Monthly

Volume X NOVEMBER, 1901 Number 1

The Founder.

CHARLES PRATT was born at Watertown, Massachusetts, on October 2, 1830, and died in New York on May 4, 1891. His opportunities for education were limited by the circumstances of his childhood, but his earnest desire for knowledge and training led him to make sacrifices enough to make good the losses of his youth. His first dollar was earned at the bench. With his earliest savings he gave himself a year at Wilbraham Academy, and all through his life he made the most of every opportunity that came his way. His business life was one long series of successes. He wasted neither time nor money; he put into everything that he did the best of himself; and he spent but little time in doing work which seemed to him of no avail. Though generously interested in every enterprise that made for the betterment of his fellowmen, his great interest was concentrated on the subject of industrial training. Experience had taught him that the work of the world must always be done—to a greater extent—by men and women and not by machines. To make these ordinary workers intelligent, competent, and happy, was his purpose. To put into the average commonplaces of the shop and the workroom some of the inspiration of culture, was his ambition. To do, in short, for the ambitious American boy and girl some of the things which, by great effort and sacrifice, he had done for himself, was his reason for founding Pratt Institute. To it he gave freely of his wealth, of his time, of his enthusiasm, and of his practical knowledge and common-sense. It was no meagre gift. Much as Pratt Institute owes to its present Board of Trustees, to the intelligent and loyal service of its directors and teachers, it owes most to Charles Pratt, who gave to it "the only gift that counts,—the gift of one's self."

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Extracts from an Address to the students of Pratt Institute by Mr. Charles M. Pratt a year after the death of Mr. Charles Pratt.

HE [the Founder] lived his natural life, unselfish as it was, for he could live no other. Such a life was to him the highest satisfaction and greatest joy. That you know. Do you remember his saying to you here one day — "I am so grateful, so grateful that the Almighty has inclined my heart to do this thing." The source of his life-joy was clearly indicated, and was always the same. He never hesitated to acknowledge it, for he desired that we might all secure the same.

His personality, which means much more than any of us can realize or express, is gone. Its loss has grown apace with the days and months; it does not lessen. This is what I feel here in this place of all others. The strength of that face so full of life and courage, so responsive to every honest and self-helpful appeal for aid; the brightness of those eyes so penetrating that we always felt ashamed to meet them when we had not done our best; the restless activity of that body with its energy and responsiveness to every need of the mind or heart; — these are gone. But the personality they constituted was once here; it ministered to you and to me; it left a deep impress upon its generation. Shall all this be lost? Shall it all fade away, its outline growing more indistinct as the years go by until lost among the multitudes of the dead? That such might be the case our Founder fully realized. Often did he speak of it to me as his old and early friends went before, and his own actively earnest life was confessedly too full for leisure to dwell upon their memory. While I realize the possibility of such a result, I do not see its necessity. You and I may, perhaps, look at this matter from different standpoints, and yet I do not think that we do. His desire to serve was extended to you all as well as to me,— the same in kind if not in degree. To us, his sons and co-trustees, has been committed this trust, and for its keeping nothing seems to me so inspiring as to recall his life and personality. We, therefore, for ourselves and for all who knew him, for all who shall hereafter come into new life and power through his thought and beneficence, shall keep fresh in memory his personality and cherish the spirit of his life. This, then, is to be our watchword, our safeguard, and the source of our courage and fidelity to trust.

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Annual Report of the Secretary.

To the Trustees, Gentlemen:

HEREWITH I beg to submit to you a report of the Pratt Institute for the year ending June 30, 1901. It has been an encouraging year, showing a development in all departments toward the ideal of practical service which the Founder had for the work.

It has been our endeavor to keep clearly and constantly before us the fundamental purpose of the Institute, namely, the propagation and development of industrial training.

From the standpoint of educational principles, the great value of industrial training is found to lie, not so much in its development of the eye and hand, as in the opportunity it offers for the expression and consequent development of the creative faculty.

When we recognize the results secured through such training, we are compelled to accept it as a fundamental and vital part of all complete training and not as outside subject-matter artificially added to the school curriculum.

We are constantly having our educational theories modified by our practical contact with industrial and trade conditions as they exist, and we have been able to solve some of the questions which always arise in the transition from school training to the practical work of the world.

When the Institute opened, thirteen years ago, there was but little demand for trained workers in many of the departments of activity toward which we directed our attention, and we were forced to meet the problem of creating a demand for our workers at the same time that we were giving them their training. It has been difficult to gain the confidence of the working public, but no more difficult than we had felt it would be. We knew it must be a slow process. We realized from the beginning that our work must be done thoroughly and on sure conservative lines, and we have been satisfied to wait until the practicality of our courses could be demonstrated.

Each of the great divisions of our work — the training of skilled workers, the training of teachers, and the training of students — has thrown some light upon the question of industrial training as a whole and has helped us in the solution of some of its problems.

Full reports of the work of the various courses will be made during the year by the several directors. It is sufficient for me to emphasize my appreciation of the growth and development of both directors and teachers and of the steadily increasing clearness with which they are grasping the plan of the Founder and of the intelligence with which they are adapting the opportunities offered by the Institute to the needs of the times.

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ENROLLMENT.

The number and classification of the students for the year 1900–1901 was as follows:

	DAY. Men.	Women.	EVENING. Men.	Women.	TOTAL.
High School	108	153			261
Fine Arts	174	396	204	78	852
Domestic Art		597		112	709
Domestic Science		189	2	82	266
Science and Tech.	140	5	388		533
Kindergarten	27	112		8	147
Library	1	28			29
Gymnasium	175	284	99	119	677
	625	1764	693	399	3474

In more than one department:

Men	140	
Women	213	
	353	353

Individual enrollment, 3121

The total number of tuitions paid was 6123, as against 5815 of last year and 5543 of the year before.

We are gratified to be able to report this increase in the number of students, which, while it is partly due to causes which would not ordinarily be in operation, is chiefly due to a normal and healthy growth in the size of the full-time classes.

SCHOLARSHIPS.

The Prang Scholarships, which have been given in connection with the Prang Educational Company, will be discontinued at the end of this year, at the request of the company, and no new ones will be given.

Scholarships for the year were awarded as follows:

Department of Fine Arts.

Buffalo Scholarship: Eunice Evelyn Nott, Hamburg, Erie County, N. Y., Course in Design.

Fawcett Scholarship: Olive Elizabeth Hampson, Newark, N. J., Regular Art Course.

Prang Scholarships: Lelia Irene Bartholomew, Indianapolis, Ind., Normal Art Course; Anna Josephine Brown, East Greenwich, R. I., Normal Art Course; Mary B. Moulton, Oshkosh, Wis., Normal Art Course; Helen M. Webster, Denver, Col., Normal Art Course.

Art Students' Fund Scholarships: Beulah Stevenson, Normal Art Course; Clara Reynolds, Regular Art Course.

Honorable mention: Adelaide Deming, Normal Art Course.

Department of Domestic Art.

The Ethical Culture School Scholarship: Amy M. Huntington, New York, Special Dressmaking Course.

Pratt Institute Scholarship: Tessie Wigzell, Brooklyn, N. Y., Third Grade Sewing Course.

Atlantic Avenue Mission Scholarships: Eva L. Beams, Brooklyn, N. Y., Children's Sewing Course; Dolores Rittenauer, Brooklyn, N. Y., Children's Sewing Course.

Department of Domestic Science.

College Scholarships offered by Pratt Institute.

Wellesley: Alice M. Keepers, Newark, N. J., Normal Domestic Science Course.

Vassar: Edith S. Merritt, Newark, N. J., Normal Domestic Science Course.

Leland Stanford Jr. University: Gwendolyn Stewart, St. Helena, Cal., Normal Domestic Science Course.

Hamilton College, Lexington: Katherine M. Christian, Lexington, Ky., Normal Domestic Science Course.

Brooklyn Scholarship: Mabel L. Rose, Brooklyn, N. Y., Normal Domestic Science Course.

COMMENCEMENT EXERCISES.

The annual Commencement Exercises of the departments of Fine Arts, Domestic Arts, Domestic Science, Science and Technology, Kindergartens, and Libraries were held in the Assembly Hall, on Thursday even-

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ing, June 20, and were followed by the exercises of the High School, on Friday afternoon, June 21. Dr. James H. Canfield, of Columbia University, made the address at the evening exercises, and Dr. Isaac Franklin Russell, of the New York Law School, spoke to the High School graduates in the afternoon.

The diplomas and certificates were awarded by Mr. Charles M. Pratt, President of the Board of Trustees.

The Trustees' reception, in the Library building, and the Athletic Association dance, in the gymnasium, followed the Commencement exercises, on Thursday. On Friday, there was the annual dinner given to the High School alumni and a dance given by the junior class to the graduates and the alumni.

Diplomas and certificates were granted as follows:

	DIPLOMAS.		CERTIFICATES.		TOTAL.
	Men.	Women.	Men.	Women.	
High School	4	19			23
Fine Arts	2	26	13	22	63
Domestic Art		4		50	54
Domestic Science		20			20
Science and Tech.			31		31
Kindergarten		14			14
Library			1	25	26
	6	83	45	97	231

FOUNDER'S DAY.

Exercises in celebration of Founder's Day were held in the Assembly Hall on the birthday of the Founder, October 2, 1900. The annual report of the work of the Institute for the year was read by Mr. C. M. Pratt, and a short talk on the Founder and his plans for the Institute was given by the Hon. W. J. Coombs.

EXHIBITIONS.

The Annual Exhibition of Students' Work was held on Thursday afternoon and evening, June 6, Friday afternoon and evening, June 7, and Saturday afternoon, June 8. The work was well done and well arranged. The applied work in the Department of Fine Arts was a new feature and attracted more attention for that reason than any other particular exhibit.

The regular art exhibitions were continued during the year, and there were also several special exhibitions, such as that of the work of the art needlework classes, which was shown in several Western cities, and the exhibit made at the Pan-American Exposition. The following is the list of regular exhibitions for the year:

Department of Fine Arts.

October 10 to October 31: Volkmar Pottery, loaned by Charles Volkmar.

November 5 to November 30: Sketches, Color Studies, and Drawings of Edwin H. Blashfield.

December 4 to December 29: Portrait Drawings, Composition Sketches, and Paintings, by Willard D. Paddock.

January 4 to January 31: Color Studies of Ancient and Medieval Works of Art by Joseph Lindon Smith.

February 4 to February 28: Antique Oriental Rugs, Embroideries, and Metal Work, loaned by John T. Keresey and Company, of New York.

March 4 to March 30: Basketry, illustrating the work of Miss Lina Eppendorff and the Misses Frances.

April 15 to May 11: Book-binding, Book-printing, and Decorating, an exhibition prepared by Miss Mary Wright Plummer.

May 13 to May 31: Butterflies and Moths, loaned by the Denton Brothers, of Wellesley, Mass.

June 5 to June 22: Berlin Photographs of the London National and the Berlin galleries.

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Department of Domestic Art.

May 24 to June 9: Original Costume Designs, by Mr. and Mrs. Guy Rose, Miss Goodwin, and Miss Cooper, loaned by "Harper's Bazar" and "Vogue."

Department of Libraries, Children's Room.

November: Animals.
December: Christmas Pictures.
February: Heroes. Valentines.
March: "The Candy Country," a series of pictures loaned by the Misses Whitney.
April: Spring flowers and birds.

The exhibit sent to the Pan-American Exposition was admirable, showing as it did in a very small space the scope and character of the work done in the various departments. Four units—each consisting of a number of winged-frames, a case, and a limited amount of wall-space—were granted us. One of these units was in each of the following sections of the State Educational Exhibit,—Art, Secondary Education, Industrial Education for Women, and Industrial Education for Men.

LECTURES.

The increase in the number of lecture courses offered by the several departments and the greater usefulness of such courses to the students has made it possible to curtail the general lecture course. During the past year but three lectures were given, and these were made the occasions of a reception to the lecturer, who, after his talk, was asked to meet the directors and instructors.

The following is the course as given:

November 22: "Child Life in China," Dr. Isaac Taylor Headland.
March 7: "Preparation for Citizenship," Jacob A. Riis.
April 30: "How to Study Birds," Frank M. Chapman.

Special departmental lectures were given throughout the year as follows:

Department of Fine Arts.

Twenty-four lectures on "The History of Architecture, Sculpture, and Painting," by Walter Scott Perry.

Department of Domestic Art.

"Wool," by Miss N. R. Crooks.
"Needlecraft and Weaving," by Miss Lina Eppendorff.
"Flax," by Miss N. R. Crooks.
A course of ten lectures on Costume Design and the History of Costume, by Miss H. S. Sackett.

Department of Domestic Science.

A course of twelve lectures on "Rocks," by Miss Mary S. Snow.

Department of Kindergartens.

"How to Feed Children," by Dr. J. F. Moore.
"Handel's Messiah," by W. L. Tomlins.
"Underground Life," by Dr. Elsworth Call.
A course of six talks on "The Games and Occupations of the Kindergarten," by Miss A. E. Fitts.

Department of Libraries.

Six lectures on "Library Building," by William R. Eastman.
Four lectures on "The History of Libraries," by George Watson Cole.
Four lectures on "Book-buying, or Building up a Library," by George H. Baker.
"Some New Movements in Education," by Dr. H. M. Leipziger.
"Branch Libraries," by A. E. Bostwick.
"The Work of the Librarian," by Dr. James H. Canfield.
"Planning a Library," by Miss Sarah S. Oddie.
"Selection of Books for a Small Library," by Miss B. S. Wildman.
"Book Annotation," by Mrs. S. C. Fairchild.
"History of Literature for Children," by Charles Welsh.
"The New Building of the Cleveland Public Library and the Moving," by W. H. Brett.

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"Bibliography of Education," by William Warner Bishop.
"Bibliography of Classical Philology," by William Warner Bishop.
"Bibliography of Theology," by Dr. Ernest C. Richardson.
"Working up a Bibliography," by George Watson Cole.
A series of talks on "Nature-books and Works of Science for Children," by Miss Ella Holmes.
"Books for Children," by Miss Caroline M. Hewins.
"Personal Relations of Librarian with Children," by Miss Helen Moore.
"The History of Bookmaking," by C. M. Skinner. (This lecture was given in connection with the exhibition of Bookbinding for the benefit of the children.)

High School.

"The Nature of Education," by President Harris, of Amherst College.
"The Value of Public Speaking," by Dr. Isaac Franklin Russell.
"The Study of a Language," by Dr. Gabriel Weiss.

Social Service Committee.

"Interesting Churches in New York," by Miss J. A. Rathbone.
"The Exhibit of the Architectural League," by V. C. Griffit.
"The Davies Exhibit at the Macbeth Gallery," by Miss Ida C. Haskell.

CHAPEL SERVICES.

A series of chapel services was held during the fall and winter terms. A short address formed a part of each service. The following is the list of speakers: Dr. John Humpstone, Rev. T. S. Henderson, Dr. S. D. McConnell, Mrs. Alice Gordon Gulick, Dr. T. R. Slicer.

PUBLICATIONS.

The Pratt Institute Monthly, issued the first of each month, beginning with November and ending with June, is the official publication of the faculty and teachers. Its purpose is to keep the students and the public in touch with the changes and developments in the work of the Institute, and to give opportunity for the publication of articles directly bearing upon the subject of industrial and technical education.

The numbers, last year, were issued as follows:

November: Neighborship and Founder's Day.
December: Library.
January: Fine Arts.
February: Domestic Art.
March: Domestic Science.
April: High School.
May: Kindergarten.
June: Manual Training.

The coming year the numbers will take the form of reports on the work of the different departments.

Ten thousand copies of the annual catalogue were printed early in the spring. The object of the catalogue is to put into as small a space as possible a comprehensive statement of the work of the Institute as a whole. It is left to the special circulars — issued by the departments as there is need for them — to give detailed descriptions and definite outlines of the different courses. This year a circular which confined itself to the work of the evening classes was published and widely circulated. Catalogues have been mailed to our exchange list of schools and colleges; to the Young Men's Christian Associations and the Young Women's Christian Associations throughout the country; to certain prominent summer hotels; and to persons who have written for them. No attempt, other than this, has been

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made to circulate them generally, because the demand for them is always greater than the supply, and because such a publication always does its best work when and where it is needed enough to be asked for. The circulars, on the other hand, we have tried to send to lists of persons whom we felt would be especially interested in the particular kind of work described and who would be apt to take advantage of the opportunities offered by the course in question.

Mention should be made of the literary work of the directors and instructors during the past few years. Mrs. E. H. Spalding has brought out her "Problem in Elementary Composition" and her "Language Speller." Mr. W. S. Perry has published a book on "Egypt," and is now at work on a similar book on "Greece." Mr. A. W. Dow has published a book on "Composition"; Mr. C. F. Edminster one on "Architectural Drawing"; Mr. A. C. Nye one on "Furniture Designing and Draughting"; and Miss M. W. Plummer has collated a book on "Contemporary Spain as seen through her Novelists."

FACULTY MEETINGS.

Faculty meetings have been held at regular intervals during the year for the discussion and determination of questions of policy affecting the welfare of all the departments. The faculty is constituted of the directors of the seven departments and the Secretary of the Institute, who acts as chairman. Only matters of general interest are taken up by this body, the particular departmental questions being settled by the faculties of the several departments and referred to this body for ratification.

The most important decisions made during the year were those in regard to a uniform marking system and a uniform time schedule for all departments. It was decided that all records of students' work should be marked with the letters A, B, C, D, and E, the letters to mean: A– excellent; B– passed with credit; C– passed; D– conditioned; E– failed. The plus sign after a letter may be used to indicate a tendency toward a higher grade of work.

The time schedule, as adopted, is given below:

9:00 to 10:00	1:20 to 2:10
10:00 to 10:50	2:10 to 3:00
10:50 to 11:40	3:00 to 3:50
11:40 to 12:30	3:50 to 4:40

EDUCATIONAL WORK.

It is interesting and encouraging to note that the instructors have had frequent chance to be of service to a larger number of persons than is represented by our student body. The New York and Brooklyn summer schools, this year, claimed their attention. Mrs. M. D. Chambers, instructor in cookery in the Department of Domestic Science, acted as supervisor of cookery in the Brooklyn schools and had twelve of her normal Domestic Science students teaching under her. Mr. E. M. Healy, of the Department of Science and Technology, had charge of the manual training given in the New York schools; and Mrs. A. M. Locke, of the Department of Kindergartens, again directed the Brooklyn

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playgrounds. A large number of Institute students taught in the schools and worked in the playgrounds. Twenty-nine students from the Department of Domestic Art and thirty-two students from the Department of Fine Arts should be added to the number of Domestic Science students already given, making a total of seventy-three.

Seven High School instructors attended the summer school at Clark University this year. Half of each day was devoted to the regular lectures of the school and the other half to conferences with Dr. Gulick on the special problems of the Institute High School.

Mrs. E. H. Spalding gave again a course in methods of teaching English at the summer school for teachers at Hyannis, Mass.

Mr. W. C. Stimpson and Mr. W. J. Kaup, of the Department of Science and Technology, were at the Bethlehem machine shops for some weeks, helping classes from Lehigh University to get the greatest possible benefit from their observations in the shops.

Another source of strength to the Institute is its ever increasing alumni body. Five graduate associations have been formed,—the High School, Library School, Department of Kindergartens, Department of Domestic Art, and the Evening Chemical Course,—all of which are keeping their members together and in touch with the work which is currently given at the Institute.

The records of these associations give interesting statistics. Almost all the graduates are in positions. There is no trouble whatever in finding work for the strong students; in fact, a choice of places is usually waiting for them at the time of their graduation, and there is always something that the less gifted ones can find to do.

The habit of study, formed at the Institute, and the many interests awakened here in different kinds of work induce at least twenty-five per cent. of the graduates to continue their studies as soon as it is possible for them to do so. Many of the graduates of our Department of Science and Technology find their way into the larger engineering schools, and no art student seems satisfied until he or she is again working under criticism.

Large numbers of our former students, realizing the progress that the work of the Institute makes each year, come back for graduate courses or to take up some work not covered by them in the course which they took while here.

THE PRATT INSTITUTE NEIGHBORSHIP ASSOCIATION.

The Pratt Institute Neighborship Association offers a chance to the students, while here, to get practice teaching at the Association's Settlement, in Greenpoint; to become familiar with some of the current discussions of philanthropic problems; and to gain an interest in social questions. At the same time, it offers a channel for those acts of helpfulness and thoughtfulness which students are so ready to perform for one another when they know a way and see an opportunity.

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The report of the Association for the year makes a creditable showing.

BUILDINGS.

The changes made in the buildings a year ago have proved most satisfactory. The story erected on the Science and Technology building for the use of the Department of Fine Arts made five admirable studios which have greatly added to the comfort and efficiency of the department.

Equal satisfaction may be expressed with the accommodations offered by the two stories added to the Electrical building for laboratories and shops.

A new building for the Department of Kindergartens is now in the process of erection. It is situated on the corner of Willoughby Avenue and Ryerson Street, about one block from the Main building. It will contain rooms for the kindergarten and connecting class, accommodations for the training classes, and quarters for the janitor. There will be a garden in the rear and a large play-room in the basement of the building. It is built of brick with lime-stone trimmings, is two stories in height, and in design is in harmony with the other Institute buildings.

These changes and the work done in the court are the most important items of construction since the erection of the Library building, in 1895.

It is hoped that at some time in the not too distant future it will be possible to build a combined assembly hall and museum building. We have now no assembly hall which is at all adequate to our needs, and the demand for such a hall made by the number of our lecture courses and by the development of the work in music done in the High School must be met.

Such a building should also accommodate a certain amount of our museum material. The original technical museum, which was located for a number of years on the fifth floor of the Main building, was divided, six years ago, and distributed among the different departments. The several collections form the nucleus of a fine industrial museum, which should be supplemented by additional material. The installation of the material in the hallways of the several departments has been in many ways a decided advantage over the former arrangement of the location of the entire collection in one place. It has made the museum material much more available and has created a greater interest in it. While we recognize the value of this plan and feel that it would not be wise to change it, we appreciate the assistance which would come to us through such added museum facilities as would be offered by a new building.

I am glad to report that a number of fine samples of industrial art — mostly textiles — have been added to our museum material this year.

We are continually seeing opportunities for making out of our own buildings and grounds a sort of permanent museum. The court-yard, for example, which is situated between the Main and the Science and Technology buildings, has been made a suitable setting for a fine old Italian well-curb, which stands in its center and serves as a fountain. The court has been paved and furnished with

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seats of a design in harmony with the fountain. So, while the court serves the utilitarian purpose for which it was planned, it also offers a pleasant retreat for students and is a source of real inspiration to all who pass through it.

A wrought-iron gate of good design has been placed at the street entrance to the court and adds much to its interest. The treatment of the court, including the design for the gate, was worked out by Mr. Vincent C. Griffith.

In thinking of the work of the directors, teachers, and students, we are sometimes apt to forget the many workers that are employed to make success possible.

The purely physical side of the Institute problem is not a small one. The services of the general and departmental offices, of the engineer and janitor forces, the lunch room, and the many other things which minimize friction and trouble are essential features of a well organized institution.

We have six buildings, which, aside from the grounds,— front and rear,— have to be taken care of. They are used daily except Sunday and three nights a week,— some of them every night. It requires during the school year twenty-nine men and women to attend to the cleaning, lighting, heating, and watching of the buildings and grounds.

The executive and business side of the Institute work is carried on in the general office, where all the financial dealings of the Institute with the teachers and students are conducted.

THE ATHLETIC ASSOCIATION.

The work of the teams of the Athletic Association was excellent during the year, and left us with the championship — Interscholastic — in football, base-ball, basket-ball, and hockey.

The demands made upon the students by the team work was great, and the faculty felt that better and more ecomical plans for the future could and should be made. A governing committee of the association was appointed to co-operate with the students in making out new game schedules and in determining matters of general policy. The committee consists of Mr. J. V. Sturges, Mr. J. M. Jameson, and Mr. Hugo Froehlich.

In looking back over the year, we have cause for encouragement. We are getting about us a student body which comes to us with more interest and enthusiasm and leaves us with more loyalty than students did in former years, when courses were shorter and students were not with us long enough to get into the spirit of the place.

Because we are building on firm foundations, and because we are developing slowly, we have a right to believe that the future holds more of success for us than the past has held.

Respectfully submitted,

Frederic B. Pratt.

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Annual Report of the Neighborship Association

FOR THE YEAR ENDING MAY 10, 1901.

THE Association closes today the eighth year of its organized life.

The existence of the Association, its work, and the opportunities for service offered by it, were brought to the attention of the incoming classes at the Institute early in the year, by means of the November number of the Pratt Institute Monthly,—the Neighborship Number,—a copy of which was given to each new student. The President of the Domestic Science Chapter notes in her report the good effect this had in that department in arousing an interest in the work of the Association.

The most important new work of the year was the organization of a committee for social service, consisting of representatives from each department. This committee has begun a work the value of which cannot be overstated. It has brought together the students of the several departments in a number of common interests and activities. It has kept track of students when they were ill and has seen that they were properly cared for. It has arranged a series of noon musicals which were very much enjoyed, and has been in charge of the weekly religious services.

The annual entertainment took the form this year of a fair, accompanied by a very successful minstrel show, and followed by a dance. The whole Institute worked together with a will, and the result of this united effort showed itself in a social and financial success far beyond the most sanguine anticipations. The sum of $325 was cleared. It will be expended in permanent improvements at the Astral and in extending the work at Greenpoint.

At the conclusion of Mrs. Alice Gordon Gulick's talk on her school in Spain, it was felt that an opportunity should be given for a tangible expression of the interest aroused. A mite-box was placed in the general office to receive contributions, and $10.51 was collected.

The governing board has held monthly meetings during the year and has kept in touch with the work of the Settlement through the reports of the head worker.

Miss Mabel Hastings was obliged to resign the office of treasurer in the early fall. Mr. Williston was appointed to take her place, and has held the office during the year. A new system of bookkeeping has been introduced, and, according to an arrangement made by the finance committee last fall, all moneys received at the Settlement pass through the treasurer's hands. The affairs of the Association are now on a firm financial basis. It has lived quite within its income, though the large balance shown by the treasurer's report means not that we have more than our needs, but simply that the proceeds of the fair have not yet been expended. The financial pressure

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under which the Association has labored during the past two years has been entirely relieved.

Turning now to the work of the several chapters,— the Kindergarten Chapter, the pioneer organization in the work at the Astral, has carried on its kindergarten, raising for its support by dues, sale of fudge, and entertainments, $407.26. Too much praise cannot be given this small chapter for the persistent and courageous devotion with which it has carried on this work. It is hoped that another year arrangements may be made by which the Kindergarten and the Settlement may be brought into closer relations. In addition to its own work, the chapter had a doll booth at the fair which contributed $25 to the general fund.

The Art Students' Fund Association increased its scholarship fund by $153.62 as the result of its annual fair, and also added to it by a sketch sale after the spring exhibition. A concert and dance in May, while not financially successful, was so well arranged and so delightful socially as to reflect great credit on those who planned and carried it out.

The class work at the Settlement has been carried on by four normal students.

One feature of the work of the Domestic Science Chapter which is worthy of commendation and consideration is its hospitality committee. The members of this committee, appointed in June, were at the Institute early on the opening day in the fall and received the new students, showing them about, assisting them, and making them feel at home.

Six members of the chapter have taught classes at the Astral this year. The chapter took a very active interest in the fair, contributing material for cakes and giving much time for the making of them. The success of the cake booth was limited only by the amount of its stock in trade, the demand for its wares being far greater than the supply.

In addition to the classes in millinery, dressmaking, and sewing conducted at the Astral by the Domestic Art Chapter this year, a very active part was taken in the fair by its members. The "mending booth" was a novel feature, and the general fund was increased $77 thanks to its varied efforts.

The Library Chapter has carried on its usual work,— Home Libraries. A library of twenty books is placed in the home of a family in a neighborhood where the children do not have access to books; ten or a dozen children are gathered there once a week, and a visitor meets them, plays games, reads to them, and distributes the books. Four of these libraries have been in circulation this year and seven members of the library class have acted as visitors. The chapter works in connection with the Children's Aid Society, which has secured the homes for us. All the houses where the libraries have been placed this year are open to us for next year, and another family has sent in a request for one. The chapter now owns two hundred and forty books, not all of which are suitable for its work. There is need for more books for girls and for very young children. It has also five bookcases. The chapter had charge of the fortune-telling booth at the fair, and

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also worked in co-operation with the Domestic Art Chapter in the work of making flags.

It is believed that it will be possible to start the work early in the fall and to make decided progress another year.

Though there is no organized chapter in the Department of Science and Technology, the students of that department have given much help to the Association. Flag-staffs were made for the Pratt Institute banners sold at the fair, and very welcome was the assistance of the decorating committee given at that time. Three bookcases were made in the department and presented to the Library Chapter for its use.

Two entertainments were given by the High School Alumni Chapter,—a dance in December and a musicale and dance in April. These entertainments were successful, and, while they did not add a great deal to the treasury, they were worth giving, and the chapter ends the year feeling that progress has been made and that more can be done another year. The chapter took charge of the refreshments at the fair and rendered most efficient aid. The undergraduates of the High School took part in the entertainment this year for the first time. They conducted a very successful candy booth.

The head worker at the Settlement, Miss Mary White Ovington, to whose wisdom, energy, and devotion the growth and development of the Settlement is in very large measure due, has been granted a leave of absence for a year. The work will be left in the hands of Miss Steel, who has been a volunteer resident worker for a number of years. Miss Steel's intimate knowledge of conditions in Greenpoint and her experience in the life of the Settlement give ample assurance that the work will continue to grow and develop as in the past. We have been fortunate in being able to secure the services of Miss Macy as assistant worker for another year.

Looking forward, we feel that we are justified in the hope that the Association may fill a larger place in the social life of the Institute, and that the interest of the members of the Institute in the Settlement and the opportunities presented by it may steadily increase.

Josephine Adams Rathbone,
President.

THE COURT-YARD.

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Annual Report of the Greenpoint Settlement

OF THE PRATT INSTITUTE NEIGHBORSHIP ASSOCIATION.

FOR six years the Pratt Institute Neighborship Association has supported the Settlement at Greenpoint. Beginning in tiny quarters, it now occupies a large house, has rarely fewer than eight residents, and each year a larger number of persons comes within its doors.

No part of its growth has been more satisfactory than that shown in its relation with the Institute, its students, alumni, and teachers. The first enthusiasm with which the Association started upon its Settlement work gradually waned, as enthusiasm will, and for a time all save a very few of the students seemed indifferent to the enterprise at Greenpoint. But, during the last two years, and especially during the year that has just passed, the interest in the Settlement has grown steadily among the Institute people. Our teachers, drawn largely from the Normal students, have come to us not only full of determination to make their classes a success but anxious to learn all that they may of the Settlement and its methods. The governing board has managed the finances so ably, and has brought the interest of the Settlement so clearly before the students, that the Association has gained new and more vigorous life and has rooted itself firmly in Greenpoint. We may believe it will continue there, doing more conscientious work each year, until the world has grown so in the spirit of neighborliness and intelligent understanding of the communities' needs that Settlements, as such, may cease to exist.

But while the Greenpoint work has gained in support at the Institute, it has lost some other helpers who used to conduct club work; this has occasioned a noticeable falling off in the number of afternoon children this season. Some of our helpers have left Brooklyn, others have taken up teaching and are unable to reach the Settlement early enough in the afternoon to be of service, while others have found the trip to Greenpoint too wearisome to seem to them worth the effort while there is other philanthropic work in which they may engage near at hand. To such of these as are really interested in the Settlement's welfare we would suggest that they aid us by providing some entertainment for us each year. A few of our old friends have done this, and helped us most cordially this past Christmas, but we need to have many good times planned for our young people — and our older people, too — if we are to do our best for them. During the season beginning October 15, 1900, the Settlement conducted eight clubs and twenty-three classes.

A recital of the class work conducted by the Association will be given by each department in another part of the Monthly. This does not, however, include all the classes held at the Settlement. Some of the In-

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stitute's former pupils have given lessons which were not directly under the Chapter's supervision; among them the assistant worker, and Miss Aeschenbrenner, who has taught dressmaking successfully for us for many years. If we were to count all the dresses Miss Aeschenbrenner has supervised their number would reach into the hundreds, and very pretty gowns they have proved to be.

Our dancing class has been in existence for three years, and, under Miss Cruttenden's able management, has greatly improved the character of the dancing that takes place, in class and out, within our doors. Our great difficulty is at present in keeping the class small enough for our restricted rooms, so many are the boys and girls who plead to enter it. This year we carried on successfully an afternoon class for children, believing that it would be excellent if the little boys and girls learned from the start to be decorous in their good times. A few children withdrew because we did not teach the skirt-dance, and a number were undoubtedly disappointed at the lack of vaudeville methods; but about twenty remained to the last, and amid an admiring circle of mothers executed a number of pretty steps. The class was almost entirely made up of girls, the little boys perhaps hating dancing-school as much as did Miss Daskam's Dicky, but escaping from it as Dicky did not.

For four years we have had no class in stenography, believing the study too difficult a one to be taught by amateurs; but this autumn we were glad to have a number of young men and women stenographers in the neighborhood come to us asking permission to rent one of our rooms twice a week for a speed-class. We easily made terms, and the class met until June, managing its affairs entirely itself. It was pleasant to find among its members two young men who had gained their first knowledge of stenography from Mrs. Esmond's lessons given at the Settlement five years before.

Our music pupils have made considerable progress this year. We count our musicales, held once a month, as important educational work. About half of the programme is given to performances by the pupils, the other half to the rendering of good music by good musicians. There are scarcely any musical societies in Greenpoint, and our population, despite its large German element, seems to have no instinctive love for music of a good order. We have not found that our young German-Americans care for much beyond a certain thundering execution of a waltz, so we mean to have the little children who are taught by us hear, as frequently as may be, really good selections. Two musical clubs were formed this year among our boys. For their continuance, however, they need the guidance of some one that can play the guitar or mandolin. Is there no one who will volunteer?

Our Penny Provident Bank should certainly appear with our educational work, since we feel that it is teaching the children the valuable lesson of learning to save. Almost from its beginning the Settlement has had a

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savings system, and no other of its activities has shown so remarkable a growth as this. From holding the bank half an hour a week in a little room, with one person in charge, there is now such a rush at banking hours that it takes three and sometimes four persons to do the work. The bank is held three times a week. Long before the hour of opening the halls begin to fill with little boys and girls. They sit on the stairs (we have so many stairs to sit on!) and compare books one with another. Sometimes there will be a scuffle, and then a patient resident will leave her dinner and send the offenders out. Living as we do in an apartment-house, the front door is always open, and to send a child into the street is not the least guarantee that he will come back again. Our bank receives deposits from a penny to three or four dollars. We have undoubtedly proved the great need of establishing a savings system in our community, and at the Penny Provident quarters they tell us that ours is one of their best stations.

CLUB WORK.

It seems to be a law of neighborhood guild work that the young people should be grouped into clubs. A club is the recognized social unit, and it is expected that, as far as possible, it will be a self-governing unit. For this purpose it is well officered,—almost extravagantly so in some cases, where a club of five has a president, vice-president, secretary, treasurer, and sergeant-at-arms. The idea of self-government works excellently with us among the adults, who are used to governing themselves; but with the children, and especially among the boys, we have never for any long-continued time succeeded in reaching the ideal. Our Irish-American and German-American boys, when they do misbehave, misbehave together. They are all leaders, and only the hand of the director, one who is not of themselves, can stay them. The sergeant-at-arms, elected by the boys to bring to order or to expel if necessary the unruly youth when any uproar occurs, will probably be the first to need expulsion.

We found this year among the boys—and boys' club work always proving our most difficult problem it seems natural to consider it first—that they found simply coming in and sitting in the club room, talking, playing cards, practising on guitar or banjo, was a lasting pleasure. The club room was attractively furnished this winter, largely through the efforts of the boys themselves, and they liked to meet there and have a social time. If those same boys can be held in a class a second night in the week, we are satisfied to have them spend one evening in their own way. Our best classes with boys this year have been in sloyd work.

Many of our boys have been with us four, five, and some six years. The Grant Club is four years old; the Dewey Club, under various names, has been in existence five years; the Franklin Club four years. Looking over our old records, we find few boys who have wholly left us; so, whatever difficulties we may have from month to month, we know

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that ours is a home where the same young people like to come again and yet again.

If the boys are faithful to us the girls are not less so. There are some school-girls who have been obliged temporarily to leave us as their studies have grown increasingly difficult, but they are anticipating coming again, when they are a little older, to an evening club. The Sophie May Club has in it six of its original nine members, a good number, we think, to keep five years. The Larcom Club has among its most active members four of the six young women who were the club's founders. This club has had a somewhat eventful year. In May it gave a supper at which twenty-six were present, six representatives coming from other clubs in Brooklyn. The supper was the outcome of a suggestion given us in the "Club Worker," where a contest for gaining new club members was decided. The club members divided into two sides, and each side had until May 1 to bring in all the new members it could. The side bringing in the fewer members was to give a supper to the other side. Membership with us was to mean not only election but the payment of a month's dues, and many girls who thought they would like to join dropped out at that test. We nevertheless, by this method, in two months gained five good members, and we had a charming supper, with a speakers' table and with toasts that were responded to by members and visitors. Then in the summer came the convention of working-girls' clubs in Buffalo, a complete and never-to-be-forgotten success, which four of our members were able to attend.

The Woman's Club has had a successful year, enjoying many a good time, but also considering some of the serious questions that confront the members as wives of workingmen. This is a club which we believe to be very important to the Settlement.

The Young Men's Debating Club has come to stay with us. The number of young men who care for anything so serious as debating is not many in Greenpoint, but we have gathered some ten who are in earnest in their desire to understand how to think and how to talk on matters of present moment. The club this year was fortunate in securing Mr. Bartley J. Wright as its leader.

Our roof garden was completed this summer, and we were able to invite all the young men and women of our various clubs to be with us Wednesday evenings on the roof. We had many good times, and found it quite spacious after our cramped room below; for, though we have been for three years in our new quarters, the inevitable has come, and we have outgrown our house.

A most important form of work was undertaken by the Settlement this year with the advent of its trained nurse, Miss Graham. Brooklyn has no adequate system of district nursing, and our ward was without any nurse upon whom we had the right to call for help. Not but what we did occasionally secure a nurse's services, but she came from a considerable distance, and as a favor. Now we have with us some one upon

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whom our people can call in illness, and who is ready to go to any case where poverty makes the payment of a nurse impossible. That does not imply that the patients pay nothing. This is often the case, yet a number pay what they can. Of course, since the Settlement has had a trained nurse all the people who have come to it have been wonderfully well, and it seemed at first as though no one ever again would be ill in Greenpoint. But the report of our nurse's work for the year shows a large number of cases attended. The number of cases for the year was 185; the number of calls for the year 759, of which 709 were house calls and 50 office calls. All that this means — the saving of life, the relief of suffering, and the easing a little of the last weeks of hopeless pain — is a very precious story to the Settlement, but it is one which can never adequately be told.

The interested person who visits Settlements as one of the interesting sights of a great city is almost sure before he or she leaves to ask whoever is doing the honors of the house. "And do you notice that there has been a distinct improvement among the pupils in the neighborhood since this work began?" I do not know how this may affect other workers, but to me the question is half ludicrous and altogether unanswerable. What is meant in the first place by one neighborhood? Our children come to us from all parts of the ward. Does the questioner mean, Have we affected the lives of 50,000 and more souls? Do the men drink less, the boys smoke less, the babies give over their coffee? Or do they restrict the neighborhood, and mean only the people immediately about us, and would they count it a distinct improvement in the neighborhood that the little girls on our block play more gently and gracefully than they used to, as one of our admiring neighbors assured us they do? Surely, if the question means anything it ascribes to the single small Settlement a much greater power than it can possibly wield. It can only influence a few lives, it can only make a few friends, and he who looks to see it regenerate the world that surrounds it must soon know bitter disappointment.

Yet there is a real way in which a Settlement can make a difference to all the people of its neighborhood. There are many reforms that the municipality and private society are introducing in our city, and the neighborhoods where the Settlements exist are those in which such reforms are most likely to be located. The Settlement workers are looking out for good things, and bring them into their district if they can. Since we have been in Greenpoint many excellent reforms have come to the ward. For some, we can claim no smallest credit — but others have appeared partly because of our presence.

These are some that have come within the last six years. In 1898 the Settlement started the first playground in Greenpoint, aided by the Parks and Playgrounds Society. The next two years the Parks and Playgrounds Society conducted the work, aided by the Settlement. This last year, losing its beautiful site, the third

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site to be lost, the society withdrew from our ward, but the Board of Education stepped in and established an excellent playground in the yard of the Dupont Street school. This we believe to be progression in the best direction — the municipalization of educational enterprises. For three years the seventeenth ward has had a vacation school. A large grammar school has just been opened in Greenpoint with the best modern apparatus. This gives the ward ample school accommodations for all its children. A day nursery was opened here this summer, within two blocks of us. A dispensary was started last spring, in the rooms of the Eagle Street Mission. It is the only dispensary in Greenpoint. This summer the Settlement was made a station for the distribution of sterilized milk. Heretofore the nearest station was over a mile away. The Astral, in a part of which we are housed, has for a year been under the care of a superintendent who practises the methods of the best modern rent-collector. Under her management the house has become one of the most popular tenements in the city. And, last, the people of the fourteenth, fifteenth, and seventeenth wards have succeeded in getting a bill through the legislature obtaining a number of acres of land, on the edge of Greenpoint and Williamsburg, for a public park. When this is laid out it will make an incalculable difference in the impression gained by any one coming from Brooklyn to Greenpoint. Instead of rushing through a desolate region of stagnant ponds and ash-heaps, they will skirt a park of green grass, flowers, and, we hope, a children's playground.

With so pleasant an entrance to the ward, there must be a growth of public spirit, and more and more educational and social advantages must come to us, until we can say that there is a distinct improvement in Greenpoint. If the Settlement has aided in some small degree in bringing this about, we can smile at our seemingly small results and be of good courage with the opening year.

Mary White Ovington,
Head Worker.

"Be cheerful and have no regrets for the wasted or misused past, and never borrow trouble about the future,— but do well the duty which is nearest to you in the present."

Charles Pratt.

OFFICERS OF THE NEIGHBORSHIP ASSOCIATION.

President, . . Miss Josephine A. Rathbone.
First Vice-President, Mr. Arthur L. Williston.
Second Vice-President, Mrs. Bertha A. Pfeffer.
Secretary, . . . Miss Adelaide Deming.
Treasurer, ... Mr. J. T. Pratt.
Head Worker, . Miss Mary White Ovington.

PRESIDENTS OF CHAPTERS.

Domestic Art, . . Mrs. Robert Humphries.
Domestic Science, . Miss Elizabeth Condit.
Fine Arts, ... Mr. Forest Grant.
High School, ... Miss E. L. Warner.
Kindergarten, ... Mrs. J. N. Moore.
Library, ... Miss E. M. Peck.

BACK NUMBERS WANTED.

The Boston Book Company is desirous of obtaining back numbers of the Pratt Institute Monthly, for which liberal terms will be paid: September, 1893, and November, 1895.

THE BOSTON BOOK COMPANY,
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Reports of the Chapters of the Pratt Institute Neighborship Association.

HIGH SCHOOL.

DURING the past season the High School Chapter of the Neighborship Association held seven regular meetings, with an average attendance of six members,—the membership numbering thirty. Two dances were given, one in December and one, a musical and dance, in April.

At the time of the fair, the members of the chapter assisted the committee by taking charge of the refreshment tables in the gallery of the gymnasium, and were able to turn in $14 towards the receipts of the evening. In October, the chapter gave $4.50 to Miss Ovington for the purchase of napkins. In April, dues to the amount of $3 were paid to the general Association.

The accounts for the season were closed on May 10, the treasurer reporting a balance of $10, which showed some slight progress against a balance of $2.24 in May, 1900.

DEPARTMENT OF FINE ARTS.

In addition to raising money for the Art Students' Fund, the chapter, in common with the other department chapters, has contributed each year to the funds of the Pratt Institute Neighborship Association.

On November 2, 1900, a meeting of representatives of the chapter was called for the election of officers, and at this meeting it was decided to hold a fair in the middle of December.

On November 16, 1900, at a meeting of the president, secretary, treasurer, and the special board of directors, $12 was appropriated to carry on the work at the Astral Settlement. Two of the volunteers to assist in the Settlement work were normal students, Miss Quinn and Miss Alice Smith; two, regular art students, Miss Nell Murphy and Miss Ethel Baker; and one, a design student, Miss Lucile Marvlog. Water-color, drawing, and manual training were the subjects chosen for instruction.

The following report by Miss Mary Quinn gives an idea of the purpose and spirit of the work.

The Art Students' fair was held on December 15, and was a success socially and artistically. The receipts amounted to $153.97. The chapter volunteered a booth for the Association fair in February, and from it a good sum was realized.

In May, the New York University Glee, Banjo, and Mandolin Clubs were engaged for a concert in the Assembly Hall of the Institute. The afternoon threatened a storm, the attendance was small, and the receipts fell short of expenses. Members of the department faculty and the students very kindly made up the deficit.

Drawings for the scholarship competition were handed in early in June, and, owing to the excellent quality of work, it was quite difficult to make the awards. It was finally decided in favor of Miss Beulah Stevenson, first

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scholarship; Miss Clara Reynolds, second scholarship; Miss Adelaide Deming, first mention.

Special Report of the Class Work.

Certainly it was refreshing after a long tiresome ride to find an enthusiastic crowd of boys waiting for you, — boys anywhere from nine to twelve years old, poor, whose only freedom and fun was the freedom and fun of the street, but, withal, wholesome, healthy, and capable boys.

For many reasons it seemed better to organize a club than to continue a drawing and manual-training class, partly because the boys had been in a school-room or shop all day and needed a change of social atmosphere. In school and in the shops they were bound by rules and authority in which they held no part, while the government of the club rested solely with them.

There were only five present at the first meeting, so we decided to have only five officers,— president, secretary, corresponding secretary, treasurer, and the instructor as the advisory board. New elections were to take place when the membership reached twelve, which it did at its second meeting.

The club was organized for educational and social purposes, and, after a heated discussion as to whether Lincoln was a Republican or a Democrat, it was named the Lincoln Club.

The money from the Art Students' Fund Association and the club dues were used to repaint the rooms and to buy sloyd knives and wood. We started out with making careful working drawings of models before whittling them, and later made successful attempts at boxes and stools.

The social side was confined to conversations and readings, which were meant to be in the line of current events, though they usually resulted in the taking up of subjects which were more personal and nearer to their boyish hearts. An air-castle, — a prospective minstrel show,— to raise money with which to buy books and magazines, filled them with joy for a few weeks, but the show didn't go, because the advisory board didn't have time to push it.

Miss Mary Fernald became a member of the advisory board and gave very valuable assistance.

That the boys learned a certain amount of drawing, or a certain amount of manual training, has its own value in their lives, perhaps; but the greatest value came with the self-control, the acknowledged submission to law, and the practical working out of a social democratic problem.

Mary F. Quinn.

DEPARTMENT OF DOMESTIC ART.

The Neighborship Chapter of the Department of Domestic Art carried on the Saturday morning sewing-school in the Kindergarten room of the Astral at Greenpoint, as it has done for the past five or six years. The school numbered about ninety children, with an average attendance of sixty-five. It was under the care of Miss Harriet L. Briggs, who was its superintendent the year before, and had a corps of eight teachers, all students of the sewing course at Pratt Institute. They were prompt and regular in attendance and most inter-

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ested in the progress of the little girls. Much nice work was accomplished. The older girls made underclothes for themselves, learning to cut and plan and to sew by machine.

Mrs. Lena B. Humphries acted as president of the chapter. Among its other activities were two large evening classes in millinery and one in dressmaking. These classes were taught by the normal students of the Department of Domestic Art, and made good progress. One sewing-machine was purchased by the chapter and added to its equipment, also a large number of cutting-tables. All these classes met weekly from October to June, with a holiday at Christmas time. The Saturday morning sewing-school closed with a social meeting largely attended, when games, recitations, and ice-cream and cake were enjoyed by all.

DEPARTMENT OF DOMESTIC SCIENCE.

During the past winter the Neighborship Chapter of the Department of Domestic Science received a call from Miss Ovington for teachers of the classes in cookery for the Settlement. In response to this, eight of the second-year normal students took upon themselves the responsibility of the classes. The Misses Dahl, Davidson, Mosman, and Stewart taught the classes in cookery, and the Misses Bradt, Gillett, Martin, and McGiffert assisted the students of the Department of Domestic Art in the classes in sewing.

The four classes in cookery numbered respectively ten, ten, thirteen, and ten, and in age ranged from an average of twelve years to an average of twenty-eight. The four classes in sewing put in charge of the Domestic Science students numbered twenty-five, twelve, twenty, and eighteen, and in age ranged from an average of six to an average of twelve years. The terms of the classes were twelve weeks, with the exception of Miss Dahl's, which was extended to twenty weeks, and that of Miss Mosman, to twenty-two.

The students found the work a welcome opportunity for testing their teaching ability, and uniformly reported the pupils as courteous and well-behaved in manner and earnest in work. Their interest was well sustained, and bore fruit in added skill and enthusiasm for home-making.

The prospective classes for the coming year are larger than for any previous year at the time of organization. For each line of work there are already fifty applicants.

DEPARTMENT OF LIBRARIES.

The Library Chapter of the Pratt Institute Neighborship Association had in circulation this year four home libraries, the visitors, seven in number, being in each case members of the first-year library class.

One meeting of the visitors was held during the year, at which suggestions were made in regard to books necessary to meet the requirements of the children, the chief lack being that of good books for girls and for young children. A request for games was made, in response to which three were purchased,— Bible Questions, Anagrams, and Authors. Through the kind offices of Mr.

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Williston, the Department of Science and Technology made and presented to the chapter three new book-cases, making five the number owned. The chapter owns also 240 books, about 30 of which were presented last summer through the efforts of Miss Homans, and six this winter by Mr. Welsh of Scribner's.

All of the homes in which the libraries have been located wish them again next year.

DEPARTMENT OF KINDERGARTENS.

Last May the Alumnæ Association of the Kindergarten Department was reorganized. It has now within the larger organization a Neighborship Chapter of sixteen members, with Mrs. J. M. Moore, of the class of 1898, as chairman. Each class that has graduated has two representatives in the chapter.

A new era dawned with the reconstruction, and with it have come some changes that are most delightful. First and most important are the new rooms given us by the Institute Trustees for the kindergarten. At one corner of the Astral building is a large room that was formerly used as a store. This was remodelled to meet the needs of the children, and, thanks to the untiring efforts of the superintendent of the building, was ready for occupancy on September 9, the opening day of the kindergarten. The room has been decorated in green, the larger windows filled in with screens, and a glass cupboard for materials added. A dressing-room partitions off the larger room to avoid any contact with clothing, and the plumbing is new and of the most approved kind. To make possible an ideal kindergarten by giving right physical conditions is the thought of the Trustees.

It is interesting to know that many remarks were made by people passing by the new rooms, such as, "Well, we are going to have a kindergarten in our neighborhood; isn't that good?" And these comments show how that which is seen is alone understood, for the kindergarten has been there seven years but has been in the basement.

Eighty-four children registered the first day, and for the first month there has been an average daily attendance of sixty-eight.

The Trustees suggested another good idea, and with it made a generous offer—that the kindergartner should become a permanent member of the Astral settlement and share the life of the resident workers. This was made possible by an arrangement that makes living expenses light. With the selection of Miss Amelia C. Brown, class of 1898, for kindergartner, our cup of blessing seems full.

Department of Kindergartens.

Neighborship Committee.

Mrs. J. N. Moore, *Chairman.*

Miss Sophie Brady, Class of '94.
Mrs. George E. Reed, Class of '94.
Mrs. Jarvis Carter, Class of '95.
Miss Julia P. Roberts, Class of '95.
Miss Florence Hughes, Class of '96.
Miss Elizabeth Delapierre, Class of '96.
Miss Jennie H. Nicholson, Class of '97.
Miss Laura G. Williams, Class of '97.
Miss Amelia C. Brown, Class of '98.
Miss Laura C. Crawford, Class of '98.
Miss Jeannette Wallace, Class of '99.
Miss Elizabeth F. Mascord, Class of '99.
Miss Lottie B. Gore, Class of '00.
Miss Ella F. Woodward, Class of '00.
Miss Lilian Walton, Class of '01.
Miss Mary S. Packard, Class of '01.

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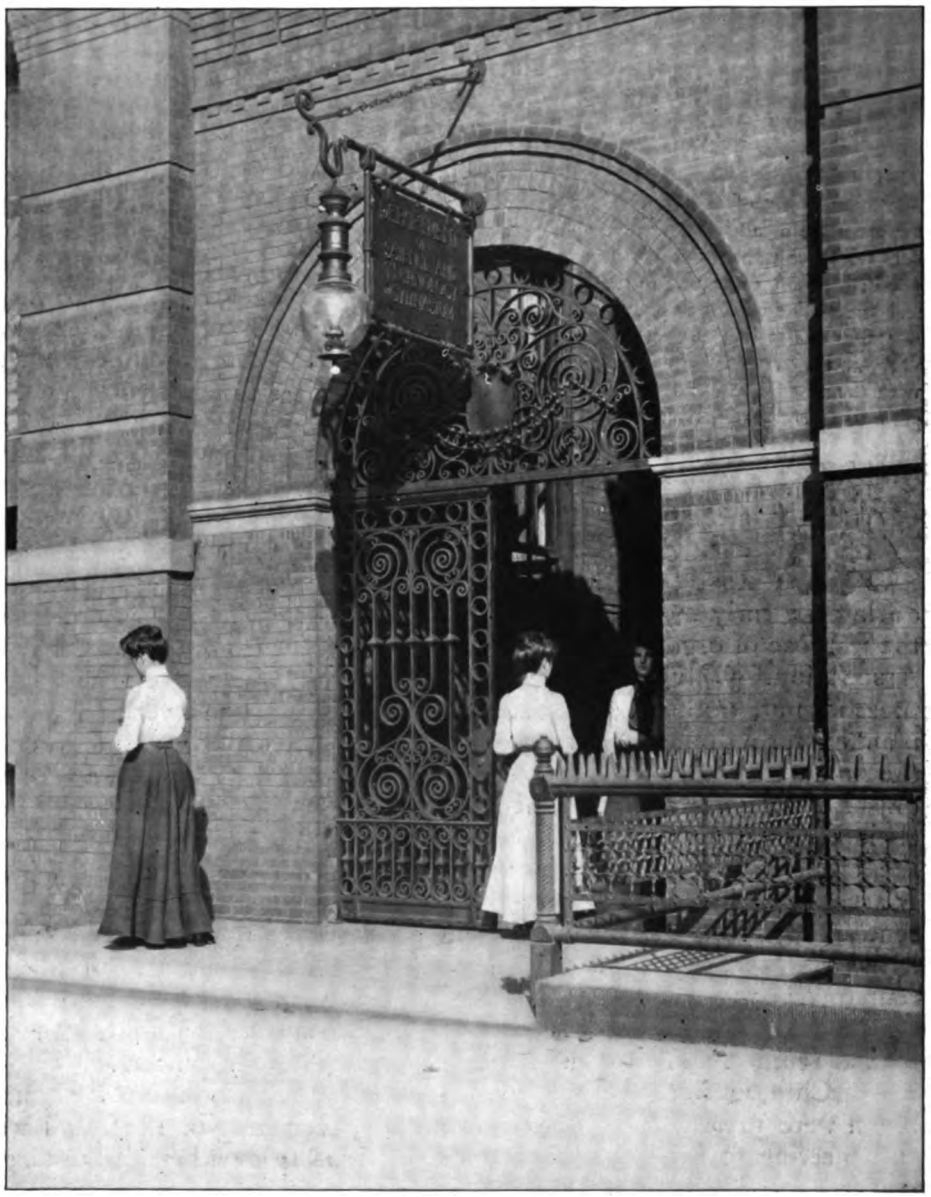

WROUGHT-IRON GATE AT THE ENTRANCE TO THE COURT-YARD.

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Pratt Institute Chemical Alumni Association.

"The object of this Association shall be the maintenance of an intimate relation of its members with Pratt Institute, and the promotion of goodfellowship, of mutual interest, and of chemical knowledge among its members."

"Students who have completed the second year, and instructors who have been connected with the evening chemistry course, shall be eligible to active membership."

From the Constitution of the P. I. C. A. A.

A FEW graduates and instructors of the evening chemical course of Pratt Institute held a meeting, during the early months of 1899, for the purpose of organizing an Alumni Association. Only seven men were present, but, nothing daunted, they planned for a dinner and reunion of the graduates of the course with the object of forming a permanent association. On April 5 of the same year the dinner was given at the Hotel Margaret, and seventeen were present. A constitution was adopted, and it was resolved to have a dinner and reunion every year.

On April 10, 1900, the second annual reunion was held at the Germania Club, and at this time twenty-seven were present. It was voted at this meeting to have four gatherings a year, and to adopt a pin as a badge of membership.

The first of the regular quarterly meetings of the association was held at the Elephant Club, May 22, 1900. Over thirty were present, and it was voted to revise the constitution, incorporate the association, and systematize a method of securing situations for unemployed members. It was also announced that the officers would undertake to secure one or two men of prominence in the chemical trade to address the quarterly meetings. When the new constitution was adopted, the form of government was changed to a board of directors, consisting of the president, vice-president, secretary-treasurer, and three other members.

The quarterly meetings have been a success. The annual dinner is held each year on the second Thursday in April. The dues of the association are one dollar a year. The cost of the dinner is extra, and is optional.

The annual dinner and business meeting was held this year at the Drug Trade Club. Forty-three were present, of which number three were guests.

At the quarterly meeting held in June, 1901, the idea of a chemical library for the association was suggested and is now under the consideration of the officers.

With a membership of about sixty-five, consisting of nearly all who are entitled to membership, and a general attendance of at least fifty per cent. at the quarterly meetings and of sixty-five per cent. at the annual dinner, it is unnecessary to say that the Pratt Institute Chemical Alumni Association is a live, active organization, of interest to its members.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

Department of Libraries — *Free Library, Reading-room, and Reference-room.* School of library training, 1st and 2d year courses.

Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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LIBRARY NUMBER

PRATT INSTITUTE MONTHLY

December, 1901

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X | December, 1901 | Number 2

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., an the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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Jamaica, Queensborough, New-York

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Pratt Institute Monthly

Volume X DECEMBER, 1901 Number 2

Annual Report
Of the Pratt Institute Free Library

FOR THE YEAR ENDING JUNE 30, 1901.

TO THE TRUSTEES, GENTLEMEN:

HEREWITH I beg to submit the report of the Free Library of Pratt Institute for the year ending June 30, 1901. The year has been one of considerable activity and we hope progress, and during the latter part of the year there have been gains both in registration and circulation, owing in part doubtless to the rainy spring, which has interfered with out-of-door occupations and amusements.

The organization of the Long Island Library Club has proved, as we hoped, a step toward closer co-operation and a better understanding among the libraries of the city. Steps have been taken toward a satisfactory division of the field of purchase and an outlining of the specialties of the various book-collections, also toward a co-operative bulletin of additions and work with the schools, while the later meetings of the club have been devoted to topics of pressing interest to every public library, such as the abolition of red-tape wherever practicable, the choice of scientific books for the children's department, etc. The membership of the club is increasing and includes some teachers. The policy of the club is to welcome those who come as members of other professions and as users of libraries, since thus we feel sure of obtaining valuable information and help from those who see our work from other points of view than ours.

The annual meeting of the American Library Association, at Waukesha, Wisconsin, was attended by the Director of this library, and a paper was presented on "Some Experiences in Foreign Libraries."

The principal new work of the year has been the establishment of the Information-desk on a sound footing, and although its benefits have been felt throughout the Library it seems best to report on this later under the work of the Circulating Department, since the desk itself is placed in the delivery-room.

CIRCULATING DEPARTMENT.

Open from 9 A. M. to 6 P. M. on all week-days except Fourth of July, Labor Day, Thanksgiving, Christmas, New Year, Washington's Birthday, and Decoration Day, and from 9

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A. M. to 9:30 P. M. on Mondays, Wednesdays, and Saturdays.

Registration.

Registration of adults, at the Main Library	2,407
Registration of children under fourteen, at the Main Library	1,228
Registration of adults, at the Astral Branch	291
Registration of children under fourteen, at the Astral Branch	396
Total registration for the year	4,322
Total renewals (to be added)	3,425
Total	7,747
Total expirations (to be deducted)	5,027
Growth in registration	2,720
Total registration to date	60,639

The total active membership, June 30, 1901, is reckoned as 39,913. The total proportion of renewals to expirations has been more than three-fifths, as can be seen. Mention should also be made of the 257 transfers of children whose cards in the Children's Department were still in use when they attained the age of fourteen, and who were transferred to the Main Library instead of being required to renew their application. Trace of the children who continue to use the Main Library at any interval after leaving the Children's Department, can be kept easily from the fact that the children's register has a block of borrowers' numbers not used in the Main Library, and these numbers continue the same when the child is transferred or when he renews his application for the use of the Library. 397 cards have been given to teachers, allowing the use of six books at a time, for one month, without renewal. This is the largest number given out in any year since these cards were introduced.

Circulation.

The circulation from the Main Library has been as follows:

To borrowers over 14 years of age	149,266
To borrowers under 14 years of age	33,847
To the Astral Branch	3,766
To City Park Chapel	100
To St. Luke's Chapel	54
To Simpson Methodist Junior League	200
To Good Will Club	330
To Boys' Welcome Hall	200
Circulation of books in the French language	3,450
Circulation of books in the German language	4,530
Circulation of books from the Open Shelves	15,255
	210,998
Circulation of the Astral Branch to borrowers over 14	15,451
Circulation of the Astral Branch to borrowers under 14	11,759
Total circulation for home use	238,208

The average percentage of fiction circulated was 63.2 per cent. at the Main Library. The circulation from the open shelves does not show an increase, owing probably to the small size of the collection. All popular new books, except new fiction, are placed in this room, and the consequence is that the shelves are crowded, and even window-seats and trucks have been brought into requisition. After taking careful measurements and blocking out on paper the possibilities of the entire delivery-room as an open-shelf room, I am ready to recommend to you such a disposition of the space. This would give us an

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added capacity of 3500 volumes or more. These added to the 2000 volumes now shelved there would give a good-sized collection free of access to the public. As the entire plan with all details has been furnished you, I need not go further into the matter in this report, save to say that the change seems highly desirable.

The collection of duplicate novels, circulated at five cents a volume per week, now consists of 27 works. The supply of these has not been extravagant, so that when the demand has ceased there have been few copies of any one book left to cumber the regular shelves for any length of time, and some copies have worn out by the time the demand had come to an end. They have nevertheless gone far to dispose of the chronic complaint with which libraries are so familiar, that one can never get the new novels.

The question of the reserving of books by means of reserve postal-cards would seem to be pertinent just here. 4865 cards were sold the past year, a much larger number than ever before. Without doubt, this represents an abnormal demand for a few books, owing largely to the present advertising methods adopted by publishers. It means also the retirement from circulation for twenty-four hours (sometimes more) of the books reserved, and the failure, therefore, of each book to do the duty possible to it if kept in constant circulation. In view of this, and of the extra work entailed by so many reserves, it seems desirable to discourage somewhat the reserving of books, and I should therefore recommend an increase in price of the reserve cards, especially as this Library has always sold them at a lower price than that set by other libraries.

Perhaps the most noticeable change in our statistics comes from the report on mending. Last year 54,967 volumes were mended at the Main Library and Branch; this year only 29,057. There is a decrease also in the number of volumes discarded, so it cannot be that we are discarding books which before we thought worthy of mending; neither is there much increase in the rebinding. We are led to conclude either that the decreased demand for books the first half of the year has meant less wear and tear, that the mending is better done, that the books are more carefully handled by borrowers, or that all three of these things are true. It cannot be said truthfully that books are better made than they were last year.

The "Information-desk" was established as a regular feature of the Library November 1st. It had previously been tried in our old quarters, and last year in the spring, with students in charge,—just enough to show that in proper hands it could be made a most important factor in our work. Miss Winifred L. Taylor, who was called from Freeport, Illinois, to help us make the experiment, had had twelve years' experience as volunteer librarian of the town-library, helping to select books for purchase and to guide people in their choice of reading. She had afterwards for years been a member of the library board. Miss Taylor was left entirely to her own devices as to

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clerical work, as we wished her to feel that she could have time to supply the wants that she herself might perceive in the way of lists, etc. The experiment has been tried for seven months and a half, and has confirmed us fully in our belief in the value of an information-desk for the giving not only of information but of help and counsel. Of course, the class chiefly benefitted is young people. Those who have been transferred from the Children's Department have carried a line of introduction to the desk and made the acquaintance of the Main Library under good auspices. Young men and women also have not been slow to avail themselves of its help, as well as persons new to the Library and unacquainted with the necessary forms. The feelings and perplexities of the public with regard to certain customs and regulations have found voice and a sympathetic hearing, and many misunderstandings have been corrected, mistakes rectified, and the reasons of certain procedure made clear. For all this work, time is a most necessary element, and in the hands of a judicious assistant produces results well worth its expenditure.

To go into some detail as to results, we may perhaps use Miss Taylor's own account of some parts of the work accomplished. In January she says: "A number of boys and girls have been transferred from the Children's Room and many others have begun taking books for the first time. I have taken these young people one by one, and taught them how to consult the printed lists and the card-catalogue, explaining all their cabalistic signs. I have assisted them in making out their first lists of a dozen numbers or more, representing a variety of authors; through this list of twelve books by different authors they have the ground-work for selections of fifty or sixty books or more. In making out these first lists with the boys, I omit the Henty, Ellis, and Munroe books, as they all know these authors, and aim to enlarge their circle and to call their attention to writers of whom they know nothing. The boys and girls usually pay strict attention and so begin the use of the Library intelligently. I have assisted a number of persons who, not being able to get the latest books, have seemed at sea in the matter of selection, helping them to make out fresh call-slips with the numbers of books not so greatly in demand. I think the public are appreciative of the fact that there is some one in the room whose time is entirely at their service. A number of persons, in conversation at this desk, have seemed for the first time to realize the relation of literature to character, and in some cases of which we know have extended our work beyond the library by themselves undertaking the guidance of the reading of younger persons, coming back occasionally for consultation. Students of music and art, deeply interested in their subject, but quite unaware that it had a literature, have been introduced to the theory, history, and biography of art and music."

In February Miss Taylor reports: "I notice in looking through the shelves that many of the Ellis books are in, and that Tomlinson is gaining

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in popularity. I also hear much less regret expressed for the absent Oliver Optic and Alger, and more opinions to the effect that the Henty books are all very much alike. Some of the boys are beginning to take out a second book, the 'not fiction,' and that gives a chance to get them interested in fresh lines. My list of books for this purpose is very popular." "I find my book-lists a very great convenience, but experience convinces me that to hand even a most carefully selected list to any individual and to expect him to get just what he wants from it is like sending a sick man into a drug-store and telling him to help himself, that every bottle on the shelves is good for something. One must study the symptoms before recommending either book or remedy. . . . I know of perhaps twenty novels — aside from the standard series of fiction — which have a certain quality of all-round, bright mediocrity, novels of a certain indefinable social standing, that I feel safe in recommending to the average reader; these, of course, are books with no marked peculiarity either in the subject or the manner of treatment, or in the characteristics of the writer,— stories of steady movement and plenty of light and shade. A good, romantic love-story seems to appeal to all classes of readers, and I find that men and women, as well as boys and girls, are at heart hero-worshippers. But the most unexpected individual tastes crop out." . . . "I continue to make out individual lists, and more frequently." "I am convinced that what has this year been only an experiment would soon come to have an organic relation to the whole."

An article by Miss Taylor in the *Library Journal* for April, 1901, entitled "The Library Friend," goes more into detail with regard to the work of the desk, and establishes beyond contention the need, not to say desirability, of such an official in the large library where the pressure of the regular routine does not allow time for the desk assistants to accomplish such work.

The receipts in this department have been as follows:

From fines, Main Library . . .	$1393.54
From fines, Children's Department	105.33
From fines, Astral Branch . . .	133.14
From volumes lost and paid for, Main Library	27.61
From volumes lost and paid for, Children's Department . . .	3.11
From volumes lost and paid for, Astral Branch	1.00
From sales, Main Library . . .	185.90
From sales, Children's Department	3.20
From sales, Astral Branch . . .	.25
Total receipts	$1853.08

READING-ROOM.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 9:30 P. M.

Attendance at the Reading-room of the Main Library	54,119
Attendance at the Reading-room of the Astral Branch	22,587
Evening attendance at Children's Reading-room (adults)	814
Evening attendance at Children's Reading-room (children)	3,598
Total Reading-room attendance .	81,118

The attendance shows a gain of 143 over last year, the month of November registering 5901 readers in

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the Main Reading-room, the largest monthly attendance yet recorded.

The new janitor has succeeded for the most part in keeping children from playing on the steps and on the walks around the building, which has meant greater quietness for readers and students.

Periodicals now subscribed for at the Main Library	216
Newspapers now subscribed for at the Main Library	13
Periodicals now subscribed for at the Astral Branch	35
Newspapers now subscribed for at the Astral Branch	8
Total	272
Periodicals received as exchanges for PRATT INSTITUTE MONTHLY	47
Periodicals received as gifts	41

The following periodicals have been added to the subscription-list:

The Sewanee Review.
The World's Work.
Rivista delle Biblioteche.
Physical Review.
Science Abstracts.
Magazine of American History.
Publications of Southern Historical Association.

The following have ceased publication:

Engineering Mechanics.
Croquis d'Architecture.
Scottish Review.
New World.
Revue pour les Jeunes Filles.

Progress has been dropped.

Much reference-work continues to be done in this room, through the back numbers of unbound periodicals, owing to the cumulative indexes now published. The order of the room has been generally good.

REFERENCE DEPARTMENT.

Open daily, except Sundays and the usual ho days, from 9 A. M. to 9:30 P. M.

Attendance at the Reference Department of the Main Library	29,2
Attendance at the Reference Department of the Astral Branch	8,5
Total attendance	37,8
Number of volumes brought from stack for consultation, Main Library	14,9
Number of volumes brought from stack for consultation, Astral Branch	1,3
Total	16,26

The reports of this departmen have been necessarily brief, durin the past year, the increase of attend ance and consequent increase in dail work being so great as to exclud much clerical work. Every mont of the year except August has show an increase over last year, Marc proving the record-month so far, wit 3492 visitors in this department o the Main Library.

Lists have been made as follows notwithstanding the pressure:

Holland. (By request.)
German history.
Bibliography of Philosophy and Sociology (Revised.)
Period of discovery in North America.
New inventory of Reference Department.
New guide to location of periodicals.
Index to bibliographical reading-lists kept in Department.

The principal additions to the resources of the department have been:

Benedict. American Admiralty.
Bouvier. Law Dictionary. (New ed.)
Lockhart. Scott. (New ed.)
Powell. Army List.
Universal Encyclopedia. 12 vols.

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Larned. History for Ready Reference. (For the Astral Branch.)
Croly. Woman's Club Movement.
Johnson. Camp-fire and battle-fire.
Real Academia Española. Diccionario de la lengua castellana.
Moulton. Library of literary criticism. Vol. 1.
Franco-German War, by generals and other officers who took part.
Bible. Two-version ed.
Transactions of the American Institute of Mining Engineers, 1873–97.
Roncagli. L'Italia in casa e fuori.
Garcia Cubas. Diccionario geográfico, histórico, y biográfico de los Estados Unidos Mexicanos.
Paris Exposition (1900). Amtlicher Katalog des deutschen Reichs.
Jannaris. Concise dictionary of English and modern Greek.
Thesaurus linguæ latinæ. Vol. i, pt. 1.
Norwegian government. Norway.
Law of civil procedure for Cuba and Porto Rico.
Marshall. Mushroom Book.
Roehl. Inscriptiones Græcæ Antiquissimæ.
Sachse. German sectarians of Pennsylvania. 2 vols.

The number of pamphlets indexed and filed has been over 1500. Account has been kept recently of the number of pamphlets called for from the stack, and we find the number increasing each month. An unusual demand for the Smithsonian publications is attributed by the department to the printed analytical catalogue-cards furnished by the Publishing Section of the American Library Association. The students of Mrs. Spalding's, Miss Stevens's, Miss Harriman's, and Dr. McVannel's classes have been the most frequent users of the department from the Institute. Prof. Monroe's classes from the Brooklyn Institute, classes of boys from the Heffley Commercial High School, and of both boys and girls from the Hamburg Avenue Grammar School, have come in frequently, the first to consult books reserved for them, the last two to make their first acquaintance with works of reference. A half-hour's help and explanation from the assistant-in-charge set them on their feet and enabled them to use at least the encyclopedias and dictionaries intelligently and with ease. The classes in English from the Pratt Institute High School are reported as no longer contented to read only the books and extracts required for their class-work, many of them returning after school hours to cultivate a wider acquaintance with works and authors to which the required reading served as introduction.

The department begins to feel crowded for book and pamphlet-room, especially when, as has happened this year, material for binding has had to accumulate and occupy needed space, owing to the urgency of daily duties and the impossibility of preparing the material for the binder.

ART REFERENCE DEPARTMENT.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 9:30 P. M., from September 15 to July 1. Open at specified hours from July 1 to September 15.

Attendance	14,296
Number of books and plates taken on cash deposit	207
Number of books and plates taken on department orders	2,244
Number of photographs taken on department orders	2,989
Number of photographs taken on Director's permit	707
Number of phographs used at the Library	4,550

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There has been an increase in attendance in this department also, the first fortnight after the regular opening hours had begun showing a gain of 17 per cent. in the number of visitors.

The photographs have been used this year by classes other than art-classes, teachers of history from our own school and other schools frequently coming for photographs to illustrate their subjects. If we had the full use of the third floor office we could probably make it convenient for such classes to come to the Library and see a much more comprehensive collection than can be carried to them by the teacher. The record for the year has been somewhat better than usual, as early in the fall-term the regulations for the use of the department were compiled and sent for posting to those departments of the Institute whose students most frequent the room.

The chief additions to the collection shelved here have been:

Cooper. Linear Perspective.
Cowell. Deutsche Fachwerkbauten der Renaissance.
Ellenberger. Anatomie der Tiere.
English household furniture, Georgian period.
Middleton. Ornamental details of the Italian Renaissance.
Huish. Greek terra cotta statuettes.
Crane. Line and form.
Parmenter. Album historique. Vol. 1–3.
Singleton. Furniture of our forefathers. Pt. 1.
The Rubaiyat, with Vedder's illustrations. (Large-paper copy.)
Armstrong. Gainsborough.
Mumford. Oriental rugs.
Pelletreau. Early New York houses.
Poynter. National gallery. 3 vols.
Lady Dilke. French architecture and sculpture of the 18th century.
Journal of the Photographic Society of Lond 1854–91.
Egypt Exploration Fund Memoirs. 2 vols.
Wheatley. Remarkable bindings in the Brit Museum.
Weichardt. Tiberius' villa.
Huish. Samplers and tapestry embroideries.
Scènes au théâtre japonais.
Wickhoff. Roman art.
Gonse. Les chefs-d'œuvres des musées France: la peinture.
Jackson. History of hand-made lace.
Dante. Divine Comedy. Doré illustrations.
École nationale des Beaux-arts. Les gran prix de Rome d'architecture de 1850 à 190 4 vols.
Rooses. Christophe Plantin.
Ysendyck. 150 architectural plates from t "Documents classés de l'art dans les Pays-Bas.

The exhibitions, under the care o the Department of Fine Arts, hav been as follows:

Volkmar pottery. Lent by Charles Volkmar.
Sketches, Color Studies, and Drawings, by E win Howland Blashfield.
Portrait Drawings, Composition Sketches, an Paintings, by Willard D. Paddock.
Color Studies of Ancient and Medieval Worl of Art, by Joseph Lindon Smith.
Antique oriental rugs, embroideries, and met work, lent by John T. Keresey & Co.
Basketry, lent by Mrs. Frederic B. Pratt.
Denton collection of Butterflies and Moths.
Photographic reproductions from the collection of the London National and Berlin Galleries Lent by the Berlin Photographic Company.

The Library held its first exhibi tion, one illustrating the History of the Book, from April 13 to May 11 Though the visitors to this were not so numerous as to some more popular exhibitions, the number, 1693 was not small, and nearly all who came studied it with close attention. Credit is due to Miss Palmer and Miss Collar, of the Library staff, for the artistic grouping and full and

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careful labelling of the exhibit, making it easily understood even by child-visitors, of whom there were a number. On the afternoon of May 6th, Mr. Charles M. Skinner, of the *Brooklyn Daily Eagle*, gave a talk on the history of book-making, in this room, to an audience largely of children, visiting the cases afterward and explaining the use of the various objects.

CATALOGUING DEPARTMENT.

Volumes catalogued during the year	5,041
Volumes plated, labelled, and made ready for the shelves	8,032
Volumes prepared for rebinding	3,201
Volumes discarded	1,161
Volumes made ready for the Astral Branch	357

Of the volumes catalogued, 168 were in French, 208 in German, 15 in Italian, and 4650 in English and other languages.

The discarded books were sent by request to the Kings County Penitentiary, the Free Library of Haines' Falls, N. Y., and to Barren Island, in Jamaica Bay.

A separate classification for the Shakspeariana has been finished and the books renumbered in accordance with it. This brings together in our classed catalogue all that we have by or about Shakespeare, giving us a special collection of 338 volumes.

The cataloguing and labelling of our map-collection have received much attention during the year, the collection of the Lenox Library being visited several times and consultation had with Mr. Letts, the head of the map department at that library. 232 maps were entered in the first six months of the year, the contents of one roll of the Coast and Geodetic and the Geological Survey. 59 maps, all that the Library has aside from the Survey maps, have been catalogued and made ready for use, and an outline-course in map-cataloguing prepared for the Library School. Ultimately the atlases will be analyzed in the catalogue, and maps of special value, in books, will be noted.

The analytical cards furnished by the American Library Association for the Old South Leaflets, and subscribed for by this Library, were prepared for our catalogues, the work taking about fourteen hours of one person's time. This preparation includes classifying, assigning a subject-heading for each title, comparing the author-headings with those in our own catalogue, writing call-numbers, etc. Where the subject headings are already assigned, they have to be collated with our own list of headings, discrepancies reconciled, and slips made for new headings. Frequently there are not cards enough furnished to meet all the requirements of our catalogue, and written cards must be added. Finally the bulletin slips must be made. So that the saving of time is not so great as would at first appear.

The Italian books, proving sufficiently numerous, have been represented in a separate drawer in the card-catalogue and have since attracted a larger number of readers.

Although the showing of this department is a good one, as to work accomplished, it might have been better had not the assistants been so

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often called upon to supplement the force of other departments.

ORDER DEPARTMENT.

5920 volumes have been entered during the year.

Additions by purchase	4,732
Additions by gift	703
Additions by binding pamphlets and periodicals	485
Additions for circulation	5,325
Additions for reference	547
Starred books*	48
Additions in English	5,391
Additions in French	194
Additions in German	231
Additions in Italian	39
Additions in Spanish	57
Additions in Latin and other languages	8
Total number of volumes entered to June 30, 1901, including volumes of Astral Branch	85,429
Total number of volumes withdrawn to date	10,450
Total number of volumes in Library, July 1, 1901, including 3869 volumes in French, and 3120 in German	74,979

The more noteworthy accessions have been recorded in the report of the Reference and Art-reference Departments, pp. 34, 35, and 36.

Among the most interesting accessions of the year were 38 chap-books, published in Bath, Bristol, and London, in the early part of the century. They were bought to illustrate the lectures on the history of literature for children; also about fifty old-fashioned books for children and young people, published between 1748 and 1842. Some books printed in the Confederate States during and immediately after the Civil War were purchased at auction, as having historical interest, while an extra set of the *International Studio* was bought for circulation, and duplicates of the last ten volumes of the *Library Journal* for class-use in the Library School. Among the gifts of the year a number of text-books given by the Pratt Institute High School should be mentioned. The majority of these were added to the Text-book Collection in the Reference Department. The number of accessions, including volumes replaced, has been so large as to take almost all of the time of the department, so that the binding of periodicals and pamphlets, work belonging here, has been retarded much more than usual, in spite of the constant efforts of the department to catch up.

*Books which circulate only on payment of a cash deposit.

CHILDREN'S DEPARTMENT.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 6 P. M. and 7 to 8:30 P. M., October to May; 9 A. M. to 6 P. M., May to October.

New members registered	1,228
Expirations of membership	1,652
Renewals of membership	385
Transfers of membership to Main Library	257
Circulation of books for home use	33,847
Evening attendance, adults	814
Evening attendance, children	3,598

The registration and circulation of this department showed a decrease until October, when an increase began which has continued to date, owing largely to the visiting of schools by the head of the department, to awaken or revive the interest of school-children. This will be spoken of in detail farther on.

The number of letters to parents during the year was 1546, 1044 of

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which were answered. In May all but two of the 111 letters sent out brought replies.

The Information-desk has proved a boon to this department. Children transferred to the Main Library are sent to this desk with their cards, and escape to some extent the feeling of strangeness natural in going into an untried department. This is the point at which to influence their use of the main collection, as, once acquainted with its routine without any one's aid, they would be much less likely to care for suggestions. It is the feeling of helplessness and ignorance at the time of the transfer that we must take advantage of to give their reading a turn in a satisfactory direction. This can be done and the child experience no less pleasure in his reading than if he had chosen without guidance.

It was decided early in the library year to transfer to this department the classifying and cataloguing of the children's books, inasmuch as the new books thus became familiar to the assistants much sooner than otherwise, and as the subject-headings for the children's catalogue are simpler and more specific than those used in the catalogue of the Main Library. More analyticals are made also. A desk for the use of the person cataloguing has been placed outside the rail in the Children's Reading-room, where some oversight of the room can be had at the same time.

The Bulletins and Exhibitions have been continued throughout the year. The subjects of the former have been China, Schooldays in Many Lands, Thanksgiving, the Pope's Jubilee, Caroline Islands, Queen Victoria, her family and pedigree, with colored illustrations from the Jubilee Number of the *Illustrated London News*, Valentine's Day, with original verses and designs, Silk and the Silk-worm (student's work), the "Out-of-doors" bulletin inaugurated last year, Memorial Day, Mexico, Lapland (the last two students' work), and May Day. The exhibitions in the room have been the usual Animal, Christmas, Hero, and Spring exhibitions, with some slight changes, and the original illustrations of Miss Alcott's "Candy Country" by the Misses Whitney. These made the room look very gay, being all in red and black, and proved very attractive to grown persons as well as to children. The story had to be repeated many times. The children do not seem to tire of the regularly recurring exhibitions mentioned above, the one on Heroes seeming especially popular. The story of the sinking of the Birkenhead, as narrated in Miss Yonge's "Book of Golden Deeds," was read again and again, apropos of the picture, and boys to whom the story had been told were observed repeating it to other boys, often to groups of five or six. The spring-time exhibition was placed just before Easter, and a succession of wild-flowers and plants has decorated the room ever since. The exhibitions in the Art Gallery of the Library, for which children who asked received permits, were the Joseph Lindon Smith collection of original Greek and Egyptian color studies, which many children visited a second time and to

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which they brought their parents and teachers, the basketry collection lent by Mrs. Frederic B. Pratt, which also was revisited by many children, the illustrative collection of the history of book-making, the Denton butterflies, and the photogravure illustrations of paintings in the London and Berlin National Galleries.

A lecture on the History of Book-making was given in the Exhibition-room early in May, by Mr. Charles M. Skinner, of the *Brooklyn Eagle*, and proved exceedingly interesting to both children and adults. Visits to the cases, with Mr. Skinner as guide, followed the lecture.

Gifts and loans to the room have been very gratifying in character. A jar of tadpoles, a little stuffed white seal with soft fur so irresistible for stroking that it had to be put out of reach, and which has led to much reading of Kipling's "White Seal," some green cocoanuts and a fine picture of the cocoa-palm from the Department of Kindergartens of the Institute, the Candy Country pictures, daily contributions of flowers, have all been suggestive and appropriate.

The evening attendance of children shows an increase of 957 over that of last year. The evening work was apportioned in part this year among students of the course for children's librarians, and they were given a free hand as to the methods employed for passing the evening pleasantly and profitably, with the understanding that their note-books were to be handed in to the head of the department, at regular intervals, showing just what they had done. A brief record of some of this work may show the drift of the influences exerted. "To a tableful of larger boys and girls I showed the country of Egypt on the map. While they talked about it, I showed photographs of the Sphinx, obelisks, temples, of Rameses II, etc., also of beads, chains, bracelets, bags, and chains of coins such as are worn by donkeys in Egypt. The donkey-chains led to a discussion of the modes of travel, on donkeys and camels, the beads and bracelets to an account of the costumes of the country, some beads from a mummy-case to information as to mummies, etc." On a snowy evening there was a discussion on snow and some illustrations of snow-crystals. For some smaller children, a table was covered with books of rhymes, to acquaint them with something besides "Mother Goose." The approach to the use of these was made through some pictures of cats and the repetition of all the cat-rhymes they could remember,—the rhymes then being found in the various books. Another evening, photographs and books of Chinese and Japanese life were shown, and the children set to looking up Chinese and Japanese places in the Century Atlas. "They had never found places on a map by means of an index, and it interested them as much as a puzzle." On a very windy evening, Howitt's "Wind in a frolic," Field's "Night wind," and other "windy poems" were read. Another evening, pictures of John Burroughs and his haunts were shown, and the children told of his love for birds, while there were bird books enough

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on the table for each child to have one. The books were distributed and every one tried to find something about the robin, the use of indexes being taught incidentally. When the robin had been found and discussed, the books were exchanged and the blue-jay looked up in the same way. An evening was spent in telling Legends of the Rhine, illustrating with maps and pictures. Several children asked next day for books containing the stories, and it was learned that they had repeated the stories at home. Several "copying" evenings are reported, when the children, with one accord, wished to copy verses. The head of the department considers as a very profitable evening one spent with five or six books on the table, talking a little about them and reading a bit here and there to enlarge the children's acquaintance with books and authors. The books invariably go out the next day, and the assistant is often asked to reserve them over night.

Regular visits of the children's librarian to schools were begun in October, one morning a week being set apart for this purpose. The plan had first been submitted to and approved by the school principals, of course. These visits are not exactly of the nature of advertising, since they are made not so much for the Library's good as to make sure that teachers and children *know* of the Library and what it can do for them. Since each school building contains twelve or more rooms, in all of which the Library must be explained, a winter can easily be spent in the two or three schools nearest the Library. The visits have been most courteously, even cordially, received, and invariably followed by increased use of the Library, by teachers as well as pupils. The return of many former borrowers, an increased amount of reference-work, and more use of the subject-catalogue, are other results.

Some of the reasons given for the dropping of library-privileges were interesting and amusing. One boy had lost his card and didn't suppose he could have another, only one of the many cases of misunderstanding which are discovered; one doesn't read; one, a colored boy, said his grandmother had died and left a fine library; another liked only one author and he wasn't in the children's library; one had no time; one got tired; one didn't know the way; another (this was early in October) said it had been too cold! Many made the common explanation that they "forgot about it." And indeed, it is a wonder, when one considers the kaleidoscopic sensational street-life of many children, that they remember anything. Some of these reasons called for explanations and directions, such as what to do about a lost card, about disuse of privileges when moving away and renewal of them when coming again within reach of the Library, how to get help from the Library in school-work (several children having stopped taking books because they had to study).

The answers to the question, "How do you know what books to take when you go to the Library?" brought from a number the fact that they chose their book on hearsay evidence, some other child having de-

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clared it good. One boy "reads a little at the beginning, in the middle, and the end"; others choose interesting titles; another reads the headings of the chapters; one uses his finding-list at home to make a list and picks out the books by means of this; one consults the lady at the desk; another knows what kind of book he wants and goes to the shelf where there is a tin (label) for that kind. Lists of books, twelve in number, were prepared for eight school-grades, beginning with the fourth primary, representing the third year in school, and extending throughout the fifth grammar grade, or sixth year in school. These lists, headed "Good Books for Boys and Girls in the . . . grade," accompanied with pictures of the Children's Room, mounted on dark-green cardboard, were taken to the school and left there for a month. They were recognized at once as very decorative and were well received.

Explanations of the meaning of the words "author," "subject," and "title" proved desirable, and much more familiarity with and interest in book-titles has followed this clearing-up of ideas.

A number of subject-headings from the card-catalogue were read, to show on what a variety of subjects information might be found in books, and here the boys especially were greatly interested, and many of them gave up their recess to remain in and ask questions.

A few books were taken to the school at the same time and some idea of how to place them on the shelves by means of the call-number was given, the places for the name of author and title, and index if there was one, pointed out, and some remarks made, especially to the younger children, on the way to handle and care for books.

Application-blanks were then produced for those children who might wish to use the Library, and the wording read aloud before they were allowed to sign them. They were told when to call for their books, and the visit was concluded. A second visit followed, a month later, to the first rooms visited, to see if the bulletins had been of use as reading-lists, the facts leading to the conclusion that the books themselves should go with the bulletin or else be reserved to be given to these school-children on the date of their first visit. Questions as to favorite books led to the usual discovery that the child often named the book he thought some pupil in good standing preferred, or that he himself ought to prefer, rather than the actual preference, if there was any; and that often when questioned about the favorite book, he could tell very little if anything about it. One boy who preferred "Rollo's Travels," when asked for some account of them, gave a very fair account of Gulliver's; another confused Robin Hood and Robinson Crusoe. It is generally safer to follow up such statements of preference on the part of children, if one wishes not to be blinded to the true situation.

Illness on the part of the visitor in February and March interfered with a number of visits, the second round being completed late in May. Nearly all the children who signed applica-

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tions reported for their cards, and the use of the Library by these children has been more intelligent than that by most children who had had no such explanations. There is no doubt that the increase in registration, renewal, and circulation is owing in great measure to these visits, that the quality of the reading and reference-work is also better; and that many teachers have been stimulated to renewed interest in the Reference Department especially.

We hope that this work may be prosecuted with fewer interruptions the coming year.

LIBRARY SCHOOL.

First-year Course.

Seventy-three applicants took the June examinations for entrance; forty-three passed, and from these the usual twenty were selected, beginning work October 4th. Eleven States were represented by the students accepted for all courses:

Connecticut	1	New Hampshire	1
Illinois	1	New Jersey	3
Kansas	1	New York	10
Massachusetts	6	Pennsylvania	1
Michigan	1	Wisconsin	1
Minnesota	1		

The work of the course had been rearranged, so as to bring rather more work into the first term and make the second term less crowded with subjects.

Ten students volunteered as visitors for home libraries, while one agreed to take the evening hours of a library established by the Children's Aid Society.

Three new courses were given during the third term, one of six lectures on Library Buildings, by Mr. William R. Eastman, inspector of libraries for New York State; one of four on the History of Libraries, by Mr. George Watson Cole; and one of four on Book-buying: or Building up a Library, by Mr. George H. Baker, librarian emeritus of Columbia University. The final lecture on Library Buildings was given in the evening, in Assembly Hall, with lantern-views of buildings and plans.

The single lectures given by visiting lecturers were as follows:

Dr. Henry M. Leipziger, on Some new movements in education.
Mr. Arthur E. Bostwick, on Branch Libraries.
Dr. James H. Canfield, on Qualifications of a librarian.
Miss Sarah S. Oddie, on Planning a library.
Miss Bertha S. Wildman, on the Selection of books for a small library.
Mrs. Salome Cutler Fairchild, on Book annotation.
Mr. Charles Welch, on the History of literature for children.

The visits of this class to libraries in New York and vicinity were as follows:

Newark (N. J.) Free Public Library.
The Harlem Library, New York.
Washington Heights Free Library, New York.
Webster Free Library, New York.
Brooklyn Public Library.
Long Island Historical Society Library, Brooklyn.
Brooklyn Library.
Columbia University Library.
Bryson Library, Teachers' College.
Jersey City Free Public Library.

The usual spring trip of visits to libraries was made during the last week in March, all the first-year students except two being of the party, which was in charge of the Director

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and the head-instructor. The visits this year included the libraries of Providence, Pawtucket, Boston, Brookline, Salem, Medford, Lynn, and Hartford, with a side-trip by several of the party to the library of New Britain, Connecticut, by all of which, as well as by the Boston Book Company, Library Bureau, and D. C. Heath & Co., of Boston, the party was most courteously and kindly received. The trip was virtually a study in library buildings, as Providence, Pawtucket, Lynn, and New Britain had all new quarters to show.

The reading-lists made by the students covered the following subjects, including lists of material for debates, and indexes:

1. Debate: Was the French Revolution of benefit to mankind?
2. Debate: Is fear of punishment the strongest incentive to right-doing?
3. Debate: Have missions in China been worth while?
4. Debate: State constabulary.
5. Debate: The value of examinations.
6. Index to conventional designs, grape-vine, hop-vine, and pumpkin-vine.
7. Index to illustrations of artistic pewter, brass, and copper work.
8. Index to personal narratives of the Siege of Pekin.
9. Index to illustrations of sailors' uniforms, of the United States and England.
10. Index to poems of events published within the past two years.
11. Index to illustrations of staircases.
12. List on protective mimicry.
13. List on cheap library post.
14. List on Trans-Siberian railroad.
15. List on Municipal art.
16. List of 100 German novels for a small library.
17. List of 100 German books (not fiction) for a small library.
18. List of stories illustrating life in foreign countries.
19. Library editions of standard foreign authors.

The students also compiled, in addition to these, a list of fifty dollars' worth of children's histories, of fifty of the best single short stories, and of fifty collections of short stories.

The practical work of this class has been reported on favorably by all departments, and two of the class were engaged during the spring term on the staff of the Library, to fill vacancies.

Historical Course.

Three students of the class of 1900 entered for this course. There was no important change in the course. The lessons in Paleography were made easier by the use of blue-print photographs of MS. letters and abbreviations, furnished by Professor Egbert for reference in preparing lessons. In Italian the class became so much interested as to continue it on their own account when the term ended.

Two of the lectures on Printing, at the Marion Press, were illustrated by the press in operation, and all but one of the lectures on Binding, given at the Evelyn Nordhoff Bindery, were process-lectures.

It was decided early in the year that not enough time was being given to the cataloguing of modern books of some difficulty, and the time for this was doubled, with good results.

The lectures given especially for this class, aside from those for the School in general, were as follows:

Mr. William Warner Bishop, two lectures: Bibliography of education; Bibliography of classical Philology.

Dr. Ernest C. Richardson, on Bibliography of Theology.

Mr. George Watson Cole, on Working up a bibliography.

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The collections visited, besides those visited by all classes together, were those of the Grolier Club, the General Theological Seminary, and the Union Theological Seminary. One student accompanied the first-year class on the spring trip to New England. One of the students of this course we were obliged to lose early in the third term, a very good opportunity offering for her to put into practice the instruction of the course, in a far Western library.

The theses and bibliographies assigned were as follows:

Private printing-presses in the United States; with a Bibliography of the Marion Press.
List of books illustrating different kinds of indexes.
History of printing on Long Island.

Course for Children's Librarians.

The second class taking this special work was composed of a graduate of the class of '96 and one of '98, with two of the class of 1900. As two of these had had practical experience in dealing with children, the make up of the class was very satisfactory. The attitude of the students toward the work was more and more gratifying as the year went on and they grew in insight into its significance. The generous spirit shown by all of them toward the Children's Department, their readiness to respond in emergencies, was productive of benefit to them as to the Library.

Some of the book-talks in the latter part of the year were given in the Children's Department, in the morning, at an hour when the room was little visited, in order that all the books referred to might be ready at hand. The discussions were made more informal by this means, and were more generally participated in. The talks on nature-books and works of science for children were given by Miss Ella Holmes, assistant-curator at the Children's Museum, and were much enjoyed and appreciated. These ended with a botanizing excursion of the class and instructor, under Miss Holmes's guidance. The other lectures given to this class, aside from those intended for the entire school, were as follows:

Miss Caroline M. Hewins, on Books for children.
Miss Helen Moore, on Personal relations of librarian with children.

The visits to children's libraries or libraries doing considerable work with children, besides those made with the other classes, were as follows:

Aguilar Library, New York.
University Settlement, New York.
Children's Museum, Brooklyn Institute.

Among the best means of developing the sense of responsibility, the faculty for management and discipline, and the ingenuity and resourcefulness of the students, the evening-work in the Children's Library comes easily first. The planning of the work for the evening and the oversight of the first-year student who was assisting, the adaptation of plans to circumstances as they developed, even the laying aside of plans, in some instances, and the following of the children's lead, called for foresight, self-control, quick wits, and sympathy, as almost no other part of the work could.

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The possibility of teaching children the use of works of reference by means of problems treated as games, has been before suggested, and the readiness with which they responded to one or two attempts of this sort on the part of the students, seems to confirm the opinion that much can be done in this way. (See pp. 40 and 41 of this Report.)

Theses and bulletins were required of these students, and were assigned as follows:

Theses:

Story-telling and reading aloud in the Children's Library.
The requirements of a card catalogue designed for the use of children.
Relative value of practical work in the special course for children's librarians.
Reference-work for children.

Bulletins:

Children of other lands.
Fourth of July.
Inventors and inventions.
Spring sports.
Greece and the Grecians.

The Bulletins on the Fourth of July, on Greece, and on Children of other lands, were very generally successful, and those on printing and telegraphy attracted special attention from boys.

All the cataloguing of new books for this department was done by these students, partly to acquaint them with the books and partly to exercise them in the rules adopted for the children's catalogue.

The demand for librarians and assistants began to come in to the School so early in the year as to be somewhat embarrassing. However, only one student was excused before the first of June; and all who went out had notice sufficient to secure the necessary amount of practical work beforehand, especially in those lines of work in which the expected position was not likely to supply them with practice.

Owing to the demand and to the difficulty the school had had during the winter to supply help when requested, it was decided to increase the entering class, for this year, at least, to twenty-five. The examinations were given June 14th, both at the Institute, and at various places in the States, in Canada, and in Paris (the applicant in this case being an American, travelling abroad for the year), and resulted in the selection of twenty-three women and two men for the class of 1902. Thanks are due to those librarians who kindly consented to oversee the examinations and forward the papers, and especially to Mr. James Bain, of Toronto, and M. A. Maire of the Sorbonne, Paris.

In January, 1901, a letter was sent out to all graduates of the School now in active service in library-work, asking for comments in the nature either of criticism or of suggestion, on the work of the course as it stood at the time of writing. Some of the very valuable suggestions received in reply will be acted on during the coming year, and we wish to express here our hearty recognition of the pains taken by most of our graduates to reply sincerely and in detail to our questions.

The pin chosen by the Graduates' Association, to be worn at library meetings, "in order to promote class

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fellowship and insure mutual recognition upon those occasions," has proved satisfactory in design, and if generally worn can not fail to serve its purpose.

STAFF.

There has been considerable illness during the year, more especially in the winter months, and the schedules have been consequently much disturbed. This, in connection with the resignation of Miss Watts, the valuable assistant in the Circulating Department, to take a position in the Osterhout Library at Wilkes-Barré, January 1st, and the resignation of her substitute, Miss Margaret Griggs, to accept a position in the Library of the American Society of Civil Engineers, May 1st, made it necessary to fall back on student help for the remainder of the school-year, until our students were ready for permanent positions. While this help was all that could be expected, it was more or less irregular, and it is a relief to report a full staff and a regular schedule once more.

Especial recognition is due to those members of the staff who have the arrangement of schedules for the library and for the individual departments. The "14–15" puzzle is simple compared to the problems that frequently come up in the assignment of hours and work to the twenty-five members of the staff, with the luncheon- and dinner-hours, the weekly half-holidays, the evening work, vacations, illness, etc., to be considered. The School also makes frequent demands upon the staff, and it is an evidence of the friendly attitude and harmonious working of the Library and School that these demands are looked upon as a matter of course by the Library, are as moderate as possible, and not resented to my knowledge. The heads of departments, while solicitous for the welfare and reputation of their particular work, are also interested in observing the development of the students who come to them, and submit to be experimented upon with a good grace, remembering, perhaps, the days when they also were learners.

The improved janitor-service is cause for congratulation. The noise of children on the steps and walks has been stopped, and apparently without arousing the slightest animosity on the part of the children. If the janitor were at our service at all hours, we should have no need to complain of noise in the halls or on the stairs. This has been avoided to some extent by the signs requesting silence and giving reasons for the request, which have been put up in the halls on each floor; but they are not sufficient to control the noise completely. So much of this comes from the running up and down stairs that I am inclined to recommend the putting in of an elevator. Aside from the noise of footsteps, people are always quieter in manner in an elevator than on stairs, and I believe the library would be the gainer in every way by such an arrangement.

ASTRAL BRANCH.

Open daily, except Sundays, from 9 A. M. to 9 P. M.

The record of the Branch shows an unusual loss in all statistics for

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two very good reasons, namely, the fire of December 17th, which necessitated the closing of its doors for all except the return of books, from December 17th to 31st, and the smallpox epidemic in April and part of May in its immediate neighborhood, making it necessary to call in the cards of many families and forbid them also the use of the reading-room at the Branch, at the same time causing the loss of other borrowers for a time through fear of contagion.

The registration for the year is as follows:

New members	687
Expirations	657
Renewals	391
Net gain in membership	421

Of this 292 is of adults and 129 of children under fourteen.

The circulation for the year was 27,210 volumes, of which 11,759 were circulated to children. The percentage of fiction was 63 per cent., of which 37 per cent. was issued to children. 3766 volumes were called for from the Main Library, by daily delivery. The attendance in the reference-room was 8565. The reference-work continues to grow in dignity, many High School students, as well as teachers, now coming regularly to the Library. 1320 volumes were brought from the stack for consultation in the reference-room. The little open-shelf over the catalogue-case is kept supplied with a mixture of new and old books, and many books are drawn from this shelf that have never gone out before. It is an indication of what might be done if there were space enough to shelve the books around the walls and make them free of access.

There were 22,587 visits to the reading-room during the year, and the order is reported as generally good, though that on the walks outside, as usual, left much to be desired. The patience and perseverance, uncomplaining spirit and hopefulness, of the staff here, in the face of the many discouragements offered by such a neighborhood as surrounds the library, cannot be too warmly praised.

The fire referred to above, and the water used in extinguishing it, destroyed some 200 volumes, while nearly as many had to be rebound. The periodicals ready for binding were also destroyed and had to be replaced.

The head of the Branch reports 4656 volumes mended, 601 rebound, and 277 discarded. 351 volumes were added during the year, including gifts and periodicals bound, the principal accessions being

Larned. History for Ready Reference.
Smith. Chinese Characteristics.
Colquhoun. China in Transformation.
Bryce. Impressions of South Africa.
Lloyd. Newest England.
Ober. Puerto Rico.
Roberts. History of Canada.
Hart. Salmon P. Chase.
Tarbell. Life of Lincoln.
George. Life of Henry George.
Whitman. Austria.
Miller. The Balkans.
Stedman. American Anthology.
Salmon. Domestic service.
The Student's Standard Dictionary. (For circulation.)
Grimshaw. Shop kinks.
Rose. Modern machine shop practice.

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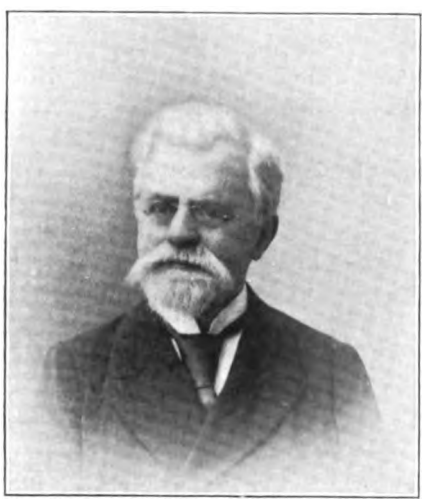
In closing this report, I beg leave to thank you especially for my own leave of absence during the first quarter of the year, during which I was in charge of the exhibit of the American Library Association at the Paris Exposition and in attendance on the International Library Congress, meeting in the same city,—as well as for your usual liberality and kindness toward the Department of Libraries.

Respectfully submitted,

Mary Wright Plummer,
Director.

Eminent Librarians Part V
Charles Emile Ruelle



THERE is perhaps no large library in Paris which gives one the impression of a broad and cordial hospitality as does the Bibliothèque Ste.-Geneviève. This may be in part because, being in the Latin Quarter and devoting itself largely to the accumulation of the leading modern books in the sciences and belles-lettres, its great reading-room is likely to be well filled with students,—or in part because its modern lighting (by the bec Auer, a sort of Welsbach light) and heating (by hot water pipes) make it more comfortable than some of the others; but all these things would fail if the spirit of hospitality were lacking, which it certainly is not. M. Charles Emile Ruelle, the administrator of the library, is doubtless largely responsible for this atmosphere of welcome. His kind efforts to give the writer the information she was in search of, at some trouble to himself, his detailed explanation of the work of the library and the uses of the various rooms, and his reply to her sentence of thanks at parting, "It is nothing worth mentioning, Mademoiselle. Librarianship is a fraternity everywhere, is it not?" gave her the key to the home-feeling which she always had in this particular library. Sometimes when she realized who and what these librarians were who were taking such pains to help and interest a stranger, what well-known names they bore in the profession, and of what learned works many of them were authors,—she felt overwhelmed by the many kind-

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nesses, so simply offered, that she received at their hands, and by her own temerity in vouchsafing any sort of request.

From sources furnished by the subject of this sketch the writer is at liberty to draw some facts in regard to the life of M. Ruelle, who may be characterized as a bibliographer and Hellenist. He was born in Paris in 1833, the son of a University professor. Receiving his B.A. at the age of nineteen, he secured a position within a short time in the offices of the Ministry of Public Instruction, and in 1877 became librarian at the Sainte-Geneviève. This position he held for twenty years, until in 1898 he became administrator of the library.

His earliest researches were in the direction of Greek music, and Greek studies generally have been his favorite field. For twenty years past, as librarian of the Association for the encouragement of Greek studies, he has published an annual bibliography of this subject. His first printed essay in this direction was a first and a remarkable translation of the *Elé-ments harmoniques* of Aristoxenus. From this he went on to a *Collection des auteurs grecs relatifs à la musique traduite en français.* Another line of work is represented by *Les Oeuvres complètes du médecin Rufus Ephesius*, a work begun by Charles Daremberg, and which appeared in 1879. Two of his works have been crowned, his *Bibliographie générale des Gaules* by the Academy of Inscriptions and Belles-lettres, and his musicographical collection, with a translation of the *Poetics* and the *Rhetoric* of Aristotle, by the French Academy. In 1889 he published a critical edition of the treatise of Damascius on *Doubts and Solutions of the First Principles* and of the *Parmenides* of Plato. He has been a constant contributor to a number of reviews, such as *l'Univers musical, la Revue et Gazette musicale, le Bibliographe musical, la Revue archéologique, la Revue de Philologie, la Revue critique*, as well as to works like *le Dictionnaire des Antiquités grecques et romaines* and *la Grande Encyclopédie.* In short, his life has been the laborious, self-rewarding one of the scholar. May his example continue to inspire the students who frequent the hospitable home of books in which he officiates as host.

M. W. P.

TEXT-BOOK COLLECTION.

The following text-books have been sent by the publishers to the Pratt Institute Free Library for its "Text-book Collection." This is shelved in the General Reference-room of the Library, free of access to the public.

From D. Appleton & Co., New York:
A Text-book of Astronomy. By George C. Comstock. 1901. $1.30 net.
From Ginn & Company, New York:
The Working Principles of Rhetoric. By John Franklin Genung. 1901. $1.40 net.
From The Macmillan Co., New York:
Botany: an Elementary text for Schools. By L. H. Bailey. 1901. $1.10 net.
A Short History of the United States. By Edward Channing. 1901. $ .90 net.
From American Book Company:
A Brief French Course. By Antoine Muzzarelli. 1901. $1.25.
From Globe School Book Company, New York:
Introduction to the Study of English Literature. By Vida D. Scudder, A.M. 1901. $1.20 net.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

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Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

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Department of Physical Training — Morning and evening classes for women. Evening classes for men.

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For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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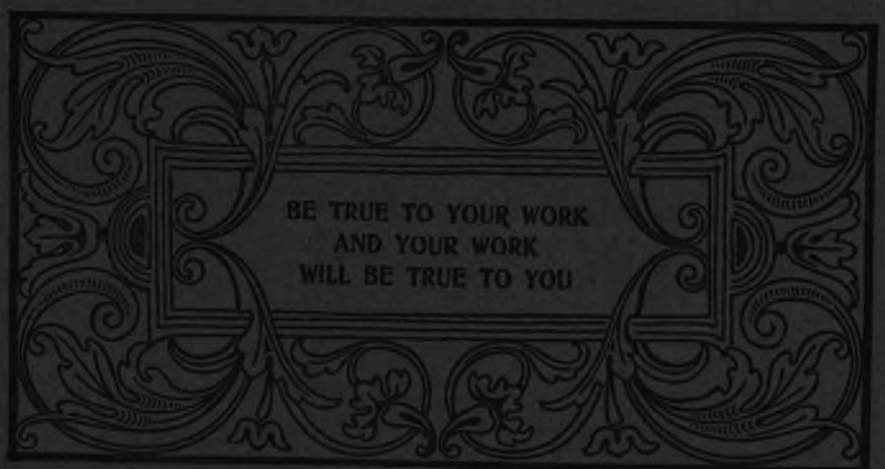
FINE ARTS NUMBER

PRATT INSTITUTE MONTHLY

January, 1902



Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X | January, 1902 | Number 3

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New-York

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Pratt Institute Monthly

Volume X JANUARY, 1902 Number 3

Annual Report Of the Department of Fine Arts.

TO THE TRUSTEES, GENTLEMEN:

THE classes of the Department of Fine Arts opened September 23. Although the date of opening is earlier than that of other art schools, the classes were filled during the first week; and, since October first, it has been possible to admit but a limited number of students. There is every indication that the various classes will remain filled by students pursuing full and regular courses of study, and, during the year, only such applicants will be admitted as can present drawings that qualify them to go on with the work of any course.

The enrollment for the year is as follows:

DAY CLASSES.

Regular Art	125
Normal Art	76
Design	68
Architecture	28
Wood Carving and Art Metal	19
Total	314
Evening classes	259
Saturday morning Children's Classes	144
Total number of students in Day and Evening Classes	717

Formerly many students attended the classes only five mornings or five afternoons of the week; but now all students are giving their time most seriously to art study, spending the morning and afternoon sessions of each day in the pursuance of regular courses. As already indicated by the enrollment figures, the work of the department is divided into various courses.

REGULAR ART COURSE.

The Regular Art Course is so planned that students may acquire, with the technique of drawing and painting, a broad and general education in those elements necessary for a true understanding of art, and for individual and esthetic culture. Applicants who are undecided which course they are best fitted to pursue are advised to enter the regular art division. If they do not continue it to the advanced classes in life and portrait drawing and illustration, the training that they receive in the first year of the course is a valuable foundation for the courses in design, architecture, wood-carving, art metal work, and, provided they meet the full condition for entrance, for the Normal Art Course for the training of teachers.

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Throughout the Regular Art Course the students pursue several lines of supplementary work. During the first year, in addition to cast and life drawing, much attention is given to freehand perspective, sketching, color, and composition.

Recently the work of the advanced classes in life and portrait drawing has been placed on a new basis. Students are not permitted to work the entire week from one set pose of the model, as though there was nothing to secure but drawing and anatomy in the study of the human figure. All models are employed for two weeks. During the first three mornings and afternoons of the week, students draw from life and from the portrait in charcoal and color for the necessary drill in technique. The remaining two mornings of the week the model is posed in costume in a pictorial composition, to illustrate some thought, story, or action, from which sketches are made in various mediums. On the afternoons of the same two days, studies are made from the same model for illustrative purposes, attention being directed to the technicalities of reproduction.

During the second week students may carry their studies farther by returning to the same pose, or they may work from a new pose. In this way the fatigue that results from working constantly on one study is overcome; and the students not only have the opportunity of pursuing one line of study which will be directly helpful to another, but have also the opportunity to study the model in various poses for action study and for the portrait, and to apply the facts thus learned in pictorial a lustrative composition. In all work criticism is given by sever structors. During the two week instructor gives at least four critic in the drawing of the figure, ar the same number in portrait s and two in composition and illu tive work. To further the wo illustrative drawing, the depar was fortunate in securing last M the services of Mr. Otto Bec many years instructor in the Academy of Cincinnati. Mr. gives two full days to the wo illustration in the advanced art cl Mr. Beck expresses his though the subject as follows:

"Carl Marr, when questione to the place that illustration tak art, replied that to-day it is dif to say where the illustration ends the painting begins. The sup tendent of the art department i first-class publishing house wil vise the talented applicant to p half the time and illustrate the o half. The deduction is plain. good illustration forms itself, only out of good constructive d ing, character portrayal, and a l representation of the mental im but these must be enveloped in charm emanating from tone, c light and dark, light and shade, line. It is safe to say that composi is the foundation from which all th elements start; that it determines proportions of light and dark, the of color, the quality of tone, the c ness of thought expression, the f of character-portrayal, and the gr of the drawing.

"Composition for the illustra

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should begin with surface decoration. The printed page is subject to the laws that underlie design as practiced to-day. When the student has become sensitive to beautiful proportions of spacing, proportions of light and dark, and good arrangements of color, he is not so easily confused when confronted with the apparently capricious arrangements of the same elements that occur in pictures in which figures are made to 'tell a story.'

"The point at which the design differs from the picture is where light and shade are introduced. Light and shade cause the forms to assume plastic quality, thus giving us realism where before we had the abstract.

"The illustration classes take up the work at this point. The student starts by drawing from the model in the nude and from the draped figure. After some proficiency has been gained in drawing, and facility has been acquired in the use of various mediums such as charcoal, oil monochrome, colored chalk, india ink, gouache, and pen-and-ink, the work is advanced to composition. We endeavor as illustrators to keep in mind primarily the 'story-telling element,' that is, our work must 'illustrate.'

"To conceive a picture with the model before us is as difficult as to infuse a character into the drawing from the model. This is, however, a vital point for the illustrator and is made a chief feature of the class work. It is highly important that each member of the class may develop his peculiar talent. In order that his individuality may be retained, individual criticism in place of class criticism is adopted.

"The department is liberally supplied with models, making it possible at times to place a group before the class, effecting marked increase of interest in the more complicated art problems. Some of the most characteristic studies from the model will be used as material for decorative treatment. In this way the realistic and the abstract are varied throughout the year, familiarizing the student with the kind of work with which he is likely to be confronted in the publisher's office."

NORMAL ART COURSE.

The Normal Art Course aims to qualify students to fill positions as teachers and supervisors of art education in public, high, and normal schools. All applicants for this work are required to pass a preliminary home examination in drawing, which may be taken the first of May, of June, or of September. The papers are issued only to those who have fully decided to take the examination, and they must be returned immediately to the Institute. The work must give evidence of a comprehensive knowledge of the principles of freehand perspective, good technical ability in drawing from ornament, common objects, and nature forms, and in simple rendering in light and shade. With these papers, letters or testimonials must also be presented.

Of the number that applied for the Normal Art Course this year ninety-five took the preliminary home examination. As the entering class is

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PORTRAIT STUDY BY MISS ELIZABETH G. PIATT, NORMAL ART CLASS.

limited to forty students, these examinations were competitive and the best papers accepted. In this way a strong class of students was formed. The class was filled in June; but, owing to withdrawals, a limited number was elected in September to fill the vacancies. Every applicant claiming much experience as a reason for omitting work in the course finds the class composed of persons of similar art experience, the work from the beginning being of an advanced character. During the first year the time of students is given to advanced light and shade drawing, life drawing, free-hand perspective, and sketching, design, composition, color, instrumental drawing, clay modeling, and psychology. During the second year students continue water-color, life drawing, composition, and other advanced work. Mr. Beck continues his report as follows:

"Of the many problems confronting the normal art students in their work among the children of our public schools, none is of greater importance than the teaching of good drawing. Where large numbers must be taught, the tendency always is to fall into a manner in expressing form, making the rendition lifeless. It is most difficult to retain a 'live' way of working.

"In order that the student who is preparing to teach drawing in our schools may avoid the superficial and attain to a conception of more vital drawing, our art-normal classes are receiving especial care in the instruction in this branch of art. The natural tendency is to see the outline of the model as an unfeeling tracery having the effect of a wire-bound space. To discourage this and to substitute a line subtly rendering the everchanging forms of the figure is the first consideration. Accompanying the drawing of the contours should be the effort to make the forms inclosed by them perceptible, as construction, modelling, and a better judgment of proportion are dependent upon these forms. The slant of the head, for instance, is more vigorously rendered when the parallel lines indicating the slant of the eyes, nose, and mouth are made in proper relation to the contour. Not

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less important is the 'touching-in' of prominent forms such as cheek-bones, the bone structure exposed at the temples and jaw.

"The result of such simultaneous recording of the chief structural characteristics of the organism is the development of the tactile sense. A like treatment of the forms of the body will insure a power to draw a figure that is possible, that will stand and hold together.

"To increase the power to draw with assurance, it is helpful to divide the figure into planes, each rendered with flat shading according to the tone value it assumes in relation to every other. When these exercises are followed by the teacher's explanation of the anatomy of the figure, drawing becomes lucid. After the student comprehends what good drawing is, he can appreciate form rendering by simple outline. It will then have 'quality.'

"With such an outline, composition of a primitive kind will be attempted by using the lines of the figure in such a manner as to cause beauty of spacing when placed in a rectangular area. This will be followed by the filling of the varied spaces with flat tints graded to produce an intended effect. Later, lines and forms can be introduced into background, making the problems more complex.

"Through such training comes the perception of 'story-telling' in art, governed by esthetic principles. This, fully grasped and instilled into the minds of the school children by our normal pupils, should insure some understanding of the true nature of art, and it ought to be a factor in producing a rising generation capable of intelligent appreciation of art."

MIRROR FRAME OF FRENCH WALNUT
DESIGNED AND CARVED BY MISS MAUD L. CALKINS,
NORMAL ART AND MANUAL TRAINING CLASS.

NORMAL ART AND MANUAL TRAINING COURSE.

In the early days of the manual training movement children in the public schools were allowed to do almost any and every form of hand-

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LEATHER PORTFOLIO DESIGNED AND EMBOSSED BY MISS M. JOSEPHINE LITTIG, NORMAL ART AND MANUAL TRAINING CLASS.

work regardless of tools used and quality of results.

To bring about more systematic and skilled work, and to meet the demand for the introduction of the subject of manual training in the public schools at a minimum expense and with the use of few tools, the sloyd method became the prevailing system. This system, while producing good technical results along certain lines, is, as it has been taught, lacking in originality and artistic value.

With the advent of the arts and crafts movement has come the demand for work in manual training that shall be directly related to, and based upon, art instruction, that shall give greater variety of work, and that shall call forth the creative efforts of the children.

The Department of Fine Arts was the first department of the Institute to organize a normal course, and early it incorporated in that course, as an elective, manual training. To meet the new and very urgent demand for art and manual training instruction along the new lines, the department is now giving more attention to manual training than heretofore and to original design as a part of that work. The plan of work now being followed for the Normal Art students and the Normal Art and Manual Training students is the same for the first year. A very high standard in drawing is required for admission, and during

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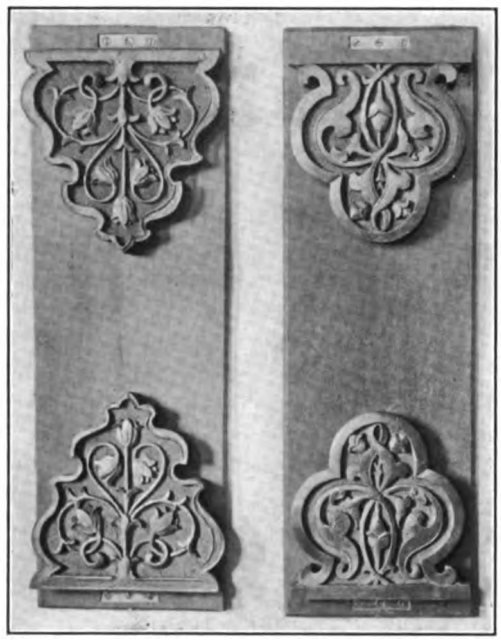
this first year the time of students is given to advanced light and shade drawing, life drawing, sketching, design, composition, instrumental drawing, and clay-modeling, a general training that is fundamental and essential to well-trained teachers of manual training as well as of general art work. In the method work of this first year is also included manual training for the first four years of the graded school.

MAHOGANY BELLOWS DESIGNED AND CARVED BY MISS GERTRUDE M. DRESSER, NORMAL ART AND MANUAL TRAINING CLASS.



BOOK-RACKS DESIGNED AND CARVED BY STUDENTS OF THE NORMAL ART AND MANUAL TRAINING CLASS.

During the second year all students carry on their general art work for four half-days each week. A fifth half-day is devoted to making the designs under the instruction of Mr. Hugo Froehlich to be carried out in the various divisions of manual training. These designs are applied in the whittling and benchwork two half-days and to wood-carving and leather-carving two half-days each week. A fifth half-day is devoted to weaving and basketry, while provision is made for wax-modeling in the creation of designs for ornamental and useful objects. Provision is also made for work in bent iron and, the latter part of the year, for work in furniture design.

The students of the second-year

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class who do not take this so-called manual training, which is, strictly speaking, applied art, devote their time to other forms of art study carried on in the department.

Thus, all students throughout the course pursue art work, a large number, however, electing to apply their designs in wood, metal, leather, weaving, and basketry, thus fitting themselves to teach applied art, *i. e.*, manual training, instead of merely working in black and white and color. In this way not only are we meeting the demand among educators for a more vital and comprehensive course in manual training, but we trust we shall also be a power in demonstrating the important relationship of these hitherto widely separated subjects.

Many of the forms of applied work herein mentioned as being a part of the course now being pursued in the Department of Fine Arts are carried out entirely in that department. Other forms are now being conducted in two other departments: namely, in the Department of Science and Technology, the whittling and benchwork; and in the Department of Domestic Art, the weaving and basketry.

Diplomas are awarded for the completion of the Normal Art Course of two years, and of the Normal Art and Manual Training Course of two years, according to the work taken the second year. During the past eleven years, so far as can be determined, about four hundred students have been elected to positions as supervisors and teachers of drawing in cities throughout the country. Since last June thirty-one students of these courses have received positions as follows:

Miss Frances M. Beck, Supervisor of Drawing, Jackson, Mich.

Miss Mary G. Beckwith, Teacher of Drawing and Manual Training in the Heusenger School, New York City.

Mrs. Louisa G. Berry, Teacher of Drawing in High School, Brockton, Mass.

Miss Maud L. Calkins, Teacher of Drawing in Borough of Queens, N. Y.

Mr. William D. Campbell, Position with Prang Educational Co., New York City.

Miss Helen S. Daley, Teacher of Drawing in State Normal School, Geneseo, N. Y.

Miss Lottie E. Dayton, Supervisor of Drawing in primary grades, Yonkers, N.Y.

Miss Florence A. Everett, Supervisor of Drawing, Duluth, Minn.

Miss Mary G. Fernald, Supervisor of Drawing, Cedar Rapids, Ia.

Mr. Forest Grant, Instructor of Art Classes in Manual Training School, Washington, D. C.

Miss Rachel C. Howell, Supervisor of Drawing, Middletown, N. Y.

Miss Helen L. Jarrold, Teacher of Manual Training, Westfield, Mass.

Miss Emma C. Klanke, Teacher of Drawing in Manual Training High School, Indianapolis, Ind.

Miss Grace M. Knox, Teacher of Drawing, Ilion, N. Y.

Miss M. Josephine Littig, Instructor in Freehand Drawing, Mechanics' Institute, Rochester, N. Y.

Miss Katharine A. Lovell, Supervisor of Drawing and Manual Training, Englewood, N. J.

Miss Bertha Palmer, Supervisor of Drawing, York, Pa.

Miss Jennie C. Peterson, Supervisor of Drawing, Elmira, N. Y.

Miss Bessie G. Piatt, Supervisor of Drawing, Brainerd, Minn.

Miss Anna L. Pratt, Supervisor of Drawing, Lockport and North Tonawanda, N. Y.

Miss Mary J. Quinn, Teacher of Drawing, Borough of Queens, N. Y.

Mrs. Grace G. Rockwell, Teacher of Drawing in High School, Azusa, and Teacher of Drawing, Sloyd, and Music, Glendora, Cal.

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Miss Lillian O. Rechel, Teacher of Drawing in State Normal School, Shippensburg, Pa.

Miss Stella Skinner, Art Instructor, New Paltz State Normal School, N. Y.

Miss Alice R. Smith, Teacher of Drawing and Manual Training, Glen Ridge, N. J.

Mr. Livingston L. Summers, Supervisor of Manual Training, Island of Cuba.

Miss Luella Tupper, Teacher of Drawing in Normal School, Stevens Point, Wis.

Mr. A. Claude Tuttle, Teacher of Manual Training, Cleveland, O.

Miss Alice H. Warner, Teacher of Manual Training in Home Industrial Schools, N. Y., and Teacher of Wood-carving at the Cathedral Guild, Garden City, L. I.

Mr. Max Weber, Teacher of Manual Training, Lynchburg, Va.

Miss M. Louise Wilburn, Teacher of Drawing and Manual Training, Durham, N. C.

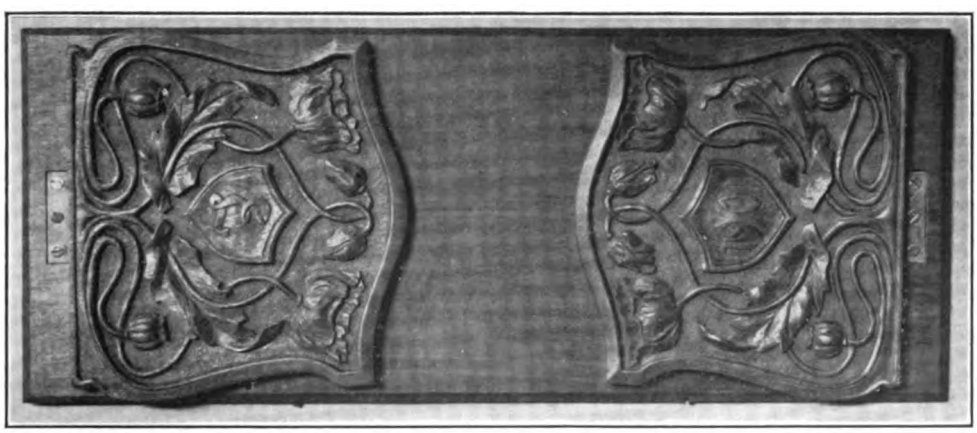
The following students from the Regular Art class have received positions as teachers since last June:

Miss Edith B. Abbott, Assistant in Art Department, Wellesley College, Wellesley, Mass.

Miss Fanny C. Shepard, Teacher of Drawing in High School, Decatur, Ill.

COURSE IN DESIGN.

The Course in Design is one of the most important in the department. Effort is made to give students every opportunity to develop an appreciation for beauty and to express it in creative form. Realizing that a designer must be, above all things, an artist, students are made acquainted with the nature of art, as well as the processes of its application to use. A careful training in the fundamental principles of art and instruction in the various kinds of applied art are the direct intention and purpose of the course. A course in composition provides for the study of the best work of the past and the production of original designs. Students begin with the composition of lines and spaces, proportion and repetition; proceeding to the distribution of light and dark, and the principles of coloring. From the simple straight line to two-tone designs they pass to more



MAHOGANY BOOK-RACK DESIGNED AND CARVED BY MISS ALICE H. LOCKE, NORMAL ART AND MANUAL TRAINING CLASS.

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complicated patterns, introducing many tones and colors.

The elementary work is based upon the principles of a mental training first,—a grasp of what art is, and its relation to life. The intention is not so much to impart knowledge as to help students to develop their own resources; not to aim merely at success in drawing, but to develop power.

To illustrate the fundamental principles of art, namely, rhythm, proportion, dark and light, massing and values, the students make drawings from nature of flowers, insects, and landscape, that they may become acquainted with examples of line and color, both for their beauty and for use later in applied art. To further illustrate rhythm use is made of Indian pottery, basketry, and the Pratt Institute collection of historic textiles.

After the training in the first principles, the students take up the special branches of design in detail and the processes of manufacture. Special instruction is given in the designing of book covers, wall paper, silks, carpets, stained and painted glass, metal work combined with glass in boxes, lanterns, and lampshades. The designs in metal are worked out with Mr. Joseph Aranyi, instructor in the art metal classes. Stencilling patterns upon fabrics is introduced to give practice in the use of colors and dyes and the adaptation of designs.

Much attention is given to the study of nature forms, and certain days are devoted to painting in water-color from flowers and still-life and to drawing, painting, and conventionalizating flower forms to serve as motives for designs.

Lessons and lectures are also g in interior decoration and furni design by Mr. Alvan C. Nye. students learn to design the var architectural details of room const tion, including doors, door and dow casings, cornices, and mant After working to scale the walls room, the scheme is rendered in c with decoration, under the supervi of Mr. Arthur W. Dow. In con tion with this work much atten is given to furniture designing. students make the working draw and afterward perspective views color, designs being made for ferent styles of chairs, tables, s boards, and cabinets.

Mr. Arthur W. Dow, Instru in Composition and Design, rep as follows concerning the work of special afternoon class in composit

"The work in the Special Com sition class is intended to meet needs of students who have alre had training and who desire to e upon some special line of advan painting. This gives opportunity individual, rather than purely instruction.

"The work of the year, though cluding many subjects, and va applications, can be classified und few heads, every problem being illustration of one or more princi of fine art. The main subjects this class are color harmony, la scape painting, mural decoration lustration with use of life mo composition of figures with landsc technique of oil painting, and vanced design. These studies lea special applications of design to gl metal, wood, leather, and fabrics.

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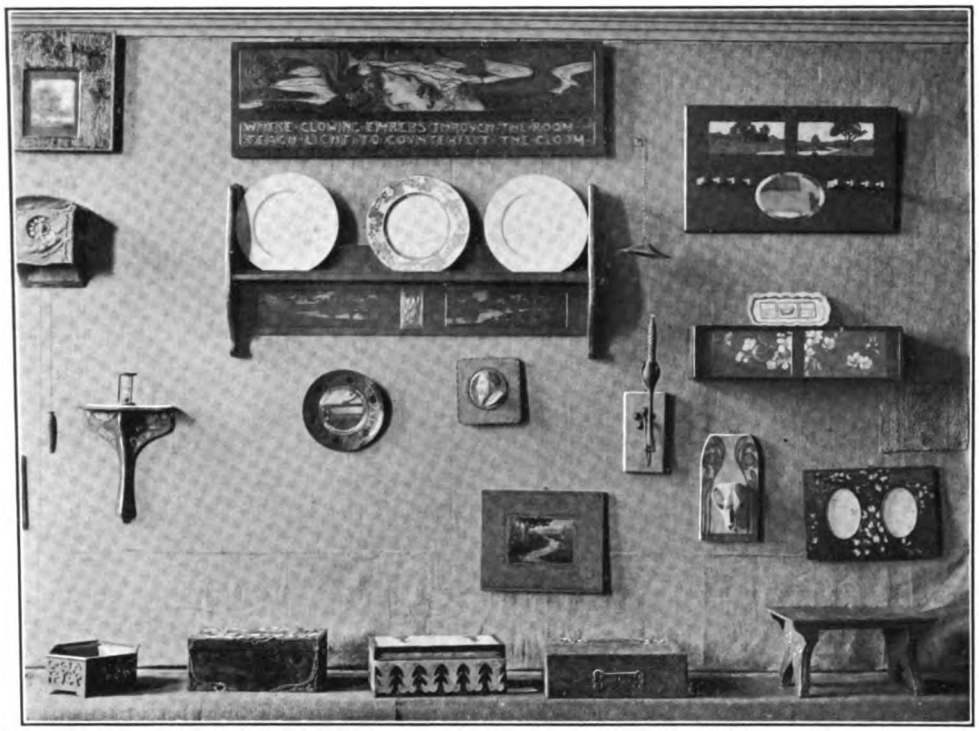

DESIGN APPLIED TO WOOD, METAL, AND CHINA DECORATION BY STUDENTS OF THE DESIGN CLASS.

THE ARTS AND CRAFTS.

"It is a thing to be deprecated that there should be a class of mere artists who furnish designs ready-made to what you may call the technical designers. I think it is desirable that the artist and what is technically called the designer should be practically one." *William Morris.*

The Department of Fine Arts has always recognized the practical side of art education, aiming to provide, as an outlet for the many forms of art that engross the attention of students, work along the line of the crafts. While a few students having marked ability and opportunity for making art a life study may continue their practice in the life and illustration classes, the great majority of art students of average talent and limited means of support must seek a livelihood early in their career, and this class of students must be provided for.

It is not enough that students shall know how to produce creative designs on paper; they should also be able to apply them to the objects for which they are made. The knowledge that comes through practical application is of the utmost importance in the vitalization of the design and in acting as a stimulus to the creative impulse. It is a lack of this knowledge that makes so many of the designs for objects made by students in the schools of this country and abroad impractical and hence valueless

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HAMMERED SILVER FRAME — EXECUTED BY MISS ELLEN P. DAY, ART METAL CLASS.

whether regarded from the esthetic or the economic standpoint. Just as soon as a student is taught the nature and function of the material or object to be decorated or wrought, so soon will he learn to beautify it in a manner that shall be simple, dignified, and individual.

In order to reconcile the design to its use as a decorative feature of a given object, special instruction is given in applied work, thus uniting the many phases of art instruction such as freehand drawing, modeling, design, sketching, composition, and water-color in the production of original designs that may be practically applied. In this way students are led to a fuller understanding and appreciation of the relationship of the arts to the crafts, directed by master-workers whose professional experience in the different crafts enables them to administer to the needs the students and to bridge over apprenticeship necessary to the adj ment of principles to practice.

The spirit of co-operation un the various courses of study m tained in the Department of H Arts, all of which have as a com basis a thorough training in the p ciples of form, line, and color, their proper relationship. The co in design provides thorough trai in the principles of artistic design the application of these principle the many forms of applied work as textiles, prints, rugs, carpets, tery, iron work, stained glass, fu ture, and interior decoration.

In stained glass, the students a their original designs directly to g producing very beautiful effects of and color. Designs for textiles applied to burlaps, silks, and c material for curtains, screens, and decoration by means of stencillin

HAMMERED BRASS ASH-RECEIVER DESIGNED AND EXECUTED BY MISS ELLEN P. ART METAL CLASS.

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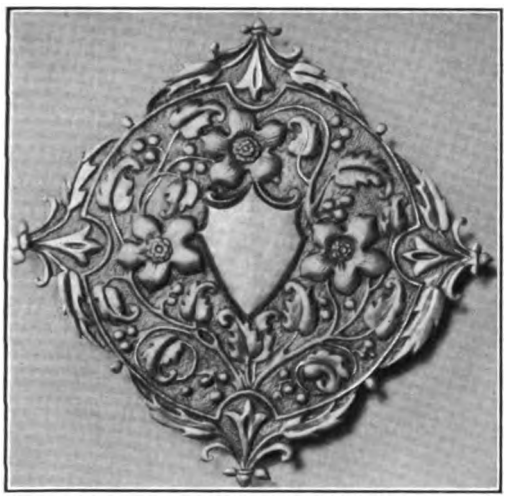
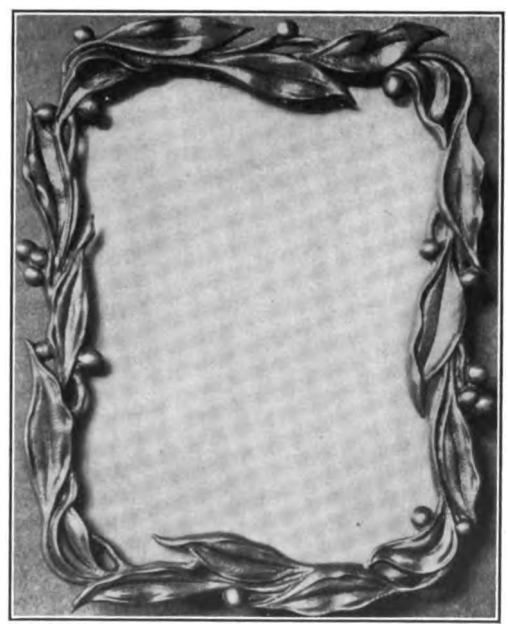


HAMMERED BRASS STUDY
DESIGNED AND EXECUTED BY MISS ANNA M. FRASER,
ART METAL CLASS.

Designs applied to household objects are of a wide variety. All the work is designed and executed by the students. Whether the design or accessories are of wood or metal, the students apply their designs to these several mediums, studios being provided and appliances furnished for the successful execution of such work. Fire screens are wrought in iron from original designs and decorated by wooden panels carved, painted, and constructed by the students. Designs for lanterns are made by the students and worked out in metal, the openings being filled with glass and decorated in color. Articles such as picture-frames, sconces, glove boxes, foot-rests, placques, and brackets are a few of the practical objects produced.

A course in Art Metal Work provides for the direct application of designs to objects wrought in brass, silver, and copper, including silver pins, belt buckles, bon-bon dishes, picture-frames, tea-strainers, dishes, etc. Beautiful objects in various metals are also hammered out by students on a large scale, comprising bowls, vases, plates, and other objects, the surfaces being decorated in repoussé.

For those who wish to apply designs to wood, a course in Wood-carving is maintained. Students are taught the use of tools, the quality of various woods, freehand and instrumental drawing, designing, and wax-modeling, and such part of carpentry and cabinet work as will serve in the construction of objects to which designs are to be applied. Students of furniture design have an opportunity to apply their designs in carved surfaces. Many carved objects of use are turned out by the wood-carvers,



HAMMERED BRASS FRAME DESIGNED
AND EXECUTED BY MR. WILLIAM C. STIMPSON,
ART METAL CLASS.

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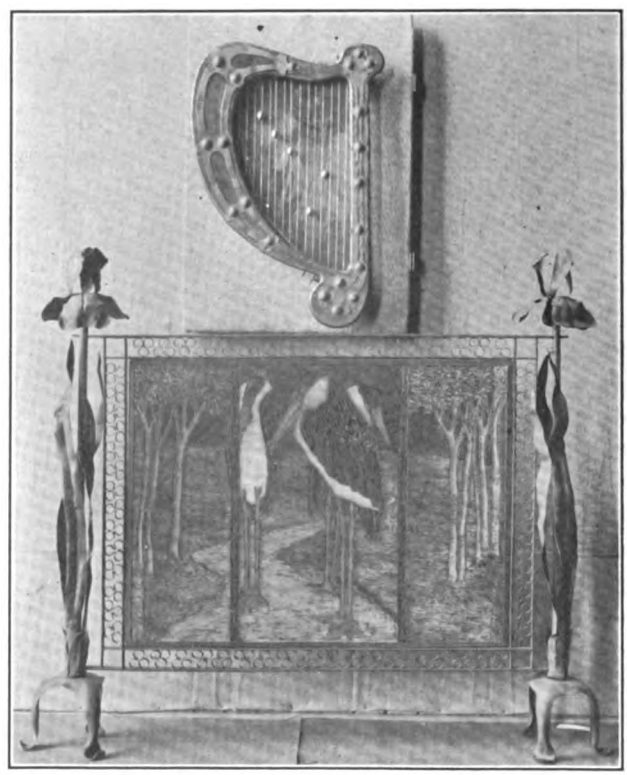
including paper-weights, paper-cutters, blotters, glove boxes, book-racks, mirror backs, picture frames, tabarets, bellows, chests, and chairs.

A course in Leather-carving also offers opportunity for the further pursuit of the arts and crafts. Work in design, freehand drawing, and wax-modeling prepare the way for original designs to be carved upon leather in the form of folios, pocketbooks, card cases, belts, chair backs, screens, panels, and table covers.

For those students who may wish to model small objects such as candlesticks, vases, inkstands, and the like, to be cast in metal, instruction is provided.

To further promote the arts and craft work, a room has been provided in the Department of Fine Arts, with cases in which may be exhibited from time to time the applied work of students that is of a salable character. No work is eligible for exhibition that has not been approved by a committee of instructors. Eventually, it is hoped that an Arts and Craft Guild



DOOR-HARP IN WOOD AND METAL WITH COLORED DECORATION
DESIGNED AND EXECUTED BY MISS EUNICE E. NOTT — DESIGN CLASS.
FIRE SCREEN IN WROUGHT IRON, BENT IRON, AND BURNT WORK
DESIGNED AND EXECUTED BY MRS. LOULA G. BERRY — NORMAL ART AND MANUAL TRAINING CLASS.

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will be formed, membership being open to graduate students.

Much credit is due Mr. Arthur W. Dow for the work in composition and design executed by the students under his instruction; to Mr. Hugo Froehlich for the work in nature study and the application of designs to objects; to Mr. Joseph Aranyi for the direct application of designs to metal, and to Mr. Moritz Loeffler, to leather and wood.

COURSE IN ARCHITECTURE.

Pratt Institute offers unique educational advantages in the field of scientific and artistic study. The continued building activities in the environment of Greater New York provide examples of construction that form a most valuable supplement to the theory and practice of the classroom. The collections of the Metropolitan Museum of Art and the Brooklyn Museum of Arts and Sciences as well as the many exhibitions held throughout the year in New York offer further opportunity for breadth of culture. While recognizing the fact that the practice of architecture involves high scientific attainments, yet educators have been prone to exaggerate the value of science as a basis for sound instruction. Accordingly, the course in architecture of Pratt Institute is placed within the artistic atmosphere of the Department of Fine Arts, where the esthetic elements of the student's training are provided. The laboratories and classrooms of the Department of Science and Technology are used for scientific work.

The course of study aims to give the student a general training leading to the practice of architecture. This training occupies both morning and afternoon sessions of two school years. It is well understood that in so short a time a student can receive scarcely more than an introduction to a fine art so important as architecture. But this introduction is of the sort that gives him the foundation, the valuable all-round knowledge, so essential to an architect who, perhaps, more than any other professional man is required to know something of everything. Considering the fact that architecture is a fine art rather than a science, the course as a branch of the Department of Fine Arts, gives special consideration to architectural draughting and rendering, freehand drawing, sketching, water-color, the history of architecture, and architectural and furniture design. Knowing that students usually begin their active career as draughtsmen, it is the endeavor to make them as skillful in draughtmanship as time will permit.

Subjects usually taught as matters of discipline are made a part of the daily routine and in this way practically take none of the time from more important work. Architectural elements, proportion, and composition are thoroughly impressed on the mind by successive problems which are critically considered by the department instructors. This trains the mind of the student for the work he will probably take up immediately on graduation, besides fitting him for more serious duties later.

The classes have for their use a very complete collection of casts and models of architectural subjects,

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about 16,000 mounted photographs and 2500 lantern slides. The Library contains a valuable collection of architectural works, and a large number of volumes on the allied arts. The principal architectural publications are constantly on file in the reading-room.

It is not sufficient for the architectural student to receive an art training alone; he must be taught the practical side as well. This is accomplished by the making of plans, elevations, and working drawings of various details that enter into ordinary frame, brick, and stone construction. This constructive drawing is supplemented by geometric drawing, descriptive geometry, perspective, intersection of solids, and surface developments.

Two afternoons a week during the first year are devoted to shopwork, familiarizing the student with the physical properties of materials used in construction, and their value and various limitations. Following the elementary exercises illustrative of the principles of construction, the students erect a small house, building all the details of framing, stairs, doors, windows, and the like.

The work in construction is pursued through the two years and is presented by means of lectures and recitations. These are illustrated by drawings of frame and brick buildings. The aim is to set forth the principles of sound building rather than to dwell at length upon the variations of local custom. The subjects treated include foundations, brick and stone masonry, mortars and cements, the characteristics and qualities of different woods, sanitation and drainage, and a presentation of the methods and processes usual in building operations.

Work in mathematics, which includes elementary and advanced algebra, plane and solid geometry, and plane trigonometry, continues throughout the course.

In strength of materials and graphical statics the student is taught to figure the strains and stresses in columns, beams, girders, tie-rods, and roof-trusses, due to the load upon them, and also to the wind pressure. Problems taken from actual cases of construction are worked out analytically and graphically. In the laboratory, which is equipped with varied apparatus for demonstration and experiment, the students test the material under strain and determine its resistance to tension, compression, shearing, and bending, as well as its modulus of elasticity and elastic limit.

The work in architectural design begins as soon as sufficient skill and experience in drawing are obtained; not with the intention of making large and elaborate drawings full of details, but by sketches of various buildings at small scale, showing the composition of the plan and elevations. These are intended particularly as studies in arrangement and proportion, preliminary to the problems in design given during the second year. From the first, small problems requiring original thought are given for solution. These relate to parts of buildings, and serve as an application of the architectural elements, giving opportunity for practice in design without waiting several months for the preparatory study

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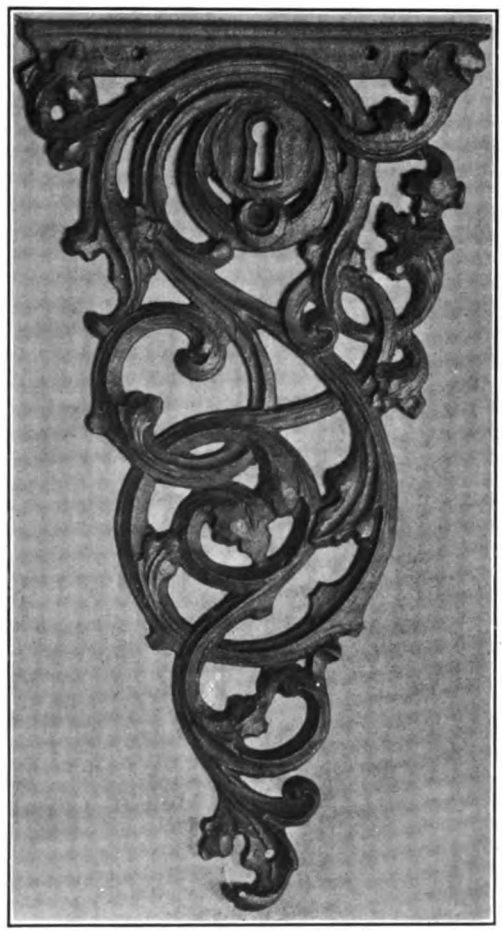
usually deemed necessary before design can be attempted.

The first-year students practice in flat and graded ink-washes, first of simple objects, the exercises gradually increasing in difficulty until finally, when the pupil has studied shades and shadows, he is required to make a careful rendering of the architectural orders. Alternating with the brushwork exercises are drawings in pencil and ink of the architectural elements, the orders, intercolumniation, superposition, arches, balusters, roofs, spires, domes, windows, etc. Particular attention is given to the orders that they may be drawn from memory at large or small scale quickly, correctly, and properly proportioned. It is recognized that the classic orders are best suited for training the student, though other influences may cause him to work in any style after leaving the school.

Second-year students are assigned problems in design and required to render it in a given time. Before developing the solution of the problem, they submit a small, quick sketch suggesting their idea, and they are required to adhere more or less closely to this general scheme in the final drawing. These drawings are then criticised by a jury of instructors. In addition to these problems in rendering there are a certain number of designs drawn in line, such as constitute the detail scale drawings in office practice. It is on these problems the student shows methods of construction and ornamental details.

Studies in freehand drawing and water-color are introduced to give the student practice in the principles of rendering, to enable him to see form and color, and to express himself in an artistic and professional manner. During the first year attention is given to freehand perspective and ornament, and to the rendering of objects in light and shade and color. During the second year attention is given principally to architectural ornament rendered in pen-and-ink and water-color. The drawings are



IRON KEY-PLATE
DESIGNED AND THE MODEL FOR CASTING CARVED BY MISS GRACE B. MUNROE — WOOD-CARVING CLASS.

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intended to serve as data for the problems in design and to illustrate the history notes.

Students are trained in the use of architectural ornament by the study of historic examples from casts and photographs, and by practice in drawing and designing objects with applied ornament.

The instruction in furniture designing familiarizes the student with the drawing and presentation of designs by means of sketches in projection and perspective. The proportion, ornamentation, and history of furniture are studied, and the methods of construction are considered so far as they are of value to the draughtsman or architect.

The history of architecture is studied by means of class-room recitations from text-books and individual research in the library, during which the student makes drawings and tracings of well-known examples. The recitations, the reproductions from memory of architectural forms, and the drawing of plans, elevations, and sections supplement the lectures given by the director of the department during the first year; and, in the second year, topics are assigned to each student for independent study. Drawings are made to illustrate special points, and the essays upon selected subjects are read and discussed in the class-room. The purpose of these exercises is to study the characteristics of style from the point of view of the artist as well as that of the archæologist. They also serve to bring the large collection of books and photographs to the attention of students, making them familiar with the best types of architectural design and historic ornament.

In September, 1901, Mr. Alvan C. Nye, a graduate of the Columbia School of Architecture, and for several years head designer of the Hayden Company of New York, resigned that position in order to give his full time to the Institute as instructor in architectural design and interior decoration.

So far as can be learned, the graduates of the Architectural Class occupy positions as follow:

Frank Whiting, '93, and George Bartlett, '93, have been with Ernest Flagg, architect, 35 Wall Street, New York City, since their graduation, being engaged upon important work.

Morrell Smith, '93, has established an office at Far Rockaway, New York. His commissions have consisted largely of residences and public schools.

George S. Cowles, '94, has opened an office in Yonkers, N. Y. His work has been largely concerned with suburban residences, apartment houses, and office buildings.

Charles L. Otto, '94, entered Columbia College as a sophomore, graduated, and after two years' experience in office work entered the Beaux Arts, Paris.

Edgar D. Fowler, '96, is connected with the estimating department of Milliken Brothers, constructors in architectural iron work, 11 Broadway, New York City.

Arthur G. Smith, '95, for five years held a position with Ernest Flagg, architect, New York City. During the past year he has been traveling and studying in Europe.

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Wallace R. [illegible], '[illegible], instructor in architectural drawing at Tuskegee Institute, Tuskegee, Alabama.

Fred W. Wengenroth, '[illegible], has a position with L. H. [illegible], architect, 34 Winston Building, [illegible], N.Y.

Cuyler B. Tuthill, '[illegible], and J. Randolph Higgins, '[illegible], have formed a partnership and have an office in Jamaica, Long Island.

Jacob Riverson, Jr., has a position with Messrs. Boller & Hodge, consulting engineers, [illegible] Nassau Street, New York City. He has work in connection with bridge and viaduct designing.

Jacob Thomas, Jr., '[illegible], is with G. K. Thompson, architect, [illegible] Broadway, New York City.

Arthur R. Koch, [illegible] for five years with [illegible]. He has recently established [illegible] for himself at [illegible] Court Street, Brooklyn, N.Y.

Milton D. Morrill, [illegible] appointed to a government [illegible] at West Point, N.Y.

George S. Welsh, [illegible] bert H. Kipp, architect, [illegible] change, Wilkesbarre, [illegible]

Hendrick van [illegible] draughtsman with [illegible] ley, 42 Market Street, [illegible] N.Y.

Cora E. [illegible] in the International [illegible] School at Scranton, [illegible]

Mary E. [illegible] office of the [illegible] N.Y. [illegible] of draughting [illegible]

Maud [illegible] Charles [illegible] 1 Broadway, [illegible]

William Shelton Smith, [illegible], is engineer of construction with Messrs. Howells & Stokes, architects, [illegible] Street, New York City.

James P. Piper, [illegible] Pennsylvania.

[illegible]

d [illegible] p he ac- on here ning hich istic be st of utiful ns to find

ifficult at first to use the n this direct method. For building-up process admits deliberate study and careful of color relation, tone, and drawing, the problem of dark ht, the rhythm of color, the of the unit of harmony. To a more thoughtful considera- f the composition of dark and and to better understand the s before attempting the color, a ing in charcoal is made. This ate arrangement in grays gives ngth and body to what follows. cts in concert with the color, and ere properly combined gives to the mplete realization of the subject a nal quality peculiarly quiet, digni- ed, and delightful.

"In the working out of any composition the dominant thought must always be to use the medium to serve the idea, adapting it to the will of the worker, be it in a suggestive dainty bit of nature study, a figure pose, or a landscape sketch. Equally free is the tone composition worked out through successive stages of development, or, again in a combination of gouache and transparent wash. It matters not how so long as the thought speaks rather than the vehicle. The medium has surprisingly few limitations when used in a subjective way. As the material used must stand for ideas, let the expression of these ideals be as naïve and personal as possible. No matter how crude the effort, it is a basis on which to rear a more perfect creation.

"With many, the brush seems a very natural tool with which to work. It lends itself more gracefully to the

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Frank R. Wallace, '96, is superintendent of the F. L. & A. Heidritter Lumber and Timber Mills, Elizabethport, New Jersey. In addition he has erected dwelling-houses.

Robert F. Polhemus, '01, is with Tredwell, interior decorator, New York City.

MAHOGANY BELLOWS
CARVED BY MRS. MARY L. B. THOMPSON,
WOOD-CARVING CLASS.

H. Lincoln Rogers, '96, has been connected with several firms, working on office buildings, residences, etc. He is now at Pier A, North River, New York City.

William Moebus, '01, has a position with Messrs. Lord & Hewlet, New York City.

Olive A. Gunnison, '00, has been with Charles P. Cody, architect, Erie, Pennsylvania.

Winthrop A. Welch, '94, has had much to do in superintending for Messrs. Babb, Cook & Willard, 3 West 29th Street, New York City.

William A. P. Schmidt, '98, is with K. M. Murchison, Jr., 1133 Broadway, New York City.

Gilbert Hickok, '95, is with the N. Y. and N. J. Telephone Company, 81 Willoughby Street, Brooklyn, N. Y.

William P. Foulds, '99, has a position with Cass Gilbert, architect, 111 Fifth Avenue, New York City.

SUPPLEMENTARY WORK IN WATER-COLOR.

There are three classes in water-color, composed of the second year Normal, the second year Design, and the second and third years Regular Art students. There is also opportunity for those students of the first year classes who meet an approved standard to take special work in water-color two afternoons each week during the latter half of the year. Mrs. Ethelyn F. Shaurman, instructor in water-color, reports as follows:

"The instruction in water-color is intended to stand for something more

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educational than the handling of the medium pure and simple. It supplements the study of form and values, composition, and design taken up in other classes, and adds to these most important fundamentals the harmony of color. This new medium, capable of so diverse an interpretation, has a charm and subtlety distinctly its own. Through it the student finds expression in a free, broad handling of masses, or in crisp suggestive sketches —sparkling bits of related color. For discipline in directness, there is no more severe test of training than to make an artistic, sincere sketch in transparent water-color. The peculiarities of the medium make it necessary to establish a perfectly related whole from the start. To do this successfully the judgment must be swift and correct and the power of selection wise, in placing one thing after another in a sequential order, so that they naturally follow and fit together without break,—no easy task without experience. There is no medium that requires so complete a command of all one knows. Quickness of perception, alertness of eye, and a responsive hand are needed to sweep in this direct sketch where the the charm and freshness of the satisfactory result depend so entirely on transparency and clearness. There can be no faltering touch, no turning back in that perfect command which is absolute knowledge plus artistic appreciation.

"It is not possible for all to be equally clever. This exacting test of one's ability to produce a beautiful result at once often threatens to paralyze effort. Many students find it most difficult at first to use the medium in this direct method. For them the building-up process admits of more deliberate study and careful weighing of color relation, tone, and truthful drawing, the problem of dark and light, the rhythm of color, the balance of the unit of harmony. To obtain a more thoughtful consideration of the composition of dark and light, and to better understand the values before attempting the color, a painting in charcoal is made. This delicate arrangement in grays gives strength and body to what follows. It acts in concert with the color, and where properly combined gives to the complete realization of the subject a tonal quality peculiarly quiet, dignified, and delightful.

"In the working out of any composition the dominant thought must always be to use the medium to serve the idea, adapting it to the will of the worker, be it in a suggestive dainty bit of nature study, a figure pose, or a landscape sketch. Equally free is the tone composition worked out through successive stages of development, or, again in a combination of gouache and transparent wash. It matters not how so long as the thought speaks rather than the vehicle. The medium has surprisingly few limitations when used in a subjective way. As the material used must stand for ideas, let the expression of these ideals be as naïve and personal as possible. No matter how crude the effort, it is a basis on which to rear a more perfect creation.

"With many, the brush seems a very natural tool with which to work. It lends itself more gracefully to the

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will of the master than the resisting lead-pencil or the brittle charcoal. It is pliant, springy, and responsive to the lightest touch. Instinct with life when moved intelligently, working from the centre of growth, the form is created with the tip, the side, or rolled and swirled into shape with the full power and breadth of the entire brush, lifting and falling with the movement of the form, the impetus and spirit of the result depending wholly on the character of the stroke. The proportion and outline are given by pushing out or drawing in the solid mass as the shape changes, moulding and brushing with the curve or flattening the planes with the broad spread brush. A beautiful transition is made from light to shade by softly blending the nuance; picking up a light here, dropping in a dark there, losing and finding the form as the light catches a bit of necessary drawing to lose it again in the obscurity of the intangible shadow.

"Drawing in a constructive way is necessary with every movement of the brush; the eye is judging proportion, is demanding that this plane shall be forced back, another rounded forward. Each mass means form — the inside shapes the outside. Once mastered, this method of working develops a power of direct expression that is spontaneous and vigorous — a freedom valuable to possess, a principle that serves one well.

"Add to the free command of the brush the understanding of what to look for: an intelligent seeing, the ability to arrange a few well-chosen truths in a simple artistic way — facts made living — so that the result shall be a melody in color, full of harmony, a perfect chord, no discordant note or refractory value disturbing the repose of the whole. These fundamental laws should be made a part of oneself. There is no great forcible truth in art that cannot be taken generally. When these universal truths come home with convincing power, get into one's habit of mind — one's very existence — art ceases to be an accomplishment and becomes a vital reality. The adaptation of these broad fundamentals for a specific end varies with each class. It is necessary to build in a large way, for in the brief time allotted to the water-color little more than suggestions for future working is possible. To search out and press home the real, rather than to give the artificial veneer that does not improve with time, is the constant aim.

"The water-color work for the Regular Art student who proposes to work along the pictorial side of art must follow up the search for good drawing and good composition. It is for the Normal student who goes out to wrestle with the problem of art education in the public service that the wisest adjustment is needed. For these students who are to give it to the many the subject must be reduced to a system, a simple arrangement of the underlying principles that may have a universal application, that shall stand for more than playing with color or making effective washes that amuse. To reiterate: the judgment must be trained, the perception quickened, the appreciation awakened, and a just sense of proportion devel-

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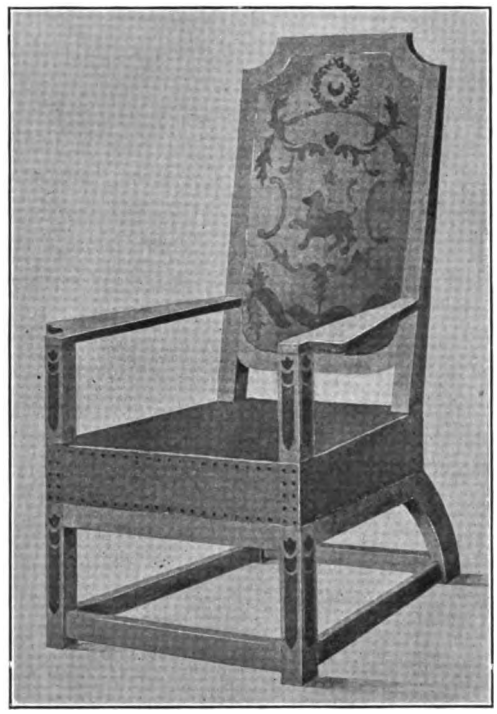
oped to understand the right relation of one thing to another. What more vital than subordination, unity, balance, rhythm, building up in the child an artistic sense of what is good and true, a something that shall mean a higher type of man or woman, mentally, morally, and artistically!

"The Design student takes up the water-color to stimulate his appreciation, and to use it in a free, suggestive way as a help in taking notes. It is also valuable in working out schemes of color — careful study of plant life, sincerely rendered, to gain a closer knowledge of the beauty to be found in an intimate study of nature, the delicacy of texture, of grace in the poise of the flower on its stalk, growth and development of leaf or petal. Groups of still-life are introduced for practice in the arrangement of color harmony, suitable for use in applied design, interior decoration, or stained glass.

"The summing up of it all is very simple: — to put into the work vitality, devotion to the art we all love, and to help on the ability to produce it; to impress all with the sincerity and earnestness necessary to the pursuit of the ideal, the willingness to seek, the singleness of purpose, and the patience to work prodigiously to reach the heights where art reveals herself to the faithful. With this possession the World Beautiful is theirs."



DESIGN FOR CHAIR BY WILLARD R. PLATT, FURNITURE DESIGN CLASS.

CLAY-MODELING.

The course in Clay-Modeling is planned to meet the needs of students pursuing various lines of work in the Department of Fine Arts as well as to provide for the training of those who desire to study sculpture as a profession, every opportunity being afforded for serious and thorough work from the antique and from life. The students of the Normal Art, Regular Art, Design, and Architectural classes take clay-modeling to supplement the freehand drawing from ornament, from the antique and from life. Designs are also made in the round for various purposes. The students of the applied arts, including art-metal, wood-carving, and leather-carving, model in wax and clay from casts, photographs, and plants, studying the principles of decorative design as applied to wood and metal.

Mr. Hermon Atkins MacNeil is

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in charge of the work in clay-modeling. Mr. MacNeil was a pupil of Chapu, at the Julian, and of Falguière at the Beaux Arts School, in Paris, and a winner of the Roman Rinehart scholarship, which gave him four years' study in Rome. His "Sun Vow" is to be represented by a plaster cast placed in the entrance hall of the Department of Fine Arts.

LECTURES ON THE HISTORY OF ART

In order that the students of art may become acquainted with the best that has been produced in the world of art, and to have some knowledge of the history of the development of art as expressed in the various phases of its evolution, a course of twenty-six lectures on the History of Architecture, Sculpture, and Painting are given each year by the Director of the Department of Fine Arts. These lectures form a part of the courses of study pursued in the department, and at the close of the series an examination is given, thus stimulating the students to further research and supplementary reading. The lectures are free to the public.

SATURDAY MORNING CHILDREN'S CLASSES.

The Saturday classes for children are taught by the second-year Normal Art students, under the direction of Miss Katherine E. Shattuck, who reports as follows:

"The classes meet each Saturday morning throughout the Institute year; the length of the session being two and a half hours. The ages of the boys and girls vary from eight to sixteen years, and the number in attendance averages about one hundred and twenty-five.

"The student-teachers this year number thirty and are arranged in three divisions. The first division includes those who have had experience in teaching drawing and grade work; the second division includes those who have had experience in grade work only, and the third division includes those who have had no experience in teaching. When those who have had experience are teaching, members of the third division are required to observe and assist for one term to prepare them for teaching. A general outline of study is given to the teachers and each one is required to make out a detailed course for the term before she begins her work, and this is submitted for approval.

"The student-teachers meet the supervisor of the classes from time to time for conference, and an effort is constantly made to improve the character of work both as regards methods of teaching and results by the children. During the first year exercises are given in form and color, the subjects being taken from plant and animal life, landscape, still-life, and costumed figure. The mediums used are charcoal, pencil, brush, ink, and color. The work of the second year consists of design, cast drawing, water-color, and pose sketching.

"To enter the design class, the student must have some knowledge of drawing that he has acquired in the first-year class or in outside classes. Study of material, as plant form, landscape, and historic motives, are required in connection with the

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original work in design. Those who join the cast classes unite in the latter half of the session with the advanced water-color class for pose sketching. The water-color and sketching from pose are taught by Miss Anna Fisher, a graduate of the Normal Art class.

"The term is all too short for special achievement in any direction, but there is an opportunity for the children to learn something of the principles that underlie all good art, to appreciate in some degree the beautiful, and to cultivate good taste. The results on paper are but secondary and only are mile-stones that indicate the progress of thought and feeling in the appreciation and expression of beauty. It is a pleasure to note the enthusiasm of the children and the assurance with which they work. The absence of analysis and self-consciousness, with the abandon of childhood and youth, are no doubt most important factors in the success of the work of children. In this attitude, the more experienced art student finds a most wholesome example. Simplicity, sincerity, honesty, courage, hope, and enthusiasm make for truth, beauty, and power."

EVENING CLASSES.

The problem confronting the work of the evening classes is different from that of the day classes. In the latter the students are giving their full time to art study with the idea of fitting for professional art work. In the evening classes it is quite different. The students in attendance are almost without exception engaged in some occupation during the day. While a few attend for the pleasure and recreation that art work may afford them, the great majority are seriously endeavoring to perfect themselves along lines that will directly aid them in their respective professions and trades. Among the vocations represented are those of stone-cutter, pattern-maker, carpenter, organ-builder, wood-carver, ship-joiner, iron-worker, die-sinker, tool and die-maker, jeweler, machinist, mineral-painter, engraver, telegrapher, cashier, electrician, scene-painter, artist, illustrator, and drawing teacher.

While regular courses are provided in Architecture, Design, Art Metal, Wood-carving, and Leather-carving, the applicant is permitted much liberty in carrying out work in accordance with his experience and capabilities. Every opportunity is given for advanced art work, including life and portrait drawing and sketching from the costumed model in action. A large class in clay-modeling is also maintained. Many of the students of the day classes attend the evening session for work that cannot be included in their regular programmes.

Frequently evening students find it possible to transfer their work to the day classes, where they have opportunity to give more time to art study and follow a more comprehensive course.

ART EXHIBITIONS.

Since 1897 the Institute has maintained thirty-five exhibitions in the Art Gallery under the direction of the Department of Fine Arts. The gallery, 25x45 feet, is well lighted and the building is fireproof. Miss Dora Miriam Norton, who has from

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month to month given an account of the various exhibitions, reports for the year as follows:

"Since the appearance of the last Art number of the Monthly containing a resumé of the year's work of the Art Gallery, it has held eight exhibitions, each of about one month. In January, 1901, the unique and valuable color studies from ancient and medieval works of art by Mr. Joseph Lindon Smith, was given; and in February, a display of antique oriental rugs, with antique embroideries and metal work, loaned partly by John T. Keresey & Company of New York, and partly by Charles M. and Frederic B. Pratt, was shown. A collection of rare Indian baskets, and of those designed and woven by Miss L. Eppendorf and Miss Francis followed in March. In April an exhibition of textiles was held in connection with the first exhibition by the Library Department,—a collection illustrating the history of bookmaking from the earliest Egyptian and Assyrian inscriptions to the modern book. Following this the Messrs. Denton Brothers, of Wellesley, Massachusetts, occupied the gallery in May with their beautiful collection of butterflies; and the season closed with an exhibition in June of reproductions by the Berlin Photographic Company from the collections in the London National and the Berlin galleries.

"The first exhibition of the present year was of oil paintings and drawings by Mr. Arthur B. Davies, shown in November. With the exception of the last two, accounts of each exhibition have appeared in the number of the Monthly current at that time.

"The work of the Berlin Company, among the finest of art reproductions, gave an interesting and profitable introduction to some fifty notable works of the great masters. Prints from Rembrandt included The Burgomaster, his own portrait at an advanced age, and a Portrait of a Woman; The Guitar Lesson by Del Sarto; the well-known Mrs. Siddons by Reynolds; five by Velasquez, among them a Philip IV, The Betrothal, and Philip IV Hunting the Wild Boar; a Madonna by Michelangelo; works by Veronese and Constable; six fine Turners, among them the Death of Nelson, Dido at Carthage, and Burial of Sir David Wilkie; the Bacchus and Ariadne of Titian; the Doge Leonardo Loredano by Bellini; Mrs. Siddons by Lawrence; masterpieces by Van Dyck, Da Vinci, Raphael, Correggio, Botticelli, Murillo, Holbein, Rubens, and many others, were included.

"When the two or three small oil paintings which were shown by Mr. Arthur B. Davies at the Academy, somewhere about 1894, are recalled and compared with the work seen on the walls of Pratt Institute in November, the remarkable and continuous growth of Mr. Davies' powers gives peculiar satisfaction. Twenty-six oil paintings, of which four were loaned by Mrs. Frederic B. Pratt and Miss Helen Pratt, and ninety-two drawings were shown.

"Mr. Davies may be called, to adapt a word to the need, an 'expressionist' painter. Most persons who look at his works are moved by the

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rare fullness and harmony of color, the rhythmical beauty of line, and even the grace as well as the originality in composition. But many lose the motive of the work — the inner thought of the artist which the painting expresses. For instance, a recent newspaper critic suggested that the titles given his works by Mr. Davies were unenlightening. Yet who can look at the riven oak in 'Hagen, Siegfried's Funeral,' with the sinister Hagen at the right, and the sorrowing train in the background, and not feel, as in listening to Wagner's immortal work, the woeful grief and loss accomplished by malice. So 'Brangaene,' — the solitary figure, small against the great hills, with its gesture at once significant and feeble — while in the foreground great billows rush over the rocky barriers, is a vivid expression of the unchaining by slight means of a mighty force; irresistible for a time, though sure to have its ebb later. These two, by the way, belong to a series of paintings from Wagner motives. In 'October's Cadence,' the fullness of fruition is indicated, recalling William Blake's lines:

"O, Autumn, laden with fruit, and stained
With the blood of the grape . . .
. . . . . .
Sing now the lusty song of fruits and flowers."

'Calamus' gives the symbolism of the sweet flag — the unity and harmony of comradeship. 'Earth's Secret' tells of the gaining of the world through love instead of war and greed; and 'A Mother of the Mountains' finds rest after wanderings, which the multiplying mountain folds beyond the reclining figure suggest. All these inner significances are given to the beholder arranged in a thrilling beauty. 'Amor Contra Mundum' glows in a soft brilliancy, seeming to radiate light, and 'Starry Jasmine' shows exquisite purity of line and mass.

"Mr. Davies' remarkable versatility is also shown in the wide range of subject and treatment. Each work is the expression of its own individual impulse, an original creation, having something worked out peculiar only to itself. 'Swaying Water,' — said by a prominent artist to be 'great as a Constable,' — 'Indoors, Mountain Cabin,' and 'The Night Passes' are wide in their range of expression. Most interesting are the drawings. A few are almost academic, but most are artistic interpretations, kindred in spirit to those by the old masters. Particularly fine is the 'Indian Series,' and of this we are told that the model was not in a still pose, but occupied in relating and illustrating tales of Indian mythology.

"A Paris student, an interior decorator, recently returned from study and travel abroad, said, 'If these works were shown in Paris they would create a furore. The man would found a school.' And he was particularly delighted with the poetic suggestiveness of the naming — instancing 'Cosmic Recesses' for one.

"In this age of realism, these creations of beauty and significant expression form a rare and welcome contrast. Such gifts as Mr. Davies possesses are the heritage of few; and the world needs their message.

"From December 3 to 14 twenty oil paintings by M. Henri Moret, an

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eminent French painter of the luminist school founded by Manet, of which Besnard, Claude Monet, and Alfred Sisley are better known in America, were by the courtesy of Messrs. Durand-Ruel of New York, shown in the gallery. A greater contrast in spirit and aim can hardly be found than that between these paintings and the exhibition immediately preceding it. Considered together they form an admirable illustration of the diversity possible to art. With Mr. Davies nature is not the object, but a treasure-house from which he clothes with beauty the conceptions of a poetic and original temperament. M. Moret, on the contrary, so rejoices in nature as it exists, that he aims at the expression of it in complete fullness; trusting his own marvelous skill in representation to arouse a like emotion in the beholder.

"The school to which he belongs proceeds on the belief that, as daylight can be solved into primary colors, so it may be most perfectly painted by pure color pigments in juxtaposition, the eye to blend these at the proper distance into an effect of light. These painters have demonstrated in their own works such an approach to the high-light of out-of-door nature as was never before deemed possible. Of this achievement the paintings by M. Moret must be regarded as marvelously brilliant and finished examples. The illusion of light, air, and space is wonderful.

"The subjects are from the coast of France; and one of the most beautiful and appealing features, also common to many, is the apparent stretching away into infinite distance of the exquisitely treated sky, and the placing beneath this sky of great ocean spaces, jewel-like in color, flat, yet with the unrest of the sea, reaching away out under the bending heavens to disappear in a horizon so truly painted that the earth's roundness appears inevitable and imagination follows the illimitable waters beyond it. The great yellow, red, and brown shore masses seem existing in actual relief. Their sea-weed-strewn buttresses of rock are planted in the surf, and their rounded grassy tops roll backward under the sky, while the mind acknowledges their unseen continuance. So perfectly is this given, that no sense of effort, of labor, of taking the intention for the achievement, is felt. It is the work of a trained observation guided by a wonderful intellect; and all is subtle, brilliant, convincing. The pictures, rendering one mood of nature, may be held to typify the tense, strenuous life of to-day — a high noon of force and energy. The unrest of the sea, the dazzle of sunlight on its sapphire bosom, the rock-founded, emerald-turfed land, the picturesque cottages, and the work-a-day peasants, are all of the present, and seen in their own true atmosphere. The beating waves at the cliff's foot, the voices of the children gathering seaweed, can almost be heard.

"The spirit of the present age, ever curious, ever striving for the unattained, has made these works possible. They are human documents, faithful to the life of to-day. And if to-day's life has need of the ideal and poetic

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in art, no less is it just that the spirit of that life itself should find its exponent on canvas.

"Following the Moret pictures came an exhibition of Copley prints, illustrating mural decoration in America, loaned by Messrs. Curtis & Cameron, of Boston, of which an account will be given later. Subsequent exhibitions will include oil paintings by Mr. William Wendt, of Chicago, sketches and drawings by Mr. E. Prentice Treadwell for interior decoration, photographs by Mr. Clarence White, and another exhibition of work by Mr. Joseph Lindon Smith before mentioned.

"That the Pratt Institute Art Gallery is steadily gaining public recognition is evident. Such expressions as — to quote one almost at random from the daily press — '. . . Pratt Institute Gallery, where one is sure of always finding something well worth seeing,' indicate an increasing public appreciation and use of it as a factor in art education. This is a reward and encouragement for the unstinted expenditure of time, labor, tact, and care necessary to its maintenance."

CONCLUSION.

In presenting this report it has been impossible within the limited number of pages to write fully of all the courses of study and supplementary lines of work pursued in the department. Some of these, notably Design, have been quite fully presented in former reports, and others will be explained in future. The illustrations in this report are devoted almost entirely to the Arts and Crafts. The work of many of the instructors has been mentioned in connection with various subjects herein introduced. The work in oil still-life and oil portrait under the instruction of Miss Ida Haskell, the work in life with Mr. Henry Prellwitz, cast drawing, sketching of the moving figure, and anatomy with Mr. Willard Paddock, sketching and perspective with Miss Dora Norton, and instrumental drawing under Mr. C. Franklin Edminster should receive equal attention and will be covered in future reports.

During the summer several instructors conducted classes of their own in the country, where interesting views were to be secured for composition and painting; others devoted themselves entirely to the practice of their art work in one form or another.

Great credit is due all of the instructors of the department for the able, unselfish, and loyal spirit with which they carry on their work, ever keeping in mind the work of the department as a whole yet always working for the individual with a devotion worthy of the highest commendation.

In closing this report, I take the occasion to thank you most sincerely for your generosity and active co-operation in furthering the work of the Department of Fine Arts.

Respectfully submitted,

Walter Scott Perry,
Director.

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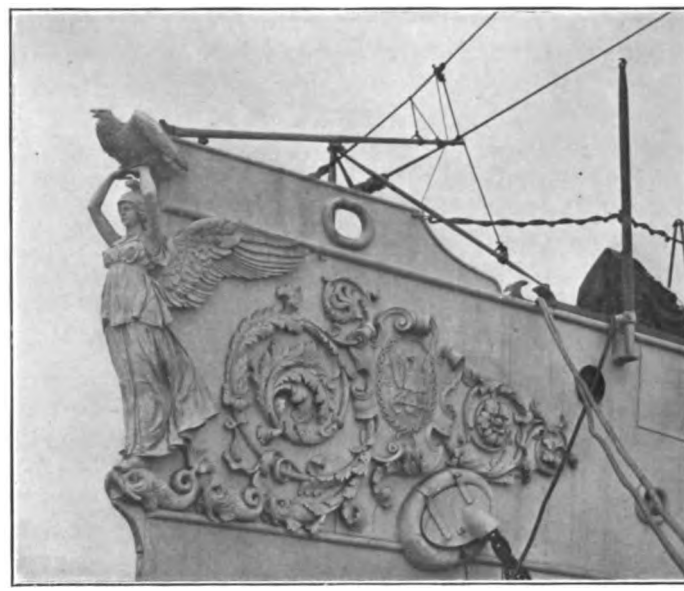

BOW ORNAMENT FOR U. S. S. CINCINNATI
DESIGNED BY MR. ALVAN C. NYE, INSTRUCTOR IN ARCHITECTURE, PRATT INSTITUTE.

DEPARTMENT NOTES.

Two years ago the Navy Department decided to place a bow ornament on the cruiser "Cincinnati," then under process of reconstruction at the Brooklyn Navy Yord. The design selected was made by Mr. Alvan C. Nye, instructor in Architecture, Pratt Institute, and was applied to the ship as illustrated. Last winter Mr. Nye adapted this same design to the bow of the cruiser "Olympia," and during the summer superintended setting the work in place at the Boston Navy Yard.

The bow ornament on the "Cincinnati" is partly wood and partly bronze, and that for the "Olympia" is entirely of bronze. The contract for modelling and carving these decorations was given to the Hayden Company of New York.

Miss Mary Allis Hurlbut was married to Mr. Joseph Gaylord, of Winona, Minn., November 27th. Mrs. Gaylord had been identified with the art classes of Pratt Institute since their organization and leaves many warm friends among her pupils and associate instructors. She carried into her work a spirit of helpfulness and a quality of strong sympathy and earnestness that has been an influence for good among all with whom she has come in contact.

The following students taught in the Vacation Schools of New York and Brooklyn in the summer of 1901:

Normal Art Class — Miss Marian F. Butts, Miss Mary W. Clarke, Miss Helen S. Daley, Mr. Elbert H. Eastmond, Miss Mary G. Fernald, Miss Maud M. Gillette, Miss

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Helen L. Jarrold, Miss Emma E. Klanke, Miss Frances H. Lyon, Mr. Alexis B. Many, Miss Lucy J. Munson, Miss Bertha C. Palmer, Miss Beulah E. Stevenson, Miss Lyla C. Sturtevant, Mr. A. Claude Tuttle.

Regular Art Class — Miss Ethel D. Baker, Miss Cornelia Cowles, Miss Julia L. Halladay, Miss Sarah F. Hendricks, Miss Nellie B. Murphy, Miss Grace E. Stephens.

Design Class — Miss Mary E. Brill, Miss Grace B. Crossman, Miss Helen Gaston, Miss Susie E. Kingsland, Miss Lucille V. Mravlag, Miss Erna W. Ruprecht, Miss Emily P. St. John, Mr. Richard T. Johnston.

Wood-carving — Miss Charlotte King. Making a total of twenty-nine.

Four exhibitions of work by members of the department have been shown in Room 44, since it was remodelled and opened for that purpose in September. The first was of summer sketches made in England by Mr. Walter K. Stone, a graduate of the Normal class, the medium being charcoal, and charcoal combined with water-color. The summer studies in oil and water-color by Miss Celia B. Seymour, Miss Clara L. Fairfield, and Miss Adelaide Deming, at Grand Manon, followed. Later a collection of pen drawings, for newspaper illustration principally, and twenty-three book-plate designs by Mr. Joseph Cummings Chase, were shown. At this writing designs stencilled on burlaps for wall decoration are being shown, and in January an Arts and Crafts exhibition, consisting of objects designed and made by students, will be given.

Of the five students who graduated from the Regular Art Class last year, Miss Fanny C. Shepard is teaching drawing in the Decatur, Ill., High School; Miss Florence Storer is drawing for illustration; Miss Sarah F. Hendricks has entered the Normal class; Miss Julia Halladay is taking advanced work in the life and illustration classes; and Miss Carrie L. Cropsey, now visiting in the South, will return to Pratt for advanced work in January.

The report of those heard from of the Design class which graduated in June is as follows: Miss Emily P. St. John has a position with the Tiffany Glass and Decorating Company, New York; Mr. Herbert Wilkinson is with Hamilton Bell & Company, decorators, New York; and Mr. Clarence Suydam has lately taken a position with Ernest Roeber, decorator in New York. Miss Clara M. Dole and Miss Sarah M. Fettretch have opened a studio in New York; Miss Hettie R. Mead announced in September the opening of a studio in Brooklyn; Miss Edith Allison has a studio in Boston; and Miss Helen Michelle, with Miss Millie Puckhaber, a graduate of the Normal class, and since a student in the Clay-modelling and Art Metal classes, has lately opened a studio in Brooklyn.

Mr. Walter C. L. White and Miss Mary W. Peckham have entered the Normal class; Miss Helen I. Miller is taking advanced work in interior decoration, water-color, and life; and Mr. Willard R. Platt is in the life and illustration classes. Mr. Ralph Johonnot is assisting Mr. Dow in the composition classes, and also is taking advanced work in design.

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Mr. A. J. Tuck, a former student in the Design class, is now with Tiffany & Company. Mr. Theodore Downs has a place with C. B. Cottrell & Sons, Westerly, R. I.

Miss M. J. Redway, a student of the Regular Art class, is supervising the drawing in the Kindergarten and connecting classes at Potsdam, N. Y.

In a competition, open to students of all the art schools of this country, Messrs. H. B. Wiggins' Sons offered, last spring, prizes for designs suitable for use on Fa-bri-ko-na, their new burlap wall coverings. Thirteen other art schools contributed, and the first prize of $50 was awarded to Miss Grace Cornell of the Regular Art and Design classes; the third, $20, to Miss Emily P. St. John of the Design class; and Honorable Mention, with $10 each to purchase the design, to Miss Antoinette D. Henderson and Miss Lucia Manning, both of the Design class.

Miss Florence Margach, of the Design class, had during the summer the use of one of the studios in the Institute building, and gave employment to fifteen or twenty students.

Miss Ellen Parker Day, of the Art Metal class, recently sold a large vase design, modeled in clay, to be used for casting by a pottery maker.

Miss Grace Cornell, a graduate of the Regular Art class and a student of the Design class, is assisting Mr. Dow in teaching drawing in the Department of Kindergartens.

The Annual Christmas Fair of the Art Students' Fund Association took place on the afternoon and evening of December 14th. A table of still-life bric-à-brac, one holding calendars, baskets, articles decorated with pyrography, and casts, a booth for the sale of photographs, another of sketches, drawings, paintings, and posters, a table of home-made confectionery and others for the sale of chocolate and lemonade, archery contests, and a very oriental little room devoted to palmistry were some of the features. In the evening fudge was made in a chafing-dish by one of the students, and, after a lively auction sale had disposed of nearly all remnants, dancing closed a very pleasant occasion. At the present time $190 has been realized, and some returns are yet to be made. This will nearly complete the amount required for the second scholarship.

Obituary.

SINCE the last Art Number of the Monthly was issued three students of the department have been removed by death. Miss Cordelia N. Parker, a graduate of the Design class, a winner of one of the Art Students' Fund scholarships, and a student in advanced Regular Art work, died last August, after an illness of some months. Her loss is deeply mourned.

Mrs. Mary Wilson passed away unexpectedly in September. Mrs. Wilson was a graduate of the Normal class in 1900, and for the past year supervised drawing in Yonkers where she won high esteem.

Mr. Alfred L. Lewis left the Design class in the spring of 1900 on account of failing health, and after a brave fight with advancing disease died last September.

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FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

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High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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FEB 24 1902

DOMESTIC ART NUMBER

PRATT INSTITUTE MONTHLY

February, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X FEBRUARY, 1902 Number 4

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., an the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New-York

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Pratt Institute Monthly

Volume X FEBRUARY, 1902 Number 4

Annual Report Of the Department of Domestic Art.

TO THE TRUSTEES, GENTLEMEN:

THE entrance examinations and the organization of the various classes of the Department of Domestic Art were held on September nineteenth, and the regular work of the classes was begun September twenty-third. The various kinds of work carried on in these classes is of such a character that considerable space and a definite amount of equipment is required for each pupil. The quality of the material used in most classes is such as to require careful personal supervision of the work by the instructor in charge. These facts make it necessary to limit the number of students in each class and to decline to receive students after the second week of the term to fill vacancies unless they have had previous training.

Notwithstanding the tendency at present to remain out of the city later each autumn, our classes were all filled the first week in October, and those applying later were obliged to wait until the January term. For the Full-Day Course in Dressmaking we received in the summer applications from about twice as many persons as we could accommodate. The entrance examinations were therefore competitive, and the eighteen young women who were best fitted for the course were admitted. With few exceptions, the students entering in September have all continued in the winter term.

The enrollment for the fall term is as follows:

DAY CLASSES:	
Normal Course	9
Sewing	136
Dressmaking	122
Millinery	79
Drawing with dressmaking and millinery	164
Costume Design	15
Art Needlework	36
Basketry	34
Total	595
EVENING CLASSES	100
Total in Day and Evening Classes	695

NORMAL COURSE.

Many changes have been made this year in the courses offered by the Department, notably in the withdrawal of the Normal Course in Domestic Art. This course was organized in 1895, to meet the demand for instructors in sewing, dressmaking, and millinery in the manual training high schools then being started

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throughout the country, and also the demand for teachers of sewing in the elementary schools where this branch of handwork was rapidly gaining favor. These lines of work were then looked upon more from the industrial or useful point of view.

It was the purpose of the Normal Course in Domestic Art to train its graduates to inspire in their pupils and the public generally the thought of sewing, dressmaking, and millinery as forms of educational manual training for girls, giving to them opportunities for growth on the intellectual, moral, and esthetic sides of their nature, as well as the physical. These teachers were led to perceive the natural connection of these subjects of Domestic Art with numbers and mechanical drawing in draughting and calculation, with good art in line, form and color in designing the articles made, with physiology and hygiene in the making of clothes, and with physical training, in the fact that only the normal, healthy body can be clothed so as to express the most beauty. They were also led to realize that dress and the surroundings in the home may have a strong influence on the spiritual nature, and that the methods used and the ideals held by the instructor in domestic art should be controlled by the same laws as govern the teaching of other subjects. Above all, they were taught that the personality of the teacher is the strongest influence at her command, and that only one who can command herself and has within her the desire to gain for herself and her pupils the best in all things can be a true teacher.

The full Normal Course covered two years, demanding the full time of the student, and included instruction in psychology, history of education, normal methods, hygiene, physical training, class observation, practice teaching, sewing, dressmaking, millinery, draughting, free-hand drawing, work in water-color, design in dress, and study of textiles used. Later, courses in elementary hand-weaving, cord-knotting, basketry, and embroidery were added.

The following students have graduated from this course, or from the special course of one year in sewing, covering all the work above named excepting the dressmaking and millinery and the advanced work in drawing, color, and design in dress. These graduates are now engaged as follows, so far as can be learned:

Mrs. Ann R. Annat, '98, Instructor of Sewing, Public Schools, East Orange, N. J.

Ada L. Austin, '99, Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Elizabeth E. Billard, '99, Instructor of Sewing and Millinery, Y. W. C. A., Pittsburgh, Pa.

Sarah A. Billard, '97, Instructor of Sewing, Public Schools, New York City.

Corinne Bone, '99, Instructor of Sewing, Manual Training High School, Kansas City, Mo.

A. Dorothy Bradt, '97, Instructor of Sewing, Dressmaking, and Millinery, Pratt Institute, Brooklyn, N. Y.

Irene L. Calef, '99, married. Now Mrs. T. B. Nichols.

Josephine G. Casey, '97, Director of Domestic Art Department, Manual Training High School, Kansas City, Mo.

Lucia P. Chick, '99, Instructor of Sewing, Dressmaking, and Millinery, Manual Training High School, Brooklyn, N. Y.

Carrie E. Church, '01, Instructor of Sewing, Basketry, and Primary Studies, Skyland Institute, Blowing Rock, N. C.

Jessie Cole, '99, Secretary and Stenographer, Holley, N. Y.

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Alice A. Corbin, '00, married, June, 1901. Now Mrs. Charles A. Livingston.

Elizabeth H. Cooper, '99, Instructor of Sewing, Children's Home, Parsippany, N. J.

Augusta C. De Vinne, '00, Substitute Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Mary B. Dickman, '97, Instructor of Sewing, Dressmaking, and Millinery, Manual Training High School, Brooklyn, N. Y.

Clara S. Dudley, '99, Instructor of Sewing and Dressmaking, Y. W. C. A., Cleveland, O.

Mary H. Field, '00, Instructor of Sewing, Dressmaking, and Art Needlework, Hebrew Technical School, New York City. Also Instructor of Sewing at Nurses' Settlement, New York City.

Julia E. Follett, '01, Instructor of Sewing, Public Schools, Brooklyn, N. Y. Also Director of Sewing in Saturday morning Industrial School, Church of the Holy Communion, New York.

Evelyn M. Garrett, '01, Director of Sewing, St. Anne's Sewing School, Brooklyn. Also Instructor of Sewing, Christ Church, Staten Island, N. Y.

Fannie H. Haskins, '99, Professional Dressmaker, Foxboro, Mass.

Fanchon Haver, '01, Substitute Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Anne L. Hazen, '00, Instructor of Sewing and Dressmaking, Straight University, New Orleans, La.

Mabel C. Himrod, '99, Instructor of Sewing and Dressmaking, Berea College, Berea, Ky.

Helen D. Hobbs, '00, Assistant Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Mary Holden, '99, Instructor of Sewing and Millinery, Aspen, Colo.

Emily C. Hunt, '00, Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Sara Hyams, '99, Instructor of Sewing and Dressmaking, Evening Public Schools, New York City.

Maude V. A. Kinney, '01, Instructor of Sewing, Basketry, and Primary Branches, District School, Troy, N. Y.

Mrs. Minnie B. Landon, '01, Instructor in Full-Day Sewing Course, Pratt Institute, Brooklyn, N. Y.

Mrs. Ethel S. Lovett, '01, Assistant Instructor in Domestic Art, Pratt Institute, Brooklyn, N. Y.

Emily M. McCullough, '00, Instructor of Sewing, Manual Training High School, Indianapolis, Ind.

Mrs. A. L. Ogden, '00, Instructor of Dressmaking, Y. W. C. A., Paterson, N. J.

Leonora O'Reilly, '00, Head Worker and Instructor in Domestic Art, Asacog Club, Brooklyn, N. Y.

Nellie E. Parrish, '01, Instructor of Sewing, Dressmaking, and Millinery, Hackley Manual Training School, Muskegon, Mich.

Edna H. Phair, '00, Instructor of Dressmaking and Millinery, Esther Mack's Industrial School, Salem, Mass.

Caroline D. Pratt, '98, Director of Sewing, St. Andrews School, Richmond, Va.

Grace Robarts, '01, Instructor in Domestic Art, Toronto Conservatory School of Literature and Expression, The Lillian Massey Normal Training School of Household Science, and the Young Women's Christian Guild, Toronto, Canada.

Eleanor Roe, '99. Health will not permit her to teach at present.

Anna J. Schaefer, '00. Not heard from.

Naomi Schofield, '00, Assistant Instructor of Sewing, Public Schools, Brooklyn, N. Y.

Grace Secrest, '00, Supervisor of Sewing, Public Schools, Akron, O.

Mary L. See, '97, Instructor of Sewing, Public Schools, New York City.

Emma E. Simonson, '99, Instructor in Full-Day Dressmaking Class, Pratt Institute, Brooklyn, N. Y.

Agnes D. Smith, '98, Private Classes in Sewing, Plainfield, N. J.

Christina M. Thompson, '98, Instructor of Sewing and Dressmaking, Manual Training High School, Kansas City, Mo.

Isabelle O. Tyler, '97, Instructor of Sewing, Industrial School, Albion, N. Y.

Florence Van Duyne, '98, Instructor of Sewing, All Angels' Industrial School, New York City, Y. W. C. A., Newark, N. J. Also private classes in Sewing and Basketry.

Mrs. Frances A. Ward, '99, Instructor of Sewing, Knitting, and Basketry, School for the Blind, New York City.

Katherine G. T. Wiley, '99, Instructor of Sewing and Cookery, Stanley McCormick School, Burnsville, N. C.

Edith M. Williams, '97, Instructor of Sewing, Public Schools, Brooklyn, N. Y.

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Mrs. Leila Wright, '99, Assistant Instructor of Sewing and Dressmaking, Pratt High School, Brooklyn, N. Y.

Ella Woodruff, '00, Private Secretary and Companion, New York City.

Ora G. Yenawine, '00, Assistant Matron and Instructor of Sewing, New York House of Refuge, Randall's Island, N. Y.

It has been most gratifying and encouraging to receive reports of the excellent, helpful work being done by these graduates all over the country. Much of it has been pioneer work, organizing classes in Domestic Art in new schools. Most of these teachers have been connected with the same school for a number of years.

So great has been the demand for our graduates as teachers that many of those from the technical classes are also filling responsible positions as teachers of Domestic Art in various schools.

At the present time, the demand for instructors seems to come for the most part from elementary schools where hand-work for girls is just being introduced, and the same instructor must be able to introduce simple work in Domestic Science as well as in Domestic Art. This condition arises from the necessity felt by so many school boards to keep the expense of introducing manual training at the lowest figure possible, and while the Institute still believes that the student cannot be adequately prepared in two years to carry on, with the best results, classes in two subjects so broad and so different as Domestic Art and Domestic Science, especially in advanced work, it recognizes the present trend of development, and now offers, as it has in the past, the Normal Course in Domestic Science, which includes sewing, some work in drawing, and handwork.

The Normal Domestic Art Class of 1902 is a strong one, nearly all those who entered in September, 1900, returning this year to complete the course and graduate in June. They are doing fine work, and give every promise of going forth to uphold and add to the high reputation already earned by our former graduates.

TECHNICAL COURSES.

Changes have been made in these courses this year with the purpose of making the full-time courses in sewing, art needlework, dressmaking, millinery, and costume design an even stronger preparation for professional work or business than in the past. The courses in these branches which require attendance at the Institute but two half-days each week have been designated Special Courses for Home Use. They have been shortened somewhat and made more directly helpful to women who desire to be intelligent and capable home makers. Of these changes and courses I have thought it interesting to ask the instructors themselves to write.

I here wish to commend to your notice the conscientious, strong work and united, helpful spirit shown by all instructors and the secretaries of the Department, creating an atmosphere which is inspiring to the students and to all who enter the Department.

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EVENING CLASSES.

As the evening courses were materially changed last year, the work this year is practically the same. The courses then were shortened so that it would be possible for a student entering at the beginning of the fall term to complete the work in either sewing, dressmaking, or millinery in six months, instead of having the courses extend beyond one school year, as formerly. The students seem to be greatly pleased with this change. Nearly all of them are young women who are professionally employed during the day, and it is surprising to note with what regularity these students attend their classes and the interest they show in their work.

The following are some of the occupations of these young women: saleswoman, stenographer, dentist, clerk, milliner, dressmaker, seamstress, gold layer, lace sewer, thermometer scaler, folding-machine and other machine operators, teachers, book-folder, feather curler, polisher, stock keeper and labeler, packer, box maker, perfumerer, silk glove maker, and women employed in cooking and general housework.

Basketry has been added this fall to the list of evening studies, the class meeting once a week on Wednesday evenings.

The limited space of these pages has made it impossible to adequately represent all the lines of work carried on in the Department. The report of the art needlework classes, instructed by Miss Mary E. Stocking and Miss Marie L. Friebus, and of the classes in basketry, must be reserved for next year. Basketry was a new course added in '01, and during the past year there were four classes of special students instructed by Miss Mary S. Hunter and two of the normal class by Miss Janet F. Hunter. This year Miss Mary Hunter has a morning and an evening class of enthusiastic pupils who have been learning to make a variety of baskets in different weaves and materials. Chair caning is also a part of the course. Miss Lina Eppendorff is giving a special course in weaving and basketry to the students of the Normal Art and Manual Training Class, and to the Normal Domestic Art Class. Next year we hope to be able to illustrate and describe these courses. We shall then have room for letters from other normal graduates who are teaching Domestic Art, and other items of interest which have been crowded out of this number.

It is now fourteen years since the Woman's Department, as it was then called, was organized in Pratt Institute, afterwards divided in '92 into the Departments of Domestic Art and Domestic Science. During all these years the interest and generous support given by you, gentlemen of the Board of Trustees, have made it possible to develop and strengthen the work of the Department of Domestic Art.

Respectfully submitted,

Harriet S. Sackett,
Director.

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Dressmaking.

FULL-DAY DRESSMAKING COURSE.

IF one doubts our right to use the word professional in relation to dressmaking, he has not followed the march of progress in this line of work. He is still thinking of the time before the common use of the sewing-machine, when the work was somewhat mechanical, and did not require a person of much general or artistic education. In those days, the object of dress was simply to warm and to cover the body in conformity with the prevailing fashion; but times have changed, and now we are required to beautify, even though we almost sacrifice the other elements at times, to hide all defects, to bring out all possible charms.

We have passed the puritanical period and the days of our grandmothers, when a best gown was carefully brushed and laid away after each state occasion, and served its purpose for at least a decade. We are living in a time when *best* would apply to almost all our clothes, for we must have a different style of gown for each occasion, and, if we have any pretensions at all, must follow radical changes in the figure, as well as the numberless fads of the fashions.

Never has it been such a study to bring out the artistic in dress. We, as dressmakers, are required to create, which means to originate, from a variety of colors in a variety of materials, such as cloth, silk, satin, velvet, chiffon, lace, buttons, beads, embroidery combinations, all in one, by a careful study of the character, as well as form and coloring, of the wearer, such a work of art, perfect in line, form, proportion, and color, that the whole will seem to be a part of the woman herself. To be able to do this requires a liberal education. And this does not mean two or three months in a school where a system

Gray lansdowne, with écru lace; insertion in skirt of gray and white striped silk band and three tucks at the bottom, collar and cuffs of gray liberty satin edged with the silk, a cord of yellow and band of purple velvet flecked with silver beads, sash of the satin. Gown made by Frances Walker, Full-Day Dressmaking Class, first term. Drawn by Agnes R. Haight, Costume Design, second year.

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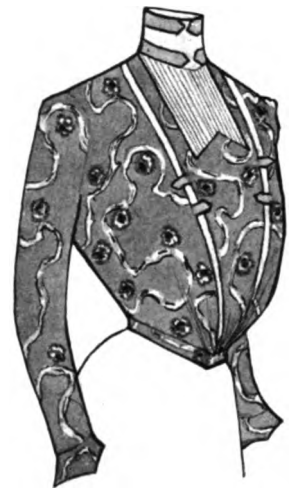
of cutting is taught, as this is merely a part of the foundation, but it does mean careful training in the technical work, and a thorough study in costume designing, which has become a paying profession in itself. Then with a few years of practical experience added to this training, we might consider that we have made a good start on the road to success.

We receive, every year, applicants of all types, who expect, by paying a certain amount at the tuition desk, to receive such a knowledge of dressmaking that they shall be qualified to run an establishment at the end of a year; but, if taken into the class after an examination as to their general education, as well as in handiwork, in a few months they realize that dressmaking is something that cannot be poured in, but, like all other knowledge, must grow from within.

All applicants must be over eighteen years of age, and able to take at least a year's course. The number of students is limited to eighteen, for two instructors. The course is graded from the elementary to the more difficult work, and the students are obliged to take the parallel course in costume designing. Instruction is given in the history of costume, business methods, and in physical culture, for in dressmaking, more than in many other vocations, much depends upon the presence and appearance of the dressmaker herself.

Five mornings each week and two afternoons are devoted to practical dressmaking, and the other afternoons given up to the supplementary work. Students are required to keep note-books of the work gone over,



Design carried out in practice materials, by Frances R. Walker, Full-Day Dressmaking Class, first term.

and these are submitted to the instructor occasionally for correction. Other home work that can be done without personal instruction is also required.

The fall term's work is as follows: Taking measures of waists and sleeves, and draughting patterns of different styles of waists and collars. Measures of bust forms are taken, linings cut and fitted, and waists made of practice materials. On these waists the principles of cutting, basting, fulling lining on material, fitting, and finishing are taught. The students choose the materials and trimmings for these waists, and carry out designs selected from the fashion plates. Other practice work in dress trimmings, such as rufflings, plaitings, pipings, French hems, buttonholes, and fancy trimming stitches, is done on cashmere.

Skirt measures are taken, and five, seven, and nine gored skirts, circular

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skirts, and skirts with circular flounces are draughted. The different styles of skirts are made in small paper models, with as varied designs as the student desires. This practice work is followed by students fitting waists and sleeve linings, and hanging several skirt linings for one another with a careful study of the lines and the proportion of parts.

After a talk on color and materials, the students buy and make their first street dresses for themselves. After this is finished, those competent are given order work. This is helpful, giving the student some opportunity to deal with the practical difficulties of doing work for others. The gowns illustrated were orders made at the end of the fall term. The gray lansdowne is a new departure in that the lining and material are entirely separate. The lining, only, is boned, and the waist and skirt of outside sewn together, generally opening at the back. The charm of these gowns is in their simplicity, and in being able to be worn over different linings.

The winter term's work begins with draughting princesse dresses of different styles. Linings are cut and fitted, but as few orders can be obtained for princesse dresses, we usually make them up as lining slips. Orders for negligé house gowns or wrappers would be gladly attended to at this time.

Instruction is given in matching stripes and plaids, and in bow making with practice materials. The remainder of the term is devoted to the making of evening dresses and more elaborate gowns.

The spring term has always been devoted principally to ladies' tailoring, with special care given to making collars and revers, and putting in pockets, and pressing. But we find that even with a great deal of care given to draughting and fitting jackets, carrying out the design in crinoline models, and making and finishing one jacket in cloth, the average student does not have enough experience to enable her to make both tailor-made and other gowns well. Indeed, very few experienced dressmakers are gifted in both directions, and it has been thought wise to give in the first year only so much of the tailor finish as is necessary to do good dressmaking and let the student grow more proficient in general dressmaking. Those who desire may take up the tailoring more thoroughly at the beginning of the second year, which it has been thought necessary to offer the students that they may have an opportunity to gain more experience and put into practice the principles learned in the first year, still having the privilege of calling for criticism when absolutely necessary.

Owing to the short period devoted to actual dressmaking, and the students stopping their sewing to get practice in fitting, etc., and the amount of labor now put into gowns, it is impossible to make any kind of a gown in less than three weeks. To those who understand how to do the more mechanical work and finishing well, and who want to devote more time to the artistic part, we give the privilege of handing the work to a seamstress who is directed and paid by these students. Our prices for making gowns range from ten to fif-

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teen dollars. The price, less ten per cent., is given to the student or students who make the gown. As far as possible, the students are expected to do their own designing, practicing with paper and crinoline on the bust forms.

The students train their powers of observation by submitting periodically sketches and descriptions of gowns which they have seen or designed. These are criticised for the benefit of the class. This custom requires their occasionally visiting the shops where gowns are exhibited, and trains them to detect the changes in the fashions.

The opportunities given in our order work are such as cannot be obtained in any dressmaking establishment. The students take the measures and draught all patterns. At all of the fittings the work they cannot do they are required to observe while it is being done by the instructor, who explains the reasons for the changes in fitting and the laws governing the design. The rare combinations of both material and design in these gowns, and the privilege of handling rich materials, is an education, and also an inspiration to both student and instructor in bringing forth a creation of beauty. All work done in the class is examined and criticised by the Director of the Department.

Reception gown of old blue crêpe, trimmings of blue velvet, white mousseline, cream-white duchesse lace and passementerie in persian colors, interlaced with velvet bands touched with gold beads, circular flounce with rows of faggoting, collar of velvet bands faggoted together. Made by Mrs. E. H. Taber, Full-Day Dressmaking Class, first term. Drawn by Jean Parke, Costume Design, first term.

We hear very favorably from our graduates. Of the eight who finished the course last June, three have been employed as dressmakers in the establishments of New York, two are doing successful work by the day, and one writes from Montana that her first work was a wedding outfit which was greatly admired and of which favorable mention was made in the newspapers. She had two girls sewing with her all summer, and expected to engage a woman helper in

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the fall. This report was from a young woman who had ability along this line, but very little previous experience, as she had graduated from a normal school with a view to teaching.

Emma E. Simonson.

HOME COURSE IN DRESSMAKING.

There are few subjects connected with art that are so difficult to treat, especially with a practical application, as dress. We have every reason to believe that a course in home dressmaking will supply a real need, and be welcomed as a valuable addition to the domestic economies. That dress is an art to set off our person to the greatest advantage must be generally admitted, and under certain conditions it may be appropriately and satisfactorily studied by most of us.

In former years, fashions were dictated by capricious accident or by the desire for novelty, rather than the study of the individual. Never has there been such a diversity of fashion in regard to cut, style, and tasteful combination of color as at the present time. No doubt we should attribute to the designers and manufacturers a great deal of credit in their careful and harmonious blending of color in the woolen textures, silks, appliques, and embroideries which we use in our trimmings. Even in the cheapest kinds of goods we find beauty in texture, color, and design. The goods of one color commonly used in former years were so hard to blend other colors with that the trimmings in our gowns were used in a mass, rather than in suggestion, as at the present time. Having so many colors in our main textures to select from, we can with safety combine two, three, and even more colors, and keep our gowns in perfect harmony. Then come the innumerable styles of waists, shirt-waists, as they are commonly called, and for the first time in years each woman will find something for her own particular style and taste, varying from the severe tailor-made shirt-waist to the waist, tucked in various ways, for house and evening wear.

The skirts are made with long, sweeping lines, showing a consummate art in cut and style. The gored skirt undoubtedly is universally worn, and the preference for the flounce effect is also evident in various ways, especially by the curved seams that give a full flare to the bottom, and by the circular flounces, graduated or straight, which are very becoming to the tall slender form. The five, seven, nine, or eleven gored skirts are more suitable for the short, stout figure, as the number of long lines add to the appearance of length.

The home course aims to furnish a preparation suitable for women who are unable, for lack of time or money, to obtain a more extensive technical training, and who have some knowledge in the making of simple undergarments. In the first three months, the students are taught to make unlined skirts and shirtwaists, such as would be made in one's own home. These are made from patterns draughted by the student, and are of washable materials. The student has two lessons a week of two hours each,

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Design for up-to-date evening gown of cream-white chiffon over pink silk, by Mathilda Meyer, Dressmaking Class, fourth term.

and does some work at home between times.

The course of work for the second term is the making of a plain, lined skirt of woolen material, which requires very careful execution in basting, fitting, stitching, and pressing. A plain skirt is very much harder to make and bring out satisfactorily than a more elaborate one, in that every detail shows. A set of models in cashmere is also introduced in this grade, including such work as is used in waist and skirt trimmings; also the cutting and fitting of a waist for a lay figure, in practice material. In the making and trimming of these waists, the individuality of the student is brought out. It also gives them more confidence and self-reliance, before working with good material.

Exercises in the cutting of the various trimmings, such as collars, cuffs, and revers, and the class talks and criticisms on the different lines and designs for different figures, are of great help to the student in cultivating the observing and creative powers. This second term is really the elementary one, its object being to give a general training in the fundamental principles of dressmaking. The practical application of these principles is worked out in the next, the third term, where the students make a gown for themselves, either of woolen material or silk. Talks are given on the selection of textures, and much thought and care are exercised in the combination of colors used in their gowns.

The fourth term is practically the same as the third, covering the same ground, only on a more elaborate scale, making an evening or house gown. This completes the home course, and should qualify any woman to do home dressmaking. The four grades cover a school year and a term. Students may enter at the beginning of any term.

Elizabeth McJunkin.

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Twelve-minute sketches in pencil, by Full-Day Millinery students, from hats made in the class.

Millinery.

MILLINERY is one of the most attractive of the subjects of study given in the Department of Domestic Art, the materials used for creating a hat or bonnet are so beautiful to handle. They, of themselves, often inspire the maker to a very artistic result. It is somewhat like painting a picture, for one must put much thought and feeling into the creation, or the production will be void of expression.

In the making of a hat there are many points to be considered. One is fitness; as, for example, a walking hat to be worn with a walking suit. It will be a special composition of form, textures, and color. The hat must be in harmony as well with the whole figure of the wearer, and even with her personality. Character is expressed in the selection of a hat, since we often hear it said, "Her hat is just suited to her," "I should select it from among many as belonging to her"; and we must admit that we sometimes hear it said with justice, "That is a beautiful hat to look at off the head, but it makes the owner appear ridiculous."

To be a skillful milliner, one must have quick, keen, and yet sympathetic appreciation of character and its expression in the lines of the face and head as well as the figure. One must be quick to see the characteristic feeling suggested by different forms, textures, colors, and contrasts of light and shade, as we find it in the outlines and masses of hat shapes, in the appearance of felt, fur, silk, velvet, lace, jet, steel, silver, jewels, ostrich feathers, stiff wings, gently rounded roses, or pointed and perky grasses. Unless one stops to think of all this, one would not imagine the benefit to be derived from working in millinery. I have heard many students say, "This course has been a real pleasure and help to me, for I have learned so much besides millinery." The other day, passing through the hall, I met a student who had stopped to look at the hats made by some of the students. Turning to me she said, "I do so enjoy my work. This is a wonderful place, and the work is so inspiring and character building." Such spontaneous confessions are very encouraging.

It is a fact that the endeavor to learn to make a beautiful hat calls

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out many latent powers, as accurate observation, a clear and definite imaging in the mind of the desired appearance of the hat when completed and placed on the head which is to wear it; for the materials used in millinery will not bear much handling, and one must be able to get the desired effect in the first trial or their beauty and crispness is lost. This kind of practice developes concentration and decision, as well as delicacy of touch. Still, strength and firmness of touch are required, too, far more than one might suppose.

To a student of five years ago there would appear to be many changes in the course of instruction, and so there are, for nothing stands still. It must go back or go forward, and with each year's experience we feel that we go forward.

FULL-DAY COURSE.

There are now two distinct purposes for study: the trade, or professional use, and the home use. The Full-Day Course, with business as its object, is completed in four months, beginning in September and finishing the last of January. A new class begins the first of February and completes the course in June. This arrangement of time has been found practicable, making it possible for those who can finish in January to be able to continue their work in some good work-room during the spring season, and for those finishing in June to be ready for the fall season. Most of these students are from other cities far and near, who return to positions in their native towns. This we like to encourage, though of course many of the students are not slow to perceive the advantages for growth which a position in a good New York establishment offers, and for several seasons after finishing the course with us the best opportunity a student can have is to be a maker or improver, as it is called, in a good establishment where she can practice, with many variations, the processes she learned in class. It is in the nature of things that we can only lay the foundation of future skill, and get the student ready to observe and receive impressions and to be able to work out the new and various ways of making hats. Rapidity and self-reliance can only come by continued practice, and best in the real demands of actual business.

We wish to take this occasion to thank the many broad-minded and progressive millinery establishments in Greater New York and other cities who have been willing to believe that we desire to give real and honest help both to them and to our students, who have taken our graduates into their workrooms and told us honestly of the strong and the weak spots in their work. Only by such co-operation can we advance the best interests of the profession. A profession it is slowly but surely becoming, requiring men and women with a good, general grasp of things, and appreciation of good art as well as technical skill. The change in millinery since 1888, when instruction in this branch of applied art was begun in Pratt Institute, is certainly most encouraging. Then each season had its one or possibly two prevailing styles of hats, and they were copied

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from the original imported Paris models with almost no attempt at variation, unless possibly in the colors used. Now even the variety in the models brought from Paris is almost bewildering, and we are not afraid to make many changes in contour, color, and textiles to suit the individuals who will wear these creations.

We want also to emphasize the fact that we do not undertake to graduate trimmers from our course. Such work requires special talent. We endeavor to develop it wherever we can, but only years of experience and observation as an improver, with the idea of some day growing to be a trimmer, usually fit even the talented for this responsible position. Individual students differ widely, and we therefore try to keep a careful record of each in such shape that we can turn to it at any time, and we are glad to give the facts to any employer who will send to us. In this way we may be able to protect our students and the public from the false claims of those who have not done satisfactory work with us. We should be glad, too, to receive suggestions or criticisms upon our course or our students' work from any milliner or former student. We have long cherished the thought that some day there might be an association of milliners, at whose meetings questions of interest to them might be discussed from several standpoints. As the general education and breadth of view of the men and women engaged in this work grows, such an association seems more and more possible and desirable.

We wish to keep in touch with all our students, and to know, from year to year, what use they are able to make of the knowledge and the impetus gained while with us. It is this that brightens the teacher's round of toil, the wearing work of each year in taking fresh, crude pupils and trying to help them to be neat, accurate, quick, observing, to have a good eye for form and color and style — to hear afterwards what these same pupils have been able to do and to become. We hope our pupils will not forget this in the rush of their business or home work, and will let us hear from them each year. We want to add these facts to the record of students' work.

Our Full-Day Course covers making and trimming all kinds of hats for women and children, frame-making and designing, free-hand pencil drawing, a course of ten lectures on historic costume, and a short course in simple business methods and keeping accounts.

Many of our students have been very successful in obtaining positions with some of the best firms in New York and other cities, and the reports received from these firms assure us of the satisfactory work done in their establishments. A few have become trimmers, many have small establishments of their own, while others do private order work.

HOME COURSE.

A student desiring to do some home millinery, and not caring to give up all her thought and time to the subject, will find two other courses, one with and one without the drawing, each class meeting two half days a week. In these classes

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the aim has been to teach the making of such hats as are worn at the season in which the class meets, rather than to cover the whole ground. One of the changes recently made is to allow the students to try making new styles in such materials as can be worn and put into immediate use, even though the materials are expensive and perishable. The inspiration of doing something that really is of use has been found as interesting and helpful with adults as it has lately been discovered to be in the case of children. We are all held by the joy of making something which we believe to be of use and also beautiful.

Many interesting materials have been collected by the instructors, given by manufacturers interested in the school, for illustrating class talks upon the nature of the materials used. The processes of making felt hats, straw hats, silk, and other articles, may be seen in the cases in the hall of the department.

During the past fall season the students have made a great many pretty hats. It is quite remarkable how a copy is made from memory of something seen in a book or shop window, and designs produced of ideas taken from parts of several hats, or suggestions given by the instructor. An exhibition was held on December 12, when about seventy-five of these results were shown.

Hats sketched in wash, by Florence A. Abel, Costume Design Class, third year.

It may be of interest to state that during the year 1900–01 there were thirty-eight students in the two Full-Day classes, two hundred and twenty-three in the day classes for home use, and fifty-two in the evening classes in millinery. *S. Ella Huntington.*

Drawing in Connection with Dressmaking and Millinery.

EVERY day the fact becomes clearer that the best dressmaker and the best milliner must be artists, as well as masters, of the technique of their profession. I say profession thoughtfully and conscientiously, feeling that the business of making man as beautiful as utility and fashion will permit is as necessary and ennobling as settling the quarrels and altercations of men, filling their teeth, or prescribing for their aches and pains. The world recognizes this practically, if not theoretically, by the time and money and amount of self-activity put into the consideration of

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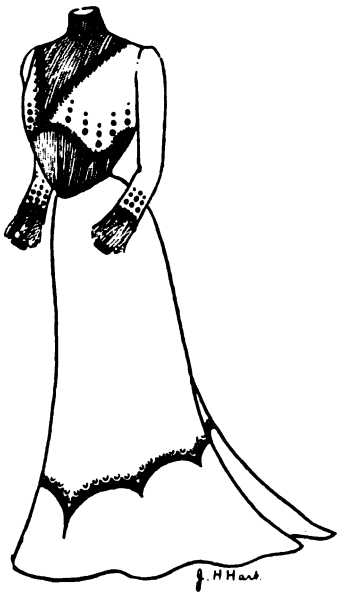
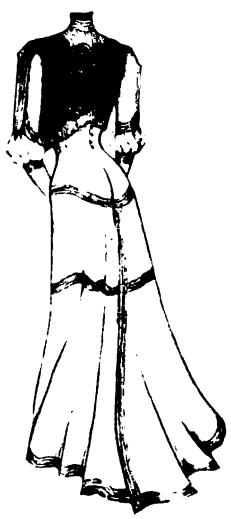


Original design suggested by butterfly, by Jennie H. Hart, Full-Day Dressmaking Class, first term. Ladies cloth with velvet trimming, the disks couched on with silk, mousseline vest.

being properly clothed. Our part in this struggle for clothes may not be a great one, but we are trying to do it intelligently, bringing to it all the activity and love of the best that we can command.

Our Full-Day Millinery students study the combining of colors and textures in water color, selecting their forms from fashion books and getting suggestions for original combinations of color from pictures, rugs, butterflies, leaves, or flowers. At the same time they are trying five-minute sketches from real hats, and later take up the drawing necessary to improve in this direction, including the study of the cylinder, sailor hat, bows, feathers, velvet, and silk. We study composition of line, mass, and form in relation to the head. Then we try on colors and select those that are most becoming. These are the points we try to cover in four months, giving four hours a week to the work.

There are so many shades of human opinion about the graceful and beautiful that it is difficult to be confident that one is right as to what is good in clothes. It was gratifying lately to hear the following remark on seeing a hat made by one of our students for a woman whose lines and masses are not all that could be desired, and necessitate study to make the best of them. An artist saw her in this hat, and after conversing for a while on other matters she said, "Do you know, the lines of that hat are just what are becoming to you!" Many others expressed approval, though not stating so clearly why they approved. If we could give each student the feeling that she knew just how to go to work to make every woman appear her best, as was



Design for gown, by Laura Stuthoff, Dressmaking Class, fourth term.

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done in that instance, it would satisfy us.

The Full-Day Dressmaking students gain ability to select, adapt, and draw a gown carefully. We also make five-minute sketches. They help the student to perceive and grasp quickly the essential points of a gown, and give her command over herself and her possibilities. We study combinations of hue and texture in water-color and becomingness of colors. We design gowns for special individuals so as to gain practice in adaptation.

By monthly exhibitions of fine paintings, photographs, pottery, basketry, and other arts and crafts, the Institute gives every student a chance to grow in appreciation of good form and color, and to broaden her knowledge of the best work being done to-day in the world of art. We have gone to the butterflies for suggestions of form and pattern, as well as color, and some of the gowns resulting are graceful and original in design. The one shown is by a student who had studied for two months only. We are giving more attention to ideas and design, and less to art technique, than we have for some years past. Our aim is to dispel the student's fear of trying her own ideas and tastes, to show the sources from which to gain suggestions and inspiration, and to find some reasonable guides for selecting what is beautiful in the march with Dame Fashion. Some people always extract beauty out of every fashion as it comes, but many are prevented by it from discovering their own possibilities for charm.

The Normal Domestic Art students have a longer course in design, including the drawing for both dressmaking and millinery, besides blackboard drawing of diagrams for sewing. Before they finish they must be able to make a good original design for a street gown in pencil, and a house gown in color. Also a good hat in pencil and one in color, which they have themselves designed. The treatment of different types of head and figure and finding the style of hat and gown that is most becoming have formed a large feature of the work this year. This seems to be what the world of clothes most needs, and we shall not mind if we do not

Original design for artistic evening gown, by Corisande Winslow, Normal Domestic Art Class, second year.

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Study of hat in relation to head. Pencil sketch by Corisande Winslow, Normal Domestic Art Class, fourth term.

attain quite so high a technical standard of work with pencil and brush as in the past if we thereby gain something toward making the best of the individual. Enthusiasm for the work comes to the student as she sees the opportunities offered by it for making the life of the average woman somewhat more interesting and beautiful and herself more capable to cope with circumstances.

The field for Domestic Art is limited only by the number of those desiring improvement in these so-called necessities of life. Pratt Institute was the first school in this country to discover and work in this field, striving to unite, if possible, the scientific with the beautiful and the practical in dress. Ideas have come from gifted individual workers in this line, and we have been particularly fortunate in being associated with a Department of Fine Arts that is appreciative and helpful, taking us seriously and approving our work or criticising us in a friendly spirit. We have been held to the practical by the fact that good material is so expensive that all our gowns are made to supply a demand, and that all are studying for professional or home work.

A wise architect once suggested that all appearances are affected and judged by comparison with their surroundings; so it is not desirable to shock others by great contrast in our clothing with what is being worn around us. On the other hand, does not subservience to fashion mean that we are afraid that our tastes and person are not worthy the respect and interest of others? When every woman discovers that she has individuality and worth, she will be happy to express herself in her clothing. Is that day far in the future?

Edith S. Sackett.

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Sewing.

SPECIAL CLASS IN SEWING.

ORGANIZED in September, '91, meeting for a three-hour session four mornings a week. Instruction in sewing was one of the first things given to women in Pratt Institute, several classes being organized in '88; but five years later the desire for a thorough course in sewing had spread so far that many pupils came to us from distant cities to devote their entire time for several months to such work, not a few fitting themselves to teach sewing in various schools. The Special Class was then offered to these pupils.

The work consisted of the small exercises, teaching all kinds of hand sewing, with talks on weaving and the manufacture of the needle, thimble, scissors, and textiles used, followed by the draughting and making of undergarments, with instruction in regard to the selection of materials and trimmings, and finished with the making of an unlined dress, dressing-sacque, and baby dress. The entire course was completed in six months.

The number of pupils entering the Special Class in the years following increased to twenty-three for one year, many taking the course to become teachers, until the Normal Course in Sewing was organized in '95. In '94, another grade of work was added to the course for the making of fine baby clothes and children's dresses. The draughting of more garments was required, and very complete note-books were written by the pupils. This additional work made it necessary to have more time to complete the course, and the sessions were lengthened to four hours. Each pupil was required to make two garments at home without supervision. These had to merit the approval of the instructor before the Institute certificate was awarded to students who satisfactorily completed the full course. The garments and dresses were often made for the friends of the pupils, and, being shown at the annual exhibitions, attracted so much attention by their daintiness that we were urged to take orders for duplicates, and to give the names of young women who could and would do such work for pay. From our experience, it would seem that only women of refinement in birth and home training, with a fair general education, can become skilled workers in these dainty garments and in household sewing.

The demand for sewing teachers, created by the introduction of sewing as part of the instruction taught in the public schools, increased, for a time, the number of pupils entering the sewing class, as the technical certificate of the Institute qualified its holder to take the public examinations for a teacher of sewing without having taken a normal course. As the standard of professional training for instructors of sewing became higher, a full normal course was required, and in the fall of the present school year the Special Class in Sewing was reorganized to meet the demands for trained seamstresses.

Eunice R. Campbell.

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FULL-DAY COURSE IN SEWING.

For some time past there has been an increasing demand for competent needlewomen. The question has many times been asked, "Are there no means by which our girls may be trained in plain home sewing?" Young women who seek to earn a livelihood with the needle too often are wholly incompetent to even make the simplest garments without assistance.

The Department of Domestic Art, realizing that it had done much for the needlewoman in the past, desired to open the way for young women to become more thorough and self-reliant as seamstresses by giving them an opportunity to work out in class, with less and less of the teacher's supervision, orders for household linen and garments, such as had once been made under careful direction. It was deemed advisable to organize a Full-Day Sewing Class, in which, by giving three terms of three months each, working daily from nine o'clock in the morning until half past four in the afternoon, a girl might become quite proficient in the general sewing of the ordinary household.

The class opened in September with a full enrollment which far exceeded the anticipation of the department. The object of this class is to fit a girl to do all kinds of sewing which might come into the hands of a seamstress; or if she has talent and wishes to continue the work and fit herself to be a dressmaker, she has gained a good groundwork upon which to build.

The course begins with the simple stitches and advances rapidly to the making of table linen, curtains, etc., followed by garment making, women's and children's underwear, taking measurements and draughting patterns. The students are much interested in draughting, as it gives them an opportunity to exercise their judgment and prompts them to solve greater difficulties as they advance. When they leave the underwear, they are led into the mysteries of the shirtwaist, which they are taught to plan, draught, and make.

To encourage the student in her work, and give self-reliance, orders are taken for all kinds of under-garments, shirt-waists, and any other work which they are capable of doing, they being responsible for work done, and receiving a small remuneration. One day each week is set apart to do the family mending, which is supplied by the class, or brought in by students of the other departments. When the student becomes more proficient with her needle, the finer work will be taken up, such as the dainty finishings of infants' wear, fancy stitches used on children's clothing, feather-stitching, hemstitching, and flannel embroidery. A student showing particular talent in any one direction and with a desire to make that work a specialty will be given the opportunity to cultivate it as far as possible.

The students are given the advantages of the gymnasium two hours a week, and three hours a week are devoted to drawing, which comes in direct line with their work.

M. B. Landon.

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DRAWING IN CONNECTION WITH THE FULL-DAY SEWING.

The introduction of drawing in the Full-Day Sewing Course is an entirely new experiment. We intend to keep all the work of this class thoroughly practical, applying it directly to the garment-making, and believe that this will help the student to become more competent to plan and make the garments which, as seamstresses, would be given into their hands. To teach them to consider the lines, depth, and width of trimming, embroidery, or lace, in proportion to the size of the wearer and the garment to be made, will certainly be of value to them in their work. We study the child's figure and little dresses, that the student may see the beauty of the little roly-poly piece of humanity and realize that we desire to keep the children childish in their dress and not to make miniature women of them; to impress on their minds the fact that we wish to accentuate rather than to obliterate youth.

Using water-colors we find the easiest and best way to show the student which color and color schemes, proportion, and distribution of colors will be suitable for the child, the girl, or the woman. Later we will take up the more advanced work, such as the designing of shirt-waists and simple dresses of washable materials, making a particular study of the awkward age of girls, and try to discover what styles and lines are most becoming to their changing figures.

E. S. Lovett.

HOME COURSE IN SEWING.

In these days underwear is one of the departments in dress most attractive to women. Pretty underwear never fails to appeal to women with dainty tastes, and it has called for superior hand-work within a few years. The home course in sewing is arranged to meet the needs of the women with these tastes, and classes are organized in September, January, and April, meeting for two hours a lesson, twice a week. Instruction is given in all stitches necessary for hand-work, in machine stitching, in draughting by measurements, as well as in the use of patterns. Talks are given on color and textiles, to cultivate the taste in the selection and buying of materials and in their use.

The making of underwear is started as soon as a student learns how to do the simple hand stitches and can run a machine. Drawers, petticoats, dainty underwear are made, and, as the student advances, more fancy underwear is attempted, as night-dresses, elaborate short and long petticoats, children's dresses, and baby clothing.

Shirt-waists are also made in the advanced classes, but the making of muslin, pique, and other washable dresses has now been transferred to the dressmaking classes, for, as any observing person must be well aware, the cutting, fitting, and hanging of these dress-skirts now requires the skill of one who makes a specialty of dressmaking.

L. I. Brewer.

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CHILDREN'S COURSE.

During the past two years several changes have been made in the children's course in sewing. Recent experiments and study by those interested in educational hand-training have led to the conclusion that young children, after leaving the kindergarten where their little fingers have had opportunity to begin to work with various materials, should be allowed to continue using their fingers in interesting constructive work, but that the things made should not at first require too fine and exacting adjustment of the young muscles and eyes. Hence, the knotting of pretty colored pliable cord or string in the simpler ties, to make things which the children can use either as gifts or for themselves, has been introduced at the beginning of the sewing course. The knotting string work teaches them to blend colors, strengthens their fingers, and aids them in learning to measure distances with the eye, and, as children are naturally quick, they soon begin to make little things such as chains for fastening their scissors, or a necklace for their dolls crochetted with cord, using their fingers in place of the needle. The child works better when the article she intends making can be used as soon as completed, such as small hammocks, bags, or butterfly nets.

Hand weaving in a simple frame of wood or upon cardboard is part of the work, and much useful knowledge of the weaving of textiles is gained. Many simple articles woven of raffia may also be made, if there be time, without attempting regular basketry. In weaving rugs, blankets, and mats for a doll's house, the child frequently will work out her own pattern or design with great pleasure.

After the string work, the threading of the worsted needle, use of thimble and scissors are taught, different stitches are made on burlap, using several colors of Germantown wool, making another kind of mat. These stitches are afterward applied on muslin, using colored cotton, the child making her own design and using the running stitch. This can be used as a doll's bed-spread. As the children's fingers grow stronger, more difficult work can be undertaken, but in every case the exercise should be made to represent something real to the child. After learning to hem, a pillow-case and sheet for a doll's bed, and a small apron, may be made.

As the child advances, she is taught to overhand, stitch, darn, hemstitch, and patch. These stitches she applies to a small bag, and the making of a doll's flannel skirt, hemstitching and fringing a small towel, and during the last term she cuts and makes one or two garments for her doll or herself. The little children this year made a few articles as Christmas gifts. One little girl made a hairpin basket. Others knotted string bags of two colors which were quite pretty, and one made the bed linen of a little cradle for her sister's doll.

Eunice R. Campbell.

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Full-Day Course in Costume Design.

THERE is an ever increasing demand for good costume designers, and a marked improvement in the rendering and designing of gowns has been made in the last ten years. The figures and gowns in some of the old fashion-papers, compared with the best designs now published, show how great has been the improvement in good lines in the figure and in gowns. The styles of the past in costume have in no previous age been so well adapted to meet the needs of the present. Still there is certainly room for improvement, for the transition from the wasp-like waist of the former French ideal to the figure of the normal woman is not easily made.

The Liberty Studios in London, organized by the Liberty Manufacturing Co., have lately issued a most charming book of costume designs. The figures are graceful and modelled after the best classic ideals. Often in the so-called reform gowns we see designs fit only for house gowns, but there is an opening field for designers who wish to fill the growing demand for sensible gowns suitable for various occasions.

In the Department of Domestic Art we have a class of advanced students superintended by experienced dressmakers who fill orders for gowns. They have been most successful in designing and making artistic princesse gowns, as well as in satisfying the general taste for the gown made à la mode. Gowns and hats made in the department are frequently exhibited.

Pratt Institute presents remarkably fine opportunities for the study of

Original design in pencil and wash for tailor-made gown, by Frances Lyons, Costume Design student, third year.

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costume design. The students spend five mornings and two afternoons in the Department of Fine Arts. The work from cast, portrait, and life under Mr. Prellwitz and Mr. Paddock occupies the mornings, the afternoons being spent in illustration work in pen and ink, wash and crayon, under Mr. Beck, in water-color with Mrs. Shaurman, sketching with Mr. Froelich, and design and composition with Mr. Dow.

Monday, Tuesday, and Wednesday afternoons are spent with Miss Seymour in work especially applicable to the designing of costumes.

Original design for princesse gown worn by uncorseted figure, by Jane O'Brion, Costume Design Class, third year.

The studios are large and well lighted, with a convenient stand for models. The costume design studio is well equipped with a large glass case where the newest gowns and hats furnished by the Domestic Art Department are shown. The students have the best fashion magazines and papers at their disposal, and the use of the valuable art reference collection of the Pratt Institute Free Library. Several afternoons are spent in looking through the pictures and books appertaining to the history of art and costume, and studying the best examples of recent illustration. The loan collections exhibited in the Art Gallery are also a source of pleasure and instruction.

In Miss Seymour's class the costume design students work first in pencil from the figure, studying proportion and line. They then learn to draw the gown form quickly and gracefully. Gowns are sketched from models and different textures, such as cloth, silk, velvet, lace, and chiffon, being represented first in pencil, then in ink, wash, and water color.

The students visit the large establishments of New York and Brooklyn, and make sketches from memory of hats and gowns. John Wanamaker, of New York, and Journeay & Burnham, of Brooklyn, have courteously given permission to the students of the costume design class to sketch many of their models for practice.

In the second and third year we employ costumed models, the work being done from life in pen and ink,

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wash, and water-color, and original designs are also worked out.

The beautifully illustrated lectures on the history of art by Mr. Perry, Director of the Department of Fine Arts, are a source of general culture and information, and are greatly enjoyed by the students. A course of ten lectures on historic costume by Miss Sackett, Director of the Department of Domestic Art, introduces the students to the style of dress worn by the different nations during the successive periods of their development. These lectures are illustrated by slides of reproductions of portrait and genre pictures. These lectures are most interesting and a source of much suggestion in design.

Students desiring to take the course in costume design must show special ability for this work, and submit sketches which will make it possible to place them according to their ability. Students who have had satisfactory previous training will be able to enter the second year class.

The openings for positions are wide. Illustrators are needed by all the fashion magazines and many daily papers, while all the large shops employ artists to sketch their imported gowns. Dressmakers also use original designs and copies of imported gowns, instead of referring to fashion plates. Most of the advertising firms have special artists who devote their time to costume work.

Although, so far as we know, Pratt is the only Institute where costume design is taught as a profession, several classes in costume design have recently been started in connection with domestic art schools, and we have had special students from New York, Boston, and Rochester, who wish to introduce the teaching of costume design into these schools.

Design for black velvet gown and hat, by Caroline D. Wright, Costume Design Class, third year.

It is extremely interesting to watch the growth of the work, and to find a new avenue of art which can be made practical, as well as beautifying and helpful in everyday life.

Celia B. Seymour.

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Drawings by Grace Kelton, Costume Design Class, first year.
Hats designed and made by Millinery Class.

Some of the Powers Gained by Manual Training for Girls in the High School during the Sophomore and Junior Years.

SEWING, dressmaking, and millinery develop the power to think and "to do," the power to produce something which expresses the pupil's self, her life, and character, and stimulates original thought and action,—and behold, a creation in the form of a gown or a hat! What does this mean? What must be accomplished before the creation is complete? It means that the fingers must do the bidding of the will after well-developed plans. Mason tells us, in his book on "The Origins of Invention," that "The people that cease to invent cease to grow. Men were placed on earth to dress and keep it, to possess and subdue it. Through this wonderful faculty of invention, the race has fulfilled its mission."

Emerson says, "What a plastic little creature man is! So shifty, so adaptive! his body a chest of tools, and he making himself comfortable in every climate, in every condition." This adaptability and the creating of exercises which employ these human tools give the power "to do." It means that power is being developed through *interest*, as the exercises are so planned that the pupil has a choice of articles to be made and of the materials and designs used. She *wishes* to make the things that touch her everyday life, and so make her life fuller and better. The *imagination* is trained while planning and designing and seeing the would-be result with the *inward eye*. *Judgment* is trained in selecting the material and design most desirable because of its fitness

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for the time and occasion. *Memory* is exercised in recalling past experiences and applying them. *Self-reliance* and originality are stimulated in thinking and working out one's ideas. *Appreciation* of what work is is gained after having accomplished work. *Self-control* and *perseverance* are used in applying one's self to finish a task with credit, in spite of all its difficulties.

There is a realization of the necessity for accuracy, patience, care, neatness, and a light touch and agility in handling material, if the true self is to be expressed. No one would be willing to admit that careless work was a true expression of herself. Then there is a sense of order and system which one grows into while working with a method. There comes also a love of work and humanity, and of beauty and right; cheerfulness, enjoyment, and altruism while working with and doing for others; and sometimes a discovery of one's self.

The health of body and mind is improved when it learns what is meant by forming correct habits of body and mind, and so to train the motor center of our brains that right actions shall become habitual. There is a necessity of *doing*, in order that the motor brain tracts will have nourishment and exercise. Halleck tells us that more blood carrying nutritive material flows to cells that are exercised than to those that are not; hence the necessity for exercise of all the brain tracts, both sensory and motor alike. He says that if any life is to be rich in enjoyment, the principle of contrast must be employed. We must take side excursions into a land of pleasure. Which adds another reason for manual training in the high school, as the work is a contrast to the purely intellectual work, and also an "excursion into the land of pleasure." Happiness is an important element in moral development.

Froebel says: "God created man in His own image; therefore man should create and bring forth like God. The spirit of man should hover over the shapeless, and move it, that it may take shape, and form a distinct being and life of its own. This is the high meaning, the deep significance, the great purpose of work and industry, of productive and creative activity. We become truly God-like in diligence and industry, in working and doing, which are accompanied by the clear perception or even by the vaguest feeling that thereby we represent the inner in the outer; that we give body to the spirit and form to thought; that we render visible the invisible."

Jane F. Brett.

Physical Training for Women.

THE interest in physical education for girls and women has grown wonderfully in Brooklyn since November, '90, when the first classes for instruction in the Delsarte system were offered to women at Pratt Institute. Mrs. Frances D. Streeter was the instructor, and the students numbered twenty-five. This was the only school in Brook-

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lyn offering such classes, and they grew so rapidly that in January, '93, we had recorded in our enrollment one hundred and twenty-six pupils. These classes were first held in the reception room of the Institute, which was then on the third floor. When the Pratt High School was built in '92 and a large room in the basement of that building was provided, light apparatus was procured for the use of the girls in the High School, and for the women of the Institute who chose to enter special gymnastic classes. This gymnasium and the instruction were under the direction of the Department of Domestic Art, and it has the honor to be the first which asked the Trustees to provide for classes in physical training in Pratt Institute.

In September, '93, an evening class for women was opened in the gymnasium with a class of fifty-eight, taught by Miss Helen Frothingham, who was a graduate of the Anderson Normal School, and at this time the Kindergarten Normal Training Class of twenty-seven also formed its first class in physical training as a part of its regular course. The High School girls numbered fifty, and in the special day-classes for women were enrolled sixty-nine. Miss Jessie Lines, a graduate of the Anderson Normal School, was the instructor for the High School and Kindergarten classes, and Mrs. Emily M. Bishop, of Chautauqua, was a most inspiring teacher of the women's classes in the Delsarte system. About this time considerable Swedish apparatus was added to the gymnasium equipment, and the High School boys were instructed by a man after school hours in light gymnastics, using the same gymnasium.

The next fall the twenty-one students in the full-day classes in dressmaking and millinery were admitted to the gymnasium without fees, as the High School and kindergarten classes had been previously, a privilege most important for women who are learning to clothe the human form. These classes continued to increase steadily, and in September, '95, Miss Martha Garside came as an assistant instructor. In January, '97, we organized a Saturday morning class in physical training of thirty-seven children, with work adapted to their needs.

The following summer the new gymnasium building was built and equipped with the best possible facilities for needle-baths, swimming-pool, dressing-rooms, running-track, and apparatus both heavy and light. Naturally there was a large increase in our classes in September. The evening class grew to eighty, a Normal Domestic Art Class of eleven, and three of the Normal Domestic Science students became pupils in the day classes, the total enrollment of the classes being two hundred and sixty, to which must be added one hundred and one High School girls.

Two morning classes for ladies were organized this year and ably instructed by Miss Margaret D. Fisher, who came to assist Miss Garside, the latter having taken Miss Lines's place, who resigned to be married. Miss Fisher was a graduate of the Boston Normal School of Gymnastics. The women students of the Art Department now became much interested in gymnastics, and almost filled one of

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the afternoon classes which had forty-four enrolled. The total enrollment for the year was four hundred and nineteen.

That year, in September, Miss Elizabeth MacMartin, a graduate of Dr. Sargent's Cambridge School of Gymnastics, was engaged to give lessons in swimming, and thirty-four women and girls each received a course of ten lessons. The swimming-pool is so well made and cared for, and Miss MacMartin is such an excellent instructor, that lessons in swimming have been given each year to a large number of women, girls, and young boys. In the year '98–'99 the number was one hundred and six; last year it reached its highest mark, one hundred and twenty-two.

Since the opening of the new gymnasium the classes for women, girls, and children have steadily increased until the lockers, dressing-rooms, and baths have really been overcrowded, and during the year just ended six hundred and twenty-three were enrolled.

The methods of instruction in these classes have always been eclectic, beginning in the early days with free movements without apparatus, the Delsarte system. Under Miss Frothingham we added the light apparatus of the German school. Miss Lines, who was a student of Baron Posse of Boston, introduced the Swedish system, and Miss Garside and Miss Fisher developed it until it formed the major part of the work as given during the past few years. No very heavy apparatus work has ever been given to girls and women in the Pratt Gymnasium, the policy being to avoid all risks of strain or accident and to encourage a healthful, all-round physical, mental, and moral development rather than athletic power. Physical examination and records of each student admitted have been required, as well as a certificate of the family physician. Thus, so far as the large numbers in the classes made it possible, each member was personally known to her instructor, and no serious cases of injury have occured. The divided skirt gymnasium dress has been required, and the Domestic Art Department designed, made patterns, and took charge of the making of gymnasium suits of dark blue serge. Miss McJunkin was responsible for this work for a number of years, but when the new gymnasium was opened and the classes grew so large, it was found necessary to arrange with a regular tailor to make the suits.

Another noteworthy fact is that all the instructors, without exception, have been women of culture and refinement, whose influence on the bearing and manners of the young women has been refining instead of roughening, as is sometimes the case. Each year, as we have seen many of the students in the High School and Normal classes, where the courses were four and two years, grow stronger and better able to endure the strain of their mental work, we have felt repaid for the long months of work and watchfulness in the gymnasium. In the evening class, and the morning class for ladies, too, many of the members have returned to us year after year, and their physical improvement has been marked. During the past year, more of the

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regular students of the Institute have used the gymnasium, the pool, and the baths. Miss Garside returned in the fall from her year's study at the Boston Normal School; Miss Fisher resigned, and Miss Marion Hunter and Miss Punch, graduates of the Boston Normal School of Gymnastics, assisted Miss Garside; Miss Hobson, our accompanist, resigned, after years of sympathetic work, to devote herself to music teaching, and Miss Ethel Richardson, the assistant, took her place and also the charge of the office work of the gymnasium.

Much interest and enthusiasm were shown and good work done during the year by all of the classes, and considerable time was given to games in the gymnasium. There was an enthusiastic contingent devoted to basket-ball. During the fall and spring terms the High School classes and many of the others had their lessons on the field, playing tennis, volley-ball, and tether-ball. Tennis was as usual the favorite, and when the large classes were on the field all the courts were occupied. Tether-ball proved a success for the "left-overs," and has been enthusiastically played by both boys and girls.

With the opening of the new year, July 1, 1901, Miss Garside assumed full charge and responsibility of all the gymnastic work relating to the women, girls, and children. The work has grown to such proportions that your Director of the Department of Domestic Art could no longer give sufficient time and thought to it, and after five years of devoted work in this gymnasium and many years of study along these lines, Miss Garside is fully prepared to carry on and develop this department.

It is therefore with mingled feelings of satisfaction and regret that, looking back over ten years of most interesting work to advance the physical health and grace of the women of the Institute and of Brooklyn, the Department of Domestic Art resigns its charge, and sincerely thanks the Trustees for their unfailing interest and generous material aid during those years now past.

Harriet S. Sackett.

Letters from Normal Graduates.

Pittsburg, Pa., December 23, 1901.

I AM pleased to give you an account of our work in the Central Young Women's Christian Association of Pittsburg. Full courses, covering about one year and a half in sewing, dressmaking, and millinery, are offered, and this year basketry has been added to our curriculum. We have an enrollment of one hundred and fifty-two students, of which the larger number are in the sewing classes.

Students come to us from all stations in life. A large number of those attending the day classes are prominent in the social circles of Pittsburg, while the evening classes are made up mostly of business women. Many are taking up the work for their own personal use, for the utilitarian value that it will be to them;

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others, as in the millinery classes, believing that millinery comes near to the fine arts, are pursuing the course for the educational value which they will derive from it; while a fair percentage are studying for professional use, especially in the dressmaking and millinery. Three of our last year's graduates are taking a normal course in Domestic Art at Drexel Institute, finishing the course in one year on account of the work done with us.

An interesting feature of our work is the Saturday morning sewing-class of colored children from twelve to sixteen years of age, who are training to become seamstresses, of which there is great need in Pittsburg.

Besides the students who come to us, we have extension classes at the South Side Branch in sewing and dressmaking, classes in sewing and basketry in several of the churches, orphanages, and factories. The largest and most interesting are those held at Heinz's pickle factory. Mr. Howard Heinz takes an active interest in the welfare of all his employees, so much so that he has engaged a college graduate to spend all his time in the forming and building up of clubs, and the carrying on of class work among the men and women in his factories. *Elizabeth E. Billard,*
Class of '99.

East Orange, N. J., Dec. 27, 1901.

I am now in my third year of teaching sewing in the East Orange Public Schools. We have seven school buildings here, and in all I have six hundred pupils. I spend either a day or part of a day at each school, as the need may be.

Theoretically, our work is planned along lines of general educational development; practically, effort is made to have each model one that will be of actual use to the child. We have forty-minute periods once a week, and no home work is required.

In our High School the work is elective, machine-work being added to the hand-sewing of the grammar grades. That the work is popular with the girls is shown in many ways, chief of which is their willingness to come before school hours, and stay after, that they may have extra help given them. Then they do take their work home and work on it. An encouraging feature to me is the interest their mothers take in their work, a number of them speaking of how much the girls enjoy the work, and how well they do at home. One mother exclaimed, after viewing a class of twenty-five children working buttonholes, "Oh! how do you do it? So many of them, and so short a time!" *Ann R. Annat,*
Class of '98.

New Orleans, December 20, 1901.

Since graduating from Pratt in June, 1900, I have had charge of the Sewing Department in Straight University, New Orleans, La., a colored school under the auspices of the American Missionary Association. Straight University is perhaps not as well known outside its field of labor as some of the other schools of the Association, as Fiske or Tougaloo, but it is one of the leading colored schools in this city. Straight offers instruction in the usual grades of primary and grammar studies, also in

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high school, college, normal, and theological departments.

We take especial pride in the industrial department. For the boys there is a four-years' course in woodworking and carpentry, after which they are taught draughting, mechanical drawing, and architectural work. In the sewing-room sewing and dressmaking are taught, the course for the girls extending over five years. There is also a class in millinery for the senior and junior high school girls, which seems to be a very popular department, and the work is intensely interesting. The greatest obstacles to be overcome are inaccuracy and carelessness, and one feels that there can be a great deal of work done in this department, aside from the cutting and making of garments.

There is also a well-equipped printing office, where the advanced students are taught printing. The officers and teachers of the school are all keenly alive to the value of industrial work, and anxious to see the present facilities extended. We are now making efforts to start a cooking school, in which a great deal of interest has been manifested. A suitable room and outfit could be provided without a great expense, and we are trusting that our northern friends will come to our aid in this great work, as they have already done so many times.

Anne L. Hazen,
Class of 1900.

Department Notes.

IN December last Miss Margaret Davis Fisher was married to Mr. Charles D. White, of Philadelphia.

In January, '01, Miss Caroline T. L. Burgess of '92, and Director of classes in millinery at Drexel Institute, was married to Mr. Frederick A. Bagg, of Troy, N. Y.

Miss A. Maude Williams of '95 was married in June last to Mr. Frank J. Stinson, of Brooklyn.

Miss Helen Crooks, of New York, has given three lectures, fully illustrated by exhibits of processes and slides, upon Early Spinning and Weaving, Wool, and Flax, in the Assembly Hall.

The Domestic Art Alumnæ Association held its annual meeting on Saturday, June 8, 1901, in the Faculty Room of the Institute. Owing to the illness of the President, Miss Dickman, Miss Smith, the Vice-President, occupied the chair. After calling the roll the Chairman made an address of welcome, at the close of which she read the changes in positions of the former graduates. The Treasurer, Miss Woodruff, then read her report, which was approved, following which the Secretary's report was submitted by Miss Simonson and likewise approved. After some discussion regarding the forming of a constitution, of which a rough outline was made, it was decided to place the matter in the hands of a committee then appointed by the President to draw up in definite form and submit to the President at some future date. Committee: Mrs. Annat, Miss Chick, and Miss Williams.

The meeting adjourned at one o'clock for luncheon, which was served in the restaurant and to which all of the Department instructors were invited, covers being laid for fifty. This afforded an opportunity for social intercourse and the renewing of old acquaintances. After luncheon business was again resumed and attention was called to the improvements in the course, and examples of work were shown. Of the fifty-one members of the Association, twenty-eight were present, many of them coming long distances.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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DOMESTIC SCIENCE NUMBER

PRATT INSTITUTE MONTHLY

March, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X | March, 1902 | Number 5

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., an the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

CONTENTS.

The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume X MARCH, 1902 Number 5

Annual Report Of the Department of Domestic Science.

TO THE TRUSTEES, GENTLEMEN:

THE Department of Domestic Science came into being to render potent in life the belief that mal-nutrition, disease, mal-adjustment to life, inefficiency in work, unrest, needless exhaustion, and many similar human ills would be lessened, if not dissipated, were the principles of nutrition and other laws of life to be applied wisely to every-day living. Since a subconscious or conscious knowledge of a principle is necessary to any application of it, and a conviction of its importance and worth essential to voluntary compliance with it, it was thought desirable to give instruction in such subjects as would enable women to administer intelligently and wisely the affairs of the home. At first instruction was given in the practical work of the home, and then in the natural science and art underlying such work. This combination of subjects is now designated as Domestic Science.

The present work of the department is an outgrowth of ten years of normal work and fourteen of technical. In the main it is but a realization of the original conception of the possibilities of such work.

The epoch-making changes in its history all reveal as their impulse the desire to make the work more earnest, helpful, and far-reaching. When the department was opened in January, 1888, with classes in cookery, sewing, dressmaking, and millinery (the courses consisting of eight to twelve lessons of one and a half to two hours each, at tuitions varying from one to five dollars), it was with the hope that such preliminary work would create, as it did, a demand for advanced courses. From the first the classes were so well attended and the work so deeply appreciated that it soon became possible to extend it.

For several years, however, all the work was purely technical in character; that is, it aimed primarily to enable the student, through acquaintance with material and method, to produce a creditable result in the medium used. Incidentally personal training of a high order was afforded in observation, judgment, resourcefulness, muscular receptivity, control, and expression.

As cookery developed into Domestic Science, seeking scientific ex-

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pression based upon scientific training, and sewing into Domestic Art embodying training in art, the need for thoughtful development of the courses, and the difficulty of directing a large and rapidly growing department dealing with different types of work, resulted in the formation of two departments.

ADVENT OF THE NORMAL COURSE.

The differentiation in the technical work became complete, but cookery and sewing were both incorporated in the normal course in Domestic Science when it was inaugurated to meet the demand for teachers of these subjects. It has been deemed wise to maintain this combination at least as long as these subjects are so imperfectly established in the school system as not to require separate teachers. The following statistics indicate in how far this has been achieved. Out of ninety-nine positions being filled to-day by women who chose Domestic Science as a major subject and Domestic Art as a minor in their training, in seventy they are required to teach both cookery and sewing, in twenty-five cookery, and in four sewing. (See p. 136.)

PROFESSIONAL FIELD FOR GRADUATES.

Women versed in the work of the home and trained in the subjects underlying the different phases of its life are sought as instructors in cookery, dietetics, hygiene, sanitation, household economics, laundry-work, sewing, braiding, knotting, netting, knitting,weaving, basketry, and other forms of hand-work. Women of culture, intelligence, and executive ability who are prepared to teach such subjects pedagogically are called to positions in public and private primary, grammar, and high schools; colleges; training schools for teachers, for nurses, and for servants; young women's Christian associations; bureaus of charity; settlements; missions; orphanages; and reformatories. Another form of the need to be considered by the training school is showing itself in the demand for intelligent, skilled, and experienced matrons, housekeepers, purveyors, and caterers for institutions, such as schools, colleges, hospitals, and hotels. For positions representing all of these types this department has been and is being asked to nominate qualified candidates. On page 133 are indicated typical positions held by graduates and advanced students of the department.

Women who have received training in this department are to-day teaching an aggregate of eleven thousand four hundred students, varying in age from six to forty years, exemplifying all degrees of training and intelligence and presenting all educational and economic problems. The number of students instructed by one teacher ranges from thirty to five hundred and ninety; the subjects taught from one to all of those named above; the positions held from that of an assistant to a supervisor of all the work of a city or a director of a department or school of Domestic Science and Art; the salaries received from $300 or $400 with (or even without) the living expenses to $1400 or $1500. In a few instances much

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higher salaries are paid to able women of college, university, and professional training whose experience enables them to render exceptional service.

Ten years ago all such work was very remunerative, but as the number of those trained for it increases and it becomes an integral part of the school system the salaries offered approach those of teachers in general. Even five years ago the average inexperienced woman of fair professional training could readily command a salary of $1000 to $1200, whereas to-day the promising graduate of far better general and professional training who has had sufficient experience to test her ability is accounted fortunate if she receives, the first year after graduation, $400 and her living expenses. However, she invariably becomes invaluable and is eagerly sought if she accepts at first any available position and considers it an opportunity to adjust herself and her knowledge to those who are to be taught and their need. It is then that she is proffered all inducements in the form of emoluments and even freedom in her work.

It is such women who will mould the future of the work. Their interest is due to an innate belief in the efficacy of the instruction which they wish to prepare themselves to give. They are not especially concerned about the possible brilliancy of their careers. They realize that those who go before mankind as teachers must possess, in addition to knowledge, earnestness of purpose and profound faith in the worth of the work in which they are engaged. They see, perhaps dimly at first but later with clearness, that the problems in woman's life must to-day be solved by training outside of the home, and that certain fundamental physical, intellectual, and moral capacities can best be developed through so-called handwork. Hence it is to this that they wish to bend their energies. They receive encouragement from parents who are glad to feel that their daughters are prepared to be self-sustaining.

Despite the facts stated, namely, that the salaries are lower than formerly, the competition sharper, the professional demands more taxing (in some instances surpassing the limits of good work or endurance), the pre-requisites for the professional training and the demands of it more exacting, the work is attracting more students each year. They desire to be efficient, welcome an opportunity to become so, and gladly make whatever effort the attainment of their aim requires.

ENROLLMENT.

The increased number of graduates from this and other normal schools of Domestic Science makes possible general training in Domestic Science and Art. Many phases of the work which naturally preceded normal training and were closely associated with it in the early stage of development have to a marked degree become a part of general school training. Thus the schools prepared to train teachers have the opportunity of greater concentration upon the vital problem of normal training. It is evident that upon its solution rests the quality of all work. This has re-

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sulted in an abnormal increase in the quantity of work done by normal schools and departments. The yearly enrollments, however, do not reveal this fact when unaccompanied by the respective curricula. For instance, in the early days of this department the students spent at most four hours per week in class work, while to-day the normal students spend twenty-five hours.

The Institute has graduated from the two-year normal course in Domestic Science 78 students. (The distribution into classes is given on page 132.) 52 of the graduates are now teaching, 4 have charge of diet kitchens in hospitals, 8 are studying, 10 are married, and 4 others are keeping house at home.

In addition to these, during the past ten years 40 students have spent one year in normal work and 25 less than a year.

Upon the graduation of the present senior class (the tenth) the alumnæ will number over one hundred and the students lost by the way sixty-five. When it is remembered that the ten years under consideration include all the pioneer work, it is most encouraging to have had two-thirds of the students admitted remain to complete the full course.

Rarely has unsatisfactory work been the cause of withdrawal. Not a small percentage of students who have withdrawn were advanced normal specials and had nearly finished the course. Some expect to return to do so. Ten were college graduates. Thirty-one are engaged professionally.

As the department has grown, fewer and fewer irregular students have been accepted, until now practically all are graduated who are admitted.

In September, 1891, the normal course of two years opened with one student, in 1895 the number increased to 13, in 1899 to 39, and since the enrollment has shown a marvelous annual growth. In 1900 there were 61 regular normal students enrolled, and this year 84. Now for the first time it is necessary to divide the second-year class as well as the first into two divisions for all laboratory and practical work. A detailed enrollment of the full-time students is given on page 131, where their general training is indicated, as also are their home addresses showing the geographical distribution of all of the students of the department other than those who live in Brooklyn and come to the Institute for short technical courses.

NORMAL COURSE.

The need for training in Domestic Science as first felt was somewhat vague. It found expression in dissatisfaction with existing conditions which were not furthering man's best interests and in a desire for instruction which would make possible the substitution of strength for weakness. It is now expressing itself along lines natural and fundamental, in that they have an organic relation to life. These are: training as preparation for life in the home, and training as preparation for such professional life as has for its aim the betterment of the conditions of the home. As

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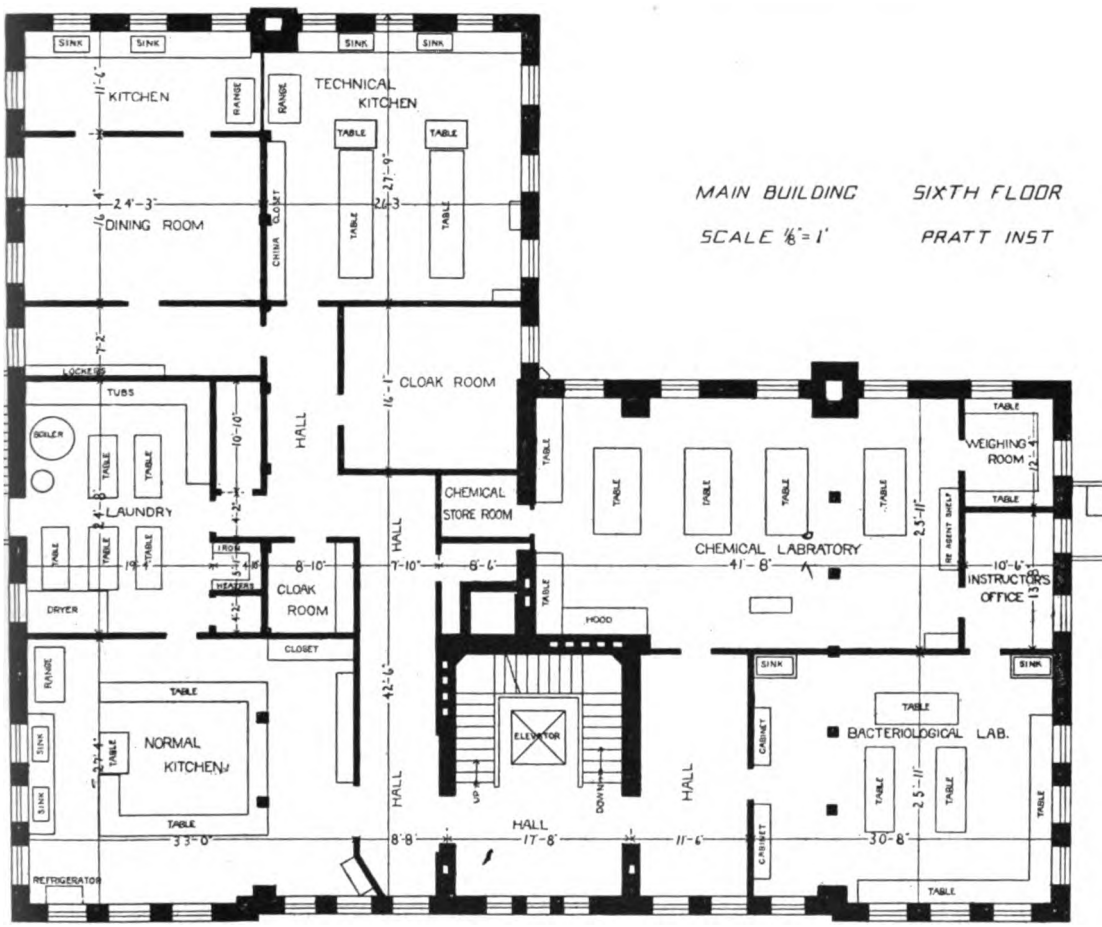

PLAN OF THE SIXTH FLOOR OF PRATT INSTITUTE.
The offices and the Sewing, Hand-work, and Lecture rooms of the Department are located on the first floor of the Main Building.

stated above, it is upon the latter that the schools prepared to do normal work focus their attention. It is their expectation that thereby they will prepare their graduates to train intelligently and thoroughly those who intend to use their knowledge in the home.

However, that the normal school may not forget or ignore the aim of those whom it is training, it is well for it to keep itself in touch with the problems which are to be its graduates' when they enter professional life. Therefore it is by design and not by force of circumstances that the general and technical courses exist side by side with the normal and food economics.

Though the four problems suggested, i. e., that of training teachers, professional housekeepers, mistresses,

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and servants, all confront the department, the normal training represents the nucleus of the work; therefore the normal course will be considered in detail and the others as modifications of it but giving to it as well as receiving from it.

Since "schools arise to solve problems and problems arise from causes, causes imbedded in the structure of society," the special training-school exists only to meet an urgent human need. Its function naturally is to prepare adequately its students for the work which is awaiting trained workers. By example and the dissemination of all that it finds to be true, it can inspire students and schools alike to strive for efficiency that their service may be real. Broadly speaking, it is obviously the nature of the need which should suggest the training required. It is through the intelligent and sympathetic study of it that it is hoped that such selective and directive power will be developed as is essential for the formulation of a curriculum through which the possibilities of students may be realized.

In the normal courses as now given in the Department of Domestic Science all applied science is well grounded in the pure science underlying it; all hand-work, including sewing, is considered a medium for artistic expression; the training to be obtained through motor activity is regarded as one of the principal educational functions of both domestic science and art; the sociological and ethical value of such work is emphasized; all principles are taught through some normal activity and not abstractly for future application; and all subjects culminate in original work in which the student uses creatively her knowledge of principles and materials.

The aim is to impart a knowledge of the special subject-matter of domestic science and art; to inculcate a love of knowledge, to train intelligence, to instill a faith in the realization of the possibilities of humanity, to develop and strengthen personality, and thus to assist the student in gaining "command of herself, that she may have full and ready use of her capacities."

That students may profit by the training offered in the normal course in Domestic Science, which is the only one that prepares women to be teachers, they must have at the time of admission to the course the following intellectual qualifications: ability to think and to express themselves at least correctly and clearly; an available knowledge of arithmetic (including the metric system), algebra, plane geometry, elementary physiology, and general physics; some hand skill and acquaintance with cooking and sewing; at least such general culture as is possessed by the graduate of a high school of accredited standing; familiarity with general history, current events, and English literature; openness of mind, intellectual integrity, and an interest in teaching as a profession. Health and personality are such influential factors in the life of the teacher that they too are important considerations in the selection of normal students.

In some instances examinations are given to ascertain the fitness of the candidates. Those inadequately pre-

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pared are encouraged, when they seem promising, to complete their preparation that they may enter a future class for professional training. To many applicants general direction in student-work is proffered. It is invariably welcomed and usually followed. From eight to twelve students are each year consciously preparing themselves elsewhere for the normal course offered in this department. An effort is made to discourage specialization in science and handwork in the High School with the intention of offering such work as the equivalent of that of a similar nature in the normal course. Though early manual training and an elementary knowledge of science are welcomed they do not afford professional preparation for teachers of Domestic Science, and when carried to excess at the expense of a firm foundation in general knowledge and breadth of culture along artistic, literary, and humanitarian lines are a real loss instead of the gain intended.

The acceptance of high school and other diplomas in lieu of the department examinations in mathematics and science is recommending itself in all instances where the student assumes the responsibility of reviewing thoroughly the subjects upon which her future work will be based and thus holds herself personally responsible for her preparation when she enters. This has been found very efficacious in some cases and has enabled a number of students to do better work than they would have done had they prepared themselves for examinations. It is difficult, if not impossible, to give a fair examination which cannot be passed by "cramming" for it. Most students are not aware of the danger and uselessness of "cramming," so it is natural for them to consider it an expedient, and an examination an emergency which justifies its use. When examinations have been passed, if the student is still unable to cope with the work for which the examination testified that she was prepared, she is sincerely puzzled by her lack of knowledge and inadequate training and is often alarmed because she does not know to what to ascribe subsequent failure. It is gratifying to have more and more candidates endeavoring to discover whether they are prepared and not simply whether they may be admitted.

During the past ten years the curriculum for the normal students of Domestic Science has been expanding. Though some subjects have come into the course to be crowded out by others with more urgent claims, the effort of late years has been one of "simplification, not through rejection, but through harmony." It is not the intention to remain satisfied with the progress already made; therefore there will be changes, but with continuity of life and unity in purpose underlying them.

IMPORTANT CHANGES EFFECTED WITHIN THE YEAR.

The work of this year has been marked by one of the most effective advances yet made, i. e., the supervision of the practice-teaching of the students. This will be discussed in connection with the curriculum and faculty.

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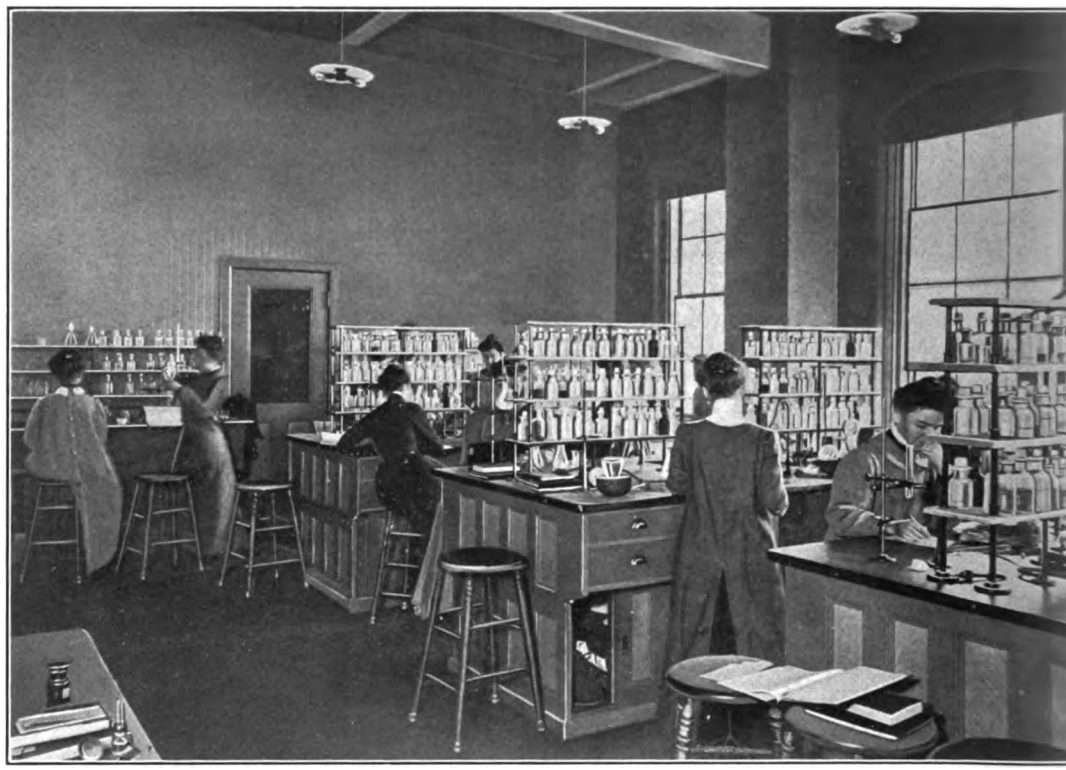

CHEMICAL LABORATORY.

The most significant changes within the department for the coming year will be the introduction of drawing and design to strengthen the artistic side of hand-work, and the articulation of hand-work (cord-work, weaving, and basketry) with the course in sewing as an integral part of it. This will, it is believed, bring strength where it is needed, and will result in a more symmetrical course.

It will be with interest and faith in its efficacy that the plan will be carried out which is to connect the work of the Departments of Domestic Art and Science in such a way as to provide broad and thorough training for women along the lines which fall within what is considered peculiarly woman's province. It is believed that it will be possible thus to prepare students admirably for the advanced professional work which harmonizes with their individual capacities, tastes, and interests, and to reinforce the same by training in allied work which will be adequate, should occasion demand its direct expression, for subordinate use in the professional life of the special teacher.

Since the present professional opportunities open to inexperienced women of training usually require of them a command of more than one subject, it is necessary to provide training in Domestic Science and Art

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for all normal students who desire to study either subject for professional use. But that the ability and ultimate efficiency of each student may not be sacrificed it is believed to be desirable to give an opportunity for specialization in Domestic Science or Art for the second year, thereby preparing the graduate to be primarily a teacher of the group of subjects which she elects for the second year and secondarily of the other applied work in her course.

The students electing Domestic Science as their major subject will pursue their entire course in the Department of Domestic Science and will be prepared to teach Domestic Science and elementary sewing and hand-work. Those who choose Domestic Art as their specialty will complete the first year of training in the Department of Domestic Science and then enter the Department of Domestic Arts for the second year (see catalogue for 1902–3). They will thus be prepared to teach Domestic Art, including dressmaking and millinery, and elementary Domestic Science.

CURRICULUM.

The lines of work now embodied in the normal course are education for the training of the professional teacher; science, with the natural sciences as basal to a true conception of their application in such practical work as cookery, for the training of the special teacher of Domestic Science; art, including its expression in hand-work, such as sewing and basketry, for the training of the special teacher of Domestic Art; ~~the~~ physical training for the physical well-being of the teacher that is to be and for conscious development of interaction between her mind and the medium for expression, her body.

The course requires two years for its completion. The student-work consists of an average of twenty-five fifty-minute periods of class-work for five days a week, sixteen hours of preparation, and two hours of physical training throughout the course. Thus the student spends seven and a half hours a day for five days a week and one and a half hours on Saturday in class-work and preparation for the same. The proportional distribution of the time is as follows: for all normal students approximately seven hours a week for two years to education (psychology, normal methods, practice-teaching, etc.) and two hours to physical training; for Domestic Science students twenty hours to science and ten to hand-work; for Domestic Art students, twenty hours to Domestic Art and ten to Domestic Science.

Until the second year there is neither evening nor Saturday class-work. The schedule is so arranged that approximately three subjects are assigned for each day. The sequence maintained in the daily work is recitation, laboratory or practical work, and field work alternating with physical training. The character of the demand made upon the student by the type of work determines the time of day and the order of rotation for each subject or phase of a subject.

In the first year the educational aspect of the work is emphasized; in the second the professional. The curriculum, however, is strictly con-

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fined to the subjects essential for an intelligent understanding and free expression of the subjects to be used professionally by the graduates. Though the students are not introduced to many branches of knowledge with which they are entirely unfamiliar, a new point of view and more intelligent and personal responsibility for the quality of the work are exacted by the nature of the normal training.

COURSE OF STUDY.

First Year — For all Normal Students of Domestic Science and Art.

Fall Term.	Winter Term.	Spring Term.
Psychology.	Psychology.	History of Education.
Chemistry.	Chemistry.	Chemistry.
Physiology.	Physiology.	Physiology.
Nature Study.	.....	Nature Study.
Cookery.	Cookery.	Cookery.
Drawing.	Design.	Design.
Cord-work.	Weaving.	Sewing.
.....	Basketry.	.....
Physical training.	Physical training.	Physical training.

Second Year — For Normal Students specializing in Domestic Science.

Fall Term.	Winter Term.	Spring Term.
Normal methods.	Normal methods.	Normal methods.
Kindergarten methods and use of materials.	Kindergarten methods and use of materials.	.....
Practice-teaching.	Practice-teaching.	.....
Chemistry.	Chemistry.	Chemistry.
.....	Bacteriology.	Heat.
Cookery.	Cookery.	Cookery.
Marketing.	.....	.....
Serving.	.....	.....
Household Economics.	Laundry-work.	Construction.
.....	.....	Plumbing (half term).
.....	.....	Heating (half term).
Sewing.	Sewing.	Sewing.
.....	.....	Weaving (half term).
.....	.....	Basketry (half term).
.....	.....	Design.
Physical training.	Physical training.	Physical training.

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The following analysis of the subjects of the normal course as given above is added that, through the recognition of the various phases of each, a more comprehensive view may be obtained:

Education — psychology, its principles and their application to education;
principles of education, the laws underlying development and their expression in educational practice;
history of education, its relation to history as an expression of the social life and development of the race;
normal methods, the principles obtaining in the school-room whereby a wholesome atmosphere, self-activity of the pupil, and greatest efficiency in the special work are attained;
kindergarten methods and use of materials, a comprehensive survey of different phases of kindergarten work (the "Mother-play," stories, occupations, and games) to give insight into the life of the child.
practice-teaching (under supervision) in Domestic Science and Art.

Science (natural) — general chemistry, qualitative and quantitative analysis, organic and physiological chemistry, and chemistry of foods;
physiology, function and structure of the body under normal conditions of life, with special emphasis upon digestion and the organs of the special senses, hygiene (personal and public), emergencies and home nursing;
bacteriology, its principles, their significance and their application to life;
heat, its principles, and their significance and use in Domestic Science;
nature study, its principles and the methods of study involved as basal to correct scientific observation and inference.

Science (applied) — cookery, its general principles in practice, their modification in the preparation of food for infants, invalids, and adults living under widely varying conditions;
dietetics, composition of the body; its waste and repair; need of food; kinds and proportions required; composition of various food materials; use of each in the body; digestibility of each; desirable combinations; best methods of cooking in order to secure greatest nutritive value at least cost; modes of meeting the needs of the individual; calculation of dietaries; comparison of the dietaries for persons of different ages and engaged in different occupations, and of those for different races; and, so far as the present state of the science will permit, the solution of special dietetic problems arising in the home.
serving, the principles and practices underlying wholesomeness and attractiveness;
marketing, economical purchase and preservation of food;
household economics, care of the house and its furnishings; plumbing, scientific principles involved and practices conducive to the maintenance of healthful conditions;
construction, the sanitary and artistic expression of the principles embodied.

Art — drawing, a comprehensive study of line, dark and light, and color; nature study, hand-work and sewing affording material for design and blackboard illustration; drafting in connection with sewing and construction for mechanical drawing.

Art (applied) — Hand-work: braiding, knotting, netting, knitting, weaving, and basketry embodying the artistic and mechanical principles of good manual work.
sewing: hand-sewing, drafting, and machine sewing, including undergarments and an unlined dress; principles of construction and execution and their appropriate expression.

Though the course is planned to develop the normal student and to train her along special lines of Domestic Science and Art through work stimulating and developing for her, it embodies all the principles and most of the specific exercises in general form which are to be adapted to other classes of students. She is expected to recognize her knowledge as the fund upon which she is to draw for subject-matter in her pro-

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fessional work but which she is to adapt, in accordance with the principles instilled by her normal work, normal methods, and practice-teaching, to the subjects and conditions under which she finds herself at work. The power to do this as well as to work skilfully, economically, and harmoniously under any conditions which may exist of necessity, is essential for the satisfactory completion of the normal course. A thesis on a subject relating to Domestic Science and showing research and original work is required of all normal students before the diploma is awarded.

After the training offered as preparation for any specific line of work has been completed satisfactorily, the department interests itself in the future of those whom it has trained, but it does not assume the responsibility of procuring positions for such as desire to enter professional life. However, since it is constantly being asked to nominate candidates qualified to render acceptable service along the various lines of Domestic Science and Art, it usually has the opportunity of placing all whom it trains. This it is anxious to do, that it may assist each one to find "the place in which she can be of the most service and where she can receive the most real help."

POLICY OF THE ADMINISTRATION.

In the life of the student-body as well as in the class-work it is the intention to give as much freedom as can be exercised wisely. It is desired to permeate the lives of the students with the consciousness of the fact that a choice is the expression of a "moral motif," that action is impelled by thought and is a test of it, and that it is in action that possibilities are discovered and realized. Thus all encouragement is given to direction from within, and as far as possible suggestion is substituted for that from without. It is gratifying to see students beginning to appreciate that they are, in the main, capable of being what they choose to be, and that they can see their work in the light of what it might be, for it is thus that they aspire to realize more fully their potentialities and grow in power, freedom, and helpfulness.

THE FACULTY OF THE DEPARTMENT.

The faculty of the department at present consists of six department instructors, who give concentrated attention to the work and problems of the department. By and through them the students are taught the subjects underlying cookery, i. e., chemistry and some branches of biologic science, besides the subjects given by the department as professional training, i. e., cookery and sewing, as well as those dealing with the application of the cookery and sewing in practice, i. e., normal methods and practice-teaching. Upon these instructors, together with the director, devolve the general guidance and thought for the well-being of the students of the department, and from this body, in the main, must emanate the human influence which moulds the personality of the student.

This training is supplemented for breadth of development by psychology and the history of education, some kindergarten work, drawing,

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construction, plumbing, and physical training given by Institute instructors of other departments. Thus each student comes in contact with six instructors within the department, at least six Institute instructors, and one or two lecturers from other institutions and walks of life. It is believed that in this way the best intellectual, personal, and technical results will be attained for the students entrusted to the department.

The only significant change in the faculty of the department during the past year, i. e., the appointment of a supervisor of practice-teaching, has proved even more beneficial than was anticipated. The graduates will go forth much more intelligent as workers than was possible under previous conditions.

Miss Mary S. Snow, the supervisor appointed, brings in her experience an element invaluable to the young teacher who may be confronted by conditions which obtain in the public schools of the large cities. Miss Snow was for eleven years superintendent of schools and director of the city Training School for Teachers, of Bangor, Maine. Her work has attracted the attention of the educational institutions and associations of New England. The University of Maine, in recognition of her service to the state, conferred upon her the degree of Master of Philosophy. The Association of Superintendents of New England elected her to its presidency in 1899, as did also the Pedagogical Society of Maine; the appointment in each instance being the first tribute of the kind shown to the work of a woman by either association. Miss Snow teaches the class in normal methods and in physiology, that she may come in touch with the students in work which is vitally connected with their future professional work. Since the missions in which the students teach are widely scattered, and the work at all hours on all days among all kinds of people and under extremely varying types of management, only a woman of exceptional ability, experience, and broad sympathies could supervise the work successfully. In the practice-classes the conditions are in many respects unfavorable; the classes are irregular and ungraded. As a phase of Domestic Science work they are of value, but in time it is hoped that this type of work may be supplemented by experience more nearly akin to that which the student will meet in professional life.

The sewing classes greatly outnumber those in cookery, due, it is thought, to the fact that the mother finds it troublesome to have a child cooking at home, while sewing can be turned to good account without serious inconvenience. Possibly the thought that sewing as such leads to a more acceptable professional career than cookery may not be without its influence. About 400 women and children are being instructed in these classes, which number is nearly 200 more than were taught by the department during last year. The size of the second year normal class made it possible to undertake more work of this kind. That there should be a long waiting-list for teachers seems marvelous when it is remembered with what difficulty such work was

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secured a few years since for even a small number of normal students.

In the practice work the student is expected to study the class and its environment, and to aim to meet the students where they are and to direct and stimulate them to desire and strive for what will nourish best both body and mind. This requires the exercise of insight, discrimination, mental flexibility, and a genuine desire to help where help is needed.

Do the students understand and relate the knowledge they are endeavoring to acquire? comes as a sincere question, therefore deserves a thoughtful answer. It is believed by those who are acquainted with the student-work and the professional work of the graduates that it is evident that they do to a marked degree. During their student life an effort is made to surround them with "conditions under which thought plays freely," and so to present all subjects that the knowledge acquired in one is exacted in all related thereto. Of this the student often is unconscious at first, and is allowed to remain so. Through her activities she discovers and assimilates what it is desired that she should know. Each subject is concluded, as an aid to permanency of impression, by a comprehensive review incorporating questions, discussions, and practical work, such as the giving of luncheons and dinners in connection with cookery, which require a thoughtful re-combination and application of the knowledge desired. This is exemplified by the outline of the course in sewing and hand-work given on page 137. However all earnest teachers are prepared to work even enthusiastically without immediate and visible results, because they know that real growth is slow, yet they are not content with indifferent work either practical or purely intellectual. There is a standard which must be maintained before the student can be graduated and thus recommended as one prepared to guide others.

The alumnæ in their work are women of broader vision, greater earnestness of purpose, and with deeper enthusiasm and knowledge than they gave evidence of at graduation. These signs are the chief elements of encouragement in any work where a human product is the aim.

SHORT COURSES IN DOMESTIC SCIENCE.

The general course of one year, which prepares women to administer intelligently the affairs of a home, has existed since the fall of 1897. Twelve students have completed it. Of the number four afterwards entered the normal course and have been graduated. Thirty students have taken a partial course, two of whom have become normal students this year. Seven students entered in September, 1901, for the general work.

The course in food economics, designed to enable women to become skilled housekeepers in institutions, was announced several years before anyone applied for admission to it. During the past few years, however, fifteen women have completed it. Until this year it has been only three months in length, and though now six a class of five was enrolled in September, 1901. Three students

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BACTERIOLOGICAL LABORATORY.

will remain to complete the entire course.

The technical classes in cookery, serving, and laundry-work have not changed significantly during the past five years. The number of earnest students who return to take the advanced courses has increased, as has also that of professional cooks and laundresses. During each year about two hundred technical students receive instruction in the department.

The High School class has varied from thirty-three to sixteen in five years.

The Saturday morning school-girls' class fluctuates in numbers; its limits have been forty-five and ten.

These courses are all treated in detail and with definiteness in the catalogue of 1902–1903. They are in subject-matter units in the curriculum for the normal students. They have established their place in it by the light which they have, through special courses, shed upon the problems of the home; more detailed treatment of them in this connection would involve a repetition of much that has been said about the work of the department and of Domestic Science in general.

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WORK OF THE DEPARTMENT OTHER THAN CLASS-WORK.

Each year the department prepares for schools a food museum, consisting of blocks representing the composition of the body and the daily outgo and income, and also a set of bottles illustrating the percentage composition of twelve typical foods. This year the demand for the museum has been such that orders could only be taken on the condition that delivery could be delayed from one to two months. This is interpreted to mean that Domestic Science is becoming more widely taught and that its place is becoming so assured that expensive equipment is obtained for it.

To many schools the department has sent at request suggestions relative to equipment and the subject-matter to be taught in Domestic Science courses. It receives many guests who are interested in Domestic Science. From all these sources comes much enlightenment as to the needs which Domestic Science workers may assist in meeting.

DATA APPENDED.

A register of the students with their home addresses and general notes on their training is given as part of the appended data, as is also a similar one of the alumnæ. This is followed by the enumeration of positions which indicate the type of professional work for which trained workers are needed. An outline of the course of study in hand-work and sewing for normal students of Domestic Science is given to illustrate its presentation and to make clear its limits. The bibliography appended has been of value to the department and of some service to others. It is believed that it will be of interest to all connected with such work as engages the attention of this department.

EQUIPMENT.

The equipment of the department is now exceptionally good. The recently remodeled laboratories are in every respect admirably adapted for excellent work. Through gradual acquisition of apparatus, models, and books needed for the several classes the department now possesses unsurpassed facilities for intelligent and thorough instruction.

It is with appreciation that it acknowledges the consideration which its needs have received.

Respectfully submitted,

Edith Greer,
Director.

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Register of Full-time Students.

1901–1902.— Normal Course.

GRADUATE STUDENTS.

Bradt, Mabel, 1901 . . Brooklyn, N. Y.
McGiffert, Sarah, 1901 . . Roselle, N. J.
Mosman, Lucy Virginia, 1901 Washington, D.C.
Tough, Mary, 1898 . . . Hudson, N. Y.

SENIOR CLASS.

Andruss, Maud Evelyn . Canandaigua, N. Y.
Austin, Grace Mary . . . Detroit, Mich.
Beard, Emma Burlew . . Fayetteville, N. Y.
Campbell, Mabel . . . . Cohoes, N. Y.
Carpenter, Mary Alice . . Providence, R. I.
Chamberlain, Cornelia . New Britain, Conn.
Christian, Mary Katherine . . Lexington, Ky.
Coe, Alice Stanley . . Englewood, N. J.
Condit, Elizabeth Carey . Brooklyn, N. Y.
Deacon, Gertrude Newbold Mount Holly, N. J.
Dole, Bernice Leona . . Haverhill, Mass.
Foote, Louise Knox . . . Rochester, N. Y.
French, Sarah Celeste . . . Evansville, Ind.
Gilmore, Marian Elizabeth . Detroit, Mich.
Gregory, Lois Bartlett . . Providence, R. I.
Johnson, Sally Sherman . . Hudson, N. Y.
Little, Caroline . . . Rochester, N. Y.
Mann, Mary Lee . . . Plainfield, N. J.
Marshall, Isobel Currie . . Toronto, Ont.
Merick, Maria Fowler . . Danbury, Conn.
Morris, Clara M. . . . . Elizabeth, N. J.
Palmer, Jennie . . . Washington, D. C.
Parker, Ella . . . . . Princeton, Ill.
Price, Elizabeth Guernsey . Hudson, N. Y.
Price, Lucinda Knibloe . . Hudson, N. Y.
Rose, Mabel Lydia . . . Brooklyn, N. Y.
Shissler, Valeria Penrose . . Detroit, Mich.
Sisson, Florence Mabel . . Collins, N. Y.
Stewart, Gwendolyn . . Kansas City, Mo.
Stewart, Lena Belle . . . St. Helena, Cal.
Tolford, Helen Alexa . . Portland, Me.
White, Cornelia Butler . . . Utica, N. Y.

In the senior class there are 32 students. Of this number 3 are college graduates, 2 spent two years in college, 8 have had training beyond that offered by a high school, 2 taught before entering the normal course in Domestic Science, making in all 15 students, or half the entire class, who come to the Institute exceptionally well prepared to undertake special training.

JUNIOR CLASS.

Adams, Nathalie Claiborne Webster Groves, Mo.
Bayliss, Florence L. . . . Buffalo, N. Y.
Beeman, Rose Edda . . Knightstown, Ind.
Benedict, Sarah . . . . Warwick, N. Y.
Bradner, Gertrude . . . Warwick, N. Y.
Briggs, Harriet Louise . . Brooklyn, N. Y.
Brinckerhoff, Jeannette . . Brooklyn, N. Y.
Brockett, Myrn . . . Battle Creek, Mich.
Bruce, Bella . . . . . Indianapolis, Ind.
Carter, Mary Catherine . . Belvidere, N. J.
Chase, Annette Follett . Chaseville, N. Y.
Dewing, Lucy Webb . . Oakland, Cal.
Dowd, Mary Theresa . . . Lowell, Mass.
Dutcher, Elizabeth . . . Brooklyn, N. Y.
Edwards, Frances Parsons . . Detroit, Mich.
Fletcher, Grace . . . . Southwick, Mass.
Franklin, Marion Scott . . Chillicothe, O.
Fullerton, Elizabeth . . . . Denver, Col.
Gilbert, Ruth Virginia . . Detroit, Mich.
de Gore, Henrietta Mercedes Tuscaloosa, Ala.
Gott, Marion Estella . . Hartford, Conn.
Hanna, Agnes Keith . . . . Alton, Ill.
Heidenheim, Hannah . . Brooklyn, N. Y.
Holt, Ada . . . . . Midland Park, N. J.
Hubbard, Sarah Gwennie . . Logan, Utah.
Jameson, Jennie D. . . . Binghamton, N. Y.
Jessup, Henrietta . . . Brooklyn, N. Y.
Kissinger, Edna E. . . . . Buffalo, N. Y.
Lane, Lassie . . . . Kansas City, Mo.
McKeand, Jane Williams . Hamilton, Ont.
Miller, Clara Gazlay . . New York, N. Y.
Mitchell, Jane Whittlesey . St. Cloud, Minn.
Moses, Irene Ella . . . Indianapolis, Ind.
Oakley, Elizabeth . . . Saginaw, Mich.
Olson, Gustava Margaret . . Brookings, S. D.
Place, Sarah Ursula . . Binghamton, N. Y.
Retter, Lena Martina . . . . Utica, N. Y.
Reininger, Winifred B. . . Brooklyn, N. Y.
Richardson, Mary E. . . Harrisburg, Pa.
Rinehart, Gertrude . . . . . Toledo, O.
Roe, Winifred A. . . . East Fishkill, N. Y.
Ryan, Elizabeth . . . . Muskegon, Mich.
Slaght, Elizabeth Strahan . Grand Rapids, Mich.
Stewart, Frances E. . . . Flint, Mich.
Symons, Mary Louise . . Saginaw, Mich.
Waterman, May L. . . . Boston, Mass.

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White, Florilla Mansfield . . Utica, N. Y.
Winch, Nancy Emery . Charlestown, Mass.

In the junior class there are 48 students. Of the number 3 are college graduates, 4 spent two years in college, 7 have had training beyond that offered by a high school, and 9 taught before entering the normal course in Domestic Science, making 21 students, or nearly half the entire class, who come to the Institute exceptionally prepared to undertake special professional training.

GENERAL STUDENTS.

Colt, Florence A. . . . Winsted, Conn.
King, Anna M. . . . . Arrochar, S. I.
Morley, Abigail Esther . . Saginaw, Mich.
Rhoades, Emma I. . . Skaneateles, N. Y.
Wray, Alice Hampton . . Cranford, N. J.

FOOD ECONOMICS STUDENTS.

Campbell, Anna W. . . . . Muncie, Ind.
Holden, Annie Bartlett . Westminster, Mass.
Pringle, Leila Gordon . . Toronto, Ont.
Root, Grace Mary . . . Thomaston, Conn.
Showers, Grace E. . . . . Ira, N. Y.

Alumnæ Register.

1893.

Nichols, Sarah A. . . . Newport, R. I.
Pomeroy, Jennie E. . . Windsor, Conn.
Usher, Susannah . . . Cambridge, Mass.

1894.

Comstock, Mary C. . . Brooklyn, N. Y.
Knapp, Maude . . . . Brooklyn, N. Y.

1895.

Bridges, Edith M. . . . Hopkinton, Mass.
Clark, Helen Carroll . . Brooklyn, N. Y.
Cole, Harriet A. . . . Brooklyn, N. Y.
Himrod, Mabel C. . . . Brooklyn, N. Y.
McNaughton, Flora N. . Brooklyn, N. Y.
Merrill, Emily . . . . . Abilene, Kan.
Vail, Mary Beals . Port Washington, Wis.

1896.

Comstock, Jessie . . . . Brooklyn, N. Y.
Demmon, Alice E. . . Minneapolis, Minn.
Everett, Margaret M. . Dobbs Ferry, N. Y.
Fisher, Katherine Rolston . Brooklyn, N. Y.
Harmer, Althea . . . . Wissahickon, Pa.
Millspaugh, Esther M. . Middletown, N. Y.
Sheppard, Juanita L. . St. Anthony Park, Minn.

1897.

Norton, Grace Brainard . Willimantic, Conn.
Taylor, Bessie Booraem . Plainfield, N. J.
Thomas, Alberta T. . . West Eden, Me.
Willard, Florence . . . . Passaic, N. J.

1898.

Adams, Henriette . . . . Brooklyn, N. Y.
Adgate, Grace . . . . Keeseville, N. Y.
Baker, Emma Lester . . . Barrington, R. I.
Chambers, Mary D. . . . . New York.
Godfrey, Grace . . . . Milford, Mass.
Jordan, Clara G. . . . Ellsworth, Me.
Lane, Jessie Bradford . . . Detroit, Mich.
Perkins, Fannie Davis . . Brooklyn, N. Y.
Pierce, Elizabeth G. . . . Buffalo, N. Y.
Roe, Ada E. . . . . Brooklyn, N. Y.
Smith, Gertrude . . . Oyster Bay, L. I.
Tough, Mary . . . . . Hudson, N. Y.
West, Millie Louise . . . Sharon, Mass.
Zabriskie, Jane A. . . Mendham Park, N. J.

1899.

Bacheler, Bernette . . Whitinsville, Mass.
Bowen, Cora Aldrich . . Providence, R. I.
Huntington, Ellen Alden . Hartford, Conn.
Loomis, Josephine Marion . . Buffalo, N. Y.
Macy, Mary Jessup . . . Hudson, N. Y.
Mayfield, Mary Gertrude . . . Ruston, La.
Perry, Bertha Clark . New London, Conn.
Smith, Emily Caroline . . Troy Hills, N. J.
Stokes, Grace J. . . . Kansas City, Kan.
Wood, Angeline . . . Westbury, N. Y.

1900.

Daniels, Adelaide S. . . . . Chicago, Ill.
Dorman, Jessie Thomas . Brooklyn, N. Y.

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DuBois, Florence S. . . Hudson, N. Y.
Fuller, Mary Alice . . . Albany, N. Y.
Hartsuff, Florence A. . . . Chicago, Ill.
Petheram, Mary Gertrude . Skaneateles, N. Y.
Roach, Bertha Lucile . . . Decatur, Ill.
Root, Kathryn Hildreth . Stamford, Conn.
Rulon, Phœbe D. . . . Brooklyn, N. Y.
Thomas, Mary Evelyn . Skaneateles, N. Y.
Williams, Elizabeth Carr . Bellows Falls, Vt.

1901.

Almy, Caroline Robinson . Jamestown, N. Y.
Bradt, Mabel . . . . . Brooklyn, N. Y.
Dahl, Christene Olivia . . Stoughton, Wis.
Davidson, Margaret Mary Peterborough, Ont.
Fraser, Jennie L. . . . . Buffalo, N. Y.
Gillespie, Elizabeth Cecilia . Albany, N. Y.
Gillett, Lucy Holcomb . Southwick, Mass.
Lennox, Reebie Lavinia . . Toronto, Ont.
Martin, Carrie Estelle . . Milwaukee, Wis.
McGiffert, Sarah . . . . Roselle, N. J.
Miles, Alice Woodward . Worcester, Mass.
Mosman, Lucy Virginia . . Beverly, Mass.
Perry, Maybell Perdicaris . Brooklyn, N. Y.
Rice, Mary Blair . . . Coles' Ferry, Va.
Riis, Minnie Christine . . . Hatfield, Mass.
Shanklin, Susanna Avery . Evansville, Ind.
Wiley, Katherine Glissan Tiffany Fredonia, N. Y.
Williams, Idah Hedrick . Muskegon, Mich.
Woodward, Grace Demmon . Westfield, Mass.
Woolson, Sarah Alice . Wallington, N. J.

The Alumnæ Register contains the names of the graduates of the two-year normal course only. The addresses and names are given as recorded at the time of matriculation at Pratt Institute.

As students these women came from sixteen widely separated states and Canada, and as workers they are as widely scattered again (see typical positions below).

Of the 78 graduates, 52 are teaching, 4 have charge of diet kitchens, 8 are studying, 10 are married, and 4 are keeping house at home.

Six of the alumnæ are college graduates and twenty-five have had one year or more of advanced special training; that is, three-eighths of the graduates of the department have had broader and more thorough general training than is required for admission to the normal course. The proportion of well trained women grows larger each year.

Upon the graduation of the present senior class the alumnæ will number more than one hundred. Of this number over three-fourths will have been graduated within the last half of the decade of the work; that is, the normal aspect of Domestic Science in this department has attracted three times as many earnest and persistent students during the last five years as were engaged in such work during the period of the same length which immediately preceded. This it is believed indicates that the pioneer stage of the work has passed.

Professional Work of Graduates and Advanced Students.

1901–1902

PUBLIC GRAMMAR SCHOOLS.

Cookery and Sewing.

Georgia, Columbus: Miss Angeline Wood (1899).
Illinois, Oak Park: Miss Adelaide S. Daniels (1900).
New Jersey, Plainfield: Miss Bessie B. Taylor (1897).
Pennsylvania, Allegheny: Miss Mary Saunders (Special). Miss Lucy Holcomb Gillett (1901).
Virginia, Lynchburg: Miss Grace Demmon Woodward (1901).
Virginia, Staunton: Miss Susanna Avery Shanklin (1901).

Cookery.

California, Los Angeles: Miss Florence Stevenson (Special).
Canada, Montreal: Miss Margaret Mary Davidson (1901).
Massachusetts, Holyoke: Miss Grace Godfrey (1898).
New York, Manhattan: Miss Grace Adgate (1898). Miss Fannie Davis Perkins (1898). Miss Ada Roe (1898). Miss Gertrude Smith (1898). Miss Florence Willard (1897).

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Sewing.

Wisconsin, Menomonie: Mrs. Idah Hedrick Williams (1901).

Minnesota, Minneapolis: Miss Nellie Richards (Special). (Regular grade work.)

HIGH SCHOOLS.

Indiana, Indianapolis. Manual Training High School: Cookery and hygiene, Miss Josephine M. Loomis (1899).

Maryland, Baltimore. Girls' Latin School: Chemistry and physics, Miss Edith S. Merritt (Special).

Michigan, Muskegon. Hackley Manual Training School: Cookery and hygiene, Miss Jessie B. Lane (1898).

New Jersey, Plainfield. North Plainfield High School: Cookery, Miss Bessie B. Taylor (1897).

New York, Manhattan. Horace Mann School: Sewing, Miss Kate Anthony (Special).

New York, Brooklyn. Pratt Institute: Cookery, Mrs. Mary D. Chambers (1898).

Rhode Island, Providence. Manual Training High School: Sewing, Miss Lucy H. Pierce (Special). Cookery and sewing, Miss Cora A. Bowen (1899).

Wisconsin, Menomonie. Stout Manual Training School: Cookery and sewing, Mrs. Idah H. Williams (1901).

NORMAL SCHOOLS.

Massachusetts, Boston. School of Housekeeping: Domestic Science, Miss Susannah Usher (1893).

Massachusetts, Boston. Boston Cooking School: Marketing, Miss Anne R. Ruggles (Special).

New York, Manhattan. Teachers' College: Domestic Art Handwork, Miss Kate Anthony (Special).

New York, New Paltz. State Normal School: Domestic Science and Arts, Miss Sarah A. Nichols (1893).

New York, Brooklyn. Pratt Institute: Cookery and household enonomics, Mrs. Mary D. Chambers (1898); Cookery and marketing, Miss Emma L. Baker (1898); Cookery and laundry-work, Miss Mary Tough (1898).

Rhode Island, Providence. State Normal School: Domestic Science and Art, Miss Elizabeth C. Gillespie (1901).

COLLEGES.

Iowa, Des Moines. Drake University: Languages, Miss Edith M. Bridges (1895).

Maryland, Port Deposit. Jacob Tome Institute: Domestic Science and Art, Miss Mary B. Vail (1895).

Michigan. Agricultural College: Domestic Science, Miss Belle C. Crowe (Special).

Minnesota, St. Anthony Park. State University, School of Agriculture: Assistant in Chemistry, Miss Eleanor Wilkinson (Special); Cookery and laundry-work, Miss Juanita L. Sheppard (1896).

Missouri. Columbia State University: Domestic Science and Art, Miss Jane A. Zabriskie (1898).

PRIVATE SCHOOLS.

Domestic Science and Art.

Illinois, Chicago. The Elementary School: Science, Miss Katherine Camp (Special); Domestic Science and Art, Miss Althea Harmer (1896).

Massachusetts, East Northfield. Northfield Seminary for Girls: Domestic Science, Miss Mary E. Gere (Special).

Michigan, Detroit. Detroit Home and Day School: Cookery and sewing, Miss Emily C. Smith (1899).

New Jersey, Englewood. Helicon Hall: Nature study and housekeeping, Miss Mary E. Thomas (1900).

Wisconsin, Fond Du Lac. Grafton Hall: Domestic Science and Art, Miss Christene O. Dahl (1901).

INDUSTRIAL SCHOOLS.

Louisiana, Lafayette. Southwestern Louisiana Industrial Institute: Domestic Science and Art, Miss Mary G. Mayfield (1899).

New York, Manhattan. Clara De Hirsch Home for Working Girls: Cookery and laundry-work, Miss Minnie C. Riis (1901).

SPECIAL INSTITUTIONS.

Illinois, Jacksonville. Domestic Science and Art, Miss Henriette Adams (1898).

Kentucky, Berea. Berea College: Domestic Art, Miss Mabel C. Himrod (1895); Domestic Science, Miss Caroline R. Almy (1901); housekeeper, Mrs. Sarah L. Hoag (Food Economics student).

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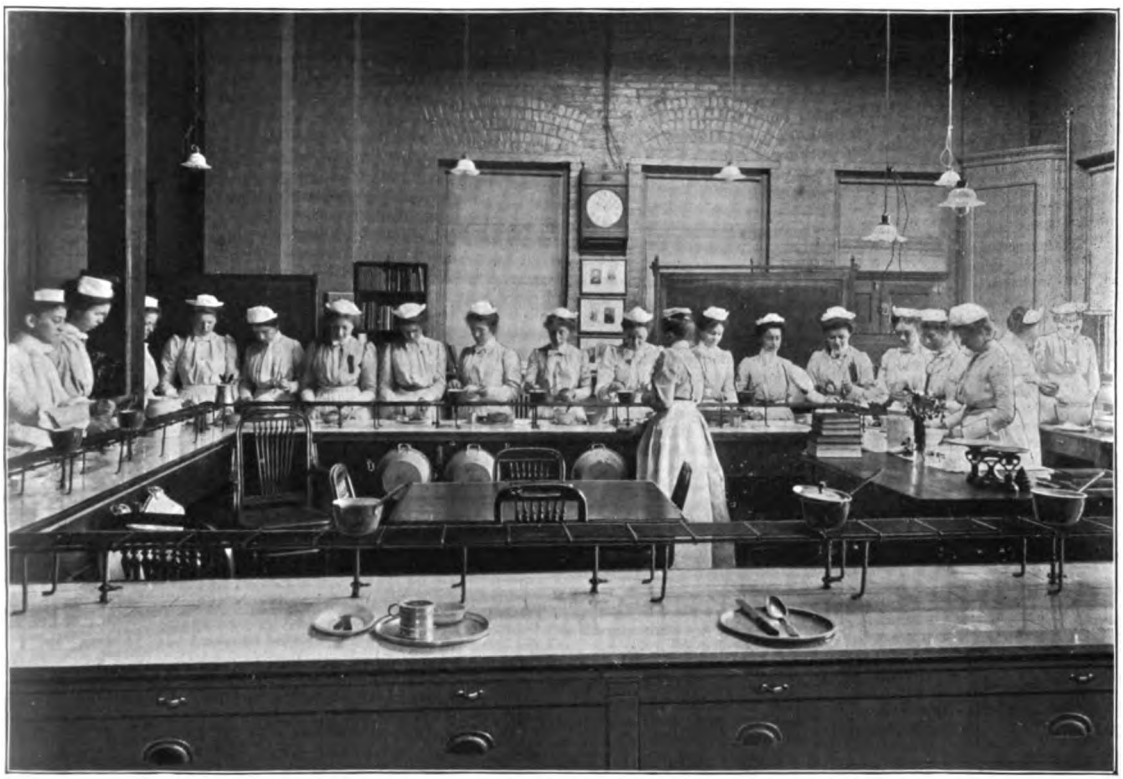

A NORMAL CLASS IN COOKERY.

Kentucky, Jackson. The S. B. Lees University: Domestic Science and Art, Miss Bertha L. Roach (1900).

Louisiana, New Orleans. Straight University: Science and English, Miss Alice M. Keepers (Special).

Massachusetts, Boston. Industrial School for Crippled and Deformed Children: Sewing and needlework, Miss Millie L. West (1898).

New Jersey, Cranford. Orphan Asylum: Sewing, Miss Jessie T. Dorman (1900).

New York, Manhattan. House of Refuge, Randall's Island: Miss Phœbe D. Rulon (1900).

North Carolina, Burnsville. Stanley McCormick Academy: Domestic Science and Art, Miss Katherine G. T. Wiley (1901).

Virginia, Hampton. Hampton Normal and Agricultural Institute: Domestic Science, Miss Bernette Bacheler (1899).

HOSPITALS.

Massachusetts, Fall River. Union Hospital Training School for Nurses: Domestic Science, Miss Maybell P. Perry (1901).

New York, Brooklyn. Kings County Hospital: Domestic Science, Miss Florence Corbett (Special).

New Jersey, Orange. Training School for Nurses: Cookery, Miss Jessie T. Dorman (1900).

Ohio, Cleveland. Lakeside Hospital: Domestic Science, Miss Mary A. Fuller (1900); Matron, Mrs. Judge (Food Economics student).

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Rhode Island, Newport. Newport Hospital: Housekeeper, Miss Alice W. Miles (1901).
West Virginia, Wheeling. City Hospital: Domestic Science, Miss Reebie L. Lennox.

SETTLEMENTS AND MISSIONS.

Connecticut, Naugatuck. School of Cookery and Sewing: Cookery and sewing, Miss Florence S. Du Bois (1900).
Connecticut, Stamford. Children's League of St. John's Parish: Sewing, Miss Kathryn H. Root (1900).
New York, Brooklyn. The Astral: Housekeeper and Director of Clubs, Miss Mary J. Macy (1899).

THE GRADUATE STUDENTS IN RESIDENCE.

Cookery.

New York, Brooklyn: Hebrew Orphan Asylum.
St. Peter's Church, Mission Classes.
Willow Place Chapel.
New Jersey, Paterson: Young Women's Christian Association.

THE SENIOR CLASS.

Practice-teaching in Cookery and Sewing.

New York, Brooklyn: Acorn Club, Concord Street.
Astral Settlement, Java Street.
Bureau of Charities, Marcy Avenue.
Children's Aid Society, 61 Poplar Street.
Children's Aid Society, Van Brunt Street.
Parish House, Atlantic Avenue and St. James Place.
Plymouth Bethel, 15 Hicks Street.
The King's Daughters' Mission Classes, Williamsburgh.
New York, Manhattan: East 11th Street Social Settlement.
Jacob Riis Social Settlement.
Rivington Street College Settlement.
New Jersey, Englewood: Private classes.

SUMMARY.

The data given below, referring to 99 positions, include the mission and vacation-school classes taught by senior students.

In 70 of these positions there is but one instructor for cookery and sewing.
In 25, the instructor is required to teach cooking only.
In 4, the instructor teaches sewing only.

Of the graduates who have taken Domestic Science as a major subject and Domestic Art as a minor, the above data indicate that three are asked to teach both subjects to every one who is privileged to devote herself exclusively to Domestic Science, and that only a very small percentage (about 4 per cent.) of women so trained ever teach sewing only. Sometimes when sewing is established in schools and cookery is about to be, the instructor will temporarily teach sewing.

DISTRIBUTION OF WORK INDICATED IN TYPICAL POSITIONS GIVEN.

	Number of Students.		
Type of School.	Cookery.	Sewing.	Cookery and Sewing.
Public Schools	4108	1110	890
High Schools	175	190	60
Normal Schools	230	30	330
Colleges	330	30	60
Private Schools	280	370	250
Industrial Schools	960	80	50
Special Institutions	290	124	70
Hospitals	75		
Settlements and Missions	192	246	240
Vacation Schools	720		
Totals	7360	2180	1950

11,490 students are being taught during the present school year by the graduates and senior students of the department of Domestic Science.

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Outline of Course in Hand-work and Sewing.

FOR DOMESTIC SCIENCE STUDENTS.

FIRST YEAR.

Elementary work:
Hand-work, 3 hours a week for 2 terms.
Sewing (hand), 3 hours a week for 2 terms.

SECOND YEAR.

Advanced work:
Sewing (machine), 4 hours a week for 2 terms.
Sewing (hand), 4 hours a week for 1 term.
Hand-work, 2 hours a week for 1 term.

A spiral system to obtain; that is, a simple expression of fundamental principles in a direct sequence followed by a complex expression of the same principles in the same or a modified sequence.

All principles to be taught through some normal activity and not abstractly for future application.

COURSE OF STUDY.

ELEMENTARY HAND-WORK.

A combination of fundamental processes, principles, and simple elements of construction, to be expressed in the execution of articles as beautiful, individual, original, and useful as possible.

Cord-work, braiding, knotting, netting, and knitting, 3 hours a week for 6 weeks.

Weaving, 3 hours a week for 6 weeks.

Basketry, 6 hours a week for 6 weeks.

(Variety of materials to be used according to their nature.)

ELEMENTARY HAND-SEWING.

Stitches to be taught in a sequence based upon hand exercise involved and on an article providing opportunity for application according to the end which each stitch best subserves. The maximum of beauty as well as utility to be attained.

EVOLUTION OF PLAIN STITCHES COMBINED WITH ELEMENTS OF CONSTRUCTION OF SEWING APRON.

(3 hours a week for 3 months.)

Evolution of Stitches.

Horizontal Stitches:
Straight, single and very long — basting.
Straight, single and short — running.
Straight, half doubled and long — half back-stitching.
Straight, doubled and short — back-stitching.
Straight, single (with loop over stitch) short — chain-stitching.

Oblique Stitches:
Straight and coarse — over-casting.
Straight and fine — hemming.
Straight (with loop between stitches) — hem-stitching.

Vertical Stitches:
Straight and fine — French-hemming.
Straight and very fine — over-handing.
Straight (finished with a tight loop) — button-holing.

Elements of Construction.

Seam and finishing of same.
Hem, plain and hemstitched.
Gathering.
Placing and finishing of a band.
Button-hole and sewing on of button.

Decoration as a structural feature introduced.
Elements of Construction continued.
Adaptation, variation, and combination of stitches.

(3 hours a week for 3 months.)

Simple drawn-work, on towels, etc. Adaptation of stitches for decorative purposes.

French hemming, on glass towels. See above.

Tape sewed on glass towels. Element of construction and combination of stitches.

Felling, on child's waist. Element of construction and combination stitch.

Facing, straight and bias, on child's waist. Element of construction and combination of stitches.

Button-holes and sewing buttons on child's waist. Element of construction repeated.

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Feather-stitching, on traveling cases, etc. Decorative use of stitch.

Chain-stitching, on traveling cases, etc. Decorative use of stitch.

Patching, on plain cotton material and on figured material. Application of stitches.

Darning, on stockings and on cashmere. Adaptation of stitches.

Summary required at end of Elementary Work.

1. Syllabus showing evolution of principles underlying hand-work.

2. Syllabus summarizing elements of construction in hand-sewing such as hemming, gathering, felling, etc.

3. Models showing use of stitches and recording of the same in a sequence which emphasizes the development of one from another.

4. Re-combination of knowledge acquired exacting creative use of suggestions and the contribution of suggestive elements.

MACHINE SEWING AND DRAFTING.

The same fundamental principles of presentation to obtain as in hand-sewing.

Drafting to be treated as a form of mechanical drawing.

Knowledge of textiles unconsciously acquired in previous work to be consciously expressed.

Evolution of principles of drafting and processes, in machine sewing,

(4 hours a week for fall and winter terms of 2d year.)

1. Large apron for cookery, simple machine processes.

2. Under-waist, cut by pattern (to implant a general conception of a working drawing and to familiarize students with lines which represent the figure in the flat).

3. Undergarments, designed, drafted, and executed; use of machine attachments.

4. Simple dress for cookery, designed, drafted, and executed.

Summarized in the following ways:

1. Syllabus covering principles of universal application in sewing on a machine,— variations peculiar to special types of machines.

2. Models recording simple processes, their application and the elaboration of same.

3. Syllabus developing the principles of drafting showing in a summary how to establish and use units of form as bases for variations required to express difference in purpose and style.

4. A garment selected by each student which in design and execution will call for an individual expression of her knowledge of textiles, processes, and principles and which will be an index of her originality, artistic appreciation, power to achieve, and hand-skill.

ADVANCED HAND-SEWING.

(4 hours a week for 3 months.)

The course in sewing to culminate in a recapitulation and refined application of principles and processes learned earlier.

Decorative hand-sewing as a structural feature to be extended and to be supplemented by free and individual expression in ornamentation.

Course of Study.

Child's dress, designed and executed.

Baby's jacket, designed to include scalloping or simple embroidery and executed.

Initial on napkin, embroidered.

Tray-cloth or similar article, decorated by drawn work.

Table or book cover, embroidered, introducing color.

ADVANCED WEAVING.

(2 hours a week for 6 weeks.)

Creative-work involving:

1. Characteristic mechanical methods.
2. Development of design and use of color.
3. Suggestions offered by textiles, nature, etc.

ADVANCED BASKETRY.

(2 hours a week for six weeks.)

Creative work combining:

1. Principles of construction.
2. Knowledge of potentialities of materials.
3. Appreciation of form, design, and color.

COURSE SUMMARIZED BY

1. A discussion of the intrinsic value of Cord-work, Weaving, Basketry, Sewing (hand), Sewing (machine).
   As manual training,
   As a means of artistic expression,
   As a field of correlation,
   As an element in social progress.
2. A general adaptation of the principles of presentation to such hand-work.
3. A consideration of the teacher's opportunity to further through such work the physical, mental, and moral development of students.

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Bibliography.

THIS bibliography is published in response to many requests for lists of the books which have been found helpful in the work of the department of Domestic Science.

The order in which the books are enumerated in each sub-division and the sequence of the sub-divisions indicate the succession in which the acquisition of books is advised, e. g., the first and possibly the second book of one sub-division should be followed by the first and possibly the second of the next and so on.

The main divisions are arranged alphabetically.

The title precedes the name of the author because it is more suggestive to those who desire the information contained herein.

The subjects considered are:

Biology:
- Bacteriology.
- Moulds and Yeasts.
- Nature Study.
- Physiology.

Chemistry:
- General Chemistry.
- Qualitative Analysis.
- Theory of Solution.
- Quantitative Analysis.
- Organic Chemistry.
- Physiological Chemistry.
- Historical Chemistry.

Cookery:
- Practical Cookery.
- Food and Diet.
- Diet for Children.
- Diet for Invalids.
- Physiological Chemistry.
- Applied Science.

Education:
- Psychology.
- History and Principles of Education.
- General Method.

Heat.

Household Economics.

Laundry-work.

Sewing and Hand-work:
- Sewing.
- Knotting.
- Basketry.

BIOLOGY.

Bacteriology.

Principles of Bacteriology, by A. C. Abbott. Lea Brothers, Philadelphia.

The Story of Germ Life, by H. C. Conn. D. Appleton & Co., New York.

Outlines of Dairy Bacteriology, by H. L. Russell. H. L. Russell, Madison, Wis.

Technical Mycology, by Dr. Franz Lafar. Griffin & Co., London.

Hygiene of Transmissible Diseases, by A. C. Abbott. W. B. Saunders, Philadelphia.

Micro-organisms in Water, by Mr. and Mrs. P. Frankland. Longmans, Green & Co., New York.

Manual of Bacteriology, by Muir and Ritchie. The Macmillan Co., New York.

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The Story of the Bacteria, Dust and Its Dangers, Water and Ice, by T. M. Prudden. G. P. Putnam's Sons, New York.

Manual of Bacteriology, by Sternberg. William Wood & Co., New York.

The Principles of Bacteriology, by F. Hueppe. Open Court Pub. Co. Chicago.

Studies on Fermentation, by L. Pasteur. Faulkner and Robb translation. The Macmillan Co., New York.

Yeasts and Moulds.

Elementary Biology, by F. J. Parker. The Macmillan Co., New York.

Moulds, Mildews and Mushrooms, by L. M. Underwood. Henry Holt & Co., New York.

Plant Structures, by J. M. Coulter. D. Appleton & Co., New York.

Nature Study.

Trees.

Trees of the Northern United States, by Apgar. American Book Co., New York.

Our Native Trees, by H. L. Keeler. Charles Scribner's Sons, New York.

Silva of North America, by C. S. Sargent. Houghton, Mifflin & Co., New York.

The Trees of Northeastern America, by C. S. Newhall. G. P. Putnam's Sons, New York.

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Cornell Nature Study Leaflets, The Oaks, Leaflet No. 8, How the Evergreens shed their leaves, How the trees look in winter. Bureau of Nature Study, Cornell University.

Familiar Trees and their leaves, by F. S. Mathews. D. Appleton & Co., New York.

A guide to the trees, by A. Lounsberry. F. A. Stokes.

A Primer of Forestry, by G. Pinchot. Government Printing Office, Washington.

FLOWERS.

How to know the Wild Flowers, by W. S. Dana. Charles Scribner's Sons, New York.

Nature's Garden, by Neltje Blanchan. Doubleday, Page & Co., New York.

Home Studies in Nature, by M. Treat. Harper & Brothers, New York.

According to Season, by W. S. Dana. Charles Scribner's Sons, New York.

BIRDS.

Bird-life, by F. M. Chapman. D. Appleton & Co., New York.

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Birds of Village and Field, by F. A. Merriam. Houghton, Mifflin & Co., New York.

Handbook of Birds, by F. M. Chapman. D. Appleton & Co., New York.

The Common Land Birds of New England, by M. A. Wilcox. Lee & Shepard, Boston.

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The Woodpeckers, by F. H. Eckstrom. Houghton, Mifflin & Co., New York.

FERNS.

How to know the Ferns, by F. T. Parsons. Charles Scribner's Sons, New York.

Our native Ferns and their Allies, by Underwood. Henry Holt & Co., New York.

MOSSES.

Mosses, by A. J. Grant. Published by author, 360 Lenox Road, Flatbush, N. Y.

A List of the Mosses of Vermont, by A. J. Grant. Botanical Department, University of Vermont.

Analytical Key to the Genera and Species of the North American Mosses, by Barnes. University of Madison, Missouri.

Nature Study in General.

Sharp Eyes and my Studio Neighbors, by W. H. Gibson. Harper & Brothers, New York.

Riverby, by J. Burroughs. Houghton, Mifflin & Co., New York.

Nature Addresses and Lectures, by R. W. Emerson. Houghton, Mifflin & Co., New York.

Any of Thoreau's Works.

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Plant Structures, by J. M. Coulter. D. Appleton & Co., New York.

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Manual of Botany, by Asa Gray. American Book Co., New York.

Field and Forest Botany with Flora, by Asa Gray (revised by C. R. Barnes). American Book Co., New York.

Physiology.

Handbook of Physiology, by Kirke. P. Blakiston's Son & Co., Philadelphia.

Human Body, by Martin. Henry Holt & Co., New York.

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Human Physiology, by Angus D. Waller. Longmans, Green & Co., New York.

Elementary Physiology, by T. H. Huxley. The Macmillan Co., New York.

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Degeneration: Its Causes, Signs, and Results, by E. S. Talbot. Charles Scribner's Sons, New York.

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Pediatrics, by T. M. Rotch. Lippincott & Co., Philadelphia.

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Physiological and Pathological Chemistry, by G. Bunge. Paul, Trench & Trübner, London.

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*Principles of Practical Cookery, by Mann. Longmans, Green & Co., New York.

*Boston Cook Book, by Lincoln. Roberts Bros., Boston.

*Boston Cooking School Book, by Farmer. Little, Brown & Co., Boston.

*Kitchen Companion, by M. Parloa. Estes & Lauriat, Boston.

*Elements of the Theory and Practice of Cooking, by Williams. The Macmillan Co., New York.

*Century Cook Book, by Ronald. Century Co., New York.

*American Salad Book, by De Loup. Knapp & Co., New York.

*Canning and Preserving, by Rorer. Arnold, Philadelphia.

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*Food and Dietetics, by Hutchison. William Wood & Co., New York.

*Rumford Kitchen Leaflets. Home Science Publishing Co., Boston, Mass.

*Cost of Food, by Richards. John Wiley & Sons, New York.

*Food and Its Functions, by Knight. Scribner & Co., New York. Blackie & Co., London.

*Foods and Feeding, by Sir Henry Thompson. Warne & Co., London and New York.

*Food Materials and their Adulterations, by Richards. Estes & Lauriat, Boston.

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No. 23. Food: Nutritive value and cost. Atwater.

No. 25. Peanuts: Culture and Uses. Handy.

No. 26. Sweet Potatoes: Culture and Uses. Duggar.

No. 29. Souring of Milk.

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No. 34. Meats: Composition and Cooking. Woods.
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No. 51. Standard Varieties of Chickens. Howard.
No. 63. Care of Milk on the Farm. Pearson.
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No. 85. Fish as Food. Langworthy.
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No. 35. Food and Nutrition Investigations in New Jersey, by Voorhees. .05
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No. 85. Digestibility and Nutritive Value of Bread, by Wood and Merrill. .05
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No. 102. Losses in Cooking Meat, by Grindley. .05
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Bulletin No. 15. Cheese Industry of State of New York, by Gilbert. .05
Bulletin No. 17. Dairy Schools, by Pearson. .05
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Bulletin No. 71. Vanilla Culture, by Galbraith. .05

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Progressive Lessons in Needlework, by C. Johnson. D. C. Heath, New York.

* Those marked can be used as text-books or reference-books, by High School or Grammar grades.

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Foster. The Macmillan Co., N
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HOME ECONOMICS.

*Home Economics, by M. Parloa. The Century Publishing Co., New York.

*Dust and Its Dangers, by Prudden. G. P. Putnam's Sons, New York.

Home Sanitation, by Richards and Talbot. Home Science Publishing Co., Boston.

*American Sanitary Plumbing, by Lawler. Excelsior Publishing Co., New York.

Floating Matter of the Air, by Tyndall. D. Appleton & Co., New York.

Cost of Living, by Richards. John Wiley & Sons, New York.

Family Living on $500 a Year, by J. Corson. Harper Brothers, New York.

Handbook of Domestic Science and Household Arts, by Wilson. The Macmillan Co., New York.

Ventilation of School Buildings, by Morrison. D. Appleton & Co., New York.

Domestic Economy, by Scott and Newsholme. Swan & Sonnenschein, London.

Aspects of Mental Economy, by M. V. O'Shea. Bulletin 36, University of Wisconsin.

LAUNDRY-WORK.

Elementary Laundry Work, by Calder and Mann. Longmans, Green & Co., New York.

Laundry Manual, by L. R. Balderston and M. C. Limerick. Avil Printing Co., Market and 40th Streets, Philadelphia.

SEWING AND HAND-WORK.

Sewing.

Needlework for Student Teachers, by Amy K. Smith. City of London Book Depot.

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Handbook for Sewing Teachers. Whittaker, New York.

Knotting.

Varied Occupations in String Work, by L. Walker. The Macmillan Co., New York.

American Boys Handy Book, by D. C. Beard. Charles Scribner's Sons, New York.

Kedge Anchor, by W. Brady. W. Brady, for sale at principal nautical stores, and stationers.

Basketry.

How to make baskets, by Mary White. Doubleday, Page & Co., New York.

Cane and Basket Work, by Annie Firth. Charles Scribner's Sons, New York.

Varied Occupations in Weaving, by L. Walker. The Macmillan Co., New York.

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Ahn's Method of Learning the German Language. Course I and II. 2 vols.

A New Practical German Grammar and Exercise Book. By Dr. Rudolph Sonnenburg and Rev. Michael Schoelch.

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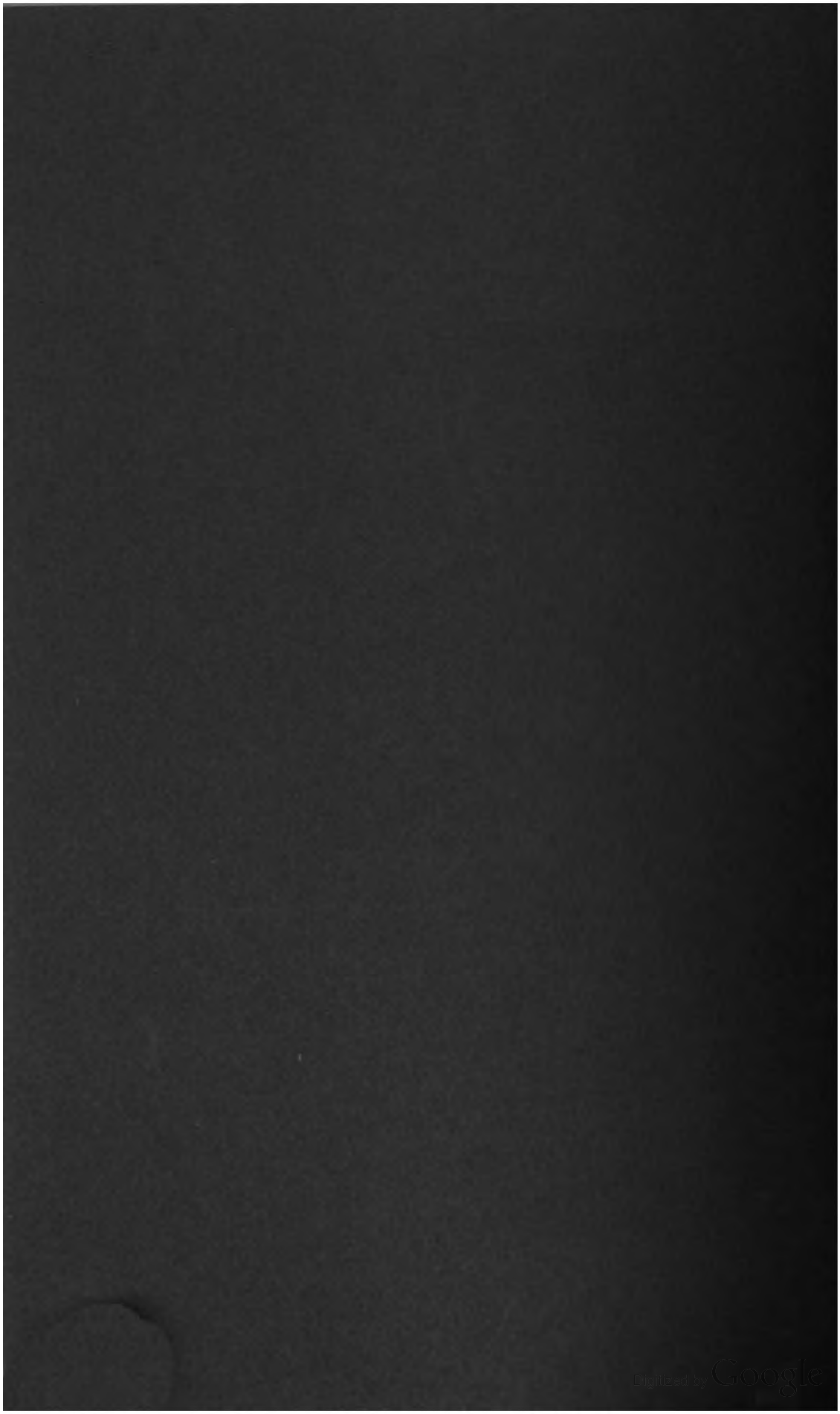
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SCIENCE AND TECHNOLOGY NUMBER

PRATT INSTITUTE MONTHLY

April, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X | April, 1902 | Number 6

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume X APRIL, 1902 Number 6

Annual Report of the Department of Science and Technology.

To the Trustees, Gentlemen:

THE work of the Department of Science and Technology for the school year 1901–1902 was started promptly and smoothly on the opening day of the term, September 23, with full classes and with the largest enrollment in our history. We had, in fact, many more applicants for our courses than we could accommodate, and the one thing which made the organization of the classes difficult this year was the large number of desirable candidates which our facilities would not permit us to accept. In many cases young men had written us for our circulars, had saved up their money in order that they might enter our courses, and had to come to the Institute with full expectation of being accepted. It had not occurred to many of them that the Department might be full, or that we might already have accepted as many as we could provide for; and the disappointment caused in the cases where we have been obliged to refuse such men has been very keen, because as a rule there has been no other place that we could suggest to them where they could get the training that they wanted.

Those who come to us are, as a rule, not prepared to enter the engineering schools, which are all of college grade; nor is the training offered by such schools exactly what they desire or need. They are for the most part young men who must be able to support themselves when they are nineteen or twenty years old, therefore they could not complete a four-year course; and, besides, in very many instances their minds are not disciplined by a long period of systematic schooling necessary to enable them to profit by the highly mathematical and scientific courses which such schools offer.

They are usually weak in their academic preparation, and lack the training that comes from well formed habits of study; yet with few exceptions they show that remarkable power of growth which comes from determination to succeed in a chosen field of work, and from an eagerness to do, to the best of their ability, whatever is required of them. They do not easily follow an instructor through a long demonstration, and at first have little power in abstract reasoning; but on the other hand they are strong in ability to "*do*" and to master problems that come to them in concrete form, and under the system of training in laboratory, shopwork, and

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drawing that the Institute gives them they rapidly become still stronger, and show a latent power, enthusiasm, and earnestness which in many cases more than outweighs their disadvantages.

It is to give to these young men in the shortest possible length of time a technical training that will be of immediate service to them in a practical way, properly preparing them for the positions that they will afterwards fill, and at the same time to develop their character and intellectual power to the utmost, so that they may continue to grow and advance after they leave us — that is the special problem of this Department.

ENROLLMENT.

The enrollment of the Department of Science and Technology for the year is as follows:

Day Courses.

First-year Applied Electricity	61
First-year Steam and Machine Design	61
Second-year Applied Electricity	37
Second-year Steam and Machine Design	22
Special Mechanical students	10
Total enrollment in Day Courses	191

Evening Technical Courses.

Applied Electricity	36
Physics	21
Chemistry, first year	27
Chemistry, second year	24
Chemistry, third year	10
Mechanical Drawing, first year	52
Machine Design, second year	17
Mechanism, third year	13
Steam and the Steam Engine (fall term only)	27
Strength of Materials (winter term only)	24
Total enrollment of Evening Technical Courses	251

Evening Trade Classes.

Carpentry	22
Machine work	60
Plumbing	55
Sign and Fresco Painting	32
Total enrolled in Evening Trade Classes	169
Total receiving instruction in Department of Science and Technology	611
Students from other Departments receiving instruction in the Department of Science and Technology	255
Grand Total	866

The following table gives the number of students enrolled in our Day and Evening Courses for the past five years, and shows the increased demand for the training that we offer so far as we have been able to provide additional facilities for the accommodation of larger classes:

Year.	1897	1898	1899	1900	1901
Day Courses	69	78	96	136	191
Evening Technical Courses	174	171	199	213	251
Evening Trade Classes	89	111	135	150	169
Totals	332	360	430	499	611

RESIDENCE OF DAY STUDENTS.

Nineteen states of the Union, besides Canada and the West Indies, are represented in our list of Day students. Of the total 191, 52 are from Brooklyn, 12 from Long Island outside of Brooklyn, 12 from New York city, and 34 from other parts of New York state. New Jersey furnishes 29, Connecticut 14, Massachusetts 9, Pennsylvania 7, Maryland 4, and Maine, Vermont, Rhode Island, Ohio, Indiana, Illinois, Kentucky, Virginia, West Virginia, Georgia, Col-

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orado, Oregon, Canada, and the West Indies send us one or two students each. But 27 per cent. of our students are from Brooklyn, and 43 per cent. of them are from parts of the country outside New York state.

Our Evening students are of necessity drawn from Brooklyn and its immediate vicinity. A number of them, however, come from New Jersey, Richmond, the upper part of New York city and its suburbs, and from the adjoining towns on Long Island.

DAY COURSES.

The Day courses which we offer in the Department are the two-year courses in Applied Electricity and in Steam and Machine Design, as we call the corresponding mechanical course. The growth and importance of manufacturing enterprises in this country, both in mechanical and electrical lines, has made it necessary to technically train the young men who are to hold a large number of important positions in them; and every year we have found the demand for men of special skill and technical knowledge of this kind increasing.

These courses are intended to fill this need, and we aim to fit our graduates for positions in machine-shops and tool-rooms where modern methods of manufacture by automatic processes call for a higher degree of intelligence than formerly; for draughting and designing of machine tools, engines, and other similar types of machinery; for stationary engineering in connection with the operation of machinery and power-plant work; or for similar positions in the building, installation, testing, and operation of electrical instruments and machinery.

The two courses are very similar in character, the only difference being that the course in Applied Electricity devotes the greater amount of time to electrical machinery and includes in the first year some general and applied chemistry, while the Mechanical course concentrates the time on machine design and machine construction and the steam and mechanical laboratory. Both of them are strictly technical, and they are so planned that the student may acquire a high degree of skill and practical knowledge of the details in his chosen work; but they also give him a sufficient amount of training in mathematics and applied science to enable him to thoroughly understand the principles underlying everything that he does, and to help him to cultivate habits of accurate thought and scientific reasoning in connection with all his work.

The students who apply for admission to these two-year courses I have already described. They are strong, active young men of good impulses and keen ambition, eager for opportunity, but often of meagre preparation. In arranging their work for them we recognize both their natural strength and limitations, teaching them by the use of concrete problems rather than by text-book instruction, and relying very largely upon the laboratory method; for only in the laboratory, drawing-room, or shop can we find the variety of those problems which will best illustrate fundamental principles in a clear and def-

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inite way and at the same time lay the practical foundation for their future work. In the laboratory, too, the teacher may come into the closest personal relations with his classes, and thus be able to fit his work more accurately to the individual needs and abilities of his students. For this reason a very generous allowance of time is given to work in the drawing-room, shops, and laboratories, and on an average only a quarter of each school day in each year of the two courses is spent in the class-room. The balance of the time is divided between the shop-work and drawing or laboratory-work.

I shall now describe the work in some of our various classes, and try to point out a few of its more important features, calling special attention to the methods by which we make our work meet the practical needs from the technical point of view and at the same time make it broadly educational by appealing to the reasoning faculties, and demanding discriminating judgment, and cultivating in the student something of creative power.

I feel, however, that the Trustees will get a clearer impression of our work and a better understanding of the methods of instruction from a somewhat full description of a single subject together with a comparatively brief description of other lines of work, than if all were given equal emphasis in this report. I have therefore included in full the report of Mr. J. M. Jameson, the instructor in charge of Physics, and I much regret that the limited space of these pages compels me to give at this time only a brief description of other lines of work and to defer the detailed description of them until another year.

REPORT OF INSTRUCTOR IN PHYSICS.

In teaching the subject of Physics to the first-year students of the Applied Electrical and Steam and Machine Design courses, we aim to cultivate in these young men right habits of thought, to develop and stimulate their power for growth, and to increase their efficiency or power of accomplishment as they increase in knowledge of the subject and its practical applications.

The necessary attributes of the scheme of instruction through which these aims are to be accomplished, and the selection of the particular methods for putting such a scheme into operation, must depend largely upon the previous experience and training of the students who enter these courses, and upon the character of the work for which they are being fitted. Many students come to us at a mature age, from practical work, after having been out of school for a number of years. They are usually willing — indeed, often extremely anxious — to make strenuous effort; but they have little judgment as to the proper direction in which to expend their energy, and their power for growth and acquisition is at first not great. Nevertheless, the courses which they are undertaking are technical, and hence somewhat mathematical and difficult. Self-reliance, considerable mental stamina, and a firm grasp of fundamental principles of Physics are therefore necessary before these stu-

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dents are ready to undertake the more technical subjects of their second year.

My own experience, and also that of my associates, has been that the type of instruction which best attains these aims, at the same time accomplishing its share in the development of the first-year students, makes possible the following things:

First. Training in the power to put forth *steady, consecutive effort* in a definite direction.

Second. Such an arrangement of time and subject-matter as shall offer but *one* new idea at a time, with sufficient illustration and explanation to adequately connect this idea with the student's knowledge and former experiences.

Third. Sufficient time and practice for this idea to be assimilated. (This demands a liberal time-allowance for Physics, and the provision in the schedule for the first-year students for five periods of recitation and eight periods in the laboratory per week is none too much.)

Fourth. A close correlation between the work of the laboratory and that of the class-room, so that the student may use the training of both for the immediate task before him.

Fifth. A method of advance through graded and, wherever possible, concrete steps which shall enable students of the previous experience and training of those here to acquire a good working knowledge of portions of the subject which are necessary for their future success but which would be far beyond their powers if approached in any other way.

Sixth. Additional laboratory practice at any time for any student who is experiencing special difficulty with any particular principle. The laboratory period offers the best opportunity for this needed *individual instruction.*

Seventh. The solution as home work and in the class-room of a great number of problems embodying in concrete form the principles of the text-book and their applications.

Eighth. Opportunity for those students showing satisfactory progress to obtain during the latter half of the year some practice in laboratory work involving a number of related operations, many of them new, and requiring independence of thought and effort in overcoming difficulties, greater skill in manipulation, and practice in forming correct general conclusions from large amounts of data.

We are endeavoring to provide these possibilities for the work as it is being conducted. The relatively enormous amount of subject-matter that it is desirable to cover during the year is so reduced in amount through careful selection of topics and through a proper distribution of emphasis that the student may proceed without undue haste, and only so much is attempted as it is believed may be well done by the average student who applies himself with reasonable assiduity. The fundamental and most necessary portions of the subject are taken up with thoroughness, and rounded out as much as possible through their associations and applications. We are placing great dependence upon laboratory work, both as providing the natural means of advance for our

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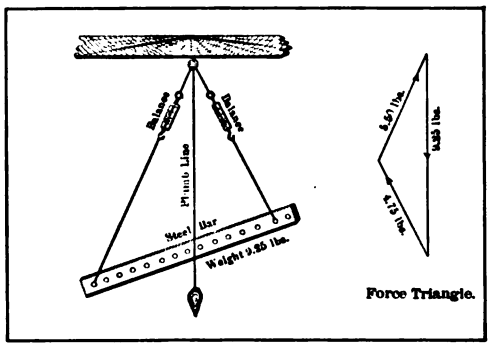

Figure 1. Conditions of equilibrium for a rigid body, three forces acting.

students and as furnishing them the fullest comprehension of essential principles. Clearer and better ideas are gained, we have found, through *doing* than through reading alone. Hence the laboratory exercises invariably either lead the way or proceed parallel with the study of the text-books and the class-room discussions.

The general scope and character of the instruction in Physics will appear from the summary of the year's work which is here given. The student begins his study in the laboratory with a simple preliminary exercise designed to teach him how to arrange his data neatly, how to estimate accurately tenths of scale divisions, how to avoid common errors in reading instruments, and similar general processes. We give only one such practice exercise, however. The student is expected to obtain his additional training in such matters as an incidental accompaniment of exercises given primarily for other purposes. Instead of continuing the practice work, therefore, the student immediately takes up the graphical representation of the quantities with which he is first to deal, viz., motions, velocities, and forces — learning how to show the direction and amount of each by lines, and how to combine these geometrically. Experimental proof of the parallelogram law is then given, using three spring balances placed horizontally. Forces of considerable magnitude are used to reduce to a minimum the accidental errors due to the inaccuracies and friction of the balances, for we can never use with our Science and Technology classes experiments or apparatus which might be regarded as trivial. It must always be such as will hold the interest of mature students, and give them practical results, which, in cases where accuracy is desired, will be comparable with standard values.

This is followed by an extended series of experiments to determine the amount, direction, and distribution of the forces in such combinations as a rigid body suspended in various ways, different types of simple trusses, bell cranks, derricks, doors, etc. An at-

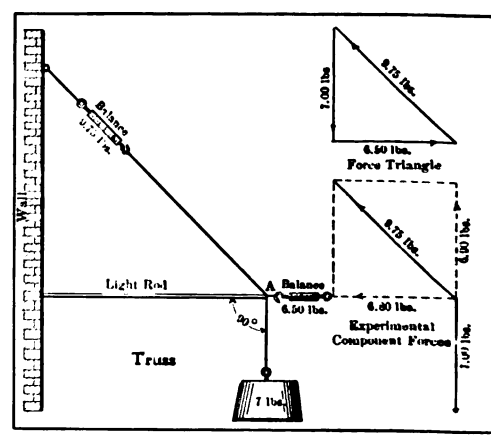

Figure 2. Distribution of forces in a simple truss. Student to prove that the sums of the vertical and horizontal components each equals zero.

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tempt is made to so grade these exercises that one shall follow naturally after another, each extending a principle learned or adding a new principle.

Illustrations of the type of experimental work required in these exercises, and of the method in which each student is expected to work out his result, are shown in Figures 1, 2, 3, 4, and 5. Nearly every one of these is capable of several modifications which furnish additional problems; thus the rod in Figure 2 may be inclined upward or downward; a second tie may be put in, or a heavy bar may be used and its weight included; any number of forces acting at any angles may be used in Figure 3; the weight of the lever may be made to act at a point of support or outside it in Figure 4; moments may be taken about any point, and as many upward and downward forces used as desired; or the forces which are shown acting along the X and Y axes, Figure 5, may be shifted until they act at any desired angle with these axes, thus requiring students to find the components, and the moments may be required about different points.

Fourteen different exercises of the general character shown, nearly all subject to the kind of variation which I have just described, are given, and they furnish the basis for the classroom work. The recitations are used to discuss and amplify the laboratory work and for practice in the solution of a large number of problems both graphical and numerical, involving these and similar principles. The students get, through this work, an excellent introduction to methods of accurate reasoning.

Center of gravity is taught as a special case of parallel forces. The center of gravity of a bar with any number of adjustable weights is computed by the application of the law of moments, with the weights in different positions, and the bar is then

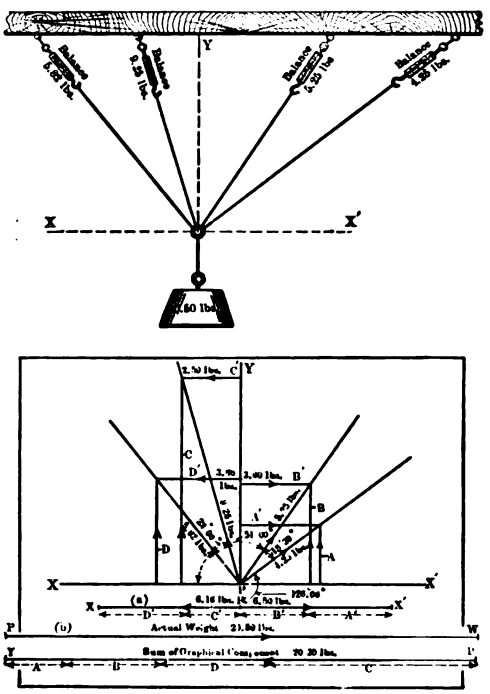

Figure 3. Equilibrium of several forces acting at a point. Algebraic sums of components along X and Y axes each zero.

balanced and the computations verified until the student has perfect confidence in the method. Similarly the center of gravity of areas, as triangles, rectangles with portions removed, cross sections of "I" beams, etc., are computed, and the results are verified experimentally by cutting out the figure accurately from cardboard of uniform thickness, and suspending it. Figure 6 shows such an exercise, with

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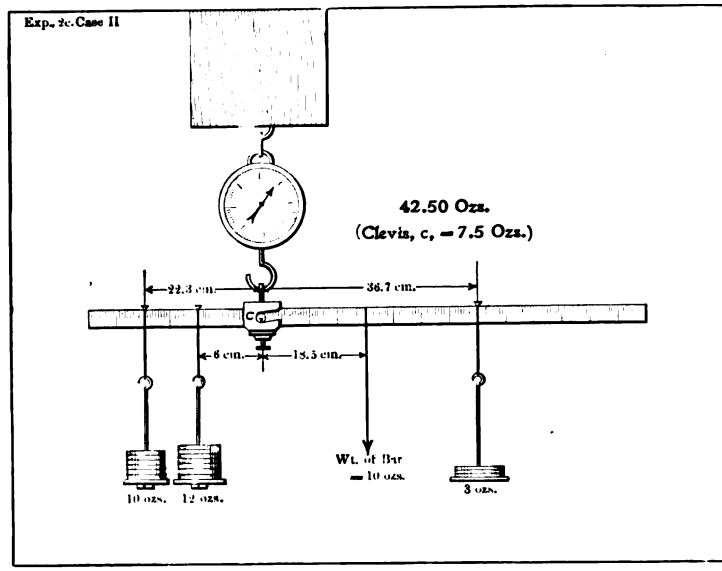

Figure 4. Equilibrium of parallel forces. Algebraic sums of all forces, and of moments of all forces about any point on the bar, each equals zero.

the center of gravity located by experiment.

The work just outlined in equilibrium of forces, moments, and center of gravity, occupies the greater part of the fall term. We place this part of mechanics first, and give it the emphasis that I have here shown, not alone because of its practical importance, but also because of the opportunity which it furnishes for introducing our students to a mathematical subject like physics through simple, direct steps, involving only simple numerical calculations, and dealing only with forces and distance; quantities with which they are already more or less familiar, and which they can measure directly.

Uniform and accelerated motion are next taken up, and, following these, the consideration of the relation of force and mass to the acceleration produced. Angular acceleration and falling bodies are taught as special cases of the general laws. In this, the laboratory work precedes the class-room discussion of the subject, and the student has an opportunity to become familiar with acceleration and the general phenomena

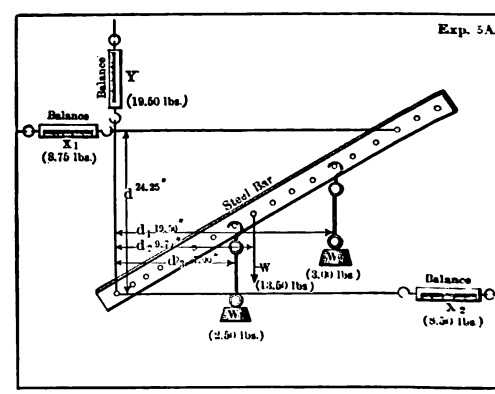

Figure 5. General conditions of equilibrium for forces in one plane. $\Sigma X = 0$. $\Sigma Y = 0$. $\Sigma Pa = 0$.

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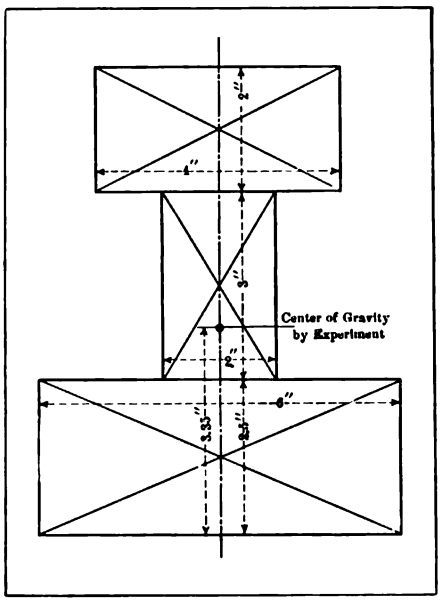

Figure 6. Exercise in finding the center of gravity of the cross section of an I beam.

of accelerated motion from observation before he is asked to solve problems involving them. The experimental determinations of the laws of accelerated motion are made by use of specially constructed cars running on tightly stretched inclined wires. The Atwood's machines are used in determinations of the relations between the accelerations produced and the forces and moving masses. The laboratory exercises include: determinations of the effective mass of a revolving wheel, as in the Atwood's machine; the study of the composition of an accelerated and a uniform motion, as shown by the water jet; the determination of the value of "g"; the study of the effect of friction in retarding motion; and the laws of the pendulum. By the use of the rigid inclined pendulum shown in Figure 7, the last exercise is extended to the determination of the relation of the period of vibration to the force acting, thus experimentally establishing everything but the constant in the usual formula for the simple pendulum.

We introduce in connection with this work the use of curves in giving such results as the relation of distance and velocity to time, mass to acceleration, etc.; and we have required standard form for these curves, and neatness and accuracy in drawing and lettering them. We have also tried to teach the proper interpretation of them, and the distinction between mere graphical records and those curves which represent natural laws.

Experimental determinations of the elastic limit, and tensile strength of wires, Hook's Law as shown in the elasticity of wires, the deflection of

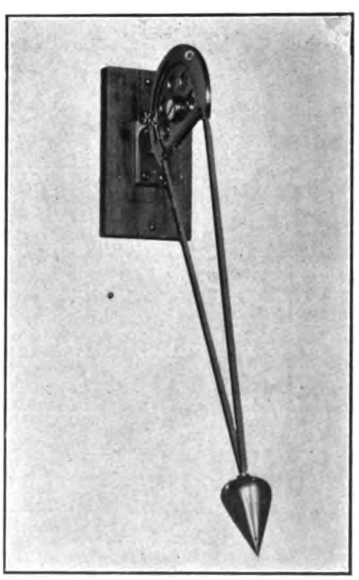

Figure 7. Inclined pendulum for proving relation of period of vibration to force acting.

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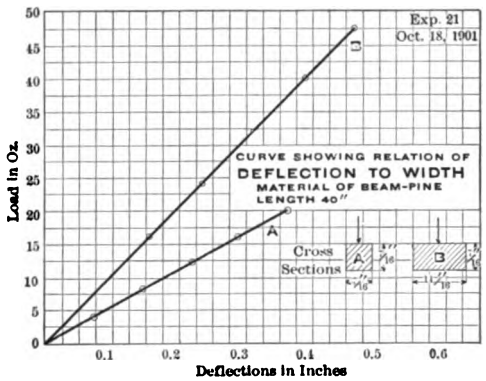

Figure 8.

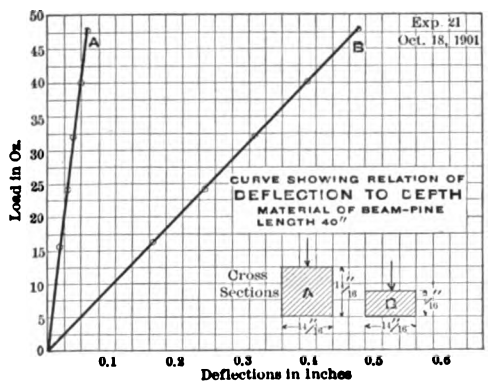

Figure 9.

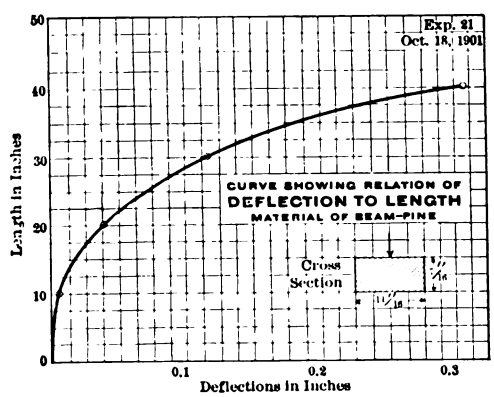

Figure 10.

Figures 8, 9, and 10. Laws of deflection for rectangular beams, with load central.

rectangular beams under central load, and of the modulus of elasticity, complete the term's work. On this work the student has his first opportunity to use the micrometer as a means of making small measurements, and his natural desire to properly determine these laws which appeal to him as being of practical value, excites his interest and his desire to obtain the greatest possible accuracy. I mention this only as an illustration of the way in which training in manipulation, accuracy, etc., may be made more effective by acquiring it in experiments where it is not apparently the primary aim. The apparatus used for this was described in the *Monthly* for May, 1900. The curves shown in Figures 8, 9, and 10, taken from the note-book of a member of this year's class, make clear the kind of results which are obtained.

Mechanics is completed in the second term with the study of the laws of friction work, energy, efficiency, and mechanical advantage of machines, and the mechanics of fluids. The laboratory work includes determinations of coefficients of friction in such practical cases as leather belting on cast iron, surfaces with or without lubrication, etc.; efficiency of combination of pulleys; efficiency tests of some kind of small machine; measurement of gas and water pressure, with open and closed manometers; determinations of specific gravity by various methods; and the determination of the pressure and volume relations of a gas at constant temperature (Boyle's Law).

In all this work, and, in fact, throughout the year, laboratory exer-

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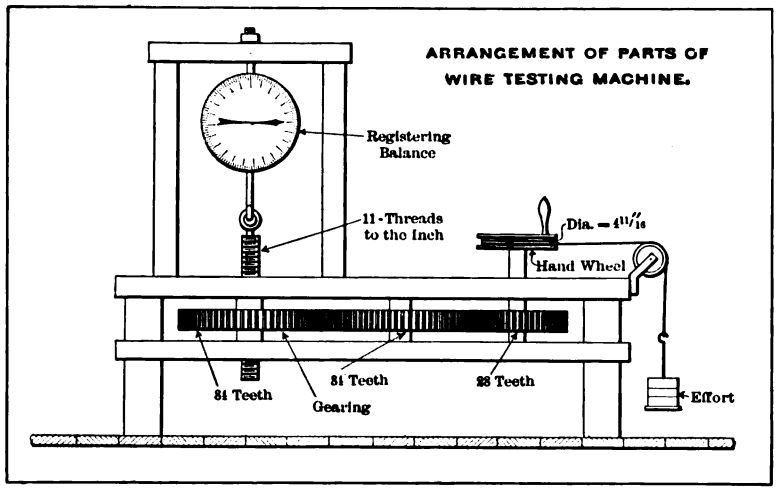

Figure 11.

cises are selected because of their teaching value. We aim to illustrate every important principle and every important term or definition by means of one or more experiments in the laboratory. As an illustration of what a single experiment may furnish in the way mentioned, I give here the data obtained from an experiment on the determination of the efficiency of a small testing machine, the construction of which is shown in Figure 11.

Experiment: Efficiency test of a wire-testing machine.

Object: The determination of the mechanical advantage, efficiency, and loss by friction of the machine at different loads.

Method: By attaching a scale pan to a cord running in a groove cut in the hand-wheel, the effort was found which would give a certain force on the spring balance. The effort was found for balance readings from 30 to 192 pounds.

Mechanical Advantage: The mechanical advantage or displacement ratio of the machine was found from the diameter of the hand-wheel, the number of teeth in the gear, and the pitch of the screw.

Input and Output: The input of the machine for a given load was computed by multiplying the effort by the distance traversed. The output was found by multiplying the corresponding balance reading by its displacement at the same load.

By dividing the balance readings by the mechanical advantage, the theoretical effort, or the effort were there no friction, was found.

The actual effort minus the theoretical gives the effort expended in overcoming friction.

Data: Diameter of hand-wheel, $4\frac{11}{16}$ inches.

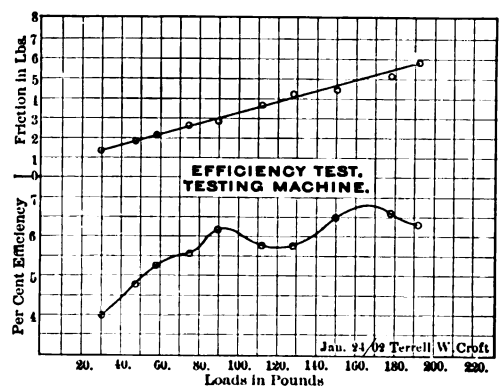

Figure 12.

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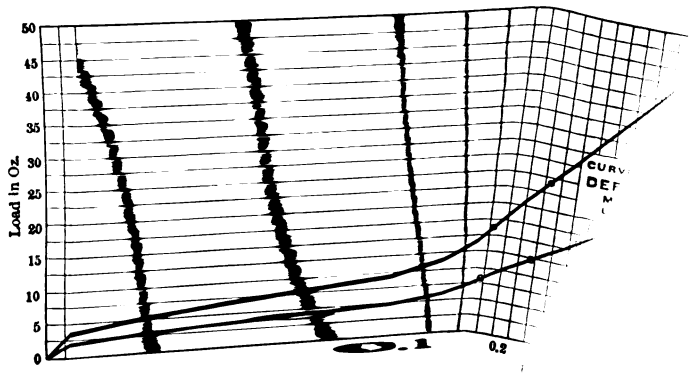

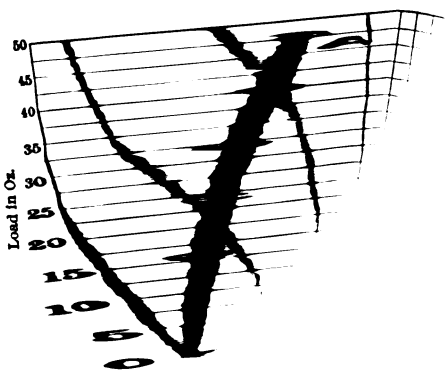

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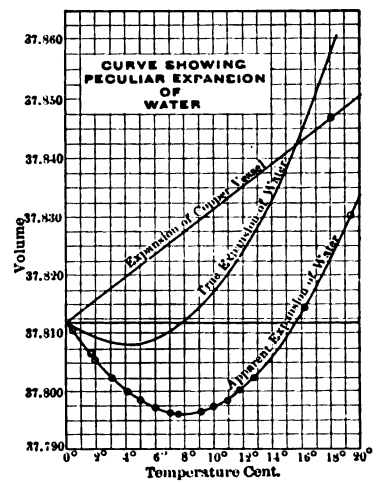

Figure 15.

surface under the same conditions, the relation between pressure and temperature of steam, the latent heat of fusion of ice, the latent heat of steam, and the specific heat of metals.

These experiments often furnish some very good graphical exercises, such, for example, as that shown in Figures 14 and 15. In the former the curve is first plotted from data obtained with the apparatus shown in Figure 13, and then the coefficient of expansion is computed from the volumes at any convenient temperatures taken from the curve. By plotting this on a smaller scale an approxi-

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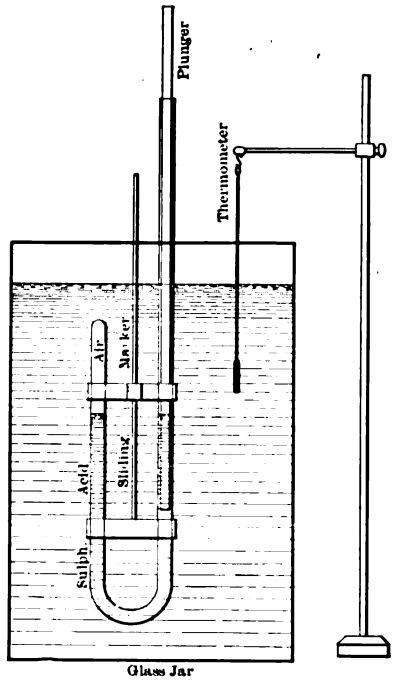

Figure 13. Apparatus for determining rate of increase of volume of a gas with rise of temperature, pressure being constant. The sulphuric acid in the two arms is kept at the same level by means of the plunger.

Number of teeth on small wheel, 28. Number of teeth on large wheel, 84. (Middle wheel acts in transmission only.) Number of threads per inch on screw, 11.

Computations: For the screw to fall one inch, the large wheel must make eleven revolutions and the small wheel three times as many.

For each revolution of the small wheel, the scale pan falls a distance equal to the circumference of the hand-wheel; therefore the mechanical advantage equals $11 \times 3 \times 4\frac{11}{16} \times 3.1416 = 485$.

Output at 30 pounds load $= 30 \times 1$ inch $= 30$ inch pounds.

Input corresponding $= 1.5 \times 485$ inches $= 727.5$ inch pounds.

Efficiency at this load equals output divided by input $= \frac{30}{727.5} = 0.04$ or 4 per cent.

Theoretical effort equals $30 \div 485 = 0.06$ pounds. Therefore, effort expended in friction equals $1.5 - 0.06 = 1.44$ pounds.

The technical student needs a clear conception of the meaning and proper use of such terms as "imput," "output," and "efficiency of machinery." Certainly no student could perform the preceding tests, properly record his observations, and make the computations necessary for obtaining all the data required in plotting the curves for efficiency and friction at different loads shown in Figure 12 without, in the process, receiving such conceptions with great definiteness.

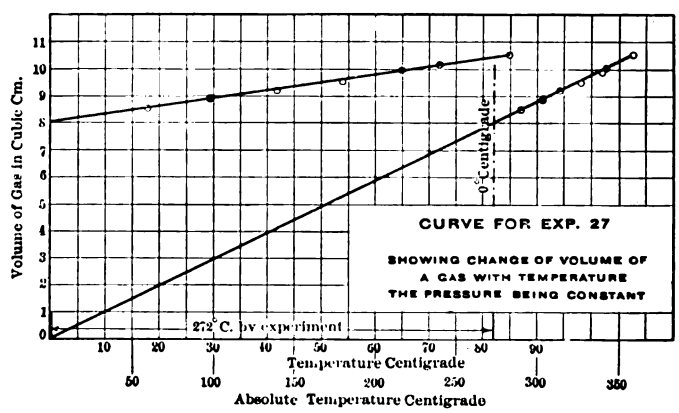

Figure 14. Expansion of gas at constant pressure and approximate determination of the absolute zero of the air.

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On completing the mechanics, we begin the study of heat, which occupies the latter half of the winter term. This forms an excellent means of transition from the direct measurements of mechanics to the indirect and more mathematical determinations of electricity and magnetism which come in the latter part of the course. The student in heat begins to measure and to associate the idea of quantity with an agent that he cannot see or weigh, and that he detects only through its effects. Somewhat more abstract reasoning is therefore required than was needed in the mechanics, where the problems could usually be shown in concrete form and quantities measured directly. In the laboratory work, also, greater exercise of judgment is required in detecting the sources of error which must be avoided entirely, and in properly controlling those which may not be excluded, so that they enter to a known extent, and may be properly allowed for. The student must be constantly upon the watch if he is to do successful work, and, as a result, he becomes more skillful, more resourceful, more thoughtful, and hence more self-reliant.

From the very first the idea of heat as a form of energy is developed, and gain or loss of heat is treated as a transfer of so much energy. This prepares the way for so much of thermodynamics as may be required later in the student's course. For the same reason such ideas as the pressure of saturated vapor as a function of its temperature are emphasized, and the student is made familiar with the thermal units and constants based upon the Fahrenheit scale of temperature. In the laboratory, after a few simple determinations in the rate of expansions of solids and liquids, including water, experiments are given for determining the laws of increase of volume of gases at constant pressure, and of increase of pressure at constant volume, the relative radiating powers of bright and blackened

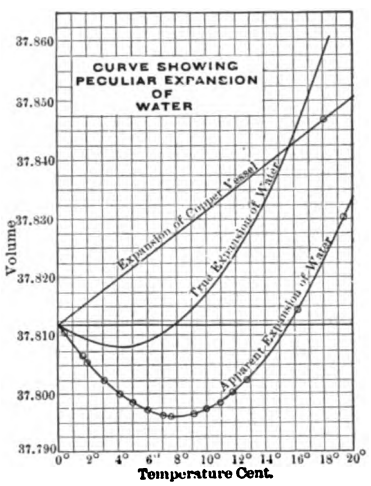

Figure 15.

surface under the same conditions, the relation between pressure and temperature of steam, the latent heat of fusion of ice, the latent heat of steam, and the specific heat of metals.

These experiments often furnish some very good graphical exercises, such, for example, as that shown in Figures 14 and 15. In the former the curve is first plotted from data obtained with the apparatus shown in Figure 13, and then the coefficient of expansion is computed from the volumes at any convenient temperatures taken from the curve. By plotting this on a smaller scale an approxi-

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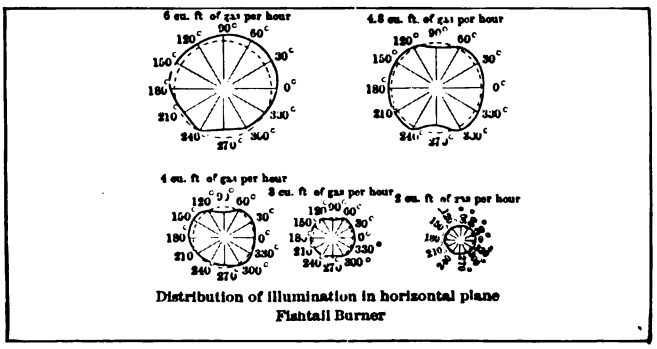

Figure 16. Distribution of illumination, and relative illuminating power of gas flames burning different amounts of gas.

mate value of the absolute zero may be determined as shown. Figure 15 shows, in addition to the other information derived from the experiment, the principle of graphically correcting for the expansion of the vessel by combining the curves.

The large amount of time needed for mechanics, heat, and electricity makes it impossible for us to do more in the subject of light than to study a few of the fundamental laws. The rotator and testing meter added to the equipment of the photometer-room last year have greatly increased the effectiveness of this part of the work by providing opportunity for a large variety of tests of gas and electric lights, comparisons of commercial and scientific standards, and efficiency tests of different types of burners and illuminants. The curves shown in Figures 16 and 17 give a suggestion of what has been accomplished with this apparatus. In addition to the photometrical work, we consider, mainly through laboratory exercises, the laws of reflection, and the formation of images by plane and concave mirrors, the laws of refraction, and the production of images by lenses.

The whole of the spring term, and usually a few weeks of the winter term, is given to the study of magnetism and electricity. Measured by its utility and completeness for the purpose of instruction, the equipment of the Department for this work is most excellent. A number of instruments of precision are included in this equipment, and others are being added for use in the general laboratory exercises and in special work, or to provide standards by which other apparatus may be constructed or calibrated. The standard high resistance and reflecting galvanometers which were purchased last year enabled us to add several experiments to our laboratory list which were not possible before, notable among them being one

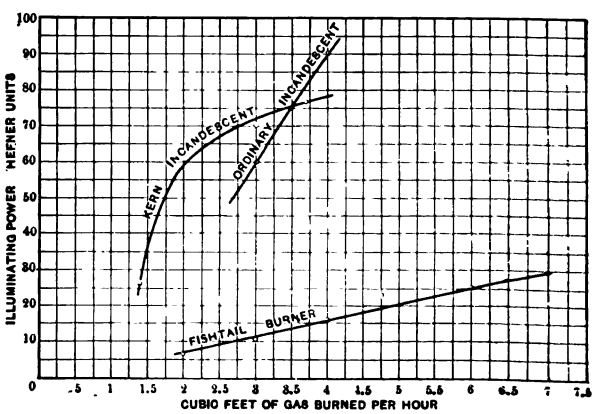

Figure 17. Efficiency curves for different forms of gas-burners.

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on the determination of insulation resistance — a very practical experiment. Among the additions this year, are a standard low resistance which will carry heavy currents, for potential difference comparisons and standardizations, telescope and scale attachments to the most sensitive of our galvanometers, and a specially constructed condenser for showing the effect of the area of the condenser plates, and the thickness of the dielectric between them upon capacity. When the storage battery now being installed is ready for use, a large amount of experimental work in which constant pressure or current, or both, is required, may be undertaken.

The instruction given in electricity and magnetism covers, with considerable detail, the theory of magnetic fields, phenomena of charge and discharge, induction, condensers, electromotive force, potential difference, resistance, and current, the laws of electric and magnetic circuits, primary and storage batteries, induced currents, magnetization of iron, permeability and hysteresis losses, theory of the dynamo and motor, incandescent and arc lights, the telephone, telegraph systems, the construction and calibration of electrical instruments, and the theory and practice of electrical measurements. A large number of problems are given, both for class-room solution and for home study. When possible these are so worded as to reproduce conditions such as frequently arise in actual practice.

The laboratory exercises furnish practice in the calibration and use of electrical measuring instruments, and in methods of measurement. They are selected particularly, however, because of their value in teaching the fundamental principles and definitions of the subject, and in developing the thoughtfulness, self-reliance, and judgment of the student. It is because of their utility in these respects that experiments such as the following are considered especially valuable.

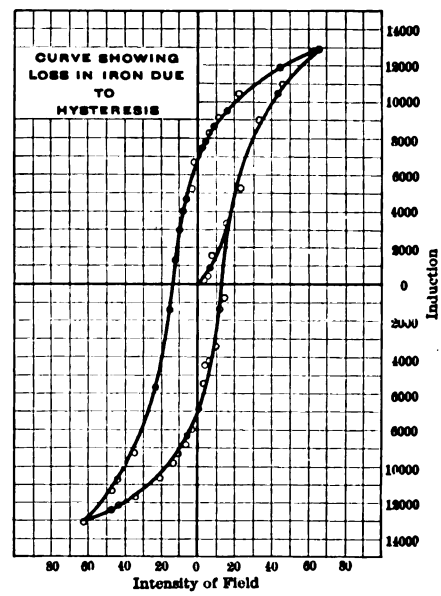

Figure 18.

The construction of plates for a storage cell from sheet lead by punching pieces of proper size and shape thickly with rough-edged holes, and then pasting them with a thick paste of litharge (negative plate), or red lead (positive plate), mixed with diluted sulphuric acid. Charging these cells from the lighting circuit, then discharging them through a known resistance, and determining the internal

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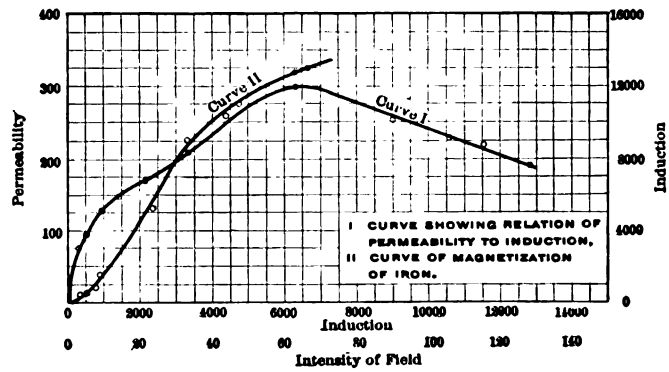

Figure 19.

resistance of the cell, its capacity and its change in electro-motive force on both charge and discharge.

Connecting up and regulating, to give good service between laboratories, a telephone circuit including batteries, receivers, and Blake transmitters.

A study of the permeability and degree of magnetization of a piece of soft iron or mild steel with different magnetizing forces, and the determination of the energy loss in the specimen, due to hysteresis, for an assumed number of reversals per minute.

Working out through the use of galvanometer, coils, and magnets, the laws of current induction, which, on a much larger scale, underlie the production of electromotive force by the dynamo.

A complete list of the laboratory exercises in magnetism and electricity follows, together with the curves of Figures 18, 19 and 20, which furnish some idea of the character of the results obtained in these exercises. Each student, on the average, performs about thirty-five exercises selected from the entire number.

Exp. 1. Study of the magnetic field about a magnet or system of magnets.
Exp. 2. Distribution of "free" or "surface magnetism" along a bar magnet.
Exp. 3. Comparison of the intensities of the fields at different distances from a magnet, near a radiator, within a soft iron screen, etc.
Exp. 4. Determination of the horizontal intensity of the earth's field by magnetometer method.
Exp. 5. Magnetic moment of a magnet.
Exp. 6. Effect of heat on magnetism.
Exp. 7. Study of the electrostatic field about an insulated charged conductor or system of conductors.
Exp. 8. Electrostatic induction.
Exp. 9. Principle of the condenser.
Exp. 10. Study of a Toepler-Holtz machine.
Exp. 11. Study of the chemical action in a simple cell.
Exp. 12. Effect of a straight conductor carrying current upon a magnetic needle.
Exp. 13. Lines of force about the coil of a tangent galvanometer.
Exp. 14. Fall of potential proportional to resistance, current constant.
Exp. 15. Measurement of resistance by method of substitution.
Exp. 16. Measurement of low resistance, potential difference method.
Exp. 17. Measurement of resistance by Wheatstone Bridge method.
Exp. 18. Determination of effect of length, cross section, and material on resistance. Specific resistance.

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Exp. 19. Effect of temperature on resistance of metals, temperature coefficient.
Exp. 20. Effect of temperature on resistance of an incandescent lamp filament.
Exp. 21. Resistance of conductors in series and in parallel.
Exp. 22. Battery resistance, Ohm's method.
Exp. 23. Effect of size and distance between the plates on battery resistance, Mance's method.
Exp. 24. Resistance of a storage battery, fall of potential method.
Exp. 25. Resistance of a battery, Beetz's method.
Exp. 26. Resistance of a battery, Kohlrausch's alternating current method.
Exp. 27. Measurement of electromotive force, Ohm's method.
Exp. 28. Relation of potential difference at the terminals of a battery to external resistance.
Exp. 29. Comparison of electromotive forces, equal resistance method.
Exp. 30. Measurement of electromotive force, potentiometer method, with a standard cell.
Exp. 31. Electromotive force of a battery, with different groupings of the cells.
Exp. 32. Test of battery cells for change of E. M. F., current and internal resistance, due to polarization, ballistic method.
Exp. 33. Measurement of current with copper voltameter.
Exp. 34. Determination of the constant of a galvanometer.
Exp. 35. To determine whether a galvanometer obeys the laws of tangents.
Exp. 36. Calibration of an ammeter by comparison with a standard instrument or Kelvin balance.
Exp. 37. Calibration of a voltmeter by means of standard cell.
Exp. 38. Measurement of capacity of condensers, series and parallel arrangements, ballistic method.
Exp. 39. Effect of area of plates on capacity of condensers.
Exp. 40. Effect of thickness of dielectric on capacity of condensers, bridge method.
Exp. 41. Study of an electro-magnet.
Exp. 42. Magnetization of iron, hysteresis loss.
Exp. 43. Laws of induced currents.
Exp. 44. Construction and test of a storage cell.
Exp. 45. Connections and regulation of a telegraph circuit.
Exp. 46. Connection and regulation of a telephone circuit.
Exp. 47. Study of an arc lamp, and measurement of energy supplied to the arc.
Exp. 48. Study of a thermo couple.
Exp. 49. Measurement of insulation resistance.

In conclusion, I would call attention again to the opportunity for more advanced laboratory work which we offer during the latter half year for those students who have demonstrated their fitness for it. No student is allowed to take advantage of this opportunity unless we are satisfied that he will get more and better training from the special work than from the performance of the regular

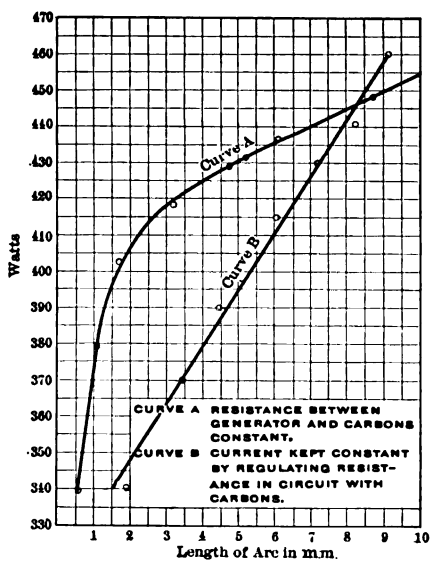

Figure 20. Energy expended in a direct current arc-light at different lengths of arc. Curve A shows the conditions of ordinary vise.

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class exercises that it replaces, and unless his subject seems well within his powers, and one likely to yield good results. Where these requirements are satisfied, students are allowed to omit certain of the more elementary and preliminary exercises, such as are less necessary to them, and to devote the time thus gained to the study of some more comprehensive problem. When conducted in this way, we find such special work of great assistance in properly adjusting the instruction to the wide diversity of preparation and attainment which is becoming yearly even more noticeable in our classes. The interest of the better students is thus maintained, and they are in no way kept back from the best work of which they are capable, while at the same time the slower or less well prepared students are engaged upon problems suited to them, and are not unduly forced. Discussion of the results of such special work later, before the class, arouses general interest in the subject, and stimulates the students to better work. We are making more general use of the plan this year than ever before. Several such special studies in heat, photometry, and electricity are completed at this date, while others, including tests of certain types of battery cells, efficiency tests of incandescent ceiling lights, a study of storage cells, and the measurement of high temperature by the thermo element, are now under way. Still others will be taken up before the close of the term.

Respectfully submitted,

J. M. Jameson,
Instructor in Physics.

SHOP WORK.

The shop work forms an important part of these courses, ten periods a week being devoted to it in the mechanical course during both years, and six periods a week during the two years in the electrical course, besides a large amount of electrical construction work which is included in the time allowed to the electrical laboratory work.

During the first part of the first year the greater part of this time is spent in carpentry, joinery, and pattern-making, the plan being to get the students started just as soon as possible on the patterns of machine parts, which they can use in the foundry, and from which they can get castings which they will finish into some complete machine the following year in the machine shop. For this reason, after the students have acquired a few fundamental principles in woodwork, and have acquired some degree of skill and accuracy in the use of tools, the instruction is almost entirely individual. Each student has his particular problems to work out, using so far as possible his own judgment, and gaining a certain degree of self-reliance in his work that would be impossible by any other method.

The variety of work which is possible in pattern-making, and the amount of ingenuity and forethought that the skilled pattern-maker must display in laying out and planning his work is almost unlimited; so that this subject gives us a beautiful opportunity to combine skill and training in practical detail with a training in method and logical reasoning. The

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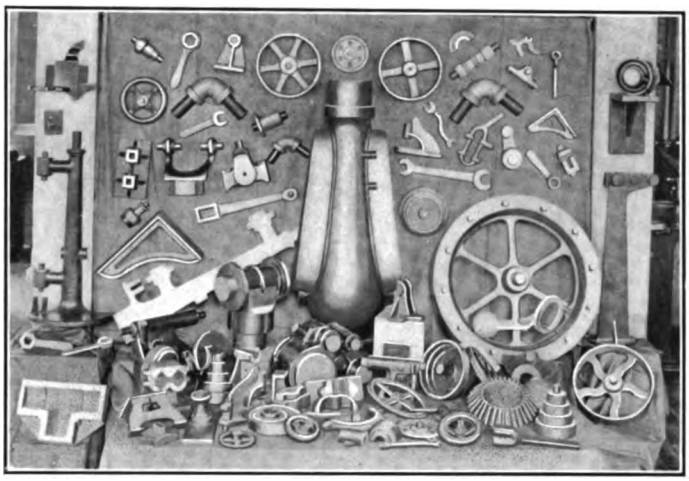

Figure 21. Pattern-work.

student realizes at the beginning that he can only succeed through continually giving his best thought to the work as it progresses, and the finished patterns furnish most interesting proof of what may be done in a short amount of time through earnest and intelligent application. Figure 21 is a photograph taken at the close of last year of a group of patterns which had been made by the class, and gives a clear impression of the great variety of work which our students do.

A course in foundry work goes parallel with the course in pattern-making, and the students get a large amount of practice in making moulds for all sorts of machine parts, varying in weight from a small fraction of a pound to two or three hundred pounds. Here the students have an opportunity to acquire a different kind of judgment from that needed in the other branches of the shop work, where exact measurement of almost every detail is possible. Success in this work depends upon delicacy of touch, the right temper in the sand, which is largely a question of feeling, having it rammed in the moulds with perfect uniformity, and having the mould vented so as to allow the rapid escape of the gases that will be formed. Much attention, too, must be paid to the facing of the moulds and the finish of the castings, and this year we are conducting a series of experiments on different methods of rattling and pickling our casting so as to get the best possible finish on them.

During the last fall term thirteen heats in cast iron were run, and nine in bronze, resulting in over 7,000 pounds of good iron castings and 165 pounds of bronze. Figure 22 is a photograph of a view of the castings taken from some of the recent heats, and Figure 23 shows a pattern casting and mould with the core in place and ready to be closed, made by some of the students of last year's

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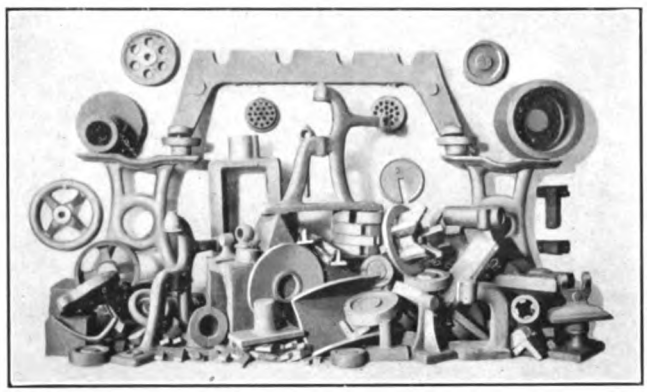

Figure 22. Castings.

class. This casting is now being finished in the machine shop.

During the last three months of the year the greater part of the shop-work time is devoted to forging. Here there is not quite the same opportunity to have all of the work form a part of some completed machine as exists in some of the other branches of the shop work; but it is all very closely related to engineering, and the students do a good deal of individual work on practical problems, besides the regular class exercises. Figure 24 shows some of the class work of the spring term 1901.

A larger amount of time is devoted to the machine work than to any other branch of the shop work, because this is the branch which is most fundamentally connected with the central purposes of our courses; and the pattern-making, foundry-work, and forging which are introduced into the courses strengthen and supplement it because of their bearing on and intimate relation to the various industries depending upon machine construction.

Were the methods of machine construction the same to-day that they were a generation ago, our problem here would be far simpler than it is, and all that would be expected of us would be to impart to our students a knowledge of the principles underlying bench work and the simple machine tools, and to give them an opportunity of acquiring a high degree of skill and proficiency in their use. But the methods of manufacture have changed, and the problem that confronts the young man who to-day enters the machine industries — if he wishes to be more than a mere machine tender — is *to devise special tools and appliances which will enable him to turn out a finished product with greater accuracy, more perfect and artistic finish, and at a smaller cost for labor.* Machines are

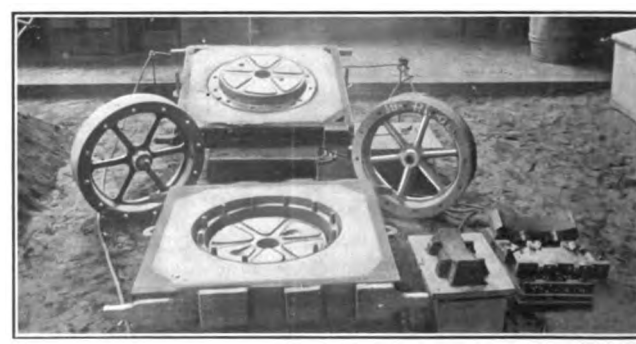

Figure 23. Moulding a fly-wheel.

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to-day manufactured largely by automatic processes or with special tools and appliances which turn out the different parts with such accuracy that they are absolutely interchangeable and can be assembled with practically no fitting or handwork upon them.

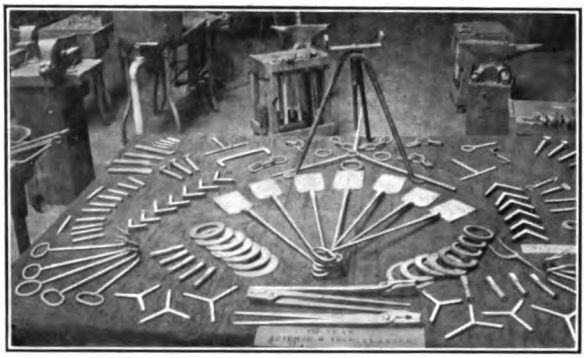

Figure 24. Forging.

It is to meet these new conditions that we must train our young men, and it therefore is not sufficient for us to give them proficiency in machine construction only; we must also give them a thorough training in the larger problem of designing and making the special tools and appliances which would enable them at small expenditure of labor to reproduce a thousand parts which shall be absolutely identical with the one in which they are concerned at the moment. This makes the work far more difficult; for these special tools require a degree of perfection far in excess of that needed for the machine parts for which they are intended, and the students are only prepared to make them after they have mastered the principles of machine work and have had considerable practice in it. But this type of work adds enormously to the interest, and makes the machine work of far greater educational value, for in no other way could we either meet the commercial conditions or so well

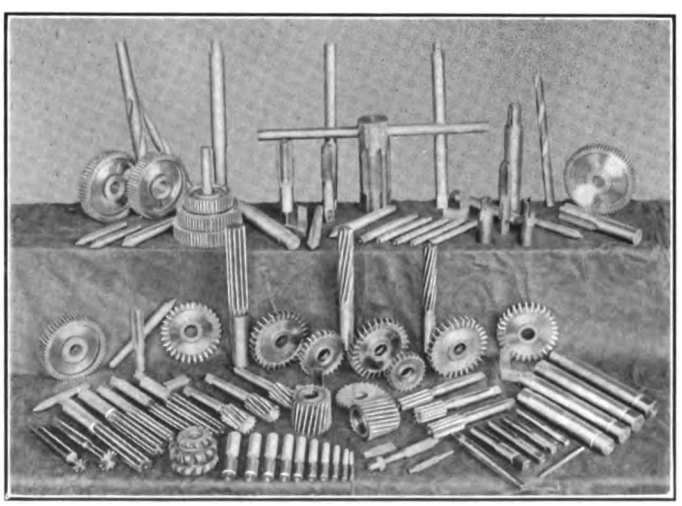

Figure 25. Tool-making.

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Figure 26. Drill press.

develop the originality and self-reliance of the students. Figure 25 shows some of the tool work of last year's class, and Figures 26 and 27 show some of the problems in machine construction that have just been completed.

MECHANICAL DRAWING.

A thorough knowledge of mechanical drawing is essential to all our students, and a high degree of efficiency in technical skill is necessary for those who wish to enter commercial drafting-rooms after graduation.

The subject is also one of great value as a means of cultivating exact thought, originality, and creative power in students, and thus can be made to serve the double purpose of giving him technical knowledge and intellectual training, provided the work is so arranged as to call forth at every step the exercise of all the knowledge that he has previously gained. In planning the work, therefore, we have been careful to so arrange it that the student could work out for himself each new problem because of the natural way in which it follows the things that he has already done.

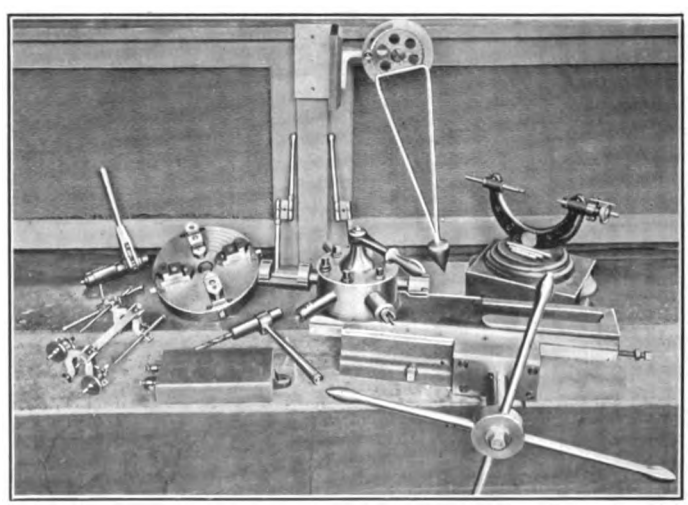

Figure 27. Machine construction.

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The first drawing required of him is to represent by views a parallel strip or rectangular block of cast iron of given dimensions. The exercise is so simple that the only help he needs is a suggestion in regard to the proper arrangement of the views on his drawing to correspond with the accepted mechanical conventions.

The next step is the representation of three views of something not quite so simple, and yet not too complicated for him to be able to discover for himself the proper method of representation.

In this way, step by step, he determines how complicated machine parts may be properly represented in mechanical drawing, and the work is all his own save only a suggestion here and there as to the conventional method or a criticism of his execution.

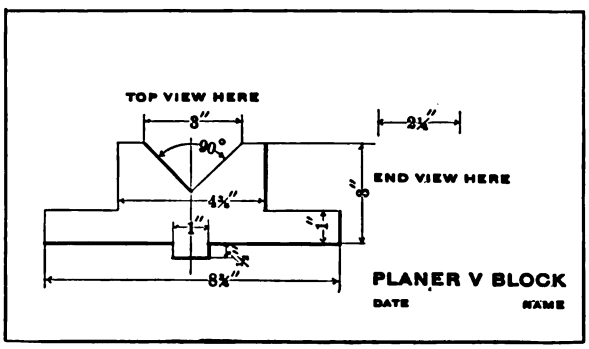

Figure 28.

During the first part of the work the student has always before him the casting or machine part which he is to represent on his drawing, and to save time in making measurements the essential dimensions that he will need to use are given to him, sometimes through an isometrical drawing on the blackboard, or on hectograph sketches of reduced scale, or in tabular form. In case sketches are given him, however, the necessary data is given him on views which are different from those which he will present in his drawing, so that his work is never that of mere copying, but he is always creating something for himself that is in advance of anything that he has yet done. Purely geometric problems have been omitted, as it is a matter of experience that principle involved can be more forcibly taught when given in connection with some practical application. It is the aim to have as large a variety of such practical applications as possible, using a different series of models with each new class, so as to stimulate to the utmost the interest. Some twenty-six new models of machine parts, embodying some special principles, were introduced during the fall term to displace those used with last year's class.

It is gratifying to be able to report that there is such a large percentage of strong men in this entire class, which argues well for the technical work of the second year. It is surprising to see the interest they have shown in their mechanical drawing, and the amount of work that they have accomplished. During the twelve weeks of the fall term the average course in Steam and Machine Design, working ten periods per week, finished forty-four plates of drawings. The first of these, coming at the beginning of the term, were, of course, very simple, but during the latter part of the term they became more intricate

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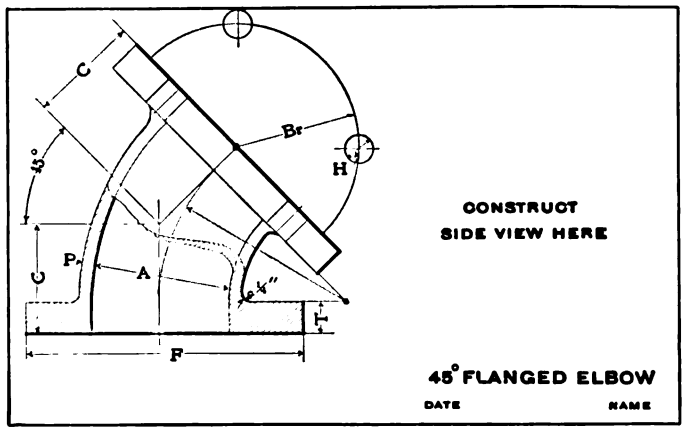

Figure 29.

and complicated, and many of them required a good deal of detail work, besides a large number of dimensions and considerable lettering.

Figure 28 shows one of the simplest hectograph sketches taken from the beginning of the course, where the student is asked to construct the top and end views from the data given. Figure 29 shows one taken a little later in the course, and without any assistance or explanations from the instructor the student is expected to construct the side view of the eighth turn-pipe fitting, although this is the first time in the course that a circle in oblique projections has been introduced. From the experience gained from oblique projections of lines and rectangular surfaces in previous exercises, he is able to do this. Figure 30 shows a somewhat similar problem, and Figure 31 shows one of the student's finished drawings of a more complicated machine part, when the principles of projections become quite intricate. This exercise was given to the class the first week in January, after but thirteen weeks' work in mechanical drawing.

This is followed by work of the same general character, involving all the principles of the intersection of surfaces, and a number of drawings on sheet metal work, teaching the principles of development. Machine sketching and the making of detail and assembly drawings from such things as a monkey wrench, shaft hanger, pulley block, small dynamo engine lathe, et cetera, follow later in the year, and the last few months are devoted to the elementary machine design, where the student is required to himself properly proportion the different parts of his own drawings. The first part

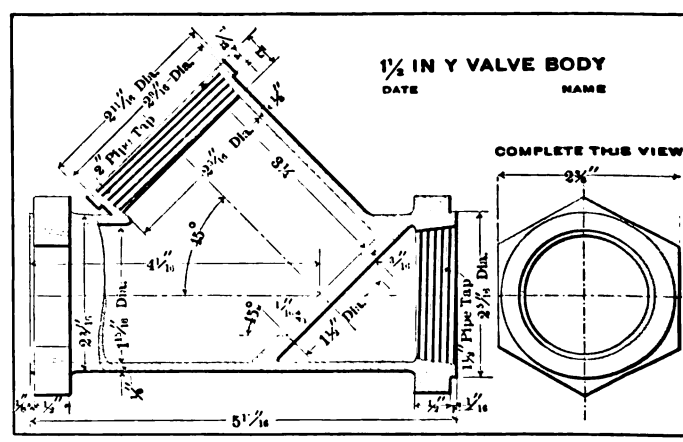

Figure 30.

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of the year the work is done entirely in pencil, and it is not until the student has acquired habits of neatness and accuracy with the pencil that he is allowed to draw in ink, but during the latter part of the year their drawings are either traced in ink, or occasionally the work is inked in on the original drawing.

CONCLUSION.

In this report, on account of the limited number of pages, it has been possible to speak in detail of only a single subject, and to briefly comment on the excellent work of Mr. Edward M. Healy and Mr. Joseph H. Garrod, Mr. William C. Stimpson and Mr. William J. Kaup, in the various lines of the shop work, and of the interesting work of Mr. Anson W. Smith in the first year Mechanical Drawing.

These were chosen for description because they are typical of all the work done in the department, and because, taken together, they give a fairly good impression of the first year's work in our day courses, in which the time of the student is about equally divided between the class-

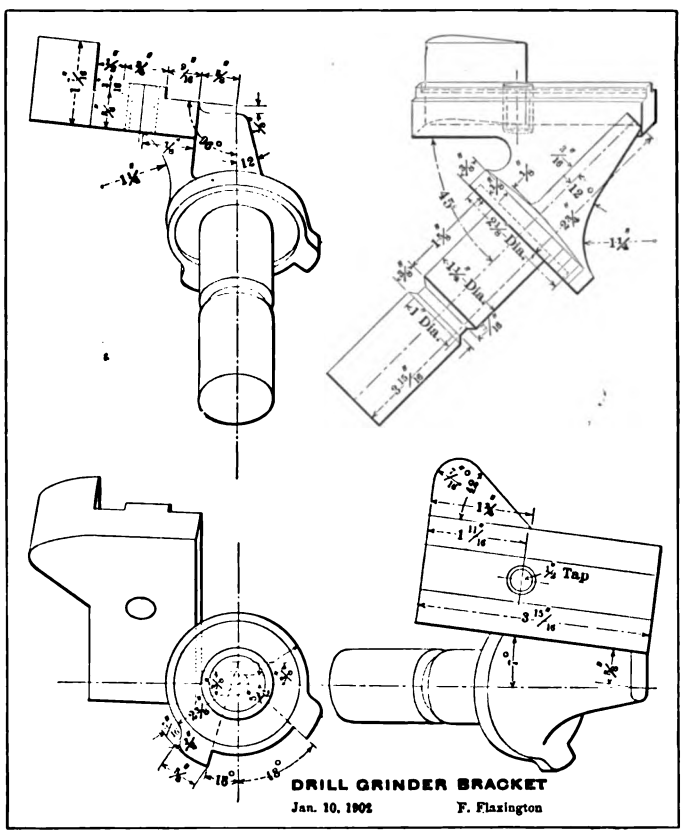

Figure 31.

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room, laboratory, drawing-room, and shops. But I regret exceedingly that I could not also speak of the work done in Mathematics by Mr. Horace W. Marsh and Mr. W. E. Stilson, and describe the method of presentation of their subjects, by which they cultivate in the students independent reasoning and originality by requiring them to construct all their own demonstrations as an expression of their individual thoughts, and thus get from them some true creative work. I should also wish to speak of the development of the work in General Chemistry under Mr. Charles M. Allen through the introduction of a number of interesting and instructive qualitative experiments in the laboratory work. There is also much of great interest that I would gladly describe in the second year of our courses; notably, the Applied Mechanics and Mechanical Laboratory work under the instruction of Mr. Harry E. Smith and Mr. Horace Judd, the work in Machine Design under Mr. William S. Ayars, in Electrical Design under Mr. Walter B. Russell, and in Applied Electricity and Electrical Laboratory work under Mr. Thomas M. Gardner, Mr. Sumner S. Edmunds, and Mr. Hylon T. Plumb. All of these lines of work I wish to bring to the careful attention of the Trustees, and shall cover them in future reports.

I regret also that it has been necessary for me to postpone until another year all mention of our Evening Technical and our Evening Trade Classes, which constitute such an important part of the work of the department, and through which we are able to be of such great service to those who could not possibly attend a day class, but who earnestly and enthusiastically give up their evenings to the work, and who are continually giving us fresh proof of their interest and appreciation of what is done for them, even after they have finished their courses at the Institute.

In closing this report I wish to thank the Trustees for their generous co-operation in furthering the work of the department, and I take this occasion also to express to all of the instructors in the department my most sincere appreciation of their earnest and untiring efforts for the development of the work and for their loyal and unselfish devotion to the best interests of Pratt Institute.

Respectfully submitted,

Arthur L. Williston,
Director.

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Alumni Notes.

The Trustees will be glad to hear of what the graduates of the Department are now doing, and of the progress that they have made since leaving the Institute, and also of the success of those who completed our courses in Steam and Machine Design and Applied Electricity last June, in securing positions almost immediately after graduating.

'98. Joseph Anglada is with the Corliss Engine Works of Providence, R. I., designing and testing electric passenger vehicles and steam trucks.

'98. Elsie F. Abbott is still with the Calculagraph Company of New York, where she has been employed as draughtsman since graduating.

'00. Frank A. Austin has been for the last four or five months draughting for Purdy & Henderson, having left the American Bridge Company, by whom he was formerly employed.

98. George Badeau, after two and a half years with the General Electric Company, is with the Colorado Springs Electric Company as electrician in a plant generating 6,600 volts. His duties include switchboard work and the general oversight of the plant.

'00. Howard S. Beach has resigned his position as assistant chemist of the Wilson Aluminum Company, Holcombe Rock, Va., to enter the Ohio State University, where he hopes to graduate in 1904.

'00. William G. Beard is now draughtsman and designer of tools and machinery with the Western Electric Company.

'99. Frank H. Berger is assistant to the wire chief at the Spring Street Exchange of the New York Telephone Company.

'99. Clarence H. Berry, who was formerly chief engineer and electrician for the Suffolk Gas and Electric Light Company at Bay Shore, L. I., has recently been appointed switchboard wireman with the New York Telephone Company, and has charge of the switchboard work in a number of exchanges.

'99. Clinton W. Bedell has been employed as estimater by Barron & Cooke, of New York, steam fitting contractors, for the last year and a half.

'95. James P. Blauvelt has been with the Gas Engine and Power Company and Chas. L. Seabury & Company, Consolidated, Morris Heights, N. Y., for the last four years, and is now designing marine machinery for the U. S. torpedo boats *Bailey* and *Wilkes* and the destroyer *Stewart*.

'96. Albert P. Boeri has been with the engineering department of the New York and New Jersey Telephone Company since he graduated from the Institute, and now has charge of the installation of common battery exchanges and the inspection of same.

'96. Robert Howard Boggs is chief inspector New York and New Jersey Telephone Company, where he has charge of a number of inspectors and assistants.

'00. George I. Boynton, after a few months' experience with the Electrical Construction Company, obtained a position with the New York Telephone Company, and is now night troubleman.

'98. John J. Brennan is assistant engineer to the Department of Sewers in the Borough of Brooklyn, engaged on draughting and surveying for new sewers.

'01. George I. Branch is switchboard attendant of the Halsey Street sub-station of the Brooklyn Rapid Transit Company.

'94. George G. Brown, who was formerly wilh W. Crary & Sons, is now employed as ship draughtsman in the United States Navy, and at present has charge of the finished plans of the sheathed protected cruiser *Chattanooga*.

'97. Robert Burns, Jr., is at present superintendent and buyer for Jabez Burns & Sons, where he has charge of all the work in the factory and draughting-room, designing of new machines, and buying all material and supplies.

'01. Henry L. Burras, since graduating, has been draughting with the Carnegie Steel Company, of Pittsburg, Pa., detailing structural steel beams, columns, girders, etc., for large office buildings.

'00. R. Diaz Buitrago is draughtsman for Nicola Tesla, with whom he has been employed since he left the Institute.

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'98. Herbert L. Carpenter is with the New York Telephone Company, and when last heard from was wire chief on their John Street Exchange.

'00. Edward D. Carter is inspector with the New York and New Jersey Telephone Company, and is engaged on cable wire testing, electrolysis tests on cable sheaths, and general inspection of telephone supplies, etc.

'00. Loring M. Clarke has been chief draughtsman of the Traffic Department, New York Telephone Company, for the past year.

'99. Robert F. Clark is mechanical draughtsman in East Norwalk, Conn., where he is engaged on designing details for air and gas compressors.

'98. Louis S. Cozzens was in the chemical laboratory of the Peter Cooper Glue Works of Brooklyn, but was recently injured in a railroad accident, and has not been able to return to his work.

'98. Charles B. Cosgrove is with a real estate firm in New York City, employed on map draughting and specifications and drawings for building and repair work.

'01. William I. Cranston is draughting with the American Screw Company, Providence, R. I.

'97. John W. Crippen, who was formerly with the Remington Arms Company, of Ilion, N. Y., is now draughtsman for the Utica Drop Forge and Tool Company, Utica, N. Y., designing fixtures for small duplicate work.

'94. Arthur T. Crocker, who was formerly general foreman of C. H. Brown & Company's works, Fitchburg, Mass., and later draughtsman and engineer for Cheney Bros., in Manchester, Conn., designing special machinery, has been for the past year in the engineering department of the General Electric Company, developing and looking after train control work.

'01. Edward F. Charsha is employed with the Lukens Iron and Steel Company, of Coatesville, Pa., designing heavy machinery for plate rolling mills.

'96. James W. Danielson, Jr., is draughtsman with R. Hoe & Company, of New York, manufacturers of printing presses.

'01. Robert V. Dunbar has been electrician with the Metropolitan Street Railway Company on general construction work since graduating.

'99. Ralph W. Davis is with the Keystone Electric Company of Erie, Pa., and has recently been promoted to chief draughtsman, where he has charge of the drawings for generators, motors, switchboards, etc., of all sizes up to generators of 1,000 KW.

'99. Clarence H. Duckworth is with the C. Pardee Works, Perth Amboy, N. J., as draughtsman and designer on cold-drawn steel and rolling mill machinery.

'00. Robert M. Earl is telephone inspector with the Traffic Department of the New York Telephone Company.

'96. LeRoy Edwards, who was formerly with the Tidewater Oil Company of Bayonne, N. J., has been for the past year with the Townsend & Downey Shipbuilding and Repair Company, Mariner's Harbor, N. Y., designing and draughting on marine engines, boilers, pumps, etc.

'00. Chas. F. Estwick, Jr., is with the Traffic Department of the New York Telephone Company, working on the main distributing board, cutting in lines, and doing similar work.

'00. Robert M. Fessenden is meter tester with the Edison Electric Company of New York.

'96. Frank H. Fisher is manager for the Riker Electric Vehicle Company.

'98. James A. Flannegan is superintendent of the Laurel Light and Power Company, Laurel, Miss.

'01. Frank M. Foote, since graduation, has been employed in the machine shop, where he is learning the manufacture of telegraph supplies.

'99. Thomas B. Ford is manager for Thos. P. Ford & Company, 61 Centre Street, New York.

'01. William Foster is draughtsman for the H. Krantz Manufacturing Company, of Brooklyn, N. Y.

'99. Charles F. Fowler is manager for the Walkill Valley Electric Light and Power Company, of Walden, N. Y., where he has general charge of plant, line, and installations.

'99. S. Kirk Fox is still draughtsman with the Consolidated Telegraph and Electric Subway Company of New York.

'01. Albert A. Fraser is draughtsman with H. C. Brombacker, of Buffalo, N. Y., where he has general superintendence of the construction of gas engines.

'00. Alman B. Fuller is chief draughtsman with the H. Krantz Manufacturing Company,

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makers of switch and panel boards, Brooklyn, N. Y.

'00. Albert B. Fritts is machinist with the Lehigh Valley Railroad Company at South Easton, engaged in erecting locomotives.

'01. Frederick H. Fuller is with the New York and New Jersey Telephone Company, and has recently been sent by them to Asheville, N. C., as inspector for some large contracts.

'96. John O. Gage is manager for John S. Gage & Company, New York City, manufacturers of mosquito canopies.

'01. John P. Gebellin is meter tester with the Edison Electric Illuminating Company of New York.

'97. Frank H. Grafton is chief draughtsman and mechanical engineer for the Wheeling Corrugating Company, Wheeling, W. Va., where he is engaged in working up improvements in machinery and equipments, and is in charge of the machine shop and the pattern shop.

'99. Walter B. Gump, who was formerly with the General Electric Company, is at present draughtsman and designer on direct current generators for the Sprague Electric Company, Bloomfield, N. J.

'01. Philip O. Harding is detail draughtsman for the Automatic Air Carriage Company of New York City.

'00. Ralph R. Hawkins is with G. Curtis Gillespie, at work on the design of an automatic machine for the manufacture of two-foot rules.

'01. Elmer L. Hayward, since graduating, has been foreman of the New York Continental Jewel Filtration Company, and later superintendent of the repair department of the R. G. DuBois Automobile Agency, Brooklyn, N. Y., but has recently been appointed as assistant instructor in machine work in the Department of Science and Technology, Pratt Institute.

'98. Harry G. Healey spent about a year as draughtsman and assistant to the master mechanic of the Ansonia Brass and Copper Company, Ansonia, Conn., but for the past two years has been with the Norfolk and Western Railway Company, and is now stationed at Roanoke in their engineering department, on general railroad draughting, plotting surveys, etc.

'01. William L. Hohn is inspector for the New York and New Jersey Telephone Company, and has recently been sent by them to Norfolk, Va., to investigate and inspect processes of wood preservation used by them.

'98. William G. Hoit is calibrating and testing electrical instruments for the Empire Electrical Instrument Company of New York.

'01. Harry C. Howell is draughtsman with Cornelius Vanderbilt, 100 Broadway, New York, detailing structure of steel and car locomotive work.

'99. William R. Hulbert is a student in the Department of Mechanical Engineering at Columbia University, New York.

'94. Harry A. Hunt is with the Taylor Iron and Steel Company of High Bridge, N. J., with whom he has been for six years, and has charge of their draughting-room and supervision of their patterns.

'97. Charles H. Israel is assistant chief draughtsman with the Wheeling Mould and Foundry Company, manufacturers of rolling mill machinery, Wheeling, W. Va.

'01. Daniel L. Jones is with the production department of the Crocker-Wheeler Company, Ampere, N. J.

'00 and '01. Jarrard E. Jones is in DuQuoin, Ill., designing details for simple and duplex steam pumps.

'01. Sidney W. Jones is draughtsman and second office assistant to Cornelius Vanderbilt, 100 Broadway, New York.

'00 and '01. Alfred O. Kauffmann is draughtsman with the Link Belt Engineering Company, manufacturers of coal-hauling machinery, of Philadelphia.

00. Franz B. Kellogg is switchboard attendant with the Citizens' Light and Power Company of Rochester, N. Y.

'99. Wilmer Kissam is electrician for the Simplex Electric Company, in charge of the testing department.

'00. Frederick L. Klee is draughtsman on motors with the General Incandescent Arc Light Company of New York City.

'99. Russell Klem has been recently sent to the London, England, office of the Wheeler Condenser Company, of New York City, to have charge of plan and erecting work.

'01. Maximilian Link is assistant to the superintendent of the Crane Company of New York City.

'98. Leon R. Lord, formerly with the Westinghouse-Church-Kerr Company, has since

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been employed as inspector of the New York Daily News Company.

'01. Charles A. Lubrecht graduated in May, 1901, from the Long Island College Hospital with the degree of M.D., and is at present house surgeon of the Williamsburg Hospital.

'00. Frank H. Lyon. Not heard from.

'01. W. Leaman MacIntosh is draughtsman on steam steel car and locomotive work with Cornelius Vanderbilt, 100 Broadway, New York.

'01. David M. Mahood is meter-tester with the Edison Electric Illuminating Company of New York.

'99. Wallace W. Manning has been assistant to chief engineer of the Hartford Steam Boiler Inspection and Insurance Company since August, 1899, and is engaged in designing and inspecting steam boilers.

'97. Charles R. Manville is with the Manville Trust Company, Waterbury, Conn., as draughtsman on special automatic machinery and watch machinery.

'94. James O. Martin is with the Department of Agriculture, Washington, D. C., as field assistant in the Division of Soils.

'97. Thomas S. Martin is designing steam and electric hoisting engines with the Lidgerwood Manufacturing Company of Brooklyn.

'99. Carl F. Martini, who was formerly with the Midvale Steel Company of Philadelphia, and later with the Isthmian Canal Commission at Washington, D. C., is now with the American Bridge Company at Chicago, Ill., preparing plans for steel railroad bridges.

'98. Arthur Masters is salesman for H. B. Smith & Company, manufacturers of heating and ventilating apparatus, and covers New Jersey, lower New York, Long Island, and Western Connecticut.

'98. Thomas P. McCray is exchange troubleman for the 38th Street Exchange of the New York Telephone Company.

'01. R. D. MacIntosh is draughtsman in the Chief Engineer's Department of the S. S. White Continental Manufacturing Company of Princess Bay, L. I.

'01. Charles P. Merwin is in the Cost Department of the Stanley Works, New Britain, Conn.

'98. Joseph Miller is wire chief with the New York Telephone Company.

'01. Raymond J. Miller is with the W. P. Davis Machine Company of Rochester, N. Y., engaged in construction work.

'98. Irving H. Osborne is electrical draughtsman for the Newport News Shipbuilding and Dry Dock Company at Newport News, Va., engaged on everything pertaining to the electrical work on shipboard.

'97. David B. Perry is chief draughtsman for the Moss Chain Company, Trumansburg, N. Y.

'98. Nathaniel Platt is inspector for the Edison Electrical Illuminating Company.

— W. P. Platt graduated from the United States Military Academy at West Point a year ago, and is now Second Lieutenant in the United States Army.

'99. Fred. A. Prahl is a student of engineering at Stevens Institute, Hoboken, N. J., where he hopes to graduate in June, 1903.

'00. Percy P. Pierce spent some time in the shops of the Pierce Wheel Works, at Buffalo, N. Y., after graduating, and is now employed as a salesman for the same concern.

'00. Charles P. Rablen is inspecting for the New York Telephone Company.

'00. Walter B. Read is with the Traffic Department of the New York Telephone Co.

'00. Nye B. Reardon is in the class of 1905, Cornell University.

'97. Charles Rehbein is chief draughtsman for the Composite Type Bar Company, with whom he has been since leaving the Institute.

'01. Arthur Ritter is draughtsman in the Engineering Department of the New York and New Jersey Telephone Company.

'98. Webster W. Ray, when last heard from, was in the Construction and Testing Department of the General Electric Company, Schenectady, N. Y.

'99. H. F. Roberts is draughtsman at Lewis Nixon's Crescent Ship Yards, Elizabeth, N. J.

'98. Harry L. Rosencrans is draughtsman in the Engineering Department of the New York Telephone Company.

'95. George A. Robertson is meter inspector for the New York Steam Company.

'98. Fred. A. Saylor, who was formerly chief electrician of the United States Steamship *Chicago*, is now chief engineer of the United States Floating Dry Dock, Havana, Cuba.

'00. George B. Seddon is in the Traffic Department of the New York Telephone Co.

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'99. Lester Schramm is with the Engineering Department of the New York Telephone Company, designing exchange equipments.

'01. Wade H. Scully is assistant to the engineering director of the Pratt Laboratory of Atlanta, Ga., installing fertilizing plants, power plants, etc.

'99. Serring D. Seabring is assistant wire chief for the New York Telephone Company at the 38th Street Exchange.

'00. William R. Siegel is assistant chief engineer of the H. W. Johns Manufacturing Company, of Brooklyn, N. Y., in charge of the machinists, engineers, firemen, etc.

'00 and '01. James H. Seeley is inspector in Engineering Department of the New York Telephone Company.

'97. Michael J. Shugrue is assistant to the electrical engineer, Edison Electrical Illuminating Company, Brooklyn, N. Y.

'01. A. L. Spenger is draughting and estimating with the Link Belt Engineering Company in their New York office.

'97. Anson W. Smith is instructor in mechanical drawing in the Department of Science and Technology, Pratt Institute.

'95. Charles H. Stone is in the Educational Department at Manila, organizing manual training in the English schools.

'97. J. P. Smithers is in business for himself, surveying and architectural work.

'99. A. Chester Terry for the past two years has been inspector for the Consolidated Railway Electric Lighting and Equipment Company, New York, applying the equipment to cars and supervising its operation.

'94. Arthur C. Tate is with A. H. Emory, Stamford, Conn., on a variety of mechanical engineering work.

'00. Louis A. Thompson is with the Milwaukee Electric Company of Milwaukee, Wis., calculating armature fields, etc.

'94. George R. Townsend, after graduating, spent three years in Stevens Institute and the Massachusetts School of Technology, studying marine engineering, and is now with the William R. Trigg Company, ship and engine builders, of Richmond, Va., in charge of their engineering department.

'96. Arthur L. Tribe is in charge of the power and distribution for the Electric Railway and Power Company, Sacramento, Cal.

'00. E. F. Tilley is draughtsman with the W. H. Hunt Company, West New Brighton, N. Y.

'98. C. O. Thomson is with the Electric Power Company of Fernando, Cal., working on the development of water power and the installation of a long-distance transmission plant.

'01. Charles E. White is meter tester with the Edison Electrical Illuminating Company of New York.

'94. H. L. White is designing jigs and fixtures for the Linotype Machine Company of Brooklyn, N. Y.

'98. Charles C. Willits is inspector of engineering material and ordnance for the United States Navy Yard, at works of the Fore River Ship and Engine Company, Quincy, Mass. His work is to see that the contractors doing Government work meet their specifications.

'99. H. A. Ward, who was formerly construction engineer for the American ——— Company, and assistant superintendent for E. W. Bliss & Company, Brooklyn, N. Y., is now President of the American Ferrofix Company, manufacturers of chemicals for brassing.

'98. Le Roy B. Vanderbilt is meter tester with the Edison Electrical Illuminating Company of New York.

'98. Philip K. van Ingen, who was formerly with the General Electric Company at Schenectady, is now troubleman with the Hudson River Telephone Company at Albany, N. Y.

'96. William Yager is superintendent of electrical running and maintenance of various plants of the Edison Electrical Illuminating Company of Brooklyn.

Mr. Ralph E. Seitz died September 28, 1901, from typhoid fever, after an illness of three weeks. From the time of his graduation he had been in the employ of the New York Telephone Company, where he had won for himself the esteem and regard of all his associates.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

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BETWEEN DE KALB AND WILLOUGHBY AVENUES.

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High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

Department of Libraries — *Free Library, Reading-room, and Reference-room.* School of library training, 1st and 2d year courses.

Department of Physical Training — Morning and evening classes for women. Evening classes for men.

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For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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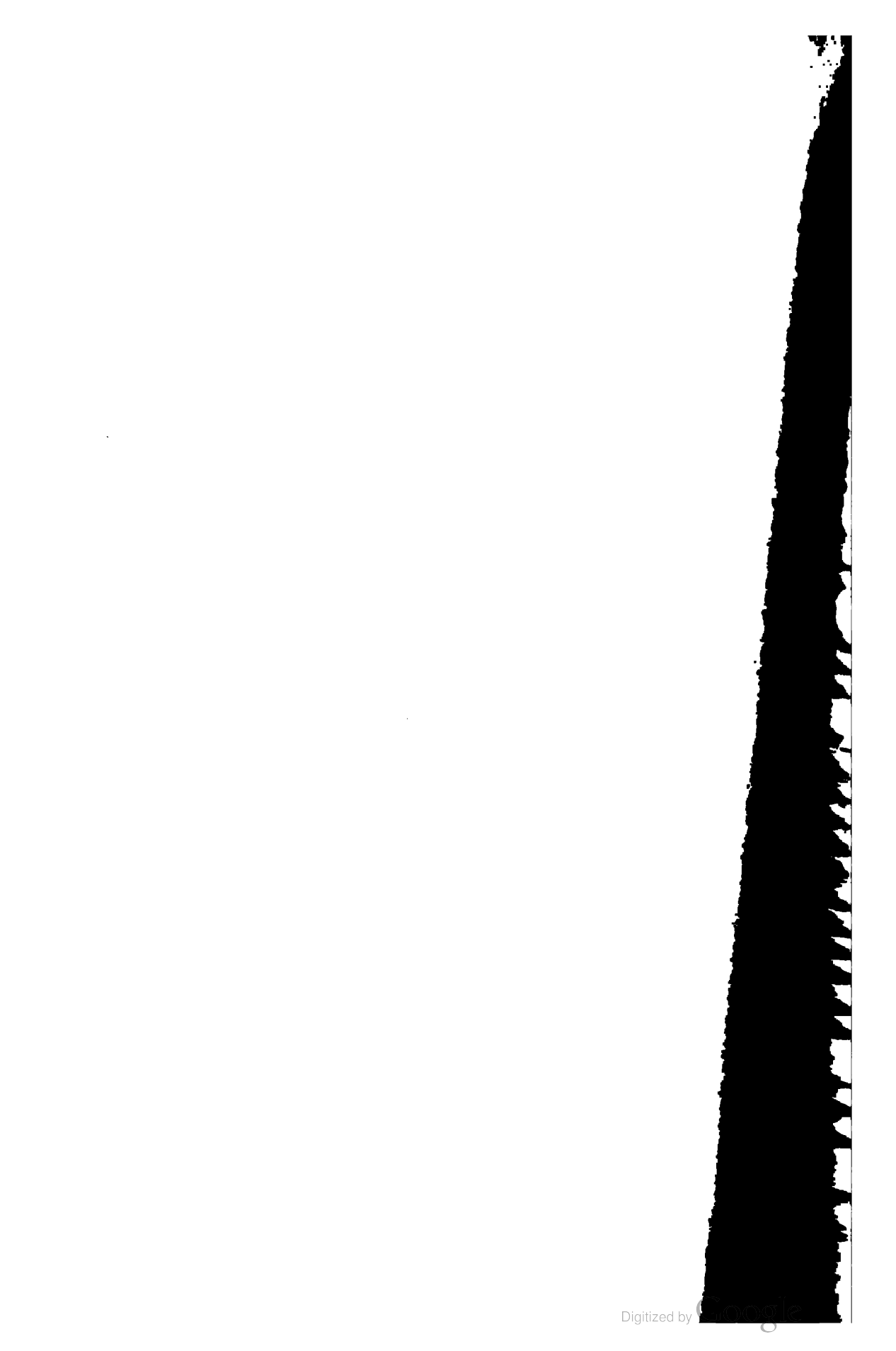
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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 ST. JAMES PLACE, BROOKLYN, N. Y.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches:

High School—A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts—Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art—Normal course; courses in sewing, dressmaking, millinery, embroidery, design, basketry; art needlework; lecture course on history of costume.

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FREDERIC B. PRATT, *Secretary.*

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KINDERGARTEN NUMBER

PRATT INSTITUTE MONTHLY

May, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X. MAY, 1902. Number 7

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N.Y., on the 1st of each month, from November to June, inclusive.

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The Marion Press
Jamaica, Queensborough, New York

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The public schools have also set the stamp of their approval on this innovation, as is evidenced in the

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The Infant St. John.
By Luini.

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Pratt Institute Monthly

Volume X MAY, 1902 Number 7

Bessie M. Scholfield.

Annual Report Of the Department of Kindergartens.

TO THE TRUSTEES, GENTLEMEN:

TEN years ago the Department of Kindergartens was established in Pratt Institute. It may be in order at this time to give some report of the growth of the department, to show the plan and scope of its work, and also to tell what has been accomplished by the kindergarten and those who have supported the movement in the outside world.

The progress that the Froebelian movement has made during these ten years is most gratifying to the workers in this field. Public opinion is undoubtedly in favor of the kindergarten; although it does not always understand its import, it believes the kindergarten to be something very good for little children, and as such accepts it. Influential men and women have upheld it in every way possible; educators, philanthropists, and writers have bestowed upon it their unstinted praise and have given it their most hearty support. When we add to this the excellent results obtained by the kindergartners themselves, we have reason to believe in the growing popularity of the kindergarten.

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summer play-grounds and vacation schools, where the kindergartner, with her songs and games, the beginnings of nature work, clay, sand, beads, and basketry, is a most welcome and efficient helper. The kindergartner has a new way of looking at education, which is found to be very practical in dealing with children from the human side, and while in some cases she has not been the superior of the teacher, either intellectually or in her training, as a rule she has a better understanding of child nature, a closer touch with life, and a more concrete method of dealing with the individual.

With the entrance of the kindergarten into the schools, new problems arise. It remains to be seen just what influence the new will have upon the old methods of education, whether the ideas of the kindergarten will permanently influence the school, and an advance step be taken along this line, or whether the kindergarten will be so overwhelmed with the system of the school that it will lose its identity and become submerged in the larger whole. That the kindergarten may greatly benefit the school has been proved too many times to need argument, but that it can give this aid without itself being the object of special care and nurture is out of the question. Each new era has for us some new educational ideal appearing in new forms. The conditions for realization are freedom from the old systems and restrictions, with encouragement for and recognition of the new. The uniting factors between kindergarten and school are identity of aim and a mutual understanding as to what education consists of. We must ask ourselves the questions: What is the child to be educated for? What are the ideals that will be most conducive to his growth? Having found unity, the next step must be to realize it. Separations arise when teachers insist that all must realize ideals in the same way, and that mental development is the chief function of the school. It is well to sharpen our wits, but we must cultivate the heart as well. However, a great change has taken place in the aim and attitude of the teacher. Kindergartners are not now the only ones who believe in the all-round development of the child and the exercise of his creative powers, but the kindergartner has the advantage of systematized material and a plan of procedure which lays equal emphasis on every side of the child's development.

The kindergartner is taught to value the individual, but she sometimes meets conditions in the school where it is impossible to give proper attention to individual children. She gives a morning's work to forty or fifty children, and in some cases is asked to repeat the work at an afternoon session, after she has lost her spontaneity and power. It is a physical impossibility to give so many hours to such vital work. Under these conditions, the life and spirit of the work dies, and we have the dead body of what might have been a living thing. All work in the primary grades would be more vital if there were but one session a day. We shall rejoice when the value of the play side of life is more fully recognized for children.

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FREE KINDERGARTENS.

We cannot ignore, in this city of many races and many minds, the need of a definite organized plan for reaching, holding, and educating the thousands of little children who run wild in the streets, where they are gaining their first impressions and getting their first lessons in life. A plan to enable the undisciplined young savage to become self-disciplined, orderly, alert, and loving is a necessity, and the Brooklyn Free Kindergarten Society was organized in 1891 to begin this work. No city can boast of better things accomplished. This society gave to the Board of Education the impulse to inaugurate free kindergartens, and we now have about one hundred and forty in Brooklyn, including kindergartens under private and church management, the public school kindergartens, and those under the care of the Brooklyn Free Kindergarten Society. This may seem a large number, but we must have at least one thousand kindergartens if we attempt to provide for all the children.

It is not likely that the kindergarten itself can solve all problems, nor kindergarten training make all children good; but if the world is ever to be better, it must come about through the men who are now children, and we all agree that if each new man had a clearer insight into life's difficulties, higher ideals to urge him on to action, and stronger powers to grapple with its evils, there would be a chance for better things. The child in the kindergarten who has learned to live under the law, who has come into right relations with his fellows, and who has gained a love for beauty and nature, has taken a step in the right direction.

PRIVATE KINDERGARTENS.

Although there are a few successful ones, private or pay kindergartens have not as a rule flourished in Brooklyn. Several reasons are assigned as causes: one, the conservatism of the people; another, the opposition of teachers who do not understand the value of this method; another, the cost of this education, and the belief on the part of parents that there is no need for it to begin at so early an age; and another, that the child must not go to school to be taxed mentally until he has a sturdy body. This last argument does not hold good of the kindergarten: children who attend kindergartens have better general health than those who are without this interest in their lives. Child-life, as well as later life, needs an aim. It has been said that kindergarten training may be good for the children of the uneducated, but is altogether unnecessary for the children of educated parents; an unconscious acknowledgment of ignorance as to what a kindergarten education means. The kindergarten must have the support of parents, schools, and teachers; nothing but the best should be tolerated. This will cost money. The kindergarten is not a school for manners, acquisition of languages, or dancing, but a place where children may obtain their best growth, physically as well as mentally, and, above all, morally. It is a child-garden,

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with a child-gardener, who expects to understand and cultivate her child-plants.

TRAINING-SCHOOLS.

There have been but four kindergarten training-schools in Brooklyn: two private schools, which are not in existence now, the Kindergarten Department of Adelphi College, and that of Pratt Institute. The Brooklyn Institute, with its lectures on kindergarten and allied educational subjects, supplements the work of these two schools. Within reach of New York and its many training-schools, two are enough for the present needs of Brooklyn.

There are about two hundred and fifty kindergartners in Brooklyn, most of whom are engaged in active work. They are represented in a Kindergarten Union, founded in 1896.

INFLUENCE OF EDUCATIONAL MOVEMENTS ON THE KINDERGARTEN.

During the last ten years two new educational movements have arisen which have not only been significant in themselves but have had a distinct influence upon the kindergarten, namely, the so-called child-study movement, and the work of Dr. John Dewey of the University of Chicago. The invasion of what she had looked upon as her own field by the Observer and the Experimenter was a new and unpleasant experience to the kindergartner; but she has outlived the ordeal, and has been greatly benefited by it. If the kindergarten is all that we claim for it, we should welcome the investigator. We need to understand every manifestation of childhood; therefore we are glad to have this field thoroughly exploited. So much discussion and experimenting must make many things clear to the educators engaged in this work, and to kindergartners as well. It is certain that under the old way of looking at education Froebel and his kindergarten occupy but a small place. His ideas of "development from within—outward, of creative work and play, of a parallel between the spiritual development of the child and the race, of unity in all education," have not had much attention; but now they are the great educational ideas of the times. Things will adjust themselves. We must welcome the new interests and impulses, and be open to the new ideas which they bring; but the kindergartner, too, must define her creed and live by it if she is to help clarify existing conditions. Let her hold to her principles, and the external and transient things will take care of themselves.

The new movement has broadened the kindergartner, but perhaps the most permanent result will be that the kindergarten will be viewed in a new light, its work will be better understood, and there will not be so great a desire to reconstruct it.

The trend of all the new education is the same: to bring a closer relation between school and life, and to recognize the value of the individual and his experiences. The stress laid upon life and experience tends to increase the subjects to be studied, and makes the problems of the school much more complicated than ever before.

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A selection of material and experiences must be made. There must follow a reduction of subjects, a closer relation of these to the needs of the child, to the needs of each stage of his development, or neither teacher nor child can survive the process. The kindergarten shows the steps to be taken in the first stages of life, and helps to the understanding of other periods.

The form in which the kindergarten came to us has not been radically changed. Froebel had great insight into child-nature, and his methods and materials seem to be what all children need and enjoy.

WORK OF THE DEPARTMENT.

Fortunately for the department, its work was begun in a small way; nothing great was expected of it, and no immediate results were anticipated. There was plenty of time given for adjustment to new conditions and freedom for the development of new ideas. The original purpose was a broad one: to give the kindergarten movement encouragement and support wherever opportunity offered. The work of the department was inaugurated during the winter of 1891–92 by a free lecture course on kindergarten subjects, given by prominent kindergarten workers. The plan of work was fourfold: to establish kindergartens for children, a normal course for kindergartners, to open classes in kindergarten subjects for mothers, nurses, teachers and graduate kindergartners,—in short, to do the specific work of a kindergarten department, and also to help carry out the aims of the Institute in which it was placed.

Many changes have taken place in the department since its opening, but the plan of work has remained very much the same. There has been growth and improvement in many directions. To be part of a large institute means life and opportunity in plenty; the meeting of men and affairs of equal importance to one's own, the testing of one's patience and business capacity, the burnishing and clarifying of one's ideas, giving help and receiving it, learning the many ways of meeting needs, all this enlarges one's life and outlook.

NUMBERS IN DEPARTMENT.

A large number of individuals have attended the classes since they were opened: in all, thirteen hundred and seventy-six. This number does not include members of free kindergartens, free lecture course or free classes. Detailed, they are as follows:

Children, Pratt Institute Kindergarten and connecting class	334
Students in Normal Course	225
Special and graduated students	359
Students in Evening classes	158
Members of Mothers' classes	300
Total	1376

KINDERGARTENS SUPPORTED.

Four kindergartens have been supported during this time, not counting the Alumnæ Kindergarten supported by the graduate students since 1894. Three of these were free kindergartens, and one the Model Kindergarten and connecting class, which is now the only one under the department.

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BUILDING.

The Kindergarten and the Training School were in separate buildings until the present year, when a new kindergarten house was built for the department, more adapted to its needs than the old quarters. The Kindergarten and connecting class use most of the upper floor, the rest of the building being occupied by the Training-School. This new building adds in every way to the comfort and convenience of the members of the department, and the fresh air and sunshine make health and happiness possible for every one.

THE TEACHING FORCE OF THE DEPARTMENT.

The teaching force in the department consists of the Director and six kindergartners. To these are added six special teachers: the instructors in physical training, music, psychology, and history of education, science, and art. The kindergartners who have charge of the Kindergarten and connecting class also teach in the Training-School, and one of the instructors in the department is the Supervisor of the Brooklyn Free Kindergartens.

THE KINDERGARTEN.

The great aim of all life is creative activity.

To those who have never seen a summary of the work of a kindergarten the following may be of interest. It is a tabular view giving a general idea of the work:

The Kindergarten:
- For children from three to six years of age.
- The normal activity for this stage: play.
- A place where play is organized.
- A place where a series of experiences bring the child to a consciousness of what he is doing.

Activities in the Kindergarten:
- Excursions: collecting nature material; seeing various nature and civic activities.
- Games; Songs; Marches: All musical ideas started.
- Stories: Stories of real life; fairy stories; myths; legends.
- Pictures: to present life to the child. The best pictures that illustrate the development of one idea.
- Materials used: Gifts, occupations, occupation work done with materials collected from nature, and other material.

"For the child's development it is necessary to observe his relation to his mother, or the one who takes the place of his mother, and to see what has an arousing, beneficial, and developing effect upon him."

To enable him to get full use of his body, limbs, senses, certain material is given. His impulse to activity and employment must be developed. His hands and fingers must be trained. Gifts and occupations are given to him that will help to accomplish this. The gifts present to the child objects which are types of the nature world around him; play with these leads him to original, creative work.

Gifts consist of:

Gift 1. Six colored worsted balls, of the six rainbow colors: red, orange, yellow, green, blue, violet.

Gift 2. Wooden sphere, cube, cylinder, and cone. (Froebel indicated and Miss Glidden has analyzed these forms.) The analysis of these forms into straight and curved forms: tablets, lines, points. From these develop all the divided cubes, called the building blocks of the kindergarten: the plane, the lines, and the point. From the sphere, planes,

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lines, point, including all straight and curved lines.

Gifts 3, 4, 5, 6. Analysis of the cube into various shaped blocks for building.

Gifts 7 and 8. These were to have been cubes 4x4x4, so other typical geometrical forms could have been made.

The present Gift 7. Various geometric planes in tablets: squares, circles, and triangles.

Gifts 8, 9, and 10. Slats and sticks, embodiments of the line.

Gift 11. Point or seed.

The occupations are types of man's activity as he has worked his way out from his needs to industry and art.

Occupations:

Pricking. Sewing. Drawing. Weaving. Intertwining. Interlacing. Folding. Paper and cardboard modeling. Cutting. Peaswork. Clay and sand.

These occupations are further developed in the cutting, in development of the weaving from the paper to straw weaving and basket weaving; the peaswork into the construction of skeleton buildings and furniture; from the work with sticks and tablets into grouping, according to law, simple figures in repetition or around a center, leading into all decorative patterns. To these may be added the cutting of vegetables and wood; the use of the thread lines, twining cords, etc.; the use of wax, sand, loam, as well as clay; the collecting of natural productions: pebbles, leaves, and flowers; the collection of living objects: bugs, caterpillars, insects; caring for their growth and unfolding; garden work: planting of seeds, caring for plants, etc.

Froebel's material is organized according to a law, the law of unity, or connection of contrasts, which is also seen in crystal forms and in vegetable growth. The same law is shown in man's growth.

Past experiences and customs of races have been crystalized in conventional games. These have been idealized by Froebel so as to have educational value and to bring the child into higher social relationships.

THE NORMAL COURSE.

To-day our plan for normal students is a two years' training, and the Institute diploma is awarded on the satisfactory completion of the course. Students enter only in the fall term, as it is impossible to take up the work later. The entrance requirements are a high-school training or its equivalent. This does not mean that a high-school training is a perfect preparation for kindergarten work, but that some systematic training in a thoroughly good school is necessary if the student is to develop the requisite power and character to sustain professional work. Students must have formed habits of study, and must know how to make good use of their time before they enter the training-school, or time is wasted. So many subjects are imperfectly understood during school life that, to insure preparation for kindergarten work, a review should be made of geometry, physiology, physics, and botany, English composition, literature, and general history. Where the applicant can present a high-school diploma covering these subjects, the department requires no examination. The Institute requires an examination in general history, English literature, and current events of applicants for the normal courses unless

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they are graduates of normal schools or colleges.

Many persons assume that girls who are not fitted for intellectual pursuits can at least become kindergartners. The truth is that, while the training benefits the undeveloped student, it takes too long to turn such a person into a kindergartner. Much is expected of her; she must turn her hand to many things; she must have native capacity, a warm heart, a musical bent, and some practicability if she is to grow into a good kindergartner.

Kindergarten training is as helpful to the adult as to the child, and while it does much for the future kindergartner's development, she must learn to see her work as a part of all education. Therefore special culture subjects are provided: psychology, history of education, and science lectures; and that her health may be fully established, special work is given in the gymnasium, and attention paid to the care of the body and its clothing. All the training tends to develop the individual power of the student, and she is helped in every way to prove her fitness for future work.

COURSE OF STUDY.

Nature study, including botany, biology, etc.
Excursions and class work.
Literature and stories: myths, fables, fairy-stories, legends, nature-stories.
Pictures: collecting and studying.
Games, songs, music: Marches and other music.
Gifts: practical play; theory from Froebel's "Pedagogics of the Kindergarten."
Occupations: all Froebel's handwork, including study of color and clay-modeling.
Theory:
- Method of presenting all kindergarten material.
- The study of Froebel's educational principles in the "Education of Man," "Mother-Play Book."
- Plan for work in kindergartens; programs.
- Froebel's relation to other educators and educational movements.

Additional Subjects:
- Drawing.
- History of education and great educators.
- Psychology.
- General lectures throughout the course.

The great question is one of fundamental principles and the *order of* the child's development.

It is impossible within the limits of this article to discuss more fully the work of the department. The various teachers have touched upon the plans and methods pursued, but anything on the gifts and occupations has been intentionally omitted until some future day. The chief aim of the department is to help the individual to gain all the development possible.

Respectfully submitted,
Alice E. Fitts.

Alice C. Eastman.

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The Kindergarten.

THE word kindergarten expresses the whole philosophy and method of Froebelian education. It was not until Froebel's thought had matured that the word kindergarten came to him as the best embodiment of his educational idea. "Kindergarten" means "child-garden," where the life of the "child-plant" is watched and nurtured by the "child-gardener." Just as the plant with its stalks, branches, and leaves, its flower and fruit, lies folded within the seed, awaiting the nurturing influence of sun, rain, and air, so the potential life of the child lies folded up within, awaiting the sunshine of right environment and the nurturing hand of conscious insight to develop and unfold it. To carry the analogy a little farther, we may consider the knowledge of self, and the creative expression of this knowledge in outward form, the blossoms of this human plant.

Froebel's distinctive contribution to the educational world lies in the fact of his having turned the light of deepest philosophic principles full upon the early period of child life, and of his having evolved a unique system of practical means whereby his theories might be proved to be vital, essential, and universal. Briefly considered, we have, as Froebel's aim, self-expression and self-knowledge through the unfolding of the inner life. The extent of the child's self-knowledge and the power of his expression are dependent upon his race inheritance, his individual temperamental tendencies, and his environment. Of great importance is the environment, for it is the kind of experiences which the child has, and the method through which they are made intelligible to him, which determine whether his life will become rich, broad, and strongly self-expressive, or whether it will be meagre, dwarfed, and selfish. Experiences constantly bring to the child impressions from without; these awaken him, and he responds in the form of creative activity, thus showing how the impression has registered, and at what doors of his inner life the outside world has tapped. Whether his experience has brought him a deeper self-knowledge and enriched his inner world, we may judge by the strength and beauty of his creative expression. Perhaps this will be made more clear by relating a typical experience in our kindergarten. Last fall, the children were encouraged to give expression to all that had impressed them in the changing aspects of nature. On our excursions to the park they noticed the gardeners potting the plants for the greenhouses and planting bulbs which were to sleep through the winter until spring should come again. The children found and gathered baskets of acorns, nuts, seed-pods, and berries; they rustled through the dry leaves and searched among them with untiring zeal for those choicest in color and form, and these were taken home

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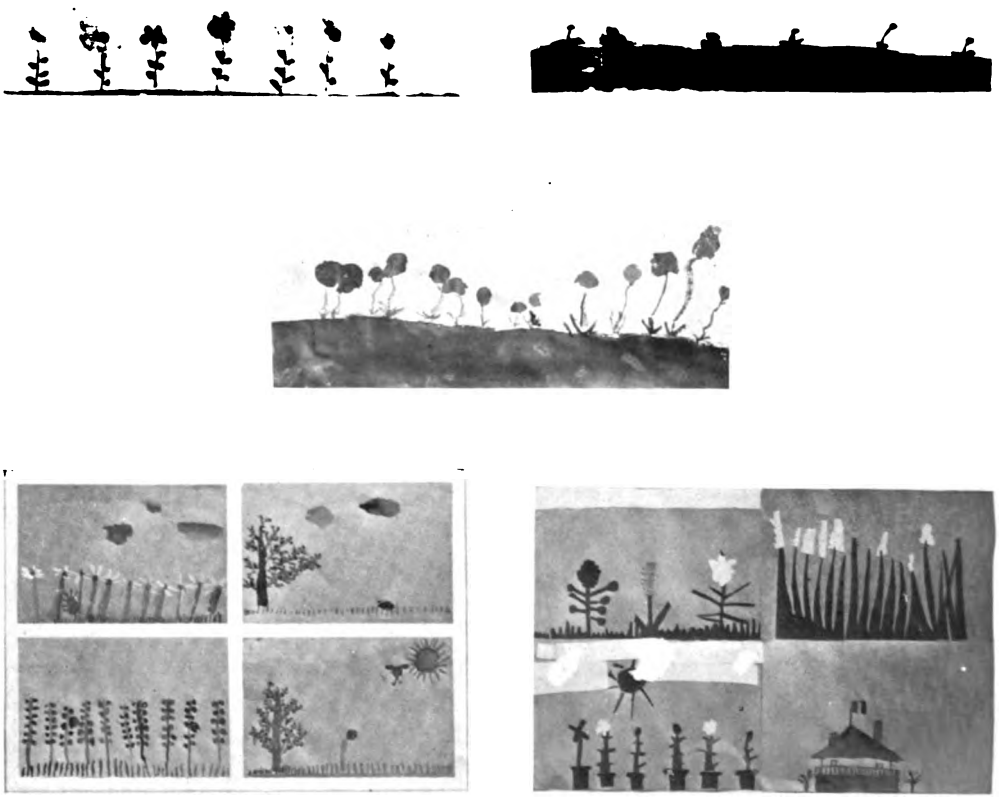

Painting and Free Paper-cutting by Kindergarten Children.

for future use and decoration. One or two empty nests were within reach, and were added to our collection. Many more were spied out among the tree-tops, and this led to the question of where the birds were that had lived in them. They, too, feeling the approach of winter, had started for sunny climes, just as the children had returned to their winter homes and occupations after the summer spent in country, mountain, and seaside.

Pictures of leafless trees, flocks of birds southward bound, and all manner of fall subjects illustrative of change and preparation for the long rest during the winter, came to deepen the *actual* experience. The children were not asked to *rehearse* what happened in the fall by a statement of facts, but were given songs which included the experiences they had had in and out of kindergarten, making this first expression one of

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feeling rather than an intellectual comprehension. Such songs as—

"Clouds of gray are in the sky,
Flocks of birds are flying by,
Trees all dressed in faded brown
Send their leaves all rustling down;
Little flowers downward creep,
Nod their pretty heads and sleep.
All the world will say good-night,
Till spring comes back with sunshine bright."

Stories were told about mother nature's care of her seed babies and buds, or of birds who had grown through the summer from babies to strong birds able to care for themselves.

Froebel says that the child imitates in order that he may understand; his unconscious thought is, "I will be all things, that through being them I may come to understand what they are." So the children were floating clouds, rustling trees, leaves dancing and resting, sleeping flowers, birds flying south, or cocoons entered into the chrysalis state. Each day the interest became more keen, and the feeling deepened until there was a constant call for the songs and a demand to be all the things themselves.

After the severe ice-storm in February was over, the children brought to kindergarten handfuls of leaf-buds and cocoons which they had found strewn about the streets, broken off by the wind and ice. The twigs were put in water. Gradually our leaf-buds, which were watched with great interest each day, began to open. One child asked what it was we used to sing about "the sun that opened the green leaf-buds." It was a spring song of last year, and we sang it.

"Good morning, glorious sun,
I love the light of the sun.
God sends his bright spring sun
To melt the ice and snow,
To start the green leaf-buds,
And make the flowers grow."

We sang several other little songs expressive of nature conditions;

"In the snowing and the blowing,
In the keen and cutting sleet,
Little flowers begin their growing
Far beneath our feet"

being one of them. Then the children said: "Let us sing 'Clouds of Gray,'" and in this way a connection was made between fall and spring.

It was suggested that we watch for everything that was waking up, and to bring any messengers of spring which we found. The things close at hand were the first noticed: the plants which had been brought on different birthdays, and which were rapidly putting forth new leaves and blossoms; the cocoons which were taken out of the fall corner, and arranged in a long line on the sunniest window-sill. Soon the children brought pussy-willows, daffodils, hyacinths, violets, and wood-anemone. One child came with a box of earth in which was growing one solitary green sprout. Another told about an old tin can he had at home with a seed in it which he had planted. He said, "I am afraid it will not wake up in time for me to show it to you before kindergarten closes, but I'll bring it if it does." Another came with

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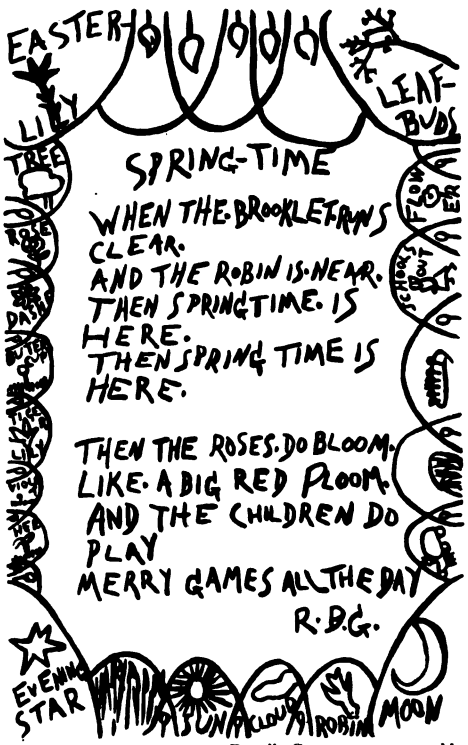
the following original poem and illustrative drawings:



Rosalie Geer, seven years old.

Another with a "spring story," as he called it, grass blades coming up, and among them a flower. Over all is the "glorious sun."

Every day water-colors and pencil drawings came to me full of the thought of spring. The blackboards were in great demand before kindergarten, and by nine o'clock they were covered with pictures of budding trees, caterpillars, cocoons, and butterflies, fields of flowers, pussy-willows, houses where people lived, and birds' nests. Our kindergarten became full of awakening life, and again the children's oneness with it shone in their faces, and expressed itself constantly in all they did and said. Two days before the Easter holidays a little girl came in fairly glowing with happiness as she placed in the center of the circle a tall Easter lily plant, and announced that she had bought it with her own money. The children's delight was spontaneous and full. To add to this feeling we arranged around the lily everything we had in the room which embodied the awakening of new life. As we were talking and singing about all these beautiful things in our circle, it occurred to me to ask if any one had looked that morning to see if a butterfly had wakened up. No one had. Two children were sent to the window to look. We waited with deep interest, and presently there was a little scream, and the two children fairly danced with delight. Of course the rest of the children were hardly able to restrain themselves. However, they took turns, two or three going at a time, until all had seen the new butterfly. We brought it to the circle, placed it among the flowers, and the children sang to it. Presently, flying close to the ground, it went outside the circle. Instantly the children expressed the strong attraction of life for life, and their unity with it. Standing on their chairs, kneeling on the floor, with hands outstretched in imitation of flowers, they waited in perfect silence, hoping the butterfly would come to them. The next morning I told Mrs. Gatty's exquisite story of the "Lark and the Butterfly," and when we had our games one child stepped into the circle, and, getting upon his elbows, moved very

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slowly with a wriggling movement. Immediately six or eight other children followed him. Music suggestive of butterfly movements was played and sung, and we had a most perfect, spontaneous dramatization of one of the most beautiful of the symbolic kindergarten games. Never was there a truer feeling of the awakening of life than was shown in the children's every act.

With the seeds, sticks, and rings, the children, left entirely free, made most individual and beautiful pictures of the spring thought, and with the free cutting produced results which in feeling for color, space, and thought were truly creative.

Florence Ames Wood.

Connecting Class.

AS the lifting of the roof in architecture denotes an expansion in the life of a people, so do new avenues of expression liberate the life of a child and add to the richness of his being. Life expands and fulfills itself by repeated all-round expression, as a plant perfects itself in its blossom. The aim of the connecting class is to extend the development begun in the kindergarten by providing rightful channels for the child's self-activity that correspond to the growing needs of body, mind, and soul. All the important centers of growth have been awakened, his kindergarten experiences have brought him in contact with the great facts of life, and now, while respecting the individuality thus developed, the chief care is to direct without crushing this exuberance of life, and to aid the child to temper and control the conscious will that appears to have started into a new and more vigorous growth at this particular period. No longer in the symbolic stage, he demands that representations shall be more perfect in detail; that the handwork be more realistic and substantial, and that a different character pervade story, song, and game. To this end, although the play spirit is carried into work, the consciousness of work in itself to attain a desired result begins to be strongly felt.

The most marked difference between the children entering this class who have had kindergarten training and those who have not, is seen in a certain lack of imagination on the part of the latter. They are not able to enter fully into every experience that is not actually present, because their past experiences have not been made clear and definite to them; the truth that lies hidden in great stories often does not reach them; they appear to hear the words only; they can express themselves but feebly in plays and games of a co-operative or representative nature, and so fail to be in entire sympathy with their comrades. The kindergarten-trained child is rarely heard to say, "I don't know how." He is ready to act in some way immediately; it may not always be the best way, but a beginning has

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been made, and from this a better way may easily be developed. The principles of the kindergarten still are the controlling influence, but the work is more advanced and more conscious effort is demanded for the child. Through free obedience to the law the child gains steadiness and poise that will fit him for the school life he is soon to enter.

All things in nature speak to him and tell him stories of life or growth as expressed by their appearance—"The golden-rod is yellow," "The chestnut is smooth and brown"; and now he begins to state these simply and clearly, and from these first attempts at composition the beginnings of reading are made until a vocabulary of sight words has become his. To this is added by degrees the practice of phonetics, or the "voices of the letters," and before the end of the year the greater number of the children can read simple stories from any elementary book.

In connection with reading, writing is begun; by imitation at first, and later by the more conscious formation and combination of the different letters. At this time the exercises are given for strengthening and developing the muscles of the hand and arm.

Number has been inseparably connected with all the kindergarten gift exercises. The child has had numerous concrete experiences of number wholes, with their possibility of separation and recombination. These experiences are now gathered together in more definite form, expressed clearly in words, and later by means of figures. The transition to the abstract comes quickly and naturally, because of the concreteness of previous experiences. Mental "stories," involving a knowledge of the four fundamental processes in arithmetic, are given. The children learn how to count to one hundred by ones, twos, threes, fives, and tens; measurements of familiar objects involving the use of a foot-rule are made; the pint, quart, and gallon measures are used in simple plays; and practical experiences in the use of United States money are had in the games of "Store-Keeper."

Perceptions of color are extended through play with the six spectrum colors and their tints and shades, and also the six intermediate colors, or half-tones, with their tints and shades; for this purpose coated papers are used, so that the standard is always true. Different harmonies are arranged, and are later applied to paper-weaving. Other color work consists of the use of crayons and water-colors. Free drawing is used to illustrate some story or experience, or some nature object about which the interest centers; simple designs are made based upon the play with the tablets, sticks, or rings. Froebel drawing precedes the exercise in writing, strengthening the muscles of hand and wrist.

Basket-weaving is begun; wire and raphia, a strong flexible fibre of the Madagascan palm, are the materials used. Four, six, and eight-sided mats are made with variously colored borders and fringes, and finally a basket with a handle.

Free expression in clay modeling is encouraged, together with more formal modeling of fruits and vegetables.

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From cardboard are made furniture, small houses, baskets of various forms, many of which are decorated with designs in water-color, and also the principal geometric solids.

During the spring term an experimental course in woodwork has been given under the direction of Mr. Frank H. Pierce, of the Science and Technology Department of the Institute. The forms made had their rise in the play with the building gifts of Froebel, and are such as connect directly with the life and interest of the child. They comprise chairs, tables, ladders, wagons, and similar articles. In addition, each child draws the plans for some original design, and later executes it in wood.

Marches, simple physical exercises, and games requiring skill are interspersed during the morning; in these games bean-bags, tennis, and basket-balls are used, and some of the circle games of the kindergarten are continued, such as Postilion, Soldier Boy, Round and Round the Village, Looby-Loo, King of France, and advanced Sense games.

The Norse myths are told during the winter months, together with stories appropriate to the season of the year. Short, incidental stories are read and retold by the children, as well as those they have heard elsewhere. Suitable poems by Stevenson, Allingham, Emerson, and Coleridge have been memorized, while the calendar repeats the same story with the festival and characteristic happenings recorded in picture form.

So comprehensive a course of work could never be undertaken with children who had not been carefully prepared for it by a thorough kindergarten training. No new centers of interest are presented, only the old appearing under a new aspect lead the child upon an ever-widening cycle of advance, and, withal, the greatest care is necessary that no child may be urged to a development beyond that which rightfully belongs to his present period of growth.

The flood of sunshine that pours all the morning into our rooms makes nature very responsive, so that both moth and butterfly emerged to add to the gladness of the children's Easter-tide. No event in nature stirs the feelings of the child so deeply as does this emergence of the moth from its long rest. The story of the dragon-fly was told one day, and with a recollection of the marvels of the Norse myth still in mind, one child asked, "And was that really true?" On being assured that it was, a little lad said, "Certainly; don't you remember how it was with the butterfly?" Twigs of lilac, maple, and horse-chestnut unfolded the treasures hidden within their winter buds; the beans, resting on muslin, sent down their rootlets into the water below, and lifted aloft their bright green leaves; bulbs and orange seeds sprouted, and corn and rice from their moist beds of cotton sent forth their characteristic blades. A new garden lies waiting in the yard without, and here the young gardeners will find an opportunity for growing things in their natural surroundings. Spring calls to them from every side, and glad child voices greet her advent in joyous song.

Ada M. Locke.

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Harriette de Capdevila.

Mother-Play.

THE Mother-Play and Nurturing Songs, the title by which Froebel's Mütter-und-Kose-Lieder is familiarly known, is a collection of the universal plays of childhood and motherhood which was gathered together by Froebel. He discarded from these plays all that was uneducational, and through the addition to each of an interpretive picture, motto, and commentary, presented them in a wholly new form. Plays and games belonged to the child long before Froebel's day. Before his advent the mother sang songs and played games with her baby, but still the mother-play remained unborn. It was not until these raw materials of education were seized upon by a genius that they became a living thing. The substance of child-education lay in them, but it was not until they passed through the personality of the educational artist that the mother-play was created.

In the plays of the child Froebel discovered the initial activities of the human being, and, therefore, the true starting-point of education. The end is in this beginning, he said; developed life lies coiled in play-life, just as the mighty oak lies coiled in the tiny acorn. In the mother's playful response to these instinctive activities of the child Froebel recognized her unconscious effort to respond to his growing needs. Let this same motherly response be charged with insight, he said, and she will seek to nurture these seeds of growth through continued and conscious play.

A study of the mother-play is of fundamental importance to the student in kindergarten training, for it contains the core of Froebel's philosophy and the key to his practice. The character of the kindergartner's whole future work will depend upon her power to grasp the essential principles of these plays, and her ability to see the application of the same to the daily life of the child.

The mother-play songs fall into three groups, and show the child's relation to nature, to man, and to God. Through these plays the mother nurtures the unfolding life of her child, and helps to place him in right relations with this three-fold life of nature below him, of man around him, and of God, who is over and in all.

The mother is the first mediator between the child and the world, and in the introductory song, the "Play with the Limbs," she starts him on his

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discoveries, that through the outer he may discover the inner universe of self. Through the medium of the mother's hand the work is begun. Placed as a barrier for him to kick against, his aimless activity is given fixed direction, and his conquest of life's obstacles is started forward. The rhythmic movement of her hands in time to the song she sings proves that the strength of the barrier has been regulated to the stage of the child's growth. The inner self-active principle of the human being expresses itself in ceaseless movement, and the mother, in following the aimless kicking of her child, is leading him out in this song along the lines of his natural expression.

In the second play the mother is having the "Falling! Falling!" game with her baby, where, through the momentary separation from her, a feeling of inner union is stirred in him, and the germs of faith and individual power are awakened in his soul.

In the various nature plays of the book the mother seeks to interpret to the child his actual experiences with nature. In the "Weather Vane" his imitative instinct is met, and through it he begins the discovery of cause—that which binds the universe into a whole. A vital sympathy with nature is the result of sharing in the fresh, active life set forth in the plays of "Beckoning to the Chickens," and "Beckoning to the Pigeons." An ideal impulse is discovered by Froebel in the child's seizure of the swimming fish, and in the play of the "Fishes" he converts this physical grasp for freedom into the beginnings of a spiritual grasp. The child's delight in the nest of birds is made the starting-point in the "Bird's Nest" game for awakening in him the consciousness of his mother's loving care and nurture, and a corresponding impulse within himself to nurture the helpless and the weak.

From nature the child's thought is turned to the life of humanity, where his moral sentiments will be called out, and where his character will be formed. His desire to enter into the complexities of human life is met by a series of "Trade" plays. With his introduction into this larger life through play, the imagination becomes fired with the ideals of gratitude, individual responsibility, just dealing, and active service.

Froebel saw in the child's outreaching for the light the beginnings of spiritual growth, and through his series of "Light Songs" meets the hunger of the soul for truth.

From these brief hints, it is evident that a period of great moment is reached in the life of the student kindergartner when so simple a thing as a little play begins to unfold to her the law of a child's whole being. With increasing sympathy and interest she follows the steps of the child in his play, making the connection between his life and that of man. The mother-play is a study of life in embryo, and must lead into all other life studies. It sends the kindergartner with new interest to great literature, where she sees the play-drama enlarged into the life-drama. With more thoughtful glance she turns the pages of history, seeing the great race movement as one with the

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movement of the life of the human being. No longer is psychology a meaningless study: it unites with the plays of the child in recording the unfoldment of the human mind. The discerning student begins to catch a vision of the oneness of child-nurture and self-culture; their processes are the same, the avenues to the one are the avenues to the other. The ideal of nurture, which is instinctive in woman, is developed into a conscious educational aim through the mother-play study, and at the same time the ideal of culture, of self-unfoldment, is awakened in a deepening sense.

The course in Froebel's mother-play for the Normal students is carried through the two years of their training. During the first year about twenty-three plays are studied, two weeks being given to each play. The first lesson consists of an exhaustive study of the picture, motto, and commentary; a lecture covering the same subject follows a week later, upon which themes are written by the students. It has been found valuable to have the first analytical study strengthened by a written outline embodying a summary of Froebel's thought contained in the picture, song, motto, and commentary, and, in addition to this, to have an original song and motto written. This original work is not intended to give practice in poetical expression, or to lead to the production of verses for future use; but it is to enable the student, through the separation of the thought from the form, to deepen her grasp of the central principle. This critical study, in which the Jarvis, Lord, and Blow translations of the "Mütter-und-Kose-Lieder" are used, gives the basis for the lecture and regular theme work.

During the first term of the second year the plan of work is similar to that of the first year, but after this the preliminary study and outline work are discontinued, and weekly lectures are given in which the plays are sometimes considered as a group and sometimes singly.

Emma Grant Salisbury.

Illustrations of original songs and mottoes written by first-year students in Froebel's Mother-Play Class, 1901–02.

"PAT-A-CAKE."

Song:

Baby, would you like to make,
All alone, a little cake?
Take the dough in both your hands,
Mother close beside you stands.
Now we roll it smooth and flat,
Here and there a little pat.
To the bakers off we go,
Toss it in the oven, so!
Soon it comes out brown and fine,
Then we'll eat it, baby mine!

Gertrude DuBois.

"ALL'S GONE."

Song:

Sad little baby,
Sitting on a chair,
Has eaten all his supper up;
It is no longer there.

Little mouth has tasted it,
Little tongue can tell
How down the little throat it slipped.
O, baby liked it well!

Cry no more, my baby.
It shall make you gay,
Frolicsome, and rosy
All the livelong day.

Carolyn L. Fetter.

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"ALL'S GONE."

Motto:

Baby cannot understand
A thing that's gone is still at hand.
But mother, when she sees his fears,
Can calm his grief and dry his tears.
When things are gone, then we must look
And see what course of flight they took.
'Tis true they may not look the same,
And they may have another name,
But, though the outward form is changed,
The inner life remains the same.

Song:

The supper's gone, my child, all gone!
The bowl is empty now.
But what has gone from baby's sight
Now makes his little eyes so bright,
And makes him laugh and crow with glee
And clap his hands so merrily.

Evelyn B. Bailey.

"GRASS-MOWING."

Song:

See, Peter is mowing the meadow-grass sweet,
He'll bring home the fodder for Bossy to eat.
Good Bossy is ready and waiting to hear
The clink of the milk-pail as Molly draws near.
The milk so refreshing, with rolls of nice bread,
The baby will eat ere he goes to his bed.
Our thanks we give Peter for mowing the grass,
And thanks to the cow and the good milking-lass.
And thanks to the baker who made us the bread,
And thanks to mamma, who the supper has spread.
Our helpers are many, some great and some small,
Not one we'd forget, but say "Thank you" to all.

Alleine Hitchcock.

Psychology.

The work in Psychology during the present year has followed for the most part along the lines of previous years. One of the functions of psychology is to prepare the way to that reflective study of inner experience which is the essential task of philosophy. Of course it is only a preparation—it gives a mere acquaintance with the tools of the higher study. Attention has been called to this aspect as occasion permitted. The bearings of psychology on the problem of education have also been kept in mind. But no amount of argument or theory of the nature of the mind's activities can settle the question in advance of any experimental work. It is in practice that theory is tested. Yet if education be a rational process,—in other words, in harmony with the known laws of mental development,—then the teacher may in part at least base her practice upon principles. Very little attention has been paid to child-psychology or physiological psychology, not because the value of both is underestimated, but because it was thought best to make an inventory of such states of consciousness as perception, feeling, desire, impulse, image, concept, and so forth—since only through this prior knowledge will the so-called contents of the child's mind have any significance. The study of psychology begins at home. As opportunity presented itself, connections were made between psychology and the theory of the kindergarten. *John Angus MacVannel.*

Alice C. Eastman.

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Stories.

STORIES give us the power of enjoying many things in life; we have only to get into the "Flying Trunk" to be able to travel over all lands and seas, and be everything that we wish to be. In stories we can see ourselves with every possibility realized; they bring us into close touch with all the great men who have ever lived, and our admiration for such heroes helps us also to be heroic. Emerson says: "All that Shakespeare says of the king, yonder slip of a boy that reads in a corner feels to be true of himself." A right choice of stories is indeed most important, for the friends whom a child meets in books are as real as those whom he meets in the streets, and have as great an influence on his character. For this reason and for many others, stories have an important place in the kindergarten, and in the heart and mind of the kindergartner.

Van Dyke says: "Let me never tag a moral to a tale, nor tell a story without a meaning." Stories are not intended to preach; they are rarely intended to be a remedy for some particular ailment; but they ought to be wholesome, nourishing food that will build up the general health of a good character, with occasional desserts of pure fun and nothing else.

Certain stories naturally belong to spring-time, others to summer, autumn, birthdays, Christmas and other festivals; some have rousing qualities, others soothing and comforting; it depends upon the natural perception and the training of the kindergartner whether she chooses those that are just fit for the occasion and the child. A lack of stories tends to make a child's life prosaic: too many stories make him as unpractical as Mrs. Jellyby; but by having just enough, he is brought into living contact with grown folk and children, with birds, animals, insects, with gnomes, giants, fairy godmothers, and other delightful creatures.

Kindergartners are always glad to unearth a good story for their children, and are ready to delve into all soils. Homer, the Icelandic writers, Spenser, Grim, Andersen, Robert Louis Stevenson, Tolstoi, Kipling, Tennyson, Lowell, Longfellow, Joel Chandler Harris, Ernest Seton-Thompson, Emilie Poulsson, Kate Douglas Wiggin, Elizabeth Harrison, Mrs. Gatty, and many others have yielded gems which give lasting inspiration. Bible stories are reserved for the highest occasions.

Unhappily, it is sometimes necessary to modify stories in order to give just that which the children need. This must be done with the greatest care, for nothing is easier than to take a fine story, finely told, and to convert it into sentimental twaddle. Some stories, otherwise excellent, speak to the children in a negative way, and for very little children these certainly need revision. There is no cut-and-dried method for such delicate work as this; those who

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attempt it must first of all realize that faith, hope, and love are the things by which men live, and that these three are able to overcome distrust, despair, and hatred; they must be guided by a certain sense of that which is good in literature, combined with the power of seeing things from the child's point of view. A knowledge of the principles found by analyzing the best stories is also of the greatest help.

Children love those fairy tales which end—"then their troubles were ended, and the prince and princess were married, and lived happily ever after"; grown people know that the end of life is not here, that this life is often disappointing, and that its story does not always end happily, but in children's stories we avoid half truths, and give that which is true of the whole of life. In the struggle between good and evil, impersonated in the fight between the hero and the villain or the knight and the dragon, we see the temporary triumph of evil succeeded by the final triumph of good. Tales of such a nature give children a love for that which is lovely, and a hopeful courage which does not flag when difficulties arise.

A study of the Norse myths is fruitful in many ways. These myths are so rugged and sincere that ordinary stories appear weak in comparison with them. Not only do they reveal the feeling and thought of the Teutonic race in its childhood, but they contain the germs of all Teutonic fairy-tales and folk-lore. For long ages before the time of books, these old tales were handed down by word of mouth, and were loved and listened to by one generation after another; in a similar way young children ask for stories before they are able to read. They give to the child that which literature gives to mankind. Both alike are unable to appropriate the whole of so rich an inheritance; it seems wise to choose a part that is worth having.

Emily Scott Thornton.

Marjorie B. Anness.

Anabel Quackenbush.

Art Course.

THE purpose of the Art Course in the Kindergarten Department is to develop in each student the power of appreciating and expressing beauty. The problem is how to help persons whose sense of beauty is uneducated to feel the difference between the fine and the commonplace and to originate something that

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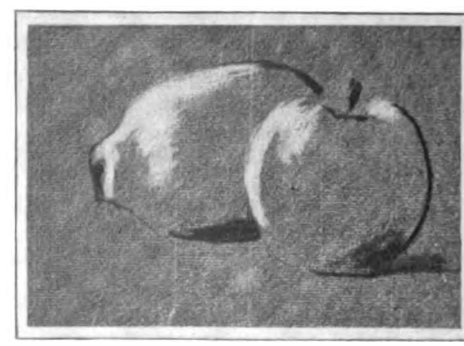
Bessie M. Scholfield.

is beautiful. It is not intended to give a series of lessons to be taught to classes of children; but if the teacher herself has an understanding of art, and can express herself, she will influence the children unconsciously, and find her own way of presenting art to the pupils.

Every one has the innate power of expressing beauty. Some have this power to a greater degree than others. The work of the training-school students illustrates this truth. Without exception, those who think they cannot draw find they can. As some one has said, each student learns that her hand is not at the extremity of her arm, but that it is immediately connected with her head.

Problems are given from the first that exercise the student's judgment and personal feeling. Individuality is encouraged. Eccentricity, however, is not a proof of greatness, and we must remember that originality consists not only in doing things differently, but also in doing things better. The pupil gains, by means of carefully graded exercises, the ability to appreciate what is meant by good proportion, balance, harmony, and other qualities of art. These exercises begin with simple arrangements of line, that is, relations of size or shape. Then follow arrangements of dark or light, or massing. This new kind of beauty consists not only of light and shade, but the quantity of light as opposed to the quantity of dark. Beginning with simple schemes of black and white, and proceeding onward to more difficult problems of three or more tones, a feeling for fine relations of dark and light is developed. Finally, color is used. Such ideas as proportion, repetition, subordination, and others which are fundamental in the fine arts, are illustrated in many ways.

The first thought is that the students shall acquire a language in which they may express their feeling; then, that they may do this well, it is necessary that they shall know how to draw. They therefore spend part of the time drawing from nature, representing in the simplest way flowers, fruit, still-life, animals, and other things. The mission of art is not to copy, but to express nature, and this truth is emphasized. To obtain this



Mary F. Aldrich.

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expression, it is important to subordinate details, and to seize the spirit and the character of things.

Reproductions of drawings made with ink or charcoal by different students of this year's classes are shown in this magazine. Good spacing and good dark and light are illustrated by the straight line designs for initial letters, by the straight line repeating borders, and by the wild-rose borders. The designs for blue-and-white china plates, the compositions of flowers and landscapes in spaces, and the three-toned border are more advanced problems, illustrating such principles as subordination, repetition, and dark and light.

The time devoted to this course is very short. The work of the kindergarten students, however, possesses certain very strong characteristics. It has life because they are in the habit of expressing themselves; and it has breadth and boldness because they work without fear.

Emily S. Thornton. Mary F. Aldrich.

Grace A. Cornell.

Music.

IT should be as natural for a child to sing as it is for him to laugh. His joy of living, his sense of companionship, find natural utterance in simple song forms. His will "plays" in *rhythm*, his mind "plays" in *melody*, and his heart "plays" in *harmony*. These three, when co-ordinated, are capable of expressing the innermost self. Song is the play of the soul. The teacher, however, must be careful that the precise execution of the words and notes does not bring the song to the level of mere performance. The artificial song voice, however sweet and smooth, is as empty and worthless as a make-believe laugh. Sincerity is the test. To be sincere is to be yourself, to be all of you. And this realness comes to us in play rather than in the matter-of-fact of every-day existence. A self-conscious smile is not really a smile, for it does not go out to others. It is known as a "smirk" of self-satisfaction. So the voice: it should go out to others in joy and playful companionship; as such it becomes one of the higher forms of self-expression.

The best way to secure this is by the influence of association: to have teachers whose voices are really vital; voices not necessarily loud, or ranged in compass, or capable of florid exe-

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Mabel Donovan.

cution, but sweet, joyous, and loving. One may well be surprised to find how many singers there are who are capable of feats of vocal performance, but who on a long-drawn single note cannot add the spirit to such words as home, prayer, joy, mother, much less voice planes of emotion, as, for example, distinguishing between a *selfish* gladness and a *noble* gladness. On the other hand, how many teachers are there who, having this power of expression through the voice, are nevertheless doubtful of their ability, because they have not music reading and performance powers, not realizing that one note of vital self-expression is more than the elaborations of whole operas merely performed.

William L. Tomlins.

Evening Class.

SOME seven or eight years ago, urged by the outside demand for additional work along kindergarten lines, a class for nurses was established by the Kindergarten Department. This class met one evening a week, and different topics bearing directly on the care of children were presented. As time passed, many teachers, influenced by the summer play-ground work, became interested in the kindergarten idea, and the class gradually increased until not only teachers, nurses, and governesses entered the course, but also students from other training-schools and other departments of the Institute.

The aim of this course has not been to train kindergartners,—the normal classes are arranged for this purpose,—but to give practical help in the application of Froebelian principles. The general plan of the work has not changed from year to year, but the details of the program vary according to the need. One evening a week is spent in the study of Froebel's Mother-Play, the singing of appropriate songs, the playing of kindergarten games. The other evening is devoted to kindergarten occupations and stories. With no time allotted for special preparation in each subject, the development of the work must necessarily differ from that given in the normal classes. As far as possible, each student expresses her opinion, and free discussion often follows the presentation of kindergarten ideas.

In the games, the important thing is to maintain the feeling of play. For this reason, the activity games and old race games are first presented, that all may spontaneously participate. Until the students are able to

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enter joyously into the spirit of the game, they cannot comprehend the mental attitude of the children.

The typical occupations of the kindergarten — sand, clay, paper-cutting and folding, weaving and basketry — are given to the class. The simplest, most inexpensive materials are used, and the students, freely expressing their own ideas, find as great a fascination as the children in these products of their activity. This year the arrangements of leaves, seeds, and other natural objects was most interesting, and some of the inventions in raphia-weaving were remarkable.

Each year the evening class has given and received fresh impulse through the ready response and intelligent co-operation of the students, until this work has become a vital feature of the Kindergarten Department.

Elizabeth E. Skinner.

Alumnæ Register.

HONORARY DIPLOMAS.

Miss Minnie M. Glidden, Director of Kindergartens, State Normal School, Providence, R. I.

Mrs. M. B. B. Langzettel, Froebel League, Kindergarten and Mothers' Classes.

Mrs. Ada M. Locke, instructor in Kindergarten Department, Pratt Institute.

CLASS OF 1894.

Flora E. Ainslie, married; now Mrs. George E. Reed.

Nellie Arms, married; now Mrs. William E. Freeman.

Sophie M. Brady, Director of Kindergarten in Public School No. 116, Brooklyn, N. Y.

Therese W. Burt, Supervisor of Kindergartens, Braboo, Wis., Director of Public School Kindergarten.

Emily E. Hartnett, Director of Kindergarten in Public School, New York City.

Louise Hurst, married; now Mrs. S. W. Schuyler.

Lillian W. Harris, not in active work.

Carrie S. Harman, not in active work.

Rebecca Oberteuffer, married; now Mrs. R. O. Bendinger.

Selma C. Soderholm, Director of Kindergarten in Public School No. 113, Brooklyn, N. Y.

Maud Sayer, married; now Mrs. Robert Bull.

Katharine Seymour, married; now Mrs. Stephen A. Barber.

Gertrude Sawyer, married; now Mrs. G. D. White.

Helene C. Trube, not in active work.

CLASS OF 1895.

Mary B. Carter, Director of Kindergarten, Montclair, N. J.

Emma L. Deeson, Supervisor of Brooklyn Society for Parks and Playgrounds for Children, summer of 1901; is now lecturing.

Cora Haviland, married; now Mrs. John L. Carver.

Emma L. Hammond, Director of Kindergarten and instructor in the Normal Kindergarten Department of the State Normal School, Westfield, Mass.

Elsie E. Lockwood, Director of Kindergarten in Public School, Newark, N. J.

Alberta Neidlinger, married; now Mrs. Henry Noyes.

Julia P. Roberts, assistant in a mission kindergarten, Brooklyn, N. Y.

Lilly A. Shaw, married; now Mrs. Victor Carroll.

Frances Whatley, married; now Mrs. L. C. Williams.

CLASS OF 1896.

Anne S. Blake, Director of "Speyer Kindergarten," New York City; instructor in Kin-

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dergarten Department, Teachers' College, Columbia University, New York.

Clara L. Brahe, Director of Kindergarten in Public School No. 131, Brooklyn, N. Y.

Agnes Maude Bussing, Director of Mission Kindergarten, New York City, under New York Kindergarten Association.

Caroline H. Crane, Director of "Slocum Memorial Kindergarten," under Brooklyn Free Kindergarten Society.

Elizabeth S. Delapierre, Director of Kindergarten in Public School No. 118, Brooklyn.

Florence A. Hughes, Director of Kindergarten in Kings County Hospital, Brooklyn, N. Y., under the Brooklyn Free Kindergarten Association.

Lillian A. Hatch, Director of Kindergarten in Public School, Brooklyn, N. Y.

Bertha H. Shaffer, assistant in Public School Kindergarten, Binghamton, N. Y.

Emily Smith, married; now Mrs. Charles P. Walker.

Florence A. Wood, Director of Kindergarten and instructor in the Kindergarten Department, Pratt Institute, Brooklyn, N. Y.

CLASS OF 1897.

Mary I. Bliven, Director of "Bedford Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Agnes Calhoun, Director in "Perth Amboy Free Kindergarten Society," Perth Amboy, N. J.

*Grace E. Fitts, not in active work.

Mabel Hawley, kindergarten governess.

Helen C. Kibbe, Director of Kindergarten in Public School, Brooklyn, N. Y.

Estelle M. Koster, married; now Mrs. Arthur M. Mitchell.

May A. Locke, married; now Mrs. Roger C. Aldrich.

Ella McKay, married; now Mrs. H. F. Burns.

*Helen I. McNear, not in active work.

Jennie H. Nicholson, Director of "Woman's Club Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Mary W. Platt, not in active work.

Florence Pray, Director of Kindergarten in the Misses Hamilton's School, Brooklyn, N. Y.

Helen Reeve, Director of "Memorial Industrial Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Laura G. Williams, Director of "Edward Richardson Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

CLASS OF 1898.

Laura W. Blair, Director of Private Kindergarten in New Rochelle, N. Y.

Gertrude Browning, Director of Public School Kindergarten in Norwich, Conn.

Florence B. Barr, Director of "E. W. Bliss Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Amelia C. Brown, Director of "Astral Kindergarten" (supported by the Alumnæ of the Kindergarten Department, Pratt Institute), under the Free Kindergarten Society.

Laura C. Crawford, Director of Public School Kindergarten, Brooklyn, N. Y.

Edyth Payne Campbell, Director of Private Kindergarten, New York City.

Grace E. Dare, Director of "The Children's Mission Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Mary W. Duryea, Director of the "University Settlement Kindergarten," New York City.

Charlotte C. Harding, Director of Kindergarten in Public School No. 117, Brooklyn, N. Y.

Louisa S. Moore, married; now Mrs. John Moore.

Mary L. McCreary, conducts a private school in Flatbush, Brooklyn, N. Y., and is director of her kindergarten.

*May E. Morrow, assistant in Mrs. Langzettel's Kindergarten, New York.

Christine H. Norton, Director of Public School Kindergarten, Brooklyn, N. Y.

Mary L. Porter, Director of "Cuyler Chapel Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Leila B. Stockton.

Susan R. Stout, Director of "Brooklyn Guild Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Helen G. Scofield, Director of Public School Kindergarten, Syracuse, N. Y.

Donnette Smith, married; now Mrs. A. P. Kesler; assistant in the Kindergarten Department of the University of Utah.

Grace B. Silliman, Director of Kindergarten in Public School No. 125, Brooklyn, N. Y.

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Henrietta Wiley, married; now Mrs. Lucien D. Gardner.

Cornelia H. Williamson, assistant in kindergarten in Industrial School, New York City.

Elizabeth D. Young, Director of "Murray Kindergarten No. 3," New York City, under the New York Kindergarten Association.

CLASS OF 1899.

Elizabeth W. Bolitho, Director of Kindergarten in Public School No. 102, Brooklyn, N. Y.

Edith N. Bentley, Director of Public School Kindergarten, Lincoln, Neb.

Ethel M. Gruman, Secretary to Principal of the High School, Rochester, N. Y.

Emily Hicks, Director of Kindergarten and Instructor in Handwork in the Friends' Seminary, New York City.

Florence M. Hall, Director of Kindergarten in Public School No. 117, Brooklyn, N. Y.

Agnes R. Harrington, Director of Kindergarten in Public School No. 72, Brooklyn, N. Y.

*Lillian D. Leighton, not in active work.

Elizabeth F. Mascord, Director of Connecting Class in the Berkeley Institute, Brooklyn, N. Y.

L. Belle Richens, Director of Kindergarten in Public School No. 62, Brooklyn, N. Y.

Alice Ross, Director of Hazelton Free Kindergarten, Hazelton, Pa.

Gertrude E. Skinner, Director of Kindergarten in Public School, Brooklyn, N. Y.

*Grace Truslow, Director of Free Kindergarten connected with Grace Church, New York City.

Mabel Howard Smith, assistant in the Central Kindergarten of the Montclair Public Schools, Montclair, N. J.

Ruby J. Simmons, Director of Public School Kindergarten, Rochester, N. Y.

Fanny B. Stebbins, Director of Kindergarten in Public School No. 103, Brooklyn, N. Y.

Sarah E. Weeks, kindergartner and teacher of Feeble Minded Children, Ellicott City, Md.

Jeannette Wallace, Director of Kindergarten in Public School, Brooklyn, N. Y.

CLASS OF 1900.

Anna I. Atkinson, not in active work.

Ruth Babcock, Director of Kindergarten in Public School No. 116, Brooklyn, N. Y.

Jessica L. Brown, married; now Mrs. George L. Wilcox.

Virginia Dwyer, Director of Public School Kindergarten, Binghamton, N. Y.

M. Bertha Greene, Director of Public School Kindergarten, Little Falls, N. Y.

Lottie B. Gore, Director of Kindergarten in Public School No. 30, Brooklyn, N. Y.

Adeline Heinold, assistant in Mission Kindergarten, Bar Harbor, Me.

Aida M. Johnston, not in active work.

Elizabeth G. Lonergan, Director of Public School Kindergarten, Brooklyn, N. Y.

Mary L. Payson, Director of Kindergarten and Instructor in Kindergarten Training School in private school, Orange, N. J.

Myra L. Rawson, assistant in Public School Kindergarten, Plainfield, N. J.

Frances Taylor, Director of Kindergarten in Public School No. 3, Brooklyn, N. Y.

†Miriam Underwood, not in active work.

Marie T. Wood, Director of Public School Kindergarten, Brooklyn, N. Y.

Ethel A. Weekes, Director of Public School Kindergarten, Brooklyn, N. Y.

*Elizabeth S. Watkins, married; now Mrs. Henry B. Rust.

Ella F. Woodward, Director of "Gerald Memorial Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

Elizabeth E. Yochum, assistant in "Physicians' Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

CLASS OF 1901.

*Emilie S. Berkes, substitute.

Mary L. Benedict, assistant in kindergarten, Ridgefield, Conn.

Mary A. Dunne, Director of Kindergarten in Public School No. 29, Brooklyn, N. Y.

Alice I. Francis, assistant in "Gerald Memorial Kindergarten," Brooklyn, N. Y., under the Brooklyn Free Kindergarten Society.

†Ruth Glidden, assistant in "Brooklyn Guild Kindergarten," under the Brooklyn Free Kindergarten Society.

Mary Storrs Packard, Director of Kindergarten in Public School No. 7, Brooklyn, N. Y.

Florence Reeves, Director of Public School Kindergarten, New York City.

Elizabeth H. Teall, assistant in Public School Kindergarten, Bloomfield, N. J.

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Annie F. Street, substitute.
† Florence E. Valentine, Director of Public School Kindergarten, Brooklyn, N. Y.
Lillian Walton, Director of Mission Kindergarten, Bar Harbor, Me.
Katheryn Weston, assistant in Pratt Institute Kindergarten, Brooklyn, N. Y., musical assistant in the Training School.
† Grace B. Ketcham, Director of Kindergarten in Public School No. 9, Brooklyn, N. Y.
* Annie M. Law, substitute.

CLASS OF 1902.

Louise Sibley Atkinson.
Fannie Park Bond.
Antonie W. Brahe.
Mabel Donovan.
Agnes Mercedes Dougherty.
Alice Clark Eastman.
Katherine Lucille Griffith.
Willa Hagerman.
Frances Mary Merchant.
Elizabeth Humphrey Morris.
Esther Van H. Mulford.
Nana Pratt.
Edith Colton Rice.
Edith Matthews Rockwell.
Cornelia Judson Ryan.
Margaret Moe Simmons.

* Students who have taken the Two Years' Training, but have not received diplomas, owing to work not yet completed.
† Will receive diploma in June, 1902.

Class.	Graduates.	Married.	Not in Active Work.	Directors.	Ass'ts.	Trainers and Supervisors.
'94	14	7	3	3	0	1
'95	9	4	0	3	1	1
'96	10	1	0	8	1	2
'97	12	3	1	7	1	0
'98	21	4	1	16	1	1
'99	15	0	0	14	1	0
'00	16	1	2	10	3	1
'01	9	0	0	4	5	0
'02	16	0	0	0	0	0
Irregular.	12	1	4	3	4	0
9	134	21	11	68	17	6

The honorary diplomas are not included in this list.

Including the class of this year, nine classes have been graduated from the department. The total number of graduates is one hundred and twenty-two. To these we add twelve more who have completed the course, many of whom are in active work, but have not yet met every technical requirement, and therefore have not received the diploma, making a total of one hundred and thirty-four.

Of the seven classes, not including the class of 1902, twenty-one are married and eleven not in kindergarten work. The total number not in kindergartens is thirty-one. Of the eighty-seven at work, sixty-eight are directors of kindergartens and seventeen assistants. Six are either supervisors or teachers in training schools. The average salary received by graduates is $600 a year.

THE ASTRAL KINDERGARTEN.
Supported by the Alumnæ of the Kindergarten Department of Pratt Institute.

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Kindergarten Practice.

PERHAPS no one appreciates as well as the student kindergartner the true value of practice work in the kindergartens. So far in her life, children have played but a minor part; she has loved and admired them, but has never been held responsible for their well-being, and now that she has chosen this profession for her life-work, she must take every opportunity to come into contact with and observe them. The instruction in the training-school inspires her with ideals and incites to action, and she becomes eager to see Froebel's principles and methods carried out in the kindergartens.

During the first year of her training the student will visit and observe in the kindergarten once a week until Christmas. She will make an accurate report of what she sees, and hand it to the supervisor, under whose supervision her practice takes place. In the beginning this is apt to be but a meagre report of what occurs, but it improves as time passes, showing growing powers of observation and discrimination. Later, as the student grows familiar with the daily procedure of the kindergarten, she sees the unity of plan, the harmonizing of parts with the whole, the why and wherefore of what goes on before her. If issues arise between child and kindergartner, she is interested to see if Froebel's principles are followed in dealing with them.

High ideals are given in the training-school, and it is quite easy for even the beginner to see that these are not always realized in practice, and, should observation continue too long, a spirit of criticism might be engendered which would be apt to blight the future success of the kindergartner. But at Christmas this ends, and with the opening of the winter term the student is assigned to a kindergarten, where for the first time she is held responsible for a group of children. These are usually the younger ones, as the older know more of kindergarten procedure than she does. Now she enters upon a new relation; love for children is not enough: she must have a knowledge of child-nature and its needs, and comprehend the scope and plan of a kindergarten, and with a novel sense of humility she asks for direction and help of her supervisor, and the right beginning for intelligent work has been made.

Now comes the relation of the inexperienced to the experienced kindergartner. The suggestions of the latter are invaluable to the practice student. It is wise to have the practice student with the children under her care in the main room of the kindergarten, in order that she may be associated with the kindergarten as a whole, and be under the immediate supervision of the kindergarten director.

An outline or program of exercises suitable for the children is prepared by the director and given to the student, with suggestions and methods of carrying it out. Working in this way with recognition for earnest effort

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and assistance when mistakes are made, the student soon attempts to solve the problems that crowd upon her. "How shall I deal with this child whose mind is active but whose hands are yet helpless? How far shall this individuality be developed at the expense of the other children? What are the things that all can do together, and that will bring accord? How shall I furnish opportunities for daily practice in obedience, attention, industry, politeness, and recognition of the rights of others? How through play can I bring these children into a knowledge of the right relations of life, so their kindergarten training will be a blessing to them?" And thus the student enters upon the six months of practice in the first year of her training.

In June the kindergartens close; they open again in September. If the student is wise in her day and generation, she is on the ground to learn how they are organized. The inexperienced girl of a year ago has now become a senior, and the older children are given into her charge. By the close of the year at Christmas the student should have had charge of children in three well defined stages of development. She should have learned the needs of each, and brought all her resources to bear in the treatment of each class. This variety of expression is necessary if the kindergartner is to look at the kindergarten from many standpoints, and from the standpoint of the whole as well as of the part. As a senior she is given the responsibility of the whole kindergarten on occasions, takes charge of the general exercise, tells a story, or conducts the game circle. She is held responsible for various things, has definite duties, takes part of the care of housekeeping, and since a mother's club is connected with every kindergarten, she has an opportunity to assist in mothers' meetings and learn the relation the kindergarten bears to the mother and the home.

Every three months the student is sent to a new kindergarten, thus making possible a varied experience in different districts and among the various classes, and sometimes she has the invaluable experience of helping to organize a kindergarten. Should her experience be in an industrial school, hospital kindergarten, college settlement, free or private kindergarten, she may see how the kindergarten proves a blessing to little children wherever they are, and that all children take to it alike, whether Jew or Gentile, barbarian or Greek, and that it is a humanitarian as well as an educational uplifting factor in a community.

After practice closes, regular observation begins again, and the student is ready to see many and various sides of kindergarten work, learning the lesson that one training-school does not hold all the insight, and that there are many ways of conducting a kindergarden. Now a connecting class comes under her observation, and, if possible, an opportunity is given her to assist in one. For a final test, the student is sent as a substitute into a kindergarten lacking a teacher, and full responsibility is given to her. Fortified by these experiences, the student claims a well-earned diploma, feeling that she has practical

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resources that will enable her to realize her ideals. Those who have watched her work for two years, now know with a fair degree of certainty whether or not she will be successful in her chosen profession.

Mary H. Waterman.

KINDERGARTENS IN BROOKLYN PUBLIC SCHOOLS.

In September, 1897, thirteen kindergartens were opened in our public schools. The number is now eighty-one. This year, since September, 1901, thirty-eight kindergartens have been established, and we are preparing to open others this spring.

In connection with some of the schools, we have secured strips of land to be used as gardens for the kindergarten children.

Our kindergartners visit in the homes of their children, and mothers' meetings are a very strong feature of the work. Under the new by-law of the Board of Education the organization of our kindergarten work has been materially changed. Four hours of work is now required. Three hours of actual work with children is all that a kindergartner can do with fine results. Four hours of work will cause our work to deteriorate.

The vacation kindergartens will continue. A new feature will be that we shall have sand-courts in corners of school play-grounds, and the games of the children will be held out of doors when possible.

The friends of the kindergarten in Brooklyn should help us in our endeavor to return to the right conditions for our work.

Fanniebelle Curtis,
Director of Kindergartens.

The Public School Kindergartens were established in 1897. By referring to the statistics that the supervisor has kindly given us, it may be seen how rapid has been the growth and what the promise is for their future.

The rooms given to the kindergartens are good, well lighted and heated, and in the new school buildings they are beautiful. The kindergartners receive excellent salaries, and have worked under favorable conditions. Now the need is for plenty of teachers, with not more than twenty-five children to a teacher, and one session of work for each, and the admittance of children at such an age as may insure to them a two years' kindergarten training.

In some cities, parents, realizing the good their children have received from the kindergarten, have asked for afternoon sessions. Where this has been granted it has been found, as a rule, the more thoughtful parents do not patronize this afternoon session. As we want neither overworked children nor teachers, some legitimate way must be found to prevent this evil creeping in.

Afternoon sessions are not good for little children, but where overcrowded districts make it necessary to provide for two kindergartens, one must hold its sessions in the afternoon. In justice to all, children and teachers should be fresh for their work, and the rooms thoroughly aired and cleaned. To have a teacher

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for a new class who has already exhausted her strength in the morning hours, is not only a mistake for the children but makes the maintaining of a high standard of work almost impossible.

By experience it has been found that all kindergartens should be in session in the morning; afternoons should be given to little more than free play and rest for children under six years of age.

The outlook is promising for the city kindergartens. From every side we hear good things said of them by parents, teachers, and school principals. *A. E. F.*

List of Kindergartens Which Have Been Under the Brooklyn Free Kindergarten Society.

(1898–MARCH 31, 1902.)

	Name of Kindergarten.	Established.	Withdrawn.	Given Up.
1	Woman's Club,	June 17, 1891.	....	.....
2	Memorial Industrial,	April 6, 1892.	....	.....
3	The Vanderbilt,	September 8, 1892.	....	.....
	Later, Edward Richardson,	May 2, 1896.	....	.....
4	The Home,	October, 1892.	1896	.....
5	The Bethel,	December, 1892.	1896	.....
6	The Asacog (Italian),	January, 1893.	....	.....
	Readmitted,	September, 1899.	....	July, 1901
7	Katharine Tilney,	September, 1892.	1896	.....
8	The Physicians',	September 11, 1893.	....	.....
9	The Lotus,	September, 1893.	....	1895
10	The Willow,	November, 1893.	....	.....
11	The Bedford,	December 19, 1893.	....	.....
	Later, Edward Richardson,			
12	The Slocum Memorial,	September 10, 1894.	....	.....
13	The Hoagland,	September, 1895.	....	.....
14	The Lincoln (Butler),	Fall of 1895.	....	April, 1897
15	The Bethany Memorial,	September 9, 1895.	....	.....
16	The Ministers',	March 9, 1896.	....	.....
	Later, "Prince Street,"			
17	The Hans S. Christian Memorial,	September, 1896.	....	.....
18	The Cuyler Chapel,	September, 1896.	....	.....
19	The Grace (in Flatbush),	April 1, 1897.	....	June, 1898
20	The E. W. Bliss,	May 1, 1897.	....	.....
21	The East End,	September, 1897.	....	.....
22	The H. B. Scharmann,	September, 1897.	....	July 1, 1899
23	The Astral,	September, 1897.	....	.....
24	The Brooklyn Guild,	October, 1898.	....	.....
25	Grace Church,	September, 1900.	....	.....
26	The Gerald Memorial,	September, 1900.	....	.....
27	The Bedford,	September, 1901.	....	.....
28	The Kings County Hospital,	December, 1901.	....	.....
29	The Incarnation,	December, 1901.	....	.....
30	The Children's Mission,	March, 1902.	....	.....

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APPROXIMATE NUMBER OF CHILDREN ENROLLED.

The first year, 1891-1892, two kindergartens, 93 enrolled.
The eleventh year, March 31, 1902, 21 kindergartens, 1654 enrolled.
September, 1891, to March 31, 1902, total enrollment 11,178.

Ten of these kindergartens have out-of-door gardens, where the children plant flowers in the spring, use garden tools, and later rejoice in the products of their labors. It is customary in the kindergartens for each child to bring a penny a day. The past year ten kindergartens, putting their pennies into a common fund, amounting to $458.72, found that it furnished all the necessary materials and furniture for the year, and in many instances paid for children's excursions as well. In this way the work becomes partially self-supporting, as no call is made upon the general fund for running expenses outside of salaries and rents, gas and heat.

During the past year the kindergartens had 2,761 visitors and held 271 mothers' meetings. This year, from September, 1901, through March, 1902, the kindergartens have had 1,689 visitors and have held 175 mothers' meetings. Many fathers have also come to these meetings to learn what is being done for their children, and to testify to the good effects the kindergarten has had upon the life of the family.

All the kindergartens are full and have waiting lists. One source of regret to the society is its inability always to help individuals or societies who are struggling to establish and maintain kindergartens in destitute neighborhoods. Six applications for help for new kindergartens are now before us, and we hope the money will be given to establish them.

Mary H. Waterman.

Free Kindergartens.

By referring to the statistics one may see the number of free kindergartens that have been under the Brooklyn Free Kindergarten Society since 1891, as well as those dropped during the same period. Each kindergarten was established to meet a crying need in some district crowded with children where there was either no school accommodations or no desire for any. All those dropped from the list met their fate because of lack of funds to maintain them, always under protest from the mothers of the children, and many times after fruitless attempts to raise funds on the part of friends and the families benefitted, so the kindergarten might be continued. The appreciation of the parents was always forthcoming and their protest hard to meet. The kindergartens that have survived these disasters have done so because of the public spirit and the devoted labors of a few who understood the value of this training and were determined to help the children.

To-day conditions are more favorable, and many good people believe in this work, which is so educational

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and humanizing. The Society ranks with the best of its kind in management and work accomplished. The teachers are well paid and love their work. There is but one session for the children, the afternoons being devoted to various duties incident to the upbuilding of kindergartens. There is a great demand for better accommodations; only a few of the kindergartens are placed in rooms adapted to their needs. Church rooms are apt to be musty and dark; the walls covered with undesirable pictures: they often have carpets on the floor and furniture about. Stores are unsuitable in shape, are apt to be in a noisy place, with no yard room for gardens and rents high. We are expecting to see very soon new rooms with air space, sunshine, good floors and plumbing, where a nursery may be added if needed and a garden out of door. A few of the twenty-one kindergartens have shown us what may be done in this respect.

There has been a question in the minds of some as to the validity of the work of a society for free kindergartens, when the public schools are opening so many. Only a few persons realize the number of children in our city for whom no provision has been made in public schools. Instead of one kindergarten in a district, there should be a dozen. Within three blocks in one district there are three kindergartens: two free, and one in a public school. These kindergartens reach two hundred children, and still more children are seen on the street. Four or five blocks in either direction there are four more, all full of children, and for the past few years, in the same locality, kindergartens and play-grounds have been maintained during the summer months.

Italians, Germans, Irish, Poles, Swedes, and many other nationalities, all working together, are being brought into harmonious relation for future American citizenship. A favorite kindergarten game is the following: "What is your country?"

"Our country is America,
Our flag the red, white, and blue,
And to the land of Washington
We ever will be true.

Then wave the flag, and wave again,
And give three loud hurrahs
For our beloved America,
And for her Stripes and Stars."

A. E. F.

Alice J. Hill.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

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High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

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Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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FREDERIC B. PRATT, *Secretary.*

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HIGH SCHOOL NUMBER

PRATT INSTITUTE MONTHLY

June, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume X | JUNE, 1902 | Number 8

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Index to Volume IX (1900–1901) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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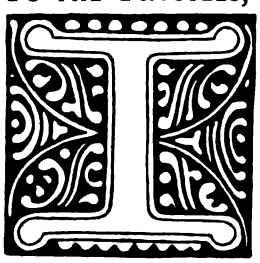
Pratt Institute Monthly

Volume X JUNE, 1902 Number 8

Annual Report Of the High School Department.

THE POLICY OF THE OPEN DOOR.

To the Trustees, Gentlemen:



T is now four years since the so-called "open door" policy was adopted by our High School. The class then admitted is about to complete its course. No final judgment may be passed after this short period of trial, but the policy involves such far-reaching consequences that I venture to make this preliminary report upon it.

The admission of the present graduating class without formal entrance examinations, their successful work, and now their desire to pursue more advanced courses lead to a consideration of (a) conditions of entrance, (b) conditions of progress from year to year, (c) conditions of graduation, and (d) conditions of entrance to more advanced courses and institutions. Let me examine these conditions in the order named.

(a) CONDITIONS OF ADMISSION TO THE HIGH SCHOOL.

This topic might be worded: The relation of the high to the grammar schools. It appears that in New York state only about twenty-seven per cent. of the children fourteen or more years of age who are prepared and enter high schools, succeed in graduating from them.* If the success of the school is to be measured by the ratio of the finished product to the raw material, the present school system stands condemned; for about one out of four of our children who enter are carried through the high school: yet I think it is generally admitted that this amount of education should be secured by every one. The large fraction of those who fail to complete their work is sufficient warrant for a critical examination of the facts.

"*Lock-Step.*"

The graded system is based upon an assumed, a theoretical, rate of progress from year to year. General experience, however, shows that the majority of the children do not make this progress. The following table is a single illustration of the facts,

*See Eighth Annual Report of the High School Department of the University of the State of New York. Bulletin No. 11, February, 1901, pps. 6-10.

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A STUDY OF AGES OF SCHOOL CHILDREN.*

Full-faced figures indicate pupils of normal age; figures to the left of normal-age line, under age; figures to the right of normal-age line, over age.

Grades.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals.	Grades.
Kindergarten.	*67	127	10	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	208	Kindergarten.
I.	27	409	400	154	52	19	6	..	6	2	..	..	1	..	..	..	..	..	..	..	1076	I.
II.	..	34	172	258	158	59	24	5	6	2	2	..	..	..	..	..	..	..	..	..	720	II.
III.	..	..	8	96	213	176	98	55	28	19	12	1	..	..	..	..	..	..	..	..	706	III.
IV.	..	..	..	11	85	178	139	96	61	56	24	2	3	..	..	..	..	..	..	..	655	IV.
V.	..	..	..	..	9	56	144	140	109	68	28	5	1	..	..	..	..	..	..	..	560	V.
VI.	..	..	..	..	..	11	57	120	103	80	35	8	1	..	..	..	..	..	..	..	415	VI.
VII.	..	..	..	..	..	..	8	67	114	116	65	16	3	..	..	..	..	..	..	..	389	VII.
VIII.	..	..	..	..	..	..	2	23	65	90	78	24	4	1	..	..	..	..	..	..	287	VIII.
IX.	..	..	..	..	..	..	..	1	8	51	93	45	4	..	..	..	..	..	..	..	202	IX.
High Sch. I. X.	..	..	..	..	..	..	..	..	..	9	50	63	73	40	13	6	1	..	1	..	256	High Sch. I. X.
High Sch. II. XI.	..	..	..	..	..	..	..	..	..	..	6	34	53	25	12	4	1	..	1	..	136	High Sch. II. XI.
High Sch. III. XII.	..	..	..	..	..	..	..	..	..	..	..	10	29	30	20	7	1	1	1	..	99	High Sch. III. XII.
High Sch. IV. XIII.	..	..	..	..	..	..	..	..	..	..	..	..	7	8	20	14	2	1	1	..	53	High Sch. IV. XIII.
Post Graduate.	..	..	..	..	..	..	..	..	..	..	..	..	..	1	7	14	1	5	11	..	39	Post Graduate.
Totals.	94	750	590	522	518	499	478	507	500	493	393	208	179	105	72	45	6	7	15	...	5801	Totals.

These returns represent a system of schools in Massachusetts when children may enter the first grade at the age of five. Schools admitting at six years should reduce their comparative tables to a common basis.

*From "An Ideal School," by P. W. Search.

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which are so generally known as to need no further demonstration. Children that drop behind from sickness, or slowness, or lack of interest, or from any other cause, seem unable ever to catch up.

The general application of this assumption involves that every individual shall in every subject go approximately as fast as every other individual, and that he shall be conditioned in his ability to go on in any topic upon his ability to keep step with the whole rank in every other topic. That there is such a uniform degree of ability, of power, or of health as to warrant such an assumption is contrary to general experience. For instance: Mary J. is an admirable reader; she does work in history, geography, English, manual training, admirably, but in mathematics she is poor. The school says to her that she is to progress in other subjects only so fast as she is able to progress in mathematics; that her mental growth in all other directions shall be gauged by her progress in mathematics. This means that she shall fall behind her class; that her mind, which is rapidly ripening in other directions, will not have intellectual food of the proper degree of maturity. She is placed with children younger than herself, and in the course of a few years drops from the class. In this general way, by the time the first class in the high school is reached, two-thirds of all the children have dropped out; and by the time that they should be ready to graduate from the high school, nine-tenths have dropped out. That this inability to keep step in everything with everybody is one of the leading factors in causing children to fall behind their classes, and ultimately to drop from the school, is, I think, so clearly shown by Mr. Search's table and by the general concensus of our experiences as to lead me to assume its truth without any further inquiry.

Is "Lock-Step" Necessary?

We are, then, at once confronted by the question, "Is this barrier which we interpose at every step in the child's progress (the barrier which demands that the child shall in everything keep step with the rest of the group) a necessary one?" Is there not some way by which the high school may be so articulated with the grammar school as to save, for years of added education, children who have not been able to keep step in everything with all the other children of the grammar school? This specific question may, perhaps, be best answered indirectly, and by taking first a larger question: Under what conditions should children be allowed to enter the high school? The immediate and spontaneous answer is, that when a child will get the discipline that he most needs out of the high school course without interfering seriously with others getting their discipline at the same time, he should be admitted. We would answer without hesitation that it would be immoral for our institution to say to a child that, because he had already been handicapped and unfortunate in school experience, we would, therefore, do nothing for him. The opposite attitude should be taken: we should be

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particularly anxious to be of service to those who most need it.

Object of Schools.

The entire school system must be regarded as a social institution, the purpose of which is to help in definite ways those who are shortly to become integral parts of the social organism. It is not an institution that exists for itself. Its life, its usefulness, is measured by the extent to which it helps the community, and not by the way in which it establishes standards so unsuited to the bulk of the community as to result in the failure of the great majority of those who come under its sway. From what has been said one is not to infer that inability to keep step is the only cause for the failure of nine-tenths of our pupils to continue their school work. Such inability is mentioned as one of the greatest single causes, and one which indirectly appears as a factor in many others; e. g., boys that fall behind are frequently removed to "enter business," when such withdrawal would apparently have been postponed in the case of greater scholastic success. To establish high standards of scholarship is a social service, but to support those standards by measures which result in the discouragement and failure of nine-tenths of the raw material is indefensible. I shall discuss later in this article the radical difference between professional and culture courses, and shall attempt to show that it is not service to the community to admit to professional courses individuals so lacking in general culture or power that they will not be able to serve the community efficiently in the special line under consideration, but that, with reference to the culture courses, exactly the opposite conditions obtain — that the more unfortunate the individual the more should society attempt to give him, at each stage of his progress, that which he needs.

Admit to the School Those Who Can Profit by It.

One would say, then, that every pupil should be admitted to the high school who can profit more by the high school work than by any other work. In general, it may be stated that those who can do the work can profit by it; that the child who fails in a given subject is, in the main, one who does not profit by it. Success in carrying the work is one measure of its profit. Thus, if we attempt to answer the question as to who will be benefitted by the high school, we shall answer, Those who can successfully carry its work.

It is the custom to admit to the high school only upon graduation from the grammar school or its equivalent; and yet graduation from the grammar school, like graduation from the high school, is, and must be, conditioned upon the accomplishment of all the work of the school. During the four years in which the so-called "open-door" policy of our High School has been maintained, it has been clearly demonstrated to us that there are children who have not completed the full grammar school work who yet should be admitted to the

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high school. These may be roughly classified as follows: (1) Those who from ill-health have been kept back in the grades, so that at fourteen or fifteen they are still six months, or possibly a year, short of graduating from the grammar school. Such children who are intelligent, who are healthy, who are mature as they should be at this age, who are proficient in the fundamental branches, have come into our school with profit both to themselves and to the institution. (2) Children of those who have moved from city to city, or who have traveled, with the result that the years in the grades have not been fully completed, but who have the qualifications of maturity, intelligence, health, and the needed scholarship to do the high-school work. Forcing such individuals to return to the grammar school results in discouragement and a lesser degree of efficiency than would result from allowing them to go into the group to which they naturally belong. Requirements for admission to the high school should be, as shown by our experience, sufficiently elastic to provide for such cases.

Delicate and Slow Children.

Shall delicate and slow children, those who cannot quite keep step with the procession, be admitted to and kept in the high school? It would be cruel and wrong for society to say to such children that, because they are already handicapped, they should be still further handicapped by the impossibility of securing an adequate education with which to meet life; but as to whether they should be admitted to a given school or not is a somewhat different question. In this particular high school, where but a limited number of pupils can be provided for, and where there are many more desiring to enter than it is possible to accommodate, it would seem unwise to admit a person who would do only partial work when such admission would exclude some one who could carry the full work of the course. This High School stands not as the sole high school in the community, but as a high school aiming at a specific problem, that of manual training with reference to school preparation for life and for college preparation, and in the solution of this difficulty children that are prepared to do the necessary work of our course should be admitted.

It is said in general answer to the proposition that admission to the high school should be determined by fitness for it, rather than by a record of having completed the grammar school work, that while this is to the advantage of some pupils, it is to the disadvantage of the social aggregate, for it creates unrest among the pupils of the upper grades of the grammar schools; it minimizes the schools' authority over their pupils. I do not understand, however, that this point is well taken, for when a pupil is ready to do the high school work it is to the advantage of the community, of the school, and of the individual as well, that he enter upon such work; unnecessary barriers should not be erected to shut out individuals from the higher education. We need to encourage rather than

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to discourage those who can go on, and it seems as if making the four groups of educational agencies — elementary, secondary, college, and university — somewhat distinct from one another might, for this reason, be of great advantage. Many children are dull and hopeless in upper grammar grades who, under the stimulus and in the atmosphere of the high school, do excellent work.

The work of the kindergarten is valuable, but if a child of nine had for any reason been unable to go to school, would it be wise to put it in the kindergarten with the children of five and try to make it keep step thereafter? By no means. The child should as rapidly as possible be put in with children of its own maturity, and till this is done emphasis should be placed on the subjects necessary to that end, such as reading, writing, and arithmetic. This is what makes the "open-door" policy especially valuable.

Let the grammar school be regarded as an institution for training children during certain years, and let it accept and keep children who are in the stage to profit most by the character and quality of its instruction. Let the high school be regarded as an institution devised for training children between fourteen and eighteen years of age, and welcoming all those who have reached that degree of maturity which will enable them to profit most by high-school work.

During the past years a great deal has been said about the lack of articulation between different grades of educational institutions, e. g., between grammar and high school, and high school and college. It was felt that the grammar school did not furnish what the high school demanded for entrance, that the high school did not give what the college required. The solution generally attempted is almost organic in its nature. It aims to tie the schools together so that each shall be so built on the preceding that the only chance for progress is to begin at the bottom and work up, and if step is lost, to drop out permanently. The "open-door" policy solves the difficulty by disarticulating. Let each school admit all who are fitted for and need its work.

We have said so far, "Admit all who need and are fit for the work." I wish now to answer the question, "Who are fit?" In general, those are fit who can carry the work well, who can do it successfully. Excellent material for the answer of this question is found in the experience of our high school itself.

A careful study of records of those who have succeeded, as well as of those who have failed, is pertinent. An inquiry among the teachers of our present graduating class as to the causes of failure among pupils in their freshman year indicates that the largest single cause of deficiency is immaturity. The work of the high school cannot be well carried except by those who have such a degree of maturity as is usually found among children of fourteen years of age. I do not mean to infer that age is always the test of maturity. It is, however, in spite of its uncertainty, the best test that we have. The difference between the high school and

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the grammar school demand is not primarily a difference in subject matter: it is a difference in attitude, it is a difference in moral quality, it is a difference that shows itself in demands upon maturity. Pupils may graduate from the grammar school at eleven, twelve, or thirteen years of age. Our records seem to show that, in general, such cases should remain outside of school until they have secured the degree of maturity ordinarily represented by fourteen years of age. Superior technical attainment by an individual pupil may not indicate at all that he is prepared to profit by the work of the high school. Technical attainment and maturity may be almost unrelated. The work of the high school is fundamentally related to a certain degree of maturity. Our experiences show that this maturity is even more important than the technical attainment which is ordinarily supposed to be involved in high school preparation. Comparatively few children under fourteen years of age, found among those who have been admitted, have that degree of mental balance, good judgment, and steady purpose which enables them to carry on the high school work with the greatest profit to themselves and to the school. The ambitious parent is usually quite ready to affirm maturity, and to believe it for his own children; but his ambition should not make us forget our experience in this matter.

Technical Preparation Needed.

The second group of those who have failed in our school consists of those whose deficiency has been in technical preparation. Let me take up this matter in detail. The studies of our freshman year consist of English, algebra, industrial history, Latin, physical geography, wood-work, drawing, physical training, and music. The subjects in which children fail for lack of scholarship are: English, algebra, Latin, physical geography, and history. The first necessity for modern methods of instruction in history and science, and even in Latin and algebra, is the ability to read — to read without effort, to read understandingly and with a fair degree of speed. We have had many children come to us, some of whom have completed full grammar school courses, who were unable to meet this fundamental and elementary requirement. Their reading was stumbling and hesitant: it was unintelligent. No record of having studied reading for years at any institution would be satisfactory. The one simple and final test is to ask the prospective student to read from some not too difficult matter, and if he cannot do this, further consideration of him as a prospective high school student should be delayed until this fundamental requirement for all further intellectual progress has been met.

The preparation in English is one of the most confusing matters. Children that have studied grammar most thoroughly and for the greatest number of years do not seem to use English with any more, if even with as much, facility as those who have studied but little if any. Children that have learned to love good read-

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ing, and have done much of it, come to our work better prepared than are those who have had much grammar study but little reading. For this particular reason we feel disinclined to insist upon any specific technical achievement in grammar or rhetoric. We are inclined to insist upon the ability to express oneself adequately, and in writing, upon a subject with which one is acquainted. It is our experience that those who can do this are able to accomplish our work, even if there has been little technical study in grammar; while those who cannot do this are unsuccessful with our work, even if there has been much technical study of language. It seems as if this were a topic that should be approached by indirect rather than by direct methods. A possible caveat should be entered in regard to the study of Latin. Those children who have an adequate knowledge of English grammar in a technical way, do take hold of Latin grammar with more readiness than others. Usually, however, the record of having read many books intelligently is of greater value, as shown by our experience, than is a record of excellence in technical English grammar.

Emphasis needs also to be placed upon the ability to write. This requirement includes satisfactory composition, spelling, hand-writing. It is not the rules of composition that are referred to; it is the actual ability to write easily, simply, and clearly what is in one's mind. The amount of writing demanded in our freshman year is considerable. The pupil who does not write readily and intelligently is so handicapped by the amount of work of this sort as to make it unwise for him to attempt the high-school course. It is not my intention to discuss the teaching of spelling, either as to method or as to extent, but as a result of our experience we feel that a pupil should learn to spell before coming to the high school, before he is fourteen. It may be that this can be accomplished by the ordinary reading and writing done in school; but this is aside from our question. It is for us to insist that pupils who come to the high school shall spell ordinary words with ease and accuracy.

The second technical attainment needed is facility and accuracy in the fundamental operations in arithmetic —addition, subtraction, multiplication, division, fractions, percentage, decimals, and compound numbers. It is not sufficient for the pupil to show a record of having done this work satisfactorily some years before, subsequent to which he has been studying algebra: he must know these subjects, and be able to handle them adequately; otherwise algebra for him will be well-nigh hopeless.

The two attainments already discussed are thus, in the light of our experience, not only desirable but essential. Under no conditions, it appears, should a pupil be allowed to attempt our high school course who is not thus technically qualified. There are other subjects which are desirable. For example, the student that has an entirely inadequate knowledge of history and geography will have far harder problems ahead of him in our course than will the student who has done satisfactory work

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in these topics. It is the same with work in science and its various branches. The full grammar-school course is desirable, and time is not wasted that is spent upon these other subjects, though they do not stand so fundamentally related to the high-school work as those which have already been discussed.

Entrance Examinations a Mutual Revelation.

In the endeavor to discover the suitability of any given child to enter upon the high-school course, it is necessary, as already outlined, to inquire not only in regard to his age and health, but in regard to his technical ability in the elementary and fundamental matters. It is just as important from the standpoint of the pupil as from the standpoint of the school, and this preliminary nominal examination should be regarded as a process of self-discovery for the pupil fully as much as a revelation to the prospective school; for the pupil is as slow to enter upon work when he is convinced that he is not prepared to carry it, as the school is to have him do so.

It is the custom to admit pupils to the high school from the grammar school without examination. It is our experience, however, that in these fundamental matters no record of having successfully completed a subject is sufficient. The one indispensable and necessary requisite is, that the pupil shall have command of the necessary subjects in order to work intelligently during the high-school period. It seems, therefore, that the high school should not shirk the responsibility of ascertaining in every case the pupil's ability. This would not necessarily be by means of formal examination, the chief effect of which would be to frighten the pupil. Informally, in conversation, it should be suggested that he read, and write, and solve a problem or two — the object being frankly stated — to see whether this is the best grade of work for him to attempt; for, to repeat, it is as much against the pupil's interests to enter a course too difficult for him as it is against the interests of the community and the interests of the institution to have him do so. The much dreaded examination may become merely a matter of mutual consultation and counsel. It need not throw difficulties in the way of any one's taking the high-school course; it may be a matter of co-operation with reference to mutual advantage. It is our experience that examinations approached in this way are quickly responded to by the pupil, and that, if it is the judgment of the examiner that the pupil is not ready for work, his judgment is approved by the pupil.

(b) PROGRESS IN THE SCHOOL.

The second topic which I proposed for discussion at the beginning of this report was that of the method of progression from year to year. In this matter I shall apply the same principles which we have so far been discussing with reference to the admission of children to the high school from the grammar schools. We admit to the freshman class those

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whom we think will profit more by the work of the school than they will by continuing in a school of lower grade. We admit to the sophomore year not only those who have completed the work of the freshman year, but all those who, in our judgment, will profit more by the work of the sophomore year than they will by repeating the work of the freshman year. And this is our rule with reference to progress from class to class and from year to year during the successive years of the course. The manner in which this works out is as follows:

A freshman, through sickness or otherwise, has not been successful in his physical geography, but has been successful in all his other work, and we will say that in his case it is not wise for him to make up the work during the summer. If, in the judgment of his instructors, he will profit more by the work of the sophomore year than he will by repeating the entire work of the freshman year, he progresses into his sophomore work. In the sophomore year he may not be successful in clay modeling, but this will not militate in the least against his profiting by the work of the junior year to a larger extent than he would by the work of the sophomore year, repeated merely for the sake of clay modeling. This policy does not imply that pupils will ever be admitted to work for which they are not prepared. For instance, a boy who had failed in his first-year Latin could not go on with his second-year Latin — such continuance would be impossible; it would be a waste of time for him to attempt it; it would not be allowed. Being a waste to the boy, to the school, and to the community, it would be altogether profitless.

Our direct aim and practice, then, is to give to each pupil, so far as we may under the limitations of school life, that which is best for him at each stage. It is evident that exceptions will occur in the ability of the child to keep step in all things with the rest of his class. The general topic of progression from year to year within the school demands the same extended discussion which has already been given to admission to the high school, but very much that has been said on the former subject applies with equal force to the latter, and if one case has been made with reference to admission to the school, it has been made with reference to progress from year to year.

(c) GRADUATION FROM THE HIGH SCHOOL.

The third topic that we proposed to discuss is the conditions under which pupils should be graduated from the high school. By graduation the school certifies to the fact of the pupil's having done all the work in a satisfactory manner. We cannot see that any deviation should be made from this simple and direct understanding of the significance of a diploma. We would have the school help every individual at every stage all that it can, and we would be willing at any moment to certify to anybody that a pupil had done a piece of work satisfactorily if it had actually been so accomplished; but under no con-

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ditions would we be willing to certify that the pupil had done all the work of the course when he had not done it, or to state that such work had been done satisfactorily when it had not been. We allow for a certain number of electives, and thus the diploma does not stand for identical studies in all cases, but we believe that it should and does stand for the faithful completion of the course of study as described in the catalogue. If a boy in his freshman year has failed in physical geography, and in his sophomore year in clay modeling, we would not prevent his going on from year to year in the course if it seemed best for him to do so; but he would understand that the diploma of the school could be secured only when those pieces of work had been satisfactorily completed. We do not understand that the policy of the "open door" in any way renders it necessary for us to lower the standard of graduation.

(d) COLLEGE ENTRANCE.

Having discussed our practice with reference to the admission of children to the High School, our practice with reference to allowing them to advance from year to year, our practice with reference to graduation and the issuance of diplomas, there remains for us to discuss further the application of this principle to college entrance. I believe that the "open-door" policy may well be applied here, and that all persons should be admitted to college who have the required maturity and who have such technical preparation as will qualify them for the specific courses which they desire to undertake, and, further, that the Bachelor's degree should be given to those who successfully complete the four years of college work. We do also feel that the college itself should examine every candidate for admission to its courses in those subjects which form a necessary prerequisite to such courses, and we believe that this examination, given by the college itself, should be regarded as sufficient for college entrance. The present system of examining upon all the work of the four years for admission to college seems to us unfortunate, for it excludes from college many who are qualified to go and to profit by the college course. The present plan of certification adopted by many institutions is useful in taking away a certain degree of fear and cramming incident to examinations, but it does not make sure that the pupil is ready for the college work in the specific branches necessary for such work. For example, a record of having successfully studied elementary algebra in the freshman year of the high school does not at all prove that the pupil is prepared to go on with studies in college that demand immediate and efficient use of such algebra.

President Hadley has divided the subjects demanded for college entrance into three groups:

1. Those which are necessary in order to the successful prosecution of the studies to be taken in college.

2. The group which it is desirable for general purposes of culture that every person should have before entering college.

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3. A group of studies which are not necessary for doing college work, nor are important, but in which the college examines in order to support the secondary schools.

President Hadley further suggests that the college itself ought to examine with reference to the first group of studies—that is, those which the student must have in hand in order successfully to carry on the college work. He suggests that the second and third groups may perhaps be by certification. We believe that nothing need be done with the second and third groups. Let us consider some cases.

A boy has left school for financial reasons at fourteen, upon completion of the grammar grades. He has worked at night schools, has been faithful in his business, and has been able to do one or two years of high-school work. He is twenty years old, and there is stirring within him the ambition for higher education. He now has financial resources that will enable him to go to college. He is thoughtful and mature for his years, has done a good deal of general reading, expresses himself clearly and well, and has a working knowledge of algebra, of geometry, and a good working knowledge of German. Shall the college say to him, "Because you were unable to take the full preparatory school course, we will not let you take the college course, in spite of the fact that you are intelligent and able to do so, and have a technical equipment to enable you to pursue the specific course desired in our institution"? Other cases might be mentioned where a boy has been kept back through ill-health, through travel on the part of his parents, through early indifference on his own part.

I would not one whit decrease the quantity or the quality of the college work, but would sever its relation to the high-school work in the same way that our school has severed the relation of the high-school work to the grammar-school work.

It seems as though the high-school diploma should stand for a successfully completed course of intensive and extensive work in the high school of a certain degree, but that it should not relate specifically to work done in the grammar school, and that every one who is prepared for the kind of work offered should be encouraged to take this high-school course. It seems equally desirable that the Bachelor of Arts degree should stand for four years of college work of the present degree of difficulty, and that no one should be admitted to the work who does not possess the maturity to profit by it or who has not had the special preparation in those subjects necessary to the carrying out of its courses, but that it should be open to every-one who is able and ready to take the course. The Bachelor of Arts degree should not represent the high-school course, for that is already accredited by its own diploma; it should be a separate thing, standing for a specific amount of work of a certain character.

Shall this general principle be applied to the technical schools? Here a new question is raised. The technical schools aim to give specific qualifications in given directions. The

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community has a right to demand from those who are to be its professional workers — for instance, from physicians, lawyers, ministers — that they shall be not merely men technically trained, but men of wide culture. Thus the technical schools have, it seems to me, a problem of their own. To admit to the college some persons who have not had the full high-school training, but who can profit by the college course, is to help to general culture those who would otherwise be deprived of it, and is, therefore, to enrich the community; to help into the professions those who have not broad culture is to wrong the community.

CONCLUSION.

The essential features of the plan now in operation are: first, the admission of all who will be more benefitted by the high school than by further work in grammar schools; second, the passing on from year to year of all who will profit by such advancement; third, the graduation of only those who satisfactorily complete the entire course.

We understand that this differs from the plan in general use, in its non-requirement for entrance of studies that the pupil might well have had earlier, but that are not essential for success in the high school.

Social Life.

Our friendships hurry to short and poor conclusions, because we have made them a texture of wine and dreams, instead of the tough fibre of the human heart.

ONE new feature of High-School social life this year has been the conferences of Director, Social Committee, and Class Officers. We quote from the Social Committee's annual report adopted by the faculty:

"Since as a faculty we believe that our school exists for the acquisition of power and to prepare for full and right living, the Social Committee keep in mind the fact that giving, in our social plan, is at least quite as essential as getting, and that the family life, in which all take an active part, is a better type for us than society, which exists primarily for adults. Intimate, friendly relationships, manifested both in work and in play, and growing naturally out of our school life, not grafted on it from the outside, are what we seem to need.

"Such social life requires the co-operation of students, requires also that they have opportunities to take the initiative. The Committee therefore recommend that this year the Director and Social Committee confer with the officers of the classes regarding our High-School social life, so that we may obtain the student point of view; and that at the beginning of each term there be a conference of Director, Social Committee, and Class Officers, in order that social aims and methods may be discussed and ac-

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cepted by the two factors — the pupils and the faculty."

The problem for the first conference to solve was: Given a class of forty-six members, thirty-two of whom are young women living in widely separated neighborhoods, and fourteen of whom are young men, how is the question of escort duty to be happily solved?

It is true that an amiable senior has achieved the remarkable record of accompanying six young women to their homes without undue haste and with no diminution of his conversational powers. The conference decided, however, that this was a championship record, beyond the attainment of the less gifted, and voted to increase the list of possible escorts by adding the names of alumni and ex-members of classes.

The usual four receptions to students and their parents have been held. The Senior reception always has a character peculiar to itself, because of the intimacy that has resulted from four years of comradeship. This year the musical programme was delightful. Mr. Phillips sang; Miss Latimer and Miss Harris played; and Mr. Schradieck, accompanied by his wife, rendered very exquisitely an adagio by Spohr, and Vieuxtemps's *Bohémienne*. Mr. Schradieck's daughter Alice is a member of the class of 1902.

Among the class spreads, one expects that given by Miss Brett to be alluring. This year the boys ventured up her "winding stair," somewhat rashly asking, "May we walk into your parlor?" They were bidden to the feast, and, although it was a cobweb party, they did "come down again." From the German classes groups of students, under the supervision of Mrs. Phelps, have heard the finest plays presented at the Irving Place Theatre; more than this, they have enjoyed Mrs. Phelps's very genuine hospitality.

Now the year is closing as it began, with many informal outings at park or shore. Mr. Watson is tireless, and carries about with him an inexhaustible store of good-nature and information.

It is hoped that one of the pleasantest of these picnic-like affairs will be the boat ride given by the faculty to the seniors on the evening of June sixteenth.

The everyday life, the good things that just happen, make, after all, the most precious part of our social life. They are so common, fortunately, that we appropriate without thought, hardly realizing how much they mean, until we pass the June milestone and sit down to review our journey.

The only way to have a friend is to be one.

A dance of the season was that of the Beta Chapter of the Phi Beta Sigma of Pratt, held at Baron's on Thursday night, May 15. Dr. and Mrs. Luther Gulick were among those who received. The committee comprised Miss Ethel Underhill, Miss Ella Field, and Miss Marion Matthew.

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Music.

IN no line of work does the High School show its strength so forcibly as in that of music.

The sixth floor is the abode of studies relating to the "development of man from the standpoint of nutrition"; the Art Department gives to the world men and women who are unusually well fitted in the lines of sculpture, painting, and design; the glory of the Department of Domestic Art lies in its recognition of the reaction of dress upon personality; while in the halls of the Kindergarten are laid solid and sure foundations for the later development of the child.

The High School, however, excels in none of these things; and even if it could not substantiate a claim to having superior college preparatory and manual training courses, all admit that in music the High School stands apart. It seems, therefore, fitting and proper that a few lines of the High School number of the *Monthly* should be devoted to the subject, and we may, perhaps, gain a clearer idea as to the nature and extent of this music if we first consider for a moment what the study of music in the High School is not.

In the first place, it is not a ceaseless drilling of scales, nor a skillful vaulting of arpeggios; it does not make its boast in phenomenally quick sight-reading; nor does it rightfully lay claim to absolute correctness of pitch,—you have only to watch the face of any one to whom correct pitch constitutes the whole of music to know that this is true, for on dull, damp mornings, when the low chapel ceiling seems to press down more heavily than usual, the tones of the singers are, it must be confessed, a trifle flat. But the music is rather, in its essence, true art, the art of which Mr. Ruskin speaks: it is the exuberance of youth finding outward vent in the rollicking glee of the spring-time; it is the sadness which lies so close to joy in every human soul wailing out, "Oft in the stilly night"; it is a wild unrest and endless longing that voices itself in the refrain of "The Radiant Morn," "Lead us, O Christ, safe home at last"; and finally it is the opportunity to express without hypocrisy through Barnby's "King all-glorious" or the "Hallelujah Chorus" one's innate reverence and adoration. Does this seem to you incredible? It did to me until I heard it, and, having heard it, I feel like saying as Philip said to Nathaniel, "Come and see!" Was it wrong, I wonder, to have felt a keen pleasure in watching, not long ago, at one of our chapel exercises, the face of an eminent music lover and composer? He had settled himself complacently in his chair to listen to what he supposed was to be an amateur performance. Gradually his face changed; the half-bored look gave way to an expression of eager delight, until, as the splendid chords of "Heaven and earth are full of Thy glory" filled the room, he forgot himself and his surroundings, while the great tears rolled down his cheeks.

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Such, then, is the nature of the music in the High School; but of its influence in the daily life of the school, what shall I say? Does it not make to a great degree the atmosphere of the school? Does it not "complete in us," students and instructors alike, "all that is best"?—since the impetus given by the fifteen or twenty minutes' practice in the morning carries us through the day's work, redeeming it from monotony and drudgery; because to teach the meaning of music thoroughly s Mr. Phillips teaches it, is to "teach courage, truth, and virtue," until

> "There is no room for care or woe
> Or wish apart from that one Will
> That doth the world with music fill!"

Debating.

IN the process of fitting boys and girls for the active duties of life beyond the doors of the school-house, we believe it is essential that they be given training in the practice of public speaking; that the subjects upon which they speak be in line with their own experiences; and that they be taught to express their own thought and personality with clearness, directness, and simplicity. We desire attainment in the way of direct expression of individuality, rather than the polish of rhetorical rhapsody that cannot be more than superficial at the age of high-school pupils.

As one means towards the accomplishment of our purpose, we require each pupil in the school to take part in two debates during the year. These debates are held in the class-room, and form a part of the course in English. The subjects are selected by the pupils. Some of the questions debated during the present year are here given:

"Resolved, That a professional and business woman is a detriment to the welfare of the home."

"Resolved, That President Roosevelt was justified in entertaining Mr. Booker T. Washington."

"Resolved, That vegetarianism is a benefit to mankind."

"Resolved, That the average young man of to-day has a better chance for financial success than his forefathers had."

"Resolved, That hope of reward is a greater incentive to right-doing than fear of punishment."

Each class selects from its number two teams of three members each, one team of girls and one of boys, to meet in a series of inter-class debates in Assembly Hall. This year the junior boys' team, consisting of Messrs. Ralph Kirkman, Hamlin Bosworth, and Stuart Montgomery, won from the senior boys in the affirmative of the question, "Resolved, That higher education is a means of securing to the individual greater financial success."

The senior girls, Misses Alice Fish, Jeannette Latimer, and Laura Mallory, won from the junior girls the affirmative of the question, "Resolved, That the credit system used

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in our department stores is a benefit to the community." The sophomore boys lost to the freshman team in the question, "Resolved, That the present cut system is a benefit to the High School." The existing system was most ably defended by Messrs. Malcolm Bird, Carroll Robb, and George Watson, of the freshman class. The freshman girls experienced an attack of faint-heartedness when the time drew near for them to meet the sophomore girls, and they forfeited the debate to their superiors, who manifested a proper degree of scorn for such lack of spirit on the part of the youngest class. The sophomore team comprised Misses Grace Parmelee, Gladys Locke, and Elizabeth Clark.

After the completion of this series there came the finals, when the winners of the senior-junior debates met the winners of the sophomore-freshman debates. On April 22 the senior girls easily defeated the sophomores with the affirmative of the question, "Resolved, That home study should be abolished." The champions among the girls, therefore, are the Misses Marion Matthew, Alice Fish, and Jeannette Latimer. The junior boys will meet the freshman boys for the championship on May 29, in the question, "Resolved, That capital punishment is justifiable.

From the material thus developed in the inter-class work the school selects a team of three boys to represent it in the Interscholastic Debating League, and a second to act as a practice team for the first. Our first interscholastic debate of the year was held in March with a team from Erasmus Hall. The question was, "Resolved, That the sale of alcoholic beverages in hotels and saloons should be allowed on Sunday." The Pratt team, consisting of Messrs. Clarence Kempner and John Vernon, seniors, and Ralph Kirkman, junior, won easily the negative of the question. We feel justly proud of the manliness, earnestness, and dignity of our team. Our second and last interscholastic debate of the year will be held on the evening of May 16, with the "Poly Prep," when the question of the exclusion of the Chinese will be forever settled. The Pratt team of this occasion will consist of Messrs. John Vernon and Leo Frank, seniors, and Ralph Kirkman, junior. The second team for both debates has comprised Messrs. Bosworth, Brown, and Stolz. The Debating Committee is unanimous in its opinion that this trio has done the best second-team work we have ever had. Both first and second teams have earned their rewards.

An alumni fraternity of boys, called the "K Q," has done much to encourage earnest debating work in our school. They have for two years announced to the school early in the year the presentation of silver cups to those members of the school who should be fortunate enough to secure places on the first and second teams — the presentation to be a feature of commencement week. For this year the following boys are eligible for the generosity of the "K Q" fraternity: Messrs. Clarence Kempner, John Vernon, Leo Frank, Ralph Kirkman, Hamlin Bosworth, Harold Brown, Herbert Stolz.

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Athletics.

IN recalling the athletic life of the Institute during the year, a loyal Prattite cannot have a feeling other than satisfaction at the work of the fellows who have carried the yellow and black.

There is always a period in a school's athletic career when, flushed with numberless victories and unused to the sting of defeat, she suddenly finds herself forced to train new men, and endeavor by superhuman work to maintain the standing she has held through the efforts of seasoned and experienced fellows.

Such a situation was met with loyalty by the football men. They responded nobly to the cries of their supporters for a winning team. Yet, although the squad was much larger than in former years, the material was below the average in weight, and lacked a knowledge of the fine points of play, so that the coach had a difficult problem to solve, even with willing pupils. To further complicate matters, some of our most promising players were injured in early games, so that the team was greatly broken up, and forced to shift about too much to be able to acquire the fine team work necessary for championship.

With all these disadvantages, the team made a fine record. The most noteworthy games were those played against Erasmus Hall and St. Paul's School, the former winning only by a safety after two fast and evenly contested halves, while St. Paul's was fortunate to secure a tie at 12–12 in view of the great football our fellows played during the second half. The scores follow:

Pratt..	11	— East Orange High School....	0
Pratt..	18	— Montclair High School.....	11
Pratt..	0	— Trinity School.....	0
Pratt..	5	— New York Military Academy.	18
Pratt..	0	— Erasmus Hall.....	2
Pratt..	16	— "Poly Prep".....	6
Pratt..	6	— Ithaca Athletic Club.....	0
Pratt..	12	— Betts Academy.....	6
Pratt..	6	— Brooklyn High School.....	17
Pratt..	12	— St. Paul's School.....	12
Pratt..	0	— Alumni.....	5
	86		77

The team was coached by Mr. Moore, a Harvard man; captained by Mr. S. B. White; and managed by Mr. Walter A. McLaren, with the able assistance of Mr. A. G. Lane.

A feature of the season was the junior team, limited to 130 pounds average weight, and composed of High-School men, which won second place in the League series. The fellows played a fast, clean game, and deserved to win. Mr. Watson acted as coach, while Mr. F. Fitch proved an excellent captain. Mr. L. M. Frank was manager. The scores follow:

Pratt Juniors..	17	— Adelphi Juniors.....	0
Pratt Juniors..	11	— "Poly" Juniors.....	0
Pratt Juniors..	0	— Brooklyn H. S. Juniors.	5
Pratt Juniors..	12	— St. Paul's Juniors.....	11
	40		16

Basket-ball again proved a Pratt specialty, the team winning the League series with the utmost ease for the third successive year, although

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the showing against the college teams, perhaps, did not equal that of the previous season. The team work, however, was fast, the fellows playing an excellent game. The greatest victory was the defeat of Princeton "Varsity" for the second time. The games and scores were as follows:

Pratt..	35	Adelphi	9
Pratt..	34	Brooklyn H. S.	3
Pratt..	49	Erasmus Hall	26
Pratt..	13	"Poly" Institute	10
Pratt..	22	Pennsylvania	28
Pratt..	20	Princeton	17
Pratt..	24	Yale	30
	197		123

The team had as captain Mr. Phillip B. Nash, and as manager Mr. Robert H. Stevens.

Considering the fact that the senior class team of the High School included three "varsity" men, nobody was surprised when it walked away with the inter-class series without serious difficulty. The scores:

Class 1902	19	Class 1903	10
Class 1902	40	Class 1905	1
Class 1902	60	Class 1904	1
	119		12

With but one member of the '01 team as a nucleus, the fellows developed a surprising amount of team work, and did fairly well in hockey, winning their way into the semi-final round by defeating Adelphi 1–0. Then, however, the team of St. Paul's School proved too formidable a rival, and our men lost 4–0. Mr. W. N. Trowbridge was captain, while the team was managed by Mr. S. B. White.

One out-of-town game was played with Montclair High School. It suffices to say that the Jerseyites had a "corking" combination.

The finals of the indoor contests, which were handicapped events, were held on March 22. The events were exciting and well attended. Three records were broken, Mr. W. C. L. White winning the 880-yard run in 2 minutes 27 seconds, as well as the mile run in 5 minutes 35$\frac{2}{5}$ seconds, surpassing the figures previously established by himself. Mr. H. F. Prescott succeeded in placing the record for the pole vault at 9 feet 3 inches, beating the figures made by Mr. Ray Nutting.

The Science and Technology Department won the "second leg" on the Inter-Department cup, the Art Department securing second place. Mr. Philip B. Nash, captain of the track team, won the individual medal with 16 points.

The inter-class contest of the High School was won by the seniors for the second conscutive year. The complete results were as follows:

Event.	Winner.	Records.
60-yd. potato race	H. F. Prescott	13$\frac{2}{5}$ sec.
220-yd. dash	S. B. White	28$\frac{3}{5}$ sec.
440-yd. dash	O. G. Hunsdon	62$\frac{1}{5}$ sec.
880-yd. dash	W. C. L. White	2:22
1 mile run	W. C. L. White	5:35$\frac{2}{5}$
High jump	P. B. Nash	5 ft. 2$\frac{1}{2}$ in.
Broad jump	F. A. Buttrick	18 ft. 9 in.
Shot put	H. F. Prescott	37 ft. 3 in.
Pole vault	H. F. Prescott	9 ft. 3 in.
Obstacle race	S. B. White	1 m. 4$\frac{2}{5}$ s.

Our relay team competed in three races during the "indoor" season, securing a second, a third, and a fifth place — the last at the games of the

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Knickerbocker Athletic Club, the first and second at the Twenty-third Regiment games in November and March respectively.

Since the "outdoor" season has been under way, Pratt has been prominent, securing 16½ points at the New York University Interscholastic meet, and coming within one-half point of the elegant cup offered. At the Trinity School games Pratt again secured second place, with 15 points. Chances for a dual meet with Dwight School, the New York champions, are now bright.

In conclusion, let me urge every loyal Pratt "rooter" to support the best track team we have had in years. We have no baseball team to lure you aside. Attend the League meet! Give the track men your best support, let them know you are with them, and help bring the yellow and the black to the fore!

"Education and the Larger Life."

IN few places will Dr. Henderson's "Education and the Larger Life" be received with more interest than in our High School, of which department of the Institute Dr. Henderson was the Director from 1898 to 1900. As teacher or student reads the book, he will recognize here and there a statement that he himself has seen verified.

In his second chapter the author says: "Life is not an affair for any modesty of purpose. That is a shabby bit of laziness. Life is an adventure quite worthy of the superlative." Naturally, his work, dealing not merely with life, but with the larger life, is not marked by any "modesty of purpose." And for this the reader is thankful; upon finishing the book, he feels that he has stood upon the mountain-top and taken a deep breath; he realizes afresh how great a thing it is — it may be — to live.

The body of the book, from Chapter II to Chapter XI, naturally divides itself into two parts. The first is given up to showing that the reality is the unit man; that the truly significant world-problem is the problem of education; that the social purpose is human wealth; that the motive power of great achievement lies in the human heart; that education is a process of organic culture; that "To believe rigidly in cause and effect is to be a philosopher, to act rigidly upon the belief is to be an artist." The second part works out the application of these truths to childhood, youth, the university, and the experimental life.

In Chapter I Dr. Henderson is as subtle as he is ingenuous. He says elsewhere: "If one does not know where one wants to go, there is little chance of success in devising a process for getting there." But he does know where he wants to go; he wants to prove that, given the sentiment and the idea, the act which embodies them will follow. Knowing this purpose, he quite skillfully and cunningly sweeps the materialist over

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into the group of the idealists, and throughout the succeeding pages insists that, as brothers, they journey with him to the goal.

The closing chapter, Chapter XI, considers the agents of the social purpose, and finds them to be "each man, each woman, each child."

A very sunshiny humor, a happy use of anecdote, an apt phrase now and then,—like that of "fuzzy thinking" for vagueness of thought,—an occasional periphresis—such as "operatives in the factory of instruction" —make the reader's philosophical excursion a veritable outing.

One sympathizes with the reviewer who is to criticise this book. A man with the genuine spirit of hospitality has brought forth therein his whitest bread and rarest wine, and has bidden his neighbor share with him the fruits of his field and vineyard. One eats, drinks, and gives thanks, forgetting to question. But the specialist will find material for censure from the very nature of things. No man may cover so wide a field and so consider details without giving material for somewhat successful criticism.

One of the finest things in the book is, therefore, written between its lines. It is the splendid daring which gives so largely and gives *now*. A more selfishly calculating man would have withheld some things through fear. But "The experimental life must 'fear nothing but fear,'" and Dr. Henderson's book is a bold "adventure" into that life.

Mr. C. Hanford Henderson, author of "Education and the Larger Life" (Houghton, Mifflin & Co.), has just returned from Porto Rico, whither he was sent by the President to make a study of educational conditions there. In his book he strongly advocates manual training, and one of the purposes of his trip was to see if the system could be applied in the Porto Rico schools.

A TRIBUTE TO MISS MOWRY.

They tell me she is dead, one I loved well,
Who, one short year my constant friend and guide,
Taught me to search out truth, nor ever bide
Content with the mere show. No prison-cell
Her class-room, but a glorious battlefield
Where each young heart, encouraged by a look,
Or shamed from cowardice by meet rebuke,
Fought out his battle, while his wounds were healed
By her dear praise. That indomitable will
Unheeding rest, that power to command,
Both tempered by a gentle love that still
Discerned the good though all the world should brand,—
Think you that these were built but for a day,
That souls like hers grow strong but to decay?

Florence Baker Grey.

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Alumni.

We give below the name, employment, business, and home address of every High School graduate so far as we know them. Any corrections or information in regard to those omitted will be very gladly received.

1890.

Roderick Allen, Superintendent of Repair Shops, Chelsea Jute Mills, Greenpoint; 561 Quincy Street.

Edward P. Folger, Engineer, 414 South First Avenue, Mount Vernon, N. Y.

Albert E. Hopkins, General Manager of Cosmos Picture Co.; 296 Broadway, New York City.

George E. Law, Rapid Transit Commission.

Arthur B. Proal, Robins Conveying Belt Co., 13 Park Row, New York; 176 South Oxford Street.

Aubrey N. Shaw, Draughtsman, A. B. See Electrical Elevator Co., 220 Broadway, New York City; 298 Carlton Avenue.

Edward M. Waring, Waring Electric Cutter Co., 247 Broadway, New York City; 937 East 34th Street, Flatbush.

Louis Wintner, General Incandescent Arc Light Co., 210 Ross Street.

1891.

Louis Ackerman, George Poll & Co., Manufacturers of Surgical and Hospital Furniture, 690–694 Harmon Street; 626 Bainbridge Street.

William H. Banzet, Designer for American Lithograph Co., 390 Hart Street.

Leander H. Conklin, Electrical Contractor, Flatbush Avenue.

Harry L. Duncan, Lawyer, 120 Broadway, New York City; 297 Jefferson Avenue.

Hubert R. Jacques, Teacher of Manual Training, Indiana, Pa.; Lynbrook, L. I.

F. L. Smith, Designing Engineer, International Paper Co., New York; 358 Adelphi Street.

Belle Spelman (Mrs. Isaac Price), Vanderbilt Avenue, near DeKalb Avenue.

Claudius Wadsworth, Jr., Technical Journalist, 496 Madison Street.

1892.

May Louise Barrett, 42 West Coulter Street, Germantown, Pa.

Gail Borden, Alhambra, Cal.

James R. Coe, Mechanical Engineer, Draper Co., Hopedale, Mass.

James K. Comings, Ranchman, Mancos, Col.

Louis Corlett, Teacher of Manual Training, 266 Franklin Avenue, Cleveland, Ohio.

Stewart H. Crampton, New York Telephone Co., 95 Gates Avenue.

Frank A. Dempsey, Manager of the Moulding Department of the Norton Iron Works, 114 Greene Street; 44 Hancock Street.

Luther Lee Emerson, Emerson & Church, Electric Supplies and Specialties, 13 Flatbush Avenue; 125 Gates Avenue.

Emma J. Hermion, Teacher in Public Schools, 100 Java Street.

C. Hubert Langmuir, Assistant Manager of the New York Life Insurance Co., 185 West 135th Street, New York City.

Geo. W. Rappold, in Colorado for his health, 413 Taber Block, Denver, Col.; 750 Flushing Avenue.

Ralph K. Shephard, Student of Art in Paris, 20 Rue Jacob, Paris; 81 Columbia Heights.

H. Donald Tieman, engaged in U. S. Forestry, Tenn.; 302 Putnam Avenue.

Charles H. Wilson, Draughtsman for Richey, Brown & Donald, Brooklyn; 202 Penn Street.

George W. Winans, Clerk in Jamaica Post Office; 33 Puntine Street, Jamaica.

1893.

H. C. Allen, Homœopathic Physician, 310 Clermont Avenue.

Harriet Cole (Mrs. N. H. Evans), 93 Lafayette Avenue.

Mary H. Cooley, Teacher of Domestic Art, Glen Cove, L. I.

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Edna Fay, Supervisor of Drawing in Public Schools of Brooklyn, 25 Quincy Street.

William Hanna, Architect, 115 Broadway.

Harris G. Hooper, Designing Naval Architect, 52 Broadway, New York City; 494 3d Street.

Joseph Lecour, Lawyer, 35 Wall Street, New York City; 283 Sumner Avenue.

Ada Lohman, Teacher in Public School No. 33; 227 Hewes St.

Clinton P. Lovell, Architectural Draughtsman, corner Park Avenue and 59th Street, New York City; 183 Keap Street.

William E. Mitchell, Manufacturer of Electrical Insulatory Compound, 59 Cortlandt Street, New York City; 395 Jefferson Avenue.

Harry Moses, Student in Long Island College of Medicine, 4 Lefferts Place.

George P. Richardson, Mechanical Engineer, 46 Bridge Street, New York City; 475 Waverly Avenue.

Elma L. Warner, Director of Physical Training, Public Schools of Brooklyn; 618 Willoughby Avenue.

Charles W. Webb, Greenwich Savings Bank, Broadway, New York City; 262 Clifton Place.

1894.

Edith H. Allen (Mrs. George Knapp), 32 St. James Place.

Kathleen G. Atkinson, 422 Clermont Avenue.

Howard A. Baylis, Teacher of Mathematics, Summit Academy, Summit, N. J.; Cranford, N. J.

Grace M. Clark (Mrs. William Painter), 2935 East Colfax Avenue, Denver, Col.

Susie L. Deans, Teacher in Public School No. 77, New York City; 446 2d Avenue, Astoria, L. I.

Benjamin F. Graves, Henry Clews & Co., Wall Street, New York City; 114 St. James Place.

Mary E. Hamilton, Teacher in Public School No. 27, Brooklyn; 42 Tompkins Place.

Joseph T. Hull, Worthington Pump Works, Van Brunt and Rapelye Streets; Highland Avenue.

George E. Hulse, Student at Stevens Institute, Amityville, N. Y.

Arthur D. Jacques, Physician, Lynbrook, L. I.

Max O. Jordon, Architect, 1164 Halsey Street.

Wynifred C. Kirkham (Mrs. Percy L. Hall), 22 Van Buren Street.

Anna M. McKinney (Mrs. Holly), Port au Prince, Hayti.

Mary S. Maguire, Teacher in Public School No. 18; 295 Columbia Street.

Edgar S. Stow, Henry Clews & Co., Wall Street, New York City; 291a Hart Street.

1895.

Mary A. Adams, 498 Grand Avenue.

Agnes Binkerd (Mrs. Horace Wells), New Canaan, Conn.

Helen D. Binkerd, Craftswoman and Interior Decorator, 854 Lafayette Avenue.

Harold Bowdoin, Architect, 130 Clermont Avenue, Mount Vernon, N. Y.

Laura Chapin, Teacher of Vocal Music and Concert Soloist, Lakeville, Conn.

Clara Culhane (Mrs. David Brower), 903 St. John's Place.

Genevieve Day, in the May Irwin Co.; 53 Rutland Road.

Elsie Eastman (Mrs. E. B. Jordan), 820 President Street.

Fred N. Esher, Lawyer, 15–21 Exchange Place, Jersey City; 245 Montgomery Street, Jersey City, N. J.

Elsie Farr, Kindergartner, Public Schools of Brooklyn, 441 Classon Avenue.

Florence Grey, 32 Cambridge Place.

Wilford Hawkins, Student at West Point Naval Academy; South Norwalk, Conn.

Joseph Hirsch, Chemist, John C. Wraina & Co., Greenpoint; 1245 85th Street.

Fred Ichen, Henry Brinkert & Co., 199 West Street, New York City; 193 6th Avenue.

Harry Kinsey, Williamsburg Savings Bank; 884 Bushwick Avenue.

Condict W. Nevins, Traveling Salesman for Machodo & Roller, New York City; 84 Highland Avenue, Jersey City.

Mary Platt, 182 State Street.

Edna Smith, Oyster Bay, L. I.

Agnes Warner (Mrs. J. E. Baldwin), East Williston, L. I.

Bertha Hancock, Public Reader, 924 Figuerra Street, Los Angeles, Cal.

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Horace Wells, Farmer, New Canaan, Conn.

Mabel Hawley, 237 Quincy Street.

Walter Tremper, Assistant Engineer, New York Rapid Transit Co.; 1055 41st Street.

Eugene Lowenthal, Max Lowenthal & Bros., Rochester; 29 Union Street, Rochester, N. Y.

1896.

Arthur W. Beal, Vice-President of Hickman Manufacturing Co., 18 Cortlandt Street, New York City; 1104 Dean Street.

Carroll Chase, Physician, 191 Kingston Avenue.

Adolph Fairbanks, Engineer, Sturgeon Falls, Canada; 18 Arlington Place.

Isabel Fisher, Director of the Gymnas.ic Work of the Y. W. C. A., Rochester, N. Y.; 155 Remsen Street.

Mabel Hall, Teacher in Public Schools, Brooklyn; 202 Clermont Avenue.

Charles O. Hartich, in Broker's Office; 482 East 18th Street, Flatbush.

Gertrude Lamb, 218 Rodney Street.

Llewellyn Morgan, De La Negue Refrigeratory Machine Co., 7 East 138th Street, New York City; 112 West 128th Street, New York City.

Walter L. Pate, Lawyer, 2 Wall Street, New York City; 416 Adelphi Street.

Harold I. Pratt, Secretary to the Charles Pratt Co., 26 Broadway, New York City; 232 Clinton Avenue.

John C. Rohlf, Standard Oil Co., 26 Broadway, New York City.

Arthur G. Seymour, Graff Furnace Co., 208 Water Street, New York City; 418 Macon Street.

Mary F. Tolman, Organist, Hartford, N. Y.

Frederick Washbourne, Traveling Salesman, 143 St. James Place.

Edith Williams, Teacher in Public Schools, 335 Lafayette Avenue.

1897.

Ruth Babcock, Kindergartner, 741 Marcy Avenue.

Harold H. Blossom, Student at Amherst, Mass.; 210 Clermont Avenue.

Elizabeth W. Bolitho, Teacher in Public School No. 118; 439 Quincy Street.

Alfred W. Bowie.

Ethel P. Burdette, Teacher in Public School No. 44; 288 Putnam Avenue.

Henry R. Cobleigh, 340 Lafayette Avenue.

Bessie Eastman, Roslyn, L. I.

Thomas N. Fairbanks, 18 Arlington Place.

Edward A. Finch, 255 Emerson Place.

Agnes J. Hall, Teacher in Public School No. 94; 182 Halsey Street.

Maude P. Harmon, 672 Putnam Avenue.

Florence Johnston, 177 Madison Street.

Eva B. Jones, 658 East High Street, Springfield, Ohio.

Ward Dix Kerlin, 155 Remsen Street.

Mary F. McCafferty (Mrs. W. A. Ferguson), 475 Jefferson Avenue.

Edith E. McElhenie, Secretary to David Belasco, 259 Ryerson Street.

Harold E. Martin, John B. Snooks & Sons, Architects, 261 Broadway, New York City; 1086 Bushwick Avenue.

Bertha Matthews, Manhasset, L. I.

Gertrude F. Merrill, 83 Rodney Street.

Joseph S. Miller, New York Telephone Co., 961 St. Mark's Avenue.

Jessie E. Morse, 200 8th Avenue.

Franklin Nevins, Lawyer, 120 Broadway, New York City; 151 Jewett Avenue, Jersey City.

W. J. Peck, U. S. Bonded Warehouse, 60 Greenwich Street, New York City; 563 Madison Street.

Nathaniel Platt, Edison Electric Co., 182 State Street.

Walter A. Ross, 398a Hancock Street.

Agnes Seymour, Teacher, Hazelton, Pa.; 746 North Diamond Avenue, Hazelton, Pa.

Gertrude Smith, Teacher in Public Schools New York City; 105 Hancock Street, or Oyster Bay, L. I.

Frances Taylor, Teacher in Public School No. 44; 99 Lee Avenue.

Charles N. Warner, Stanley Electric Manufacturing Co., Pittsfield, Mass.

Ethel A. Weeks, Kindergartner, Public School No. 112; 179 Lewis Avenue.

Joseph N. Wickham, Student, College of Physicians and Surgeons, New York City; Corona, L. I.

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1899.

Ramon Abarca, Machinist, San Juan, Porto Rico.

Herbert S. Bowne, in business with his father, Glen Cove, L. I.

Mabel Bradt, Teacher of Domestic Art, Pratt Institute; 267 Ryerson Street.

Rae Bredin, Student at Chase Studio, West Side Y. M. C. A., West 57th Street, New York City; 1334 Liberty Street, Franklin, Pa.

Rodney Chipp, Cuba Co.

Sarah I. Clark, 133 Fullerton Avenue, Montclair, N. J.

Edith J. Craft (Mrs. F. W. Curtis), 263 Quincy Street.

Amy Eastman, Roslyn, L. I.

Oliver C. Edwards, Bridge Builder, Steubenville, Ohio.

Sarah E. Finch, Student of Medicine, Syracuse University; 255 Emerson Place.

Adelaide L. Giles (Mrs. Alfred Bowie).

Lottie Gore, Kindergartner, Public Schools of Brooklyn.

Edna Hardenburgh, Saugerties, N. Y.

Alice R. Harriott, 284 Vanderbilt Avenue.

Eva M. Heffley, Cashier of Heffley School; 444a Greene Avenue.

Elizabeth Howe, Student of Kindergartening, 101 Pinckney Street, Boston.

Carrie T. Kelsey, Meadville, Pa.

Katherine Lamb, Student at Packer; 218 Rodney Street.

Sarah McGiffert, Post-Graduate Student, Domestic Science Department, P. I.; Roselle, N. J.

Frank V. Magalhaes, Student, Science and Technology Department, P. I.; 124 18th Street.

Robert W. Magrane, Student at Harvard, Thayer Hall, Cambridge, Mass.

Marion H. Maplesden, 881 Lemon Street.

Grace E. Michaelis, 256 Lafayette Avenue.

Maybelle P. Perry, Instructor of Domestic Science, Union Hospital, Fall River, Mass.; 163 Cumberland Street.

Theodore N. Powell, Student, University of Tennessee.

Charlotte L. Rudyard, Student at Vassar College, Poughkeepsie.

David S. Seaman, Student at Stevens Institute; about to enter the Buffalo Forge Co.; 1112 Bushwick Avenue.

Frederick C. Seaman, Student of Law at Columbia; 135 St. James Place.

Edith DeC. Suffren, Student at Smith College; 30 Ormond Place.

Stephen H. Townsend, Student at Cornell University; Glen Head, L. I.

Johanna E. Vogt, 105 Kent Avenue.

Irving T. Worthley, Student at Cornell; 17 Polhemus Place.

1900.

Lily B. Baylies, Student in Art Department, P. I.; 418 Putnam Avenue.

Anna W. Beach, Brooklyn Training School for Teachers; 434 6th Street.

Everett H. Beiser, Standard Oil Co.; 706 Nostrand Avenue.

Robert S. Binkerd, Student at Yale University; 853 Lafayette Avenue.

Ethel A. Bryant, Student at the Berlitz School; 391 Macon Street.

Isabel Caldwell, Student at Cornell University; 119 Henry Street.

Imogene Clark, 133 Fullerton Street, Montclair, N. J.

Clarence A. Clough, New York and New Jersey Chemical Co., Times Building; 401 Washington Avenue.

Edith W. Dalton, Glen Cove, L. I.

Alice M. Day, 659 Putnam Avenue.

Edith M. Downing, 397 Hancock Street.

Ada Dubernell, Governess, 143 Albany Avenue.

Percy Edwards, Student at University of Michigan, 644 University Avenue, Ann Arbor, Mich.; Lima, Ohio.

Stanley C. Fowler, Student at Penn College, Gettysburg, Pa.

Jessie I. Gerard, 188 Washington Avenue.

Harriet C. Harriott, 284 Vanderbilt Avenue.

Helen M. Heffley, 444a Greene Avenue.

Nellie E. Heffley, Teacher at the Heffley School, 444a Greene Avenue.

Florence E. Hubbard, Student at Barnard College, corner Amsterdam Avenue and 76th Street, New York City.

Alceste Jenkins, Student at Cornell; Sage College; 237 Madison Street.

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Thaddeus Kerlin.

Gertrude E. Ludden, Student at Cornell; 221 Gates Avenue.

Bessie B. Moore, 99 Cambridge Place.

Melvin J. Miller, Standard Oil Co.; 961 St. Mark's Avenue.

Raymond Nutting, Student at Corneil, 214 Dryden Road, Ithaca, N. Y.; 204 Clermont Avenue.

Frederic C. Pitcher, Student at Cornell; 853 President Street.

John S. Rae, Student of Art, Chase Studio; 18 Monticello Avenue, Jersey City.

Henry B. Reed, Student at Lehigh University, Milford, Penn.

Ella C. Rowell, 158 Lefferts Place.

Mary B. Searle, Babylon, L. I.

Lillian E. Seymour, Student of Music, 418 Macon Street.

Edith T. Simonson, Brooklyn Library, 373 8th Street.

Charles S. Sperry, Massachusetts Institute of Technology.

Lillian D. Wengenroth, 277 Schermerhorn Street.

Robert Winslow, 101 West 89th Street, New York City.

Robert Wood, Student of Medicine, New York University; 129 Hancock Street.

1901.

Grace B. Bond, Student at Cornell; 105 Valentine Place, Ithaca, N. Y.

Williamson B. Bowie, Student at Columbia; 171 Madison Street.

George T. Brown, Student at Cornell; Cascadilla Manse, Ithaca, N. Y.

Olive M. Burke, Regular Art Student at P. I.; 60 Van Buren Street.

Alice Cochran, Studying Piano Music, 559 Madison Street.

Elsie G. Grey, Post-Graduate Student in High School Department, P. I.; 32 Cambridge Place.

Marjory Halstead, Student of Kindergartening, P. I.; 50 Van Buren Street.

Ada Holt, Student of Normal Domestic Science, P. I.; Midland Park, N. J.

Florence Doux (Mrs. George Y. Allen), 114 Rushbrook Street, Montreal, Canada.

Harriet D. Levy, 7 West 24th Street, New York City.

Hulda E. Mayer, 313 York Street, Jersey City.

Grace A. E. Paterson, Student of Kindergartening, P. I.; 92 Madison Street.

Alice M. Rowell, Post-Graduate in P. I. H. S.; 158 Lefferts Place.

Florence E. Quinlan, 186 South Oxford Street.

Katherine Tift, Student of the Violin, 138 West 65th Street, New York City; Tifton, Ga.

Elsie P. Warner, Student at Packer; 60 Laight Street, New York City.

Natalie C. Babcock, Student at Ursuline Convent School, St. Martin's, Ohio; 741 Marcy Avenue.

Richard A. Wright, Student at Cornell, 126 Catherine Street, Ithaca, N. Y.; 1341 Bedford Avenue.

Ruth Wurzburger, 150 West 65th Street, New York City.

At the annual meeting of the Alumni Association, the following officers were elected:

President, Mr. Clarence A. Clough, 1900.
Vice-President, Miss Lottie Gore, 1899.
Treasurer, Mr. Henry Conover, 1899.
Secretary, Miss Agnes J. Hall, 1897.

The officers of the High School Chapter of the Neighborship Association are:

President, Miss Elma Warner, 1893.
Vice-President, Mrs. Knapp (Miss Allen), 1894.
Treasurer, Miss Hall, 1897.
Recording Secretary, Miss Baylis, 1900.
Corresponding Secretary, Miss Michaelis, 1899.

The meetings of the Chapter are held at the Institute the first Friday of each month at 4 p. m. Come and see what we are doing and help us do more.

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ENROLLMENT.

Total enrollment at beginning of the year		261
Withdrawn during the year		36
		225
Entered during the year		1
Present enrollment		226
Freshman Class.		
Boys	39	
Girls	37	
	76	
Sophomore Class.		
Boys	31	
Girls	37	
	68	
Junior Class.		
Boys	14	
Girls	31	
	45	
Senior Class.		
Boys	13	
Girls	16	
	29	
Special.		
Boys	2	
Girls	6	
	8	
		226

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

Department of Libraries — *Free Library, Reading-room, and Reference-room.* School of library training, 1st and 2d year courses.

Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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PRATT INSTITUTE MONTHLY

PUBLISHED BY

PRATT INSTITUTE

215 RYERSON STREET
BROOKLYN, N. Y.

VOLUME XI.

NOVEMBER, 1902—JUNE, 1903

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INDEX TO VOLUME XI.

Compiled by Students of the Library School.

An Asterisk (*) affixed to an article signifies that it is illustrated.

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FOUNDER'S DAY NUMBER

PRATT INSTITUTE MONTHLY

November, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI NOVEMBER, 1902 Number 1

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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Jamaica, Queensborough, New-York

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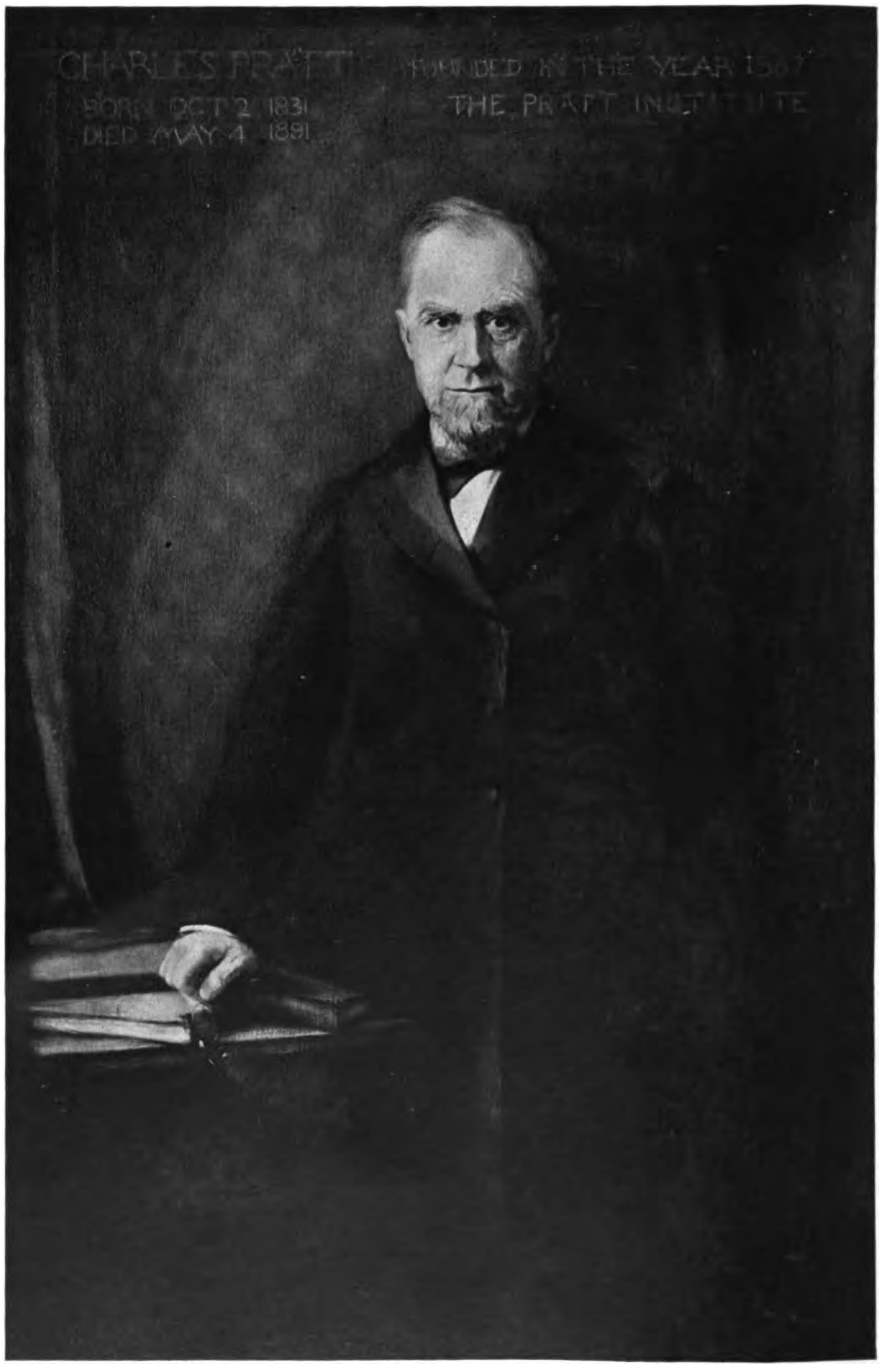

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Pratt Institute Monthly

Volume XI NOVEMBER, 1902 Number 1

The Founder.

CHARLES PRATT was born at Watertown, Massachusetts, on October 2, 1830, and died in New York on May 4, 1891. He had in his youth but few educational advantages. When a mere boy he went to work at the bench, and a year at Wilbraham Academy — which he gave himself out of his first savings — was all the opportunity for definite study that he ever had. He was, however, an earnest worker and a great student. By constant application he made good to himself the losses of his early years. He knew the value of life, and he never wasted it. His success was marked in all that he undertook. When he had the means to gratify his desires, he determined to devote his energies to giving to others the opportunities that he had missed. His sympathies were wide and his interests centered in education — and education meant to him training for all the activities of life. The workers of the world were constantly on his mind, and in establishing Pratt Institute his purpose was to make possible for them an education which should lift them up and give them something of the inspiration which comes of the true mastery of one's work. That the Institute should actually realize this ideal was the great wish of his heart. During his lifetime he gave to it liberally of his means, his time, and his experience; dying, he left to its trustees, directors, and teachers the inspiring memory of a good and wise man, who was always ready with outstretched hand to help into a larger life of right living and good citizenship the young men and women about him who were willing to help themselves.

"To live in the hearts we leave behind
Is not to die."

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Extracts from an informal talk about the Founder given to the students of Pratt Institute by Professor Franklin W. Hooper of the Brooklyn Institute on Founder's Day, October 2, 1902.

Professor Hooper spoke of the honor he felt it to be able to count Mr. Pratt among his friends and to be counted as one of Mr. Pratt's friends. He referred to the public spirit of the Founder, to his interest in every matter that pertained to the betterment of the community, especially to his interest in the question of education, and said:

THE creation of the Pratt Institute by its Founder constituted one of the most important events in the history of education in this country. The value of Mr. Pratt's work was so great that a thorough appreciation of it would require a profound knowledge of the history of education from the earliest times, together with the most intimate knowledge of the character of the work being done by the Institute to-day.

To the ancient, education meant learning to repeat the sacred books; to the mediæval scholar it was synonymous with philosophy; in this country, until within fifty years, elementary education was confined to instruction in reading, writing, and arithmetic; and the essentials of a college training were to be found in the study of Greek, Latin, and mathematics. A generation ago the scholars were those who had had such college training. These men set the standard of education. Any school or any kind of training that did not measure up to the then known college standard was looked down upon and scorned. When Mr. Pratt unfolded his plans the majority of college-bred men of the community were inclined to think that they were beneath the consideration of scholarly minds, but Mr. Pratt confounded the so-called wise men in education by

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the establishment of Pratt Institute. Through it he brought to life a broader and deeper idea of the scope and purposes of education. He showed the shallowness of the theory that culture can be gained only from books. He showed that education is a training of the powers of the entire man; that it is as broad as life and is a large part of life.

The opening of the classes at Pratt Institute to the public in 1887 did more to influence and broaden all the work of education throughout the length and breadth of the land than any other single event. It led to the establishment of a number of similar educational institutions in other cities, which are not only providing training to tens of thousands of young men and women, but are greatly affecting the character of the instruction given in the colleges and universities, in the technical and trade schools, as well as in the public and private schools of this country.

Our schools are still too largely modelled after the ideals in education that were set fifty or a hundred years ago, but the time will come when industrial education will be open to all. Then will highly skilled labor be well-nigh universal; then will the appreciation of the beautiful in art belong to the common people; then will young men and young women be educated to continue in the callings in life for which nature fitted them, and in whatsoever trade or business they may enter, to do so as cultivated men and women.

Professor Hooper concluded by saying: "Those who knew Mr. Pratt personally and intimately thought of him as a man pre-eminently interested in doing good,—a man greater than his works. Great as was his success in amassing wealth, great as was his work in founding the Pratt Institute, Mr. Pratt himself in his relations to his fellowmen, in his home, in his church, and in the community in which he lived, transcended all these."

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Extracts from a talk to the students of Pratt Institute by Mr. Charles M. Pratt, President of the Board of Trustees, on Founder's Day, October 2, 1902.

WE are here to celebrate the seventieth birthday of our Founder and the fifteenth anniversary of the establishment of Pratt Institute. In my consideration of what I should say to-day I was reminded of the trip abroad which Mr. Pratt made the year before he began the erection of the first Institute building.

After visiting the educational institutions of many countries with the view of determining what line of work could best be pursued here, Mr. Pratt returned from his trip with the conviction that our individual problem would have to be solved in its own individual way, and that, in the solution of it, the educational institutions of Europe could help him but little.

The antiquity of European civilization, the comparative stability of the Church and State, the inherited tendency of thought and custom, the prescribed methods of work both in the field of business and of skilled labor, the lack of freedom and initiative on the part of individuals, were facts which determined both the methods and results of all school work, and imposed conditions which were not possible of adoption in America.

My own brief sojourn in France and Switzerland this summer convinced me that, since that visit of the Founder, the life of the European has been undergoing a constant and important change. Science, as applied to the electrical and commercial arts, is transforming agricultural and pastoral sections into manufacturing ones. There is the same industry and much greater frugality than is shown here; the same desire for competence and the accumulation of property. Human nature in its common

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and selfish type is no different there from what we find here, and such types are as uniformly represented there as here. In fact, due allowance being made for climatic variations, the same "strenuous life" is lived there as here — if we mean by "strenuous life," as is often asserted, a desire for wealth and a surrender of one's self and one's abilities in a more or less mad race for property and for power. If, however, we mean by the "strenuous life" the development of the unselfish in us, the creation of ideals, which, in their realization, shall rightly produce in us the highest efficiency for power, for work, and for service to the State and to the man, or woman, or child who is nearest our life, then it is true indeed that the "strenuous life" had its birth and its home for nurture in these United States, and not elsewhere.

What will be the verdict of history respecting America? Will it be that she had immense prairies where wheat and corn and all cereals could be raised at lowest cost; that her mountains were full of coal and vast mineral deposits, widely dispersed and inexhaustible, and yet in kind so contiguous as to suit every economic need; that her climate produced from varied stock a race of intense nerve activity, originality, and mechanical skill: will it be this and no more? I do not believe it. The historian will say all this, and add that these great industrial conquests, which are to-day startling the world, are not due to our climate or to our natural resources so much as to our traditions as a people; to our institutions, granting to all equal rights and equal privileges under the law; to the heritage that our forefathers left us — the college, and the school, and the church, where each may worship God in his own way. We are great and prosperous as a people because of our own training, our character, and our ideals as individuals. Our Founder believed this as he believed in his own existence, and it was this belief which led him to this effort here, that, through this

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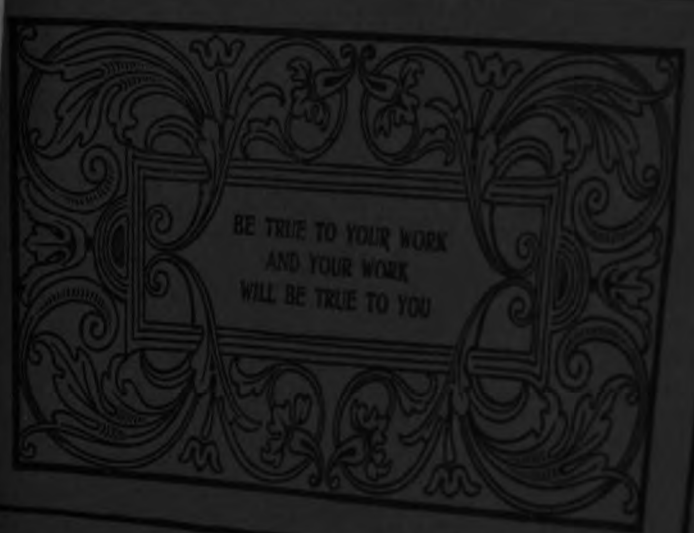
FOUNDER'S DAY NUMBER

PRATT INSTITUTE MONTHLY

November, 1902



Pratt Institute, Brooklyn, N.Y.

Institute, he might influence the individual life and so help to make his nation great.

It was his desire to found an institution which was scientific as distinct from classical, but it was also his desire that our student body should realize not only the joy in attainment of exact knowledge and skill in the courses offered, but also the attainment of a personal character and culture that should make such knowledge effective in right living.

As a Board of Trustees, our aim and sincere ambition for you students here is to give you the fullest opportunity to secure the largest possible type of life. The work is scientific, but it is more than that. It will give you, except through your own failure to make the most of your opportunities, training which will help you to find yourselves, to fix your ideals and standards, and to discipline and develop your own powers.

May I say finally to you directors,—to whom has been entrusted more and more the solution of our educational problems,—we are leaning with sincere confidence upon your judgment and your fidelity; through your concert of action a wider and truer view of the Institute's possibilities for service has been realized this year than ever before. Our efficiency as an instrument for good in the city and in our land has been measurably increased, and we are sincerely grateful to you for it. This has come, can only come, as you individually are willing to recognize your true relation, a relation wherein your work fulfills its highest function as it becomes an organic part of the whole. I beg of you to remember that the crowning personal contribution which each of you may offer towards the growth, the beauty, the efficiency, and the glory of Pratt Institute is offered whenever you truly recognize this relation.

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Annual Report of the Secretary.

TO THE TRUSTEES, GENTLEMEN:

IN submitting the following report of the Pratt Institute for the year 1901–1902, I do so with a feeling of genuine encouragement. We have handled larger classes than ever before; we have reached a body of students better prepared to do our work than those who have come to us in the past; our instructors have met with intelligent and resourceful skill the demands made upon them by an increased number of students and by new conditions; and our directors have made definite progress in their several lines of work.

The enrollment for all the departments was as follows:

	DAY.		EVENING.		TOTAL.
	Men.	Women.	Men.	Women.	
High School	117	145	...	...	262
Fine Arts	209	425	214	79	927
Domestic Art	1	623	...	133	757
Domestic Science	...	190	2	78	270
Science and Technology	191	...	419	1	611
Kindergarten	27	106	...	33	166
Library	2	36	...	...	38
Gymnasium	204	155	69	96	524
	751	1680	704	420	3555
Names repeated					372
Individual enrollment					3183

Enrolled in more than one department:

Men	169
Women	203
	372

Though the total registration has not altered materially in the past two or three years, the character of the enrollment has changed decidedly. We had last year fewer special students taking short courses than we ever had before, but this decrease was offset by the marked increase in the number of our full-time regular students. In the Department of Fine Arts, the development of the work in applied design and the strengthening of the architectual course brought to the Institute a number of practical workers who desired to give their entire time to fitting themselves for technical positions. Because of the demand for work of this character, it was possible — without in any way interfering with the service which the Institute instructors and

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equipment should render to the community — to limit the membership in these classes to those who came in September and intended to stay through the school-year. It was also possible to require some test of the applicant's ability to do the work of the course and to organize the classes on the basis of such a test. The admirable work done by our graduates as teachers, designers, and workers in other artistic fields attracts to us each year more students of ability and training. The quality of our work is such that it constantly arrests the attention of the men and women who have the natural equipment to do creditable work. This is true of the membership in our regular art course, where we take now only the students who come for the full year and who are willing to enter for full-time work.

Comparing the enrollment of the Department of Domestic Art with that of previous years, we find an increase in the number of students taking the full-time professional courses in sewing, dressmaking, and millinery, and a corresponding decrease in the enrollment of the part-time courses. This decrease seems to be due to no lack of interest in our special work, but to the fact that our full-time students require the continuous use of four workrooms, and there is, consequently, less opportunity for outside classes.

The change in the character of the enrollment in the Department of Domestic Science is in line with the changes already referred to in the other departments. Five years ago the total registration of this department was about the same that it was this past year, but then there were sixty students who entered for a short course of demonstration lessons in the use of the chafing dish and only thirteen normal students; while this year our normal students number over one hundred, and we have no course corresponding to the chafing-dish course which was given in the past.

Our Department of Science and Technology had last year the largest classes, both day and evening, in its history. The two day courses, one in steam and machine design and the other in applied electricity, are meeting a definite need, and are, therefore, well filled with good students. These courses offer an opportunity to the young man who has not had the training necessary to prepare him for the engineering schools to get — in so short a space of time as two years — a technical training which will be of immediate and practical service to him. A year ago we made definite provision in the way of buildings and teaching force to accommodate some of the applicants whom we had been obliged to refuse because of lack of room. Both first and second-year classes in these two courses are conducted in two full divisions, and there is still a long waiting list for each class.

The enrollment in the Department of Kindergartens and in the Department of Libraries remains about the same. There was a decrease in the number of women registered in the gymnasium, due to the fact that the demand for such work made by our full-time students has increased to such an extent that it was necessary, in order to accommodate these students, to give up all afternoon classes for those not members of the Institute.

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Our evening classes are attended very largely by men and women from Brooklyn and New York, but our day pupils come to us from all parts of the United States and Canada, as well as from other countries. The increase in the number of full-time students — many of whom are boarding in the city for the purpose of attending the Institute — is beginning to make the social life of our student-body a serious problem. We have from four to five hundred young persons, away from the restraints of home, living in boarding houses over which we have never attempted to exercise direct control, and located near enough together to concentrate this student life in our immediate neighborhood. Compared with many student bodies, ours behaves well, but to the citizens of Brooklyn in whose vicinity our students live they will always be a disturbing element. It seems to me that greater concentration, such as the bringing of the students together in a large dormitory, would tend to make matters worse; and that the solution to the problem lies in the separation of the students into small groups in the houses of persons who are willing to coöperate with us in securing right conditions. To this end, only those houses have been put upon our authorized list this fall whose managers have guaranteed a kind of supervision over the students.

Our teaching force has undergone a number of important changes during the past year. It is the inevitable result of work that is along more or less untried lines that it should attract public attention, and that the men and women who are doing the work should be well known. So it is natural that, as new schools for technical and industrial training spring up, they should look to us for their organizers. No small part of the service which Pratt Institute has been able to render to the country has been this parting with its teachers to take charge of work in schools that are similar to our own.

Among the men and women who have been with us longest and who left us this year were Mrs. Mary D. Chambers, who has been appointed as the directress of the Department of Domestic Science in the John Milliken University at Decatur, Illinois; Mr. J. V. Sturges, whose work in our High School as an instructor in mathematics has won for him an enviable reputation as a man and as a teacher, has been called to the principalship of the High School at Tarrytown; and Mrs. Locke, of our Department of Kindergartens, who has been appointed to an important position in New York. In this connection, we record with sincere regret the resignation of Dr. John Angus MacVannel as instructor in psychology and the history of education. Dr. MacVannel, who has been at the Institute since the fall of 1896, leaves us to give his entire time to Columbia University. While with us he handled a difficult problem in a most satisfactory way. He interested his pupils in his courses; did good, scholarly work with them; and was in his personal character an example and inspiration to us all.

Our conditions of work differ from the conditions to be found in most educational institutions. We do not have to deal with the boys and girls who are "sent" to school. For the most part, our students are young men

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and women of maturity who have had sufficient experience in life to value their opportunities. They are earnest, ambitious, and anxious to work; and they make demands upon their instructors which are not common in the average school. Our instructors find themselves stimulated to great effort in this atmosphere, and do more under its inspiration oftentimes than is good for them or than we wish them to do. There is also the constant demand upon the free time of our teachers made by the public, which is anxiously watching the kind of work we are doing at the Institute, and which, in the organization of similar work elsewhere, wants the benefit of our experience. It is no uncommon thing to have outlines of courses of study submitted to our instructors for careful criticism; to have reading lists asked for; or even to have a request for a course of study to be planned. The willingness with which the Institute teachers rise to these occasions, and the labor which they freely give to the solution of problems not their own is worthy of comment. We have a body of teachers of which we are justly proud. They work hard to keep themselves abreast of the times in their own subjects and to meet the needs of their students. They do more than this. They give freely of their personal experience and of themselves to their students and to the public, and are largely responsible for the fine spirit which prevails throughout the Institute.

In addition to the services rendered by the instructors during the school year, many of them have given assistance to the public during the summer months. Mr. E. M. Healy, of the Department of Science and Technology, had charge of the manual training in the vacation schools of greater New York; Mr. W. C. Stimpson and Mr. W. J. Kaup, of the same department, went to the Bethlehem machine shops with classes of students from Lehigh University, in order to secure for these students some definite benefit from their observation of the work in the shops; Mrs. A. M. Locke again took charge of the Brooklyn playgrounds; and Mrs. E. H. Spalding taught several English courses at the summer school for teachers at Hyannis, Massachusetts.

There are many problems connected with the work of our various departments which it is impossible at this time to comment upon. As they are solved they become a part of the history of the Institute. Many of these special problems are related directly to the views of the individual directors. As these directors become more and more interested in their work and have a larger experience with their departments and a truer knowledge of the Institute conditions, they themselves overcome many of their own difficulties. Many of our conditions are modified and many of our problems are solved through the better understanding which our directors are coming to have of the work which is being done in departments other than their own. The annual exhibition of students' work this year was more satisfactory than ever before, because it was a practical demonstration of the more common view-point for which we have been working for a long time.

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There is much, too, that I might say at this time about the growth and development of our educational work in its detail, but I feel that the trustees will get a clearer impression of our work if I leave these facts to be presented by the directors in their departmental reports. In this report I have spoken only of matters concerning all departments and the general spirit of the institution,—which would not, necessarily, come within the province of a departmental report.

Faculty meetings have been held at regular intervals throughout the year for the transaction of business affecting the management of all departments. The minutes of these meetings have been handed to you currently and are now filed, as a whole, with the Institute records. These minutes indicate a decided growth in the importance of the faculty in the life of the Institute. Carrying out the thought of the Founder and continuing our own policy, the faculty has gradually been invested with larger powers and responsibilities, until the educational policy of the Institute is determined by this board of our directors, subject to the approval of the trustees. That is, the faculty now determines all questions, such as the entrance of students and their standing; modifications in courses of study already established; the organization of new courses of study within established departments; the granting of diplomas and certificates; and the settlement of questions of discipline.

During the year the trustees appointed a special committee of the directors to outline a course in hand-work for normal students and to discuss the question of hand-work in its relation to the normal and technical problem. The work of the committee was of great value in bringing about a mutual understanding among the directors. They took up the problems presented, discussed them carefully, and prepared a report which had a real educational value. The recommendations made in this report, as well as those made by the special High School committee, have been accepted by the trustees.

It has been our plan and desire this past year to do all that we could to bring the departments into closer harmony and to bring our students into more direct relationship with one another. In addition to the receptions which have been given within the departments, we have had a number of gatherings at which the whole Institute has been represented. Our general lectures and our Neighborship Association meetings have been occasions for coming together, and the weekly practice-hour of the Institute chorus has been a pleasant gathering point for the musical students. This coming year we shall try the experiment of a morning chapel service for all students. We want to say to the students who come to us in as many ways as we can that, different as the work in the different departments is, it is based on the same fundamental principles, and that loyalty to one department and interest in its work cannot be the best loyalty and interest unless it is also expressed for all departments; that it is as a whole that our work must stand, and to make the whole an effective instrument for good must be the desire of each individual part.

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The Pratt Institute Monthly was a marked success this past year. It took the form of printed reports of the work of the departments, and each edition has been exhausted and is still in demand. There are too many technical journals taking up every phase of our work for us to enter the whole field with a single magazine, however strong and forceful it might be. Since the organization of the Institute a great interest in the subject of industrial art has been awakened, and there are now a number of reliable publications representing the educational side of our work, and also the technical work which is being done in domestic art, domestic science, mechanical art, and the fine arts. Our own magazine, which is now issued, as I have indicated, in the form of an annual report from each department, has its excuse for being in that it gives to the public each year a record of our experiments and our progress, and, in many cases, sets forth the conclusions which we have reached through our experience. It answers the many questions which are constantly coming to us, and helps to contribute to the general educational movement by showing how we are trying to do our work well, simply, and easily. It also helps by giving others the benefit of our successes and of our failures. The Monthly has been distributed freely among the people who are most keenly interested in work of the character we are doing. The mailing list, which differed with each number, has been furnished by the director of the department having the number in charge.

I have felt it wise this year to print the following brief statement regarding our finances:

PROPERTY AND ENDOWMENT ACCOUNT.

Endowment Funds	$2,100,000.00
Real Estate and Building Endowment	283,926.95
Institute Buildings and Grounds	1,179,473.74
Sundry Assets	133,853.19
	$3,697,253.88

EXPENSE ACCOUNT.

Salaries and wages	$193,445.92	
Expenses	51,124.98	
		$244,570.90
Less:		
Tuitions	$71,012.50	
Receipts from lunch room, sales, credits, etc.	4,286.57	75,299.07
Deficit, charged to Income Account		$169,271.83

INCOME ACCOUNT.

Charles Pratt & Company	$39,810.26	
Morris Building Company, rents	104,283.54	$144,093.80
Deficit met by special gift of the Trustees		$25,178.03

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There is an increase in the expense account of this year over the year before of $19,000, of which amount $16,000 is to be found in the salary budget. The increase is explained by the appointment of several new instructors to care for the additional work necessitated by the increased full-time enrollment.

We have added a new building to our accommodations this year. It was for our Department of Kindergartens, and was not completed until after the Christmas recess, a delay which made it difficult to carry on with any degree of ease the work of the Department of Kindergartens and of the Department of Domestic Science — the latter department having been granted the use of the rooms in the main building which had been occupied by the former department. Each department had admitted more students than usual with the understanding that increased room would be provided, and the added numbers in the old accommodations taxed the ingenuity of the directors and the patience of the teachers and students to the utmost. The new building contains rooms for the connecting class and kindergarten, for the department offices, and for the kindergarten training classes.

Extensive changes were made on the sixth floor of the main building, providing two new laboratories, a dining room, and a kitchen for the Domestic Science classes.

After a careful discussion of the problem, we have decided to make permanent the following arrangement for the different departments: To give to the Department of Domestic Science the use of the sixth floor and the north side of the first floor of the main building; to the Department of Fine Arts the entire fifth and fourth floors of the main building; and to the Department of Domestic Art the third floor of the main building. Every other department has now a building of its own, and the accommodations of all departments — with the exception of the Department of Domestic Art and the High School — have been greatly increased within the past three years.

In speaking of the buildings, I am reminded again of the care required to keep them clean and in order, and of the intelligent and faithful work done by our large force of janitors and janitresses. It is interesting to note that it cost us $23,230.91 to light, heat, and clean the Institute buildings last year.

Class work came to a close on June 19 with our annual commencement exercises. Diplomas and certificates were awarded as follows:

	DIPLOMAS.		CERTIFICATES.	
	Men.	Women.	Men.	Women.
High School	13	12	..	..
Department of Fine Arts	5	25	12	15
Department of Domestic Art	..	8	..	68
Department of Domestic Science	..	27	..	3
Department of Science and Technology	..	..	51	..
Department of Kindergartens	..	16	..	..
Department of Libraries	..	..	2	21
	18	88	65	107

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We grant our diploma upon the completion of our High School course and all our normal courses. We grant our certificates upon the completion of our technical and professional courses. Two years ago the faculty voted to award an evening certificate for such evening courses as were worthy of this recognition because of their length, the character of work given in them, and the amount of work covered. So far, the only courses which have qualified and been accepted are those in chemistry, plumbing, machine-shop practice, sign painting, and fresco painting.

I feel deeply gratified by the growing strength of our alumni associations. We have now a number of such organizations, which are doing good work for themselves and for the Institute. I have commented in previous reports upon the importance of the Graduates' Association of the Library School; on the unusual work which is being done at our Settlement by our Kindergarten Alumnæ; on the effective societies connected with our Department of Domestic Art; our High School; and our Evening Chemistry Course; and this year I report with equal pleasure the organization of an association by the graduates of the Department of Fine Arts; another by the graduates of the evening course in Machine-shop Practice; and still a third by the graduates of the day course in Steam and Machine Design. These organizations promise to be of great value in keeping their members in contact with each other and with the work which is going on at the Institute.

Until very recently but a small proportion of our students took our regular full-time courses which lead to a diploma or certificate. Our classes have been full of men and women who came to us for help in some particular line of work in which they were interested, but who did not have the time to give to the one or two years of study which our certificate and diploma courses demanded. Since the Institution has been established we have given training to 46,823 students, but have granted comparatively few diplomas and certificates, as the following table, giving the number of our graduates from the opening of the Institute to the present date, will show:

	Diplomas.	Certificates.
High School	267	...
Department of Fine Arts	297	329
Department of Domestic Art	34	433
Department of Domestic Science	104	107
Department of Science and Technology	...	295
* Department of Commerce	...	203
† Department of Music	14	...
Department of Kindergartens	137	1
Department of Libraries	...	264
	853	1632

* Discontinued in 1895.
† Discontinued in 1893.

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Since the beginning of the year 1900 the Institute has prepared two compact, well-arranged, and satisfactory exhibits of its work, consisting of photographs of its buildings, class-rooms, and shops; outlines of its courses; and, wherever possible, of the work done by the students. The first of these exhibits was shown at Paris, and the second at both Buffalo and Charleston.

This year we have received, in recognition of the excellent quality of our work, a certificate from Paris, a gold medal and certificate from Buffalo, and a gold medal and certificate from Charleston.

Our Neighborship Association has done admirable work this year among our students at the Institute and through the Settlement at Greenpoint. I take pleasure in appending to this report to the trustees the report of the President of the Association and the report of the Head-worker at the Settlement.

In conclusion, I can but repeat again which I have said a number of times. The Pratt Institute is the expression of the interest of the Founder in the men and women who are doing the work of the world. It is our privilege and responsibility now to stand in his place and to carry out his ideas. Our aim and ambition must be to secure for our students the opportunity to live the highest possible type of life. Our work is technical, scientific, and professional, but we are making it humanely sympathetic and genuine as well. Our problem must always be to give to the students who come to us not only a definite training which shall fit them for whatever positions in life they may be called upon to fill, but to develop their individual ability and ambitions, and to send them out with the idea that their work here has been but the starting point of an education which will end for this earthly experience only with life itself.

The record of the Institute in the past has been a record of good work done with the right motive. Our history is a history of slow growth and of satisfactory development. All that we can ask for the future is a normal progress which shall be worthy of our past.

Frederic B. Pratt,
Secretary of the Board of Trustees.

The Trustees take pleasure in announcing the gift of a bronze bust of Victor Hugo, by the French sculptor, Rodin. The gift is made by Mr. and Mrs. Frank L. Babbott, and will be placed in the Library Building.

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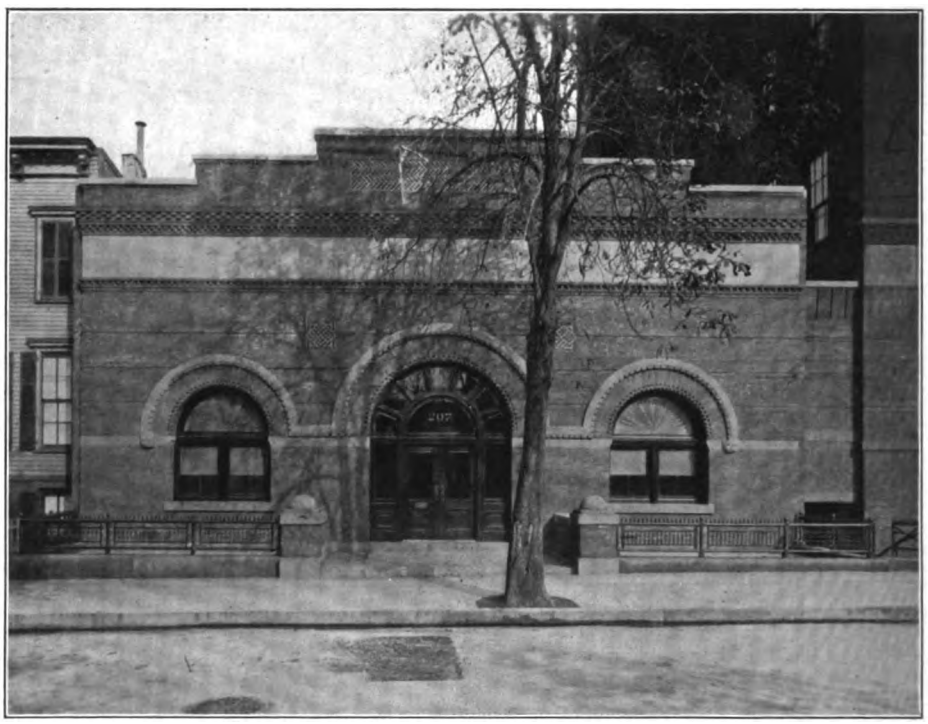

The Thrift Building.

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The Thrift.

ON the opposite page is an illustration of the new Thrift Building. The increase and development of the business of the Thrift made it necessary to provide larger quarters for the proper conduct of its work, and the new building was erected during the summer. It is large, well arranged, and adapted to the present needs of the organization and to its possibilities of growth.

The Thrift was founded on October 2, 1889, by Charles Pratt, to promote habits of thrift; to encourage people to become prudent and wise in the use of money and time; to help place in strong contrast habits of thrift and economy as against habits of thriftlessness and extravagance; to assist people to buy or to build homes for themselves, or to accumulate a fund for use in emergency or maintenance in old age.

While it has no official connection with the Institute, it was organized and designed to aid in the Institute work. To quote from one of the early reports of the Founder: "The instruction given in the Institute is intended, in part, to enable people to become self-dependent. Pupils are taught some useful work by which they can earn money. It seems a natural thing, in carrying out this part of the plan, that the next step should be to endeavor to teach them how to save this money; or, in other words, how to make a wise use of it. It is not enough that one be trained so that he can join the ranks of the world's workers and become a producer; he needs quite as much to learn habits of economy and thrift in order to make his life a success."

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Annual Report of the Neighborship Association

FOR THE YEAR ENDING MAY 1, 1902.

THE past year, the ninth of the Association's existence, has been a year of much encouragement to those interested in its work, for in it the Association seems to have established itself more strongly than ever before as an internal factor in the life of the Institute. The first duty each year is to bring the Association to the knowledge of the new students; to explain its work and the part which they can take in it either directly or indirectly. This year the President, through the kindness of the directors, met the students of the departments of Fine Arts, Domestic Science, and Domestic Art at meetings especially arranged for the purpose, and told them something of what had been done at the Institute and at the Settlement. The work needs only to be known; and the results of these meetings have been shown in a gratifying number of volunteers for class work and an increase in chapter memberships.

The Students' Bulletin has been of great assistance in keeping the students informed currently about the work.

The increased interest showed itself markedly at the time of the annual entertainment. This entertainment, following the lines laid down last year, consisted of a fair, an amateur circus, and a dance. The fair was carried on by a committee representing the several chapters of the Association under the efficient chairmanship of Miss Snow. The High School seniors assisted with a successful candy booth, and the Settlement was also represented, the "Greenpoint" booth being a new and very attractive feature. The members of the Athletic Association deserve great credit and the thanks of the Association for the very successful and most entertaining circus which they produced under Dr. Voorhees' management. Three performances were given to the delight of young and old alike. The attendance at the dance taxed the floor capacity of the gymnasium to the utmost, but no one minded a little crowding for the good of the cause. The net result was $402.

A little pamphlet was prepared for distribution at the entertainment, giving a brief account of the Association and of the development of the Settlement. This was done that the many questions sure to be asked about the Association by strangers might be quickly and correctly answered. The genuine interest and hearty coöperation met with on all hands made the task of getting up the entertainment a pleasure, and there is no doubt but that everyone engaged in it felt that the results more than repaid all the time and labor expended. Special mention must be made of the efficient aid rendered by the janitors. These men showed their interest by giving to the Association the proceeds of the coat checking.

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The money made at last year's fair was spent in equipping the Settlement gymnasium.

The Governing Board has held regular monthly meetings, which have been better attended than those of any previous year. The reports of the Acting Head-worker have been full of interest, and the informal chapter reports have kept all in touch with the work that has been done. Meetings of the finance committee have been held when necessary to pass upon other than the regular expenditures of the Settlement.

A year's leave of absence — covering the year from September 1, 1901, to September 1, 1902 —was granted Miss Ovington, the Head-worker at the Settlement. Miss Steel, who has been for some years a voluntary worker, was made Acting Head-worker. This position Miss Steel has filled so acceptably that the Board, unwilling to sever official relations with her, has asked her to assume the position of director of boys' clubs and the gymnasium for the coming year. Miss Macy, whose efficiency as an assistant worker has increased each year, has been reappointed for next year, and the Board is happy in being able to offer her a salary more nearly commensurate with the value of her services.

The details of the year's work at the Settlement will be given by the Acting Head-worker. Suffice it to say that the Board has been more than satisfied with the spirit in which the work in Greenpoint has been carried on and with the character and amount of work done.

Turning now to the work of the several chapters, the kindergarten, supported by the Kindergarten Chapter, began the year auspiciously in its new quarters, a bright corner room in the Astral Building, with an attendance of over eighty children. The whole neighborhood was interested in the renovation of the room, and the kindergartner reports that the mothers take such pride in it that they are sending the children clean and neat to kindergarten, and that this is true in the case of many little boys and girls who were formerly dressed clean on Sunday for the week. The attendance at the mothers' meetings has been very good.

This year for the first time the kindergartner has been a resident at the Settlement, an arrangement that has been of mutual pleasure and benefit. The kindergarten preceded the Settlement in its work at Greenpoint, but has never before been so closely connected with it. The Settlement workers, too, welcome the opportunity which this arrangement gives them of coming more closely in touch with the work of the kindergarten.

The Kindergarten Chapter had an attractive doll booth at the Neighborship fair. The report of the treasurer of the chapter shows that $373.40 have been raised by dues and $101.10 through the sale of fudge and in other ways, making a total of $474.50 for the support of the kindergarten.

A meeting of the students of the Department of Domestic Science was called early in the year, and was addressed in the interests of the Association by its President. Many new members were added to the chapter, which has

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a membership of forty-three. The classes in cookery and sewing at the Settlement have been more successful than ever. There have been seven classes in sewing, four in cookery, and two in serving. The classes have been full, with long waiting lists of children eager for a vacancy. One interesting feature of the work of the sewing classes was the dressing of twelve dolls and the furnishing of a doll's bed for a children's hospital, thus teaching the children to sew and letting them know the joy of giving. The first-year students have been taking orders for cakes and pies which they have baked on Saturday mornings in the department kitchens. More orders were received than could be filled, and the profits were given for the Neighborship work. Many additions have been made to the equipment of the chapter kitchen at the Settlement.

A lecture was given in the Assembly Hall on January 20, under the auspices of the chapter, by the Misses Pettit and Stone, on "Conditions of Life in the Mountains of Eastern Kentucky." Much interest was aroused by the lecture, and as a result many have sent literature to the mountain people, and a small sum of money was contributed to aid the social settlement work that is being done among them.

The chapter had an Indian booth and a cake booth at the Neighborship fair, the receipts from which, together with the tickets sold by the students of the department, made a total of $75.

The Art Students' Fund Association held a very successful fair on December 14, as the result of which $156 were added to the scholarship fund. The chapter had a still-life booth at the Neighborship fair. For the first time in several years the chapter has had no classes at the Settlement. Several students volunteered to conduct classes after the department meeting in the fall, but for some reason the demand in Greenpoint this year was for club workers, and no art classes were organized.

The Library Chapter has carried on its home library work as usual. Four libraries of fifty books each have been put in homes selected by the Children's Aid Society, and each library has been visited weekly by two students of the Library School. The work has been very successful this year, thanks to the efficient work of the visitors, who have not merely given out the books, but have become acquainted with the children, reading aloud to them, playing games, and, in two of the clubs, teaching them songs.

The chapter owns about three hundred books, but many of them are not suitable, and new or second-hand children's books of real interest are much needed. The needs of the chapter and the value of this work to the school were presented at the annual meeting of the Graduates' Association of the Library School, and help was promised.

The chapter was represented at the fair by a fortune-teller and a reader of hand-writing. The thanks of the Association are due the latter, Mr. Hugo von Hagen, who kindly gave his services, thus enabling the chapter to add $37 to the general fund.

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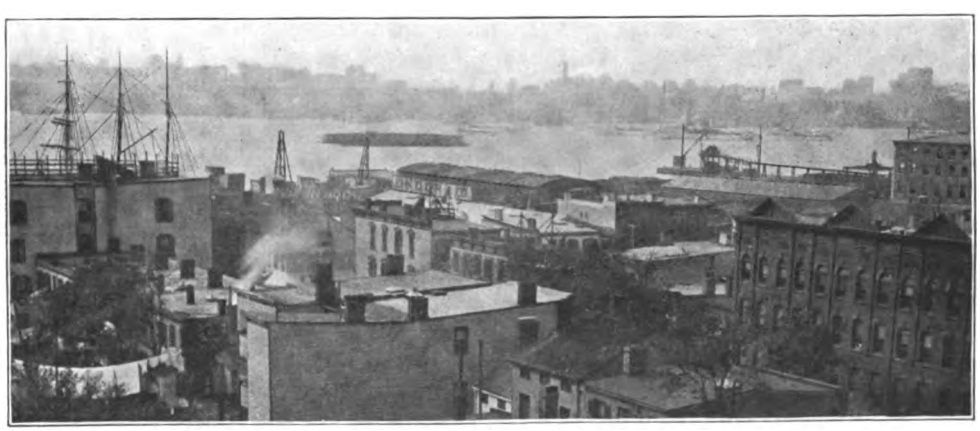
The Domestic Art Chapter held its first meeting early in November, at which Miss Steel spoke of the immediate needs of the Settlement that could be met by the Department of Domestic Art. Four committees — entertainment, hospitality, membership, and class-work — were appointed to promote social life among the Institute students and to carry on the chapter's work at Greenpoint. A sewing class, two dressmaking and two millinery classes were carried on by students of the department during the fall and winter terms. An entertainment was given in January, the proceeds of which were devoted to the purchase of a new sewing machine for the Settlement classes, and the small sum that remained was set aside as the foundation of a scholarship fund in the department. Much good-will has been shown among the students in their Association work, and all feel that their efforts have been quite as helpful to themselves as to the Settlement.

The Settlement movement has reached that point in its development when the value of the work is beginning to be seriously questioned. Critics are asking whether the relations between the Settlement workers and the real workers are normal human relations, and whether the net results of Settlement work are good or the reverse. Unquestionably a Settlement must have some real basis other than a vague desire to do good. This basis we feel the Greenpoint Settlement has in that it is essentially industrial in its work. It offers to the young women and children of Greenpoint a practical training that will make them more helpful in their homes,— better cooks, seamstresses, and milliners,— and at the same time this very instruction is helping those who give it to a better mastery of their own recently acquired knowledge and skill. This interchange of benefits we think justifies the existence of the Greenpoint Settlement, and gives us reason to anticipate a future of increasing usefulness.

Josephine Adams Rathbone,
President.



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Annual Report of the Greenpoint Settlement

OF THE PRATT INSTITUTE NEIGHBORSHIP ASSOCIATION.

IN May the Settlement came to "Seven Times One" in the "Songs of Seven," when its birthday was celebrated at the annual meeting of the Neighborship Association at Pratt Institute. The Head Worker, Miss Ovington, had taken her "Sabbatical year," and the recital of the year's work devolved upon her substitute. For those at the Institute who did not hear it, and for those whom we wish to interest in the Settlement, it is repeated here.

The industrial work at Greenpoint is largely dependent upon the Departments of Domestic Science and Domestic Art, which have chapters in the Neighborship Association. In the past year the gratitude of the Association has grown with the increase in interest and energy of those departments in developing their work. Before the Saturday morning sewing classes began they were arranged at the Settlement by normal students from the Domestic Science Department under Miss Snow's direction. The age and public school grade of each child was noted, and classification made accordingly. Applicants to the Saturday morning sewing classes were very numerous; and if the practice work of the students in this branch were confined exclusively to our Settlement we would have no difficulty in providing pupils. Millinery is always popular. Instruction in dressmaking is always in demand, but this art is not so attractive as millinery, with its quicker results. Pupils sometimes become discouraged before they have learned to draught a pattern, and will leave the class, though told that they shall be taught to use a pattern instead of learning to draught one. Inability to learn how to use a sewing-machine will also drive the pupil from the work, and so the normal student of dressmaking finds in the Settlement classes all the difficulties as well as the pleasures of teaching. One class in advanced dressmaking was taught by Miss Holmes, a former pupil at Pratt, who has rendered a similar service at the Settlement for several seasons past. The large number of applications in cookery showed a growing interest in the science, and the work in this branch proved extremely successful. The Settlement received from the Institute a gift of four cooking-tables with gas-stove attachments, so that our cooking school was better equipped last season than ever before, and when the classes ended the Association felt encouraged to appropriate from its treasury a sum sufficient to make the school still more complete. We who occasionally talk with the pupils before the teacher arrives hear how fond they are of her. The remark of one young woman was that she had finished her work, but had come on the evening of

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the last lesson in dressmaking just to sit in the class, because she liked the teacher so much and had such a pleasant time. The teachers themselves often express the pleasure they derive from their work, despite the weary journey they take to reach it. We had an exhibition at the Settlement of the season's work in millinery, sewing, and dressmaking, to which we especially invited the families and friends of the pupils, and we were proud of the goodly amount of pretty work, which was so very justly admired. One pupil, a married woman, brought her husband and three little children to see the exhibition in general, but particularly the gowns she had made, and the delighted husband avowed to us his intention of having his wife learn every branch of knowledge the Settlement had to offer.

We have noted with increasing satisfaction each year that those people at Greenpoint whom it is the Association's object to draw to the Settlement come in ever greater numbers to apply for admission to the classes, and each season our wits are puzzled how best to arrange for the accommodation of all. It is impossible to reserve any one room as a special club room; we are obliged to use them indiscriminately for all purposes, and only the cooking school preserves its particular individuality.

When the kindergarten moved into its new quarters last September Mrs. Pfeffer, then Superintendent of the Astral, gave us permission to use the old room for a Settlement gymnasium, reserving the right to its use one night in the week for a class composed exclusively of boys living in the Astral, a director being provided for it. Mr. Wright continued this arrangement when he became Superintendent in February. The five nights left for the Settlement's use were divided among classes of boys of graded ages and a class of men over twenty-one years. One afternoon class of little girls was also very successfully conducted by Miss Dix. Saturday nights were devoted to basket-ball. It will take some time before the equipment is equal to the desires of the boys, but they are eager to help the Association to add further facilities, and have already earned something towards those which they have.

The kindergarten became more closely associated with us through the residence of the head kindergartner in the Settlement. We have felt in closer touch with her work and with the entire Kindergarten Chapter. It has been a great advantage to us to use the beautiful new kindergarten room for Saturday morning sewing-classes, for occasional large dances, and whenever we especially needed extra room. The kindergarten had a very successful year, the actual attendance was between sixty and seventy children, and the waiting-list was long enough to form another kindergarten. The attendance at the mothers' meetings was from twenty to fifty-five women. These meetings are always anticipated with great zest, and the realization rarely meets disappointment — the weather being a respected factor in the matter.

Miss Cruttenden was unable to teach the dancing class last season, and

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very regretfully the class resigned itself to the fact. She who for seasons past had taught them to observe the principles of consideration in dancing, as in all things, perhaps realized but a small part of the consideration which would be given to her resignation. We saw it, and were in sympathy. The class was continued under new auspices and was well attended.

The music school ended its third year in May with an average attendance of twenty-eight per week. This branch of the work grows more popular each year, though the Irish and German Americans who form the greatest element in our district can scarcely be called inherently musical, and the instances of real talent are disproportionately rare, yet the joy of learning to play upon the piano is only equalled by the disappointment consequent upon finding that it is real work after all. One mother told us that her husband liked to sit at home Sundays listening to Gracie play on the piano. We felt consoled, for Gracie had practiced on the Settlement piano before one had come to her own home, and often we had felt that we would not "break our hearts and dee" if the far-famed "Annie Laurie" never turned up again. A piano seems almost as necessary to the happiness of the many as warmth in winter time, and when the mother of the family we had befriended from time to time through every agency within our power proudly showed us the old square piano, discarded from a neighboring Mission and bought for twenty-five dollars, we were filled with silent wonder, but expressed nothing but congratulation and resolved to continue our interest in this really worthy family whom music, however humble, was so mighty to cheer.

The sight-singing class, which started in January, continued to the end of the season. It was well taught by Mr. Asch of the New York People's Choral Union, who volunteered his services, but the attendance was indifferent. It has been entirely through the combined efforts of Mr. Asch and members of the class to extend the membership by holding social meetings during the summer that the final enrollment of members was great enough to warrant recognition by the New York Union, of which the class is now a branch. A teacher has been procured for the coming season and the promise of success is bright.

The speed-class in stenography continued to meet twice a week as in the previous year. The membership did not increase as greatly as the speed, but neither did it decrease, and the self-management of the class has been a success from the start.

Our Penny Provident Bank continues its lessons all the year round. There are many children who, like the grasshopper in the fable, are not provident in summer, but there is always some business done on bank nights, and there are rush seasons when it is hard work to keep abreast of the demand. The annual report of the Penny Provident Association shows the present number of depositors at our Settlement to be over 700. We are indebted to the Heffley School of Commerce for a loan of seventy-five dollars for bank capital.

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CLUBS.

Of the eleven clubs conducted at the Settlement during the past season none could be called new excepting the Current Events Club, which was composed of boys and girls. The others were old clubs with new names and new directors, or the same clubs which have continued for the past five years. The Woman's Club met every other week; the programme for each evening was varied. Mrs. Lovett from the Domestic Art Department at the Institute gave a very interesting and instructive talk on "The Appropriateness in Dress," which was greatly enjoyed and gave subject for much discussion afterward. "An Evening with Southern Authors," with Dr. Devol as interpreter, was a success. Various subjects were introduced at different times, including a talk about the Capitol, with special description of the Congressional Library. Matters of district improvement are always of interest to this club, and the members go from grave to gay at each evening meeting.

The Larcom Club of young women met weekly under the direction of Miss Macy and Miss Keese. The meetings were generally social in character, with occasionally an entirely musical programme. We were indebted to the Larcoms at Christmas time for their contribution of choruses, which showed faithful practice. This club, just five years old, is among the best loved of our family.

The "Sophie Mays" are little girls, but they are equal to good work. All the candy-bags were made by them at Christmas time, and under the supervision of their director, Miss Sophie Hamilton, they dressed a dozen dolls, which they took when finished to the kindergarten children in Kings County Hospital.

The Grant Club of young men has been under the direction of Miss Isabel Butler for several years, but ill-health prevented her from continuing it, and her place was taken by Mr. Keyes.

The Memorial Athletic Club of little boys wove baskets under the direction of Miss Gore and Miss Day, both graduates of the Pratt High School. The work was so successful that we contributed to an exhibition of boys' work at West Side Neighborhood House.

The Franklin Club managed its own affairs. This was experimental and disastrous to furniture and general good order, but the future will find these boys of eighteen older and we hope wiser.

There were two afternoon clubs of little boys, one of which took cooking lessons under Miss Macy's direction. Her experience was the usual one in cooking-classes for boys. When the direction was given "to your first you add your second," the first, if edible, had already been added uncooked to the boy. We have frequent occasion to observe the ways of little boys out in our neighborhood, and, as Miss Slosson says, they have "the waysiest kind of ways" sometimes. The Irving Literary Club combined the social nature attributed to Irving, and under the direction of Mr. Charles Healy studied "New York City Landmarks," some of which they afterward visited.

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The "Temple Forum Debating Club" continued to meet under Mr. Wright's direction, and varied the usual programme by engaging in contests with outside clubs, in which they came off several times with great credit.

We lost a valuable worker when Miss Graham, the Settlement nurse, resigned in order to try a new field of work. Her place was supplied by Miss Allyn, who came to us in April, and has most successfully continued the work of nursing in the neighborhood.

The value of our Settlement as a factor for helpfulness has steadily increased since the advent of the Settlement nurse. The professional calls made by her in the past year numbers 1440, office calls 112. The entire number of calls which this represents is 186. A large proportion of the year's social calls are made by the nurse, through whom the various activities of the Settlement are made known to families coming within her province who might otherwise never hear of our existence.

Each morning during seven weeks of the summer some of the Astral Kindergarten children played in the Settlement roof-garden. A kindergartner was in charge and the children seemed very happy. The average of attendance was twenty-two. Seventy different children made use of the privilege during the season.

The playground established in Greenpoint by the Settlement of '98 has been maintained by the Brooklyn Association for Parks and Playgrounds for four seasons. Last year it was impossible to procure a site, but this year the lot on the river front between Eagle and Freeman Streets was generously loaned and the Association was more than ever successful in its work. The equipment was more complete and the number of workers greater. A member of the Playgrounds Association interested herself to procure one of the public baths for our neighborhood. We found the site and all was favorable but the appropriation of the Board of Estimate and Apportionment, so we are now waiting for next time. We have made an attempt to have a playground incorporated in the plan for the new park in Greenpoint, but as yet we cannot tell what the success will be.

Through membership in organizations working for public improvements the residents of a Settlement can gain a great deal which is of use in their neighborhood, an item of which is the iced-water fountain, lately presented to Greenpoint through us by the Woman's Municipal League of Manhattan. In the Association of Neighborhood Workers, in which each Settlement is represented by two delegates, we find mutual help.

The report of a year's work in a Settlement cannot possibly give an adequate idea of all that it means to live in a Settlement. It means that you have made yourself an active member of a large family — the neighborhood. The more you love the family the more you are willing to work for it, and the more the family grows to love you the greater the coöperation. So, year by year more hands are taking hold with ours, sometimes to play, sometimes to work, and the good that comes from our association is a mutual good.

Laura A. Steel,
Acting Head-worker.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

Department of Libraries — *Free Library, Reading-room, and Reference-room.* School of library training, 1st and 2d year courses.

Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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LIBRARY NUMBER

PRATT INSTITUTE MONTHLY

December, 1902

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI DECEMBER, 1902 Number 2

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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Jamaica, Queensborough, New-York

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Agnes Cowing,	Assistant, Pratt Institute Free Library.
Maud E. Derickson,	Head of Circulating Department, Public Library, Portland, Ore.
Harriet L. Eaton,	Librarian, State Normal School, West Superior, Wis.
Adelaide T. Evans,	Cataloguer, Pratt Institute Free Library.
Jane E. Gardner,	Librarian, People's Library, Newport, R. I.
Edith A. Gillespie,	Assistant, Hampton Institute Library, Hampton, Va.
Alys M. Gordon,	Brooklyn, N. Y.
Ruth S. Granniss,	Assistant, Pratt Institute Free Library.
Kate Lewis,	West Superior, Wis.
Louise Merrill,	Cataloguer, Library of New York Bar Association, New York.
Antoinette P. Metcalf,	Assistant, Pratt Institute Free Library.
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Ada Thurston,	Special student. Librarian, Public Library, Belmont, Mass.

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Pratt Institute Monthly

Volume XI DECEMBER, 1902 Number 2

Annual Report
Of the Pratt Institute Free Library

FOR THE YEAR ENDING JUNE 30, 1902.

TO THE TRUSTEES, GENTLEMEN:

HEREWITH I beg to submit the report of the Free Library of Pratt Institute for the year ending June 30, 1902. Circumstances over which we seem to have had no control, contingencies that could not be foreseen, and difficulties that could not be avoided, have conspired to make the year a hard one, yet in every respect except one — the circulation of books — we may say that the amount and the quality of work accomplished have reached the usual standard.

The publication of a monthly bulletin jointly with the Brooklyn Public Library would seem to have been of service. It is called the *Co-operative Bulletin*, New Series, and consists of the monthly bulletins of the two libraries sewed together, the copies sent to the Brooklyn Public Library having its bulletin first and those sent to us beginning with ours. A division of the mailing-list resulted in this library's sending the bulletin to all college, reference, and subscription libraries on the list, and in the adoption by the Brooklyn Public Library of the free circulating libraries and public schools as its share. All these libraries therefore receive both bulletins without duplication. As there is no advertising in either bulletin, I would suggest another effort to get it mailed at pound rates, since it is undoubtedly of value to other libraries as well as to private persons. We frequently have requests for extra copies of certain numbers, and the reading and other lists published in addition to those of accessions seem to have been useful. A lady in Texas, for example, through the list of "Picture-books by good illustrators," discovered that Caldecott's illustrated books, which she had long lost sight of and had been wishing for, were still in print, and learned the present source of supply. The special lists printed during the year have been as follows:

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Nos. 2 and 3, January and February:
A reprint of the list of 1901, with additions, on "Richard Wagner and his Operas." This has met with a steady demand each winter.

No. 4, March:
Picture-books by good illustrators. A list for parents, teachers, and children's librarians.

No. 5, April:
Illustrated books for boys and girls, arranged under the names of illustrators. A list intended chiefly to aid in the selection of books as gifts at holiday-times, etc.; also
The Louisiana Purchase, 1803. This was immediately used in the Pratt Institute High School, though not compiled by its request.

No. 6, May:
Library Science, part 1. A list of reading for persons already engaged in library work, wishing instruction but unable to attend a library-school.

No. 7, June:
Summer in prose and poetry: a suggestive list for nature-lovers, by Nathalie W. Homans; also
German technical terms. A list for the use of librarians.

A number of these were ordered by students of other library schools.

Bulletin No. 6 has been sent out in reply to all requests for courses by correspondence, the library at the same time expressing a willingness to do what it could toward the solving of perplexities not solved by the reading and study of the books and articles referred to in the list.

An index to subjects, with an author and title-list, will be supplied for each volume of the bulletin and sold to those borrowers who wish to bind their numbers. The volume thus indexed would certainly be useful to teachers and students and to those who make most use of the reference department.

The annual conference of the American Library Association at Boston and Magnolia, Mass., was attended by three members of the staff and ten of the class of 1902 of the Library School. The two sessions of the section of Children's Librarians were presided over by Miss Moore, our children's librarian, and several of the graduates of the school, now in active service as children's librarians, took part in the proceedings.

An arrangement was made early last year by which seven members of the staff could attend each meeting of the Long Island Library Club, making two or three attendances for each member of the staff who is also a member of the Club. There are five meetings of the Club during the months from October to May. The staff was represented on the programmes by the following papers:

Report of the Committee on Co-operation between Libraries and Schools. Miss Annie C. Moore.
The Treatment and Use of Pamphlets. Miss Eleanor B. Woodruff.

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A paper was also presented before the New York Library Club by Miss Rathbone, describing a problem given to the students of the Library School in the making of "Fiction-ladders," lists of novels leading from the third-rate or lower to the best by a succession of easy and natural steps. This paper aroused much interest and discussion, and a letter in regard to this subject and the Fiction Seminar of the school appeared in the *Saturday Times* with specimen "ladders."

An article by Miss Moore, head of the children's department, on "The Choice of Books for Boys and Girls," appeared in the *Interior* for November 28, and one in the *Library Journal* for April on "Library Visits to Public Schools."

The transfer of the Astral Branch to the Brooklyn Public Library, September 15, 1901, signalizes the withdrawal of this Library from the ranks of libraries with branches. This end was foreseen when the Public Library was first established, so that the case was simply one of "holding the fort." The only conditions made in the transfer were that the Branch should retain its name, and its present location as long as its quarters shall afford sufficient room for its operations. Notice of the impending change was posted two weeks before the date set, in order that all books might be returned. An inventory was taken, showing that 5797 volumes, by actual count, were being transferred. A word should be said here in commendation of Miss Eliza Witham, head of the Branch, and of those who from time to time have assisted her. The whole atmosphere of the Branch has been one of good-will and the desire to oblige. The staff has been patient and courageous through much tribulation from conditions within and without. The Branch has been a lesson often to the Main Library, and a great help in the training of the Library School students.

CIRCULATING DEPARTMENT.

Open from 9 A. M. to 6 P. M. on all week-days (except Fourth of July, Labor Day, Thanksgiving, Christmas, New Year, Washington's Birthday, and Decoration Day), and from 9 A. M. to 9:30 P. M. on Mondays, Wednesdays, and Saturdays.

REGISTRATION.

The registration, while smaller than last year, is yet very satisfactory in character. More teachers are using the Library than ever before. In October alone 101 teacher's cards were given out and 537 books issued on them, 217 more than in the previous October. Renewals of privilege continue to equal and exceed the new applications in number, showing that we are keeping most of our old borrowers. We are frequently informed by them that they keep cards at both libraries, coming to us for their solid reading and going to the nearest branch library for their fiction.

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The statistics of registration are as follows:

Registration of adults, at the Main Library	2,108
Registration of children under fourteen, at the Main Library	1,064
Registration of adults, at the Astral Branch (until September 1, 1901)	41
Registration of children under fourteen, at the Astral Branch (until September 1, 1901)	44
Total registration for the year	3,257
Total renewals (to be added)	3,107
Total	6,364
Total expirations (to be deducted)	3,782
Growth in registration	2,582
Total registration to date	63,896

The total active membership June 30, 1902, is reckoned as 42,495. The proportion of renewals to expirations is .92. There have been 137 transfers from the Children's Room to the main collection.

The time seems to have come when we must know more definitely the character of the Library's clientèle than we can know by mere observation. An arduous task has been begun, therefore, in the classification of the Library's active membership by sex and occupation. At the same time an address-list is being compiled, by which we may know from what parts of the borough the Library draws its patronage, and that we may compare with it the addresses sent in by the Board of Health in cases of contagious disease. During this piece of work, which is being done jointly in the office and in the Circulating Department, the latter is continuing the process with new applications as they come in, in order that the results when presented may be up to date. Without being able to promise anything, we hope to have the work completed in time for our next annual report.

On September 1 registration ceased at the Astral Branch, so far as this Library was concerned.

CIRCULATION.

The circulation from the Main Library has been as follows:

To borrowers over 14 years of age	134,026
To borrowers under 14 years of age	32,692
To the Astral Branch (until Sept. 15)	387
To the Central Club	100
Circulation of books in the French language	3,476
Circulation of books in the German language	4,297
Circulation of books from the Open Shelves	13,591
	188,569
Circulation of the Astral Branch to borrowers over 14 (until Sept. 15)	2,711
Circulation of the Astral Branch to borrowers under 14 (until Sept. 15)	1,693
Total circulation for home use	192,973

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The falling off in circulation means less actual desk-work, and less wear and tear on the books; but it does not absolve us from providing every desk with an assistant and watching over the rooms and the welfare of readers and students as before. The extra time is put into other work that needs doing and that can be done while presiding over a room or desk — such work as the classifying of the registration, for instance. There has never been a time hitherto when such work could have been undertaken without the employment of extra help. More time also has been devoted by the circulating staff to satisfying the individual borrower, helping him in the choice of books, etc.

The percentage of fiction circulated was 62.8, the per cent. dropping once or twice to 59. The novels added to the Collection of Duplicates (five-cents-per-week books) have been "Kim," "Right of Way," "The Cavalier," "Lazarre," "Audrey," "Valley of Decision," "Methods of Lady Walderhurst," "Lives of the Hunted," "Velvet Glove," "Benefactress," "Crisis," "Ruling Passion," "Circumstance," "Lady Paramount," "Dorothy Vernon." The circulation from the Open Shelves has continued to fall, as I think partly because we cannot add materially to the collection, owing to want of room, and partly because the room is so crowded with books on window-sills, trucks, etc., that it is hard to get about in it or to find what one wants. Attractive editions of Scott, Lever, Dickens, Thackeray, George Eliot, Jane Austen, Hawthorne, and Irving, and of the occasional single novels that have made their authors' reputation, have been added, but we can hardly find space for them. Once the delivery-room is converted to an Open-shelf Room, we shall placard the shelves suitably and have one case especially for boys and girls recently transferred from the Children's Room. Until this change takes place, however, these improvements must stand in abeyance. The raising (to two cents) of the price of the postal-card forms asking for the reserving of books, in order to cover the expense of printing and lessen somewhat the abnormal demand for late novels, has had the desired effect. Almost immediately the demand went down almost one-half, and remained there. We do not believe that this has sent novel-readers elsewhere, as there is about the same demand, but they probably take what they find in or resort to the Collection of Duplicates. Two thousand and eighty reserve-cards were sold from November to June, as against 3585 for the same months last year. The circulation of books on teachers' cards has been most gratifying. It has amounted to 5233 volumes, a considerable increase over the figures of last year.

About ten days before Christmas a collection of fifty books suitable for Christmas gifts to adults was got together in the Open-shelf Room, but failed to attract much attention, probably owing to the short time for making it known and for selecting the books judiciously. It was an afterthought after the showing of Christmas books in the Children's Room had proven so successful, and there was not really time to form a satisfactory collection. We may try it again under better conditions another year.

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The head of the department spent a part of her vacation in the Bermudas in February. In addition to this absence there was more or less absence on account of illness in this department, as in others.

THE INFORMATION-DESK.

This desk, under the care of Miss Worthington, of the Library School class of 1901, has continued the satisfactory work begun by Miss Taylor. She reports the average of demands for help — aside from information as to blanks, catalogues, and routine — as twenty-four per day. That the spirit of the Desk has not changed may be seen from the following extracts from its report: "To introduce the right book to the right person is almost as much of a pleasure as to bring together two congenial people. It is this feeling that lends a zest to the task of finding out what people really enjoy and making it an easy thing for them to get what they want." . . . "that thrill of sympathetic delight with which one puts 'Treasure Island' into a boy's hands for the first time, or introduces another to the fascinations of Parkman. It strikes the novice in library-work with fresh force each day to find what books really mean to people." The Desk has found very useful a brief list on "Electricity for Amateurs," published by the Buffalo Public Library. A list of "Delightful books for girls from fourteen to eighteen," sent down by the New York State Library, was posted for a time and the books called for to some extent.

There has been a notable increase in the number of young men wanting help in their trade and professional reading — mechanics, electricians, carriage-painters, silk-manufacturers. We should be glad of a faculty of specialists in such cases as these.

Children sent to get "something" for their parents receive a list of a half dozen good books to take home for the father or mother to choose from. Guided by this choice, the assistant is able to make a further selection, and gradually gets into touch with this "invisible clientèle." Some of the lists go back and forth until worn out. When it is an Italian father or a German grandmother to choose for, the case is sometimes puzzling. A few lists made out as circumstances seemed to require are as follows:

General reading for girls. (Non-fiction.)
Boarding-school and college stories.
Best detective stories.
Best foreign fiction, originals and translations.
Simple stories in French and German for beginners.
Selection of the best novels of Dumas in the order in which they should be read.
Suggestive books by John Fiske, Henry Drummond, the Duke of Argyll, etc.
Lists for individual cases, e. g., books in Spanish for a French Roman Catholic Sister, who can not come to the Library, but sends for her books; books for a Mexican girl in the City of Mexico to give an idea of good American authors and their standards.

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One day in February forty persons asked for help in selecting books, and for several days in succession there were thirty such applications.

One use that is being made of this Desk by the Director is that of reviewer of books for young people. A new book, bought on approval, comes in and is turned over to this Desk for criticism and comment. According to this, in part, it is kept or returned.

The assistant reports the need of more entries in the subject-catalogue, which leads me to express appreciation of your consent to employ someone to do the subject-cataloguing of the Library from December, 1895, back to the beginning of its purchases. In those seven years the leading authors were purchased, and it is to their works that these subject-headings will give the key. The work will be begun September 16.

READING-ROOM.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 9:30 P. M.

Attendance at the Reading-room of the Main Library	50,213
Attendance at the Reading-room of the Astral Branch (until Sept. 15) .	3,032
Evening attendance at Children's Reading-room (adults), Oct. 1 to May 1 .	625
Evening attendance at Children's Reading-room (children), Oct. 1 to May 1	2,971
Total Reading-room attendance	56,841

The attendance in this room has kept up to its usual figure. The additions to the subscription-list were as follows:

Current Encyclopædia.
Craftsman.
Brush and Pencil.
Conservative Review.
Country Life in America.
Journal of American Chemical Society.
Journal de Physique.
Saturday Evening Post.
Die Frau.
Monatshefte.
Library Record of Australasia.
Traveller's Official Railway Guide.
Public Library Bulletin. (Since ceased publication.)
The Bibliographer.
La España Moderna.

Literature has ceased publication, also *The Artist.* The *Forum* ceased to be a monthly in June, and will hereafter appear as a quarterly. The new rack and cases in this room have proved a boon, and will do much toward making the room more tidy and the periodicals more accessible. The rack has been dedicated to the holding of the most popular of our gifts and exchanges. All racks and cases have been provided with metal numbers, and the check-list of periodicals, kept at the desk, indicates in which case a given periodical may be found. These numbers are also written on the posted list of periodicals.

Schools and debating-clubs use this room and its contents quite regularly in search of current material for debates.

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REFERENCE DEPARTMENT.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 9:30 P. M.

Attendance at the Reference Department of the Main Library	29,213
Attendance at the Reference Department of the Astral Branch (until Sept. 15)	423
Total attendance	29,636
Number of volumes brought from stack for consultation, Main Library	14,925
Number of volumes brought from stack for consultation, Astral Branch (until Sept. 15)	261
Total	15,186

The largest but one monthly attendance in this department was recorded in October — 6036.

This department has had heavy seas and head winds to contend with, and has come through exceedingly well. In January a valuable assistant, who had been in the department for six years, resigned to accept the headship of a similar department in another library, and the persons engaged successively to fill her place were in turn called away to other libraries, so that finally the work of the position had to be done by two students of the Library School, each taking half-time. The latter part of March the illness of the chief instructor of the Library School caused much of the work of the term examination-papers to fall upon the head of this department, so that her attention had to be more or less withdrawn from her regular work. The changing or absence of pages means greater inconvenience to this part of the Library than to any other, and there have been several of these changes during the year.

The department has begun to suffer for lack of space for additions, and in the fall all the Annuals and Year-books, except the current volumes, were removed to the Reference-stack. The work-room, which was planned originally for the growth of this department, cannot be vacated until the room now used as an art-gallery is at our disposal.

During the winter this department joined with the Order Department in the preparation of pamphlets for binding, and 200 volumes were sent to the binder, relieving the pamphlet-case of its crowded condition and getting some much-used and needed material into permanent form. One hundred and fifty-four additional pamphlets were listed and filed.

Lists on the following subjects have been made:

By request. Germany.
Negro problem.
Milton's minor poems.
Detective stories.

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By request. Anecdotes of Franklin.
Ship-subsidies.
By request. Florence.
Colonial manners and customs, revised.
Pilgrims and Puritans.
By request. Russia.
Richard Wagner and his operas, revised. (Printed.)
Louisiana purchase. (Printed.)
By request. Industrial and commercial history.
By request. Stair-building and House-framing.
By request. Italian fiction and popular books for a Settlement library in an Italian quarter.
By request. Japan.
By request. Children and Child-life in various countries. (Work of students in Library School; revised by department.)
Index to *Saturday Times* Supplement.
References for debate: Has a young man of the present time as good a chance of being financially successful as fifty years ago?
Index to miscellaneous lists compiled by our own and other libraries.
New inventory of Text-book collection.

Considering the circumstances already mentioned, this would seem to be an excellent showing of work accomplished.

The summer attendance in this department is largely of vacation-school teachers and students in the Columbia University Summer School. Books on nature-study and manual-training are in demand by the former, and by the latter books in connection with whatever branch of study they are pursuing. Works in applied science are more in demand than other classes during the summer. There has also been an increasing demand for elementary books in Spanish, and at one time three persons were waiting to read or study the little Spanish Reader in the Text-book Collection. It was at once duplicated, and the department keeps watch for the publication of easy text-books for students in order to recommend their acquisition.

Early in the fall instructors at the Institute were asked to send word in advance as to books they wished reserved for entering-classes. Lists were sent in, and the usual difficulty of getting books together on short notice or none was avoided. During October nine sets of books on as many different subjects were being reserved for Institute classes. The reserve collection for the psychology classes was used also by Brooklyn Institute students. Students from Public School No. 35 have come a long distance to use the library for help in their history-work, and the students of the Heffley School of Commerce have made considerable use of the department. The use of these reserve-collections has frequently led to applications for the other privileges of the Library.

I am glad to say that relief has been promised for the overcrowded condition of the classified catalogue, in the shape of a new and much larger case. It has been urgently needed, and will save time and labor for both the assistants and readers.

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The chief additions to the resources of this department have been:

Fiske. Complete works. 20 vols.
Symonds. Italian Renaissance. 6 vols.
Jowett. Plato. 4 vols.
Watts. Chemistry. 1899–1901.
Hexaglot Bible. 6 vols.
Larned. History for Ready Reference. Supplementary volume.
Baldwin. Dictionary of Philosophy and Psychology. Vol. 1.
Chapin. Municipal situation in the United States.
Paris. Congress of applied mechanics. Reports.
Cook. Gardening for beginners.
Harriman. Alaska expedition.
Manning. Yacht register.
Moorehead. Prehistoric implements.
Pulliam. Constitutional Conventions of Virginia. 1901.
Sulte. Histoire des Canadiens-français. 4 vols.
Arnold. Sea-beach at ebb-tide.
Howard. Insect book.
McIlvaine. Toadstools, mushrooms, fungi.
Gower. Complete works. 3 vols.
Barrett. Guide to the City of Mexico.
Canadian Men and Women of the Time.
Duruy. General history of the world. 2 vols.
Eddy. Manual of the Mother Church (C. S.).
Harper. Cyclopædia of United States History. Vols. 1-5.
Hirsch. Tabulated digest of the divorce laws of the United States.
Ponce de Leon. Diccionario tecnologico. 2 vols.
Craig. Pros and cons.
White. National cyclopædia of American biography. 12 vols.
Dennis. Centenary survey of foreign missions.
Murray. Handbooks for Devon and Cornwall.
Cullum. Biographical register of the United States Military Academy. Supplementary volume.
Hooker. Student's Flora of the British Isles.
Irwin. War medals and decorations.
Beach. Geography and atlas of Protestant missions. Vol. 1.
Champlin. Young folks' cyclopædia of literature and art.
Connold. British vegetable galls.
De Filippi. La Spedizione . . . al Monte Sant' Elia.*
Ford. Journals of Hugh Gaine, printer.* 2 vols.
Hugo. Works. 20 vols.
Schreiber. Atlas of classical antiquities.
Walsh. Handbook of literary curiosities.
Mehler. La femme et le féminisme.
Lippincott's Pronouncing Biographical Dictionary. 1901.
Englishwoman's year-book.
Michaelis. New dictionary of the Portuguese and English languages. 2 vols.
Bardsley. Dictionary of English and Welsh surnames.
Bartholomew and Herbertson. Atlas of meteorology.

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* Books lent out on deposit.

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ART-REFERENCE DEPARTMENT.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 9:30 P. M., from September 15 to July 1. Open at specified hours from July 1 to September 15.

Attendance	14,111
Number of books and plates taken on deposit	132
Number of books and plates taken on Institute department orders	1,088
Number of photographs taken on Director's permit	5,002
Number of photographs used at the Library	3,898

The summer attendance in this department is always small, the limited hours of opening being partly the cause and partly the effect of this fact. Many of the persons who do use the room in the summer, however, are teachers, who make serious use of it. There is much quiet work always to be done here in the dull season, owing to the constant busy-ness of the attendants and the constant use of the room and its resources at other seasons. The photographs are dusted and put in proper sequence in the drawers, faded and worn book-labels are renewed, additions are made to reference and reading-lists and to the photograph-index, books are mended, old and soiled placards reprinted, the textiles labelled, cut-book pasted, electrotypes numbered, etc. There is never any lack of such work when the pressure of waiting on visitors is removed.

In November the head of the department gave much time to the classification of the textile-collection, making it easier to find a given piece. This is not library work, strictly speaking, but it is the sort of work into which much of the time of this department is put.

Many valuable suggestions have come from Mr. Nye, of the Fine Arts Department, to which we have been glad to give heed, as to the addition of certain books, methods of keeping loose plates, etc.

The department and the Library generally have noticed a great improvement in the behavior of some of the classes which frequent the department, and which have in previous years given much trouble.

The exhibitions of the past year under the auspices of the Fine Arts Department have been as follows:

Paintings and drawings, by Arthur B. Davies.
Paintings, by Henry Moret.
Copley prints of mural decorations and paintings, chiefly by American artists.
Drawings, color-studies, and sketches for interior decoration, by Mr. E. Prentice Treadwell.
Artistic photography, by Mr. Clarence D. White.
Rowan collection of water-colors (flowers).
Paintings of Japanese subjects, by Joseph Lindon Smith.
Landscape paintings, by Mr. William Wendt.
Exhibition of textiles.

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The chief additions to the resources of the department have been as follows:

Cook. Hand-book to the National Gallery. 2 vols.
Cummings. History of architecture in Italy. 2 vols.
Tuyn. Old Dutch towns.
Baudry. Hubert von Herkomer.
Dilke. French furniture and decoration in the eighteenth century.
Muntz. Florence et la Toscane.
Ross. Florentine villas.
Symonds. Aubrey Beardsley.
Villari. Giovanni Segantini.
Whitman. Print collector's hand-book.
Whitney. Masters of Mezzotint.
Nordenskiold. Cliff-dwellers of the Mesa Verde.
Catalogue of the Morse collection of Japanese pottery.
Belcher and Macartney. Later Renaissance architecture in England.
Kristeller. Andrea Mantegna.
Mau. Pompeii.
Quevedo. Pablo de Segovia, with illustrations by Vierge.
Da Vinci. Characaturas.
Blount. Arbor Vitæ.
Brausewetter. Das Formenbuch.* 2 vols.
Gotch. Early Renaissance architecture in England.*
Menpes. Japan, a study in color.*
Bowes. Japanese enamels.
Guilbert. Monument commémoratif élevé à la mémoire des victimes de la Charité.
Haeckel. Kunstformen der natur. Part 1.
Lockwood. Colonial furniture in America.
Meyer. Ornamentale formenlehre.*
Moreau-Vauthier. Les portraits de l'enfant.
Triggs and Tanner. Some architectural works of Inigo Jones.
Muybridge. Animals in motion.
Muybridge. Human figure in motion.
American Architect and building news. Georgian Period. Parts 1-8.

A duplicate set of the *International Studio* for circulation has been subscribed for, much to the gratification of students.

Some sixty photographs and a few books were sent out to Winona, Minn., for help in club-work, at the request and on the responsibility of a former teacher of the Institute, now living there.

Considerable damage to books on these shelves arises from the reference of a large class of students to a single plate representing some object to be copied. By the time the lesson has been "studied" the plate and even the book is apt to be considerably damaged. If instructors would notify us some time in advance of such a direction to their classes, the Library would endeavor to get separate copies of the plate from the publishers and so save its books. To see damaged irrevocably a volume in an expensive set for the

* Books lent out on deposit.

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sake of copying one plate is rather more than it can bear with equanimity. The High School art classes, notably the modelling classes, have done considerable damage to some of the photographs, staining the margins with wax. The head of the Art-reference Department has therefore contrived a frame of manila board, with a front of transparent pyralin, into which these photographs can be slipped and kept clean while the student is working at them. The photographs injured were those for which we had prints made from the negatives of Platt's "Italian Gardens," and therefore cost us more than our other photographs.

In June the printers return the blocks that have been used for the MONTHLY and the catalogues and circulars of the year, and much time goes into the restoring of these to their places, wrapped and labelled, bringing the cut-book up to date, etc.

CATALOGUING DEPARTMENT.

Volumes catalogued during the year	5,023
Volumes plated, labelled, and made ready for the shelves	7,645
Volumes prepared for rebinding	2,512
Volumes discarded	1,049

Owing to the lateness of the vacations in this and the Order Department, the ordering and preparing of books did not begin until about October 1. The summer months were given to the clearing off of all material left in the cataloguing-room and to bringing the bulletin-slips up to date.

Early in the fall the head of the department began her lessons in map-cataloguing, under Mr. Letts, then of the Lenox Library, in order to work more intelligently with our own map-collection and be ready to instruct the Library School later in the school-year.

Additional work has fallen on this department during the year in the shape of the preparation of matter for the printed bulletin. The printed catalogue-cards issued by the Library of Congress have proved a saving of time. We collate the subject-headings with those of our own catalogue, but do not have to look up authors' names except in cases of discrepancy. We save the time of making subject-cards, simply adding subject-headings to the cards as printed. These and the call-numbers are all we add to the card. One set of the cards we cut down to index-size for filing, first as printer's copy, and later in the classed catalogue. We do not attempt to make the details of imprint conform to our own usage.

In January 256 maps of the United States Geological Survey were entered and prepared for use. These are kept in portfolios. A number of rolls are still unopened, waiting until we have a place to put them. We have specifications for a case, kindly furnished by Mr. Letts, of the American Geographical Society.

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A strike in the binderies for several months during the winter meant great inconvenience and delay in all our binding and rebinding. Not only were readers deprived of books and periodicals they should have had easily accessible, but the accumulation of these in the work-rooms and stacks was an inconvenience.

During April the renumbering of the class of Literature (800s) so as to bring together authors and criticism of them, made some progress, from 400 to 500 volumes being renumbered by the Cutter system. As the work frequently involves rewriting the cards, this is a very good showing.

In June the largest number of volumes was catalogued that had been recorded in any one month since 1896—925.

A new typewriter has been supplied, for the writing of bulletin-slips only, and one member of the staff detailed exclusively for this work, in order to avoid spoiling the machine by a variety of workers with different touch.

Instead of having the students write their cards in the cataloguing-room this year, the work was done in the class-room, much to the relief of this department, which is usually too crowded in the spring months to be comfortable or convenient.

When we consider that the time withdrawn from the department by the leave of absence of one of the staff from October 1 to April 1 was supplied by a number of different persons, substitutes, each having to be instructed successively in the many details of the work to be done, and that the head of the department had at the same time with her department administration full charge of the course in cataloguing in the School, the accomplishment of so much work as I have detailed, under difficulties such as I have described, is certainly rather remarkable and worthy of praise.

ORDER DEPARTMENT.

5329 volumes have been entered during the year.
256 maps and charts have been entered during the year.

Additions by purchase	4,217
Additions by gift	721
Additions by binding pamphlets and periodicals	391
Additions for circulation	4,765
Additions for reference	519
Starred books*	45
Additions in English	4,733
Additions in French	314
Additions in German	135
Additions in Italian	105

* Books which circulate only on payment of a cash deposit.

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Additions in Spanish	34
Additions in Latin and other languages	8
Total number of volumes entered to June 30, 1902, including volumes of Astral Branch	90,758
Total number of volumes withdrawn, including transfer of Astral	17,383
Total number of volumes in Library July 1, 1902, including 4177 volumes in French and 3253 in German	73,375

As usual, the more noteworthy accessions have been entered under the reports of the Reference and Art-reference Departments, pages 36 and 39. The event of most importance in the year to this department was the new agreement entered into by the American Publishers' and Booksellers' Associations. This was intended originally to save the local book-dealer from the disastrous effect on his business of cut-prices on books, such as given by the book-departments in the large department-stores. It was agreed that all books except fiction, published on or after May 1, 1901, should be sold to the individual buyer at the published price, and to libraries at 10 per cent. discount at the most. As libraries generally had been receiving for years all the way from 33⅓ to 40 per cent. discount, this new arrangement would have cut the purchasing power of their book-appropriations about one-third. To offset the lessened discount, the publishers promised to lower by 20 per cent. the published price, making a difference of about eight cents on the dollar to the majority of libraries. Careful observation for some months showed that this promise was apparently not being kept. Various library clubs and associations have taken up the matter, and a discount of 25 per cent. from the published price has been asked for. Some action will doubtless be taken. Meantime, the best plan for the individual library to follow would seem to be the cessation of purchase of net books for a time. It is surprising how many books a library finds it can do without if it waits until six months or a year after their publication. By that time, too, many of them begin to appear in auction and second-hand catalogues at reduced prices. It is this method of evading the difficulty that we have adopted, buying only those books which are absolutely necessary at the time, and meantime filling up gaps in the purchase of books antedating the agreement.

At the meeting of the American Library Association at Waukesha in July, 1901, the Librarian of Congress queried whether it would not be well to refrain from the purchase of new novels until they were a year old, and at the annual dinner of the New York Library Club in March, 1902, Mr. Andrew Carnegie suggested even a three-years' period of probation. Such a limitation would certainly benefit the Book-lovers' Library and similar institutions. The discussion of the subject is bound to do good, and to have some effect on the output of manufactured novels of no merit and having no reason for existence except as commercial ventures. It has sometimes occurred to me

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that it may be the province of the library of the future to restrict and regulate the use of books instead of to scatter them broadcast.

Among the additions of May were full sets of Austen, Cooper, Dickens, Dumas, George Eliot, Hawthorne, Scott, and Thackeray, in new editions, for the Open Shelves.

The head of the department was granted leave of absence for the purpose of a summer abroad. The affairs of the department were left in satisfactory condition, and one of the class of 1902, as substitute, has taken charge of the current work of the summer months, usually light, under the supervision of the Cataloguing Department.

CHILDREN'S DEPARTMENT.

Open daily, except Sundays and the usual holidays, from 9 A. M. to 6 P. M. and 7 to 8:30 P. M., October to May; 9 A. M. to 6 P. M., May to October.

New members registered	1,064
Expirations of membership	1,270
Renewals of membership	363
Transfers of membership to Main Library	137
Circulation of books for home use	32,692
Evening attendance, adults	625
Evening attendance, children	2,971

The registration and circulation began well in July and increased through to January; the school-visits were then interrupted by the absence of the head of the department, and by the enforced absence later of an assistant; while the circulation fell off in March owing to entirely unfounded rumors of contagious disease among the staff; in April and June illness interfered. A cessation in the visits to schools invariably means a decrease in the use of this department, and it is to be regretted that there was so much interference with these during the year. Several principals have sent invitations to visit the schools under their charge, showing that the influence of this communication is regarded as a helpful one.

An aid to the circulation was the reduction of fines on children's books to one cent per day, a change which was greeted with pleasure by the children. This meant considerable trouble in the alteration of many of the blanks used, but it was worth while. The bulletins of the year have been as follows:

(a) In the fall months, one on King Alfred, and one on the Rush-bearing festival, as witnessed by two of the staff in the Lake district of England during the summer. The latter led to considerable reading of English descriptive poetry. A class of twelve came from a private school to see this bulletin and hear an account of the festival, while as many as fifteen different classes were told of it during the school-visits. The King Alfred bulletin was put up on October 26, the accepted anniversary of Alfred's death, and

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consisted of portraits, old maps, old prints representing episodes in the life of the King, etc. A biographical reading-list accompanied the bulletin. A number of High School students studying the Anglo-Saxon period came in to see this exhibit and brought friends.

(b) The usual Thanksgiving and Christmas bulletins, which attracted the usual attention; but they excited less interest than the exhibition of books recommended as Christmas gifts. A revolving case was filled with these, properly labelled, and the collection was in constant use, parents and grandparents, teachers, and the children themselves copying from the lists (which gave publisher and price), and much regret was expressed that the Library did not have the books for sale.

(c) An exhibition on Greece and the ancient Grecians. On one board were photographs and descriptions of the ruins of Greek temples, etc.; on another, pictures of the principal gods and goddesses. A third sheet was devoted to the Olympian games and their recent revival, and a fourth to some of the Greek myths, Crane's illustrations from a worn-out copy of the "Wonder Book" serving for this. The "Wonder Book" itself was read considerably in consequence. Many of the Greek stories were told to the children.

(d) The Hero exhibition was posted a little later than usual this year. This and the bulletins for Valentine's Day and for Washington's and Lincoln's birthdays drew the usual attention.

(e) The Coronation bulletin, which really amounted to an exhibition, as it covered all the available wall-space, was the most ambitious undertaking of the kind which the department has ever brought to a conclusion. It was put up on June 4 and remained until June 23 or 24, when it was taken down to be sent to the Iowa Summer Library School, at which the head of this department was to give a series of lectures on the work with children in libraries. The work of arranging the twenty bulletin sheets was divided among the students of the Library School, who also supplied the accompanying biographical sketches and lists of books, and in most cases did the necessary typewriting and printing of headings. It was a very creditable evidence, for the most part, of their understanding of the principles of such work, as given them in Miss Moore's talks to the class. One of the most interesting features of the exhibit was an old print of a Coronation procession, presented by the head of the department, with a map of the parts of London traversed by it, the whole attributed to the time of George III. Photographs of Westminster and the Coronation-chair, a portrait of the King, his pedigree, an invitation to the Coronation ceremonies, an article on the meaning of the Coronation forms, insignia, etc., were the first things to be seen as one entered and turned to the left. Then the bulletin "worked back" through Victoria's reign, and those of George III, William and Mary, Cromwell, Charles I, Elizabeth (with one of Mary Stuart and one each on the Elizabeth sea-rovers and Shakespeare), Henry VIII, Edward III and the Black

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A CORNER OF THE CHILDREN'S ROOM.
CORONATION BULLETIN.

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Prince, Edward I, Magna Charta (the printing on this bulletin being very well done by Miss Mears, one of the assistants), with a fac-simile of the charter, Richard the Lion Heart, William the Conqueror, Canute, and Alfred. The exhibition will be appropriate at any time, and will take its place in a series of historical exhibitions purposed by the Library. We think these will prove of much use to teachers of history who may wish to stir up the interest of their classes by aids outside the text-book. The books referred to in the historical lists were placed on shelves adjoining the bulletins.*

(f) A very good Fourth of July bulletin was posted, and a Victoria scrapbook of unusual interest was made by Miss Sikes, one of the assistants in the room.

Only one entertainment was given under the auspices of this department during the year, and that was attended chiefly by kindergartners, students, and a few mothers with their children. It was a matinée of Fairy Tales, given by Miss Marie Shedlock of London, who held the delighted attention of her audience for an hour by the dramatic skill with which she told Hawthorne's story of Pandora, Anderson's Swineherd, and several other well-known tales, in the language of the author of each. One could but wonder if a revival of the art of story-telling might not be possible, and if it would not be a relief from the making (and reading) of many books. But the story-tellers must have the dramatic instinct, or such a revival would be worse than useless.

Evidences of appreciation of the work done by the department have not failed. A fine rubber-plant, two orange-trees, and a Porto Rican pepper-plant, from the mother of a boy who frequented the room as a child, have made it quite a bower of green. A lady who had enjoyed the picture-exhibitions brought several water-color sketches of leaves which she had painted as a gift.

A case, representing the life-history of a common butterfly, was borrowed from the collection of the Brooklyn Institute intended for such distribution, and kept in the department a month or more, It aroused considerable curiosity and interest among the children, and we hope to secure more loans of this kind.

The new cases, filling the archways between this room and the Reading-room, and effecting a complete separation of the rooms, have been made cases for reference-books, while the cupboards under the shelves were planned and are used for the storage of bulletins. While this change gives us added wall-space and will enable us to have lectures or story-telling in the room itself without disturbing the Reading-room, it diminishes the thorough venti-

* As a keystone to the historical arch, a bulletin on Arthur and the legendary period was placed in the center of the series, while silk flags of England, Ireland, Scotland, and the United States were hung at the entrance door.

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lation of the first floor such as we had before, and there have been some regrets expressed by adult readers that they could no longer glance into the other room and see the children and the greenery.

The evening work began as usual on the first of October, and has been very satisfactory both in attendance and order, the latter even when there were as many as sixty children in the room. In the fall, considerable reading aloud and story-telling were reported by the assistants, and much personal work in introducing children to new lines of reading or advancing them in those already undertaken; but as the year progressed, so much quiet reading was done by the children themselves that less effort to interest them was necessary on the part of the department.

There is more or less demand for our picture-bulletins as loans, and those which are merely of temporary interest and not likely to be used year after year, might as well serve this purpose, I think. They might prove suggestive to teachers or to other librarians.

Many visitors have been recorded in this department who are professionally interested in the work with children — such as teachers, kindergartners, librarians and children's librarians, and Settlement workers. Some of the most intelligent and appreciative comments and questions came from Miss Dorothy Ward of London, a daughter of the novelist, interested in children's libraries from the Settlement side.

LIBRARY SCHOOL.

Owing to there being an insufficient number of applicants for the second-year courses to make the giving of them worth while, it was decided to make an exception to the rule and admit twenty-five students to the first-year or general course. Another reason for this existed in the fact that all graduates of the previous year had taken positions so soon after graduating that by the first of January the Library had difficulty in filling positions on its own and other staffs. This increase of five or six students does not seem serious, but it means a very considerable increase of work for all instructors, some inconvenience as to seating, etc.

The average age of the class was twenty-eight. It included a larger Western contingent (seven) than usual, and eleven who had had more or less experience in libraries.

Some changes were made in the course previous to opening, typewriting being made an elective, and the course in technical French and German more practical and less arduous. Seventeen of the class elected the typewriting, the course in which was shortened and made directly applicable to library uses.

The usual step of forming a class-organization for the year was taken late in October.

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Twelve members of the class volunteered to act as visitors for home-libraries, two to each library, and three to work in the library of the Children's Aid Society at stated times.

During the first term a new exercise — one might truly say a "novel" one — was offered the students in connection with their work in the fiction seminar — the making of ladders of novels, to lead from third-rate or even lower grade novelists to those of the first rank by easy and natural steps. The best lists, taking everything into consideration, were one leading from Marie Corelli's "Romance of Two Worlds" to Du Maurier's "Peter Ibbetson," and from one of her psychological novels to "Les Misérables."

During the third month of the second term a case of smallpox (quite unaccounted for) occurred in the School, and terminated fatally at the end of two weeks. For eighteen days there was a period of suspense, during which it was possible that other cases might occur, but every precaution was taken against this and the School and library-work went on as usual. Sufficient appreciation can hardly be expressed of the collected and self-controlled attitude of both School and staff. There were absolutely no signs of panic, as every one had been promptly vaccinated who had not already been, and the possibility of further trouble we refused to contemplate. Unfortunately the strain from sympathy and anxiety, coming at the end of six months' hard work, led to two brief illnesses in the class the last week of the term, and the head instructor also became seriously ill and was obliged to give up her work for the remainder of the year; but by dint of every one putting a willing shoulder to the wheel, the year was finished without detriment to the interests of the class. Much sympathy was felt and expressed by the School for the classmate who was ill, and letters and flowers went regularly to the hospital. A memorial service was held a week after her death as the last observance of fellowship possible to the School, and many thoughts went toward the vacant desk during the last term of the year and at Commencement.

The usual spring trip to visit libraries, this year those of Washington and Baltimore, came at a very opportune time to break the strain and give a more cheerful tone to the thoughts of the class. Owing to the illness of one of the staff, the Director could not accompany the party as planned, and Miss Davis, the head of the Cataloguing Department, acted as guide and conducted the quizzes after the return to work. Though the weather during the trip was somewhat unpropitious, the journey served its educational purpose, and the students returned well satisfied with what they had seen and learned.

The percentages of the final examinations were as satisfactory as those of previous classes.

The third term, consisting chiefly of practical work under supervision, of visits to local libraries, etc., it was unnecessary to engage outside instruction in view of Miss Rathbone's absence except in the case of the course in the Expansive Classification. For this, Miss Abby Sargent, of the Medford (Mass.) Public Library, was engaged, and a week was devoted to the sub-

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ject, with lessons and practice, morning and afternoon. The class were much interested and did good work.

At the end of the second term one student left us to accept a very flattering offer of a position as teacher, while another accepted an offer, by our advice, to act as instructor in the Indiana Summer School for Librarians, which assembled for four weeks in April and May at Indianapolis. She had had considerable practical library experience before coming to us, and so could dispense with the practical work of the third term.

The lectures of the year consisted of the usual courses by Mr. George Watson Cole, on the History of Libraries, extended to six lectures; by Mr. William R. Eastman, on Library Buildings; and by Mr. George H. Baker, on the Development of a Library; in addition to which were given the following single lectures:

Book annotation, by Mrs. Salome Cutler Fairchild.
Book reviews, by Miss Caroline M. Hewins.
Work with school-children, and Some library economies, by Miss Mary Emogene Hazeltine.
The Open-shelf room, by Mr. Henry L. Elmendorf.
College libraries, by Miss Isabel Ely Lord.
Books in elementary science, by Miss M. Josephine Emerson.
Bibliography of the classics, and Bibliography of education, by Mr. William Warner Bishop.
Some phases of branch work in public libraries, by Mr. Frank P. Hill.
Principles of indexing, by Miss Florence Cragg.
The Expansive Classification, by Mr. Charles A. Cutter.

Visits were made, under the guidance of the Director, during the spring term to the following libraries:

Aguilar Library, East Broadway Branch.
New York Public Library, Chatham Square and Bloomingdale Branches.
New York Public Library, Astor and Lenox Branches.
King's Daughters Settlement Library.
Kingsbridge Library.
Cathedral Library.
Children's Museum Library, Brooklyn Institute.
Brooklyn Public Library, City Park and Avon Hall Branches.
Columbia University Library.
New York Mercantile Library.
Cooper Union Library.
Stickler Memorial, and Public Library, East Orange, N. J.

If the test of the instruction given is in the practical work done by the students during the third term, we may feel well satisfied with the fitness of this year's class. Testimony to the excellence of its work comes from the heads of all the departments.

From the Reference Department we quote: "Both in the review and examination, the class impressed me most favorably."

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From the Art-reference: "The students of the Library School are taking up the work in this room with interest, we think, and are doing well."

From the Circulating Department: "The class has done excellent work in this department, on the whole better than that of any previous class. They have made fewer mistakes and shown greater self-possession."

From the Children's Department: "The work of the students has been more satisfactory in its general results than ever before for the first month of practical work."

At the present writing, July, 1902, one month after graduation, all of the class except one are having library experience in temporary or permanent positions. We always urge the acceptance of temporary work when offered if no permanent position is yet in view, and the majority of the graduates are wise enough to accept it, realizing that the great thing is to keep in practice, to confirm their teaching by experience, and to be able to say, in applying for a position, "I have had such and such experience," instead of, "I have not been doing anything because the particular thing I wanted has not offered itself."

With regard to the future plans and success of the School, I have already presented to you a special report, so that it is unnecessary to speak further here of the improvements we hope to make, with your approval.

Before closing this part of the report, I wish to call your attention to the printed annual report of the Graduates' Association of the Pratt Institute Library School, issued in January. These reports give each year the constitution and list of officers and members, with their positions in libraries, and a report of the meetings and activities of the society during the year past. They are dignified in tone and tasteful in style of publication. The last report gives a list of 146 members. Of these, six have married since graduation, and nine do not desire library positions for other reasons, but all retain their interest in the Association and show a desire to further its objects. The reception tendered by the Association to the entering class each fall, the annual luncheon in New York in January, and the informal meeting usually held by those present at the annual conference of the American Library Association, are the very pleasant occasions of assembling during the year. This Association is entirely the creation of the graduates of the School, the faculty being honorary members only. The Director sent out in 1901 a circular of questions to each graduate still in library-work, asking for comments and criticisms of the course, and the replies being tabulated and considered, it was deemed wise to make a report to the Association of the present conditions of the School, which was done in 1902. At the annual meeting in January, we suggested also the appointment of a committee each year to visit the School and report to the Association, and the taking up of some piece of work the doing of which is urgently needed by libraries, thus putting the Association on a more serious footing. I am glad to say that the second of these suggestions has been very promptly accepted and an important piece

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of work undertaken by an informal committee, to be offered to the Association when completed.

STAFF.

As I have said elsewhere in this report, the sick-list has been a prominent feature of our conditions the past year. Six hundred and sixty-five hours (nearly sixteen weeks of forty-two hours) have been lost through illness. This is without including the leave of absence of Miss Rathbone for three months. Members of the staff who have never before figured on this list have made their appearance on it the past year. Of a staff of twenty-five, only six have no lost time recorded on this account, and from the first of October to the end of the school-year there were not six successive days when the full number of the staff was on duty. Add to this that leave of absence had to be granted to one assistant on account of illness in her family, and that another had to be put on half-time during two-thirds of the school-year, and you will see under what disadvantages the Library has had to labor, and I think you will agree with me that a great deal of work has been accomplished, considering all things. The greatest number of hours illness was recorded in November, and the next greatest in June. It is our custom to do without substitutes in these cases, as far as possible, except for the evening hours. These we invariably try to fill by outside help, since the regular staff have generally as many evening hours as they can safely carry. When two or three persons are absent at once, however, substitutes become absolutely necessary. Fortunately there were so many students in this year's class who had had library experience that we could occasionally make use of their services.

The question of pages has been a serious one the past year, and we have finally solved it by engaging two instead of three for the day work, relieving them entirely from evening service, and taking on boys from the Pratt Institute High School for the evening work. The results have been very satisfactory, giving us highly intelligent evening service, and much greater regularity and responsibility on the part of the regular pages.

NEW UNDERTAKINGS.

The Information Desk having been firmly established and having proved its usefulness, another step was taken during the past year in the direction of what I call practical bibliography, i. e., the making known of the right books to those whom they concern. The Director met informally in a friend's house a number of teachers and a Principal from the Girl's High School, to give them a better idea of what the Library could do for High School teachers and pupils. The result was the experiment of a Course in Books of Reference for Teachers. There were twelve persons enrolled in the class,

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which met once a week on the day and at the hour most convenient for them, and for ten weeks. The teachers represented the departments of Latin, English, German, and History. The works of reference to which they were introduced were the leading encyclopædias, dictionaries of language, biographical dictionaries, works of reference in literature, music, art, religion, geography, sociology, history and antiquities, and a few trade bibliographies. Careful notes were taken, and the attendance was seldom, if ever, less than eleven. Though these teachers were exceedingly busy women, they seemed to enjoy the course rather than find it a task, and expressed themselves as having found profit in it. The suggestion was made that the course would be valuable to the teachers of other schools and of the grammar grades, and we shall give it again the coming year, if it is applied for. Miss Rathbone conducted the course, using her lectures to the Library School as a basis, modifying them to suit the new conditions.

At the request of Mrs. Spalding of the Pratt Institute High School, another step in this direction will probably be taken during the coming year in the way of instruction to the senior class in the making of bibliographical or reference-lists and in methods of research.

We have in preparation at this writing a special announcement outlining some of the work of this nature which the Library is ready to undertake on the application of classes from schools or adult study-clubs.* We believe such work comes entirely within the scope of a library such as ours, and that there is need of making our facilities and resources known and of preaching the value of such instruction to the student, the teacher, the artisan and professional man, and even the general reader of serious literature.

Thanking you for the forbearance which has made lighter the burdens of an unusually trying year, I beg to bring this report to a close.

Respectfully submitted,

Mary W. Plummer,
Director.

* Printed in the October number of the *Co-operative Bulletin.*

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Text-book Collection.

THE Library acknowledges, with thanks, the receipt from the publishers of the following books, sent for its "Text-book Collection." This collection is shelved in the general reference-room of the Library, free of access to the public.

From the American Book Company.

Lectura y conversación, a new and progressive Spanish method. By T. Silva and A. Fourcaut. c. 1901. 60c.

Observations and exercises on the weather. By James A. Price, A.M. c. 1902. 30c.

From D. Appleton & Company, New York.

First Spanish Book and Reader. (Twentieth century text-books.) By William F. Giese, A.M. 1902. $1.20.

From C. W. Bardeen, Syracuse, N. Y.

Manual of civics for New York schools. By C. W. Bardeen. c. 1901. $1.00.

From Ginn & Company, Boston.

Composition and rhetoric for higher schools. By S. E. H. Lockwood and M. A. Emerson. 1902. $1.00.

Grammar school geography. By A. E. Frye. 1902.

Spanish and English conversation. First and Second Books. By Aida Edmonds Pinney. 1902. Introductory price, 60c. each.

From Henry Holt & Company, New York.

Exercises in conversational German. By Josepha Schrakamp. 1898. 55c.

From the Macmillan Company, New York.

Common sense of commercial arithmetic. By George Hall. 1901. 60c. net.

English history told by English poets. Compiled by Katharine Lee Bates and Katharine Coman. 1902.

German reader, edited with notes and a vocabulary. By W. T. Hewett, Ph. D. New edition, revised and enlarged. 1901. $1.00.

Teacher's manual of geography. By Charles McMurry, Ph. D. 1902.

Text-book of applied English grammar. By E. H. Lewis. 1902. 35c. net.

From Scott, Foresman & Company, Chicago.

American literature. By Alphonso G. Newcomer. 1902. $1.00.

From Silver, Burdett & Company, New York.

Enseñar á leer; guía para los maestros de párvulos. By S. L. Arnold. 1900. 32c.

Guías para maestros, con la demostración de los principios, métodos y fines de la enseñanza común. By S. L. Arnold; trans. by I. K. MacDermott. 1900. $1.25.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

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Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

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Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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Department of Physical Training — Morning and evening classes for women. Evening classes for men.

The Thrift — Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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FINE ARTS NUMBER

PRATT INSTITUTE MONTHLY

January, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI JANUARY, 1903 Number 3

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume XI JANUARY, 1903 Number 3

Annual Report Of the Department of Fine Arts.

TO THE TRUSTEES, GENTLEMEN:

IN the Fine Arts number of the MONTHLY, published one year ago, especial attention was called to the Arts and Crafts work of the Department of Fine Arts, and incidental reference was made to a new course in Manual Training. It has now been thought best to devote a large part of the present number to a fuller explanation of the Normal Art and Manual Training Courses.

The question is frequently asked: What is the relation of the Normal Art and Manual Training Courses of the Department to the work in the public schools? To make this clear it seems best to review briefly the history of the Art and Manual Training movement.

Drawing was first introduced into the public schools on a purely utilitarian basis, the argument being advanced that the subject should be taught in order to train American designers, and thus prevent the importation of designers and designs from Europe. The work was exceedingly conventional, being borrowed from the English schools, and consisted largely of arranging leaves and flowers about a centre to illustrate the principle of radiation, or arranging them to form a border to illustrate repetition. Principles were taught rather than art, and very little opportunity was given for originality. Naturally this course proved of little value, and attention was next directed to mechanical drawing of a nature to enable students to make and to read working-drawings. At first this met with decided opposition, it being considered by educators that orthographic projection, the school method of teaching mechanical drawing, was too difficult for children to comprehend. But this imagined difficulty came from those of the old school, who could see no way to teach mechanical drawing except by this method; and when it was shown that orthographic projection might give way to a common-sense method, locating the top view above the front view, the right view at the right of the front view, etc., the ground had to be fought over for years before such a method could prevail. Over and over the argument was used that this new "common-sense" method should not be taught in the public schools because it was not taught in the technical schools, and was not used in the workshops. But the new system finally triumphed; and when, a few years ago,

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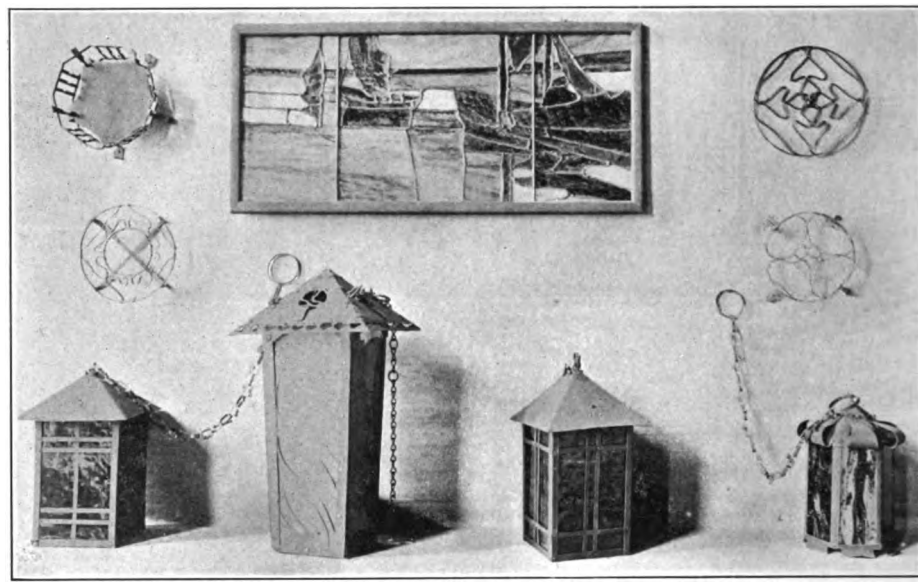

APPLIED WORK IN GLASS AND METAL.
Typical work of Normal Art and Manual Training Class.

over eight hundred letters of inquiry were sent out to the important technical schools and draughting-rooms, and to instructors of drawing throughout the country, it was found that seventy-five per cent. had accepted the new method.

The study of working-drawings was followed by that of the appearance of objects, but much time elapsed before it was fully recognized that children could learn to draw the appearance of objects. At that time it was difficult to place this work in the highest grades of the grammar schools, but now it is taught in the primary schools. Naturally, at first, the aim in all this work was for mechanical accuracy. This reacted in a desire for more freedom. Freedom abounded until it became license; and in some of the exhibitions it was difficult to decide which work was done by the primary children and which by the students of the higher grades. Later, nature became the source of inspiration. Children were taught to draw the objects, and nature forms about them. The drawing of the figure was introduced, together with the study of water-color; until now, so many things have been included that the real value of the whole subject is in danger of being lost through a misconception of the fundamental principles of art education.

The value of manual training in industrial education is now generally recognized. There is scarcely a city in the United States that does not possess its manual training school. Its vital significance is felt, not in manual training high schools alone, but in the higher grades of grammar schools, and

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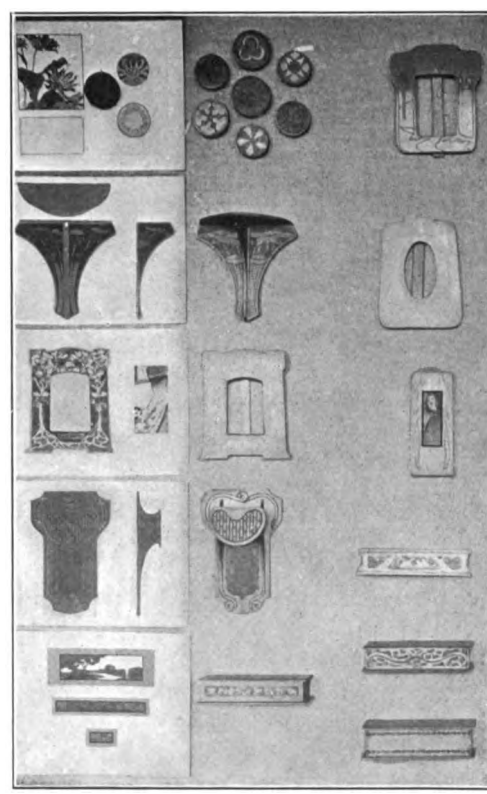
large sums of money are being spent in buildings, equipment, and instruction. But when the matter was first agitated in the National Educational Association in the early eighties, it was difficult to secure an audience that would listen to a discussion of the subject. Dr. C. M. Woodward at that time addressed an audience of only twelve individuals. The next year, at another meeting of the same association, Dr. Woodward introduced a speaker, who said, "There is little use in giving this address, as there are so few interested." Dr. Woodward replied, "Please go on; when I read a paper on the same subject last year there were but twelve present, and you have an audience of sixteen." That audience of sixteen has now increased many thousandfold in the interest shown through the country at this time. Many superintendents at first opposed the idea of introducing manual training into the public schools, and ridiculed the idea by saying, "Conceive of the absurdity of a teacher standing before a class and saying: 'Children, take your saws. One! two! three! saw! Now, children, take your hammers. One! two! three! hammer!'" This shows how little the true significance of the subject was comprehended.

Gradually the subject received more attention, but many thought that manual training meant mere "doing," or working in the concrete regardless of accuracy or an appreciation of good form and proportion. The great exhibitions held in Madison, Wisconsin, in 1884, and in Chicago in 1887, displayed literally thousands of objects made by children illustrating manual training as then taught in the public schools. All this work illustrated child activity, but there was very little quality in it. Then the educators began to ask, "If we are to have manual training, what sort of a plan can be introduced into the grades below the high school that the work may be better in quality and accomplished with fewer tools?" This question was answered by the introduction of the Sloyd System, which for the time served the purpose on the side of simplification, but even this can no longer hold the place assigned to it, for it fails to develop originality and to cope with the larger problems of practical industrial



APPLIED DESIGN.
Typical work of Normal Art and Manual Training Class.

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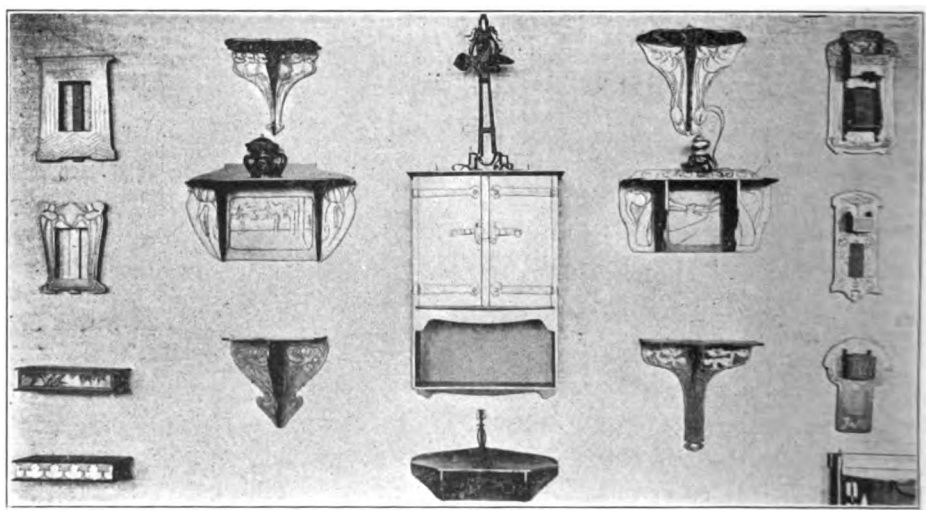
education. Set exercises worked out by every child in the school, a few for one grade and a few more for another, do not furnish the work that is now demanded or give sufficient scope for the development of the individual. Something else must be engrafted upon it, and that something is ART. With the simplification and practical application of Sloyd must come the expression of beauty in the application of form, line, and color appropriately united with useful objects through the mediums of wood, iron, metal, leather, and other material, involving weaving, basketry, wood-carving and wood-cutting, bent-iron and hammered-metal work.

The Art School of the future must teach not alone a pictorial art, but an applied art. Drawing in the public schools must be genuine and educational,



APPLIED DESIGN.
Typical work of Normal Art and Manual Training Class.

and manual training in the public schools must have a vital connection with true art principles, and a fitting adaptation of art to material.

The Department of Fine Arts of Pratt Institute was the first to organize a normal course with the aim of training teachers to supervise and teach drawing and art education in the public schools.

Since 1890, approximately 350 students of the Normal Art and Manual Training Courses have been appointed to positions of responsibility. These teachers are located throughout the United States as supervisors and teachers in the primary, grammar, high, and normal schools. In Greater New York alone forty-three teachers of drawing and manual training have received their preparation at Pratt Institute. When it is considered that these supervisors come into touch with millions of students and teachers of the public schools

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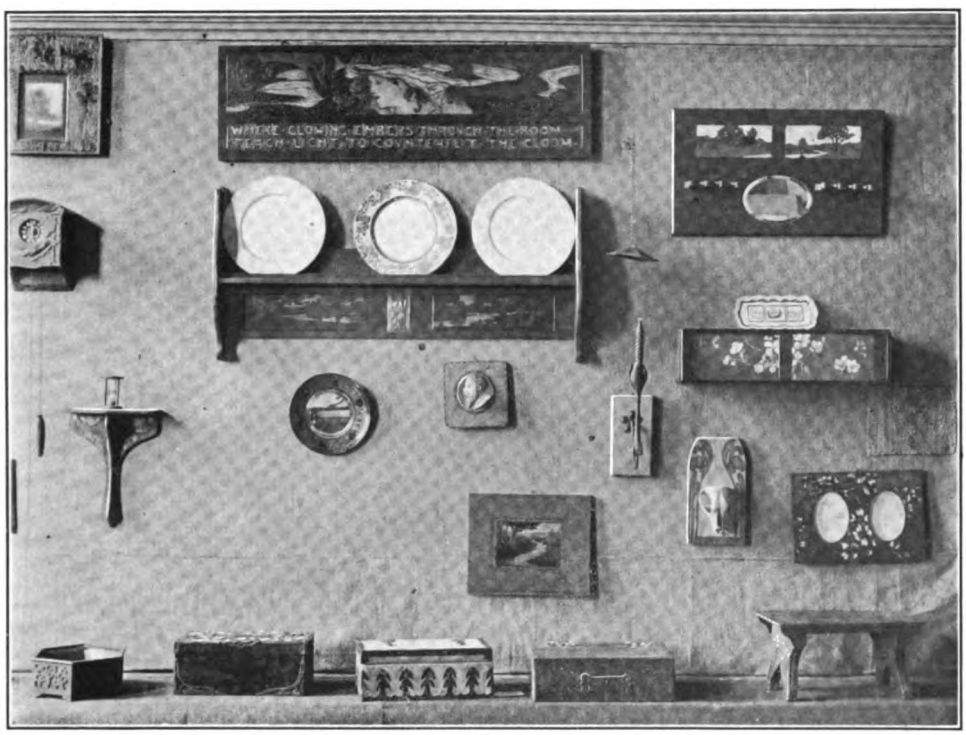
of the United States, the potent influence that such a body of art teachers exercise on the industrial as well as art-educational welfare of the country must be recognized; also the consequent necessity for giving them the best art training possible to procure.

The Normal Art and Manual Training Course aims to meet this problem by training the individual not only to appreciate and to teach the beautiful, but to impart the technical knowledge that will make for the practical as well as the artistic, uniting in these two factors the work of the hand and of the mind. The craftsman of the next generation is the child of the present, and



APPLIED DESIGN.
Typical work of Normal Art and Manual Training Class.

the skill that he will manifest will depend largely upon his present training, including, as it must, freedom of expression, appreciation for the best, a knowledge of the principles of form, line, color, and composition, and their application to material.

Some time ago manual training was incorporated into the work of the second year of the Normal Art Course as an elective. During the past year great attention has been given to the further development of that course along

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new lines of educational work. Applicants are not admitted for "manual training" alone. In the past many who thought themselves especially fitted for manual training have given as evidence of their qualifications "a mechanical turn of mind." This is no longer the eligible factor. Artistic ability must also be included in adaptability for the work. The manual training of the future must be along the line of the Arts and Crafts, and no longer confined to mechanical skill alone. It is an error to suppose that manual training means simply working constructively in wood, metal, and similar mediums. Why should not the hand-wrought object be a thing of beauty as well as of utility? What is more beautiful than the wrought iron-work of the mediaeval craftsman, born of the hand of a skilled artisan who was also an artist,

APPLIED DESIGN IN KNIFE-CARVING.
Elementary work of Normal Art and Manual Training Class.

shaping the metal into forms of beauty that fill the mind of the modern student with wonder, admiration, and reverence.

The applicant who desires to enter for the Normal Art and Manual Training Course of Pratt Institute must pass as high an examination in general free-hand drawing as the student who applies for the Normal Art Course. He must give evidence of art appreciation and power of execution. When enrolled as a student he must pursue a thorough course in art during the first year, together with the regular Normal Art students, and combine his art work with manual training the second year. This art training consists not alone of general free-hand, and light and shade and portrait drawing, and modeling, but also work in composition, which acquaints the student with the fundamental principles of design that enter into all good art. Much time is

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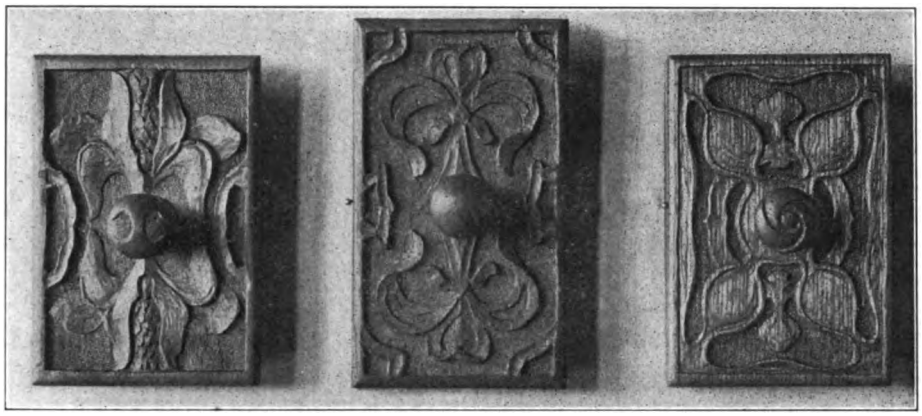
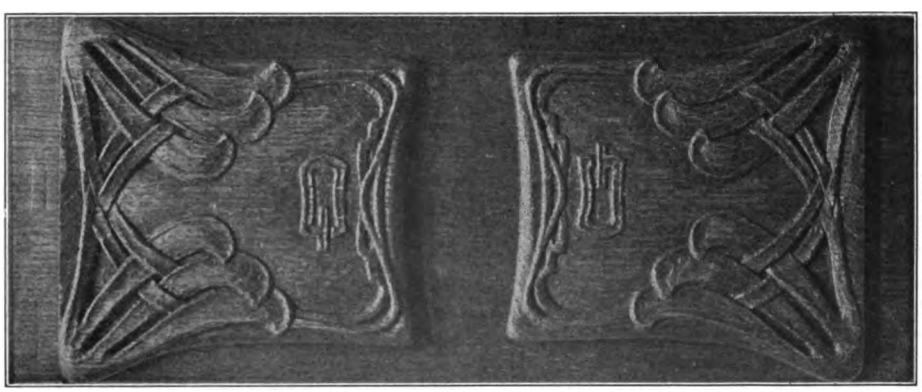


APPLIED DESIGN IN WOOD-CARVING.
Typical work of Normal Art and Manual Training Class.

given to free-hand perspective, sketching, and color, not for realism of effect, but for art expression. Instrumental drawing is also taught in its broadest and most practical sense. Working-drawings are made of objects in wood and metal, attention being given to house-construction and those things that relate to the student's environment, as interior decoration and furniture designing, thus leading him to apply the principles of composition and design acquired in his free-hand practice. With all this technical work comes its application to public school conditions, including the study of psychology and methods of teaching, and the history and theory of education.

During the second year the student who has entered for the full course in Normal Art and Manual Training finds the programme divided, so that from four to five half-days of each week are still devoted to art work, the general



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Typical work of Normal Art and Manual Training Class.

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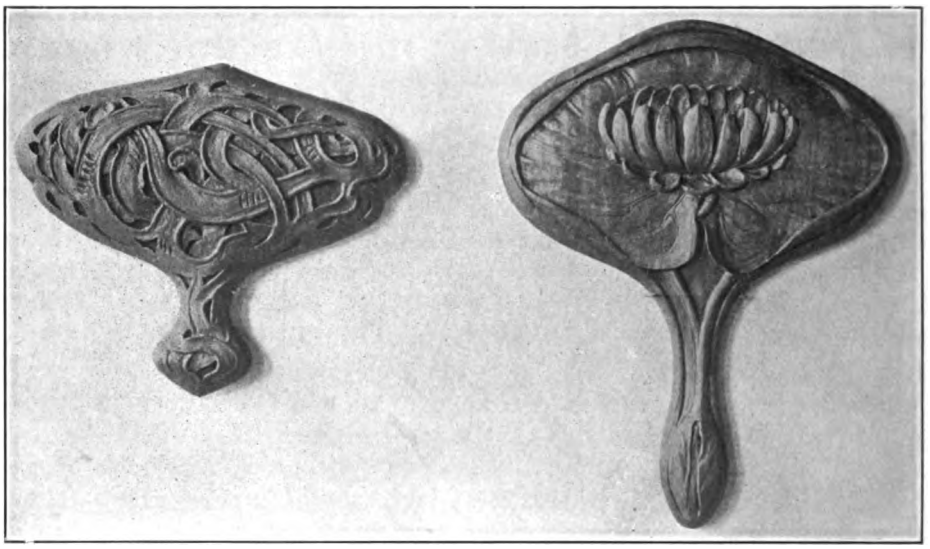

APPLIED DESIGN IN WOOD-CARVING.
Typical work of Normal Art and Manual Training Class.

drawing, composition, and water-color being carried much farther than in the first year. The aim is to cultivate in the student such fine art appreciation, individual expression, and freedom as will enable him to work along original lines, and not according to set exercises. His work in design and composition, which in the first year related altogether to the fundamental principles of design and composition, now gives place to the application of these principles to the making of such designs as may be carried out in wood, metal, silver, leather, and other mediums. The student gives part of his time to the making of objects in thin wood, using the knife as a child might work at the school-desk, or working out at the bench such exercises in heavy woods as may be carried out with tools by pupils of the higher grammar grades and high school. In designing a typical exercise each student gives special attention to form, to construction, and to fitness and adaptation to purpose. When the design has been executed in wood the finished object is decorated, to add charm to its appearance. As the thin wood employed in this cutting is without marked beauty of grain, the application of color decoration is permissible in so far as it keeps within the province of wood, embodies colors that are peculiar to wood and wood-texture, and enhances the beauty of the object. A very special point is made that decorating wood does not mean painting designs upon the finished object — a mistake which is so often made in manual training work. A design painted upon an object, as though the object were simply a background, does not meet the conditions in any way whatsoever, and results in discordance and unfitness.

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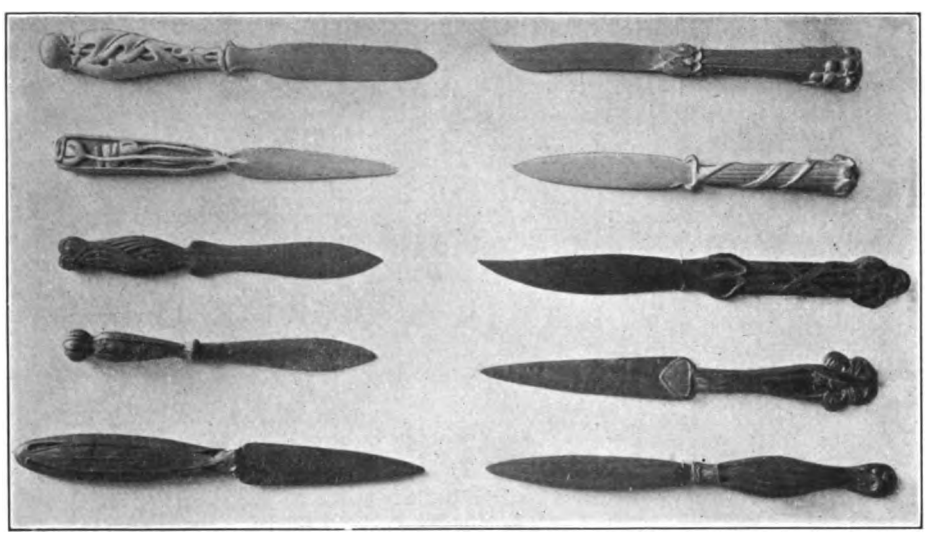
It is not enough that the student shall construct objects in thin wood and work at the bench, as in the old system of manual training. The student must also learn to carry out his work in the round. He must model in wax and understand the principles of form through familiarity with the third dimension. In designing relief-ornament in clay or wax he is learning to apply not only the same principles of space relation that govern design in the flat, but he also finds that his design must be a part of the form it decorates, enhancing the beauty of the surface in light and shade values, and at the same time emphasizing the constructive value. Learning these valuable lessons first through his full course in composition and design, and then in working in wax or clay, he is prepared to use these fundamentals in all mediums, whether iron, wood, clay, metal, weaving, or basket-making. If fitness and adaptation are strictly adhered to, he may allow himself freedom and originality in expression without over-stepping the bounds of sobriety and license. If he realizes that in the decoration of an object he must strengthen and not weaken the constructive elements, he is bound to be simple in his use of ornament. If he is familiar with the quality and texture of materials through actual manipulation, he will not lose sight of the fact that each medium claims for itself certain characteristics. If the medium be bent-iron, the design applied will be within the limit of structural lines; not in the bending of iron to meet all sorts of vagaries in curves and ugly outlines, but rather by adopting certain principles of construction found in triangular, circular, square, and other geometric shapes that give strength, stability, character, and repose to the design.



APPLIED DESIGN IN WOOD-CARVING.
Typical work of Normal Art and Manual Training Class.

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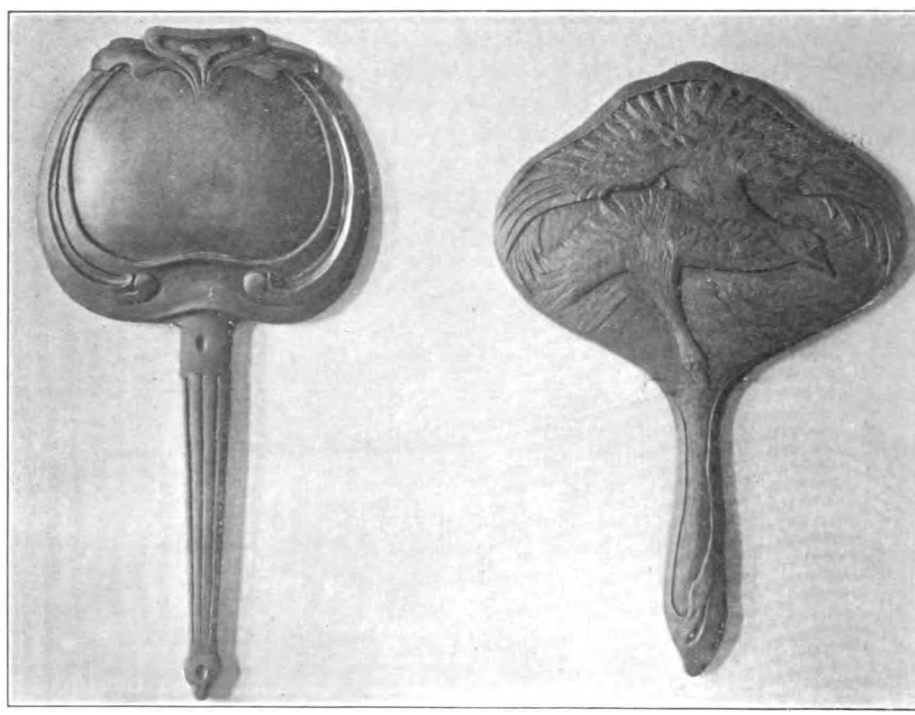
But iron and wood are not the only materials that may be used in the schools. The conditions are not the same in all communities. In some sections special attention may be given to the use of other materials. To meet these varied conditions the students of the Normal Art and Manual Training classes learn to apply their designs also to leather, textiles, and basketry. Basketry and weaving are pursued under careful supervision. Various forms of weaving are developed in successive stages, including the use of the small hand-loom. In basket-weaving a great variety of forms are made by the students, and woven in such a way as to produce interesting designs.

In all this Arts and Crafts work the student is trained to exercise thought, originality, and individuality. He is not given a group of set exercises and told that these must be carried out according to special grades in the schools. He is made acquainted, so far as possible, with the conditions that govern the public school problems, and is led to exercise individuality and judgment, so that when placed upon his own resources he shall be able to solve the different problems and conditions of art and industrial education that every new section or locality has to present. If he is a true teacher, possessing the ability to impart knowledge, and trained by means of a thorough course in art



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Typical work of Normal Art and Manual Training Class.

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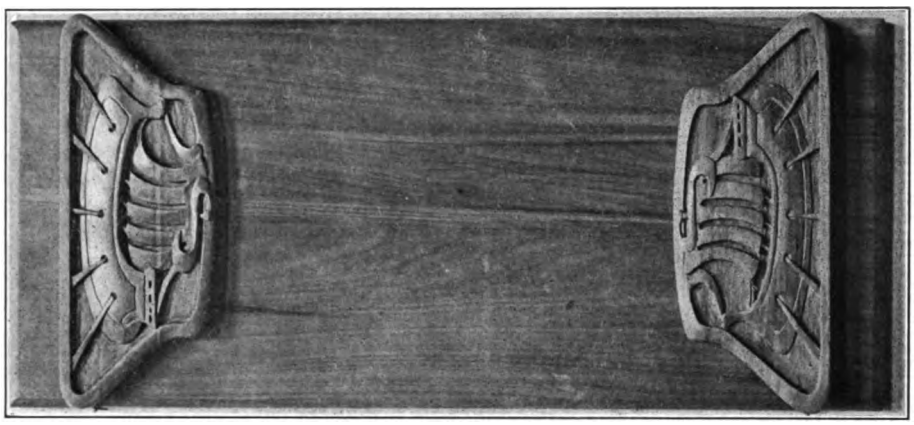

APPLIED DESIGN IN WOOD-CARVING.
Typical work of Normal Art and Manual Training Class.

and manual training, he should be able to go into the public schools and develop a course of study that will meet the conditions of this or that particular city or school. He should not revert to his note-book to learn what specific exercise should be applied to a particular case, it being taken for granted that the man or woman who is worthy to be a supervisor or teacher of drawing has so fully grasped the conditions and the work he has elected to teach that he will not make the mistake of introducing the work of a higher grade into a lower grade, or vice-versa.

More and more attention is being given to the Arts and Crafts throughout the country. The art school of the past has given a so-called art education that has too frequently meant nothing more than cast, life, and portrait drawing. Classes have been trained as though every student member was to become a portrait or figure-painter, thus neglecting a branch of art — the crafts — that not only contributes to the pleasure and profit of the individual, but, as history illustrates, is a most vital force contributing to the welfare of the country. Much of the commercial prosperity of our cities to-day depends, and will continue to depend, upon the training of our art workers. Why then should we neglect a factor so vital as craftsmanship in our educational systems, which stand for the betterment of the individual and the community? The mistake of these many years is being rapidly recognized. More and more attention is being given in all art schools to develop and cultivate the special talent or inclination of the individual student. It is not what he must do, but what he can best do. Students should find themselves in their work, and should develop along the line for which they are best fitted.

The Department of Fine Arts of Pratt Institute was one of the first schools to organize parallel courses of study in the application of the fine arts. Courses in wood-carving, in ornamental relief-modeling in wax and

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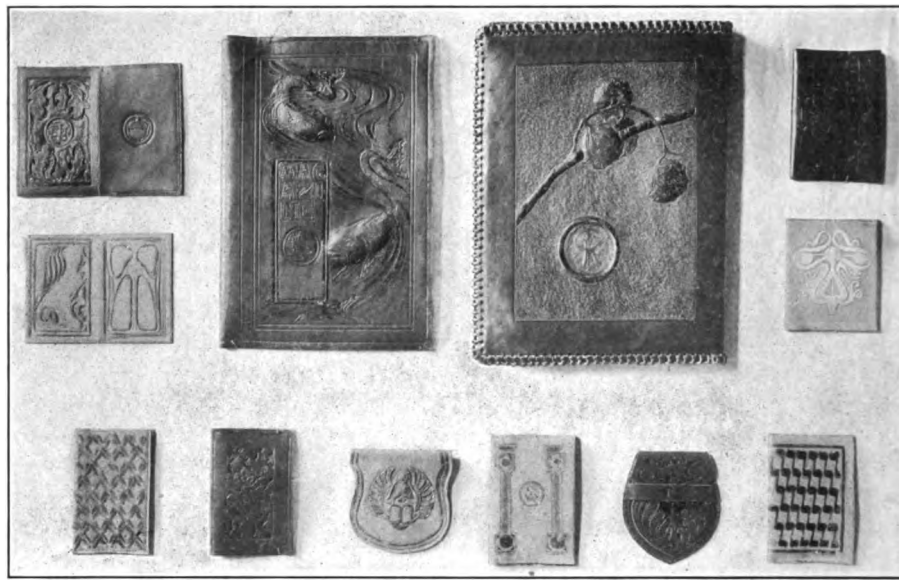

APPLIED DESIGN IN LEATHER DECORATION.
Typical work of Normal Art and Manual Training Class.

clay, in all kinds of applied design, including carpets, rugs, textiles, prints, etc., together with a course in Architecture, have long been maintained. Two years ago a course in metal-chasing, engraving, die-sinking, and enameling was introduced, every facility being provided for professional craftsmanship. The students of the Normal Art and Manual Training classes come closely in touch with this work in art metal, and many find the time in evening classes to develop their manual training in this direction, hammering out in sheet-metal objects that may become individual and beautiful in contour and line, and shaping upon the surface designs that add to their beauty.

The illustrations in this number of the MONTHLY show the work now being carried out in composition, design, and the applied arts by the Normal Manual Training and other students. Accompanying these illustrations, that show the individuality of the work and the application of art to construction, are also exercises in thin wood, bench-work, etc., that have, in the past, been popularly known as strictly "manual training," and which still form a vital part of the general training.

ART EXHIBITIONS.

Since 1897 the Institute has maintained successively forty-four exhibitions in the Art Gallery under the direction of the Department of Fine Arts. The gallery is 25 x 45 feet, is well lighted, and the building is fireproof. Miss Dora Miriam Norton, who has from month to month given an account of the various exhibitions, reports as follows:

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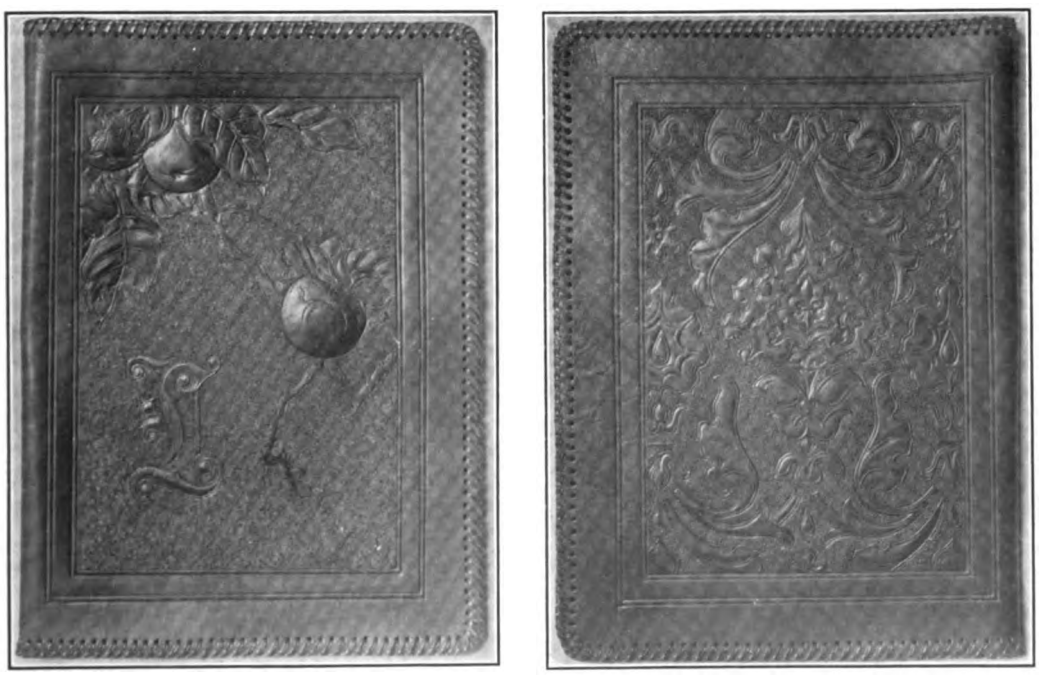
"Nine exhibitions, one being double, the work of a sculptor and of a mural decorator, besides an exhibition of textiles from the collection owned by Pratt Institute, and others of photographs from the Art Reference Library, have been shown in the Art Gallery of the Institute since the issue of the MONTHLY last January.

"A collection of Copley prints, made from mural paintings and decorations, also from noted easel pictures, loaned by Messrs. Curtis and Cameron of Boston, occupied the gallery from December 26 to January 10. These were most valuable as forming an introduction to a field of art in which American painters have of late years achieved signal progress. A recent article by a London correspondent quotes 'one who has every right to speak with authority on the subject,' as follows: 'It may be well to remind millionaires that to give a commission for decoration to a painter is a far more useful thing than to buy a picture. It lifts art patronage out of picture-fancying into the region of high adventure, takes the first step toward bringing back painting to its proper place as an important factor in the national life, and makes the artist's a calling that might fitly attract to itself the best talent in the country.'

"That American artists and art patrons have awakened to the truth of the



APPLIED DESIGN IN LEATHER DECORATION.
Typical work of Normal Art and Manual Training Class.

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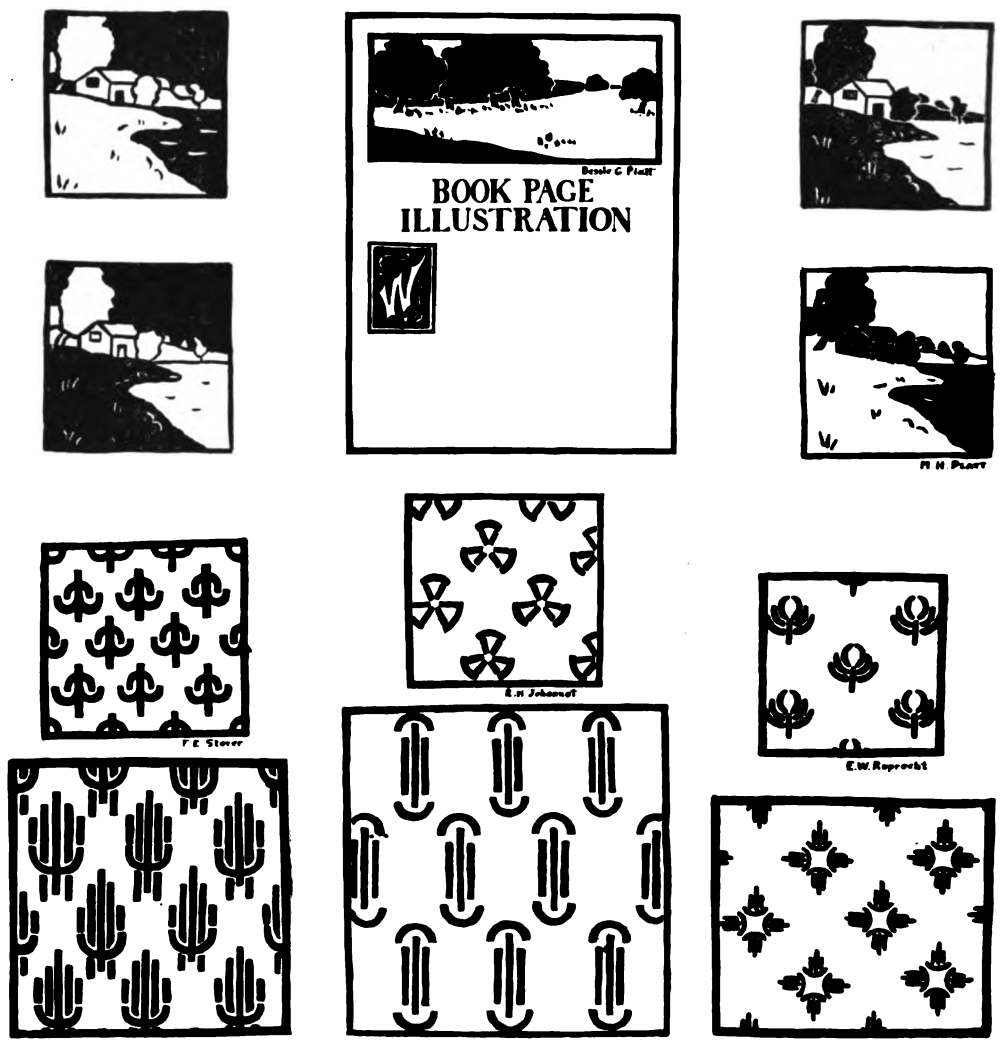
above was indicated in the important works represented here. A large number are from the epoch-making work in the Congressional Library at Washington, while the decorations of the new Criminal and Appellate Courts, La Farge's work at Bowdoin College, and the paintings by Puvis de Chavannes and Sargent in the Boston Public Library were represented. Besides these were prints of many important easel paintings by Brush, Whistler, Sargent, Vedder, William M. Hunt, Thayer, and others.

"A very practical exhibition of drawings, sketches, and color-studies, illus-



COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

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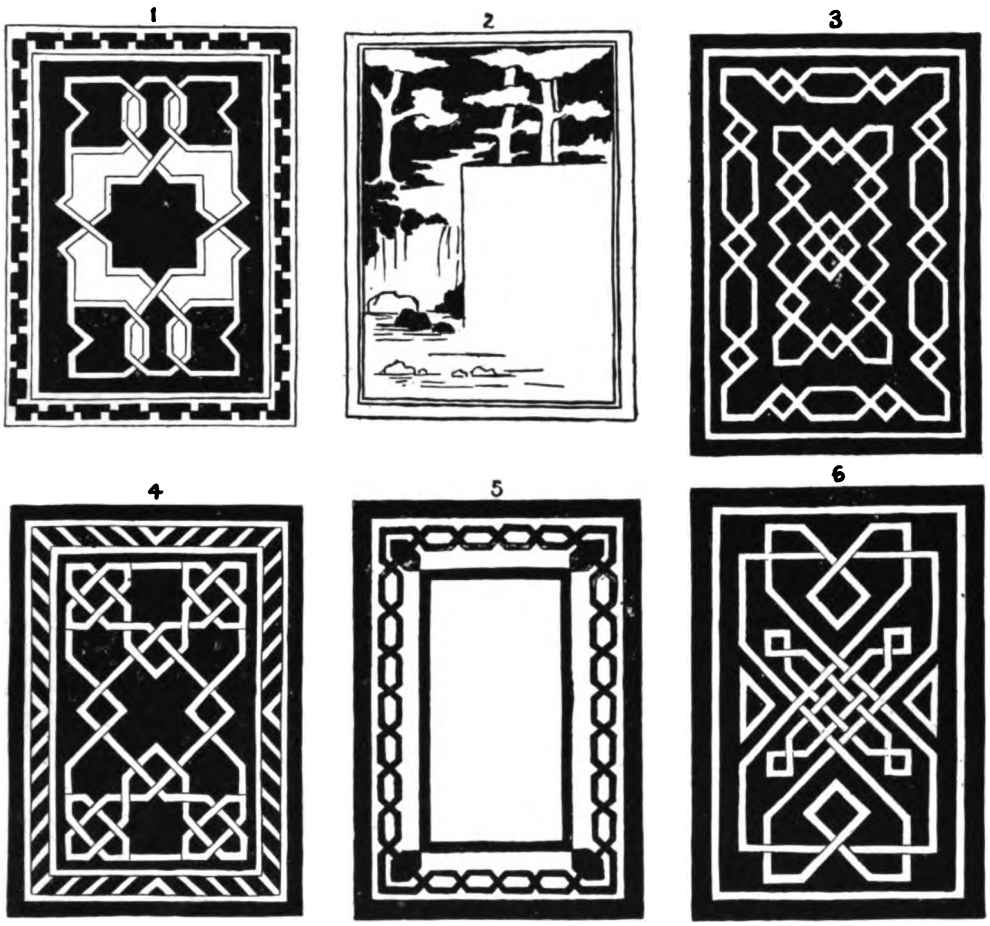

COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

trating interior decoration, by E. Prentice Treadwell of New York, was on view in the Art Gallery from January 13 to February 1. The collection included designs made for several residences, notably that of Mr. George J. Gould, from which were shown elevations, perspective, and details, including furniture and hangings. Designs for a dining-room and an entrance-hall for the home of E. C. Converse of New York city, and interiors made for the residences of Samuel Thorne and of H. J. Chisholm, Esq., were also shown. A beautiful wood panel in a design touched with transparent color and outlined in pyrography, was accompanied by the design for a dining-room in Elizabethan style in which it was to be placed. A very elaborate drawing of a large entrance-hall showed the possibilities of color and perspective in presenting to the mind the semblance of a stately interior yet uncreated. As an

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illustration of the methods of a practical and successful interior decorator in working out and making clear to patrons and workmen his own conceptions this exhibition was of value, not only to students, but to all who live in houses and must be surrounded with more or less successful attempts to beautify interiors.

"The Rowan Collection of Flower Paintings shown in the gallery from February 5 to 19 merits the interest and attention of the public, whether from the artistic and scientific standpoint, or simply as the achievement of one woman's unassisted genius and energy. It consists of more than 500 water-color

COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

paintings, comprising the Flora of Australia, New Zealand, West Indies, and the United States. All are rendered with careful fidelity to nature, and are most valuable as records, although totally different from the countless studies and drawings of the Japanese artist, who, equally faithful to nature, always carries in mind an artistic possibility for the flower. Among them are some of the rarest flowers and orchids, many varities being unnamed and unknown until Mrs. Rowan found them. Many also were done under conditions requiring the pluck and endurance of an explorer, as well as the devotion of an artist. Some were painted in Australian swamps, some on the fever-laden coasts of New Guinea, while frequently Mrs. Rowan was exposed to dangers and hardships which might have tested the powers of the strongest man. Some of the rarest specimens were named and classified by Sir Ferdinand von Mueller and Sir Joseph Hooker, the celebrated botanists, who, together with other scientists and artists, agree in regarding this collection as unique in its value and completeness.

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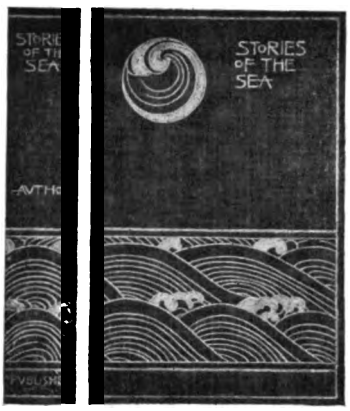
"The late development of photography as a fine art has opened a new field to art students, and makes the exhibition from February 24 to March 8 of 'Original Photographs of Figures and Landscapes, by Mr. Clarence H. White of Newark, Ohio,' very interesting. Mr. White's technique is very strong, and his pictorial effects often remarkable, many of his works being fine in line and mass, as well as in poetic suggestiveness. It is said that Mr. White is employed at business regularly, and does the most of this work mornings and evenings, thus using a light generally supposed to be impracticable, but which, in his hands, produces effects of unusual piquancy and beauty. With such mastery of technique as Mr. White possesses, the way is open for him to more boldly originate and carry out his personal conceptions and schemes of arrangement.



COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

"'Pictures Made in Japan, by Joseph Lindon Smith,' remained in the gallery from March 19 to April 5. Recalling the peculiar interest and beauty of an exhibition in 1901 of 'color-studies from ancient and mediaeval works of art,' by Mr. Smith, one is prepared to expect a like treatment of the far more unfamiliar Japanese sculptures. But, besides being unfamiliar, the Japanese work is so totally different in spirit and aim from that derived from the Greek that, before it can be appreciated, it is necessary to recall that the sculptor wrought mainly for the expression of moral or religious ideas and attributes instead of beauty, or even material facts. With this in mind, it is not so hard to see in the Dai-Butsu of Kamakura, that colossal seated figure, an impersonation of the idea of calmness, benevolence, and mercy. This immense bronze, 50 feet high, was modeled and cast by Ono Goroyamon. Also full of significance are the two fierce-looking Deva kings, who guard the temple Jodai-ji, at Nara. An interior of the Chion-in temple at Kyoto shows the shrine of Enko Daishi, to whom this temple is dedicated, on a stage in an open space marked off by four gilded pillars — the shrine being a gorgeous mass of gold and laquer. Two other interiors contain beautiful wall-paintings and wood-carving. Another subject is a wonderful gate — a mass of intricate

COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

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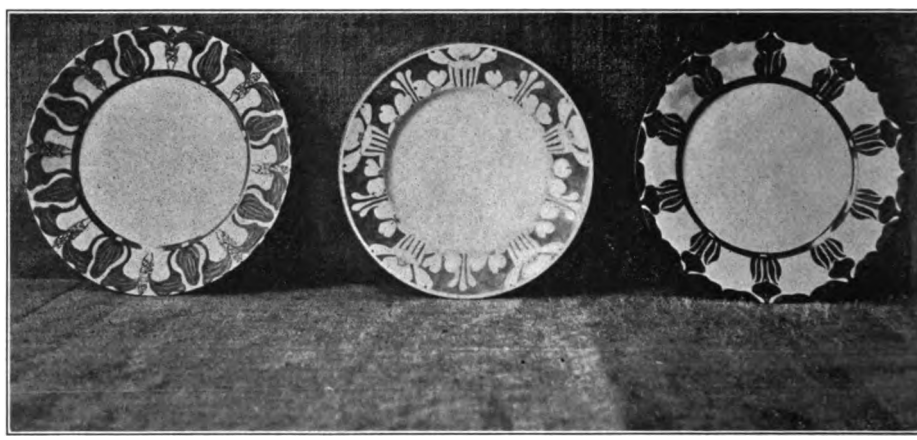
and elaborate carving and beautiful color. A Japanese wrestling match, with its ring of spectators in brilliant-hued dress, is striking; and a weird study is 'The Sacred Firewalking, Tokyo,' two gowned figures against the dark of night, advancing over what looks like live coals strewn with lumps of unlighted coal. A landscape with Japanese dwellings, the head of a young girl, and an enlargement from a print by Hokusai were interesting. In all there were fourteen works, which throw new light upon Japan and her art.

"A strong exhibition of twenty-five oil landscapes by Mr. William Wendt of Chicago followed the above. Mr. Wendt is a close student of nature, and adds to faithful and competent observation both force of conception and vigor of handling, and, in many instances, marked poetic feeling. It is but nine years since Mr. Wendt gave himself entirely to painting, and in that time he



COMPOSITION AND DESIGN.
Typical work of Normal Art and Manual Training Class.

seems to have passed through the stage of literal study of nature, and to now be finding himself in his work, i. e., to be beginning to use nature more as a means for the expression of his own poetic conceptions. While the artist's own individuality appears in all of these broadly-treated, out-of-door compositions, with their beautiful color, it is evident that in nearly all the main impulse has been supplied by nature as it was seen by him. In two of the paintings shown, 'A River of Rocks' and the large night scene facing the gallery entrance, we have something more than the study of nature — we feel the artist's own poetic impulse to be the main factor in the production of these two pictures. To students this collection is of great value, as pointing the way of careful study taken by all great men. Nature can only be used as means of expression by those who will give the time and labor necessary to thoroughly and intimately know her. The path followed by Corot, with

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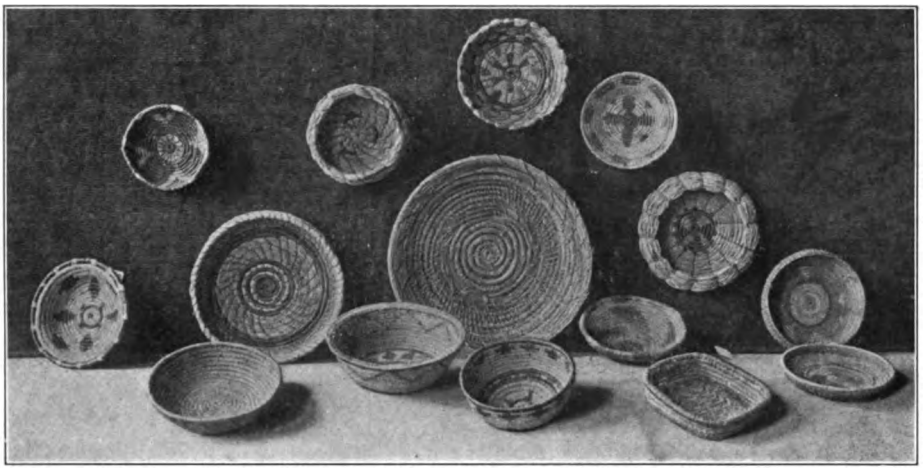
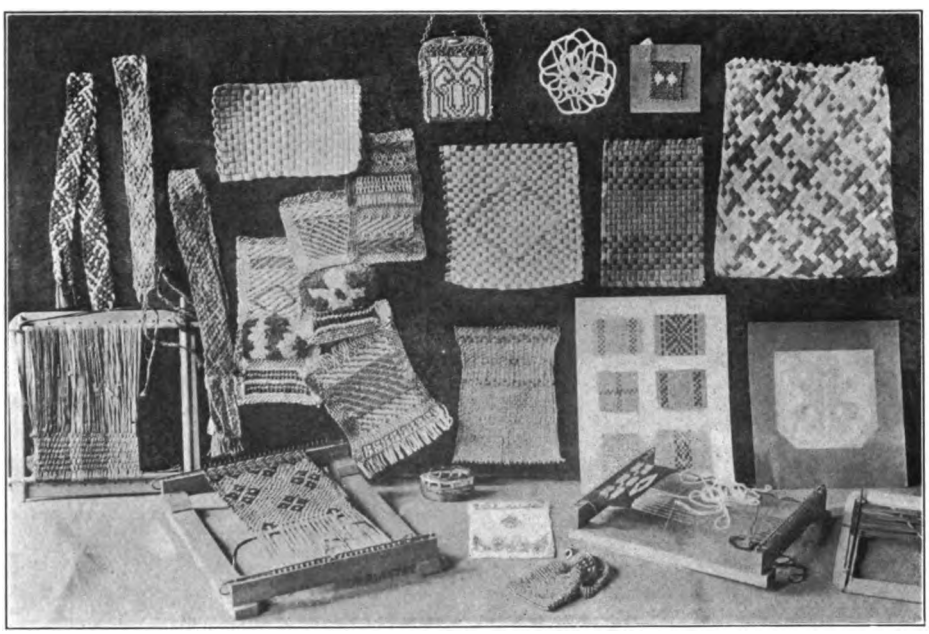


APPLIED DESIGN IN BASKETRY.
Typical work of Normal Art and Manual Training Class.

his minutely faithful early work and his later charm of breadth and poetry, is akin to the one Mr. Wendt seems to have chosen, and his future is full of promise.



APPLIED DESIGN IN WEAVING.
Typical work of Normal Art and Manual Training Class.

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APPLIED DESIGN IN ART METAL WORK.

"In the exhibition of sculptures by Mr. Hermon A. MacNeil, which, with work by Mr. George W. Breck, constituted the October exhibition, we had examples by one of the foremost of those men who in the last decade or two have gained recognition by the study of our native Indian types. That this, though a comparatively new field of art, holds rich material for the artist, is shown by the work of Mr. MacNeil. It is evident that he knows this primitive people, comprehending its modes of thought and living as only his intimate personal contact with the tribes of the West could enable him to do. To this knowledge he brings the best art training, not only of America, but of Paris and Rome, where he held the Roman Rhinehart Scholarship. Twenty-two works, comprising two large groups in the cast, eight statuettes, five busts, and seven bas-reliefs, were shown. All but four of these were from Indian types, many of which, as the small study for 'The Sun Vow,' 'Returning of the Snakes,' and 'Primitive Indian Music,' possess the living quality of the best Greek art. They picture for us the mystic frenzy of a religious rite, the pathos of a displaced and vanishing race, the rude nobility or unexpected refinement of feeling in a stolid chief, or the shy native grace of a Moqui or Ute maiden. 'The Sun Vow' is a large group, in which the old chief watches eagerly the flight of an arrow, which the tensely erect body and uplifted bow of the boy at his knee tells us has just been sent into the air. It is a noble and strong work, as is also 'Out of Chaos Came Forth Dawn.' This great symbolic composition, with its turmoil of more or less blindly striving figures, culminating in the free, clear-eyed personification at the summit, relates itself interestingly to Mr. MacNeil's study of our Indian remnant of primitive man, as typifying the evolutionary upward struggle of humanity. The design in relief for the Medal of Award of the Pan-American Exposition and the two portrait heads exemplify his treatment of less unusual subjects. While Mr. MacNeil has gained in breadth and technique from the European schools, he has preserved his own originality and spontaneity, and still remains a representative American sculptor. Although one

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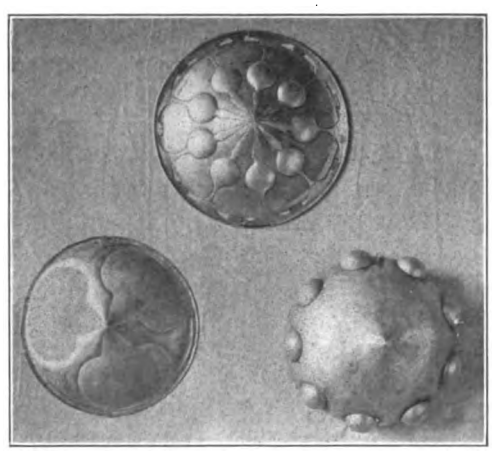
of the younger men, he has won important rank in the Expositions of Paris and Buffalo. Among the public institutions that have secured some of his larger works are the Art Institute of Chicago, the Peabody Institute of Baltimore, and Cornell University; and the silver medal of the Paris and Charleston exhibitions and the gold medal of the Pan-American Exposition at Buffalo have been awarded him. A recent commission received by him is to model an Indian group, heroic size, for the public park of Portland, Oregon.

"The copies from great mural works made by Mr. George W. Breck, whose work was shown at the same time with Mr. MacNeil's, are of much interest, as presenting to us what can not be given by the fidelity of modern photographs. His original designs for decorations show that he carries into his own work the high standard gained from this study of great masters. Mr. Breck's work has also another interest, as an illustration of the return of the late modern school of mural decorators to the old. There was a time, some twenty-five or thirty years ago, when mural decoration did not conform to the flat wall — it was, in reality, but a picture put on the wall. Now, largely following Puvis de Chavannes, decoration is more a part of the wall — not an opening through the wall to a view beyond.

"Many of the exhibits by Mr. MacNeil, and all by Mr. Breck, were executed while the artists were pursuing their studies as associate members of the American Academy of Art at Rome.

"Original Drawings by Masters of the Fifteenth, Sixteenth, and Seventeenth Centuries, forming part of the Nahl Collection of old Masters, loaned by Mr. William C. Paul of New York, were shown from October 28 to November 8, and included one hundred drawings by Murillo, Rubens, Tischbein, Raphael, Boucher, La Fage, the two Poussins, Correggio, Claude Lorraine, Franz Hals, Lemke, Verboeckhoven, and others. A mythological



APPLIED DESIGN IN ART METAL WORK.

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group by Boucher, representing Mars disarmed by Cupid, a small drawing on gray paper with white washes and a few pen lines by Nicholas Poussin, some studies of Biblical scenes in red chalk by Rubens, and a head by Franz Hals are among the most notable. The entire collection was made by members of a German family named Nahl, a descendant of which brought it to California many years ago, where it remained in his studio till his death.

"Thirty-one water-color landscapes and marines by Mr. Henry B. Snell were shown in the gallery from November 14 to December 13. The most obviously striking of anything concerning this exhibition is the astonishing achievement of expression attained in this medium. Mr. Snell is a very

APPLIED DESIGN IN POTTERY.

strong exponent of the modern movement to use water-color for close study, and for the rendering of many effects hitherto deemed possible only in oil-color. New methods of handling water-color have been developed, of which Mr. Snell has much entirely his own, and the boundary line of limitations has become movable, not to say indefinite. The first impression, therefore, on viewing this exhibition was likely to be of surprise that water-color could be made to do so much. But it was directly apparent that these technical achievements were but the means of expression for a mind of deep sympathy with nature, possessing an extraordinary sense of color, tone, atmosphere, and composition, and in an eminent degree an appreciation of the poetic aspects of ordinary nature. It is hard to point out special excellencies where there are so many. 'The Lighthouse in Moonlight' held the place of honor, and deservedly, with its ineffable radiance of tender, vibrating light and color. On the left of it 'A Passing Sail' was exquisite in poetic suggestiveness. Opposite 'The Lighthouse' was 'H. M. Ship Renown,' full of beautiful color, and at the right-hand end 'Pettes Cove, Grand Manan,' was exquisite in sunny atmospheric tones. Examples of fullness of color are 'Old Ice-House,'

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a small study, and 'Nightfall,' a steamer ploughing her way through the ocean. 'Peace and War' and 'Path to the Lighthouse' are poetic and moonlight night studies, and 'The Cove,' near 'H. M. Ship Renown,' is very satisfying in tone, color, and atmosphere.

"An exhibition of landscapes and portraits by Robert Henri followed Mr. Snell's, and is being unpacked to place in the gallery as this goes to press. The circular issued by the Institute speaks as follows:

"'Many of the paintings by Mr. Robert Henri shown in the gallery may not be familiar to all visitors, as the American public has but lately been accorded the privilege of seeing a full exhibition of the artist's paintings. Mr. Henri has quite recently made New York his permanent residence after spending many years in Paris, Italy, and Spain. The Salon and Champs de Mars exhibitions have contained many of his canvasses, one of which, "La Neige," was purchased from the Salon of 1899 by the French Government for the Gallery of the Luxembourg. This official recognition by France is a most important tribute to the artist's work.

"'Through long years of careful observation of nature and keen artistic appreciation, Mr. Henri has acquired a vocabulary of art that enables him to express his thoughts in simple and yet eloquent terms, eliminating details and concentrating upon the vital and philosophical truths that nature discloses to those who penetrate below the surface of things. His works are full of the spirit of life, of the great struggle of nature, and the power of moving forces. To him nature is life, and art serves its true purpose only as it expresses the eternal truths of existence and exalts the soul with the beauty of nature and of noble action and living. As in the "Hill Top," "Spring in the Forest of Fontainebleau," and "The March Wind," he conveys to the sympathetic observer a clear vision of some appeal, some rare moment, or emotion of nature, that, though fleeting in reality, leaves a sense of permanency in thought and impression. All his canvasses have the sparkle and vitality of living motion. His portraits possess personality and a vigor and a directness that are exhilarating. Especially are these qualities present in the "Figure of a Girl," which is full of the buoyancy of youth, elasticity of motion, vivacity, and the fresh, clear beauty of glowing health. Technically, Mr. Henri's work is broad, free, and direct in treatment, showing great facility, a full knowledge of principles, and a use of color that is fearless and yet restrained.'"

Reference has been made in the beginning of this report to the very large number of students who, receiving their education at Pratt Institute, have gone out into the many cities of the country to supervise art and industrial work. It is not possible to meet the demand for well-trained teachers. Following this report is a list of students who have received appointments since the last graduation. Respectfully submitted,

Walter S. Perry,
Director Department of Fine Arts.

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Positions Secured by Students of Normal Art and Normal Art and Manual Training Classes since June, 1902.

Miss Anna Bier, returns to position as supervisor of Drawing, Greenville, Ohio.
Miss Ethel N. Buttles, instructor of Manual Training and Drawing, the Winona Agricultural and Technical Institute, Winona Lake, Ind.
Miss Marian F. Butts, teacher of Drawing, Malone, N. Y.
Mrs. Anna J. Carson, teacher of Manual Training and Drawing, Thurston Prep. School, Pittsburg.
Miss Mary W. Clarke, supervisor of Drawing, Lansing, Mich.
Mrs. Ella Colbath, instructor in Drawing, State Normal School, Oneonta, N. Y.
Miss Maudilee Cooper, instructor in Manual Training and Sewing, Locust Valley, L. I.
Miss Adelaide Deming, instructor in Drawing in the Department of Domestic Science and in the Architectural class, Department of Fine Arts, Pratt Institute.
Miss Lillian Fliege, supervisor of Drawing, Calumet, Mich.
Miss Gertrude Gardner, instructor in Drawing, Palmer College, Le Grand, Iowa.
Miss Maude M. Gillette, supervisor of Drawing, Bradford, Pa.
Miss Alma L. Hamilton, teacher of Drawing and Manual Training, Tidioute, Pa.
Miss Sarah F. Hendricks, instructor in Drawing, High School, Kingston, N. Y.
Miss Mary L. Herrick, substitute teacher of Drawing, South High School, Minneapolis, Minn.
Miss Mary B. Hyde, instructor in Elementary Manual Training, primary grades, Manual Training Department, Teachers' College, New York.
Miss Elizabeth A. Kempton, instructor in Drawing, Mrs. Oppenheimer's School, New York.
Mr. Forrest E. Mann, instructor in Applied Design, Arts and Crafts Society, Dayton, Ohio.
Mr. Alexis Many, instructor in Design, Boys' Manual Training School, Washington, D. C.
Miss May B. Moulton, supervisor of Drawing, Aurora, Ill.
Miss Lucy J. Munson, teacher of Drawing and Manual Training, Miller School, Albemarle, Va.
Miss Lena M. Newcastle, instructor in Drawing, High School, New Bedford, Mass.
Miss Bessie F. Palmer, assistant teacher of Drawing, Hartford, Conn.
Miss Frances B. Pierce, teacher of Drawing and Elementary Manual Training, High School, Lockport, N. Y.
Miss Christine Pollok, supervisor of Drawing, Middletown, N. Y.
Miss Clara P. Reynolds, assistant instructor in Manual Training, Utica, N. Y.
Miss Louise M. Rowe, teacher of Drawing, Indiana Kindergarten School, Indianapolis, Ind.
Mr. Frank Sanford, instructor in Manual Training in seventh and eighth grades, Oak Park, Ill.
Miss Louise E. Snow, teacher of Handicraft, Boys' Club, Erie, Pa.
Miss Beulah E. Stevenson, instructor in Drawing, State Normal School, Bloomsburg, Pa.
Mr. Edward H. Thornhill, supervisor of Manual Training, Utica, N. Y.
Miss Susa Whedon, instructor in Drawing, Girls' High School, New York city.
Mr. Walter C. White, instructor in Manual Training, Durham, N. C.
Miss Elizabeth Wightman, returns to position of teacher of Drawing, Mt. Pleasant, Mich.
Miss Alice E. Woodman, supervisor of Drawing, Natchitoches, La.
The following students taught in the New York Summer Schools: Miss Florence Abels, Miss Ada Apgar, Miss Ethel D. Baker, Miss Marie Boggs, Miss Mary E. Brill, Miss Ethel N. Buttles, Miss Elizabeth Clark, Miss Marion H. Cook, Miss Cornelia Cowles, Mr. Elbert F. Eastmond, Miss Helen Gaston, Miss Mary S. Halladay, Miss Julia L. Halladay, Miss Appalonia Lewis, Miss Helena C. Jensen, Miss Ina Johnson, Miss Rena B. Johnson, Miss Elizabeth Kempton, Miss Jane Kenyon, Miss Susie Kingsland, Miss Genevieve Kittredge, Mr. Forrest E. Mann, Mr. Alexis B. Many, Mr. John Messenger, Mr. Lester Misner, Miss Lucy J. Munson, Miss Nell B. Murphy, Miss Eunice Nott, Miss Laura Ripley, Miss Mabel Rodebaugh, Miss Ernestine V. Ruprecht, Miss Louise Snow, Miss Edna Walker, Miss Lucy Walker, Miss Alice Warner, Miss Elizabeth Weiffenbach, Mr. Walter White, Miss Belle Williams.

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Department Notes.

IN the annual exhibition of the Water-color Club this year Mr. Hugo Froehlich exhibited three very strong paintings, and Mrs. Ava M. Froehlich two, all well placed. Miss Anna S. Fisher had three hung, two landscapes and a study of poppies; and Miss Adelaide Deming had four studies of still life and flowers on the walls.

Mr. Frederic Baker, formerly a member of the Regular Art class, but for the last seven years a student in Paris under Courtois, received at last spring's Paris Salon most signal honors for his picture, "Christ in the Garden of Gethsemane." The New York *Herald* says: "It was one of three hundred canvasses selected by the jury from a total of more than three thousand offered for acceptance, and was not only hung upon the line, in itself an unusual honor for a first picture, but to the surprise of the artist, who was not aware that his name had been proposed, secured his election as an associate of the Societé Nationale des Beauz Arts, an honor which exempts his work from jury decision in the future and assures his unquestioned admission to each Salon. This honor is one seldom accorded to foreigners, and this is the first instance of its having been awarded to an artist on the strength of his first Salon exhibit. The Paris press has been most laudatory in its praise of the work."

It was by Coutois' advice that Mr. Baker, year after year, refrained from offering work to the Salon, the famous French portrait and figure painter foreseeing the promise in his pupil's work, and insisting that he should send nothing until he had achieved a picture which would establish his reputation at once. The result has fully justified the wisdom of the master, and may well serve as a lesson to impatient or discouraged beginners.

Miss Mary Greene, a graduate of the Normal Art class, and since for several years a student in Paris, received a second medal at the last Paris Salon for her picture.

The Brooklyn Chapter of the American Institute of Architects on February 6 invited competitive designs for the cover of the catalogue of the Architectural Exhibition to be held during March, no restriction being expressed as to competitors. Three prizes of $50, $25, and $10 were offered, and the first and second were awarded respectively to Miss Elizabeth Brainerd Bonta of the Second-year Design class, and Miss Beulah Stevenson of the Second-year Normal class. All drawings submitted in competition were shown at that exhibition of the Chapter. In consideration of the fact that this competition was general and open to art schools and professional designers, it is a source of much satisfaction that the first and second prizes were taken by Pratt Institute art students.

Out of twelve prizes offered last fall by Mr. Bunkio Matsuki, four, in-

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cluding the first, were awarded to pupils of the Springfield, Massachusetts, High School for studies in water-color. This subject is under the instruction of Miss Mabel E. Stock, a graduate of the Normal Course in 1900.

Mr. Walter Scott Perry, M.A., Director of the Department of Fine Arts, and Miss Clara Louise Fairfield were married July 7. Mr. and Mrs. Perry spent the summer in Northern Italy and in the Dolomite and Swiss Alps. They returned September 22, and on December 23 sail again from New York by the steamer Lombardia, to be absent for the remainder of the Institute year, visiting Egypt, India, a few places in China, and spending considerable time in Japan. Here Mr. Perry hopes to see some art collections and museums not ordinarily accessible to visitors.

Mr. Willard D. Paddock, now an instructor in cast and life-drawing in this department, and previous to his study of some years in Paris a student in the Regular Art class, and Miss Charlotte E. Smith were married on September 17 last. Mr. and Mrs. Paddock are now living in New York.

Mr. Douglass McClees of the Regular Art class and Miss Blanche Wadsworth of the Costume Design class, were married last year, and are living in the Studio Building on Vanderbilt Avenue.

Mr. H. Freeman, also of the Regular Art class, and Miss Agnes Haight of the Costume Design class were married in July, and will probably make their home in New York city.

A number of the graduates of the department met at the Institute on the evening of June 11, 1902, and formed an Alumni Association, the officers being: President, Herbert B. Wilkinson; Vice-President, Maud S. Calkins; Secretary, Florence E. Storer; Treasurer, Robert Polhemus. On Tuesday evening, June 17, the first annual dinner of the Association was given in the Institute restaurant, Miss Calkins presiding. The after-dinner speeches by Mr. Perry, Miss Weeks, Miss Quinn, Miss Simmons, Miss McSherry, Miss Hyde, Mr. Misner, and Mr. Polhemus were especially felicitous, and a most enjoyable evening made an auspicious beginning for the new organization.

A very pleasant reception and dance was given by the Second-year Normal class to the other members of the department on October 18, and the First-year Design class had a Hallowe'en spread October 31, between 4 and 6 o'clock, in the Music Room, which was very enjoyable to all concerned.

A new branch of the Art Metal work under the instruction of Mr. Aranyi, that of enameling on metals, has been begun. Each student commences by making three test-plates, one each of silver, copper, and gold, since the color fires differently on different metals. The colors, which are supplied as lumps of a very fusible colored glass, are ground fine, mixed to a paste, and arranged in numbered spaces on these plates. When fired they form a guide as to the final appearance of the colors, which often change greatly in firing. In a case by the window of the fourth-floor entrance hall may be seen fifteen stages of the process of enameling, from the drawing of the design on the metal to the final gold-plating of the exposed metal parts.

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A class in Applied Design for students in Art Metal, Wood-carving, and Leather-work has been formed, meeting Friday afternoons, under the instruction of Mr. Froehlich. These students have work in their respective subjects as above five mornings, in wax-modeling with Mr. MacNeil three afternoons, and with Mr. Froehlich in designing on Friday afternoons.

Mr. Ralph H. Johonnot and Mr. Edward John Thatcher, Jr., taught drawing and manual training in Dr. C. Hanford Henderson's summer school for boys during last summer, and Mr. Johonnot, with Miss Grace Cornell, assisted Mr. Arthur W. Dow in his summer school at Ipswich, Massachusetts. Mr. Johonnot is this year, as last, assisting Mr. Dow in his classes at Pratt Institute.

Miss Mary Langtry and Miss Eunice E. Nott are working part time on illustrative work for the Prang Educational Company, and using the rest of their time for post-graduate work at Pratt Institute.

Among other graduates of the Design class who have returned to Pratt for post-graduate work are Miss Elizabeth Bonta, Miss Helen Michel, Mr. Henry S. Michie, Miss Mary W. Peckham, Miss Amy L. Bunnell, Mr. E. R. Moulton, and Miss Mary Runyon.

Mr. LaMont A. Warner has for some time held a very satisfactory position as designer with the Gustave Stickley Company, manufacturers of artistic furniture, Syracuse, New York.

Mr. Herbert B. Wilkinson is with Duryea & Potter, decorators, of New York city.

Miss Helen Gaston and Mr. William A. Hartman have positions with Louis C. Tiffany of New York city.

Miss Octavia Conant is working at her home, Greenfield, Massachusetts, in basketry and illustrating, and also has joined the local Arts and Crafts Society.

Mr. Fred M. Hadley, after working in the summer with Herter Brothers of New York, interior decorators, decided that some knowledge of architecture would advance his work as a decorator, and is therefore at present with Hopkins & Koen of New York.

Of those graduating from the course in Architecture last June, Mr. Walter I. Bell has a position with Ernest Flagg of New York city; Mr. George W. Webber is now instructor of modeling and wood-carving in the Normal Training School of Dayton, Ohio; Mr. John D. Montfort is with the Manhattan Brass Company of Glen Cove, New York; and Mr. Henry M. Sackrider is with John H. Parker & Company, general contractors, New York.

Of graduates of the Regular Art class, Mr. John C. Brommer is taking the Normal Art Course and Miss Florence G. Storer is in the illustration class. Miss Josephine W. Barnard has a studio in Buffalo, where she has been very successful. Mr. George E. Koch is now giving all his time to illustration for Prang & Company, and Miss Julia C. Pratt has recently taken a place with the same firm, also for illustration. Miss Clara M. Goodman has opened a studio in Hartford, Connecticut.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

An Institute, with Day and Evening Sessions, offering complete courses in Art, Science, and Technical Branches.

High School — A four-year course for boys and girls, combining drawing and manual work with the usual academic studies of a high school.

Department of Fine Arts — Classes in freehand and architectural drawing, clay modelling, wood-carving, design; regular art course; art metal course; normal course for training of teachers; lecture course.

Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology — Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens — A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

Department of Libraries — *Free Library, Reading-room, and Reference-room.* School of library training, 1st and 2d year courses.

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For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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IN MEMORIAM.

Miss Jennie A. Plimpton, a graduate of the Normal class of 1898, died of scarlet fever after an illness of only four days. She was a valued and efficient teacher of drawing in the public schools of Hartford, Connecticut, where she leaves many friends, as well as at the Institute.

Mr. Herbert Burrowes of Keysport, New Jersey, a graduate of the Course in Architecture in 1899, lost his life on May 19 by jumping from his train to avoid a threatened collision. Mr. Burrowes was a capable and earnest student, attractive and manly in character, and made many friends at the Institute, to whom his sudden death was sad news. He held a position with D. Barber of New York.

Arthur S. Evans, a faithful and promising student in the Regular Art class for the spring term, was drowned while on his vacation early last summer.

ART STUDENTS' FUND ASSOCIATION.

The annual Christmas Fair of the Art Students' Fund Association, which is the Art Department chapter of the Neighborship Association, took place on the afternoon and evening of December 13 in the restaurant and Music Room of the Institute, the sale tables and refreshments being in the former and the latter being given up to the evening's dancing. In spite of disagreeable weather the places were crowded. The restaurant was gay with Japanese lanterns overhead, and booths for the sale of pencil, pastel, and water-color sketches, photographs, pyrography, leather-work, baskets, cake, confectionery, posters, Pratt banners, and many other articles. In the space under the main entrance, which was curtained off, lighted, and provided with a stage and chairs for the occasion, a show went on, most entertaining, to judge from the peals of laughter issuing therefrom. Silhouettes of the department instructors adorned the walls, small reproductions of the same being sold at a table. One booth was devoted to fake "photographs," and at another a veiled lady told fortunes for the traditional palm-crossing.

The Architectural class had constructed a very artistic Italian pergola, with white cheesecloth-covered pillars and garlands of Christmas greens, to which they gave the name of the "T-square Tavern," and where they dispensed refreshments during the afternoon and evening. Dancing in the Music Room, also decorated for the evening, closed an occasion delightful socially, and which will be remembered as one in which all, with the utmost generosity and good-will, worked together for the common purpose, even some students of another department lending their efforts to carry out the programme.

The financial results were also highly gratifying, the net receipts at the present writing being two hundred and sixty dollars, and expected to reach at least two hundred and ninety. Of this, one hundred and fifty dollars will be needed to complete the second of the Association's Scholarships in memory of the Founder, and the remainder, with sixty-three dollars of membership dues, will begin a fund for the third Scholarship.

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HIGH SCHOOL NUMBER

PRATT INSTITUTE MONTHLY

February, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI FEBRUARY, 1903 Number 4

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume XI FEBRUARY, 1903 Number 4

Annual Report Of the High School Department.

TO THE TRUSTEES, GENTLEMEN:

OF the several unusually interesting and fascinating pieces of work being done in the department, there are three which I wish to bring to your attention in this, my final report as Director of the High School.

LUTHER HALSEY GULICK.

INDUSTRIAL HISTORY.

The Industrial History comes five times a week in the first year of the High School course and precedes the more formal study of history during the remaining years, which includes the usual topics of Greek and Roman, English, and American History. Its purpose is to awaken a deep and genuine interest in history; to show the young people how history is made; and to show them that history is the story of *life* closely related to their own lives. The Industrial History also precedes the regular work in English, as it is felt that there should be a considerable amount of practice in writing under wise guidance and, under conditions when it is absolutely certain that the pupil will have something definite to say in connection with his other work, before he begins his more critical study in literature, composition, and rhetoric.—THE EDITORS.

A GLANCE into Room 20 in the High School building during any part of the past week would have revealed strange sights to the uninitiated. Before school, during class, at noon, and after school one might have seen the room filled to overflowing with an intent throng of girls and boys absorbed in the making of baskets—and this was an incidental part of the work in industrial history, a feature that grew out from the clamor on the part of the students to really *do* the thing that primitive people did. They had been studying about the origin and history of basketry, one of the primitive industries of the race—one of the factors in the sum-total of human achievements that has helped man to conquer his material environment and subdue Nature to his uses. No amount of reading could give the student the degree of appreciation for the wonderful beauty in the basketry of the aborigines of our own continent that the *making* of one real basket gave them. One of the boys who is still working on his basket told me recently, "Ever since I began my basket I have *seen* so many baskets, and they are all so interesting to me. I take up every one I see now and examine it, to see if I can make it."

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In the gratification of this desire for the basket, enthusiasm has been augmented rather than satisfied. This natural impulse to "find out how" is the one that has fore-shadowed every step of industrial progress in the history of the race. It must be fostered.

When a stranger visits my class-room he asks what period of history we take up with our freshman class. When I say that it is *industrial history*, he stops to consider. After a time he invariably asks, "Just what do you *mean* by industrial history?" It is to answer this question and its companion query, "Just what do you *do* in industrial history?" that this report is made.

I do not wonder that people are bewildered by the new term, because all of our preconceived ideas on the subject of high school history have been well rooted. For a long time the subject-matter for our texts began with the migration of people into the peninsula of Greece. Within comparatively recent years a few chapters have been prefixed to the subject, giving the history of the Egyptians, Chaldeans, and Assyrians. All of it, however, has been, generally speaking, *political* in its development. Even such excellent histories as those of Dr. Montgomery devote the bulk of material to the rise and fall of political organizations, reserving only a few paragraphs in fine print, at the end of each chapter, to the psychic development of the people.

Industrial history began when man came down from dwelling on platforms in trees to live upon the earth, and began to make use of his intelligence to supply his needs. Industrial history may be regarded as a history of the evolution of human needs.

Hunger was among the most fundamental needs of the race. To supply this need all the industries of husbandry came into being. "The desire for food, the sense of fatigue and the desire for rest, the pain of monotony and the desire for change, the desire for warm or cool shelter, of refuge from storm, the sense of danger and the desire for safety from savage beasts or men, are the stimuli that have incited men in all ages," * and will ever continue to incite them to industrial activity. And it is by means of progressive conquests of this material environment in supplying his needs that man's spirit has become increasingly free and decreasingly dominated by material things.

It is through knowledge of these needs of our predecessors and their ways of meeting their conditions through the long line of racial evolution that we can best appreciate the institutions of modern times, our superb industrial achievements — in fact, *ourselves* and all the conditions of our cultural, industrial, and political environment. Our present conditions of government and of religion cannot be understood except in the light of the fundamental economic and industrial elements which conditioned and governed man's early development.

"When we compare the cultures of different people and of different times, we gain the best possible understanding of our own time and our own sur-

*Otis T. Mason. Origins of invention; p. 18.

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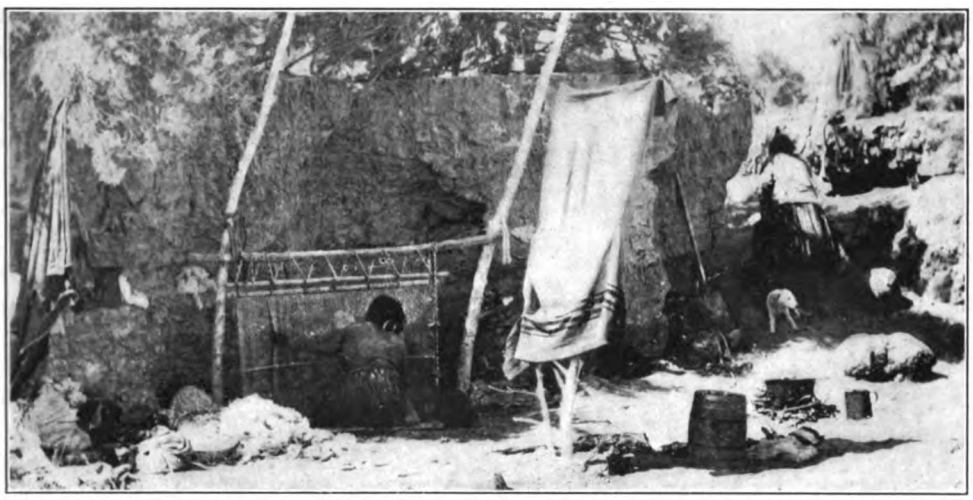
roundings. Some unmeaning ornament upon a vase may become pregnant with meaning when compared with the crude pottery of some rude tribe; a strange custom in our society may become illuminated when we learn the social ideas of a lower people; some hampering superstition finds significance and loses force when we look into the religious notions of a savage." *



THE HOGAN, OR HOUSE, OF THE NAVAJO ON THE MESA, SHOWING THE WOMAN AT WORK ON A BLANKET.

(Printed through the courtesy of Mr. George H. Pepper of the Hyde Exploring Expedition.)

The modern dwelling, the most palatial that we can conceive, had for its ancestor the cave or rude shelter of rocks or boughs; in it dwelt man and his family after they came down from their arboreal habitat. The man that lived in the cave was the predecessor of the man that now lives in the palace. In time, the ambitious, progressive man became dissatisfied with his rock shelter,—it ceased to satisfy his needs,—so he became an inventor or an imitator, and he burrowed him an underground house, which gave better protection for his family, and thus enabled him to wander further from home in search of food for them. When the underground abode ceased to satisfy his needs he learned the advantage of living in a community, and he built his dwelling near that of the neighbor he had distrusted in the past. In this sense the history of the dwelling-house very closely involves the history of the man.

So it is with the history of agriculture and the implements employed. The steam-plough, the great achievement of modern day, is the lineal descendant of the digging-stick invented by primitive woman to aid her in harvesting the earliest crops, the roots that Nature planted and cultivated for her.

* Frederick Starr. First steps in human progress; p. 291.

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The beautiful textiles with which we surround ourselves in our clothing and in the draperies of our houses are the legacy, the full-fruits, of generations and generations of forebears, each improving upon the creations of the preceding generation as his growing needs made it necessary. The most exquisite fabric of our age had for its ancestor the primitive fabric woven of bark or grass. Professor Mason says: "The textile art is older than the human species. For not only spiders and many caterpillars drew out ex-

A VETERAN IN THE ART OF BLANKET-MAKING AMONG THE NAVAJOS.

(Printed through the courtesy of Mr. George H. Pepper of the Hyde Exploring Expedition.)

tremely fine threads, but birds wove nests long before man's advent on earth. And, most significant of all, in tropical lands especially, trees and plants fabricated cloth, which men wore from time immemorial, and on it they have also preserved their thoughts. There is no reason to doubt that the very first women were weavers of a crude kind, and that the textile art has been with us always in one form or another." *

Woven into the warp and woof of a Navajo blanket is the history of the needs, the struggles, the inventions, the achievements of many generations of industrious, honest people. Their beautiful industry lifts them far above their squalid surroundings. When we come to know the Navajo through his splendid industrial achievement, we can no longer call him a "pagan Indian," as Mr. Ernest T. Seton speaks of him.

*Otis T. Mason. Origins of invention; p. 224.

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I will quote Mr. George Wharton James's thought on this subject in connection with basketry: "To the uninitiated a fine Indian basket may possess a few exterior attractions, such as shapely form, delicate color, and harmonious design, but anything further he cannot see. On the other hand, the initiated sees a work of love; a striving after the ideal; a reverent propitiation of supernatural powers, good or evil; a nation's art expression; a people's inner life of poetry, art, religion; and thus he comes to a closer knowledge of the people it represents, a deeper sympathy with them, a fuller recognition of the oneness of human life through so many and diverse manifestations. Fine baskets, to the older Indian women, were their poems, their paintings, their sculpture, their cathedrals, their music; and the civilized world is just learning the first lessons of the aboriginal melodies and harmonies in these wicker-work master-pieces." *

The knowledge of man, then, through his *works*, enables us the better to appreciate our fellowman to-day, whether he is still in the low savage condition of the Bushman of Australia, or has passed on in the scale of evolution, and now stands, the highest exponent of Anglo-Saxon culture. We owe our present status in life to the struggles of our predecessors in freeing the human soul from the shackles of helplessness and ignorance, and it seems that the very natural way of preparing people for life's work is to give them a knowledge of, and appreciation for, the development of their own kind. This is the aim of industrial history.

In teaching the subject of industrial history in the freshman year of high school, our subject-matter is grouped under a series of topics, and these groups are arranged in the order of their importance to the needs of the race. This method of presenting the subject was planned by George E. Dawson, Ph.D., whose work in Springfield was well known to Dr. Luther H. Gulick. After Dr. Gulick became Director of the Pratt Institute High School, he brought Dr. Dawson's work to the attention of the Board of Trustees of the Institute and secured his appointment to initiate the course here.

First group: The origin and history of typical fruits, vegetables, and cereals used by man in the progressive stages of development from savagery to civilization.

Second group: The origin and history of typical tools for cultivating, harvesting, threshing, grinding.

Third group: The extent to which savages, barbarians, and civilized people have domesticated animals. The origin and history of typical flesh-producing, milk-producing, pack- and draft-animals.

Fourth group: The origin and history of basketry, pottery, fire and cooking, spinning and weaving, sewing.

Fifth group: The origin and history of the culture of cotton, flax, silk, and wool, and the treatment of animal skins.

Sixth group: The history of man's dress, woman's dress, foot-wear, head-wear, ornaments.

Seventh group: The history of the dwelling-house, and of the bed, chair, and stove.

*George Wharton James. Indian basketry; p. 16.

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BASKETS.

Eighth group: The origin and history of fuel industries, wood-working, stone-working, metal-working, brick manufacture, building, artificial lighting.

Ninth group: The history of inventions from early to modern times, not included in the groups mentioned above.

This work covers two terms; the third term is spent on the specific industries of the United States.

First, the *extractive* industries: the wheat, corn, rice, potato, apple, peach, orange, grape, dairy, cattle, wool, cotton, silk, lumber, coal, petroleum, and mining industries.

Second, the *transforming* industries: flour, butter and cheese, manufactures, house-building, ship-building, railroad construction.

The work is done almost entirely by the individual method. In the outlines of work given above, the subjects in each of the major groups are related. Each student works out one subject in each group. When a subject is assigned him, he is given a mimeographed list of references, of which the following one will serve as an illustration:

The origin and history of tools for grinding grain.

References:

1. Mason's Woman's share in primitive culture; pp. 18-22, 142, 78.
2. Nadaillac's Prehistoric times; pp. 51, 296.
3. Thompson's The land and the book. Volume on Southern Palestine and Jerusalem; pp. 107, 108.
4. Bolles's Industrial history of the United States; p. 78 (picture).
5. Joly's Man before metals; p. 248.
6. Smithsonian report for 1899; pp. 423-446 (pictures).
7. Schweinfurth's Heart of Africa; vol. II, p. 424.
8. Hittell's Mankind in ancient times; vol. I, pp. 73-74.

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AN INDIAN WOMAN OF THE THOMPSON RIVER REGION, BRITISH COLUMBIA, STILL USING THE DIGGING-STICK FOR DIGGING ROOTS.

(Printed from a photograph furnished by the American Museum of Natural History.)

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9. Deniker's Races of man; pp. 155-157.
10. Ratzel's History of mankind; vol. II, pp. 383, 384.

When the reference work on one group of topics is finished the papers are read before the class, each student presenting to the class the results of his investigation in the original works of the greatest authorities on the subject. The practice of going to original sources for information is in itself a *moral* practice. This general exchange of subject-matter, and the reviews incident to examinations, are the only features of real class-work that we have, the rest being individual.

A certain amount of work is assigned per term as a minimum requirement. It is possible for the slowest workers to satisfy this requirement, but it does not hold back the student with greater power. Each one may travel his own pace. Some students are now doing (January 21) the work assigned in the minimum requirement for the last week of February.

It would be impossible to carry out this plan of work were it not for the unusually helpful assistance which the Pratt Institute Free Library renders so courteously. The Library has compiled many lists of references for our use, and they furnish us with the reference books to be used in the class-room, or they reserve them for us in the library, as we prefer.

In explaining how the different topics may be illuminated for the clear understanding of the students, I can make use of a few of the things we have done this year. In the same proportion that the Pratt Institute Free Library has made our research work possible, we are indebted to the Museum of Natural History in New York and the National Museum in Washington for illustrative material. Without the Library and without the Museums we could have done little.

While studying the origin and history of fire and the primitive ways of producing it artificially, the boys readily constructed the simple appliances, the plough and drill used by our predecessors before they knew the flint and steel. Notwithstanding the fact that they had the specific directions of Dr. Hough,* and had examined the real Indian drills which Mr. Harlan I. Smith so kindly gathered together for us at the Museum of Natural History, their efforts to get fire all ended in smoke. While in Washington recently I had the rare fortune to be able to spend a morning in Dr. Hough's laboratory, where he taught me the art to bring back to the boys, and also gave us an equipment of sticks, cotton-wood, yucca, bamboo—rare treasures. The ability to get the spark is now possible, but still a great accomplishment, for it is difficult to acquire the lost knack.

Ninety members of the present class have visited the Museum of Natural History to study the fire-implements, cooking utensils, basketry, and dwellings of the savages of our continent. Mr. Smith has given us most valuable assistance by gathering together for us objects of which we would otherwise have known nothing.

*Report of United States National Museum for 1888.

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In studying the history of spinning and weaving, we had for purposes of demonstration the models of looms lent us by the Domestic Art and Domestic Science departments. Some of the boys are now making looms under Mr. Green's guidance, and the girls are waiting for the opportunity to weave materials as soon as the looms are ready. It surprised me greatly to learn, when the subject was first opened, that not more than twelve of the ninety pupils knew that their forebears, not many generations removed, had spun and woven their own clothes. One of the looms under construction is to be a model of the loom of colonial times; one is being constructed on original lines, designed to weave silk; one is to be a simple loom of regular size to weave fabric one yard in width.

The following essays are illustrative of the work done by the students. They are printed without correction of subject-matter:

THE ORIGIN AND HISTORY OF TOOLS FOR GRINDING.

To woman we owe the start of the grinding apparatus, as to woman we owe the starting of nearly everything else in the course of human progress.

It was probably by accident that she discovered that the crushed grain served as a more delicate food than the whole kernels, so she set about to crush her grain for food. She first pounded it between two stones, but this proved a slow and tiresome way, so she decided to invent another method. The material result of her thinking was the mortar and pestle. This was used for ages until civilization was fairly well advanced. There were two distinct classes of mortar and pestle. One was the wooden mortar with the wooden pestle; the other the stone mortar with the stone pestle. Many of the more or less uncivilized races to-day use the mortar and pestle. In Asia they are in constant use for hulling rice and bruising food. In Africa mortars are used wherever material can be obtained, especially among the heathen tribes of tropical Africa. In the old plantation days in the United States every farm was equipped with a mortar and pestle.

Mason's Origins of inventions.

Another primitive method extensively used was the method by which the grain was ground between two slabs of hard porous rock. In Philistia the grain is ground in this manner. This method later developed into the stone cylinder turned on a pivot over a slab of rock. From remains dug from the earth, we find that the primitive miller used several other devices for reducing grain to flour, namely:

Mason's Origins of inventions.

1. A hollowed log with a wooden pestle.
2. A hollowed log with a stone pestle.
3. A flat table of stone, operated upon by a rubbing-stone or muller.
4. A round stone, pierced through the middle, turned upon another stone by means of a handle passed through the hole.

Deniker's Races of man.

The most primitive devices of the present day are found among the Bushmen of Africa and the Arabs.

In Pompeii the mannaria or hand-mill was used. "The base was a cylindrical stone, some five feet in diameter and one in height," says the Harper's Dictionary, "out of which arose a conical projection two feet high, forming the lower mill-stone. This had an iron pivot fastened at the top. The outer stone was formed in the shape of an hour-glass, so that one-half fitted like a cap upon the conical surface of the lower stone, receiving the iron pivot mentioned above in a socket made in the centre of the narrowest part between the two halves. The grain was poured into the hollow cup at the top and ran gradually down through holes pierced in it to the solid cone beneath, where it was ground to flour between the outer surface of the cone and the inner surface of the cap."

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In the remains of the ancient lake dwellings of Switzerland are found corn-crushers of hard sandstone, about the size of a man's fist. The grain was ground by rubbing a round stone on their hollowed surface. Rude water-mills and hand-mills, dating as far back as Ethelbert, King of Kent, have been used up to recent times in Great Britain, Ireland, and Scotland. From the old-fashioned water or wind-mill to the modern mill is but a short step, as the modern mill has comparatively few essential parts, but more delicate mechanism.

Britannica Encyclopædia.

Hence from time unknown man has used animals, water, wind, and human strength to grind his grain, but now steam, mightier than them all, has taken their place, and will probably carry on the work for many ages to come. *Lawrence Ewing.*

HOW MAN HAS IMPROVED PLANTS BY CULTIVATION.

In order to understand the improvement man has made in cultivating plants we must look first to the beginnings of agriculture.

It was woman who began the cultivation of plants. In wandering about for roots and fruits she came upon plants noted for their good promise. She protected them by placing sticks around; that these plants might receive light and air she would pluck the surrounding plants; in order that these plants might be accessible in time of need they were transplanted; still later came the idea of saving seed.

De Varigny's Experimental Evolution.

While agriculture began with woman, it made little progress until man had taken it up, and by irrigation and the help of beasts had perfected it.

From innumerable experiments made through necessity by the savages of every land with the results handed down by tradition, the nutritious, stimulating, and medicinal properties of the most unpromising plants were probably discovered.

The savage inhabitants, having found by hard trials what plants were useful or could be made useful by cooking, took the first step towards cultivation by planting near their own homes. The next step was to sow the seeds of useful plants, and finally, as the soil became more fertilized, improved plants appeared. Sometimes a wild native plant attracted the attention of some savage, and he transplanted it or sowed its seed. That transplanting or sowing seeds was regarded with more forethought than would be expected is known from an early period of civilization, as the Australian barbarians "have a law that no plant bearing seeds is to be dug up after it has flowered," and this law for the preservation of the plant was seldom violated.

Darwin's Animals and Plants under domestication.

To-day, when we look around us and see a collection of fresh, attractive fruits and vegetables we can hardly realize they are the work of man. Nature gives, it is true, but only to the industrious worker.

Starr's First steps in human progress.

The wild roots, stalks, leaves and seeds, nuts and fruits which primitive man had offered to him would, if offered to us, be thought worthless. Roots and tubers, thin and hard, bitter, poisonous, such as the poor people of the past dug from the earth, man has improved through cultivation and created endless varieties.

Notice the cabbage; it was probably a native of Europe; its leaves attracted notice at first, and it was used as food. Taken for its somewhat thickened leaves, it was grown with care until it came to give the great heads we know so well, but nothing ever comparable grew in nature. Its root was also found useful as man took the plant, cared for it, and produced the turnip. Hunger and varying taste led him to improve the flower clusture of the plant, and he got the cauliflower. Thus from one single wild species man produced three totally different forms.

The potato in its wild state produced tubers of small size, stringy, tough, and bitter. An old Peruvian took what Nature gave and improved it. The plant which he prized he gave to others, until, when Raleigh visited Virginia, the Eastern Indians were cultivating the small and valueless plants. Taken to England, it was rapidly improved, it lost its bitterness, it was increased in size. To-day, comparing the original form with the many choice varieties raised in gardens, it would be difficult to believe the two to be the same plant.

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The same is true of fruits. One of the most wonderful illustrations of what man can do in changing nature is seen in the peach. Long ago in Western Asia grew a wild tree which bore fruits, at the centre of which were the hardest of hard pits, and over this a layer of hard flesh—bitter, stringy, with almost no juice—which, when ripe, separated, exposing to view the contained seed. Such was Nature's gift. Man taking it found it contained two parts, which, properly treated, could be made of use for food—the external pulp and the bitter inner pit. To-day we eat the luscious peach with its thick, soft, richly-flavored juicy flesh.

We take the soft-shelled almond with its sweet kernel; it is the old pit improved and changed by man. The peach and the almond are the same in nature; the difference they now show are due to man's patient ingenuity.

Primitive man, in every land except Australia, found some plant in his surroundings which has helped towards the contributions to the modern table. That man has changed plants by cultivation is proven by the endless varieties we see in the world to-day. As long as man cultivates he will have variety.

Anna Kelly.

ANIMAL SKINS AND THEIR TREATMENT FOR USE AS CLOTHING.

The women of Cuba, who do all the tanning for the family, tan the skins in different ways. When a very soft skin is wanted, it is tanned with the brain of the animal and water. Much less care is taken in the preparation of coarse leather. It is first soaked in cold water until the hair has fallen off; then it is stretched on the ground by means of pegs. The Indian women on their knees scrape off all the gummy parts with a piece of sharpened elk-horn. After this it has to go through a softening process before it is ready for use.

Prescott's Conquest of Peru: p. 151.

Most, if not all, tribes of savages have known how to tan skins in some way. The North American Indian rubbed the hide with the brain of a buffalo or deer; in Patagonia, the savages used chewed liver; the Abyssinians tanned with clotted milk and flaxseed; the Eskimos soak the hide in lye, after which it is chewed; the natives of Arctic Asia and Europe use the yolk of eggs, chewed reindeer liver, and the brains of animals.

Hittell's Mankind in Ancient times; vol. II, p. 139.

The Hottentots understand the tanning of leather and the preparation of furs best of any of the arts. When the skins are fresh they repeatedly rub them and beat them hard. To get rid of the hair, they sprinkle ashes on the fresh hide and then it is allowed to "sweat" in the sun. After this it is rubbed on both sides alternately with grease and sand until it can be cut easily.

Ratzel's History of Mankind; vol. II, pp. 41, 83, 220, 289, 290, 391, 551.

Tanning by means of bark is also known to the Hottentots, but not to all savages.

Very few of the Negro tribes of Africa know much about tanning skin, but the Makololo people seem to know the art quite well, for they use the skins of their oxen in making mantles and shields. In making the mantles the skin is first stretched on the ground by means of pegs and dried. When it is dry ten or a dozen men collect around it and scrape it until it is very thin; then it is smeared over with a quantity of brain and thick milk. Next an instrument, made of a number of iron spikes tied to a piece of wood so that only the points project, is applied in a carding fashion until the fibres of the skin are quite loose, after which thin milk or butter is again applied. When completed it makes a garment nearly as soft as cloth.

Livingstone's Travels in South Africa; p. 211.

When the colonists first settled in America, the Indians were preparing their leather by smoking it. Very little was done by the colonists in the leather industry until, in 1649, Captain Matthews, an old settler, erected a tan-house in Virginia and employed eight shoemakers. This gave a start, but the industry grew slowly. In 1662 the Virginia Assembly required that tan-houses should be erected in every county at the county's expense. In this way more leather shoes came to be worn. In New England the industry grew more rapidly than in the South.

Bolles' Industrial history of the United States; pp. 444, 456.

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Enclopædia Britannica.

In civilized countries leather is made by three different processes — tanned leather in which the skins are treated with tannic acid; tanned leather in which the skins are treated with mineral salts; and chamoised leather, where the skins are treated with oil or fatty substance.

The best skins are obtained from oxen which come principally from South America, Australia, East Indies, and North Africa.

The best tannin is made from the bark of the oak tree.

The first thing the tanner has to do when a mass of hides come into his tanyard is to clean them. This is done by soaking the fresh hides in lime water and the dry hides in brine. Then they are placed in a machine and worked, to render them more uniform in thickness.

The next operation is to clear off the hair, which is done in America by hanging them in damp, underground cellars from ten to twenty days and allowing them to "sweat."

From this point on the skins that are to be used for the fine articles of manufacture — the skins of sheep, goat, deer, and calf — are treated with great care. They are washed several times in lime water and in an acid water to render the skin porous.

The skins are then staked out, rubbed carefully with oil, and hammered for about two hours to force the oil into the skin. This process is repeated six or a dozen times, according to the thickness of the skin. When this process is completed they are hung in a heated room, where a process of oxidation is carried on; when completed the skins assume a yellow color. After this the unused oil is washed out with a warm potash solution.

The substances, with proportionate values, principally employed in tanning are: Alum, 20 pounds; salt, 9 pounds; flour, 40 pounds; 250 eggs, 7/8 pint olive oil, and 12 quarts of water. About one hundred skins are put into a cylinder and worked for forty minutes.

After being dried and stretched they are scraped to the required thickness. Then they are dyed, oiled, and ironed, after which they are ready for the market. *George Rulon.*

INDIAN WOMAN SCRAPING SKIN.

(Printed from a photograph furnished by the American Museum of Natural History.)

These essays are characteristic of the work done by all of the class, and are suggestive of the thorough grasp which the students get of a wide range of subjects. *Romiett Stevens.*

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STUDENTS' WORK — COPIES IN WAX FROM THE PLASTER CASTS.

MODELING.

INTRODUCED in the second year of the High School course a year and a half ago, modeling has taken the place of cast-drawing and some of the work in design. As a means of form-study it has many advantages, and is easily superior to drawing from the cast. As a medium of design, it at once opens up a new field of applied art.

The high-school pupil designing with a pencil or with color thinks only in flat spaces. He may make magazine covers, rugs, textiles, decorations for book pages, wall spaces, etc., with fairly good success, but if he attempt to design a vase with lines on paper, the chances are that it will be a poor vase in porcelain or silver. He may make a good working drawing of a piece of furniture, but experience shows that he will have little conception of how the thing would really look.

With the clay, however, he at once begins to see things as having solid form — three dimensions enter into his thought and calculation. In his material he finds a responsive medium of expression; and dishes, vases, candlesticks, andirons, gateways, arches, buildings, all sorts of things which depend for their beauty on their proportion and their relation of solid masses, grow and take form under his touch as he learns the value of seeing things from many points of view. Of the philosophy which may justify the continuance of the modeling in the course, therefore, little need be said here, other than to call attention to the close relation that exists between the development of the sense of touch and the growth of the individual and of the race; to the freedom which the modeling gives for individual expression, and to the value to the æsthetic nature of the refined appreciation of form.

The accompanying cuts give an idea of the work that may be done by the high-school pupils. The time has been divided between copying from good examples and exercises where the pupils work out their own designs. Some have been more interested in the copying, but the majority of the class pre-

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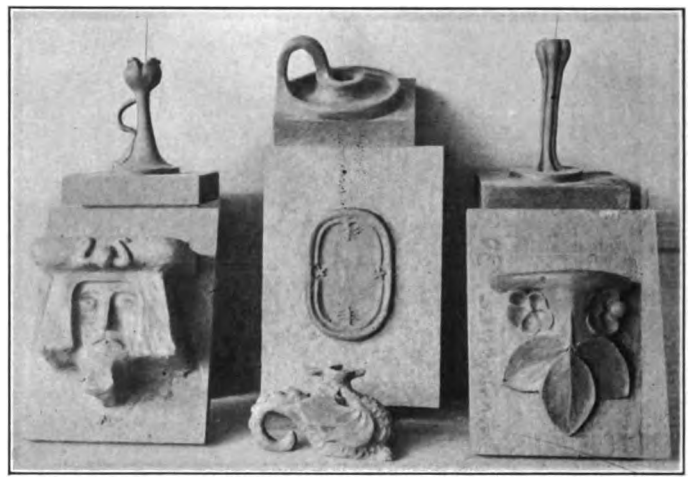

SOME OF THE STUDENTS' OWN DESIGNS IN WAX.

fer the original work, and wherever this preference is marked pains have been taken to adapt the assignments to the individual needs or abilities of the pupil.

REPRODUCTIONS IN PLASTER MADE BY STUDENTS.

Many have been much interested in making and coloring the plaster casts of their own work,—both copies and their own designs,—and some of the designs are made for the especial purpose of reproduction, not only in plaster but afterward in metal. The above cut shows some of the designs which the boys, who also have foundry-work in the same year of their course, have moulded and cast. This gives another link in the much desired chain of correlation between art and manual training, which strengthen both the modeling and the foundry work. It gives purpose and incentive to good work to the modeling, and it furnishes a variety of the best kind of material for painstaking and intelligent individual work in the foundry.

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BRONZE REPRODUCTIONS MADE BY STUDENTS IN THE FOUNDRY.

Some of the articles shown in the figure above are of cast-iron, some are of bronze, some are just as they came from the sand, some have been dipped and colored by acid treatment to give them a more pleasing finish, and others have been carefully chased over a portion or the whole of their surface. The figure on the right shows a candlestick which, in the same way, was first moulded in wax and then cast in plaster in order to get a pattern which could be used in the foundry, and from which the bronze casting could be obtained. These are but a few illustrations, yet they may be sufficient to suggest the many interesting possibilities that the close correlation of modeling and foundry opens up to both pupils and teachers.

Isabel M. Kimball.
William C. Stimpson.

BRONZE CANDLESTICK DESIGNED AND MADE BY STUDENTS.

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CORRELATION.

Teaching that imparts knowledge and fails to supply ideals and inspiration is notably not education; craft that fires no yearning for the vision of the greater whole is not art.
BENJAMIN IDE WHEELER.

LANGUAGE is an expression of *life*. Whatever gives school children an opportunity to live more fully, more freely, more helpfully, will, therefore, contribute toward a vitalized vocabulary; will store away in their minds pictures of objects actually seen, of processes actually followed, which will vivify their own words or illuminate for them the speech of others. For a child that never has sown his seed on good ground, to reap the subsequent rich harvest, or scattered it on rocky soil, to look in vain for the abundance that rewards the cultivator of a neighboring fertile patch, the parable of the sower falls on heedless, or at the best on wondering, ears; but the boy that has planted his seeds and watered and shaded his vines, drinks in the full meaning of the symbolic story. Into his heart it sinks, and again has been exemplified: "To him that hath shall be given." The high-school pupil who, by aid of the nicest tools and instruments modern ingenuity can devise, has constructed in the school shop a piece of scientific apparatus for the verification of a natural law, recognizes just what *method*, *exactness*, and *patience* represent, for without the aid of what they symbolize his labor would have been useless. Fortunately he has grasped the meaning of *purpose*, too; his purpose has controlled him, holding him to steady, directed effort, and enabling him to win the goal of which he has never lost sight. It is interesting to read what Holmes writes about a vocabulary that is alive: "Language! the blood of the soul, Sir! into which our thoughts run and out of which they grow! We know what a word is worth here in Boston. Young Sam Adams got up on the stage at Commencement out at Cambridge there, and taught people how to spell a word that wasn't in the Colonial dictionaries! *R-e*, *re*, *s-i-s*, *sis*, *t-a-n-c-e*, *tance*, *Resistance!* That was in '43, and it was a good many years before the Boston boys began spelling it with their muskets. . . . Yes, yes, yes, it was a good while before those other two Boston boys got the class so far along that it could spell those two hard words, *Independence* and *Union!* I tell you what, Sir, there are a thousand lives, aye, sometimes a million, go to get a new word into a language that is worth speaking. We know too well what language means here in Boston to play tricks with it. We never make a new word till we have made a new thing or a new thought, Sir!"

The most precious words, it is acknowledged, are likely to be those standing for simple things, simple relationships. To reproduce the home, then, to make with one's own fingers something to supply a family need, or to become a part of the world's industrial life, is to find the depth of meaning held in many such words. Moreover, if the high-school pupil has fashioned a basket, woven part of a blanket, modeled a vase or a bowl, carved on a box

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put together with his own hands some design of his creation, moulded and reproduced in bronze a Roman candlestick, or forged hinge, knocker, or door-pull like that from some mediæval monastery, he has established a real connection with history, geography, science, and literature, for his daily work has touched them all. Neither pupil nor teacher, it may be, foresees that hinge or knocker or door-pull, so carefully wrought, will some day become an open sesame into a bit of the Past; for the educational harvest may not always be reaped in accordance with calculation, seeds may long lie dormant, yet one day sprout to scatter others of their kind.

In considering English and industrial work in their relation to each other in the school, one finds a continual and necessary interchange of service. Most teachers of English are met by class after class that shrinks from composition. Why? Probably because similar work has been both dishonest and unreal; it has been apart from life itself. Themes have been prepared, it is true, but often upon subjects with reference to which the writers have neither thoughts nor feelings. Sometimes classes have spoken or written the thoughts and words of others; more often their work has been one of mere words emptied of meaning. One learns to understand what lies behind the inquiry, "How many words shall I write?" If a teacher insists upon honesty in composition, upon the putting down of only one's own thoughts or feelings in one's own words, her class will at once become aware of its poverty. It has little to say. Of course, this problem is not in the least discouraging. Its solution comes along with its statement: We have not; as a consequence we cannot give; we must, then, acquire. By means of conversation experience is shared, literature is studied and talked about, thoughts are interchanged. Classes find, moreover, that they do possess a little store of experience, knowledge,—even wisdom,—and feeling, but that they rarely utilize it. They have, as it were, shut the lid down over their historical and scientific data and truths, over their experiences in shop and laboratory. Wanted and summoned, these emerge and do all sorts of things to help statement, proof, or illustration.

When the time for writing comes the teacher may wish to cultivate the power to observe and to describe accurately. The hand-work of the school furnishes themes, plus experience. The description of any process — such as that of weaving, darning, modeling, coloring — will be useful. The return of pupils that have been absent may suggest oral or written work of this sort, the class, or a member of it, giving the lost instruction, describing the process. To be helpful, one must be clear and precise. Perhaps no better exercise for the elimination of unnecessary words can be found. To impart knowledge — a little definite knowledge — is the purpose of such writing. Superfluous words defeat that purpose.

If one were giving the history of the evolution of his candlestick, he would very likely use all four kinds of composition — description, narration, exposition, and argumentation. The first three, it is evident, would be re-

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quired again and again, as he sketched, and explained, and told the story of the modeling, of the making of the plaster cast from the model, of the mould cast in sand, of the finishing, and of the coloring; and the fourth might be needed to uphold some slight deviation from the usual method. Is not this sort of work sometimes better than the reproduction of another's story? The pupil does the thinking, the observing, the comparing, and selects words that say what he means. He is learning to have a purpose; he is telling about one thing; and he has a continuous thread for his facts. Both unity and sequence should be in his work. Such exercises do not, of course, preclude more imaginative work in story-telling.

The classes in manual training, as well as many others, furnish subjects desirable for debates, because pupils actually have thought about what they are to discuss sufficiently to hold an opinion and to contend for it.

But the best work in English — whether it is closely connected with that of other branches or not — will be accomplished only when a teacher works with her class; when she, too, has caught something of the spirit of the manual work and is making and doing what they are making and doing. Feeling this to be true, I shall be pardoned if I digress for a moment to consider it and what it involves. Would it be surprising to find some day, the teacher of English writing on the themes suggested to her pupils, doing her share of the work, doing it with straightforwardness, and reading it when "her turn" came round? being careful to write nothing for mere effect; most careful never to overshadow her pupils by her own accomplishment, but to keep only a step ahead of them. What would become of the games in the kindergarten if the teacher "wouldn't play!" What of the plant, the manual, the industrial work if the teacher didn't *do?* Will the best English work possible in the class-room be done until teachers can achieve in composition at least what they require of their pupils, and until they do achieve it in class-room exercises common to themselves and their pupils? Adequate training for the teaching of English composition is, however, seldom given. You may say: "Does not the expression of thought and feeling in one's own language come so naturally that instruction in that expression as an art is unnecessary?" Teach, edit, correspond, and you have eloquent answers. As a teacher, you will receive those answers in the vagueness or painful silence of pupils whose intelligence struggles for a vent in words; as an editor, you will read them in sentences so involved that you long for an Ariadne's thread to lead you safe out of them; as a correspondent, you will be startled by them into wondering whether your friend has that grace by which you fancied him to be distinguished, or that mental clearness which has made him a trusted adviser. And yet, "The man is only half himself; the other half is his expression!"

To come back to the subject of correlation it is quite clear even from what has thus far been said in this merely suggestive paper, that the industrial work gives body to the English. But the chief service of English to

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the industrial classes has not been mentioned. "There is a part of your nature as much nobler than your brains as heaven is above the earth," says Dr. McKenzie. Unless English ministers to the spirit, it hardly deserves a place in the curriculum. May it not foster the things of the spirit? He who works with his hands alone renders poor service, the heart must go into the toil; only the loving touch fashions the thing of beauty. To have imagination enough to wonder, as artist or artisan, at what spring the cup we are fashioning will be filled, to have love enough for our fellows to send a blessing out into the unknown for him who shall drink from the cup, is to have been enriched by what is above price. And literature helps, at least, to confer this great possession. Subtly and surely — in song, biography, and story — it influences thought and stirs feeling. This is developing life. But to gain only to keep is not enough. The ability to express one's self in language, to scatter again what has first been carefully garnered, is necessary for the good of the soul. Therefore, both composition and literature, it seems to me, render incalculable service to the industrial work.

What wonder that modern educators correlate in the same way other studies having a relationship more evident than that existing between manual training and English; that they would, for instance, have history, literature, and composition serve one another, literature giving fuller life and movement to what history introduces, and composition inciting a student to work upon thought or research until he wins his way into the heart of an era or wrests from an age its secret.

There are many schools that recognize this little band of history, literature, and composition as a trio, with some relationship of parts, but few who go much further. They cannot, however, rightfully shut out science from their group. Was not the physical aspect of Greece like a scroll on which a modern scientist might have deciphered coming dissensions and ultimate downfall? her mountains, in those bygone days, keeping her states from perfect union. And did natural surroundings influence Dutch history in a less degree? Incessant fighting with the sea, watchful care over the land to keep it from the soulless grasp of a never-sleeping, mighty foe, ensured that national pluck and patriotism which could write a splendid page of history. A race may make its own history, but environment has much to do with the giving of the race qualities, with the setting of limitations, with the making of the race itself.

Such a connection of one department of science — physical geography — with history is to-day more general in our schools, but not perhaps more desirable or essential, than the connection of man's life-history with the life-history of plant or of animal, for

"Man is one world, and hath another to attend him."

When the meaning of these lines is recognized in our teaching, history may cease to be the shallow village tale that excites Emerson's scorn because it

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shuts out from man's history the history of all neighboring systems of being.

Some schools there are which seek in every study the help of drawing; depend upon it to show the route or manœuvres of an army, the main features of building or battlefield, of leaf or fossil; for a clear sketch of an object and vague thought about it are incompatible.

The teaching of English is very generally connected with that of other modern languages, as well as with Latin — the mother being called upon to explain some of the idiosyncracies of the daughter. Nicety in the rendering of shades of meaning in translation is made to aid exactness of expression and to enrich the English vocabulary.

But is there not unification for mathematics with science, and for both those studies with manual training? "Algebra and the mathematics," it has been declared, "have their tropes or figurative expressions." As a figure in language may explain and illustrate the unfamiliar by the familiar, so may the known quantities in algebra discover for one a profound secret. Mathematics becomes the handmaid of scientist or craftsman, while science and the manual arts give deep purpose to mathematical study. Steadied and guided by that love of truth which science and manual training foster, imagination may find the key to unlock what yet are mysteries.

But even after the artificial walls that have separated study from study have been levelled, or at least penetrated, will there not still be necessary the unification of all studies with practical life, so that young men and women shall go out strong, fine, and well-equipped, having trained powers and abilities to serve their fellows? Doubtless the day will come when we cannot echo Locke's cry, that "Schools fit us for the university rather than for the world."

May the modern school rest even here, having unified studies only with one another and with practical life? Corson declares, that "To sharpen the intellect, the What Knows, without rectifying the What Is (the hidden soul) is a dangerous thing — dangerous to the individual, dangerous to society;" and Helene Lange, in "The Higher Education of Women in Europe," refers to Macé's fairy-tale about the boy whose head was stuffed with so-called facts, and the girl who knew the one thing — how to love God and obey Him. One recalls the fate of each child, as they both travel through the centuries and the world with a fairy. The boy's supposititious facts are not facts after all, and his knowledge is ignorance; but the little girl's wisdom stands the test of all times and places.

This, then, is the supreme unification: the unification of all study with moral and spiritual growth. Art, history, literature, science — indeed, all studies — give of their fruit to feed the spirit. Science requires from her student patience, perseverance, integrity of work. While he serves her she is, therefore, doing something for him — she is building character. She is deepening his sympathy with nature and with men, and is strengthening that love of truth which shall make him spiritually free. Not merely the giants of old

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needed to touch the earth now and then. Sir John Lubbock says: "The love of nature is a great gift, and if it is frozen or crushed out, the character can hardly fail to suffer from the loss;" and again, "Science will raise and strengthen the national, as surely as the individual, character." What is true of science is perhaps more evidently true of other studies.

The progress of man is to be not only material and intellectual, but moral as well, and none can foresee his own possibilities. He that hath ears to hear, may he be *let* to hear; and he that hath eyes to see, may he be *let* to see.

Elizabeth H. Spalding.

Department Notes.

Since the preparation of this number of the MONTHLY was begun the Trustees of Pratt Institute have received the resignation of Dr. Gulick from the directorship of the High School. This they announced to the students in the *Bulletin* of the Institute in these words:

> "We desire to avail ourselves of the opportunity offered by *The Bulletin* to announce, officially, to the Institute the resignation of Dr. Luther Halsey Gulick from the directorship of our High School.
>
> "Dr. Gulick came to us in September, 1900; has given us three years of strong and helpful service, and leaves us greatly to our regret.
>
> "He has been appointed by the Board of Education as Director of Physical Training in the schools of New York,—a position of large responsibility and great opportunity which his experience and training especially fit him to undertake. We feel that the Board of Education is to be congratulated upon his election."

At the request of Dr. Gulick, he was relieved from work at Pratt Institute on February first, and the High School Committee of the Institute Faculty was asked to take the place of Director of the High School for the remainder of this year.

ATHLETICS.

The athletic season of 1902-1903 opened at Pratt Institute this fall under conditions which differ greatly from those of former years. Last spring Pratt withdrew from the Long Island Interscholastic Athletic League.

The reason for the withdrawal is that the age-limit imposed by the League prevents a number of good athletes in the Art Department and the Department of Science and Technology from competing on Institute teams. As a consequence, the teams that played the preparatory schools of Long Island were considered not so good as could be turned out if the age limit were removed. Moreover, the teams which wore the yellow and black were not truly representative of the Institute, since they were composed only of men under twenty-one years of age.

A football schedule was arranged for the fall of 1902, which included games with Lawrenceville, Stevens Institute, and New York University. A good deal of heavy football material appeared for practice and a successful season was looked forward to. There were a number of men who had played the game and who knew its fine points, but the old trouble of lack of time for practice interfered with the development of team work. As has been the case in previous years, much of the practice was done either in the dusk or in the dark.

One of the players on the team made the following remark about one of the games played this fall: "As long as it was light they gained around our ends and through the line, and we fumbled to beat the band, but as soon as it got dark you ought to have seen us tear them to pieces—we were in our element then."

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The following shows the results of the games played:

Montclair High School.....	0	Pratt...10	Webb Academy.....	10	Pratt... 0
Stevens Institute.....	5	Pratt... 0	Betts Academy.....	0	Pratt...22
New York University.....15		Pratt... 0	DeWitt Clinton High School.	11	Pratt... 6
Lawrenceville.....36		Pratt... 0	Peekskill Military Academy ..	0	Pratt...17
St. Paul, Garden City 22		Pratt...11			

The total number of points scored by our opponents was 99; by Pratt, 66.

The captain of the team was Preston of the Science and Technology Department, who is well known as the star half-back of the championship 1900 team. W. J. Thompson of the same department managed the team, with the assistance of H. D. Humpstone of the High School.

A football team was organized this fall to represent the High School. Mr. Watson, who coached the Junior team last year, coached this team also, with the assistance of Mr. Kaighn.

The following record shows the result of the games played:

Manual Training High School, 2d..10		Pratt High School.....	0
Summit Intermediate Y. M. C. A... 5		Pratt High School.....11	
New Rochelle High School.....11		Pratt High School.....	0
Erasmus Juniors..... 5		Pratt High School.....17	

Opponents, 31; Pratt High School, 28.

W. T. Wright of the class of 1903 was the captain of the team, and played a strong game at left guard. Chase of the class of 1904 managed the team. All who played in fifty per cent. of the games won their "P. H. S."

The basket-ball schedule for 1902-1903 is one of the best we have ever had. It includes games with three first college teams and one freshman college team. Preston, who was mentioned above as the captain of the football team, was elected captain of the basket-ball team. H. D. Humpstone of the High School is its manager, and hopes to add to the present schedule a game with Harvard freshmen and two or three games to be played "up the State."

The record of the games so far played is as follows:

Hasbrouck Institute of Jersey City....27		Pratt....25	
Erasmus Hall High School.....12		Pratt....28	
Boys' High School.....18		Pratt.... 4	
Pratt Alumni.....24		Pratt....25	
University of Pennsylvania 36		Pratt....16	
Yale, 1906 28		Pratt....29	

This leaves two of the college games to be played, the game with Princeton scheduled for February 7, and that with Cornell on March 12.

The work of the relay team this winter has been more successful than that of any other relay team which ever ran for Pratt. O. G. Hunsdon of the Department of Science and Technology is the captain of the team, and J. Messenger of the Art Department is its manager. Out of six races entered fourth place was secured once, second place three times, and first place twice.

Altogether, we may safely say athletics are booming. We shall try to find a place for baseball practice this spring, and we expect to turn out a winning track-team. That interest in athletics is growing is shown by the fact that there are now two hundred and fifty-six members of the Athletic Association, while last year at this time there were only one hundred and seventy-seven.

Ralph Kirkman, Class of 1903.

GIRLS' BASKET-BALL.

The basket-ball season this year opened with the greatest enthusiasm among the girls. Three games have already been played, and there will be several more games this year, both at our own school and out of town. We hope our friends will continue to be interested in the basket-ball, and will give us their support in the coming contests. *Ethel Underhill.*

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Alumni Notes.

BELOW we give such information as we have at hand regarding the members of the classes that have graduated from the school. We regret that we are unable to include every member of the alumni of the High School.

1890.

Roderick G. Allen, 561 Quincy Street; superintendent of repair shops, Chelsea Jute Mills.
Walter S. Dunscomb, 523 Garfield Building, Cleveland, Ohio; chief structural engineer for Webster, Camp & Lane Company.
Edward P. Folger, 414 South First Avenue, Mount Vernon, N. Y.; civil engineer with the Atlantic Avenue Improvement Company; landscape artist and surveyor.
Albert A. Hopkins, 296 Broadway, New York city; with the Cosmos Picture Company.
George E. Low, 163 East Twenty-fifth Street, New York; with the Rapid Transit Commission.
Arthur B. Proal, 176 South Oxford Street; with the Robins Conveying Belt Company.
Aubrey N. Shaw, 298 Carlton Avenue; draughtsman for the A. B. See Electrical Elevator Co.
Edward M. Waring, 937 East Thirty-fourth Street, Flatbush, N. Y.; Waring Electric Cutter Co.
Louis Wintner, 210 Ross Street; in the employ of the General Incandescent Arc Light Company.

1891.

Louis Ackerman, 626 Bainbridge Street; is engaged in the manufacture of surgical instruments.
William H. Banzet, 390 Hart Street; designer for the American Lithograph Company.
Leander H. Conklin, 139 Gates Avenue; electrical engineer and contractor.
DeLancey W. Corlett, 655 Jennings Ave., Cleveland; teacher of Manual Training and Drawing.
Harry L. Duncan, 297 Jefferson Avenue; practitioner of Patent Law, New York city.
Hubert R. Jaques, 238 Market Street, Johnstown, Pa.; supervisor of Manual Training.
F. L. Smith, 397 Adelphi Street.
Mrs. Isaac Price (Belle Spelman), 254 Vanderbilt Avenue.
Claudius Wadsworth, Jr., 496 Marion Street; technical journalist.

1892.

May L. Barrett, 42 West Coulter Street, Germantown, Pa.; illustration.
Gail Borden, 508 Laughlin Block, Los Angeles, Cal.; mining capitalist.
James R. Coe, Hopedale, Mass.; mechanical engineer.
Louis Corlett, 655 Jennings Avenue, Cleveland, Ohio; principal of West Manual Training School.
Stewart H. Crampton, 95 Gates Avenue; with the New York Telephone Company.
Frank A. Dempsey, 44 Hancock Street; manager of the welding department, Morton Iron Works.
Luther Emerson, 125 Gates Avenue; in engineering department Lehigh & Wilkesbarre Coal Co.
Emma J. Hennion, 100 Java Street; teacher in the Public Schools.
C. Hubert Langmur, 185 West One Hundred and Thirty-fifth Street, New York city; director of Columbus Circle Branch of the New York Life Insurance Company.
George W. Rappold, 750 Flushing Avenue. The last news we had from Mr. Rappold was that he was in Colorado for his health.
Ralph K. Shepard, 81 Columbia Heights; architect.
Augustus C. Smith, 212 Union Street.
H. Donald Tieman, 302 Putman Avenue; in Yale studying Forestry.
Charles H. Wilson, 202 Penn Street; draughtsman in Architectual Iron Works.
George W. Winans, 33 Puntine Street, Jamaica, L. I.; letter-carrier.

1893.

Herbert C. Allen, 304 Clermont Avenue; homeopathic physician.
Mrs. N. H. Emmons (Harriett Cole); address not known.
Mary H. Cooley, Glen Cove, L. I.; at home.

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Edna Fay, 212 Quincy Street; supervisor of Drawing in the Public Schools.
William Hanna, 115 Broadway, New York city; architect.
Harris G. Hooper, 494 Third Street; naval architect.
Joseph H. Lecour, Jr., 433 Monroe Street; practicing law at 35 Wall Street.
Ada Lohman, 227 Hewes Street; teacher in Public School No. 33.
Clinton P. Lovell, 183 Keap Street; architect.
William E. Mitchell, 395 Jefferson Avenue; with the Electrical Insulating Company.
Harry Moses, 4 Lefferts Place; student in the Long Island College Hospital.
George P. Richardson, 475 Waverly Avenue; mechanical engineer.
Elma P. Warner, 618 Willoughby Avenue; director Physical Training, Brooklyn Public Schools.
Charles W. Webb, 262 Clifton Place; Greenwich Savings Bank.

1894.

Mrs. George Knapp (Edith H. Allen), 69 Putnam Avenue.
Mrs. George P. Richardson (Kathleen Atkinson), 475 Waverly Avenue.
Howard A. Baylis, Cranford, N. J.; teacher of Mathematics.
Mrs. William Painter (Grace M. Clark), 2935 East Colfax Avenue, Denver, Col.
Susie L. Deans, 446 Second Avenue, Astoria, L. I.; teacher in Public Schools of New York city.
Mrs. William F. Purdy (Margaret Earl), 198 Warren Avenue.
Benjamin F. Graves, Jr., 114 St. James Place; with Henry Clews & Co., Bankers.
Mary E. Hamilton, 42 Tompkins Place; teacher in Brooklyn Public Schools.
Joseph T. Hull, Highland Avenue; clerk with Worthington Pump Company.
George E. Hulse, Amityville, L. I.; graduated from Stevens, 1902.
Arthur D. Jaques, Lynbrook, L. I.; physician.
Max O. Jordan, 670 Decatur Street; architect.
Mrs. Percy L. Hall (Winifred Kirkham), 22 Van Buren Street.
Mrs. Holly (Anna McKinney), Port au Prince, Hayti.
Mary S. Maguire, 580 Henry Street; teacher in Public Schools.
Frederick MacN. Robertson, Natick, Mass.; married September, 1902; physician.
Edgar S. Stow, 291a Hart Street; broker.
Alice M. Woodford, 111 Fort Greene Place; teacher in Public Schools.

1895.

Mary A. Adams, 498 Grand Avenue; at home.
Mrs. Horace Wells (Agnes Binkerd), New Canaan, Conn.
Mrs. George Young (Helen Binkerd), 854 Lafayette Avenue; married November, 1902.
Harold Bowdin, 130 Clermont Avenue, Mount Vernon, N. Y.; draughtsman.
Laura H. Chapin, "The Spruces," Lakeville, Conn.; vocal teacher at Taconic School for Girls; church and concert singer.
Mrs. David Brower (Clara Culhane), 906 St. John's Place.
Genevieve Day, 53 Rutland Road; in the May Irwin Company.
Mrs. Edward Bailey Jordan, Jr., (Elsie Eastman), 820 President Street.
Frederick Esher, 49 Clinton Avenue, Jersey City, N. J.; practicing law.
Elsie L. Farr, 556 Lafayette Avenue; kindergartner.
Florence Grey, 32 Cambridge Place; private teaching.
Bertha Hancock, 929 Figuerra Street, Los Angeles, Cal.; public reader.
Wilford Hawkins, South Norwalk, Conn.; graduates from West Point, 1903.
Mabel Hawley, Palm Beach, Fla.; kindergartner.
Joseph E. Hirsch, 1245 Eighty-fifth Street; assistant chemist, United States Navy Yard.
Fred Ichen, 193 Sixth Avenue; with Henry Brinkert & Co., commission merchants.
Harry R. Kinsey, 315 Bainbridge Street; bank clerk.
Eugene Lowenthal, 29 Union Street, Rochester, N. Y.; in the firm of Max Lowenthal & Bros.
Condit W. Nevius, 84 Highland Avenue, Jersey City, N. J.; travelling salesman.
Mary Platt, 182 State Street; at home.

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Frank Raynor, 285 Decatur Street; clerk.
Edna Smith, 105 Hancock Street; at home.
Walter Tremper, Borough Park, N. Y.; assistant engineer on Rapid Transit of Connecticut.
Mrs. J. E. Baldwin (Agnes Warner), East Williston, L. I.
Horace Wells, New Canaan, Conn.; farmer.

1896.

Arthur W. Beal, 1104 Dean Street; Vice-President of Hickman Manufacturing Company.
Carroll Chase, 191 Kingston Avenue; physician.
Mrs. Thomas Burrows, Jr., (Mabel Conover), 1456 Bedford Avenue.
Adolph S. Fairbanks, Sturgeon Falls, Ontario, Canada; supervising engineer.
Mrs. Kane (Margaret R. Fabris); address not known.
Isabel D. Fisher, 153 Clinton Avenue, Rochester, N. Y.; director of Physical Training.
Mabel H. Hall, 202 Clermont Avenue; teaching in Public Schools.
Charles O. Hartich, 482 East Eighteenth Street; in broker's office.
Gertrude Lamb, 218 Rodney Street; at home.
Llewellyn Morgan, 112 West 128th Street, New York city; mechanical engineer.
Alexander Milne, 107 Atlantic Avenue, Stamford, Conn.
Walter L. Pate, 416 Adelphi Street; practicing law, Wall Street.
Harold I. Pratt, 232 Clinton Avenue; Charles Pratt's Company.
John C. Rohlfs, 26 Broadway, New York city; stenographer and clerk with Standard Oil Co.
Harry C. Roller, care of Frank Roller, Roselle, N. J.
Arthur G. Seymour, 418 Macon Street; with Graff Furnnon Company.
Marcy L. Sperry, care of Stone & Webster, 93 Federal Street, Boston, Mass.; with Savannah Electric Company, Savannah, Ga.
Mary F. Tolman, Hartford, N. Y.; church organist.
Frederic L. Washbourne, 70 Maple Court, Flatbush; selling drugs, chemicals, and essential oils.
Edith M. Williams, 335 Lafayette Avenue; teaching in Public Schools.
Charles F. Wood, 101 Division Street; physician.

1897.

Henrietta Adams, Jacksonville, Ill.; teacher in a school for the deaf.
Ruth Babcock, 741 Marcy Avenue; kindergartner.
Harold H. Blossom, 210 Clermont Avenue; student of Practical Agriculture and Horticulture.
Elizabeth W. Bolitho, 439 Quincy Street; director of a Kindergarten.
Alfred W. Bowie, Jr., 189 Jefferson Avenue; mechanical engineer.
Ethel P. Burdett, 288 Putnam Avenue; teaching in Public Schools.
Henry R. Cobleigh, 340 Lafayette Avenue; with the *Engineering Record.*
Bess Eastman, 788 Carroll Street; at home,
Thomas N. Fairbanks, 18 Arlington Place; with the Japan Paper Company.
Allen Gard, 240 Main Street, Meriden, Conn.; graduated from Sheffield Scientific School, 1901.
Arthur E. Gard, 240 Main Street, Meriden, Conn.
Agnes J. Hall, 182 Halsey Street; teacher in Public School No. 109.
Maude P. Harmon, 672 Putnam Avenue; at home.
Mrs Harcourt Penniston (Florence Johnston), 954 Park Place.
Eva B. Jones, 658 East High Street, Springfield, Ohio; at home.
Ward H. Kerlin, 639 State Street, Camden, N. J.; naval architect. Mr. Kerlin is keeping house.
Mrs. W. A. Ferguson (Mary McCofferty), 475 Jefferson Avenue.
Edith E. McElhenie, 259 Ryerson Street; Secretary to David Belasco.
Harold E. Martin, 1086 Bushwick Avenue; architect.
Bertha Matthews, Manhasset, L. I.; at home.
Gertrude F. Merrill, 83 Rodney Street; at home.
Joseph S. Miller, 961 St. Mark's Avenue; with the New York Telephone Company.
Jessie E. Morse, 200 Eighth Avenue; at home.

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Franklin Nevius, 151 Jewett Avenue, Jersey City, N. J.; practicing law.
Nathaniel Platt, 182 State Street; with Edison Electrical Company.
Walter R. Ross, 389a Hancock Street; employed in an importing house.
Mrs. Hoeg (Gertrude Smith), 175 Quincy Street; married November 12, 1902.
Frances Taylor, 99 Lee Avenue; teacher of Kindergarten in Public School No. 44.
Charles N. Warner, Room 16, Melville Block, Pittsfield, Mass.; foreman Transformer Department.
Ethel A. Weeks, 340 East Nineteenth Street; kindergartner.
Joseph N. Wickham, Corona, L. I.; graduate from the Physicians' and Surgeons' College, 1903.
Edward A. Finch, 255 Emerson Place; taking Applied Electricity in Pratt Institute.

1898.

Charlotte B. Gore, 509 Monroe Street; kindergartner in the Public Schools.
Agnes Seymour, 746 Diamond Avenue, Hazelton, Pa.; supervisor of Drawing.

NOTE.—No regular class graduated in 1898 because of change of course from three to four years.

1899

Ramon Abarca, San Juan, Porto Rico; manager of the English department of a machinery house in San Juan.
Herbert S. Bowne, Glen Cove, L. I.; in business with his father.
Mabel Bradt, 267 Ryerson Street; teacher of Domestic Science.
Rae Bredin, 1334 Liberty Street, Franklin, Pa.; student in Chase's Art School.
S. Isabelle Clark, 187 Montclair Avenue, Montclair, N. J.; at home.
Rodney D. Chipp, care of Cuba Company, New York city.
Madeleayne Cloyd, 114 Atlantic Street, Jersey City, N. J.
Henry S. Conover, 163 Clinton Avenue; clerk with Mason Manufacturing Company.
Mrs. F. W. Curtis (Edith J. Craft), 274 Putnam Avenue.
Oliver C. Edwards, Jr., 508 North Fifth Street, Steubenville, Ohio; civil engineer.
Mrs. ——— ——— (Marie L. Ferm), 310 Seventh Avenue.
Sarah E. Finch, 255 Emerson Place, New York city; Cornell medical student.
Mrs. Alfred W. Bowie, Jr., (Adelaide Giles), 189 Jefferson Avenue.
Edna Hardenbergh, 92 Putnam Avenue; at home.
Alice R. Harriott, 284 Vanderbilt Avenue; studying German with Mrs. Phelps.
Eva M. Heffley, 444a Greene Avenue; cashier of Heffley School.
Elizabeth F. Howe, 101 Pinckney Street, Boston, Mass.
Carrie Y. Kelsay, Meadville, Pa.; at home.
Katherine Lamb, 218 Rodney Street; at home.
Sarah McGiffert, 197 Ryerson Street; teaching in Domestic Science Department, Pratt Institute.
Frank V. de Magalhaes, 124 Eighteenth Street; in the laboratory of Edison Company.
Robert W. Magrane, 63 Thayer Hall, Cambridge, Mass.; one of the 50 best students of Harvard.
Marion H. Mapelsdon, 881 Union Street; at home.
Grace E. Michaelis, 256 Lafayette Avenue; at home.
Maybell P. Perry, 163 Cumberland Street; teacher of Domestic Science in the Public Schools.
Theodore N. Powell, Knoxville, Tenn.; instructor in chemistry.
Charlotte L. Rudyard, 250 Lafayette Avenue; student at Vassar.
David S. Seaman, care of Buffalo Forge Company, Board of Trade Building, Boston, Mass.; assistant manager of the Boston office.
Frederic C. Seaman, 135 St. James Place; student in Columbia Law; first bass in Summerfield M. E. Church.
Edith de C. Suffren, 30 Ormond Street; studying in Smith College.
Stephen H. Townsend, Glen Head, L. I.; student at Cornell.
Johannah E. Vogt, 105 Kent Street; at home.
Irving T. Worthley, 408 West One Hundred and Fiftieth Street, New York city.

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1900

Lily B. Baylis, 418 Putnam Avenue; in the Art Department of Pratt Institute.
Anna W. Beach, 112 St. Felix Street; at home.
H. Everett Beiser, 706 Nostrand Avenue; with the Standard Oil Company.
R. S. Binkerd, 854 Lafayette Avenue; student in Yale.
Ethel A. Bryant, 391 Macon Street.
Elisha W. Bushnell, Richmond Hill, L. I.
Isabel Caldwell, 119 Henry Street; studying at Cornell.
Imogene Clark, 187 Montclair Avenue, Montclair, N. J.
Clarence A. Clough, 401 Washington Avenue; with the New York and Pennsylvania Company.
Edith W. Dalton, Glen Cove, N. Y.; at home.
Alice M. Day, Newfoundland, N. J.; at home.
Ada H. Dubernell, 143 Albany Avenue.
Percy Edwards, 920 Monroe Street, Ann Arbor, Mich.; law student in University of Michigan.
Stanley C. Fowler, Pennsylvania College, Gettysburg, Pa.; student in Pennsylvania College.
Mrs. Raymond D. Simons (Jessie I. Gerard), 188 Washington Avenue; at home.
Harriett C. Harriott, 284 Vanderbilt Avenue; studying German with Mrs. Phelps; in Pratt Institute Gymnasium.
Mabel Heffly, 444a Greene Avenue; in Heffley School.
Nellie E. Heffley, 444a Greene Avenue; in Heffley School.
Florence E. Hubbard, 179 West Seventy-sixth Street, New York city; student in Barnard College.
Alceste Jenkins, 237 Madison Street; at Cornell.
Thaddeus Kerlin, 226 Willoughby Avenue; with the Powers Paper Company, New York city.
Gertrude E. Ludden, 221 Gates Avenue; at home on leave of absence from Cornell.
Melvin J. Miller, 961 St. Mark's Avenue; with the Standard Oil Company.
Lewis E. Meeker, Jr., 201 Heustis Street, Ithaca, N. Y.; studying at Cornell.
Bessie B. Moore, 99 Cambridge Place; at home.
Charlotte E. Morgan, 1173 Bushwick Avenue; class of '04, Barnard.
Raymond Nutting, 204 Clermont Avenue; a Junior at Cornell.
Frederick C. Pitcher, 853 President Street; student at Cornell.
John S. Rae, 18 Monticello Avenue; student at Chase's Art Studio.
Henry B. Reed, Jr., Milford, Pa.; at Lehigh.
Ella C. Rowell, 158 Lefferts Place; at home.
Mary B. Searle, Babylon, L. I.
Lillian E. Seymour, 418 Macon Street; studying music.
Edith T. Simonson, 373 Eighth Street; Assistant Librarian at Brooklyn Public Library.
Charles S. Sperry, Louisburg Square, Boston; Massachusetts Institute of Technology.
Roy S. Wallace, 63 Thayer Hall; one of Harvard's "Fifty."
Lillian D. Wengenroth, 277 Schermerhorn Street; at home.
Robert Winslow, 101 West Eighty-ninth Street, New York city.
Robert L. Wood, 129 Hancock Street; student in the New York Homeopathic Medical College.

1901

Nathalie C. Babcock, 741 Marcy Avenue; studying and teaching music.
Grace B. Bond, 40 Brooklyn Avenue; she is home on a year's leave of absence from Cornell.
Mabel H. Black, 25 Vernon Avenue; in St. Lawrence University.
Williamson B. Bowie, 171 Madison Street; electrical course at Columbia.
George T. Brown, Seventy-first Street and Broadway, New York city; student at Cornell.
Olive M. Burke, 60 Van Buren Street; in Pratt Institute Art Department.
Helen M. Clarke, 644 Amsterdam Avenue, New York city; in Pratt Institute Library School.
Alice Cochran, 559 Madison Street; studying music and in Pratt Institute Gymnasium.
Hulda H. Conover, 163 Clinton Avenue; in Pratt Institute general office.
Elsie G. Grey, 32 Cambridge Place; studying and teaching music.

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Marjory Halstead, 50 Van Buren Street; Pratt Institute Kindergarten.
Alice J. Hill, 196 Hooper Street; Pratt Institute Art Department.
Ada Holt, Midland Park, N. J.; Domestic Science Department, Pratt Institute.
Ethel L. Kirkus, 485 Willoughby Avenue; Pratt Institute Kindergarten.
Mrs. George Y. Allen (Florence Doux), 114 Rushbrook Avenue, Montreal, Canada.
Harriett D. Levy, 7 West Twenty-fourth Street, New York city; at home.
Hulda E. Mayer, 313 York Street, Jersey City; at home.
Grace A. E. Paterson. 125 Putnam Avenue; Pratt Institute Kindergarten.
Alice M. Rowell, 158 Lefferts Place; in Mount Holyoke College.
Florence E. Quinlan, 186 South Oxford Street; at home.
Anna Terbell, Southampton, L. I.
Katherine L. Tift, Tifton, Ga.; 138 West Sixty-fifth Street, New York city; studying violin.
Elsie P. Warner, 426 Jefferson Avenue; at Vassar.
Richard A. Wright, 1341 Bedford Avenue; in Sibley College, Cornell.
Ruth Wurzburger, 150 West Sixty-fifth Street, New York city; doing millinery work.

1902

Emily M. Aldrich, 306 Greene Avenue; Domestic Science Department, Pratt Institute.
Charles B. Bennett, 243 Pleasant Street, Providence, R. I.; Brown University.
Emma M. Blessing, 24 New York Avenue; studying music.
Edna Colby, 142 Putnam Avenue; Domestic Art Department, Pratt Institute.
Helen Deguée, 134 Dean Street; at home.
Ella G. Field, 198 DeKalb Avenue; Pratt Institute Kindergarten.
Alice R. Fish, 105 St. Felix Street; studying at Packer.
Leo M. Frank, 368 Lafayette Avenue; Cornell University.
Katherine Heilner, 17 South Oxford Street; Pratt Institute Art Department.
Clarence Kempner, 53 Linden Street; in Harvard.
Alfred L. Lane, 342 Macon Street; travelling salesman.
Jeannette Latimer, 184 Adelphi Street; studying music.
William Luithlen, 709 Grand Street; taking the Architectural Course, Columbia.
Edith L. McIntyre, 509 Madison Street; Pratt Institute Kindergarten.
Walter A. McLaren, 102 Hart Street, New York city; Cornell medical student, New York city.
Laura H. Mallory, Mystic, Conn.; at home.
Marion D. Matthew, 88 Sumner Street, St. Johns, N. B., Canada; teaching.
Stanley B. Mintram, 99 Gates Avenue; second year, A. E., Pratt Institute.
John R. Montgomery, 41 Remsen Street; in Harvard.
Philip B. Nash, 248 Quincy Street; New York Telephone Company.
Leita A. Rust, 141 Quincy Street; at home.
George Strobridge, 317 East One Hundred and Eighteenth Street, New York city; Columbia.
Ralph I. Underhill, 510 Willoughby Avenue; Harvard.
Frank M. Wright, 450 Clinton Avenue; Harvard.

OBITUARY.

The death of James K. Comings, '92, occurred in December, 1902. He had been in Colorado for nearly ten years, hoping that the climate there would bring health and strength, but after a manly struggle he gave over and is at rest. He was an exemplary Christian.

The school community was greatly shocked to learn of the death of Edith Downing, '99, from typhoid fever in October, 1902. She won an enviable position in the school by her truthful, womanly life. Her parents have the sympathy of a wide circle of friends.

William Peck, of '97, died in December, 1902. His life in the High School was most exemplary. His classmates and many friends will be deeply grieved to know that death has entered their circle.

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PRATT INSTITUTE

FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
BETWEEN DE KALB AND WILLOUGHBY AVENUES.

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Department of Domestic Art—Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science—Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

Department of Science and Technology—Two-year courses in steam and machine design and applied electricity; evening courses in mechanical drawing, mechanism, physics, chemistry, applied electricity, steam and the steam-engine, and strength of materials; evening trade classes in carpentry, machine-work, plumbing, and painting.

Department of Kindergartens—A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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Department of Physical Training—Morning and evening classes for women. Evening classes for men.

The Thrift—Deposit, savings, and loan branches, the privileges of which are open to the public.

For further information, or for application blanks, apply at the General Office of the Institute, Ryerson Street.

FREDERIC B. PRATT, *Secretary.*

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DOMESTIC SCIENCE NUMBER

PRATT INSTITUTE MONTHLY

March, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI MARCH, 1903 Number 5

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queens Borough, New York

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Pratt Institute Monthly

Volume XI MARCH, 1903 Number 5

Annual Report
Of the Department of Domestic Science.

TO THE TRUSTEES, GENTLEMEN:

THE work of the Department of Domestic Science for the past year has followed the lines indicated in the last annual report and in the catalogue of the Institute for the year 1902-1903. It has consisted of a normal course of two years for the preparation of teachers of Domestic Science and Art; a course of one year in food economics for the training of skilled housekeepers; one of the same length in general domestic science for use in the home; technical courses in the special subjects of the various departments of housework; courses in cookery for High School students and children; and courses in cookery, sewing, and hand-work for mission and settlement classes.

The department now provides for and instructs 250 students, distributed as follows: 100 normal students, 10 students of food economics, 10 general students, and 130 technical students, including the High School and elementary classes in cookery.

The subject-matter presented is the same as that of a year ago, with the following exceptions: For the normal students, instruction in art and more extended hand-work; and for the students of food economics, protracted work in accounts, methods of systematizing housework, and the care of linen. Though these changes seemingly refer to details, they have an important significance in the strength which they promise.

The curriculum resulting for the normal students embodies in the first year training in science, with the expression of it in activities normal to life in the home, and training in art, with its expression in the choice and construction of articles pertaining to every-day life. In the second year an opportunity is afforded for the election of Domestic Science or Art as a major subject, that each student may be prepared to take the initiative in teaching the group of subjects for which she is best adapted. The training in the secondary group of subjects broadens the student's life and sympathies, and prepares her to render acceptable service as an assistant to a special teacher of this group should her time permit and occasion require it.

From year to year the methods of presentation of the subject-matter dealt with by the department change. They attempt to fulfill more adequately its

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constant purpose to afford thorough personal training, to ensure complete assimilation of knowledge vital to the life of the student as an individual and also as a prospective special teacher, to establish high ideals in work, to effect mastery of material and means, and to instill a desire for growth.

The fact that the demand for training in Domestic Science and Art and for qualified teachers of the same continues to increase gives evidence that such work has been needed. Yet more than has been accomplished is rightly expected from Domestic Science and Art. However, where dissatisfaction has been felt, and in extreme instances has found expression in the discontinuation of this work or the substitution of other subjects, the change has frequently been only a temporary suspension of the work. Its reinstatement is intended as soon as its potentialities from a pedagogical point of view have been more fully revealed and developed.

Some able educators look upon much of the work offered along these lines as unprofitable, and permissible only because it displaces meaningless so-called "busy-work." Even these critics express faith in its ultimate efficacy because it calls for motor expression from the child, while acquainting him with race traditions and activities which illumine all subjects engaging his attention.

The intelligent and sympathetic acquaintance with the industrial environment and history to be gained through these activities is now valued and sought for the child. The intimate relation of food, shelter, and clothing to life, and the fact that the activity required to provide them is normal, therefore developing to the child, have recommended Domestic Science and Art and have undoubtedly secured for them a significant place in the school.

A subject to be recognized as worthy of such a place must, of course, address itself to all types of students, and carry to each something unique and of real value. It is believed by the advocate of Domestic Science and Art that these subjects have it within their power to do this. To the student of quick comprehension one of their principal missions is to give an opportunity to express, test, and fix knowledge gained through other avenues. For example, when facts and processes of arithmetic are required for measurement in constructive work of this nature it increases the availability and adequacy of the knowledge possessed. The girl who has been able hitherto to work with facility, when told what laws she is expected to apply finds here an opportunity to exercise her ability to select for herself each as needed.

To the students of slow or unaroused intellect light is often shed upon mental perplexities, and a feeling of capacity awakened through the presentation of a task which seems possible and attractive. Thus an interest is frequently provoked in subjects which before were without meaning, but now are understood because needed. Even the girl to whom arithmetic is a confused mass of figures usually finds significance in the actual measurement or calculation for some end which is real to her, such as a garment or a muffin.

To the student of average ability, as indeed to all others, such work en-

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courages achievement based upon understanding and resulting in appreciation. It is found that the girl who estimates her ability to make bread or a basket by the quality of that which she makes, possesses power that otherwise would not be hers. It is only through such experience that she learns to interpret intelligently and sympathetically the experience and work of those engaged in the production of articles of this kind.

It has been natural for cookery and sewing as school subjects to present, as they have, many and serious difficulties. Though complex, they have been so generally practiced that at first there was no hesitancy in entrusting such work to unprepared teachers. To the ineffectual teaching of untrained and inexperienced women of refinement and professional dressmakers or housekeepers are to be attributed most of the misgivings voiced. A stronger future is promised by the general demand for more thoughtful consideration of the pedagogy of these subjects and for adequate training of the special teacher. It has always been recognized that such special teachers should be acquainted with the facts, possibilities, and principles of the special subject-matter, and proficient in their statement, realization, and expression. Now it is further expected that they be able to discern readily the essential facts of these subjects, be imbued with a desire to understand the life of the child and the potentialities of its various stages, be familiar with the laws of mental activity, and be firm in their faith in the value of these subjects.

In the early teaching of every subject the dominance of the logic of the subject-matter is pronounced. Even after the instructor realizes that the subject is not to be taught for its own sake, but primarily for that of the student, he continues for some time to develop it at the expense of the student, and also at that of a thorough assimilation and appreciation of the subject itself. It therefore is not strange that the teaching of cookery and sewing, after it passed the stage of presenting isolated facts, presented a sequence of facts classified without special reference to the laws of the mental life of the student. Nor should it cause surprise that it is only recently that a rearrangement of the subject-matter has been attempted which has for its aim the development of the student and the formation of a background for the more abstract work which will later reveal and formulate the laws underlying the facts expressed in the practical work.

This work in the elementary, grammar, and secondary public schools is interesting, promising, and suggestive. It varies in type with almost every city in which it has been installed. The environment and the characteristic employment of the inhabitants condition most evidently such work. The interests of the parent and the ability of the child are moulding influences when not determining factors. For example, where work in iron is a dominating interest the children enter upon manual training prepared in understanding and skill for tasks which would be impossible to students of a purely commercial district. To make use of this special ability of the child, and at the same time to supplement it wisely, is one of the most important and perplex-

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ing problems. This accounts in a measure for the impression of disorganization in manual training which sometimes results from seeing the different phases of the work as adapted to special localities.

Another confusing element is introduced by finding the work in different cities under the direction of the supervisor of kindergartens, or of elementary work, or of art, or of manual training, or of sewing, or of cookery, or of the principal of the school in which it is taught. The basis of selection seems in every instance to have been personal fitness for the responsibility. It is clear that more kinds of service are thus required of an individual than he can be prepared to render with satisfaction to himself.

The divergence in the training of the teachers conducting the class-work is not less marked. It ranges from that of thorough special normal training through less extended special equipment to the very limited specific preparation of the regular grade-teacher. The work of the grade-teacher, however, has many strong features, two of which obviously are the thorough knowledge of the child and the opportunity for complete correlation with his other work. Yet such conditions may not always result in the fullest development of the possibilities, and therefore may make the subjects appear as only a wholesome form of successful amusement. Where a clear conception and intention in the mind of the teacher does not underlie the activity, the work often fails to afford the needed training for which it should be given. A spirit of earnestness and pleasure seems universal among the teachers engaged in such work. The supervisors are intelligent, full of faith in what can be done, most ready to give time, thought, and the result of their experience to advance the cause of the work, and are alive to all opportunities for discovering where improvement is possible.

Though the training of special normal schools has influenced the combination of subjects taught by one teacher, it has been but one of many factors. The courses offered by the training-schools to-day are as follows: Manual training, domestic art and domestic science uncombined, manual training with art or domestic art, and domestic science with domestic art. In the combination courses the student spends the greater part of his time in training on the subject which he intends ultimately to make his specialty.

Manual training consists of work in wood, metal, and leather. Except when combined with domestic art, it usually includes cord-work, weaving, and basketry. Domestic art incorporates cord-work, weaving, basketry, sewing, embroidery, dressmaking, and millinery. When it is given as a minor subject, embroidery, dressmaking, and millinery are omitted. Domestic science as a major subject embraces cookery, dietetics, serving, marketing, hygiene, sanitation, household economics, and laundry-work. As a minor subject domestic science is limited to cookery, serving, and marketing. Courses in art, science, and education accompany these professional subjects.

It is natural that objections should be found to the complete separation of the so-called manual training subjects, and also to the combinations existing.

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However, tradition, economy, and an honest effort to find out what is really best account for the present situation.

It is objected that the courses leading to preparation in only one professional subject do not equip the teacher to fill the positions open to-day. Too early specialization is thought to result in lack of vision, sympathy, and ability to correlate the special subject with the regular work of the school. Those who believe that little children should be under the care of one teacher only urge a decrease in the number of specialists in the lower grades.

Against the combined courses is brought the charge that even if the elements are not discordant, they do not hold equally the interest of the teacher, and therefore may lead to work which is not strong in all directions.

To many who believe that constructive work should express good artistic thought, manual training is but a phase of art, hence the combined courses in art and manual training. Those who favor manual training in combination with domestic art maintain that manual training is more than a phase of art, and believe that work in wood, metal, and textiles is one in fundamental principle, despite the difference in the media and instruments used. Appreciation of beauty and expression of it all recognize as essential in this work. That such training in art is necessary as will render the results in manual work pleasing, is no longer questioned. As training, however, the manual side of the work would receive the greater emphasis from this class of educators. An objection of wide acceptance which is urged seriously is that the teaching of work in wood is thus assigned to a woman. It is thought by many that few women can carry into it the strength which is needed for effectiveness.

It is not tradition only which keeps domestic science and art together, but the fact that in general training they supplement one another. Combined, they afford a more balanced training than either can alone, and they do so without lowering their effectiveness. Were it true that each student is distinctly artistic or scientific in her ability, a natural separation would be effected. On the contrary, it is found that at least seventy-five per cent. of those who specialize in these subjects show during the first year of training here such even ability along these lines that it is usually difficult to decide to which subject the greater amount of time should be given in the second year. In this respect the students of fair and of excellent ability do not differ. It, of course, is true that there is a small number whose strength unquestionably is in one direction only. Even in such cases the abbreviated training along the other line has not been without direct value, as it has strengthened the individual. Evidence of this fact has been given in the ability shown in the study of art and domestic art by students so trained.

What distribution of these subjects will ultimately obtain cannot be foretold. It is now an open question upon which light is being earnestly sought. It is probable that experience only can adjust satisfactorily the difference of opinion which now exists. The outlook, however, is encouraging, for it is

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truth that all are seeking. To it supremacy will be granted when it appears in a guise which is unmistakable.

It is not advised by any who have the good of education at heart that the teacher attempt greater breadth of subject-matter than will ensure proficiency. Still it must be remembered that the teacher cannot be a scientific expert in research or an artist devoting his life to creative work. He must rest content with such participation in scientific investigation and in art as is afforded in the laboratory, through the application of law formulated by others, and in the studio by an attempt to express the beauty which he enjoys. The teacher's specialty must be the effective development of the student through sympathy and such knowledge of truth and beauty as he himself understands and appreciates.

To the child, hand-work, sewing, cookery, and allied subjects mean a pleasurable activity in imitation of processes pertaining to life as he knows it. They afford him the opportunity to become familiar unconsciously with raw material and its possibilities. Further, these subjects teach his hand obedience to his will. It is agreed now that the little child must have his coarser muscles called into play first; must deal with distinctions which are large enough to be evident to him; must feel the necessity of completing what he begins; and must make each piece of work an expression of his best effort. To this end care should be taken to give him only such tasks as with earnest effort he can do acceptably. The youth should be given in these, as in other subjects, exercise for the powers which are developing, and encouragement to seek for an explanation of what is seen and done.

SUGGESTIONS FOR GRADED SCHOOLS.

The types of work which are suggested in the following pages for students of different ages represent those which have commended themselves through trial in the public or mission schools. As experience increases many changes are anticipated, though fewer undoubtedly will be necessary in the future than have been essential in the past.

For the child just emerging from the kindergarten simple constructive work with card-board, and the wrapping of it with raffia for picture-frames, is of value if such work has not been incorporated in the kindergarten training. Simple cord-work, such as braiding and knotting, have been found very profitable and interesting to children of this age. In one mission a child asked for cord to make a bag at home, and later brought a very small bag to show the teacher. She explained that she had shared the material with three playmates whom she had taught to make bags. It is said that in some cities cord-work has failed to interest or profit the children. The only reason suggested as an explanation of the failure was the dearth of articles which could be made. On the little bag and hammock, however, children usually master simple braiding and knotting, and are ready to do something more difficult.

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The choice of good color and proportion, as well as the child's best workmanship, should be obtained from the first. The conditions of the school today provide that this work be done within school hours. This limitation is not to be regretted, since the children need at this stage suggestion, direction, and supervision for the furtherance of their best interests. Entirely unguided choice of material, color, and design at first has been found to result in confusion and poor work. Though children cannot be encouraged too strongly to take the initiative and to work as independently as they are able, it is equally important that they be not overwhelmed and disheartened, and that they be not permitted to put into permanent form too meagre or crude a thought. It is only as each child does his best work with the least assistance which will make the work possible to him that hand-work justifies its claim to a place in his life.

Simple weaving with the fingers, using pliable material over a notched card, has been found to be a good introduction to weaving. At once a few children show a desire and the ability to vary the number of warp-threads crossed by the woof. It is difficult to discover whether this desire is for a different effect or for a variation in the activity. Probably the latter, but when the result becomes evident the effect upon the child and those who are about him usually is marked, and more original work follows. In the main, however, the children do as they are directed; they neither question nor experiment. They work with absorption and apparent pleasure in the activity. Still it seems wiser that all work should result in something for the home or possibly the doll-house. The latter is becoming an integral part of the equipment of the primary school. Good only is reported as resulting from its introduction.

Weaving presents so many possibilities that it can be continued through from one to two years before the work becomes mechanical. Only three-quarters of an hour a week of class-time is allowed for it, and such other time as the regular school work does not consume. An iron-holder and a doll's hammock, or similar articles, are woven successfully over a card, with no instrument except possibly a needle to carry the woof thread, and when necessary fine knitting-needles through the card to prevent the outside warp threads from being drawn in unevenly. Since the work has been introduced into the school curriculum that the child may learn to control himself and material, too much thought cannot be given to furthering this end. Nor will such an aim result in poor workmanship if the teacher is able and wise.

When it is clearly advisable to use a frame on account of the size of the articles to be woven the simplest one has proved to be the best. A plain, firm frame, to which the warp-threads are held in any simple manner (even by wrapping a string around the ends of the frame), is adequate. Such a loom gives the child a better opportunity to develop himself, and even to do good work, than the more elaborate ones. A means of keeping in place the warp-threads of the selvedge is usually found necessary when larger work is

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begun. The less such a means interferes with the firmness of the selvedge the better it serves its purpose.

Though a needle is now used to advantage, a shuttle, heddles in any form, and even a batten should be withheld. The child does not feel the need of such assistance, and unless his work should become of such a character as to require it, it is to be avoided. Very beneficial exercise results from using the needle to raise the warp-threads. Earlier the children picked up the threads with the left hand. It is desirable that the employment of the left hand continue, as it can if the needle is manipulated with it and the right one alternatively.

Rugs and blankets for the doll-house usually claim the attention during this period, which ends for the child with the second or at the latest with the third year in the elementary school. To the consideration of color and proportion is now added simple composition and design. More freedom in the choice and use of material is encouraged. When possible some work with beads should be given.

Often the receptive and ingenious child, through acting upon suggestions offered by the material instead of by his neighbor, produces something unique. As yet it has been impossible to ascertain in how far the children, when given freedom, unite elements which they have observed and thought applicable to their work.

Since basketry is but a form of free weaving, it is the next natural step in hand-work for the child. Again such material should be chosen as will render good work possible. As the handling of all material for basketry is somewhat difficult, it is essential that the first work preclude all unnecessary problems, such as great variation in purpose, form, design, and material. Though children use splints with much better result than most adults, nearly all splint baskets are inartistic. Therefore, until a means of creating greater beauty with splints is devised their use is not recommended.

The finer rattan seems to meet the need of the children better on the whole than any material that has been used. The control of it for an end is a problem which taxes wholesomely the ability of the child in the third year of the elementary school. The difficulties encountered in the making of baskets are so patent to the child that he does not fear them. He attacks them with courage, and overcomes them more readily than does the adult. Some teachers think that work of this type makes a child very self-reliant. They contend that there is a perceptible difference in the attitude of a child so trained toward all his work. The feeling of conquest which he has enjoyed, they believe, unconsciously encourages him to seek for himself the cause of the difficulties which his work presents, and to master alone what is hard for him.

From the rattan mat, the child in his fearlessness passes to freer conception and better execution in basketry than the average class of adults can attain easily. Sewed raffia baskets are made with painstaking care. They are astonishingly firm, and express many interesting and attractive thoughts of their

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little makers. With this work in raffia all principles have been taught, all fundamental difficulties overcome, and a creditable degree of skill acquired. A strenuous effort is being made to enlist the interest of the children in the discovery of native materials suitable for baskets. Before their interest wanes the children usually make several baskets at home. Unless the child creates for himself new artistic problems his attention would better be required for some new form of manual work, which will prevent him from indulging in mechanical activity which demands neither thought nor increased effort. Before work of an entirely different nature is undertaken chair-caning is advised.

Though crocheting and knitting are rarely taught to-day, it is hoped that they will soon be incorporated in the hand-work for the child. Immediately after basketry, in possibly the fourth year, this phase of manual work would find the child ready and interested. As soon as the child has gained facility in the use of the needles and freedom in expression of good thought in this new medium, all further application of the processes should be carried on as a home industry or avocation.

It is hoped that the time is at hand when at least such work in wood as can be done with the knife will be given to the girl before she begins to sew. The fifth year could be spent profitably on such work and still leave an abundance of time for sewing and cookery before the girl completes the grammar school course.

Through the four years of the elementary school it has not been found necessary to separate the girls and boys for hand-work. Both seem to take great pleasure and interest in weaving and basketry, and to profit equally by the exercise involved. With the advent of sewing, differentiation in their activities seems advisable. The work for the boys after they have begun work in wood is not a professional problem of this department.

The number of schools in which sewing is taught for the training of the child is increasing rapidly. Though it still is possible to see deplorable methods, there is every reason to believe that they will pass naturally. The younger teachers are breaking away from the traditions with which they began their work. They do so in most cases unconsciously. They are simply seeking a way of helping their students more effectively, and are not at the moment thinking about the ultimate formulation of their thought.

The effort made is toward naturalness. The stitches and elementary constructive processes are rendered significant by being taught through application and in an order representing a progressive demand upon the student's mind and hand. Coarse material fashioned into some simple article, such as an oven-holder, requiring over-handing around the edges, has not proved too taxing for the smallest child who can hold a needle. For little children, over-handing seems to be a more normal and profitable initial activity than basting.

It has been necessary in some communities to demonstrate to the mothers that it is intended in sewing to teach the child something which even she will

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recognize as of real value. Sometimes this amounts to a necessity if the teacher wishes good results. Her best hope of winning the mother is to have the child make some articles which will be valued in the home. A bag, a towel, a pencil-holder, and later, dolls' clothes, afford the opportunities needed to teach the principles of elementary hand-sewing.

SOME PEDAGOGIC CONSIDERATIONS.

It is curious that while the young teacher is thus seeking a way in which she can make the practical work in sewing tell the girl what she would teach her, she frequently expresses discontent because she must teach children cookery through the practical phase of the work. That the necessity to do so is often due to her own conviction that all else is unprofitable as well as distasteful to the child does not always dispel the dissatisfaction. What interests her intellectually she unconsciously wishes to make her message to her students. It is truly difficult for her to appreciate quickly that the child's point of view, which differs so evidently from her own, is no less real and necessary to the child. Until her acquaintance with children reveals and impresses this fact, her position is that of the woman who said to the child, "Were I you, dear, I wouldn't step into those puddles," to which the child responded, "Were you me, Aunt Lizzie, you probably would step into all of these puddles."

It is with genuine disappointment that many teachers of Domestic Science realize that if they and their students are to meet, it must be on the student's intellectual plane, as that is the only one common to both.

The teacher's first impulse is to repeat the methods which she has seen used, and her second, to explain fully and directly what it gave her pleasure to learn. In the second, she does not realize that she is trying to convey to the pupil enjoyment resulting from an activity which she is inhibiting. In the first, she overlooks the fact that methods which were addressed successfully to her mind cannot be expected to reach that of the child who should be many stages below her in development. Her repetition of methods adapted to different conditions is due, in a measure, to an earnest desire to work along lines which are approved. All are aware that this mistake can be obviated by teaching normal students only what can be taught to children. Such an effort to adjust subject-matter and method to the child, in training the normal student, results, however, in placing the child under the instruction of a dwarfed teacher, whose background is so meagre that she lacks vision. The woman who has no acquaintance with chemistry and physiology cannot prepare the child's mind, through cookery, for vital and full insight into these subjects. To possess the scientific knowledge requisite, and to use it to guide cooking so that all that is learned will be in line with what will follow, requires self-control, the ability to work with a long plan in which others share, and the power to place what is real before that which will give the appearance of unusual knowledge.

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The misconceptions which lead to the neglect of the child, and of the working methods necessary to him, cannot be annihilated by an effort of the will, but are disappearing by the substitution of methods more in keeping with the proper aim of the teacher. When the child or student of any age is looked upon not only as a problem, but an absorbingly interesting one, activity as of great value only when it calls into play the best powers in work which has intrinsic worth, and self-expression as desirable only when it encourages a child to express a worthy self, effective education will result.

A psychologist has said, "To pick locks industriously will make an individual more efficient than idling." It is maintained that it is easier to direct activity into right channels than to arouse and sustain it where it does not exist. Attaching such importance to it is not intended, however, to foster the feeling that enough has been done when children are kept active. Teachers always have an opportunity and are pledged to do constructive work, to make every impulse, thought, and volition tend upwards.

After the introduction of the idea of activity into education came that of self-expression. With feverish haste it was proclaimed good. It thereupon swept into all departments of work. Now it is being considered. It is contended that the result has been poorer work and lowered ideals of workmanship, and that it has not strengthened the child appreciably. The observations upon which these conclusions are based were made, it must be remembered, when the principle first became operative. The increased appreciation and resourcefulness of the individual are not easily or quickly measured, and in a hasty estimate appear absurdly unable to balance poor work, low ideals, and self-satisfaction. That when one first sees he should think that he sees all, ought not to be a matter of too great discouragement, for one must see before he can see in proportion. By increase of light all hampering self-satisfaction can be dispelled. To tax the individual continuously is to enable him to measure himself by those who are above him, and not by those below.

It is to be hoped that the sanctioned license which has made possible the expression of commonplace and meagre ideas has not prejudiced too strongly those controlling organized education. If the child's career be guided, and he be permitted freedom of expression along each line of conduct and thought as he becomes able to express a worthy self, development will certainly result from the independence granted.

The fetish worship of work because it shows individuality regardless of its merit has brought the doctrine of self-expression into great disrepute, and in many localities is effecting a return to most evident and deplorable repression. The extremes in combat will, however, probably hasten the right use of the good in each. The time is at hand when self-expression has ceased to signify spontaneous activity only. To encourage lack of reflection and self-control, and to ignore the fact that one expresses himself in choosing to inhibit an unworthy impulse, has not been the aim of even those who are

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responsible for the evils evident to-day. Nevertheless, if greater wisdom is not exercised, the end will be far from satisfactory.

It never has been considered that the child who strikes his brother expresses himself more adequately than the one who controls his desire to do so. It must be believed that ultimately more self-guidance, through control, will be stimulated by suggestion and expectation in school work. Then better results will undoubtedly commend the method which is endeavoring to voice a great truth. A wiser choice of what the child shall be encouraged to attempt to express will further such an end.

Another principle in teaching which has been consciously introduced, used, and abused of late is interest. When interpreted as advocating the indulgence of the caprice of the student, it is without defence. When it urges the use of each nascent period at which the ardor for given activities is at its height, all should listen who would have the child arrive at maturity developed and balanced. It is thus that his life becomes rich in wholesome experiences, his mind well furnished and capable of comprehending phenomena, and of perceiving means at hand which can be used for high ends. To-day the activities normal to the developing individual have been defined with sufficient accuracy and clearness to suggest the necessary accommodation in work. Though it is commonly determined for the individual teacher what types of work and what phases of it are appropriate for students of different ages, it is important that she know enough of the life of the race and individual to understand why she does what she does.

It is probable that to-day every one believes in laboratory work because principles can be known most fully through their manifestation. Yet it seems difficult to maintain this as a basal principle in instruction. Words often seem to be accepted as a more direct approach to the mind than investigation which will disclose latent possibilities. It is unquestionably easier to tell a student what exists, and what may be expected to happen under given conditions, than to ensure his discovering what does exist and what is occurring before him. Still, no one thinks that a description of chemical or physical properties of substances ever results in as complete comprehension, or as vital and lasting knowledge of the facts, as is afforded by the examination of substances under conditions which will cause their characteristics to reveal themselves. Even more necessary is it that an organ be studied in terms of its function. It is thus that the student realizes that structure is determined by the purpose which it serves. Through such a method the student learns to infer function from structure, and forms the mental habit of constructing in conformity to an end.

The instructor's rôle in such work consists in establishing for the student conditions which require observation, induce inference, inspire enthusiasm, create appreciation, effect assimilation, demand skill, impel application of knowledge under modified or new conditions, and develop the ability to see and embrace opportunities intelligently.

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SPECIAL ASPECTS OF DOMESTIC SCIENCE AND ART.

This method is applied not only to Domestic Science, but also to Domestic Art. Even in the basket or dress, the function should be the determining factor in the choice of materials and structure. Instruction which ignores this all-pervading principle defeats its own aim. In teaching, as in life, it is found that only the means which serve a worthy end are ultimately conserved.

Teachers discover slowly but fully at last that to permit the student to do what serves no real purpose in her development is to wrong her. Students are rarely unemployed, but frequently occupy their time with things which need not be done, to the neglect of those which they need imperatively to do. Sometimes a girl will expend all her time in hand-work because she enjoys it, and will do so without being deeply conscious that she is indulging herself by leaving undone what she enjoys less. A wrong moral standard is easily established when industry is accepted as the equivalent of work which needs to be done, or as an excuse for the neglect of the same.

It is natural that the conscious aim of the teacher and student should differ, but each should be furthered by the other. In a game, it is right that the student play for the end in it, while the instructor aims to exercise the student physically and intellectually through it. In cookery the girl cooks to be active, and to make something which interests her; the instructor has her cook to acquaint her with food-materials, the characteristic changes which are effected in the preparation of food for man, and to instill, through good methods in work, a desire to work effectively. In sewing, the problem is fundamentally the same. The activity is directed by the end to be attained. The apron or bag must be for a purpose, and the stitches learned on such an article must be used for the purpose they serve best. The purpose of any article may, of course, be its utility, its beauty, or its developing power.

The teaching of any process or subject under artificial conditions must justify itself by proving the superiority of such training for the student. The teacher of Domestic Science and Art often is asked why she advocates so strongly the small quantity of material used in cookery, when in sewing there is a distinct tendency toward the abolishment of models or exercises in favor of work which involves more real problems. Usually she has not formulated the difference, even when aware that a very real one exists.

Cookery, unlike sewing, has had periods of being taught by demonstration and lecture. The teacher of cookery, in using small quantities, is simply making possible practical work for the individual student. The quantity of food prepared is adequate for an individual, and the pedagogic unit in the presentation of such work is a complete process. This individual work in cookery may properly be considered an analogue of the making of clothes for a doll or a child.

From the point of view of economy, the small quantity of material used in

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teaching cookery in schools is a necessity. The expense involved for cookery always exceeds that of sewing. As yet it has not been determined whether the making of articles instead of models will modify greatly the cost of class-work in sewing. It is not anticipated that it will, as inexpensive material in moderate quantity is all that is needed. Though small pieces were used in models, many were needed for the several stitches and principles of construction, as well as for practice work.

On account of the nature of cooking, the processes must be completed within the time allotted for the work, which again limits the quantity of material that can be used in school. Sewing is free from this condition too, as a large piece of work may be interrupted and still be capable of successful completion.

The preparation of the individual quantity of food and of the model in sewing have, however, some limitations in common. Small quantities of meat do not afford adequate opportunity for the acquisition of the necessary knowledge of the kinds and cuts of meat. In a model for sewing a similar disadvantage exists, in that models do not permit of the most intelligent selection of material. A satisfactory disposition of the latter deficiency is possible by changing the method in sewing. The former must still persist to a perplexing degree. Markets are visited, and purchasing for home use is encouraged as far as opportunity offers. Again, sewing on models and cooking in small quantities present a common difficulty when the preparation of flour mixtures is considered. The handling of the small piece of cloth and the manipulation of the small quantity of food materials is in some respect harder, and in others easier, than that of the larger quantity, and thereby introduces unnaturalness. For the sewing, this disappears with the change of method. In cookery, it renders of great importance home-work and abundant practice in the preparation of meals in the school.

Domestic Science and Art have two distinct missions, i. e., an educational one in the school curriculum, and a technical one in the preparation of women who desire to be proficient workers along these lines. In this report attention has been confined to the former because it presents more perplexities, is in a more unsettled state, affects more widely the race, and will not, unassisted, solve its problems, as most technical work must. Emphasis has been laid on the work of the lower schools, because it is their work which reaches the largest number of individuals, and conditions the ability of students in such higher work as they may be priviledged to undertake.

It is not the intention to ignore the value of Domestic Science and Art in the secondary and higher schools, but at present the type of work, the sequence in it, and the aim must differ to conform to the work of the lower schools upon which it is based, and this varies greatly. Still there is a common ground to be found in the phases of these subjects which are in harmony with the degree of development of the student and the other studies being pursued. Some of the difference evident to-day is due to the variation in the

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theories of those responsible for such work. Some schools aim to derive all possible educational benefit from these subjects. Their belief is that the practical work of the lower schools should now reveal more fully its significance, and illustrate the more abstract science and art of the High School course. They strive to afford training which will result in practical use in the home only. Others desire so to prepare the student in the fundamental principles of these subjects that the knowledge acquired may be used for self-support when supplemented by limited subsequent training. The intellectual and mechanical phases of the work appear, and are valued in every High School course, but the aim places the emphasis upon one, to the subordination of the other.

Where wisdom is exercised, the work in Domestic Science and the natural sciences is made so mutually dependent that the student feels the need of both. If the student has used, as it is wise she should, various types of leavens in the flour mixtures which she has made, and has observed the action and noted the facts disclosed, she is now ready to formulate the laws controlling the action of leavens. If simultaneously she studies gases, discovering their properties and methods of generation, she is prepared to determine for herself from what and how effective leavens can be obtained.

It has been found that some of the most astoundingly conflicting ideas are held firmly in the minds of students simply because they are kept apart. For instance, the knowledge of the specific and necessary means of generating carbon dioxid, even when known, strangely enough, does not always control the statements made concerning the formation of baking-powders. Too much care cannot be exercised in ascertaining whether the students are thinking intelligently and clearly. It is too often assumed, to their detriment, that of course they understand what they are doing. In this work it should never be impossible to make the work demand right thinking. The performance of tasks exacting knowledge which should be possessed usually is possible. Since a student may recite correctly and act carelessly, and neglect all opportunities to use her knowledge aright, it is best for her that what she does be accepted as the measure of what she knows and intends.

What has been said of Domestic Science in the High School, it is hoped, indicates that it is of greatest value when placed in close conjunction with physiology, physics, and chemistry. This necessarily places it late in the course.

Though the children should combine food-materials and learn through experience the principles of combination, the formulation of such principles should be reserved for their more mature years. Not until the student has formulated such principles from her practical experience should she be acquainted with them in the abstract. After this knowledge has become hers it should, of course, find conscious expression in concrete form. For example, the child knows from her life experience that meat, vegetables, bread, and butter are common articles of diet and illustrate a typical combination. Even in the more restricted diet of the poorer classes most of the

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food principles appear in some form. With this knowledge as a background, a classification of food-materials upon such a basis is advised. Thus a rational foundation can be laid in experience. Even when food materials have previously been classified, as it is advisable that they should be, according to the processes employed in the preparation of food, there need be no confusion, as the general divisions will remain constant.

It cannot be too strongly emphasized that only very clear, important, and broad distinctions should be recognized at first. Young children and students approaching a new subject must have their work present to them at the beginning only essential facts. It must bring out in sharp contrast fundamental differences, and through dependence upon earlier work must develop any significant relations which may exist. For example, in flour mixtures, if the work is introduced, as is usual for children, with a thin or thick batter, it should be followed by a soft dough, so that the difference will impress itself and prevent all possibility of confusion between batters and doughs. When these gross distinctions are clear, then those which involve slighter changes in proportions and manipulation should follow. Through both the contrasted and closely related mixtures the common features should be recognized, as well as the differences.

It has been found that the child observes rather closely, and uses in her work readily and naturally the knowledge resulting from her observations. Yet no real interest on the part of children has been detected in the purely rational side of cookery. They can, however, be induced to study the egg with reference to the temperature required to coagulate the albumen and the yolk before they proceed to the cooking of eggs, but this is possible only because it is forced upon them as a necessary preface to the end which interests them, namely, the cooking of the egg. Possibly children so taught learn the facts for which such experimental work is given. A few may even remember in some detail the results. But on the whole such work is meaningless, partly because the results are so inaccurate that they are inconclusive, or at least should be so considered by the careful experimenter. Often the instructor is forced to announce what the experiment was expected to make evident.

Some teachers maintain that they teach thus that the child may discover the properties which control processes. Since as full directions, however, must be given for the experiment in which the girl is not interested, and in which she is unable to reach a reliable and accurate result, as for the cookery where constructive work is possible, it simplifies and strengthens the work to give at once directions for the proper cooking of the egg. Through the process the effect of heat upon the egg can be observed. Later, when the degree of development renders experimental work possible and desirable, the gross knowledge acquired earlier can be verified and refined by accurate experimental work.

Two objects are served by such a method of procedure. First, the student learns to expect to discover what is happening without unnecessarily artificial

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assistance. Second, only what can be done is expected, which is always wholesome. To demand accuracy which is without significance to the student inculcates a disinclination to attempt to be accurate in anything, or a slavish and misguided reverence for the appearance of accuracy. It is most important in work of this type that the facts disclosed by it shall control the ideas which are supposed to be gained from it. Appreciation which has been aroused through an appeal that reaches the student leads naturally to a desire for accuracy. Then the opportunity for it should be given in a requirement which encourages most careful investigation. As the study of dietetics illustrates this very forcibly, perhaps it will be well to consider it somewhat in detail. Through the method which is now being used, it is hoped that the student will be left with a working knowledge of the subject.

DIETETICS.

For the child or any student, dietetics naturally begins in the knowledge derived from the diet with which she is familiar. It is probable that it will not be a balanced or desirable dietary, but it will have the general characteristics which are fundamental to a knowledge of the subject. These can be taken and the rest left. From the inspection of different combinations a classification of food-materials can be effected. The question, "Why are these kinds of food combined?" arises naturally, and opens the way to the study of the needs of the body, from which the functions of food can be inferred. Children realize that they grow and work, and easily understand that food is needed for both processes. By a simple explanation, adequately illustrated by similes which they can understand, they learn to know and appreciate the general functions of food. From the classification of foods which they have made, they can tell in very general terms what purpose each ordinary food can serve.

Though they can understand, in a measure, combustion and heat as energy, it is inadvisable to allow them to use terms which are empty to them. It may be that children grow into an understanding of language through having its meaning borne in upon them by using it, but this is not the case with scientific terms. Until they express facts to the child, they only puzzle and overwhelm him with a sense of incapacity. The use of mineral matter and water in the body, except in the most general way, should be deferred, because it is not feasible to attempt now an elaborate analysis of foods. It is wiser, since it will ultimately lead to a more thorough comprehension of the subject, to let the girl assume that each food, as she knows it, has one function; that is, it either builds tissue or furnishes energy. Any finer distinction confuses the young girl and makes her desire to avoid the subject.

A close correlation between physiology and cookery is needed, and will be of mutual benefit. This is most easily effected by having the two subjects taught by the same instructor. In many High Schools such combination of

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work exists, and results in strength for the student. It affords a better opportunity of doing clear and earnest work in hygiene, home nursing, and sanitation, for which subjects the teacher of Domestic Science is usually responsible.

With High School and older students the question, "Does each food serve one purpose only?" becomes pertinent. When it is asked, the time has arrived for the student to be guided to the knowledge which she seeks. But before this question becomes urgent, it is well to find an opportunity to have the student inform herself concerning the quantity of food consumed per day by an individual, the ratio existing between the weight of the body and the quantity of food required, and the factor of waste which must be allowed in purchasing and preparing food.

This can be accomplished by the instructor planning meals which express established dietetic standards. These meals should be prepared by students in groups of five or six for themselves or their classmates. Before undertaking such work they all should be somewhat familiar with cooking, so that they will not be confused by too many new ideas and directions.

The students should ascertain the quantity of the materials which they use, and record the same. They should not be confused by unnecessary weighing. To illustrate, they should weigh most carefully a familiar unit quantity of flour (used in cookery), and then estimate the amount used in different ways in the dietary prepared. They should note accurately the gross waste in the preparation of the food by weighing everything which needed to be discarded. It should not be overlooked that this work furnishes an excellent opportunity for the student to learn how to tabulate data simply, clearly, and in good form. After each meal is served the unconsumed food should be weighed and the quantities noted as before. From such data the quantity of food consumed can be calculated, and from it the average amount for each individual for the day can be estimated. Such meals should be served at noon, or in the late afternoon, when they will have a value which is real. The ratio between the quantity of the food consumed by the individual and the approximate body-weight should be determined; likewise that between the food served and the material discarded. It usually is desirable to include the cost in such a calculation, and to give the students, if possible, an opportunity to purchase the food, that they may acquire a working-knowledge of the quality of food-materials, the season at which they are obtainable, the unit quantities in which they are sold, and the cost. Students should be encouraged to consider the quality, the quantity of food available in a substance, and the price when they are judging of the cost of a food. Though each student has in this work made but one calculation, and four or five have used the same data, there usually are several groups at work, which makes comparison of results possible. A fair agreement invariably exists. The conclusions reached are not expected to be accepted without confirmation by the standards established by experts. This work enables

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the student to enter into the thought of the expert dietitian, and to interpret his statements and to apply them intelligently.

It has been found unfortunate to involve each student in a series of meals before any conclusions are reached. As rapidly as the student can summarize her work she should do so, but she should suspend judgment where data is so meagre as to lead to a wrong conclusion. Students should be trained to expect of themselves fuller knowledge as the subject unfolds. Though in this work approximations have been encouraged, it has been found that the conclusions resulting compare as favorably with the standards sanctioned as do those obtained from more detailed work. It is an affectation to assume that great accuracy is possible, for the sources of error inherent in dietetics to-day are such that the percentage discrepancy due to the use of large and general units is not appreciable. For the average student this fact does not seem to be thinkable. Often the student who neglects to use the rider on a balance will carry her calculations five or six decimal places, when the weight which the scorned rider could have determined would have been represented by one decimal place only. It is not unusual to see the cost of the sugar used in a ten-cent luncheon estimated as amounting to .0004 of a cent, or even less. It is essential that the student be held to representing only what has reality to her, that she may not lose the habit of mental integrity. Inconceivably small units in this work are to be avoided, as they are a menace to thought and an encouragement of meaningless and mechanical work.

The simple dietary indicated has been the instructor's statement of a few facts to the students. This method, it is believed, will vitalize and impress these facts and render them readily available. If time will permit, or home life offers the opportunity, it is well to have the conditions of the problem changed and to allow the student to solve it again, bringing out, if possible, the difference between the quantity of food consumed by children, women, and men under varying conditions of life, such as hard muscular work, mental work, etc., but always using the first determination as the unit, and expressing all others as a part or multiple of it.

The student now is prepared to participate intelligently in the separation of food-materials into their constituents, and to answer the question, "Does each food act as a whole, serving one dietetic purpose only?"

The knowledge of the constitution of food-materials, which the student has obtained in handling them in cooking, may now be supplemented by some gross qualitative analysis of typical foods, such as potato and milk. If bottles containing substances representing qualitatively and quantitatively the constituents of a pound of several typical foods are at hand, it is well to have those inspected which represent the foods that are under discussion. In this work students should be required to familiarize themselves with the weight of unit quantities of common foods, such as potatoes, eggs, and so forth, so that they will know approximately and readily how many eggs there are in a pound, or how many pounds of potatoes are consumed when a

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given number have been used. Such a method requires intellectual co-operation, and results in development. But to the more mechanical weighing is usually accorded higher respect, because of its appearance of accuracy.

From the quantity of the constituents represented in the bottles referred to a chart can be made, giving the percentage composition of several of the ordinary foods. This work is proposed because it will give the student the ability to read charts intelligently, and with interest instead of anxiety, while familiarizing her with the composition of food. A table giving the same data should be constructed, that a reading knowledge of tables giving the composition of food-materials, such as are published by the Department of Agriculture, may not be a confusing mass of unintelligible facts.

It is well now to introduce the student to more explicit knowledge of the function of the constituents of food, and to the calorie as the unit quantity of heat in which energy generated by food is measured. The methods of the determination of the fuel value of food should be discussed, the student being called upon to explain them from the point of view of physics. The student's knowledge of digestion and metabolism should be strengthened and expanded, and a clear conception of combustion ensured in connection with the explanation of food in terms of heat units. With these dietetic elements clearly in mind, the calculation of the dietary planned by the instructor and prepared previously by the students should be calculated, in order to disclose the weight of protein required daily, the general relation between the quantity of fat and carbohydrates consumed, the fuel value in calories of the food eaten, the quantity of water present in the foods used, and the quantitative relation between breakfast, luncheon, and dinner. With these facts, which should be verified by the standards current, the students should construct and prepare a dietary to re-express them, adapting the principles learned to new conditions. The initiative in formulating the problems should be taken by the students, and only such directions given or limitations set as are essential to ensure clear work. The danger will lie in the attempt on the part of the student to solve more complex problems than she is able to undertake, or at least complete quickly enough to leave a well-defined impression of the whole. The general percentage composition of ordinary foods should now be fairly well established in the mind of the student. Her class-work should make necessary to her an available knowledge of accurate data of this type. Again, the conclusion which she has drawn from her work should be confirmed, or if necessary corrected, before it becomes fixed in her memory as an established fact. Practical or experimental work should be depended upon for the discovery of facts and the testing of conclusions. When the student is in possession of such general knowledge of dietetic principles and the composition of food-materials as has been advised, it is well to calculate roughly but very rapidly several dietaries in the simplest general terms which will express the principles.

Knowing, as the student now should, the proportion of protein in meat,

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of carbohydrates in vegetables, and of fat in fats, the number of calories of heat furnished by a pound of each, and the fact that .25 of a pound of protein is required daily and 3500 calories of heat as energy by the man at moderate muscular work, a very reliable dietary can be calculated mentally. In calculations of this type only the chief constituent of each food should be considered, that complication may be avoided. Through such simplification the conception of dietetics is so clarified and strengthened that the student is and feels capable of thinking intelligently about a dietary, and has so thoroughly assimilated the fundamental facts that she uses her knowledge easily, or even unconsciously. Rapid class-work in the selection of foods which will replace each other in the dietary, and of the combination of those which will complete one another, is of great value, as is also the estimation of the quantity of different foods which can be procured for a given sum.

Before the student ceases to study dietetics under school conditions, she should be acquainted with the so-called co-efficient of digestibility of the different classes of food; that is, the proportion in each which has been found to be digestible. The sources of information relating to the subject should be opened to her in such a way that she can use them with facility, and will be interested in doing so.

The subject should be made of such vital importance and so practical that the girl will feel the necessity, as well as the desire, to apply her knowledge in the home. When the calculation of the dietary of a family is undertaken a method should be used which will bring out in strong relief the important features. Again, it has been found that detailed calculations fail to serve the purpose desired. A sufficiently large unit should be taken to render unnecessary fine weighing and elaborate calculation. If the work continues to be burdensome and tedious, after it is understood, it will be neglected from lack of time, if not from disinclination.

The most practical approach to the problem in the home is made by noting the quantity of food supplies on hand and of those purchased during the period to be considered, which should not be less than a week. The menus should be planned with general reference to dietetic standards, but the dietary should not be minutely calculated. At the end of the period the sum total of the food materials used should be obtained by subtracting the quantity of the supplies still on hand from those available at the beginning and those procured during the period. From this amount should be taken the average percentage of waste material established by experts as the factor of refuse. Thus all unnecessary weighing can be avoided. The total quantity of the food consumed should be compared with that which should have been provided according to the standard amount advised for such a family. Then the amount of protein, the number of calories, the general distribution of the food, with its cost, should be ascertained and tested by the standards prescribed. Any discrepancies which have appeared should be studied and remedied for the future. Thus such work can be carried on effectively in the

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home, and can ultimately lead to such investigation as is possible outside of the laboratory.

SOME POSSIBILITIES IN THE TEACHING OF DOMESTIC SCIENCE AND ART.

The general pedagogic principles underlying this presentation of dietetics find expression in the other phases of the work of this department.

Cookery began its career as a purely practical subject, controlled by unrelated empirical formulas of marked indefiniteness. Skill in combining and handling material and judgment in the use of heat were supposed to come through exercise only, therefore repetition was the method employed in teaching. As a reaction from such limited mechanical work, and partly as an outgrowth of it, investigation began in which fundamental processes were sought and then the principles underlying them. The latter led to much speculation and experimentation, which resulted in theories, some of which have been helpful, others misleading and retarding. The outcome has been, however, that a few laws have been formulated, the validity of which, within wide limits, has not been questioned. The experts who are now doing thorough work in physiological chemistry and dietetics are rendering a service of incalculable value. To them unquestionably all must look for light, and, in most instances, accept and apply their results without participating in the investigation.

Though organic chemistry and the chemistry of foods are essential to the intelligent study of cookery and dietetics, still it is only as they serve to illuminate, rationalize, and strengthen the latter that they have a place in Domestic Science. Do develop the possibilities of practical and theoretical cookery and dietetics so that the practical will express the theoretical, and will be controlled by it, is the problem engaging the attention of all who believe that such work is of value. To this end, in normal work practical cookery and the study of the natural sciences are ever associated.

The career of sewing has not differed in principle from that of cookery. It, too, began with faithfulness to an exact model, and required skilful use of means in isolation from an object before any free application was expected. The result here, as in cookery, was a measure of mechanical skill only. Here, through growth, means are being adapted to a conscious end, and training in allied lines of hand-work and in art is being introduced into most schools which attempt to prepare teachers of sewing. It is hoped thus to make teachers appreciative of beauty in sewing and hand-work, and effective in the expression of it, that they may be suggestive to their students.

It is too early to speak more than appreciatively of the training in art which has this end in view. The problem is comparatively new, not only in its conscious aim, but also in the type of student, so that the work offered must

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formulate itself through experience. But even now interesting and promising results are evident.

As this department is not attempting to solve the problems of Domestic Art for the secondary school, only those of the lower ones and of the training school have been considered in this report. Though perhaps brilliant results cannot as yet be claimed for Domestic Science, Domestic Art, and manual training even by those who have had an opportunity to see the best work which has been done, still no one doubts that the future will fulfill the promise which even now is widely recognized. The dissociation of the theoretical and practical sides of such work, with first the latter dominating and then the former, is the period of the history of Domestic Science and Art which is closing. It is to be followed, all trust, by strong intercourse between the two; the practical introducing the theoretical, and then being consciously controlled by it.

With more profound thought and more sustained study the sociological, manual, and intellectual phases will receive due attention, and will serve one another in harmony. Even the teacher of extended training, who goes to her work with ardor, often succumbs to the expectation of others. She does not believe, with them, that her work is of slight real value to the student, but she finds it harder than she expected, and sometimes is tempted to rest in a compromise between what is expected and what seemed possible to her.

This work has, in direction and supervision, all the difficulties of laboratory work, combined with freedom of expression on the part of the student. It presents at once the problems of class and individual work with large numbers of students, and has hard manual-work attached. To face it courageously and to work untiringly for the development of its educational possibilities requires women of intelligence, earnestness, and fortitude. When it is remembered that even yet most women who are unqualified for other work are advised to enter this field, one of the difficulties of the past is revealed. Fortunately there is a perceptible change of attitude. The need of women able intellectually and strong in personality is more widely recognized, and the work itself is appealing now to many women, who enter it from choice, and not because nothing else seems possible to them.

When the special teacher's training enables her, as it is beginning to now, to use her subject-matter rationally and ably because she sees its whole range in its relation to the subjects upon which it depends, to those to which it contributes, to social problems, and to the development of the mind, even those who judge all work by its evident results only, will value this. Those interested in this type of work can serve its cause best by sending to it only capable workers, who will give themselves unsparingly and joyously to it.

Though many who signify their desire to be prepared for such work are at the time unconscious of the responsibility which they are assuming, those who train them are not. Training-schools are, and should be, held respon-

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sible for the ability and attitude of the teachers whom they recommend as capable of being entrusted with such work.

The adequately equipped instructor will teach the student to discover facts and principles through experience as well as experiment, and will require in performance the student's knowledge as it is acquired. She will ensure development and the realization of it. She will keep the student in constant touch with the phases of the work which require time for assimilation, such as the art side of Domestic Art. She will demand of the student what can be done, and will accept only her best work. She will not allow her to rest content in meagre accomplishment. She will have the student pass on to new problems which tax her to the utmost as she solves those presented. She will make earlier ones suggest those which are to follow. She will encourage independent work, but even when commending the effort will not sanction poor work. She will keep high ideals before the student, which she will raise as the student approaches them. She will inspire the student to desire earnestly to press forward to better and harder work. She will strive to make her capable of judging her own work intelligently, and of taking the initiative in strengthening it. She will endeavor to make the student face her mistakes and deficiencies, with the determination that strength shall grow out of them. She will impress the fact that the student opens and closes opportunities by the reception which she accords them. She will emphasize what faithful effort will accomplish, and that good thought is of value only when it is sustained by perseverance.

Such an instructor will, it is hoped, teach the student that what she is she chooses to be, but that she can be what she will be. It is the teacher who believes this for herself who carries it effectively to others.

Here, as in the specific student-work where the practical work was expected to reveal the laws controlling it, the teacher's work, her attitude, her sympathy, and her interest must tell her students what laws should control work and conduct if she hopes to direct theirs. The formulation of these principles in words should, however, be deferred, not only until the student is mature, but until the quality of her work gives her the power to interpret and appreciate the significance underlying work and conduct.

Before closing this report the Department of Domestic Science wishes to express its appreciation of the sympathy and co-operation tendered it by the Trustees and the other departments of the Institute.

Respectfully submitted,

Edith Greer,
Director.

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Professional Appointments Accepted since June, 1902, by Graduates of the Normal Course.

Miss Mary B. Vail, class of 1895, instructor in Domestic Science, Teachers' College, New York city.
Miss Susannah Usher, class of 1893, instructor in Domestic Science, Simmons College, Boston, Mass.
Miss Grace Godfrey, class of 1898, instructor in cookery, Simmons College, Boston, Mass.
Mrs. Mary D. Chambers, class of 1898, director of the Department of Domestic Science, James Milliken University, Decatur, Ill.
Miss Grace Stokes, class of 1890, instructor in cookery and sewing, Agricultural College, Menomonie, Wis.
Miss Caroline R. Almy, class of 1901, instructor in Domestic Science, Berea College, Berea, Ky.
Miss Mary Tough, class of 1898, instructor in cookery, Pratt Institute, Brooklyn, N. Y.
Miss Sarah McGiffert, class of 1901, instructor in chemistry and cookery, Pratt Institute, Brooklyn, N. Y.
Miss Maud Andruss, class of 1902, instructor in cookery and laundry-work, Pratt Institute, Brooklyn, N. Y.
Miss Margaret Davidson, class of 1901, instructor in cookery, Toronto Technical School, Toronto, Canada.
Miss Reebie Lennox, class of 1901, instructor in cookery, Technical School, Winnepeg, Canada.
Miss Bertha Roach, class of 1901, instructor in cookery and sewing, Tusculum Institute, Tusculum, Tenn.
Miss M. Christine Riis, class of 1901, instructor in cookery and sewing, S. B. Lees Institute, Jackson, Ky.
Miss Jennie Fraser, class of 1901, instructor in Domestic Science, George Junior Republic, Freeville, N. Y.
Miss Caroline E. Martin, class of 1901, instructor in cookery and sewing, Y. W. C. A., Chicago, Ill.
Miss Sarah A. Woolson, class of 1901, instructor in cookery, Y. W. C. A., Paterson, N. J.
Miss Gustava Olson, special normal student, instructor in Domestic Science, Y. W. C. A., Kansas city, Mo.
Miss Gwendolyn Stewart, class of 1902, instructor in cookery, laundry-work, and household economics, Domestic Arts Association, Pittsburgh, Pa.
Miss Katherine Christian, class of 1902, instructor in cookery and household economics, Domestic Arts Association, Pittsburgh, Pa.
Miss Lucy V. Mosman, class of 1902, instructor in cookery, Kindergarten Association, Dallas, Texas.
Miss Louise K. Foote, class of 1902, instructor in cookery, Alumnæ Club, Louisville, Ky.
Miss Lois B. Gregory, class of 1902, instructor in cookery, New England School of Cookery, Springfield, Mass.
Miss Cornelia Chamberlain, class of 1902, instructor in cookery and sewing, Private Mission, Naugatuck, Conn.
Miss Mary Carpenter, class of 1902, instructor in cookery, Private Mission, Baltimore, Md.
Miss Elizabeth Condit, class of 1902, instructor in cookery and sewing at the Union Settlement, New York city.
Miss Sarah C. French, class of 1902, instructor in cookery, Experimental School, Department of Pedagogy, University of Chicago, Chicago, Ill.

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Miss Laura Buffum, class of 1902, instructor in cookery, Ossining School, Ossining, N. Y.
Miss Florence Willard, class of 1897, instructor in cookery, Technical High School for Girls, Manhattan, N. Y.
Miss Alice Demmon, class of 1896, instructor in cookery, Public Schools, Pueblo, Col.
Miss Angeline Wood, class of 1899, instructor in cookery, Public Schools, Clearfield, Pa.
Mrs. Idah H. Williams, class of 1900, instructor in cookery, Public Schools, Pueblo, Col.
Miss Grace Woodward, class of 1901, instructor in cookery, Public Schools, Allegheny, Pa.
Miss Grace Austin, class of 1902, instructor in cookery, Public Schools, Homestead, Pa.
Miss Mabel Campbell, class of 1902, instructor in cookery, Public Schools, Saratoga Springs, N. Y.
Miss Gertrude Deacon, class of 1902, instructor in cookery and sewing, Public Schools, Columbus, Ga.
Miss Marion Gilmore, class of 1902, instructor in cookery and sewing, Public Schools, Lynchburg, Va.
Miss Jennie Palmer, class of 1902, instructor in cookery and sewing, Public Schools, Wheaton, Ill.
Miss Mabel Rose, class of 1902, instructor in cookery, Public Schools, New York city.
Miss Valeria P. Shissler, class of 1902, instructor in cookery, Public Schools, Detroit, Mich.
Miss Lena Belle Stewart, class of 1902, instructor in cookery, Manual Training High School, Kansas City, Mo.
Miss Cornelia B. White, class of 1902, instructor in cookery and manual training, Public Schools, Asbury Park, N. J.
Miss Mabel Bradt, class of 1901, instructor in cookery, Evening Public Schools, Brooklyn, N. Y.
Miss Mabelle P. Perry, class of 1901, instructor in cookery, Evening Public Schools, Brooklyn, N. Y.
Miss Bernice L. Dole, class of 1902, instructor in cookery, Evening Public Schools, Brooklyn, N. Y.
Miss Sally S. Johnson, class of 1902, instructor in cookery, Evening Public Schools, Brooklyn, N. Y.
Miss Helen A. Tolford, class of 1902, instructor in cookery, Evening Public Schools, Brooklyn, N. Y.
Miss Florence Corbett, special normal student, city dietitian, New York Board of Public Charities, New York city.
Miss Florence Sisson, class of 1902, dietitian, Moses Taylor Hospital, Scranton, Pa.
Miss Isobel C. Marshall, class of 1902, housekeeper and instructor in invalid cookery, Massachusetts General Hospital, Boston, Mass.
Miss Caroline Little, class of 1902, housekeeper and instructor in invalid cookery, Buffalo General Hospital, Buffalo, N. Y.
Miss Ella Parker, class of 1902, instructor in invalid cookery, Training School for Nurses, Princeton, Ill.
Miss Mary E. Richardson, special normal student, class of 1902, housekeeper and instructor in invalid cookery, Nurses' Training School, Polyclinic Hospital, Philadelphia, Pa.
Miss Elizabeth Browning, special normal student, dietitian, Hartford General Hospital, Hartford, Conn.
Miss Belle C. Crowe, special normal student, matron, Chadbourne Hall, University of Wisconsin, Madison, Wis.
The following graduates and students of the Department of Domestic Science taught in the New York Summer Schools: The Misses Mabel Bradt, Jessie T. Dorman, Helen C. Clark, Elizabeth C. Gillespie, Caroline E. Martin, M. Christine Riis, Sarah A. Woolson, Rose Edda Beeman, Harriet L. Briggs, Mabel Campbell, Annette F. Chase, Hannah Heidenheim, Ada Holt, Jennie D. Jameson, Clara G. Miller, Winifred B. Reininger, and Frances Stewart.

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Register of Full-time Students, 1902-1903.
Normal Course.

ADVANCED SPECIAL STUDENTS.

Locke, Elizabeth, Brooklyn, N. Y.
Mann, Mary Lee, Plainfield, N. J.
Merick, Maria F., Danbury, Conn.
Morris, Clara M., Elizabeth, N. J.
Price, Elizabeth G., Hudson, N. Y.
Price, Lucinda K., Hudson, N. Y.

SENIOR CLASS.

Adams, Nathalie C., Webster Groves, Mo.
Bayliss, Florence L., Buffalo, N. Y.
Beeman, Rose Edda, Knightstown, Ind.
Benedict, Hope O., Perry, N. Y.
Benedict, Sarah, Warwick, N. Y.
Bradner, Gertrude, Warwick, N. Y.
Briggs, Harriett L., Brooklyn, N. Y.
Brockett, Myrn, Battle Creek, Mich.
Bruce, Bella, Indianapolis, Ind.
Chase, Annette F., Chaseville, N. Y.
Dowd, Mary T., Lowell, Mass.
Dutcher, Elizabeth, Brooklyn, N. Y.
Edwards, Frances P., Detroit, Mich.
Fletcher, Grace, Southwick, Mass.
Fullerton, Elizabeth, Denver, Col.
de Gore, Henrietta M., Tuscaloosa, Ala.
Gott, Marion Estella, Hartford, Conn.
Hanna, Agnes K., Alton, Ill.
Heidenheim, Hannah, Brooklyn, N. Y.
Holt, Ada, Midland Park, N. J.
Jameson, Jennie D., Binghamton, N. Y.
Keepers, Alice May, Newark, N. J.
Kissinger, Edna E., Buffalo, N. Y.
Lane, Lassie, Kansas City, Mo.
McKeand, Jane Williams, Hamilton, Ont.
Miller, Clara G., New York, N. Y.
Moses, Irene Ella, Indianapolis, Ind.
Oakley, Elizabeth, Newburgh, N. Y.
Retter, Lena M., Utica, N. Y.
Reininger, Winifred B., Brooklyn, N. Y.
Rinehart, Gertrude L., Toledo, O.
Roe, Winifred A., East Fishkill, N. Y.
Ryan, Elizabeth, Muskegon, Mich.
Slaght, Elizabeth S., Grand Rapids, Mich.
Stewart, Frances E., Flint, Mich.
Symons, Mary Louise, Saginaw, Mich.
White, Florilla M., Utica, N. Y.

JUNIOR CLASS.

Ackley, Ida, Fall River, Mass.
Albaugh, Bessie, New Market, Md.
Aldrich, Emily, Brooklyn, N. Y.
Allen, Gertrude L., Elgin, Ill.
Anderson, Bella J., Whitby, Ontario, Can.
Angell, Harriet W., Willimantic, Conn.
Barnicle, Grace V., Brooklyn, N. Y.
Baxter, Caroline F., Mansfield, O.
Becker, Irene M., Utica, N. Y.
Best, Marilla R., Chili Station, N. Y.
Board, Josephine C., Chester, N. Y.
Brinckerhoff, Jeannette, Brooklyn, N. Y.
Browning, Elizabeth, Norwich, Conn.
Bruckman, Josephine H., Denver, Col.
Bymhold, Margaret W., Muskegon, Mich.
Clapp, Edith D., Tarrytown, N. Y.
Coupland, Sara D., Chicago, Ill.
Crawford, Lotta I., Manhattan, Kan.
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Dates, Abigail McK., East Orange, N. J.
Downing, Bessie F., Hanover, N. H.
Duff, Mary Ella, East Orange, N. J.
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Farnsworth, Mildred L., New Haven, Conn.
Ferris, Florence L., Buffalo, N. Y.
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Hart, Jennie H., Clinton, Iowa.
Howey, Louise L., Canandaigua, N. Y.
Jenkins, Mabel, Plainfield, N. J.
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SCIENCE AND TECHNOLOGY NUMBER

PRATT INSTITUTE MONTHLY

April, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI APRIL, 1903 Number 6

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Kindergartens.
June	Report of the Department of Domestic Art.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume XI APRIL, 1903 Number 6

Annual Report
Of the Department of Science and Technology.

To the Trustees, Gentlemen:

HEREWITH I beg to submit to you the annual report of the Department of Science and Technology for 1903. The year which has passed since my last report is one that has been marked by growth and development in all the lines of work that are included within the department. Three different types of industrial education are represented by the courses of instruction which we at present offer: (1) the Secondary Technical Education, in our two-year day courses; (2) the Evening Technical Courses; (3) the Evening Trade Courses; and the distinction between these different types and the objects for which each one is designed is, I find, every year becoming better and better understood by all—by those who are interested in educational questions, and by the general public as well. This is something on which I think we may well be congratulated, for with this better understanding of the purpose of these courses comes a fuller recognition of their value, not only by the young men who wish to fit themselves for their life-work, and their parents, but also by employers who are constantly seeking earnest, ambitious, capable assistants to enter their service. As a natural result of this, the opening of the last fall term brought us a much larger number of applicants for admission to each one of our courses than have ever come before—in fact, a larger number than we could possibly find room to accommodate; and also within a few weeks after the commencement for our day classes, I was able to report that every one of our fifty-one students who were graduated last June, and who had not made other plans, had received satisfactory employment in a line of work for which he had been especially fitting himself at the Institute.

But aside from this increased appreciation of our courses, which has brought greater numbers of candidates for admission to our doors and has enabled us to find more ready and profitable employment for our graduates, which is of course gratifying, there has been growth and development in an educational way during the past twelve months. The instruction has been stronger, and time has been economized, so that the students who have been

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enrolled in the department this year have, I feel sure, carried away both something more of technical training, which especially fits them for their chosen vocations, and also something more of character development, which better prepares them to successfully meet the larger problems in life, than the members of any earlier class. This has been possible largely because of the serious and well-defined purpose of the students who entered our different courses. They have known in advance, in almost every instance, exactly the kind of work for which they wished to fit themselves, and they came to the Institute with this single idea in mind, determined to succeed.

As the objects and results of instruction such as is given in the Department of Science and Technology become more widely known, there is, too, a greater *natural selection* among those who are seeking technical instruction. A young man who has decided that he wishes to become a designer of machine tools, for example, sees in our two-year course, which is planned for that purpose, an opportunity for him to get exactly the training that he requires, at an expenditure of time and money small enough to make it come within his reach, and he enters the course with enthusiasm, ready to devote his entire energies to the accomplishment of the object he has in view. What is true in this case is true for the others. We therefore are able to have each class in the department more and more uniform as regards the character of the students of which it is composed, and we now have each one drawing almost exclusively from the special group of individuals in the community — or the country at large — for which it is especially designed. The great majority of these students are more or less familiar with the practical conditions that surround the work in the callings which they have chosen, if indeed they have not had actual experience in them. We have found that this, too, is of very great value, as it enables the students to understand the applications of many things that they learn, and it makes it possible for the instructors, almost at the beginning of the term, to proceed directly into the heart of their subjects without the introductory and preliminary work that would otherwise be necessary.

ENROLLMENT.

The enrollment of the Department of Science and Technology for the year is as follows:

DAY COURSES.

First-year Applied Electricity	63
First-year Steam and Machine Design	63
Second-year Applied Electricity	42
Second-year Steam and Machine Design	42
Special Mechanical students	12
Total enrollment in Day Courses	222

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EVENING TECHNICAL COURSES.

Applied Electricity	36	
Physics	30	
Chemistry, first year	30	
Chemistry, second year	19	
Chemistry, third year	16	
Mechanical Drawing	62	
Machine Design, second year	33	
Mechanism, third year	11	
Steam and the Steam Engine (fall term only)	31	
Strength of Materials (winter term only)	24	
Total enrollment of Evening Technical Courses		293

EVENING TRADE CLASSES.

Carpentry	31	
Machine Work	66	
Plumbing	64	
Sign Painting and Fresco Painting	45	
Total enrolled in Evening Trade Classes		206
Total receiving instruction in Department of Science and Technology		721
Students from other departments receiving instruction in the Department of Science and Technology		263
Grand total		984

The following table gives the number of students enrolled in our Day and Evening Courses for the past six years; and so far as we have been able to provide additional facilities for the accommodation of larger classes, it shows the increased demand for the industrial education represented in our courses of instruction.

	1897–98	1898–99	1899–00	1900–01	1901–02	1902–03
Day Courses	69	78	96	136	191	222
Evening Technical Courses	174	171	199	213	251	293
Evening Trade Classes	89	111	135	150	169	206
Totals	332	360	430	499	611	721

Nearly every State in the Union, besides Canada and the West Indies, are represented in our list of Day students. Of the total—222—55 are from Brooklyn, 20 from Long Island outside of Brooklyn, 11 from New York city, and 34 from other parts of New York State. New Jersey furnishes 29, Massachusetts 7, Connecticut 18, Pennsylvania 5, Maine 4, Ohio 4, South Dakota 3, Vermont 2, Illinois 2, Maryland 2, and Peru, S. A., Brazil, S. A., Argentine Republic, S. A., Cuba, Oregon, Texas, Danish West Indies, Michigan, Louisiana, Colorado, Virginia, West Virginia, Missouri, Georgia, District of Columbia, Rhode Island, and Tennessee each send us one or two students. But 24.8 per cent. of our students are from Brooklyn and 45.5 per cent. are from parts of the country outside of New York State.

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Students in our Evening Classes are almost entirely residents of Brooklyn and its immediate vicinity—their work during the day would of necessity prevent them coming from any great distance. A number of them, however, come from New Jersey, Richmond, and the upper part of New York city and its suburbs, and the adjoining towns on Long Island.

DAY COURSES.

The Day Courses of Study which are offered in the department are the two-year courses in Steam and Machine Design and in Applied Electricity. The characteristic feature of these courses is specialization—in fact, a very high degree of specialization. In them we have not in any way attempted to cover the broad general field of Mechanical or Electrical Engineering. The limited time of two years is too short to make that possible, if it were desirable, and that field is already too well covered by strong courses in existing schools and colleges for us to feel any necessity of undertaking it. Instead, we have selected certain large groups of positions in the drawing-rooms, shops, and power-houses of modern manufacturing and industrial plants, for which, at present, there seems absolutely no other provision for one's obtaining adequate instruction in preparation; and we have concentrated our entire energies on giving, in the two years that is available, the most thorough and complete training that is possible, to fit our students for these particular positions. A glance at the present method of directing business and manufacturing in the United States shows a strange contrast with the less efficient processes of even two or three generations ago, and the one impressive aspect of these industrial changes that have marked the latter half of the century which has just passed is the almost universal tendency in all departments of activity toward a more elaborate organization, accompanied by the introduction of labor-saving methods and appliances. This has vastly increased the number of distinct and well-defined vocations for which the youth of the present generation must be educated; and especially in mechanical and electrical lines there has grown, during the past few years, a large number of important positions which require men of training, skill, and technical knowledge to fill them with efficiency. It is to properly prepare young men to fill certain specific groups of places in the great class of middle positions below the Chief Engineer and the General Manager, but above the skilled mechanic, which have grown up in the mechanical and electrical industries of this country, that our courses in Steam and Machine Design and Applied Electricity are planned. The graduates of these courses must have sufficient training in applied science to enable them to grasp the ideas of the engineer above them, and sufficient knowledge of practical details of the business in which they are engaged to enable them to intelligently carry them out.

It is expected that the graduates of the course in Steam and Machine Design, after a few years of practical experience, will be able to effectively fill such positions as designers of machine-tools, engines, pumps, automatic ma-

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chinery of all types and machine parts of every kind; and also that from them we shall find young men who will be able to enter the shops of these same establishments as *advanced apprentices*, and work their way up to positions as assistant foremen, foremen, and superintendents. Our experience has shown that exactly the same course of study best answers these two purposes, because the successful designer must be well trained in machine construction, and the efficient shop director of to-day must be a master of detail design. The same course also prepares its graduates for one other group of positions, that is, assistant engineers and stationary engineers in the power-plants of the large office buildings and manufacturing establishments. The training that these young men have had in machine construction and in machine design, with their knowledge of steam and their familiarity with all classes of machinery, has made such of them as have accepted these positions especially valuable to their employers.

In just the same way our two-year course in Applied Electricity prepares young men for quite a large number of positions selected from the broad field of electrical engineering work, and among its graduates we find those who, after a few years' experience, admirably fill such positions as designers and engineers' assistants, and other equally important positions in connection with the construction, installation, and operation of electrical equipment and machinery, and in power and lighting and manufacturing plants.

Mechanical Drawing.

IN my report last year I was unable to devote the space to a description of work in Mechanical Drawing that I should have been glad to. I feel that the Trustees will get a clear impression of the methods of instruction throughout the department from a somewhat detailed description of our work in this subject, even though this forces me to omit, or speak very briefly, of the other lines of work to which I would be glad to give equal emphasis.

A thorough knowledge of mechanical drawing is essential to all the students in our day classes in Steam and Machine Design and Applied Electricity; and a high degree of efficiency and technical skill is necessary for those who wish to enter commercial draughting-rooms after graduation from these courses. As a means of cultivating exact thought, originality, and creative power in the student, this subject is also one of the greatest value. It is thus made to serve the double purpose in the course of giving technical skill and knowledge to the student and giving him intellectual training at the same time. Provided the work is so arranged as to call forth, at every step, the exercise of all the knowledge that the student has previously gained, and also requires of him continuous thought while he is at work, each one of these objects is, we have found, a distinct aid in the accomplishment of the other.

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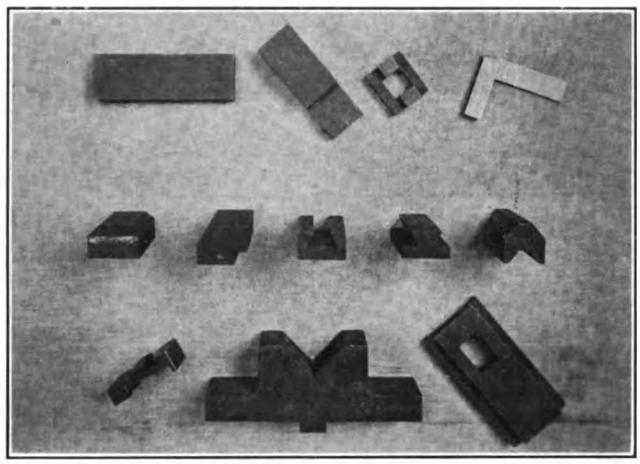

Figure 1. The castings used for the shop-drawings, which constitute the first work of the course in Mechanical Drawing, involving plane surfaces only.

In order to give an accurate picture of what Mr. Anson W. Smith, the instructor who has immediate charge of the first-year work in Mechanical Drawing, has been trying to accomplish during the past year, the following summary is given:

It is necessary for the instructor to assume that each student, upon entering his class, has never handled a drawing-instrument before, and that he is entirely ignorant of principles of projection-drawing. A series of practical exercises to familiarize the student with the proper uses of his instruments and drawing-material is, therefore, needed, and since absolute accuracy must be required of every student from the beginning, training which will insure this is necessary. Our experience has shown us, however, that this *training* can be gained through the regular work in projection-drawing, and that the time otherwise needed for introductory exercises may thus be saved. Every drawing in the course consists of just the kind of shop-drawing that would be required in the commercial drawing-room. The castings from which they are made, however, are carefully selected, so that the principles of projection will come to the students in a logical order.

The first series of drawings in the course as it has been given this year was extremely simple, and the models were arranged so as to make each succeeding drawing just a little more difficult than the preceding one, involving never more than one new principle that was not included in some of the previous drawings. The instructor's purpose was to arrange these models so that each student could work out for himself these new problems as he came to them, because of the natural way in which the principles followed one another. He desired to have the steps between succeeding drawings not too difficult to discourage the weakest students in the class, but rather direct enough to give them self-confidence. The ablest students were required to make the same drawings as did the others, but with less data and assistance, so that they, too, would have tasks which would require their best efforts and arouse their interest.

Figure 1 is from a photograph of the models for the first series of drawings. It will be noticed that the first four of these require the use of only

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the T-square, right triangle, and scale, the first two being made with full lines only, and the next two involving the use of dotted lines as well. The next five models require the use of forty-five-degree and sixty-degree triangles, and also the use of the protractor. To save time in making the drawings in the early part of the course, the data is given to the students on hektograph sketches, which are drawn carefully not to scale, from which he may determine all the dimensions that he needs to know. In some cases these sketches are isometric, so as to differ from the views that the student will show on his drawing, and in other cases one view only is given, and the dimensions which are needed for the other views are given in words. This gives the student continual practice in projecting one view from the others which have already been determined, and requires that he always put thought into his work.

Figure 2. The castings used for shop-drawing, which constitute the second series in the course.

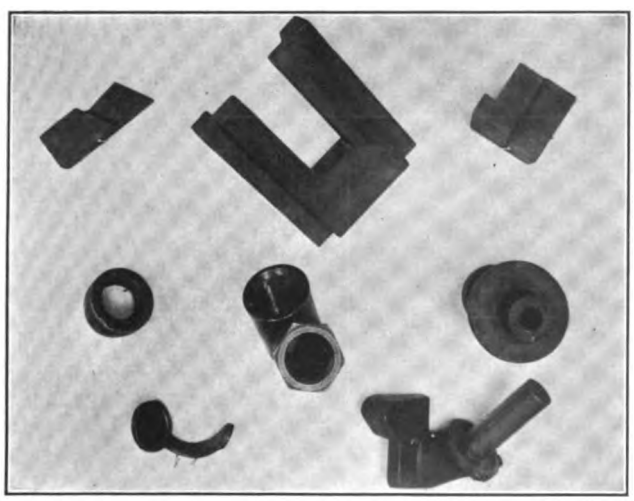

Figure 3. A few castings used to teach the principles of oblique projection of straight lines and plane surfaces, and circles and cylindrical surfaces.

When the student had become proficient in the use of his T-square, triangle, pencil, and scale in making neatly lettered and dimensioned working-drawings from models such as those just described, the work changed and drawings from models composed of cylindrical, conical, and spherical surfaces, requiring the use of compasses, were introduced, and sufficient of this latter work was given for the instructor to feel sure that the student was able

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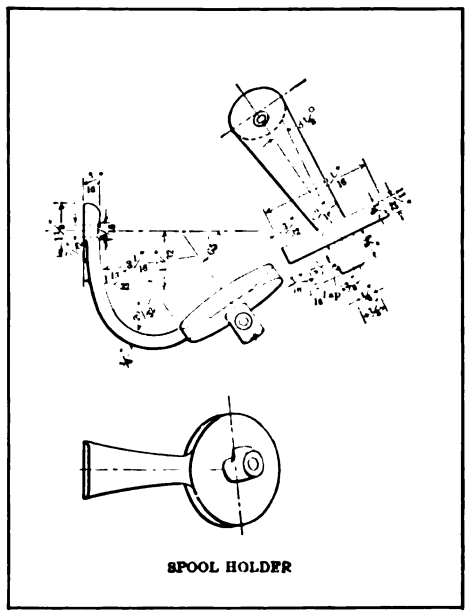

Figure 4. From students' drawing of a casting shown in Figure 3. Problem in oblique projection.

to make a simple projection-drawing of any model. But in order that he might not be obliged to try to learn too many principles at the same time, models were selected which were symmetrical in outline and free from all tapped holes or threaded surfaces. Figure 2 is taken from a photograph of the models for this second series of drawings.

That the student might become familiar with the conventional methods of representing tapped holes and threaded surfaces before he was asked to make a drawing from a model containing such, a short series of drawings of nuts, bolts, cap-screws, and set-screws, arranged with drawings showing their application, was given. In these drawings the student was asked to take his dimensions from the standard tables, such as are used in the majority of shop-draughting rooms, and make such calculations for himself as were necessary for him to get the information that he had to use in his drawing.

After the completion of the work that has thus far been outlined, the majority of the students in the class had come to feel somewhat confident in their ability to make a projection-drawing of almost any object, but when they reached oblique projection they soon were led to realize that there were still branches of projection-drawing which they had not experienced, which involved many difficult features and problems which required their best energies to solve. This is a feature in the arrangement of the course which, I think, has been especially valuable. The class as a whole had gained a degree of self-confidence and enthusiasm from their very con-

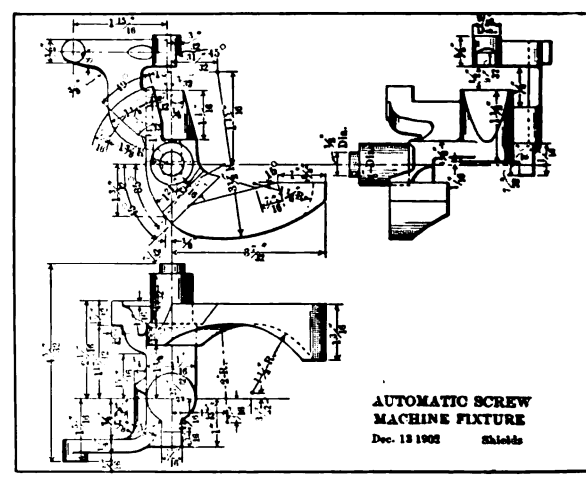

Figure 5. From students' drawing of a supplementary model in oblique projection.

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siderable accomplishment with the large variety of models in simple projection, which enabled them to approach the more difficult problems in oblique projection with an interest and determination that would otherwise be impossible. In the oblique projection, as in the simple projection, all of the principles have been taught through the making of working-drawings from machine-castings, and it would be difficult for me to overstate the very great gain which I believe there is in this method over the method of teaching projection in a conventional way through geometrical problems. Our experience has shown us most conclusively that the students grasp the principles more clearly when they learn them through their application.

Figure 3 is from a photograph from some of the castings which are used as models for the series of drawings for oblique projection. The first three of these show the oblique projection of only straight lines and plane surface, and the next five show the oblique projection of circles as well, and with the last three of these castings it is necessary for the student not only to derive an elipse from the circle when turned through an angle, but also to derive a second elipse from the first elipse turned again before he can obtain all of the views which are necessary for the complete working-drawing of the piece. In order to show the value of these exercises more clearly, I am showing in figure 4 the working-drawings from one of these models.

Besides the regular models for the drawings in oblique projection which I have just described, the instructor has gathered together from a large variety of sources a most interesting collection of supplementary models for work in oblique projection, which are given to different members of the class, according to their progress and ability. These have proven of great value to us as a means of cultivating independence and originality in the different individuals. Figure 5 shows a students' drawing from one of the more complicated of these, worked out without any preliminary sketches or assistance from the instructor, and figure 6 shows a photograph of a number of others.

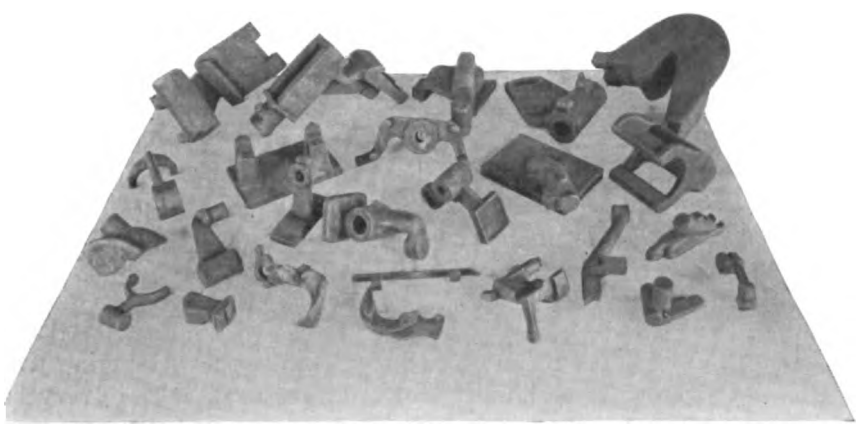

Figure 6. Photograph of some supplementary models for oblique projection.

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The work that I have thus far described occupied the whole of the fall term and a little less than half of the winter. The next few weeks were devoted to several subjects in mechanical drawing which the instructor has found to be of general value to all draughtsmen, namely, drawings in development as represented by sheet-metal work, penetration of solids, shop-drawings of gearing, and isometric projection. Each of these subjects was presented in a way similar to those already described in the form of practical problems from castings of other models from which working-drawings were required. During the last six weeks of the winter term, two periods a week were devoted to the making of sketches and measuring up of parts of one or more of the following list of objects from which assembly and detailed drawings were afterwards made. In this part of the work the students were allowed to work together in groups of two, each pair being required to make all the necessary sketches and measurements for two assembly drawings and a full set of detailed drawings going for one of these assemblies, and each student was required to make himself one complete assembly drawing.

LIST OF ASSEMBLY DRAWINGS.

A 4-inch jaw Parker Vise.
Two different sizes of Pillar Blocks.
Two sizes of Shaft Hangers.
Three styles of Globe Valves.
A Y-valve.
A 2-inch Gate Valve.
8 and 10-inch Coe Monkey Wrenches of two different styles.

Tracings and blue-prints were required of all these drawings, and with each of them was required the full bill of material of the stock required. A card-catalogue system, where each student hands in with each drawing a properly filled out index card, and also time-cards on which the student charges his time to each job on which he has been working, similar to those in use in most commercial drawing-rooms, were required.

The greater part of the spring term is being devoted to problems in *intuitive* machine design, in which the student is required to properly proportion the details of quite a variety of machine parts that do not require calculation, according to his own judgment. The first group of problems of this character has been taken from the Ball engine, which we have in our Steam Laboratory. Some of them are given in the following list:

The Throttle Valve.
The Connecting Rod.
The Stuffing Boxes for the Steam Cylinder and Valve Chest.
The Eccentric Rod.
The Piston and Piston Rod.
A number of different parts of the Fly-wheel Governor.

By varying the principal dimensions from those on the engine which we have in our Laboratory, individual problems were arranged for every student. Each one was required to complete one of the first two of these problems, and also one of the remaining four. In the problem for the connecting-rod,

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for instance, the type of rod to be used was given the student by a rough sketch, showing the character of the rod on the engine. Both dimensions of the crank-pin and the crosshead-pin, and the distance on centers between them, was also given; the remainder of the design was left to the student's discretion, but was criticized from time to time by the instructor. In the same way in the other problems, a few of the essential dimensions were given on rough sketches, which were sufficient to control the general character of the design. All of the details were, however, left to the student. This is the kind of design which the young draughtsman is called on to do in nearly all of the offices which our graduates are likely to enter, and I feel that this practice which we have been able to give them, where they have the benefit of the full and frank criticism from an experienced instructor, is one of the most valuable parts of their course.

After these problems in engine designs were completed last year, the class took up a number of similar problems in machine-tool design, such as the head-stock, tail-stock, or tool-carriage of a lathe, or the design of some similar machine parts, and about two-thirds of the class were able to carry these problems to completion before the end of the year. The remainder of the class did not have quite time to finish this last problem.

During the first part of the year the work is done entirely in pencil, as it is not until the student has acquired habits of neatness and accuracy, and able to make an excellent working-drawing with pencil, that he is allowed to draw in ink, but during the latter part of the year the drawings are finished in ink, either traced, or occasionally inked in on the original drawing. From September to June, taking the average of the entire class, each student has handed in to his instructor 69 finished drawings, which have been criticized and corrected if necessary. It seems to me that this quantity of work, together with the difficult character of many of these drawings, as illustrated by the samples which I am including in this report, gives most positive testimony of the value of the essential features of this course; i. e., of having everything taken from practical problems in machine-shop or draughting-room; of having the student work out for himself the solution of every difficulty that he meets from the beginning of the course to the end; of having the steps between the different problems very simple during the first part of the course, until the student has acquired considerable ability to work on his own initiative, and is ready to challenge his instructor to give him something more difficult than he has yet attempted. If instructors in mechanical drawing could but realize the time that might be saved and the immense gain in quality of work that could be reached by basing all their instruction on simple shop and drawing-room methods in this practical common-sense way, I feel certain that we should soon see the abstract methods of descriptive geometry disappear from the teaching of drawing in our technical and engineering schools and colleges.

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Mathematics.

MATHEMATICS is most important and fundamental in both of the Day Courses in this department. It is continued five times a week throughout both years, and as the students, when they enter the first-year classes, have had comparatively little systematic training in any of its branches, it is necessary for the instructors in the department to start at the beginning to lay a good foundation. All that we can insist upon as a requirement for admission is ability on the part of the applicant to make the ordinary arithmetical computations and calculations with ease, accuracy, and speed. We cannot even assume that he knows anything of algebra, geometry, or trigonometry.

In planning this work in mathematics it has been necessary, too, for us to constantly keep in mind the character of the young men who enter the department, and the purposes for which they will use this training. The form and method of presentation for this work are the result of an attempt to solve the problem of the teaching of mathematics, not from the view-point of the mathematician, but of the students' necessities. Whether these young men come to us from the shop or the high school, they all have one common need. This need is not primarily for mathematics as a wit-sharpener, or as mental discipline,—though of necessity it will help in this direction,—but as a key or an instrument to use in their other work. The aim has been, first, to make it as effective as possible as a training in *self-reliance* and *independent logical reasoning;* and second, to make it an efficient *tool* to assist them directly in all of their work at the Institute, and to be a continual help to them in their practical work after they graduate.

I believe profoundly that each one of these purposes helps in the realization of the other, and Mr. H. W. Marsh, the instructor who has charge of this subject, has given a great deal of thought and original work to make the instruction of mathematics in each one of the branches included in the courses, fit these special needs.

The majority of our students will, in all probability, spend much of their lives in work which is related to construction in one way or another. For them, training in inductive reasoning is more important than in deductive reasoning; the cultivation of self-reliance through continually constructing for themselves their own chains of argument and demonstrations is more important than facility in grasping the thought of another from the printed page; the development of originality is more important than the cultivation of memory, and the knowledge of how to use mathematics in the solution of practical problems, different from any which they have already seen, is more important than abstract generalization. These facts have largely controlled us in the methods of the development and presentation of the algebra, plane,

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and solid geometry and trigonometry and the elements of calculus and algebraic geometry which constitute the two years' work in mathematics. These conditions differ so radically from those of most other schools that we have thus far found it impossible to obtain suitable text-books, and have been forced to create our own substitutes for them. In the Elementary and Advanced Algebra, it is true, we still use texts to some extent for reference, but the greater part of the work is done from mimeograph notes which the instructor has prepared for his students, and in all the other branches of mathematics we are entirely dependent on such notes.

I am sorry that the limited space of these pages does not permit me to give a full description of each term's work in detail, but I think that I can, perhaps, by a few illustrations taken here and there from the two years' work, give the Trustees a fairly accurate appreciation of the methods which are very generally followed. In all of the work the instructor tries to teach the student to do his own reasoning, and depend upon himself for each step that he takes. The way in which this thought is carried out all through the work in mathematics can be best illustrated, perhaps, by a page taken from the notes of the geometry. The idea is to require the student to do everything for himself, to take each step that is required in the development of every demonstration as though it were an original proposition which he must work out. In order that this may not be too difficult for the weaker students in the class, these steps are made quite short, and often, too, the directions and suggestions which are given help the student to determine in what direction his next step should be taken. But in no case is the needed information given to him directly, and these suggestions are given to him in such a way that it will be impossible for him to proceed from one to the next until he has worked out the reason for each. Thus, the student has always to draw his own figure from a study of the theorem, which is, therefore, his own linear representation of the conditions expressed therein. Then follows his statement of the hypothesis, the conclusion, and lastly, the demonstration of his own creation. Each thought that enters into this demonstration is his own, because he, and not another, thinks it, and every demonstration is an expression of his individual ideas as he himself has worked it out. The following page of mimeograph text, with the corresponding page taken from the student's *work-book*, will illustrate my thought:

PLANE GEOMETRY.

V THEOREM 15.

If an exterior angle of a triangle is not double the opposite interior angle, a produced bisector of that exterior angle meets the opposite side, produced in one direction or the other, in a point, the ratio of whose distances from the respective extremities of the produced side equals the ratio of the sides of the given triangle respectively adjacent to those distances.

Directions:

From the vertex through which the side is produced to meet the bisector, draw a parallel to the bisector terminating in the opposite side.

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Suggestions:

(1) Write the relation of the ratio of the segments of that side to the ratio of segments of the produced side.
(2) Compare the result with the algebraic expression of the conclusion, and transform it by one of the theorems in proportion, so as to obtain as many of the terms required in the conclusion as possible.
(3) Compare again with the conclusion, and determine what must be substituted.
(4) What extensional relation must be proved between the line and the line to be substituted?
(5) But lines in this extensional relation can only be opposite angles in what relation?
(6) Prove this relation of angles, starting with the angle opposite the line to be substituted, or with the angle opposite the line for which substitution is to be made.
(7) Finish the demonstration.

(*Students' solution copied from one of the work-books.*)

V THEOREM 15.

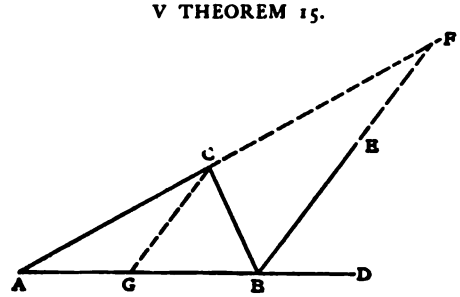

Figure 7.

Given the exterior angle C B D not double the angle A, the $\triangle$ A B C, and B E the bisector of the angle C B D produced to meet A C produced at F.

Prove $\frac{C F}{A F} = \frac{C B}{A B}$

From C draw C G parallel to B E until it terminates in A B.

(1) $\frac{A C}{C F} = \frac{A G}{G B}$ Line through two sides parallel to third.

(2) $\frac{A C + C F}{C F} = \frac{A G + G B}{G B}$ Composition.

(3) $\frac{A F}{C F} = \frac{A B}{G B}$ Sum of parts axiom.

(4) $\frac{C F}{A F} = \frac{G B}{A B}$ Inversion.

(5) C G B = E B D. Construction, exterior-interior angles.
(6) E B D = E B C. Hypothesis, definition of Bisector.
(7) C G B = E B C. Equality axiom.
(8) E B C = B C G. Construction, alternate interior angles.
(9) C G B = B C G. Equality axiom.
(10) C B opposite C G B = G B opposite B C G. Sides opposite equal angles.
(11) $\frac{C F}{A F} = \frac{C B}{A B}$ In (4) substitute value G B from (10) Q. E. D.

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This method, just illustrated, where the student constructs his text-book from the suggestions given him, is used not only throughout the entire work in geometry, but also in much of the other work as well. As an illustration of the close correlation between the instruction in mathematics and in other subjects, I am giving a few samples taken from the mimeograph notes prepared for the students in Elementary Algebra.

SAMPLE SHEETS FROM MIMEOGRAPH NOTES OF FIRST-YEAR ALGEBRA.

MATHEMATICAL ROOM. THE PRATT INSTITUTE.

Problems in Variation.

1. The volume of a gas varies inversely as the height of the mercury in a barometer.
   The volume is 23½ cubic inches when the barometer registers 29.4 inches.
   What is the volume when the barometer registers 30.7 inches?
2. The resistance of a wire varies directly as the length, and inversely as the cross-sectional area.
   The resistance of 390 feet of 1-16-inch copper wire is 1 ohm.
   Find the resistance of 2 miles of ¼-inch copper wire.
3. The distance through which a body falls from rest varies as the square of the time during which it is falling.
   A body falls 176.5 meters in 6 seconds.
   How far will it fall in 1-6 of a minute?
4. Amount of illumination received by a body varies directly as the intensity of the light, and inversely as the square of the distance from the light.
   From a light of 16 candle-power the illumination at 5 feet distance is 6.
   Find the illumination from a light of 50 candle-power at 12 feet distance.
5. Angle of Torsion varies as $\frac{FL}{D^4}$
   A wooden rod 36 inches long and one inch in diameter is twisted 5 degrees by a force of 10 lbs.
   Find the force which would deflect through 11 degrees a rod of the same material 45 inches long and 1-5 of an inch in diameter.
6. Breaking Strength varies as $\frac{bn}{L}$
   A beam 8′x4″x2″, supported at the ends, breaks under a weight of 3000 lbs., acting at the middle.
   Under what weight will rupture occur in a beam of the same material whose dimensions are 10′x5″x3″?

Transformation of Formulas.

1. Indicated Horse-power.
   $$\text{I. H. P.} = \frac{PLAN}{33000}$$
   Solve for L. N.
2. Space Traversed in any Second.
   $s = \frac{1}{2} gt^2 - \frac{1}{2} g (t-1)^2$
   Simplify the second member; then solve for t and g.
3. Coefficient of Expansion of a Gas at Constant Pressure.
   $V_1 = V_0 (1 + Bt_1)$; $V_2 = V_0 (1 + Bt_2)$.
   These two equations are simultaneous.
   Solve for B.

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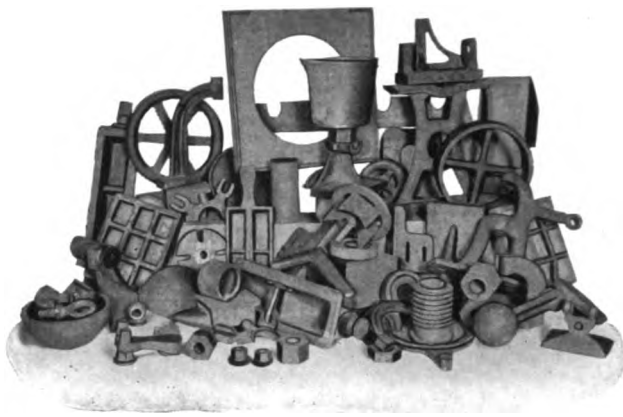

Figure 8. A group of students' castings.

These problems are chosen as typical from many pages more of mimeograph notes of the same character. They are used entirely for instruction in algebra, and I believe that students can in no other way so quickly, intelligently, and appreciatively grasp the basal principles of mathematics as through such practical problems dealing with questions that they are already familiar with.

What I have already said, together with the illustrations that I have given, will be sufficient to show to the Trustees how different are the needs of our technical students from those of the students in other schools and courses, and how radically we have deviated from the conventional methods of teaching mathematics in order to fully meet their requirements. The ground which the students cover in the short amount of time, and the power and facility they acquire in the use of their mathematics, together with the very genuine interest that they take in this work, which comes from their keen appreciation of their own accomplishment in it, is ample proof, I feel, of the wisdom in the system which Mr. Marsh has introduced into his instruction.

The following summary will show how completely all the branches of elementary mathematics are covered during the two years of the courses:

SYNOPSIS OF THE COURSE IN MATHEMATICS.

FIRST YEAR.

Fall Term.— Elementary Algebra.

Simple problems involving one unknown quantity; the four fundamental operations; simple equations, largely formulas required in the work in physics; factoring; solution of quadratic equations having rational roots; solution of equations of all kinds, including literal, complex fractional, and complete quadratic; ratio and proportion; variation and problems. Mimeograph notes largely used in all the work of the term.

Winter Term.— Plane Geometry.

Eighty selected, fundamental, and necessary theorems from the first five books. Choice of theorems determined by the subsequent work in mathematics and other subjects in the course. Individual work-book, with each demonstration worked out independently by each student in the class from mimeograph suggestions.

Spring Term.— Plane Trigonometry.

Logarithms and the use of tables. The right triangle; six ratios; practical examples. The isosceles triangle; how solved; examples. The oblique triangles; the demonstration of the

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four laws; examples and practical problems drawn from the applied work of the two years of the course.

The entire subject as here outlined is written in full by each student from mimeograph directions.

SECOND YEAR.

Fall Term.

Advanced algebra and trigonometry, including the graphic solution of equations of different degrees; rigorous treatment of radicals; much problem work, involving applications of algebra, geometry, and trigonometry, in the determination and transformation of formulas required in draughting, mechanics, and the electrical and mechanical laboratories.

Winter Term.— Plane Geometry in advance of ground covered in first year:

Solid geometry: About fifty selected theorems involving the essential propositions of plane geometry; the theory of limits, with its application to plane and solid geometry.

Spring Term.— Calculus and Graphical Algebra.

The plotting of curves; tangents to curves; problems in rates and increments; laws of differentiation of simple algebraic and trigonometric functions; practical problems in maxima and minima. Meaning of integration; elementary integrals from differential tables, with examples and practical problems.

This brief course enables the students to understand the calculus in such works as he is likely to need for reference after graduation.

Subject written by each student from mimeograph text.

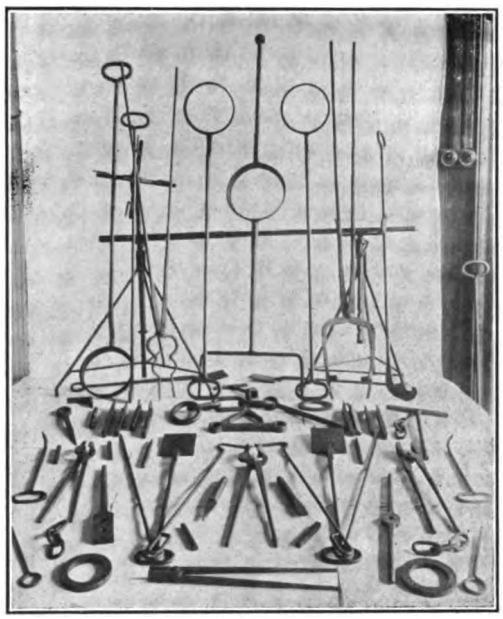

Figure 9. Students' forgings.

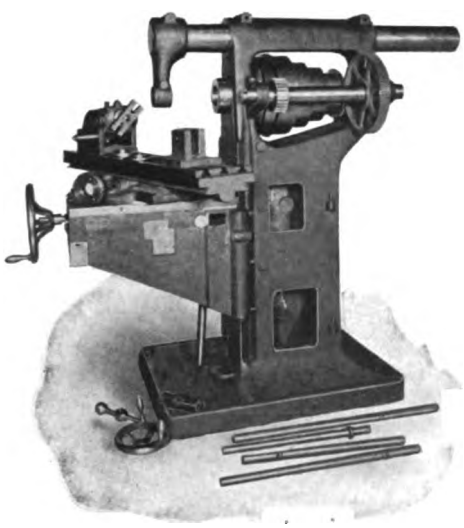

Figure 10. No. 3 Universal Milling Machine, with 20-inch table travel and 17-inch vertical travel, now under construction.

Shop-work.

I AM unwilling to close this report without making some reference to the excellent work which has been accomplished this year in the various branches of our Shop-work, and I am sorry that the space will not permit me to describe each one in detail, because the practical training which we give in these departments of our work

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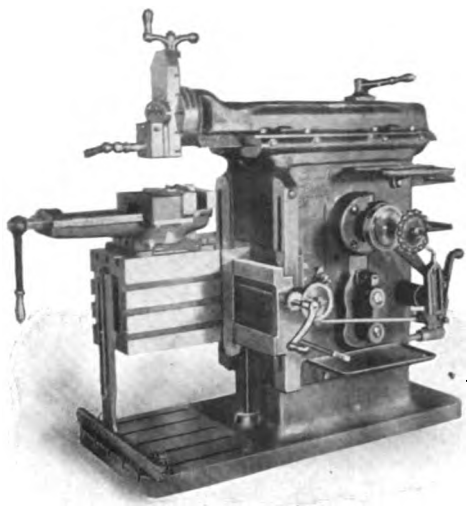

Figure 11. 20-inch geared shaper, completed by students since last annual report.

forms a very important part of our two-year Day Courses. Figure 8 shows the photograph of a group of castings, and indicates to some extent the character and variety of the Foundry-work, and the Pattern-making also, for the students make all of their castings from the patterns which they have made themselves. The statement that during the year twenty-three heats in cast iron have been run and twenty-one in bronze, resulting in over 8000 pounds of sound and perfect iron castings and 130 pounds of bronze, indicates the scope of this work.

Figure 9 shows the photograph of some of our Machine Forgings. We have tried this year to make a forging of a more practical character than ever before, and have undertaken much larger projects than are usually attempted with students in this work, oftentimes allowing groups of two or three to work together on a single forging.

Figures 10 and 11 show some of the students' Machine-work. Besides the work in Machine Construction, we endeavor to give our students practice in the design and construction of special tools and appliances, by which it is possible for them to turn out a product, superior in finish, and with greater accuracy and speed, and at a smaller cost for labor, than could be done by any other method. Figures 12, 13, and 14 show some of these special tools and devices.

At present 368 individual problems — many of them consisting of a number of parts and not including duplicates — are under way in the machine shop, as parts of the various machines and pieces of laboratory apparatus or shop equipment which we are building, included among which is the No. 3 milling machine shown in Figure 10.

Figure 12. Photograph of a few punches and dies made by students

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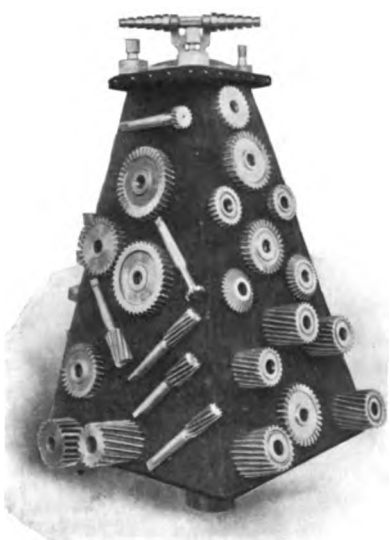
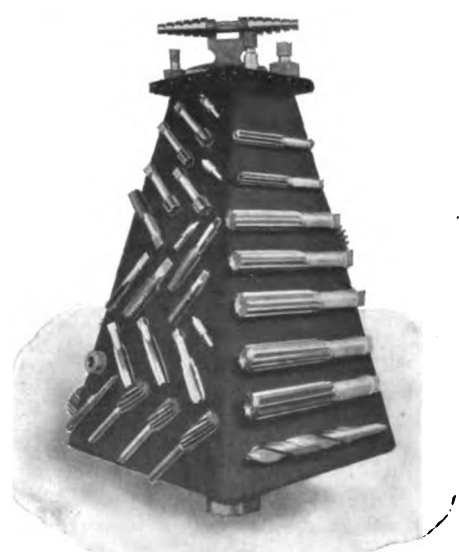
Conclusion.

IN my report this year it has been possible for me to describe in detail but two of the subjects that enter into our courses, and to very briefly comment on the year's Shop-work. These were chosen for description, because, taken together, they give a somewhat accurate impression of the character of the first year's work in our Day Courses, and because they are typical of all the work that is done in the department. I regret exceedingly, however, that I could not also speak of our work in Chemistry, Machine Design, Mechanics, Steam, Strength of Materials, and Applied Electricity. I feel sure that the work in all of these subjects would prove of equal interest, and I shall wish to bring them to the careful attention of the Trustees in future reports. The work in Physics and in Shop-work was described in my last annual report. I also regret that I must postpone, until another year, all mention of our Evening Technical and our Evening Trade Courses, which form such an important part of the work of the department, and through which we are able to help such a large number of enthusiastic workers who cannot possibly attend the day classes.

I wish to take this occasion, in closing my report, to express my most sincere appreciation of the earnest and untiring efforts of all the instructors in this department to advance and develop our work, and of their unselfish and loyal devotion to Pratt Institute. Respectfully submitted,

Arthur L. Williston, Director.





Figures 13 and 14. Taps, reamers, milling-cutters, and other special tools made by students this year.

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Alumni Notes.

THE Trustees will be glad to hear what the graduates of the department are now doing, and of the progress that they have made since leaving the Institute, and also of the success of those who completed our courses in Steam and Machine Design and Applied Electricity last June in securing good positions almost immediately after graduating. I am therefore giving, in the following list, what information we have at hand regarding them.

'98. Joseph Anglada, who has been testing and designing electrical passenger vehicles and steam trucks for the Corliss Works at Providence, R. I., since he graduated, has recently left a position in the equipment department of the United States Navy Yard, Brooklyn, N. Y., where he was designing special electrical apparatus, and is now electrical designer with the Gibbs Engineering and Manufacturing Company of New York.

'00. Frank A. Austin is draughtsman for the New England Structural Company, Everett, Mass., designing steel beams and columns.

'98. Elsie F. Abbott is with the Calculagraph Company of New York, where she has been employed as draughtsman since graduating.

'98. Arthur M. Anderson. Exchange troubleman at the Spring Street Exchange of the New York Telephone Company when last heard from.

'98. George S. Badeau, who has been for the last two and a half years with the Colorado Springs Electric Company as electrician in a plant generating 6600 volts, resigned last fall on account of his health. His duties included the charge of the switchboard and the general oversight of the plant. Before going to Colorado he was with the New York Edison Company.

'00. Howard S. Beach is a student at the Ohio State University, where he hopes to graduate in the mechanical engineering course in June, 1904. For a year after graduation at Pratt Institute he was assistant chemist of the Wilson Aluminum Company, Holcombe Rock, Va.

'02. Thomas Beaghen, Jr., is draughtsman and inspector, having charge of the inspection of materials and locomotive tests for the New York Central and Hudson River Railroad Company.

'00. William G. Beard is testing tools and electrical machinery with the Western Electric Company.

'99. Frank H. Berger is assistant to the wire chief at the Spring Street Exchange of the New York Telephone Company.

'99. Clinton W. Beddell, who was formerly employed as estimater by Barron & Cooke of New York, steam-heating contractors, is at present draughtsman with William G. Baldwin, 107 West 17th Street, New York city.

'99. Clarence H. Berry, who was formerly chief engineer and electrician for the Suffolk Gas and Electric Light Company at Bay Shore, L. I., has recently been appointed switchboard wireman with the New York Telephone Company, and has charge of the switchboard work in a number of exchanges.

'95. James A. Blauvelt, who was formerly with the Gas Engine and Power Company and Charles L. Seabury & Company at Morris Heights, N. Y., and later was designing marine machinery for the United States torpedo boats "Bailey" and "Wilkes" and the destroyer "Stewart," is now draughtsman for Meiklehan & Dinsmore, electrical engineers, Nyack, N. Y., laying out power stations and designing electrical machinery.

'96. Albert P. Boeri, since graduating from the Institute, has been with the engineering department of the New Jersey Telephone Company. The nature of his work is the installation and inspection of common battery exchanges.

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'96. Robert Howard Boggs is Traffic Chief, Long Island Division of the New York and New Jersey Telephone Company.

'00. George I. Boynton, after a few months experience with the Electrical Construction Company, obtained a position of inside troubleman with the New York Telephone Company.

'01. George I. Branch, who was employed as switchboard attendant of the Halsey Street Substation of the Brooklyn Rapid Transit Company, is now a student at Stevens Institute of Technology, where he hopes to graduate with the class of 1905.

'02. Harry Bortin is with the cable department of the Bell Telephone Company of Philadelphia, Pa.

'02. Thomas J. Brennen is studying municipal engineering.

'98. John J. Brennen is assistant in Department of Sewers of Brooklyn, engaged in drafting and surveying for new sewers.

'94. George G. Brown, who was formerly with William Cramp & Sons, is now employed as ship-draughtsman in the United States Navy at Port Washington, N. Y., and at present is in charge of the finished plans of the United States sheathed protected cruiser "Chattanooga."

'02. Harrison Bucklin is with the Pneumatic Signal Company of Oak Park, Ill.

'94. R. Diaz Buitrago is draughtsman for Nicola Tesla, with whom he has been employed since he left the Institute.

'97. Robert Burns is President of the Burns Foundry and Machine Company, Brooklyn, N. Y.

'01. Henry L. Burras, who after graduating was draughtsman for Carnegie & Company of Pittsburg, Pa., detailing structural steel, columns, and girders, has recently accepted a similar position with Purdy & Henderson, civil engineers, New York city.

'02. Fred A. Buttrick is in the testing department of the General Electric Company, Schenectady, N. Y.

'98. Herbert L. Carpenter has been with the New York Telephone Company since graduation. When last heard from he was wire chief of their John Street Exchange.

'00. Edward D. Carter is an inspector with the New York and New Jersey Telephone Company, testing for electrolysis on cable sheaths and general inspection of telephone supplies.

'00. Edwin F. Charsha, who was employed with the Lukens Iron and Steel Company of Coatesville, Pa., designing heavy machinery for plate-rolling mills, has been with the Hilles & Jones Company, Wilmington, Del., since October, 1902. He is at present designing punches, shears, plate-planers, and plate-bending and straightening rolls.

'02. Ernest L. Clark is "insideman" at the Riverside Exchange of the New York Telephone Company.

'99. Robert F. Clark is mechanical draughtsman for the Norwalk Iron Works Company, South Norwalk, Conn., designing details for air and gas compressors.

'00. Loring M. Clarke is chief draughtsman for the traffic department of the New York Telephone Company, New York city.

'98. Charles Cosgrove is with William A. White & Sons of New York city, who do an extensive business in financing building operations.

'98. Louis S. Cozzens when last heard from was in the chemical laboratory of the Peter Cooper Glue Works in Brooklyn.

'01. William I. Cranston, who was with the American Screw Company, Providence, R. I., has been draughting with Brown & Sharp Manufacturing Company since May, 1902.

'97. John W. Crippen, who was formerly with the Remington Arms Company of Ilion, N. Y., is now draughtsman for the Utica Drop Forge and Tool Company, Utica, N. Y., designing fixtures for small duplicate works.

'94. Arthur T. Crocker is on the engineering force of the General Electric Company, Schenectady, N. Y., developing the multiple circuit type of train control. He was formerly general foreman at C. H. Brown & Company's works, Fitchburg, Mass.

'02. Frank M. Crossman is draughtsman for the George A. Hogg Iron and Steel Foundry Company, Pittsburg, Pa., designing rolling-mill machinery.

'99. Ralph W. Davis is chief draughtsman for the Keystone Electric Company at Erie, Pa.

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'96. John W. Danielson, Jr., has been draughtsman with R. Hoe & Company of New York detailing and designing printing presses for the past two years.

'96. Albert V. T. Day is Vice-President of the Baldwin-Day Company, which has recently been incorporated to invent, design, manufacture, and exploit automobile inventions of all descriptions.

'02. Roy E. Day is draughting for the Heine Safety Boiler Company, drawing settings, location, and foundry plans for boilers.

'02. Alphonse Dautun has been with the General Electric Company at Schenectady as lathe hand since he graduated.

'02. Robert V. Devlin has been with the Stanley Electric Manufacturing Company since he graduated. He is taking their student course and getting practical shop experience in the various departments of the works.

'99. Clarence H. Duckworth, who was for two years after graduating with the C. Pardee Works of Perth Amboy, N. J., as draughtsman and designer of cold-drawn steel machinery, is now with the Canton Roll and Machine Company, Canton, Ohio, designing rolling-mill machinery.

'01. Robert V. Dunbar has been electrician with the Metropolitan Street Railway Company since graduating, engaged on general construction work.

'00. George M. Earl is assistant to the Engineer of Traffic, New York Telephone Company, designing switchboard equipments and economical methods for traffic handling.

'96. Leroy Edwards, who has for several years been engaged in designing and draughting on marine engines, boilers, pumps, etc., is at present in charge of the foundry of McCrum & Edwards, brass founders, being one of the partners in the firm.

'00. Charles Estwick, Jr., is with the New York Telephone Company, by whom he has been employed since he left the Institute, as Traffic Inspector.

'96. Frank H. Fisher, who until recently had charge of the draughting-room of the Riker Electric Vehicle Company, is now Secretary and Treasurer of the firm of George Fisher & Company.

'00. Robert M. Fessenden has charge of meters and distribution work of the Consolidated Gas Company of New Jersey. He was formerly meter-tester with the New York Edison Electric Company.

'98. James A. Flannegan is Superintendent and General Manager of the Laurel Improvement Company, Laurel, Miss.

'01. Frank M. Foote since graduation has been employed as a machinist, where he is learning the manufacture of telegraph supplies in the machine shop.

'99. Thomas B. Ford is Manager for the Thomas P. Ford Company, 81 Centre Street, New York city.

'01. William Foster is employed in the testing department of the Canadian General Electric Company, testing transformers and induction motors.

'02. George M. Foulds is draughtsman for the Consolidated Telegraph and Electrical Subway Company of New York.

'99. Charles F. Fowler is Manager for the Wallkill Valley Electric Light and Power Company of Walden, N. Y., where he has general charge of plant, line, and installations.

'99. S. Kirk Fox is still draughtsman with the Consolidated Telegraph and Electrical Subway Company of New York.

'01. Albert W. Fraser, who was formerly draughtsman with the Erie Gas Engine Company at Buffalo, N. Y., is now draughtsman and inspector with the National Tube Company, Keysport, Pa., designing tools and inspecting finished work.

'02. Albert V. Free since leaving the Institute has been engineering apprentice with the Westinghouse Electric and Manufacturing Company.

'02. E. Seymore Frost has supervision and inspection of electrical installations on the United States Government boats building at the Crescent Shipyard.

'00. Almon B. Fuller is chief draughtsman with the H. Krantz Manufacturing Company, makers of switch and panel-boards.

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'00. Albert V. D. Fritts is machinist with the Lehigh Valley Railroad Company at South Eastern, Pa., where he has been engaged in erecting locomotives. At present he is running a 36-inch lathe.

'01. Frederick H. Fuller is in the engineering department of the New York and New Jersey Telephone Company, estimating on new switchboards to be installed in central offices.

'96. John O. Gage is Manager for John S. Gage, New York city, manufacturers of mosquito canopies.

'01. John Peter Gebelein is meter-tester with the Edison Electric Illuminating Company.

'97. Frank H. Grafton is chief draughtsman and mechanical engineer for the Wheeling Corrugating Company, Wheeling, W. Va., where he is engaged in working up improvements in machinery and equipments, and is in charge of the machine-shop and pattern-shop.

'99. Walter B. Gump spent a year and a half after graduating with the General Electric Company at Schenectady, N. Y. For the past year he has been mechanical and electrical designer and experimenter in the invention department of the National Cash Register Company, Dayton, Ohio, where he is designing and inventing details on new cash registers and electrical appliances for operating.

'02. Henry M. Hanks is inspector of machinery for C. W. Hunt & Company, Staten Island.

'01. Philip O. Harding is detail draughtsman for the Automatic Air-carriage Company of New York city.

'01. Elmer L. Hayward since graduating has been foreman of the New York Continental Jewel Filtration Company, and later Superintendent of the repair department of the R. G. DuBois Automobile Agency, Brooklyn, but is now Assistant Instructor in Machine Work, Department of Science and Technology, Pratt Institute.

'00. Ralph R. Hawkins is with the Incandescent Arc Light Company, Brooklyn, N. Y., on the design of automatic electric oil switches for high voltages.

'98. Harry G. Healy spent about a year as draughtsman and assistant to the master mechanic of the Ansonia Brass and Copper Company, Ansonia, Conn., but for the past two years has been with the Norfolk and Western Railway, and is now stationed at Roanoke, Va., in their engineering department at work on general railroad draughting, plotting surveys, etc.

'02. C. E. Hebbert since graduating has been in the testing department of the General Electric Company, Schenectady, N. Y.

'01. Emil Hohn is electrician in the engineering department of the New York and New Jersey Telephone Company.

'98. William G. Holt is with the American Telephone and Telegraph Company in the engineering department, laying out conduits and attending to traffic work.

'01. Harry C. Howell since February 15, 1903, has been draughtsman with the Taylor Iron and Steel Company, High Bridge, N. J. Formerly he was draughtsman with Cornelius Vanderbilt, 100 Broadway, New York city.

'99. William R. Hulbert is a student in the Department of Mechanical Engineering, Columbia University, where he hopes to complete the course in Marine Engineering in 1904. He was first-class electrician in the American Department of Varied Industries at Paris Exposition in 1900.

'94. Harry A. Hunt is chief draughtsman with the Taylor Iron and Steel Company, High Bridge, N. J.

'02. Roger S. Huntington since graduating has been with the New York Telephone Company in the switchboard department, and is at present in the main distributing frame at Spring Street Exchange, New York city.

'02. Harry Hussa is travelling salesman for the Chrome Steel Works of Brooklyn, N. Y.

'02. Henry Charles Iffland has been draftsman principally in electrical work since graduation.

'97. Charles H. Israel, formerly assistant chief draughtsman with the Wheeling Mould and Foundry Company, manufacturers of rolling-mill machinery, Wheeling, W. Va., is now chief engineer of the American Foundry and Construction Company, Pittsburg, Pa., manufacturers of hydraulic and rolling-mill machinery and high-pressure valves and fittings.

'01. Daniel L. Jones is in the production department of the Crocker Wheeler Company.

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'01. Jarrod E. Jones is with the Blakeslee Manufacturing Company in Du Quoin, Ill., as chief draughtsman, engaged upon pumping and coal-mining machinery.

'01. Sidney W. Jones is draughtsman with the Turner Construction Company, 11 Broadway, New York city.

'01. Alfred O. Kauffman is draughtsman with the Link Belt Engineering Company, Philadelphia, Pa.

'00. Franz B. Kellog has secured the position of first electrician at the State Reformatory, Elmira, N. Y. Formerly he was switchboard attendant with the Citizens Light and Power Company of Rochester, N. Y.

'02. F. C. Kirkup since graduation has been night wire chief at the Williamsburg office of the New York and New Jersey Telephone Company.

'99. Wilmot H. Kissam is electrical engineer for the Chicago Short Line Company. He was formerly cable expert for the Simplex Electric Company.

'00. Fred L. Klee, formerly draughtsman on motors with the General Incandescent Arc Light Company of New York city, is at present draughtsman in the equipment department, Brooklyn Navy Yard, designing electrical apparatus.

'99. Russell Klemm has for the past two years been with the Wheeler Condenser and Engineering Company. In January, 1902, he was sent to the London office of the company, and recently has been appointed chief draughtsman of that office.

'02. Louis B. Kumpf. Not heard from.

'02. Nixon Lee is at work in the testing laboratory of Columbia University making tests for the city of New York in the strength of materials, of fireproof wood, etc.

'01. Maximilian Link, who was formerly assistant to the Superintendent of the Crane Company of New York city, and later draughtsman of the Westinghouse Electric Company, Pittsburg, Pa., has recently accepted a similar position with the Western Electric Company at Chicago.

'95. Charles A. Lubrecht graduated in May, 1901, from the Long Island College Hospital with the degree of M.D., and is at present practicing medicine in Brooklyn.

'—. Frederick W. Maby, electrician in United States Navy when last heard from.

'99. Wallace W. Manning has been assistant to the chief inspector of the Hartford Steam Boiler Inspection and Insurance Company since August, 1899, engaged in the design and inspection of steam boilers.

'01. David M. Mahood has been meter-tester with the New York Edison Company since September, 1901.

'02. Frank V. de Magalhaes is with the laboratory of the New York Edison Company testing instruments, incandescent lamps, etc.

'02. John L. McDowell is at present employed by the American Car and Foundry Company, Berwick, Pa.

'97. Charles R. Manville is with the Manville Brothers Company of Waterbury, Conn., as draughtsman on special automatic machinery and watch machinery.

'94. James O. Martin is with the Department of Agriculture, Washington, D. C., as field assistant in the Bureau of Soils.

'97. Thomas S. Martin, who has been with the Lidgerwood Manufacturing Company of Brooklyn designing steel and electrical hoisting engines for the past five years, has recently accepted a position as draughtsman with Westinghouse, Church, Kerr & Company. He is engaged on details and general layouts for power-houses.

'99. Carl F. Martini since October, 1902, has been draughtsman with the Chicago and Western Railroad at Chicago, Ill. His work has been principally in connection with track elevation. He was employed with the Midvale Steel Company of Philadelphia immediately after graduating from the Institute, and later was with the Isthmian Canal Commission at Washington, D. C.

'02. A. P. Mayhew, Jr., has returned to the Institute to take the second-year work in Applied Electricity. He graduated in the course of Steam and Machine Design.

'98. Thomas P. McCray is exchange troubleman for the 38th Street Exchange of the New York Telephone Company, New York city.

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'01. Raymond D. McIntosh is engineer with the Miller-Morris Land, Canal, and Irrigating Company at Estherwood, La.

'01. W. Leaman MacIntosh is general car and structural draughtsman with the Rapid Transit Subway Construction Company, New York city.

'98. Arthur Masters is salesman for the H. B. Smith Company, manufacturers of heating and ventilating apparatus.

'02. Clarence A. Murphy. Not heard from.

'01. Charles P. Merwin is with the Stanley Works of New Britain, Conn., designing special tools and parts of machinery.

'98. Joseph S. Miller is wire chief with the New York Telephone Company, New York city.

'01. Raymond J. Miller is now draughting and designing for the W. P. Davis Machine Company of Rochester, New York.

'02. John R. Moore is assistant to the Superintendent of the order department, C. W. Hunt & Company, Staten Island.

'02. Ernest J. W. Miller is at present draughtsman with Eaton, Glover & Company of Brooklyn, N. Y., designing stamping and engraving machinery.

'02. John J. McNally is employed by Albert A. Crary, consulting engineer, 95 Liberty Street, New York, drafting and assisting in engineering work.

'02. R. Halliday Nexon since graduation has been with the Thresher Electrical Company of Dayton, Ohio. He is now erecting engineer with that company at their New York office, having charge of the installation and testing of generators, motors, and switchboards.

'02. Robert I. D. Nicoll is telephone and switchboard-tester with the Western Electric Company in their New York office.

'02. John G. Nugent has left his position with the General Electric Company at Schenectady, N. Y., where he was employed winding armatures for motors and rotary converters, to become executor of his father's estate.

'98. Irving H. Osborne is chief assistant to the electrical engineer of the Newport News Shipbuilding and Dry Dock Company at Newport News, Va.

'02. René H. Pecheur is expert machinist, locating trouble and investigating cause in new electro-mechanical systems of compositing.

'02. Edwin B. Peet is on construction work with Edwin B. Stimpson & Company, 31 Spruce Street, New York.

'97, David B. Perry is chief draughtsman and shop superintendent for the Morse Chain Company at Trumansburg, New York.

'00. Percy P. Pierce has been some time in the shops of the Pierce Wheel Works of Buffalo, N. Y. He is now employed as salesman for the same concern.

'98. Nathaniel Platt is inspector for the Edison Electrical Illuminating Company.

'96. William P. Platt is a member of the Second F Artillery Corps at Fort Danglas, Washington.

'99. Fred A. Prahl is a student of engineering at Stevens Institute, where he hopes to graduate in June, 1903.

'02. Harry F. Prescott is with the Bullard Machine Tool Company of Bridgeport, Conn., employed as general machinist.

'00. Charles P. Rablen is student with the General Manager of the New York Telephone Company. His work covers all branches of telephony.

'98. Webster W. Ray, who was formerly in the construction and designing department of the General Electric Company at Schenectady, N. Y., is now the erecting engineer of the Christensen Engineering Company of Milwaukee, Wis.

'00. Walter Van H. Read is business manager for W. C. Farrand of Arlington, N. J., having general management of work done in the photograph gallery.

'00. Nye B. Reardon is in the class of 1905 at Cornell University studying civil engineering.

'97. Charles Rehbein is chief draughtsman for the Composite Type-bar Company of Brooklyn, N. Y., with whom he has been since leaving the Institute.

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'01. Arthur Ritter is engineer and draughtsman for the American Blower Company, 141 Broadway, New York. The work consists of figuring ventilating and drying plants.

'99. Harry F. Roberts is draughtsman at Lewis Nixon's Crescent Shipyards, Elizabeth, N. J.

'95. George A. Robertson since graduating from the Institute served two years as draughtsman with the W. & A. Fletcher Company, marine engine builders, Hoboken, N. J., four years with the Electrical Storage Battery Company of Philadelphia, Pa., and two years with the New York Steam Company of New York city. In January, 1903, he was appointed engineer in the heating and ventilating division of the Board of Education, New York city.

'98. Harry L. Rosencrans has been with the New York Telephone Company since he graduated from the Institute. He is draughtsman in the engineering department.

'98. Fred A. Saylor is chief electrician in charge of all plants, lighting and power, for the city of Havana, Cuba.

'99. Fred Scheer, Jr., is a student at the Polytechnieum, Zürich, Switzerland.

'99. Lester Schramm is with the engineering department of the New York Telephone Company, designing exchange equipments.

'01. Wade H. Scully, who after graduating from the Institute was assistant to the engineering director of the Pratt Laboratory at Atlanta, Ga., has recently been appointed Factory Inspector in the Inspection Department, New York city. His work consists of testing fire-pumps, sprinkler systems, and making general reports on the fire protection of factory buildings.

'01. James H. Sheely is inspector in the engineering department of the New York Telephone Company, New York city.

'00. William R. Seigle, Jr., who was formerly assistant chief engineer of the H. W. Johns Manufacturing Company of Brooklyn, N. Y., is now chief engineer of the Patton Paint Company, Newark, N. J., having charge of the mechanical and electrical equipment, the engineers, electricians, machinists, etc.

'99. Serring D. Seabring is wire chief for the New York Telephone Company, Madison Square Central Office.

'00. George B. Seddon has been in the traffic department of the New York Telephone Company since graduating from the Institute.

'02. David G. Shepherd is assistant foreman in the filament-treating department of the Sawyer-Man Electric Company.

'97. Michael J. Shugrue is assistant to the electrical engineer, Edison Electrical Illuminating Company, New York, engaged in designing, drafting, and installing switchboards and electrical machinery.

'02. Axel L. Sjoberg is with the New York Telephone Company, having charge of the battery and power plant at the Harlem Exchange.

'02. Gordon K. Smith is draughtsman with the Western Electric Company in their New York office.

'97. Arthur D. Smith is mechanical engineer with the Reading Iron Company at Danville, Pa., where he has the chief supervision of all machinery in the iron-rolling mill.

'97. Anson W. Smith is instructor in Mechanical Drawing, Department of Science and Technology, Pratt Institute.

'02. Horace A. Staples, second assistant engineer on the steamship Huron of the Clyde Steamship Line.

'02. Robert H. Stevens is draughtsman, detailing steel-mill construction and arrangements for motor-drives at Pottsville, Pa.

'02. William A. Stevens is continuing his studies in electricity at Pratt Institute.

'97. Joseph P. Smithers, Jr., is draughtsman in Pottsville, Pa., detailing plans of steel-mill construction.

'95. Charles A. Stone is in the Educational Department in the Philippine Islands organizing manual training courses in English schools. His work is in the province of Cuyo Paragua.

'02. William J. Spencer is inspector of electrical equipment, Navy Department, now stationed at the Brooklyn Navy Yard.

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'01. Alphonse L. Spenger is in the New York office of the Link Belt Engineering Company, drafting, estimating, and inspecting.

'02. Rudolf J. Stam is civil engineer in the maintenance and way department of the Pennsylvania Railroad. He is at present located at Wilmington, Del.

'94. Arthur C. Tate is draughtsman and assistant to A. H. Emery, Stamford, Conn., electrical engineer.

'02. Fred W. Taylor, Jr., is travelling engineer for E. & T. Fairbanks Company, planning for the installation of weighing scales in troublesome localities.

'02. Alexander O. Taylor is with the Pacific States Telephone and Telegraph Company at San Francisco, Cal.

'99. Chester A. Terry for the past three years has been inspector for the Consolidated Railway and Electric Lighting and Equipment Company, applying the equipment to cars and supervising its operation.

'02. William H. Thatcher since graduation has been making insurance maps of factories and buildings.

'98. Charles O. Thomson was formerly with the Electric Power Company of Fernando, Cal., working on the development of a water-power installation for long-distance transmission. He has been for the past year doing general electrical work, installing engines and electrical machinery in Ontario, Cal.

'00. Louis A. Thompson is in the engineering department of the Milwaukee Electric Company, calculating armatures and field-windings for direct-current machines.

'00. Edwin F. Tilley is in the construction department of the Otis Elevator Company, designing hydraulic and electric elevator plants.

'94. George R. Townsend, after graduating, spent three years at Stevens Institute and the Massachusetts School of Technology and one year abroad, studying marine engineering and naval architecture; is now with the William Frigg Company, ship and engine builders, as aide to the General Superintendent.

'96. Arthur L. Tribe has resigned his position with the Electric Railway and Power Company of Sacramento, Cal., where he had charge of the power distribution, to accept a position with the Greenbower Gold Mine, Sierra Mountains, as calculating and drainage engineer.

'02. Elgie J. Umstead is engineering apprentice with the Westinghouse Electrical Manufacturing Company at Pittsburg, Pa.

'98. Leroy H. Vanderbilt, after leaving Pratt Institute, studied at Purdue University, where he graduated in 1901. He is now draughtsman in the office of the mechanical engineer of the New York Central and Hudson River Railroad.

'99. Clarence R. Van Deusen is draughtsman at the New York Navy Yard, where he is engaged in electrical work.

'98. Philip K. Van Ingen, who was formerly with the General Electric Company at Schenectady, N. Y., is now wire chief of the West Exchange of the Hudson River Telephone Company, Albany, N. Y.

'96. William H. Voorhees, who was for five years with the American Bridge Company, has been for the past year structural draftsman and designer with Milliken Brothers, 11 Broadway, New York. His work includes office buildings, mill buildings, and bridge work.

'02. Edward O. Wegner has been doing some experimental work on his own behalf since leaving the Institute last June.

'01. Charles E. White is meter-tester with the Edison Electrical Illuminating Company, New York city.

'94. Hammond L. White is draughtsman for the Mergenthaler Linotype Manufacturing Company, Brooklyn, N. Y.

'02. Ralph S. Willis is with Sanderson & Porter, 31 Nassau Street, New York, engineers and contractors, with whom he has had charge of the installation of a 400-kilowatt rotary sub-station at Putnam, Conn. He expects to enter the Electrical Engineering Class at Sibley College, Cornell University, in September, 1903.

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'02. Timothy S. Williams is draughtsman with the Ridgewood Manufacturing Company, 96 Liberty Street, New York.

'97. Walter G. Willis has charge of the experimental department of the Walter A. Wood Mowing and Reaping Machine Company at Hoosick Falls, N. Y. His work consists of designing and constructing pattern-machines for a complete line of harvesting machinery.

'98. Charles A. Willits is inspector of engineering material and ordnance for the United States Navy Yard at the works of the Fore River Ship and Engine Company, Quincy, Mass. His duty is to see that the contractors doing Government work meet their specifications.

'99. H. Armour Ward, who was formerly construction engineer for the American Tobacco Company, is now President of the American Ferrofix Company; also President of the American Brazing Company and a member of the firm of Wall Street bankers, Pollock & Vaughan.

'96. William Yaeger is Superintendent of Electrical Construction and Maintenance of various plants of the Edison Electric Illuminating Company of Brooklyn.

Text-book Collection.

THE Library acknowledges with thanks the receipt from the publishers of the following volumes for its "Text-book Collection." This collection is shelved in the General Reference Room of the Library, free of access to the public.

From Henry Holt & Company, New York:

Standard English Prose. Bacon to Stevenson. Selected and edited by Henry S. Pancoast. 1902.

From Silver, Burdett & Company, New York:

Freshman English and Theme-correcting in Harvard College. By C. T. Copeland and H. M. Rideout. 1901.

From Ginn & Company, New York:

New Plane Geometry. By W. W. Beman and D. E. Smith. 1899. 75c.

Elements of Algebra. By W. W. Beman and D. E. Smith. 1901. $1.12.

From D. C. Heath & Company, New York:

Insecta. By Alpheus Hyatt and J. M. Arms. 1890. (Guides for Science-teaching. No. VIII.)

Six volumes of the "Arden Shakespeare": Henry VIII, edited by D. Nichol Smith, M.A.; King Lear, edited by D. Nichol Smith, M.A.; Coriolanus, edited by Edmund K. Chambers; Much Ado About Nothing, edited by J. C. Smith, M.A.; The Merchant of Venice, edited by H. L. Withers; King John, edited by G. C. Moore Smith, M.A.

The Library has received from the publisher, Mr. William T. Comstock, New York, the gift of a copy of "Wall Papers and Wall Coverings," by Arthur Seymour Jennings.

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FOUNDED BY CHARLES PRATT
FOR THE PROMOTION OF ART, SCIENCE, LITERATURE, INDUSTRY, AND THRIFT.

215 RYERSON STREET, BROOKLYN, N. Y.
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Department of Domestic Art — Normal domestic art course; courses in sewing, dressmaking, millinery, costume design, basketry; art needlework; lecture course on history of costume.

Department of Domestic Science — Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

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FREDERIC B. PRATT, *Secretary.*

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DOMESTIC ART NUMBER

PRATT INSTITUTE MONTHLY

May, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI | May, 1903 | Number 7

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Domestic Art.
June	Report of the Department of Kindergartens.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume XI MAY, 1903 Number 7

Annual Report
Of the Department of Domestic Art.

TO THE TRUSTEES, GENTLEMEN:

THE courses which have been given in this Department during the year now closing are the normal domestic art course of two years, enrolled 15; the technical courses for professional use: in sewing of one year, enrolled 20; dressmaking of two years, enrolled 32; in millinery of four months, enrolled 29; in art needlework of two years, enrolled 14; in costume design of three years, enrolled 12. Total professional courses, 107. All these courses require the full time of the students. The courses for home use in sewing, dressmaking, and millinery enrolled 364; drawing, water-color, and design, in connection with dressmaking and millinery, enrolled 129; art needlework enrolled 41; and basketry enrolled 47. Total in courses for home use, 452. The courses for home use require attendance at the Institute but two half days a week, and the completing at home of some of the work begun in class.

The Department has also instructed the 38 girls of the High School Sophomore Class and 29 girls of the Junior Class in sewing, dressmaking, and millinery three times a week, and 51 children on Saturday mornings in cord-work, sewing, and embroidery. Evening classes in sewing, dressmaking, millinery, and basketry have been taught two evenings a week to 133 young women. The Department has thus provided for the instruction of 636 individual students in its various courses, and furnished teachers for others in mission and settlement classes from its graduates and students.

The Normal Course in Domestic Art has been reorganized since the last report, and now includes work in domestic science during the first year of the course. The Normal Courses in Domestic Science and Art are the same during the first year, and the entrance examinations the same, so that the students pursue their studies and work in the Domestic Science Department in the first year, and at the beginning of the second year have the opportunity to decide whether they are best qualified to make domestic art or domestic science their major course and specialty during the last year of the course. The work of the first year covers psychology, history of education, chemistry, physiology, cookery, drawing, cord-work, weaving, basketry, sewing, and physical training. In the second year the student who makes do-

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mestic art her specialty takes advanced sewing, dressmaking, millinery, drawing, water-color, and design in connection with dressmaking and millinery, history of costume, embroidery, basketry, normal methods, practice-teaching, and bacteriology.

The graduate of this new normal course is therefore prepared to teach elementary domestic science, as well as the branches of domestic art. Where courses of this nature are being introduced, it is sometimes necessary for one teacher to start several lines of instruction, and no one can doubt that a practical knowledge of physiology, cookery, and chemistry are valuable to a woman in any position of life, if not called upon to use them professionally.

It is impossible yet to speak of the results of this course, but the broader training in the science and cookery now included certainly give a wider outlook and experience, and must enable a teacher to be in more sympathetic touch with the home life of her students, and the general interests of the schools and of the community by which she is surrounded. We shall graduate a good class this year to carry out the spirit and continue the work of the Institute in domestic art. Miss Winifred Reininger, a member of the class, who had taught successfully for a number of years previous to her entrance, accepted a position before the close of the second year in the public schools of Muskegon.

The class of '02, who were graduated from the full two-year Normal Course in Domestic Art, have been teaching as follows during the year just closing:

Helen Agnes Bray, instructor in sewing and dressmaking, Gregory Normal Institute, Wilmington, N. C.

Catherine A. Cotton, instructor in sewing, millinery, and basketry, Y. W. C. A., Pittsburgh, Pa.

Alexandrine Herckner, instructor in dressmaking and costume design, Educational and Industrial Union, Boston, Mass.

Evelyn Mathewson, instructor in basketry, Church of the Holy Communion, Borough of Manhattan, New York; millinery, Evening Public Schools, Borough of Manhattan, New York; later, sewing, Public Schools, Borough of Richmond, New York.

Mattie M. Schilling, instructor in millinery, Evening Public Schools, Borough of Brooklyn, New York; supervisor of sewing, St. Anne's Sewing School, Borough of Brooklyn; private classes in millinery and art needlework.

Eleanor Stebbins, assistant instructor in dressmaking, Pratt Institute; instructor in sewing, Maxwell House, Borough of Brooklyn, New York.

Corisande Winslow, instructor in sewing, dressmaking, and millinery, Miller School, Albemarle, Va.

Margaret D. Davidson, married January, 1903, to Mr. Isaac T. Roe of Suffern, N. Y.

The following is a list of the normal graduates of previous years who have changed their positions since June, 1902:

Elizabeth H. Cooper, '99, instructor in sewing, music, and German, Park School, Boonton, N. J.

Augusta C. DeVinne, '00, instructor of sewing, Evening Public Schools, Borough of Brooklyn, New York; later, instructor of sewing, Public Schools of Borough of Queens, New York.

Clara S. Dudley, '99, instructor in sewing and dressmaking, Hampton Institute, Hampton, Va.

Fanchon Haver, '01, instructor of sewing, Public Schools, Borough of Queens, New York; instructor of sewing, Evening Public Schools, Borough of Brooklyn, New York.

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Anna L. Hazen, '01, instructor of sewing, Evening Public Schools, Astoria, L. I.
Helen DeL. Hobbs, '01, instructor of sewing, Public Schools, Borough of Brooklyn, New York.
Maude V. A. Kinney, '01, instructor of sewing, dressmaking, and millinery, Normal and Collegiate Institute, Asheville, N. C.
Almira L. Ogden, '00, instructor in domestic art, Drew Seminary, Carmel, N. Y.
Leonora O'Reilly, '01, director of classes in hand and machine-sewing, Manhattan Trade School for Girls, Borough of Manhattan, New York.
Edna H. Phair, '00, instructor in sewing, dressmaking, and millinery, Y. W. C. A., Dayton, Ohio.
Caroline D. Pratt, '98, instructor in sewing and dressmaking, Hampton Institute, Hampton, Va.
Naomi Schofield, '00, instructor in sewing, Evening Public Schools, Borough of Brooklyn, New York; instructor in sewing, Borough of Richmond, New York.
Christina M. Thompson, '98, instructor in sewing and dressmaking, Girls' Technical High School, Borough of Manhattan, New York.
Ella Woodruff, '00, assistant instructor in sewing and dressmaking, Pratt Institute; instructor in dressmaking, Grace Church Settlement, Borough of Manhattan, New York.

The increasing interest and confidence in domestic art as a desirable subject to be taught in the regular courses of public schools has been strongly manifested in educational circles all over this country during the past year. It seems to be a well-established fact that it is possible to make instruction in sewing, dressmaking, millinery, art needlework, and basketry such that it will be truly educational. It may be made excellent manual training in affording opportunity for the brain to express its thoughts in concrete form by means of the eye and hands. In the process of dressmaking, not only the eye and hands, but the whole body is used. As a means of applying instruction in drawing, color, form, and design, domestic art has been found most valuable. Here are interests which touch closely the life of the home, and are naturally keen among girls, wherein a sense of what is really beautiful may be awakened and cultivated. Nor are these branches lacking in opportunities for applying accuracy of construction, the use of mechanical drawing, and the processes of numbers, in ways that make the pupils realize their value as only concrete examples can do.

Again, the subjects of domestic art, from their social and industrial view, may be used to make real and definite the study of history and economics, in the history of textile arts, and the processes of growth and manufacture of the products and the tools used in class work.

As the articles made are often for personal use, it is possible to do much in the way of wise suggestion along the lines of physical health and beauty.

It is evident that domestic art in the schools may be a subject of broad culture, and that the instructor should be a woman of excellent general education and culture, as well as of strong professional training. It is encouraging to note that this opinion is gaining ground, and that from all sides the demand is now coming for the broadly trained teacher, where a few years ago a skillful dressmaker or needlewoman was considered adequate.

The growing interest in domestic art is indicated by its recent introduction into the courses of various schools in all parts of this country. The public schools of Muskegon have been extending their course into the

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grammar schools, and strengthening that of the Manual Training High School. Kansas City Manual Training High School, where domestic art is elective, has six hundred and fifty girls from the first, second, and third-year classes, who have entered the courses in sewing, dressmaking, and millinery, and the school was obliged to disappoint at least a hundred others for lack of accommodation, though they have recently enlarged their building, and have a number of finely equipped rooms for these subjects. Downer College, Milwaukee, now has a course in domestic art. Denton, Texas, is to have a school for girls, in which domestic art is to be made a strong feature. San Antonio is considering the introduction of domestic art into its schools. Throop Polytechnic Institute, Pasadena, has been broadening its course in domestic art. Washington Agricultural College, at Pullman, Washington, is to offer a course in domestic art another year. The State College of Agriculture and Mechanic Arts, Ames, Iowa, has increased its course in domestic art this year, and the James Milliken University, Decatur, Illinois, will open a department of domestic art next fall. The work has been well begun in Toronto and Montreal.

Coming nearer home, the State Normal School at New Paltz, N. Y., organized a course in domestic art a year ago, which is now well established. New York city, Borough of Manhattan, has this year opened a Girls' Technical High School, in which sewing and dressmaking are a part of the regular course. The evening public schools of the Boroughs of Manhattan, Brooklyn, and Queens have given courses in sewing, dressmaking, and millinery during the past winter, while the Manhattan Trade School for Girls, established last fall by a corporation of men and women interested in the welfare of young working girls, is teaching phases of domestic art which will fit young women to enter trades where hand or machine-sewing is used.

The requests for teachers in the evening schools, the settlement classes, and industrial schools have been more numerous than ever this year, and capable graduates of the technical courses have been appointed to teach during the past year as follows. We have not mentioned in any of these lists the large number of normal and technical graduates who have continued in their same positions during the past year.

Technical graduates and students who have been placed in positions since June, 1902:

Florence Abel, instructor in costume design, Pratt Institute.

Annie L. Aston, instructor in millinery, Evening Public Schools, Borough of Brooklyn, New York.

Caroline E. Brainard, instructor in sewing, Public Schools, New Rochelle, N. Y.; sewing, St. Bartholomew's Mission, Borough of Manhattan, New York.

Happy Ella Branch, instructor in sewing, Home for Wayward and Unfortunate Girls, Boston, Mass.

Helen Brooks, instructor in sewing, St. Bartholomew's Mission, Borough of Manhattan, New York.

Minnie Bundschuh, instructor in sewing, University Settlement, Rivington Street, Borough of Manhattan, New York.

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S. Elizabeth Burnell, instructor in millinery, Christodora House; also at Harlem Y. W. C. A., Borough of Manhattan, New York.

Julia C. Carey, instructor in sewing, Evening Public Schools, Borough of Brooklyn, New York.

Florence H. Coulthard, instructor in millinery, Manhattan Trade School for Girls, Borough of Manhattan, New York; also at the Catholic Women's Association, Borough of Brooklyn, New York.

Catherine E. Dailey, instructor in dressmaking, All Souls' Chapel, Borough of Brooklyn, New York.

Mary L. Deming, instructor in sewing and dressmaking, Manhattan Trade School for Girls, Borough of Manhattan, New York.

Meta B. Develin, instructor in dressmaking, Grace Church Settlement, Borough of Manhattan, New York; later, full-time position, instructor in sewing and dressmaking, Y. W. C. A., Paterson, N. J.

Frances J. Farrell, instructor in millinery, Astral Settlement, Greenpoint, N. Y.; also at Catholic Women's Association, Borough of Brooklyn, New York.

Marion A. Gilbert, instructor in sewing and dressmaking, Y. W. C. A., Borough of Brooklyn, New York.

Leila F. Hall, instructor in millinery, Evening Public Schools, Borough of Brooklyn, New York.

Lillian M. Holmes, instructor in sewing, Alexander Chapel, Borough of Manhattan, New York; dressmaking, Grace Church Settlement, Borough of Manhattan; also at Astral Settlement, Greenpoint, N. Y.

Harriet Howell, instructor in Domestic Art, Throop Polytechnic Institute, Pasadena, Cal.

Rachel Jefferson, instructor in sewing, St. George Sewing School, Borough of Manhattan, New York.

Carrie Lauffer, instructor in sewing, St. Bartholomew's Mission, Borough of Manhattan, New York.

Mary J. McKay, instructor in dressmaking, Evening Public Schools, Borough of Manhattan, New York.

Alice Milford, instructor in sewing, Evening Public Schools, Borough of Brooklyn, New York.

Ada R. Price, instructor in sewing and dressmaking, Colored Manual Training High School, Washington, D. C.

Ellen L. Richards, instructor in sewing and dressmaking, Girls' Technical High School, Borough of Manhattan, New York.

Mina A. Simpson, instructor in dressmaking, All Souls' Chapel, Borough of Brooklyn, New York.

Alice Slack, instructor in sewing, St. Bartholomew's Mission, and dressmaking, Nurses' Settlement, Borough of Manhattan, New York.

Hilda Svenson, instructor in dressmaking, Grace Church Settlement, Borough of Manhattan, New York.

Emma H. Taber, instructor in dressmaking, Pratt Institute.

Lillian Taylor, instructor in millinery, West Side Neighborship House and Hartley House, Borough of Manhattan, New York.

Minnie C. Venable, instructor in millinery, Evening Public Schools, Borough of Brooklyn, New York.

Gertrude Walbran, instructor in art needlework, City Parish Mission, Borough of Brooklyn, New York.

S. Constance Watt, instructor in sewing, Evening Public Schools, Borough of Brooklyn, New York.

Emeline N. Welch, instructor in millinery, Evening Public Schools, Borough of Brooklyn, New York.

Isabelle M. White, instructor in sewing, St. Bartholomew's Mission, Borough of Manhattan, New York.

Beulah Wilder, instructor in sewing and dressmaking, Colored Manual Training High School, Washington, D. C.

Frances M. Williams, instructor in Domestic Art, State College of Agriculture and Mechanic Arts, Ames, Iowa.

Kate Williams, instructor in sewing, South Congregational Mission, Borough of Brooklyn, New York.

Albina D. Wilson, instructor in sewing and dressmaking, Y. W. C. A., Cleveland, Ohio.

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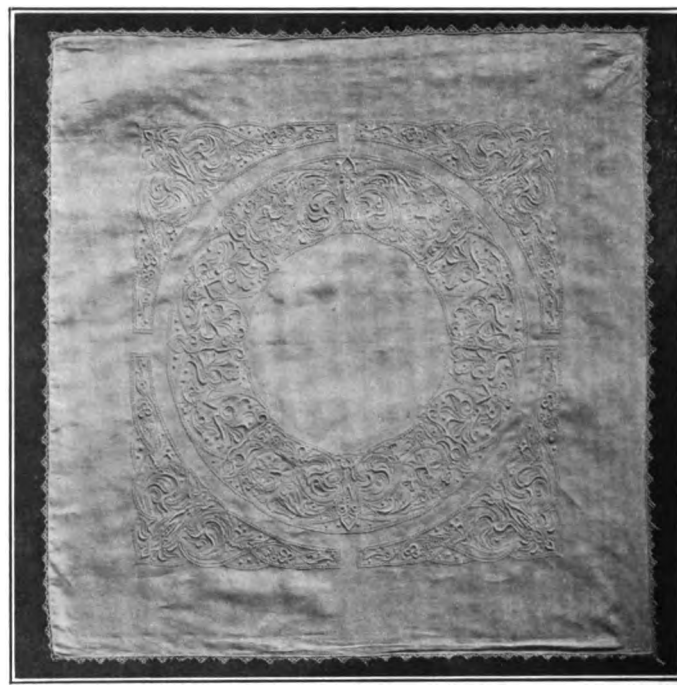

WHITE LINEN LUNCH-CLOTH.

Designed by M. E. Stocking and embroidered by M. L. Friebus. Satin and German stitches in white cotton, lace edge made with needle, white linen thread.

Art Needlework.

IN making a report of the art needlework for a few years past, it will be well to state first what we have been endeavoring to do. In design, we have been trying to teach that the effect of flat decoration, if composed of good forms arranged with relation to each other as to size, shape, and strength, will be a well-proportioned and pleasing whole, and that a flow of graceful lines may suggest beautiful floral forms without offending one's artistic sense.

Design is a very important factor of our work. Students of the regular morning class devote two mornings of each week to the study, and it forms quite the most interesting part of the course. But no pupil is allowed to work out her own design, unless it is approved by the instructor. Until such a time as the student shall be able to make her own designs well, they are made for her and given to her to work out with the needle.

In the carrying out of our designs in color, we try to make the piece, when finished, one restful, harmonious whole. Though it may seem a con-

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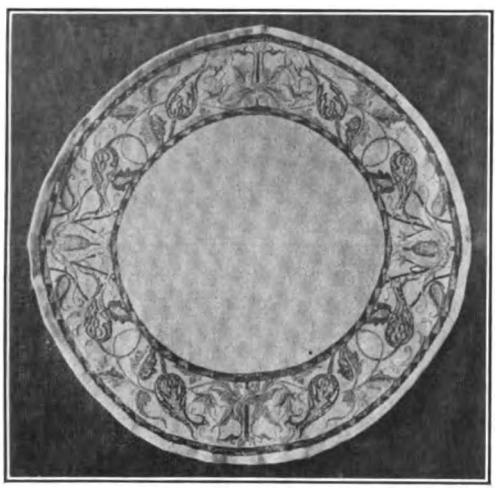
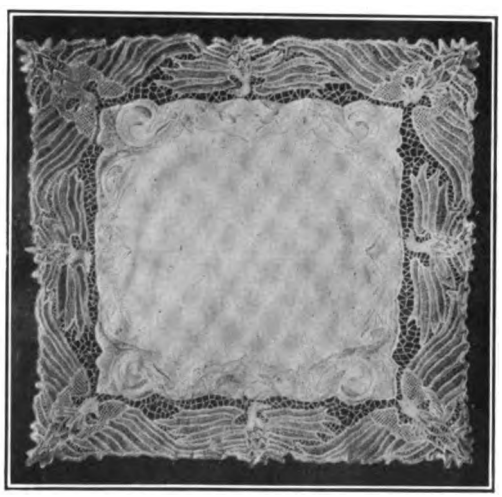
tradictory statement, brilliant threads applied to suitable backgrounds may be restful. Stained-glass windows have been found restful and soothing to the eye, even when the individual pieces of glass composing them have been of the most brilliant colors. With the light sifting through the mass, the soft blending of the hues has made what is often called "a dim religious light." In our embroidery, we are trying for this effect by blending many colors into one harmonious whole.

Individuality, good or bad, adds or detracts much in the success of this work, as in everything else, and each pupil is urged to express herself to the fullest extent in her embroidery.



CENTERPIECE ON FINE CRASH.

Designed by M. E. StockIng; embroidered by Frida M. Krollpfeiffer. Tapestry stitch in filling-silk, reds, greens, and gold.



CENTERPIECE IN SILK LACE AND EMBROIDERY.

Designed by M. E. Stocking; made by Gertrude Hastorf. Pale green center embroidered in mother-of-pearl tones.

The graduating class of '02 worked out an interesting problem. A piece of parti-colored silk damask was hung on the wall of the class-room, and the pupils were instructed to make a design for any drapery they wished to decorate, taking from the brocade their direction of stitches and suggestions for design. One chose a pair of curtains, another a small square for a table, another a round cover, two chose cushion cover-tops, and one a single curtain. When the work was finished it would have been difficult for a novice to have traced a likeness to the original, or a family resemblance between the various designs made to decorate these articles, and yet it was there. Different parts of the original brocade had appealed to the several young women, and they had emphasized or made their own such parts as set their imagination to work.

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TABLE-COVER ON LINEN CANVAS.

Designed and embroidered by Florence Von Glahn. Tapestry stitch, filo floss in shades of gray and violet.

For the coloring, they were instructed to use one shade each of red, blue, and yellow; they were not restricted in the depth or lightness of tone, or the kind of threads they were to use. As to stitchery, they must follow the damask weave; that is, all the stitches must be parallel to the first stitch inserted in the cloth. Here again the individuality of the worker was shown, for the colorings were entirely different in effect. One had made green blue predominate. Another had produced a sparkling jewel-like effect by using very brilliant shades and in about equal parts of her different colors, working with very flossy silks. Another had created almost a pink-grey effect by using very pale and grey shades of the prescribed colors, this also in bright silk on a yellowish linen crash. A fourth had obtained a red effect, rather oriental, by using raw silk and letting the red predominate on a grey crash background.

A curtain was worked in heavy flax threads on a grey linen ground, with the yellow and baby-blue prominent. We were so much pleased with this experiment that we shall make such contests a prominent part of our work, so long as the design and coloring so produced are as fine as those just mentioned.

Sketchy darning in silks of various colors is much encouraged, the effect being more shimmering than the Kensington stitch.

That our workers may not produce chromo effects, we advise them not to attempt the embroidery of natural flowers, for it is a most crude form of decoration. It is, when finished, a glaring thing, which is a poor copy when placed near Nature's most precious treasures. Silk is not adapted to the sketching of natural flowers, and the needle is too sharp for art in this form. Such pictures are better produced by another medium. Though you may pad the edges of the flowers and mould them as you will, they have as little art value as an imitation strawberry made to serve as an emery bag. We try to teach our students to avoid making ridiculous the things which are useful, and which can be artistic as well.

Some four or five years ago we conceived the idea of using coarse, hand-woven Russian crash as a good ground for covers of dining-room furniture. The soft grey of this material brings out the beauty of the wood, and the most beautiful effects of color can be wrought on this background. For this embroidery the Tussah silk, the wild silk of India, is used.

Our "Pratt Point" is a coarse kind of lace intended for use in the upper part of portieres or screens, or for mats for hall or other tables, where a bit

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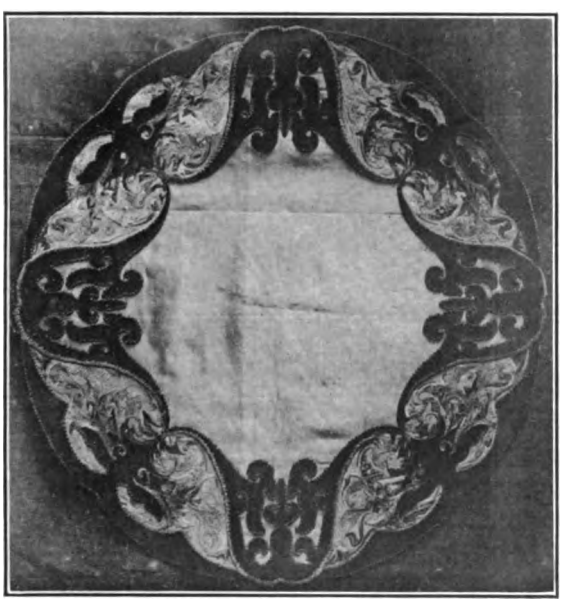
of color is desired and a raised effect is not objectionable. This lace is made in exactly the same way as the fine Italian point-lace, only that in place of the cobweb-like thread of the Italian point a coarse hemp thread is used as the skeleton, with heavy, colored flax thread of various colors for the lace work, the effect being of the stained glass order.

We have made a great deal of white work on linen backgrounds. Several students who owned hand-woven linen sheets have transformed them into counterpanes, with pleasing designs worked in white cotton, in German and buttonhole stitches. These ideas are sometimes carried out by our students when they leave us and sometimes have classes of their own, and a comical class in appearance must have been one taught by a student of ours, in which each of the pupils was engaged upon a formidable piece of work of the kind just mentioned, namely, a hand-woven sheet, about two and a half yards square, being converted into a bedspread.

SOFA-PILLOW ON COARSE GRAY LINEN.

Designed and embroidered by Marion True. Tapestry stitch in tussah silk in Persian colors.



LIBRARY TABLE CENTER.

Designed by M. E. Stocking; embroidered by Edith Halstead. Applique of brown moleskin on red-gold satin jean, embroidered in opalescent tones.

Church work has grown in importance. Several of the students, beside designing and working such vestments, have either taken private pupils or instructed church guild workers in this branch of art needlework.

Closely allied to church work in its methods is the making of banners. On these silken emblems our students have been interested in recording for many schools and colleges the victories of their athletic contests.

In the making of braid and

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RUSSIAN CRASH CURTAIN.

Designed by M. E. Stocking; embroidered by Florence Hunzinger. Brocade stitch in coarse linen, reds, greens, and browns.

gimp laces, we have impressed upon the students the necessity of good design and durability. When we notice the atrocious productions in hand-made braid laces that so often stare at us, we realize how important it is that our students be taught to make laces which are not a trial for the eyes and nerves.

Another form of lace-like texture has been made on fine, hand-woven crash. The design is worked with colored silks in a sketchy way, the sections between the lines being partly cut away, and a small margin hemmed down on the back of the design. The sections to be left open are worked in lace stitches with thread to match the crash; the effect of this lace is to give grace and lightness to the work on which it is used. It makes a good effect for bedspreads or curtains.

From time to time exhibitions of the students' work have been sent to other cities upon request. For example, the Arts and Crafts Societies of St. Louis, Minneapolis, St. Paul, Providence, and Philadelphia, to the Pan-American at Buffalo, and the Charleston exhibition. These exhibits have brought orders for designs from art needlework societies and many firms in different cities, and a large number of orders for various forms of home decoration have been embroidered as well as designed.

This year we have had arranged and put in large folio books, so that they may be easy of access to the students, twelve hundred original designs suitable for various kinds of embroidery made during the past few years, and more are constantly being added.

These folios are an attractive addition to our order department as well, for apart from the classes in embroidery we take orders for work either finished or begun. Designs are made to order and sold. Work is stamped or silks

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are sold, and the large importation of silks which we carry makes it possible to obtain colors and shades from us which are difficult to get elsewhere.

Four years ago a schoolgirls' class was formed, based on the same course of study as that adopted by the regular classes, but simplified to meet the abilities of the young workers. The main object in placing art needlework within the reach of young, eager minds and deft fingers was to awaken in these same minds a feeling for the beautiful in the home surroundings, and to develop the critical quality in trying to discriminate between what is just pretty, but useless, and what is of real use and a thing of beauty.

The work done in class, using a variety of the simpler stitches under the direction of the teacher, is repeated at home on the same piece of work. Sometimes a more imaginative child applies her newly-acquired knowledge to some of her own things, often with remarkable success. Articles such as sofa-pillows, centerpieces, table-covers, etc., have been favorites, and some good effects in color have been achieved.

The amount of embroidery used at present upon gowns, shirtwaists, stocks, and collars has kept the students and the order department busy during the past year. Miss Stocking, the instructor and designer, has made many exquisite designs for embroidered waists, which have been carried out by her students, and some very pleasing designs have been made and worked by the students themselves. Miss Stocking has made many beautiful designs for enriching with embroidery or appliqued work the dresses which have been made in the various classes of the Department. These designs have been carried out by the dressmaking students, with the instructor's advice. An increasing number of the students in the sewing, dressmaking, and millinery classes

STOLE.

Designed by M. E. Stocking; embroidered by Mrs. George Breed. White brocade worked in seed pearls set with bullion, Japanese gold, and iridescent tones of silk.

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join the embroidery classes at one time or another, and are thus able to ornament their own costumes, as well as articles for decorating their homes.

An exquisite white crepe de chine scarf necktie was daintily embroidered on the ends in pale soft-colored silks, giving a Persian effect. A beautiful white crepe wedding gown was beautifully embroidered with white silks and seed pearls in a dainty, flowing fashion. A reception gown of grey voile was made interesting and becoming by appliqued grey satin-faced cloth in a Moorish design, cut out to show a silk underneath in soft Persian colors. A black broadcloth gown had pale blue satin facings in the jacket, embroidered with shades of Chinese blue silks.

A number of the graduates are employed by the large stores to execute orders for art needlework. One student has been making some charming designs for embroidered satin slippers.

Three graduates of the art needlework course of two years have been teaching successfully for several years in the vacation schools of Brooklyn and New York, and during the winter have taught in girls clubs and settlement classes.

One graduate makes a business of selecting, designing, and making hangings and decorations for private houses, with good results both artistically and financially.

When we look back a few years and remember how difficult it was to inspire students with the desire to learn to make their own designs, or to get them to believe that study and work would ever enable them to do so, and then realize that all of the students in the morning class of this year have made pleasing designs for their work, we can truthfully report a marked advance in the work of the art needlework course.

Technical Course in Dressmaking for Professional Use.

THE professional or full-time course in dressmaking has been extended this year from a one-year to a two-year course. Indeed, if we consider the full-time course of one year in sewing, the making of undergarments, simple shirtwaists, and children's dresses as the beginning of the course in dressmaking, the full course now requires three years. About half of our present eighteen students in the first-year dressmaking class completed the full-time sewing course last year, and intend to return next year to complete the second year of the dressmaking course. This will give a strong three years' training and considerable practical experience.

The other students who entered the first-year class in dressmaking were required to show work and pass a written examination which gave evidence that they were qualified to keep up with the regular course in dressmaking, and most of them have been able to do so.

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The new course began with the draughting, fitting, and making simple shirtwaist dresses in cotton materials or unlined woolen material, each student making a dress for herself. They then studied the draughting and fitting of more intricate dress-skirts and of lined waists, according to the Vienna Tailoring System. This knowledge they put into practice by making and designing a dress-waist for each other, using inexpensive materials, but sparing no pains in the fitting, finishing, and style in order to learn the principles of good dressmaking.

A part of two afternoons each week during the year was spent in the study of water-color and pencil-drawing with the instructor in costume design, Miss Edith Sackett. In the drawing-room they learned to think of good color combinations, and pleasing form and line in dress decoration. They then tried to make a design for a street or simple house-gown for themselves of some of the many materials of wool. When they had planned one which the instructor approved, they procured the materials and went to work to show how well they could put into practice the knowledge gained during the first three months of the year. After these dresses were completed the young women put them on, and a morning was spent by the Director of the Department with them in examining the workmanship and studying the artistic effect of the gowns.

The students who had thus proved their ability to do good work were now allowed to work, under the supervision of the instructors, Mrs. Taber and Miss Lee, upon orders for shirtwaists and simple gowns, receiving a moderate price for each order as it was completed. These orders were so well carried out that all which could be filled by the middle of June had been received before the first of April. About twenty-six shirtwaists of cotton or woolen material, twenty-two shirtwaist dresses of cotton, linen, or wool, and twelve dresses of soft silk or wool, quite elaborate in design, have been made.

The order work was begun the first of February. By means of it the students have materials to work with, opportunity for varied experience in fitting and making, and the moderate prices received for the work enable them to defray part of their expenses. In addition to the work spoken of above, the students have made sixty-two shirtwaists and thirteen dresses at home. By confining the order work received in the first-year class to simple gowns, if indeed any can be so designated in these days, it has been possible to have the students themselves do much of the fitting and planning, so that they may become more self-reliant.

One young woman who completed the sewing course last year and six months of the dressmaking course this year withdrew because she had an excellent opening in a dressmaking establishment in New York, where she would be given an opportunity to make herself a valuable worker.

We feel that the two years' course, one in sewing and one in dressmaking, well used, will enable a bright young woman to go into a dressmaking establishment, and by several years' experience become a valuable assistant.

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For those who have some talent in design and in dressmaking, and who wish to fit themselves to do independent work, we feel that the second year of the dressmaking course is necessary. This year for the first time we offered this additional year's course, and the experiment has proved satisfactory. Some of the students continued from the one-year class of last season, and some had studied dressmaking in other schools.

The course includes draughting and fitting princesse gowns and fancy skirts. Considerable time has been spent in cutting and designing all kinds of waists and waist-trimming. One afternoon each week has been given to study of color and design with the brush and pencil, or with textiles, as instructed by Miss Edith Sackett. Often these lessons have been used in visiting exhibitions of up-to-date costumes.

Gown of green crêpe de Paris, with lace appliqué forming yoke on skirt, and the collar and jacket; Persian ribbon strapped with bands of darker green velvet; chemisette of white tucked chiffon, with velvet and lace at top of collar. Made by Mina Simpson, second-year class.

Orders for elaborate gowns for house or evening wear were received in October, and carried out by the students under the instructor, Miss Simonson's direction. As our aim is to have the student take all the responsibility possible, we give the making of an entire gown to one student, so that she may create the whole, and not, as in an establishment, merely work upon a small part of a gown. Of course, our method is slower, and we cannot rush an order through as is sometimes done in an establishment, but our students learn the whole art of dressmaking, designing, taking measures of the figure, draughting, cutting, fitting, finishing, and trimming. So well have the orders been carried out and the designs suited to the wearer of the gown that we have been obliged to refuse many orders throughout the year, and the students have been able to earn their tuition. They must, of course, gain speed by experience and practice in doing many times over what they learn in the course.

In the latter half of the winter term the making of jackets and ladies' tailor-made gowns was studied, and excellent results were obtained.

Both the first and second-year classes in professional dressmaking have work in the gymnasium twice a week, and the first year class have a course of lessons in simple business methods and the keeping of accounts.

All of the full-time class who satisfactorily

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completed the dressmaking course in June, 1902, have been kept busy doing professional work in dressmaking in different parts of the country, so that we have had to say again and again we know of no one whose time is not fully engaged when asked to recommend dressmakers.

Miss Julia K. McDougall reports as follows in regard to the graduates and students of the Technical Courses in Dressmaking and Millinery:

Dressmaking and millinery, as seen from a professional point of view through the eyes of our graduate students who have taken up these arts as a business, present a very different aspect from that taken by the student who wishes to use her knowledge for teaching or at home. The thoroughly practical nature which is called for in the dressmaker or milliner should debar any purely theoretical woman from taking up these branches as a profession. As in everything else in which one is to succeed, it is necessary to have, aside from ambition, a large stock of courage, patience, and strength to add to the artistic ability and ingenuity so essential to success.

Gown of grass linen over pale blue silk, trimmed with lace bands; waist with shirred yoke, finished with a deep bertha edged with tucks; shaped lace girdle interlaced with blue chiffon, which forms the sash. Made by Josephine Guichard; drawn by Mina Simpson, second-year class.

Our professional graduates are divided into four classes: those who work at home, those who go out by the day, those who go to work in establishments, and those who set up establishments of their own. The last class is, of course, the smallest, as to do this requires capital that few possess, and a reputation for excellence of work to obtain patronage, which has not yet been acquired. When conditions are favorable, and it is possible, this is the shortest road to success in the dressmaking world, for the actual drudgery of the work may be avoided in the supervision of the whole. It means, however, tremendously hard work for a time, for a business woman has said that not much rest or enjoyment can be taken for the first three years, until one's reputation is made and patronage secured.

Many of our dressmaking graduates have undertaken small establishments of their own, with two or three girls to sew under them, thus giving them an opportunity to do more work, as well as to exercise their taste and skill in the designing of the gowns they make. Others have established their business on a larger scale. One has secured for a partner a woman of many years' experience, and their establishment in New York now turns out the

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most expensive and elaborate gowns. Mrs. Leslie Carter's gowns for the play of "Du Barry" were made there, and the reputation of this firm extends far out of New York city.

As it is not possible for every woman to start in this way, it is a comfort to those who cannot to know that the dressmaker who goes out by the day is, when satisfactory, the greatest blessing of all to the community. From the list given below it will be seen that many of our graduates adopt this means of using their dressmaking knowledge. It gives variety to their work and brings them in contact with cultured people. They gain experience and confidence in a short time, and are able to earn a good living. After the first year it is possible to choose the patrons one desires, and keep them for steady customers, after which, by studying their individual tastes and needs, a dressmaker can make herself truly valuable.

The demand for just such women is greater than can now be filled, and they command from one dollar and a half to three dollars and a half a day, according to their speed and ability. It is a field where there is still room for many, and which is so large that there is little reason to believe that it will soon be overcrowded.

The millinery course of instruction has been made a short one, to make it possible for the graduates to go directly into workrooms of establishments where the best hats are made, when they wish to make themselves more valuable or to gain further experience before starting in business for themselves. In this way there is an opportunity to see the best in materials, color combinations, and style, and to get an insight into business life.

The business seasons are short. In the wholesale houses, the fall and winter season begins in July and the spring and summer season in January. Each lasts about three months, and as the seasons of the retail houses begin in September and March, it will be seen that a good worker may obtain employment almost the entire year. A girl often returns to the same position for a second and sometimes a third year. Although she seldom becomes a trimmer in an establishment, the constant sight of an expert trimmer at work makes her more deft at her own private millinery, which she sometimes carries on at the same time outside of her regular hours. It is with great satisfaction that we note the ever increasing call for trained workers in millinery. Each year there is a larger demand from well-established firms than can be supplied, and the introduction of educated and skilled workwomen in the workroom mean, of course, a raising of the standard as well as the wages.

In the reports received from our graduates, mention has been made many times of the great benefit that the course of drawing and costume design has been to them, enabling them to sketch designs for their customers, and giving them a better idea of proportion and design as adapted to the individual. We feel so strongly the importance of making it possible for our evening students to have the benefit of this course that next year it is proposed

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to give a course in drawing and costume design for those who are engaged in dressmaking and millinery.

The list given below comprises only the graduates of the last few years who are now in business, so far as information regarding them could be obtained. It is interesting in showing the area over which our work extends, as well as the variety of occupations.

PROFESSIONAL GRADUATES AND STUDENTS OF THE TECHNICAL COURSES.

Dressmaking.

Mrs. May Camman, in business, Roselle, N. J.
May W. Chandler, with Alcott & Weeks, New York city.
Sarah Craig, in business, New York city.
Isabelle Earle, in business, New York city.
Mary E. Fagan, in business, Maspeth, L. I.
Mabel C. Greene, in business, Homer, N. Y.
Mary A. Hackett, with Miss Suydam, Brooklyn.
Mary S. Haley, in business, Syracuse, N. Y.
Maud Hammond, in business, Griffin, Ga.
Amy Huntington, with B. Altman & Co., New York city.
Euphemia Innes, in business, Dillon, Mont.
Mrs. K. Kilham, of Weibel & Kilham, New York city.
Ann E. Peters, in business, Montclair, N. J.
Helen Post, in business, New York city.
Emma Schindhelm, in business, Brooklyn.

Those who work at home:

Mrs. Annie Bennett, Brooklyn.
Edna Bois, New Brunswick, N. J.
Florence Banks, Brooklyn.
Jennie Brady, Brooklyn.
Harriet Edwards, Sayville, L. I.
Puah Hallock, Brooklyn.
Bella Hennessy, Brooklyn.
Anna Kipp, Brooklyn.
Mamie Lander, Brooklyn.
Emma Moses, Parkville, N. Y.
Helen Post, Woodside, L. I.
Laura Post, Woodside, L. I.
Carrie Valentine, Brooklyn.
Mabel Valentine, Brooklyn.
Kate Williams, Brooklyn.
Emma Zipfel, Brooklyn.

Those who do dressmaking by the day:

Mrs. Sarah Barlow, Brooklyn.
Annie Beilterock, Brooklyn.
Grace Blydenburg, Stony Brook, L. I.
Mrs. Anna Curtis, Brooklyn.
Mrs. Connell, Brooklyn.
Frances Driscoll, Parkville, L. I.
Margaret Clark, Brooklyn.
Julia Defillipe, Brooklyn.
Emma Doering, East Mauch Chunk, Pa.
Ellen Dowd, Brooklyn.
Margaret Harriott, Brooklyn.
Hortense Hayes, Brooklyn.
Emma Hoffmire, New York city.
Josephine Holler, Brooklyn.
Ethel Jones, New York city.
Carrie Lauffer, Brooklyn.
Florence Louden, Brooklyn.
Frances Lukins, Syracuse, N. Y.
Aline Lilliquist, Brooklyn.
Florence Murray, New York city.
Mrs. M. McDonald, Brooklyn.
Mary McKay, Brooklyn.
Cassandra Munson, Brooklyn.
Alice Palmer, Providence, R. I.
Mary Reilley, Brooklyn.
Mary Rorke, Brooklyn.
Mary Ryder, Brooklyn.
Charlotte Schnippe, Brooklyn.
Gertrude Smith, Glens Falls, N. Y.
Fannie Slack, Staten Island, N. Y.
Sara Stobbe, Brooklyn.
Mrs. H. Swezey, Jamaica, N. Y.
Esther Thompson, Brooklyn.
Annie VanZandt, Brooklyn.
Lillian Walsh, Woodsburgh, L. I.

Millinery.

Cora Alliger, in business, Paterson, N. J.
Ella D. Ashworth, with Sullivan, New York city.
Isabel W. Bonner, with Phipps & Atchison, New York city.

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Aurelia Braxl, with Phipps & Atchison, New York city.
Mrs. Henry Colwell, in business, New York city.
Olive Cornell, in business, New York city.
Constance Curtis, with Miss Harmon-Brown, New York city.
Olive Duryea, with Phipps & Atchison, New York city.
Margaret Dunn, with Cochran & Son, New York city.
Maude E. Ellis, in business, Belfast, Me.
Olive Estes, in charge of workroom at St. Albans, Vt.
Minnie H. Evans, with John Roberts & Co., Utica, N. Y.
Johanna Engelhardt, with Phipps & Atchison, New York city.
Albertina E. Ferrett, with Dunlap, New York city.
Frederic Franke, private millinery, St. John, N. B.
Margaret Flynn, with Phipps & Atchison, New York city.
Martha Franey, in business, Shenandoah, Pa.
Mary Grimes, with Simpson & Crawford, New York city.
Adelaide Griffin, with Koch & Son, Brooklyn.
Ines M. Gruber, private millinery, Harttord, Conn.
Elsie Hettrick, with Coyne, Brooklyn.
Laura E. Holbrook, of Howell & Holbrook, North Adams, Mass.
Ada Hoffmire, with Madame Banner, New York city.
Leona Hutton, in business, Sidney, N. Y.
Avis L. Howell, of Howell & Holbrook, North Adams, Mass.
Mary Johnson, in business, Yarmouth, N. S.
Anita Kellogg, with Miss Harmon-Brown, New York city.
Jessie LeCluse, with Madame Gandy, New York city.
Annie R. LeManquais, with Phipps & Atchison, New York city.
Ella F. Locke, with Miss Harmon-Brown, New York city.
Jane Lupton, with Koch & Son, New York city.
Annie B. MacKay, private millinery, Brooklyn.
Jane E. Melhinch, head trimmer in establishment at Natchez, Miss.
Annetta V. Monahan, with B. Altman & Co., New York city.
Maud Niblo, trimmer in establishment, Spafford, Conn.
Emily C. Rublee, with Miss Casler, Brooklyn.
A. Celestia Savoy, in business, Somerville, N. J.
May Shelton, with Madame Gandy, New York city.
Florence Simonson, in business, Staten Island, N. Y.
Blanche Stephens, with Layton & Layton, Dayton, Ohio.
Byrd Taft, in business, Mattituck, N. Y.
Harriet VanDusen, head of chiffon hat department and hat model, Alley & Allen, New York city.
Lulu Varian, with Miss Harmon-Brown, New York city.
Kate Wagner, private millinery, Brooklyn.
Mary E. Whitman, in business, Marlboro, Mass.
Fritz Williams, trimmer at Miss Harmon-Brown's, New York city.
Myrtle Williams, with Miss Harmon-Brown, New York city.
Emeline Welch, with Redfern, New York city.

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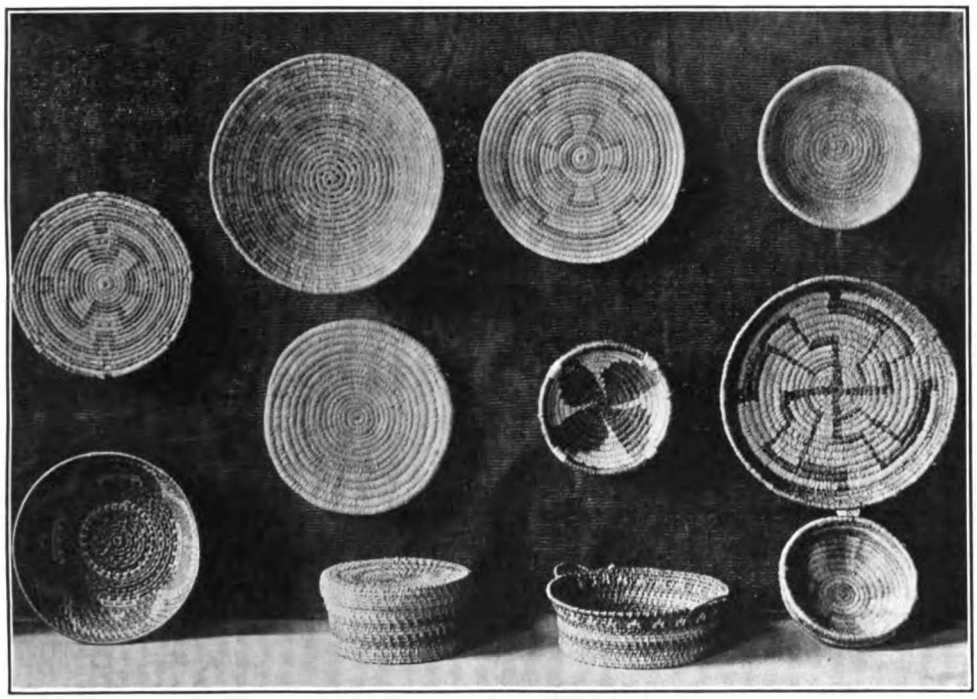

SEWED BASKETS AND MATS.

Close sewed, long and short, and Portuguese wrapped stitches.

Basketry.

BASKETRY has been a part of the normal course in domestic art since September, 1900. At first the instruction was confined to the weaving of baskets with reed, or with raffia over splints. This covered the construction of baskets in single, double, and Indian weave, finished at the edge with various borders, as the flitched edge of triple weave, the cycle border, and the Madeira border. The shapes were various, round, oblong, square, and melon-shaped. Chair-caning was also taught.

A year ago the course was extended to include the making of baskets with the different sewed stitches, using raffia over reed, and hemp thread over coiled grasses or other fibres. These stitches included the long and short, the Portuguese, figure eight, and cashmere wrapped stitches, the close, single and double, and open or bird-cage twining. Such baskets require more time in the making than the work in reed-weaving, but are very durable, and allow of great variety in color and design in the woven or sewed

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patterns, which may be introduced for decoration. One member of the class, a post-graduate of the normal art course, made most successful experiments in dyeing raffia in many beautiful soft rich tones of color. These she was willing to sell to the rest of the class, thus making it possible for them to make baskets really beautiful in color and design.

In October the class visited the salt marshes to gather grasses under the guidance of the instructor, Miss Lina Eppendorff. These they dried and used in some of the coiled-sewed baskets. Many of the marsh and field grasses have beautiful tones of purple, yellow, orange, and red, as well as green, and lend a peculiar charm to the baskets and trays made of them.

Instruction in hand-weaving on a small frame, making various fancy weaves, was also introduced. Raffia of different colors was woven in an intricate plaid design into a fabric, which was used for handkerchief or letter cases. Ribbons or flat braids were woven in diagonal designs for bags and belts, and beads of different colors were woven in simple designs into belts or fobs.

The class all worked out the same methods of combining threads and materials, but varied their colors and designs and the style of the articles made.

So much interest was manifested in the work of the normal class that a second class was held later in the year for other students, many of whom desired to learn to make beautiful baskets simply for the pleasure of it.

The small, finely sewed baskets can be kept at hand in the home ready to catch up in an idle moment, as some people pick up knitting or crocheting when one is too tired to read or write, and in course of time one has finished a piece of handwork that is attractive, useful, and very durable. Unfortunately, woven-reed basketry requires more space and opportunity for keeping the reeds damp, and so is not such social work. It is, however, excellent for developing strength in the hands, and firmness and evenness of handling.

During the school year just closing, a morning and an evening class have been studying reed basketry under Miss Mary Hunter's instruction, and an afternoon class has been learning the sewed basketry with Miss Eppendorff. These classes met once a week, and did considerable work at home between the lessons. A number of the students continued the course for several terms, and gained sufficient skill and experience in design to complete some excellent baskets.

Some of the members of these classes and a number of the normal graduates have been teaching simple basketry to classes of boys and girls in different schools. Such work has been found good hand-training, and of a nature to hold the interest of children from ten to fifteen years old. Not only in the vacation schools, industrial schools, and settlement classes has this been so, but in private schools among children from cultured homes. Basketry and weaving are so intimately connected with the history and life of the American Indians and other early races, whose customs are of absorb-

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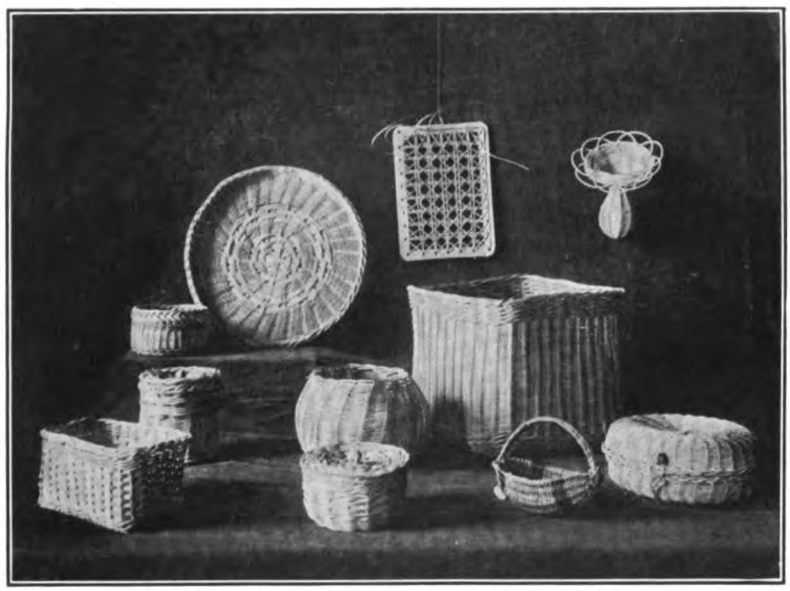
ing interest to boys and girls, that they are occupations which naturally attract children. The normal domestic art class of this year have also been studying basketry with Miss Eppendorff.

The two illustrations of baskets are taken from the work of the students of the classes of a year ago.



REED BASKETS IN SINGLE, DOUBLE, AND TRIPLE WEAVES, CANE SEATING.

The full-time or technical course in Millinery for Professional Use has been carried on during the past year in the same manner as was fully reported in the February number of the MONTHLY for 1902. It is only necessary to add that a large class completed the course in February last, and have been employed in the workrooms of a number of large establishments during the spring season just closing.

The full-time course of three years in Costume Design for the training of illustrators of costume has also been carried on during the year substantially as was reported in detail in the MONTHLY above mentioned. The class this year has been an unusually strong one. The second-year class had all done good work in the first-year class of the regular course in the Department of Fine Arts in cast-drawing, sketching, still-life, freehand perspective, color, and composition, and were thus prepared to advance rapidly in drawing from life and in work in water-color, as well as in sketching and designing costumes in pencil, pen and ink, and wash drawing. The third-year class have

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been doing excellent work, and will graduate with the ability to continue the satisfactory professional work of our graduates from this course.

The day-courses in sewing, dressmaking, millinery, and costume design for home use have all been successfully carried on this year on the same lines as last year. One of the most popular of these has been the shirtwaist classes, meeting twice a week for three months. The students have learned to draught shirtwaists from measurements, and to make them in the many styles used at the present time. We have had one hundred and eighteen students in these classes, and they have made from three to six waists each.

The Evening Courses have not been changed during the year, except that several shirtwaist classes have been held in addition to those in sewing, dressmaking, and millinery. At the beginning of the next school year in September we shall open an evening class in drawing and costume design for the benefit of those engaged in dressmaking and millinery. The class will meet on Monday and Wednesday evenings, from September to April. No previous training in drawing will be required.

Respectfully submitted,

Harriet S. Sackett, Director.

Department Notes.

THE annual meeting of the Normal Domestic Art Alumnæ Association was held on Saturday, June 7, 1902, in the Faculty Room, Pratt Institute, the President, Miss Mary B. Dickman, presiding. After the usual business was disposed of, Miss Sackett was called upon to speak of the new course in normal domestic art to be organized in September, after which Miss Stebbins spoke of the course in basketry, and Miss Winslow of the art needlework, as given in the normal course. Mrs. Landon was called upon to explain the professional sewing course, and Miss Simonson the addition of a second year to the professional dressmaking course. Miss Dickman then gave a paper on economics in domestic art, in which she urged teachers to emphasize this phase of their teaching.

After some further business the biennial election took place, resulting in the choice of Mrs. Leila F. Wright, President; Miss Anne L. Hazen, Vice-President; Miss Emily C. Hunt, Treasurer; and Miss Florence VanDuyne, Secretary.

Upon motion, the members adjourned for luncheon. Covers were laid for fifty, and a very pleasant social hour was enjoyed.

Miss Grace Secrest, of the Normal Domestic Art Class of 1900, died suddenly at St. Luke's Hospital on December 14. Miss Secrest was a woman of ability and fine character, and had taught sewing successfully in the public schools of Akron, Ohio, since her graduation. In August last she resigned her position to study Domestic Science at the Teachers' College. Her death is a distinct loss to the Domestic Art Alumnæ Association.

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Department of Domestic Science—Normal course for training of teachers; Food Economics course for training of professional housekeepers; general and technical courses for home use.

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Department of Kindergartens—A two-year normal course; classes for mothers, kindergartners, and special students; evening classes for nurses, teachers, and special students; lecture course; kindergarten and connecting class for children.

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FREDERIC B. PRATT, *Secretary.*

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KINDERGARTEN NUMBER

PRATT INSTITUTE MONTHLY

June, 1903

Pratt Institute, Brooklyn, N.Y.

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Pratt Institute Monthly

Volume XI JUNE, 1903 Number 8

Published at Pratt Institute, 215 Ryerson Street, Brooklyn, N. Y., on the 1st of each month, from November to June, inclusive.

Entered at the Brooklyn Post-Office as second-class matter. Ten cents a copy. Seventy-five cents a year. Eight numbers issued per annum.

The Monthly is issued in the following order:

November	Founder's Day Number.
December	Report of the Department of Libraries.
January	Report of the Department of Fine Arts.
February	Report of the High School.
March	Report of the Department of Domestic Science.
April	Report of the Department of Science and Technology.
May	Report of the Department of Domestic Art.
June	Report of the Department of Kindergartens.

The Index to Volume X (1901–1902) may be obtained at the General Office of the Institute. It will be sent to any address on receipt of a stamp for mailing.

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The Marion Press
Jamaica, Queensborough, New York

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Pratt Institute Monthly

Volume XI JUNE, 1903 Number 8

Annual Report Of the Department of Kindergartens.

TO THE TRUSTEES, GENTLEMEN:

A YEAR ago, when the report of the Kindergarten Department was presented, the Gifts and Occupations were purposely omitted, owing to lack of sufficient space to adequately deal with a subject so important to kindergartners. Again we find it impossible to do justice to both Gifts and Occupations, and as we have had repeated requests to report on our methods of giving handwork, we have chosen that subject for this number of the MONTHLY.

We give all of Froebel's Occupations to the students in the Training School and to the children in Kindergarten, but naturally lay greater stress upon some forms of handwork than others: for instance, every child has an experience in pricking, but it is not developed to any extent; all do some of the intertwining, but other occupations are more emphasized since they afford greater scope for creative work. No one of Froebel's Occupations fully takes the place of another; each represents some art or industry of the race, and as such has its place in the child's experience.

Froebel's aim in giving his Occupations was not to give the child a trade, still less to give merely technical training. His purpose was to afford a means of expression for the child's feelings and for his growing ideas about things. Secondly, he intended the child to gain power of hand and eye; to come to know processes; to be able to change material so as to make it conform to his ideas; and to learn how to use intelligently color, form, and number. The educational, rather than the technical aspect, is the side we would emphasize. We would have people see that a little child must not have too difficult tasks set before him or anything other than great simplicity in his work expected from him.

Perhaps the one thing that is difficult for those out of the kindergarten to understand is that the occupations are not isolated things. They are related to each other and to the other materials of the kindergarten. They are one phase of the many aspects of the kindergarten. The ideas of number, color, and form are first presented in the gifts; the occupations afford a means of

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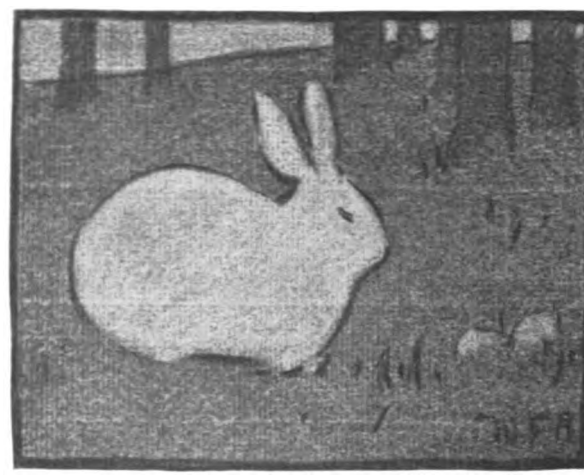
expressing these ideas. The occupations and gifts supplement each other, the gifts supplying the definite ideas that the child must have to do intelligent, creative work. It is as if one wanted to know color and went to the rainbow and picked it apart and then used the bits for new combinations. The occupations are not only related to the gifts, but they are also related to the stories, pictures, and songs, as these stir the feelings and imagination which find an avenue of expression in the occupations. Again, excursions are important, as they give the experience which stimulates the child to express ideas he has gained. Games are another means of expression of the same ideas. In short, various experiences come into the life of the child. He tells of these in different ways; one avenue of expression is not enough. His nature is versatile; all that mankind has found needful the child uses, and learns the meaning of life in so doing.



Charcoal sketch from life. Normal student.

KINDERGARTEN OCCUPATIONS.

THE occupations of the kindergarten are pricking on cardboard; sewing with thread of various kinds (cotton, wool, silk) on cardboard; free drawing and the drawing on the network or Froebel's drawing; intertwining of paper strips; interlacing of thin wooden slats; weaving of paper strips into paper mats; folding of paper circles, squares, oblongs, and triangles; paper and cardboard modelling; paper cutting; peas work; and clay and sand modelling.

These occupations are further developed in the weaving, first in paper, then straw mats, basketry and rug weaving, in the use of thread lines, twining

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cord, and knotting; in the peas work and simple construction of skeleton forms into cardboard, and then wooden buildings and furniture. To these Froebel adds the cutting of clay, vegetables, and soft wood, and the use of wax, sand, and loam, as well as clay. He would have the children make collections of nature materials, pebbles, shells, leaves, and flowers; also of living objects, animals, insects, bugs, caterpillars, caring for the life in its growth and unfolding. He would have the children make gardens, plant seeds, and watch and tend the growing plants. This covers a large number of experiences (see "Education by Development") and almost all classes of objects.

It is necessary for us to see what educational purpose these things serve, and what Froebel would have us do with them. Froebel was forced to find employment in the evenings for some boys he was educating, and began by using the occupations he was familiar with—embossing or pricking paper and cardboard, gardening in summer, and from these employments he developed his ideas of handwork as a means of education. He went to the Chinese for some of his occupations, but he lived in middle Germany, where all the arts and crafts have their home, and where we see the individual as a master workman, respected as an authority. The part that Froebel contributed was in the selection of simple yet typical processes, flexible and easily obtained materials, and in putting these in orderly sequence according to laws of color, form, number, arrangement, and in emphasizing those occupations which were the universal property of all races, instinctive alike to all. All this was outlined somewhere in the forties, and can be found in Froebel's pedagogical papers.

Pestalozzi introduced sewing, spinning, and weaving into his orphanage at Stans to teach the children a means of livelihood. He was not very successful. He saw that, while this might prepare for practical occupations of life, it was not sufficient for educational purposes. He sought to discover a universal principle of activity which might be applied to physical and mental work alike, something akin to what he called the principle of all organic life, but in this he did not succeed (Mme. von Bulow in "Handwork and Headwork."). He continued to give work in his schools, but he never understood the relation of work to the intellectual development of his pupils. To give expression to inner conditions was not his thought or the thought of any one until Froebel devised his occupations.

Froebel believed that as the flower unfolded according to the law of God so did the child, and that the important thing was to get hold of the child's first instinctive utterances and help them toward expression. It is only in the instinctive utterances of child life that education can find its true starting-point, and only in the mode of development of the human race do we find a clew to the right management of these utterances.

In the kindergarten the occupations do not lead into particular trades or industries, but the general manipulations common to all handicraft are practiced and general processes are seen. Froebel would have his occupations

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give manual dexterity, training of muscle and eye; but most important they should serve as a means of expression.

The child has an instinct for doing something. This doing something takes at first certain forms with certain materials. The materials lend themselves more or less readily to the instinct to test, to arrange, to modify; from this they lead to more creative expression. The piling up of the sand leads to seeing things that resemble the mound, and things that may be represented best in the material should grow out of this work. The child will only go so far. The teacher leads him on by steps so progressive that he soon has exhausted what may be done in one medium and seeks another. Clay naturally follows sand, and paper- and cardboard-modelling follow these. In the scoool come woodwork and carpentry. This, however, is only leading out in one direction. If the surface of the sand is used, drawing or decoration may be developed — drawing with baby's finger in dry or damp sand, then drawing pictures with a stick, then drawing on paper or blackboard, representing things he has seen; then sewing pictures, then work with brush or crayon, and finally power to represent freely is acquired.

If decoration is the idea to be expressed, impressing forms in sand to make borders, stringing of beads, pasting of parquetry, paper cutting, or drawing and brush-work may be developed. Pricking, line sewing on cardboard of elements of form (vertical, horizontal, and slanting lines and their combinations), weaving, paper cutting, and peaswork in geometric outlines, lead also to constructive work. Pure artistic expression may be shown in sand, clay, pricking, paper, color work with papers or with water-colors. Now it is not so much which occupation we are using, but the use it is serving in the development of the child at the present moment. Creative activity is our goal; progressive steps lead to its attainment. Certain things must be remembered: (1) What instincts are manifested by little children; and fortunately these are never wholly dead — even later in life they may always be aroused by giving them proper exercise; (2) what material best meets these instincts; and (3) what principles are involved in the successful expression of the instinctive activity.

We have work with solids, surfaces, lines, points, leading to construction. We have work with surfaces, lines, points in decorative work with sand, paper, clay, brush, pencil, leading to art productions. Select your occupation, the one best adapted to the powers of your particular children. They are undeveloped; develop them. They are unconscious, aimless: gradually bring them to conscious effort. The underlying principle will be slowly grasped. Your plan is to bring the child up against this so many times that he discovers and unconsciously uses it. Just as in the use of number in the work with beads, parquetry, weaving, and decorative patterns, he does something, finds his power to do, does again and again what you have given him. Now he is allowed to choose either color, number of parts, or position. He makes his combination. It is quite like yours, still it is his; a

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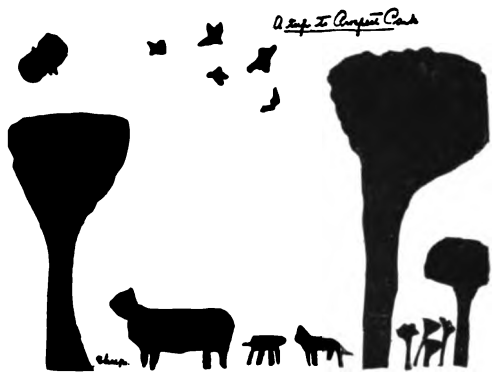
bit of himself is in it. He is successful, and wants to choose again — a touch of freedom. He must not lose his head: back you bring him to tackle the next difficulty. A fresh choice, a new combination, and he begins to feel, not only his own power, but that there are always fresh fields to conquer, and we have our young pupil taking hold in good earnest. The impulse to do is there, and to hold on and conquer. This is certainly what we all strive for. But it never should be along only one line, and it always should be in short steps. Do not mind keeping but a short time at one thing. Nothing is gained by attempting a task too difficult for young fingers and powers. Lead up to its approach from all sides until you find its genesis, and then begin the hard work there.



Free Cutting. Free Kindergarten child.

The desire of the mind to grasp, as well as the hands, must not be ignored. To tell how is not enough. I must know how and direct myself, to really do good work. For instance, basketry given to a little child is apt to be too much for him; and yet, to make a basket, what joy! Now see all the simplest ways of making something like a basket with paper, ribbon, straw, etc. Then come copper wire and raffia, then later rattan and raffia in their natural places. The simplest basket that can be finished in half an hour by a little child is task enough. We must follow our children, and not be disturbed by the basket fad, however interesting it may prove to be to older children and ourselves. It is beyond a kindergarten child's powers, both physically and mentally; but you can lead up to it so gradually that when the child reaches it, he is ready to grasp its technical difficulties and be willing to attempt the more difficult task. Froebel's occupations are the best things for little children, are within their powers, and the best means for developing and strengthening these powers.

One word about using a different occupation to lead up to or throw light upon another. Weaving is a bringing together of parts to form a surface. There are many simple ways for the first steps — a large weaving-frame to weave in strips, loose strips woven together; then wooden slats woven, or ribbon, or paper; then paper weaving mats, then thread weaving. We can trace the general idea of weaving, leading into weaving of cloth proper. Braiding and knotting would help towards understanding of the thread weaving for cloth or rugs. Line sewing on cardboard leads up to weaving. The first weaving may be, and often is, done that way.

The laying of parquetry and paper cutting lead into knowledge of weaving patterns; arrangement of materials, of beads, or parquetry according to num-

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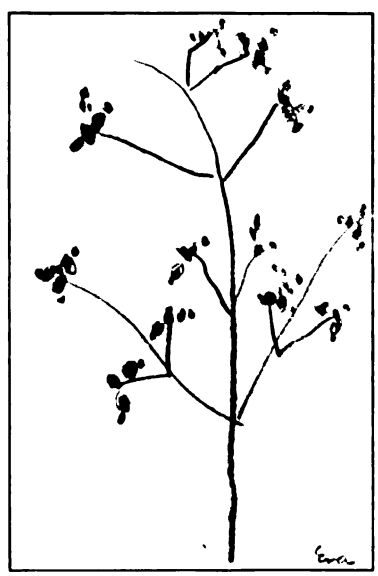
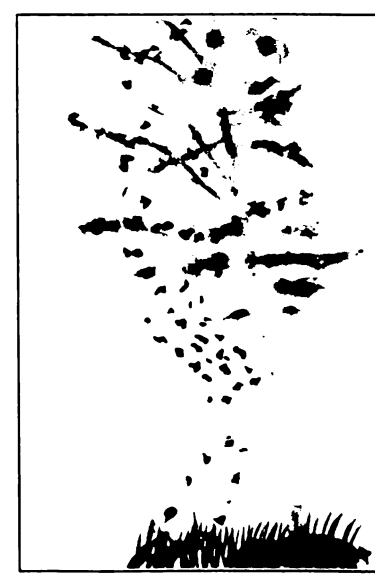
ber, helps in understanding the relations of number in weaving. With children from three to four years of age, arrangement of materials comes first, laying of parquetry in patterns, pressing on sand surfaces, stringing of beads, pricking, free drawing, sewing, folding and twisting of papers and chain making, weaving of slats and of small paper mats, clay and the beginnings of cutting. Children from four to five, further use of previous materials, but leading into a modification of materials; weaving, parquetry laying, sand modelling, clay, sewing, peaswork, folding, cutting. Children from five to six, quick reviews of occupations, showing underlying principles and sequence in sewing, weaving, bead stringing, cutting, drawing, brush work, water-colors, sand-table working in groups; frequent clay modelling, peaswork, cardboard modelling, basket weaving in its simplest beginnings.

Connecting class: teachers realizing the different directions into which the occupations lead, may group them for the purpose of summing up the ccild's knowledge, his ideas, and may further develop these along their several lines. Thread-weaving may be begun, basketry, woodwork, cutting of clay and vegetables, paper and cardboard modelling. Beads and parquetry may be used again, but in connection with number and written work.

All the ideas of number relations, position, direction, form, and color the child has come to know through the occupation work, are the foundation from which to develop the abstract or written number-work, writing, and reading. It is important that, as a matter of experience, a child knows that a whole may be divided into 3, 6, 9, or 12 parts; that all quadrilaterals have four sides; that 3, 6, 4, 8, 12 are the numbers of the cube.



Brush-work. Free Kindergartens.



Nuts and leaves falling.

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STRINGING OF BEADS AND SEEDS.

THE beads now in use in the kindergartens are the wooden ones invented by Mrs. W. N. Hailmann. They are spheres, cubes, and cylinders, colored and uncolored. The colors are the six spectrum colors — red, blue, yellow, green, orange, violet. One often wonders how kindergartners ever got along without such desirable playthings. The beads never wear out, yet are never old in the children's eyes. Truly the instinct for stringing beads is universal, if anything in the world is. Where children know but little of the English language and are as yet a little afraid of their surroundings, beads are a panacea. Where ideas are vague and order lacking, here is a means to make things clear and systematic.

Through contrast the first ideas of separate things are gained, and here lies the possibility of getting one's first ideas of number. We begin the simple classification of a group of things, alike and then unlike; alike in color or form, or unlike in one of these particulars.

Endless combinations are possible, and it would be overwhelming if we did not begin with very simple relations and lead the child, step by step, to bring order out of chaos. A little basket full of spherical beads of all colors, a shoestring with a long shank at one end and a large knot at the other, and the stringing may begin.

It is a good plan to show the child how to put the beads on the string and then leave him alone to experiment. He likes this, and presently he will hold his string up to show you what he has done and to have your admiration. Next, let him choose one color, by name or not, and find all like it and string; now another color and do the same, and another color until his beads are exhausted. Next lesson, a string made up of one bead of one color and one bead of another, and so on. Next, two beads of one color and two of another, and so on. This followed by other number combinations. Next, perhaps one bead of each color repeated. Then he can put them on in spectrum order — red, orange, yellow, green, blue, violet; then repeat this order until beads are all gone, gradually developing steps in number and color until you find he is ready for the added complication of form. Give balls and cubes uncolored first, retracing the steps already taken in number. Then the cylinders, and then all beads of all forms and colors, each child having a stated problem to work out on his string — sometimes given by the kindergartner, and sometimes thought out by himself. One can whisper the number combination to each child, then each concentrates better on his own problem.

This is an extremely valuable occupation, but should not be overdone. It is important to remember that ideas gained in one occupation may be used in another; for instance, the ideas of number gained in stringing of beads are

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Nature materials. Stringing of seeds.

used in weaving and in the laying of parquetry patterns, the beads really taking the office of the gifts, giving ideas of number, form, color, etc.

What has been learned in the stringing of beads may be applied to the stringing of various materials that nature offers, such as seeds, shells, cones, nuts, etc., and most artistic and pleasing effects can be made. As the differences in size, form, and color are endless, exquisite combinations, involving most subtle proportions, may be produced. Students may make collections in the summer and early fall for this purpose, and often by this means a very extensive idea of seapods and fruit may be indirectly gained. Number is one basis for combination, form another, size another, color another.

Every semi-savage people has interesting strings of beads: the Bushman in Africa, the Hawaiian, the Australian, the Indian, and many others. These strings sometimes have commercial significance, but more often religious. The child has a peculiar interest in all that he does along this line, and this too often is ignored; but we may also remember that he is not a savage, and we must not cultivate savage instincts, but lift them into the æsthetic realm.

Almost all seeds may be perforated after being soaked. This perforating may be done by the kindergartner for the children, or, if soft seeds, they can do it themselves with a strong needle. Shells and nuts must be perforated. The artistic use of nature materials should not be lost sight of in the delight of making a string of beads. There is certainly a great pleasure in doing this work, but it is pleasure of a higher order if the motive be beautiful.

One advantage to the child of these nature strings, over and above the wooden beads, is that they may be his own. All beads are liable to be appropriated in kindergartens. Very little children cannot understand why they should not keep what they have made, and so use of wooden beads should alternate with other chain-making, either of seeds or paper, or both. Paper chains of various colors, chains of straws, and paper parquetry may vary the work with beads and seeds. Sometimes glass beads of a large size may be used, but they are expensive, as they cannot legitimately be returned to the kindergarten. Good seeds for stringing are all kinds of melon seeds, citron, sunflower seeds, peas, beans of many colors, maple wings, flower seeds, ash paddles, acorns and cups, and red berries.

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Another use for seeds may be in decorative forms. The large flat seeds may be laid in patterns on the kindergarten tables, or the patterns glued upon cardboard. We may perhaps mention here that leaves and small bunches of flowers may be pressed and mounted in patterns and glued on cardboard, care being taken to have the right amount of space in the arrangement, so the occupation may have some artistic value. Ideas gained from other art work may also be used in stringing these beads.

THE USE OF SAND.

SAND is the material that seems to have been made for children. They are drawn to a sandpile as bees to sweets, and appear to be as naturally related. There certainly is a correspondence between the flexibility of the sand and the mental state of the little child, and pleases him accordingly. This first desire for variety on his part finds its satisfaction in the sand, but, like all good things, it would soon pall unless it involved purpose and difficulty. With the little child, the slight resistance offered by the material is just the stimulus that is needed; and, seated on the sandpile with bottle and spoon in hand, he fills and empties his bottle, and the hours are not long enough for this play. Presently he will be interested in filling his cup or bucket, and soon in working on the surface of the sand, making pictures; and now he is ready for as many suggestions for various kinds of play as the kindergartner is ready to give him. After a time, one discovers that it is what the mind contributes to this work that makes it interesting. What the child makes instinctively, he loves to find has some meaning, and so we may find our motive for sand-work. It must first be the drawing that interests, then naming what has been made and playing with it, and then imitating and originating new forms, thus leading to the place where his ideas and power to express them have gained definiteness and meaning.

Different ways of using sand will be described, and the instinctive play that leads into them. Many others might be cited, but these will perhaps suffice as a beginning. A little child piles up the sand, or plays with it by carrying it from place to place. Then the sand is moistened, so that it will stay in its place better. We build a hill. One hill can be made high, and we will put a flag at the top, stones around the base, and steps or a road from the bottom to the top. Then you may build a road to my hill. I will hollow mine out, and say some one lives in this cave, perhaps a bear. We will have hills, stone roads, and trees on the hill and along the road. Sticks, straws, stones, any material that is near at hand, adds to the realism of our scene, and our play grows. Ideas are furnisned by one's surroundings, by the stories of the kindergarten, or by the child's imagination; these ideas are many and we are glad to get them externalized in material, where they are often less fearful to him. All depends upon the spirit of play possessed by the kinder-

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gartner. At first she suggests resemblances, and leads the child to see how he has made a house or a castle. Soon his little mind begins to work, and he has ideas of his own to exchange, and this grows until he works by himself and can make forms and tell what he is making. From this, quite complicated modelling may grow.

The great point is to bring the instinctive doing and the creative imagination together, and this we accomplish by starting with what the child makes and leading forth his impulse in relation to some idea.

The child is at first satisfied with a very crude expression, if the outward thing conforms to his inner idea; later he demands a more complete expression. What is true of sand is true of every other occupation—pricking, weaving, drawing, etc. There is instinctive impulse and the orderly, intelligent action; the part of the kindergartner is to bring these two together, the one throwing light upon the other. The rhythmic instinct finds opportunity to display itself on the hard, smooth surface of sand. We will at first take one finger and poke a hole, and then poke another and another until we have a row; these we outline by drawing a line on each side of the row and we have a border. This may be done with a stick, stone, or shell. Very pretty patterns are made with these impressions, varied by the number and position of the units.

The originality that is developed in this work is astonishing. Children are very fond of making new designs. Care should be exercised in keeping the surface of the sand smooth and not allowing carelessness in the play, otherwise the pattern cannot be seen. The rhythm of each border may be counted out or sung, or the same represented on the blackboard with chalk. Something of the beauty depends upon the spacing, and so we will lead the child to look for this element and see what beautiful forms he can make.

We ask the child what he has made; he whispers back birds or horses, or something that he alone sees in the symbol before him. So did the primitive races see significance in their simple geometric patterns. In all first expressions of little children do we find this love of secrecy. There seems to be something very personal that surrounds their first little creations. In the pasting of the parquetry circles, we find the same whispering when we ask what has been made.

Shells and stones may be laid in border patterns, and varied indefinitely by the child finding the principle that lies back of the variety. Number changes this order—one and one, two and two, one and two, and so on, always remembering that steps are necessary to the child's mind if he is to master this variety. Alternation and change of position are another means of varying; alteration of form—a square and then a curved form, etc. Then the border pattern may be changed to an arrangement around a center or to an all-over pattern, thus working out along various decorative lines. Then follows drawing on the sand, with a pointed stick, pictures and patterns with the same simple design of lines—unintelligible forms at first, growing into clearer and more definite expression.

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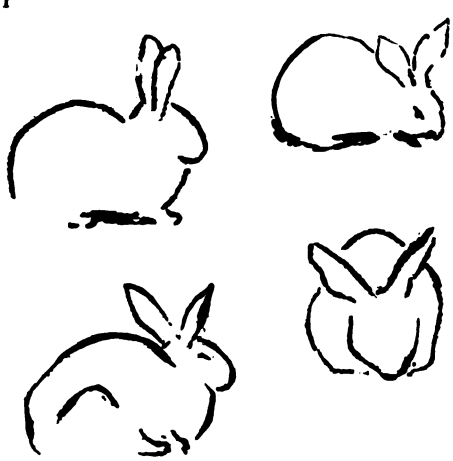
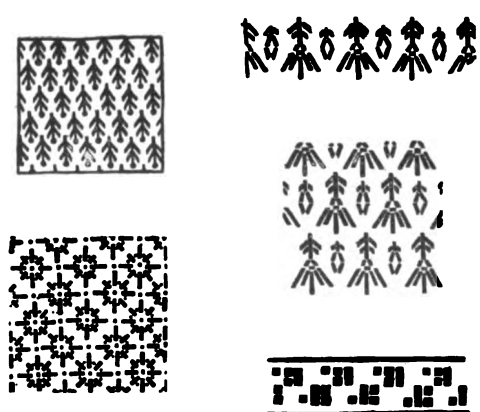
Now we will leave the work upon the surface of the sand, and touch upon the modelling with the wet sand. Each child may by himself work out some simple idea, or he may unite his work with that of the other children. This working in relation with others does not come at first; but after a little, especially if he and the kindergartner have worked together, he finds pleasure in uniting his work with that of the other children. For instance, all the children may begin by working out some aspect of the farmer's life, and then find they can put what they have made together. Or the children may begin with the thought of making a farm-yard, one making the house, another the barn, etc. The children feel free to do this when they have played together some time and are in the habit of expressing themselves in this material.

The ideas that the kindergarten children carry out are usually supplied by the life that they are interested in at the time. If in the springtime, it would be garden beds and flowers, or barnyard and animals. If winter, perhaps trade life would be depicted. Various materials will be demanded by the children as they grow clever at expressing their ideas. Sticks, blocks, small stones for building, and twigs from cedar trees may be supplied or used. Finally tin or zinc moulds may be used with damp sand. These may be hollow cubes or cylinders. The moulds are filled with sand, and then it is pressed out. The wet sand retains the shape of the form, and makes the modelling more like clay work. When this stage of definiteness is reached, ideas may find better expression in clay.

Sand gardens may be out of doors, and more elaborate work be attempted. All work depends upon the resource and intelligence of the kindergartner. Sand-tables are of many varieties. When means are limited, the ordinary table may be used by being covered with oilcloth, and sides made that will hook together and make a box-top to hold the sand. Sand-boxes that will accommodate two children are good, but the long table where many individuals may work together, and where there is more freedom for each, has proved to be more successful.



Sketches from life. Normal students.



Designs in black and white. Normal students.

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The Blacksmith in clay modelling. Pratt Institute Free Kindergarten.

CLAY.

LITTLE children do not always want to wait with folded hands to be told what to do with materials that are placed before them. They are quite as apt to begin to do something immediately; and in this doing we may see the natural instinct at work, and the ideas evidently present in the childish mind by the manner in which he expresses them. Taken as a starting-point, nothing can be more important than this, and it is sometimes overlooked in the desire to give an excellent modelling lesson. When children first touch clay, they have a desire to test and investigate it. They pound it flat upon the table, roll it out in long rolls or form it into small balls, arranging these in various ways familiar to all who have given clay to small children.

It has been found practical, as a step in retaining the child's interest in what he has already begun, to turn what he has made into some object that is familiar to him and that he loves, as transforming a ball into an apple; this takes him from the instinctive use of the material to see that it is representing something.

Thus clay that is pounded flat may be turned into cakes or cookies by cutting it into round discs with a metal bottle-top or whatever one has at hand that is small enough. These may be played with as cookies or arranged in symmetrical forms and placed on a large clay disc flattened out by the child. Or the little discs, colored, and with holes punched in the center,

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may be dried and used as beads, or, when dry, played with as flat discs and arranged in patterns. The small balls of clay are often made into beads. They can be pushed upon one of the long sticks used in peaswork, and before dry turned several times to make the holes large enough, then colored, or carved with a stick, or otherwise ornamented as individual fancy may dictate. Again, the clay balls may be arranged in groups of three, five, or six on a flat clay plaque, and, by a touch here and there, be turned into a group of leaves: the three, into a clover-leaf by adding a stem, or into a petaled flower. The group of three or five may be a form of symmetry, and thus lead out into decorative work. The rolls of clay are usually stood up on a clay plaque and a flat piece of clay put on as the roof of a house or porch. This shows evidently a wish to construct, and may be developed in many directions. Flower-pots or cups and saucers are easily made from a ball of clay pushed out, shaped, and flattened.

Clay balls may be utilized as a basis for many objects. One ball may have slight touches and additions and become an apple or any round fruit, or several small balls may be made into a bunch of cherries. Two balls put together with fresh clay added to unite them may easily be made into a potato or any oblate fruit or vegetable. A large ball and a small one make a pear or egg-shaped form; and with this as a basis for a body, many animal forms may be evolved, adding fresh clay and the detail that changes it into rabbit, mouse, cat, dog, chicken, etc., as circumstances require. Children are very fond of this use of clay. It is primitive and crude but, as a beginning, is very important, and all little children should have it. They rise to the broader use of clay as they grow older. It helps in rapid composition of form and also serves as an easy means of expressing what they see, the only thing they see at first being the essential or general aspect of an object; details they see later. It also is a quick way to express these things at a stage when the child does not care to work long for results.

But all this, as one can see, is not true modelling, nor the real use of the clay that may be arrived at in the kindergarten. Life is the thing that interests children, and an interpretation of this as the child sees it, is the thing we are aiming for. Clay is an unrivaled medium in which the child's ideas of life may be expressed; the feelings that have stirred within him in regard to things he sees cannot always be expressed in words, but they may be pictured forth in clay, and so he loves it. One may see how important it is that this material should be in good condition when given to him; that each child should have all he needs to use; that each should be allowed to work alone freely and unrestricted in his manner of working, looking to his teacher for recognition or suggestions. She should not touch his clay unless he asks for help, and even then it is better to suggest the remedy to him and let him make the additions himself.

Great results often hang on little things. The sense of plenty of material, of freedom in mode of expression, of a happy, undisturbed atmosphere

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around him, of constant recognition by the kindergartner of his making of good and bad points, are all most important if we would expect creative expression on the part of the child.

When the sense of power to express ourselves is once born, and has found the medium, no matter what, in which we can tell our thoughts and feelings, then we are filled with satisfaction. A more healthful condition does not exist. A child can often model or draw what he cannot tell, and thus make others understand him; and from this form of expression comes the other, *i. e.*, language. The power to achieve, the sense that this is mine own, leads to comparison of one's work with others, and a correct judgment arises as to quality and exactness of one's own productions.

Circus Parade in clay modelling. Pratt Institute Kindergarten.

In fall and spring, clay should be given at least once a week, and as much oftener as circumstances permit. After an excursion to the park, to the blacksmith, or to see the circus parade, sand, clay, brush-work, or drawing may be given: the sand to the little ones, clay and drawing to older ones, and brush-work to the oldest. Clay, however, furnishes the most flexible medium.

Each child may be working on the same idea, but different aspects of it. Perhaps there has been a visit to the blacksmith's. The children return and are given clay. One child attempts the blacksmith at his anvil. We know he is already an experienced modeller. Another child attempts the horse the blacksmith was shoeing. Another child makes horseshoes, another a hammer, another the anvil. Little children do not see many things at first, and they are quite satisfied to make one thing they see; as they grow more expert, their attempts are more complicated. The older children see things in wider relation, and then suggest all the things being put together so the representation of the blacksmith will be more complete. This would be true of the circus parade or the representation of the barnyard. The great point for the teacher to know is that the child is interested in the life of things; the more he knows of the life history, the more he will love to depict it, and as he begins to represent his experiences, he will better and better understand them and the more the particulars will be clear in his mind.

Most clay work is perishable, and it is all right that it is so. As the child grows, he does better and better work. The clay has also served its purpose,

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and a new medium is required. If one wishes to preserve specimens, they may be fired; but unless the clay is potter's clay, it will not stand much heat.

There must be a plan and the teacher must work with her pupils if she would succeed in modelling. Indefinite work leads to no results. The idea of growth should be given with all life forms, especially vegetable and animal forms. If we begin with a small piece of clay, the form should be indicated then and be developed on all sides at the same time. This is opposed to the idea of taking a large piece of clay and working it into shape. This cannot lead to right seeing of form or to the right touch. The modelling of forms in kindergarten is seldom from objects. It is usually done when no object is present except to the imagination. The life shown in the modelling is so pronounced that one does not realize this. The value lies in the expression of what has been retained and the clearness of vision that results, as may be seen after a fresh experience on the part of the children in their renewed attempts at modelling the forms. To clear up their ideas, repeated experiences are necessary.

The clay must not lose its moisture or it will not respond to the touch, and this brings us back to the right preparation of clay. The preparation of clay needs foresight, care, and also some muscle. If one has an intelligent attendant the latter requisite may be supplied, but careful supervision is necessary. A few directions may be helpful. Dry clay should be broken up, put in a jar, and covered with water for several days, then the water poured off and the clay reduced to proper consistency by putting it into a coarse cloth and squeezing the superfluous water out. Then mix in balls, to get it a little dry; then put in cloth and knead and beat it into a flexible mass. Keep in a jar, in loaves the size of ordinary loaves of bread, and cover the jar with oilcloth. Clay must be carefully prepared before using it a second time. It should either be baked in an oven or be purified with ammonia. If the children's hands are dirty, wash them before using clay, and if there are any breaks on their hands, use fresh clay each time, throwing away all that they have touched. These precautions will make it possible to use clay frequently, no matter what one's surroundings may be. Excellent clay may be procured of the Terra Cotta Company, New York, and of kindergarten supply houses.

The illustrations show clay modellings of "The Circus Parade," "The Knights," and "The Blacksmith," modelled after return from excursion. The clay was photographed long after it was dry, and therefore it is not so lifelike as when it was first made.

A Fire. Water-color sketch. Home work from Pratt Institute Connecting Class child.

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WEAVING.

WEAVING is one of the primitive arts of mankind, and we must look for its beginnings in the living needs of peoples. Woven fabrics are found among all nations, and the development of this industry may be easily traced, as all the steps of progress are seen right around us. Nature has done some little weaving on her own account, and birds have been experts in weaving since the beginning of time. There are as many sorts of bird weavers, too, as there are of man weavers, and birds become skilled through practice as workmen do. The child too has an impulse to weave, and seeks satisfaction for this instinct. He may never do any weaving, some other form of manual activity taking its place, or, if he lives in the Orient, he may become a skilled weaver and earn his livelihood as such. The rug-weaving in Turkey and Persia is often done by children, but all of these children even have not the native ability to make good weavers. They are put to the work, and it soon is apparent whether or not they will succeed. They sing a monotonous chant as they weave, and learn the art step by step by themselves, some seeming to have an instinct for it.

This fine work has no counterpart in the kindergarten. Here the children weave not so much to learn the art of weaving as to engage in an activity that is a primitive, simple form of manual training and that has distinct educational value. It teaches adaptation of materials and the relation of number and color combinations to æsthetic form. This can have but slight value to the little child as leading to a means of livelihood. Weaving is also a means for exercising creative impulses, and, if given in the right way, is a most delightful means of leading to appreciation of the beautiful.

The child begins with an impulse to weave; from this impulse our part starts, and most important is the starting. A song with the weaving helps to give rhythmic form to the movement—"Under one, over one, under one again; over one, under one, here we are again." With the doing comes clearness of idea as to the process, and soon the under and over is complete and the mat is done. With this mat the first technical difficulties are mastered and the idea of weaving begins to be clear. The threading of the needle and the pushing up of strips are learned, and our weaver may begin to think about his weaving. It is not necessary to remind ourselves that this is for the beginner, either the little child between the ages of three and four years, who cannot as yet understand words and directions, or the older one if beginning. The time given to the work must not be too long. The mat should be small enough to be finished at one sitting and yet large enough to show the complete design, and not be too much of an undertaking for the young weaver.

In introducing weaving, one may use a large weaving-frame with strips of cardboard an inch wide, each child putting in a strip until the large mat is

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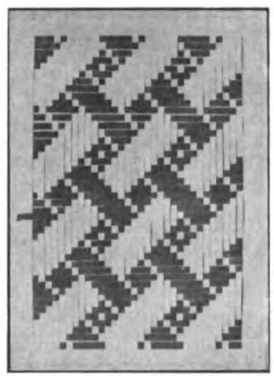
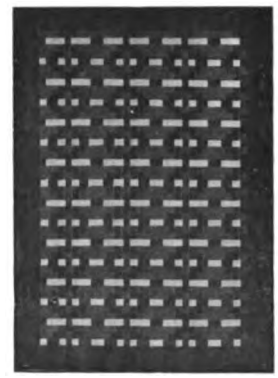
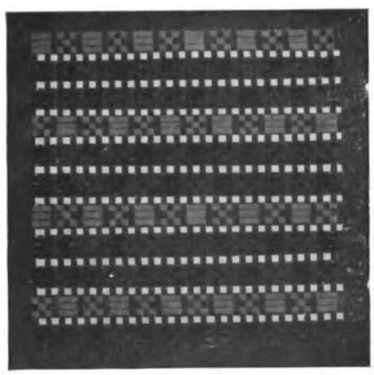
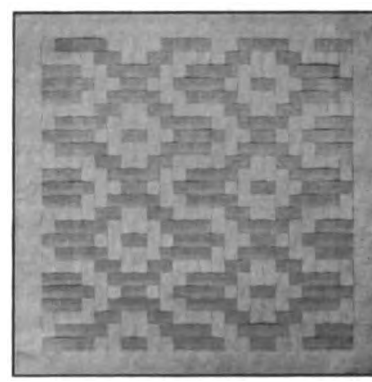




Two tones of green.





Two tones of orange.

Paper-Weaving Patterns.

finished, the exercise taking in all about half an hour. The rising in turn to put in the strip makes pleasant diversion for the small people, but weaving only becomes really loved when the work is "mine own" and all about it has the personal element. At first this comes in the simple possession of the mat. This is increased by the child's choosing the color of his mat, then the pattern he is to weave, then both mat and pattern. Finally he chooses his colors and originates his own pattern; now the mat is truly his to keep or to give away.

Step by step he has reached the place where he knows that combinations of number will change a pattern; that certain colors make for or against beauty. "Never ignore the steps" is a good motto for the kindergartner. When these are mastered, the child has power over material. He can now make it conform to his thought, and this is the way brains build themselves and freedom comes. Systematic exercises are good for minds as well as arms,

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but there should be nothing mechanical. First we may weave a mat under one, over two, under three; then a second mat of under two, over three, under four. With paper mats, under four makes too loose a weave, but it is well for children to work out a complete number progression if they want to do it. As soon as they understand this, they can plan their own work and make their own combinations of number, and thus produce a great variety of patterns.

The kindergartner can give one or two combinations and then ask a child to choose the next pattern he is to make. He may choose an old combination of number, but let him try. It is most important that this sense of freedom to choose be developed early, but his choice must be under law. At first the child does not venture very far; all first efforts must be protected by a larger personality. He likes to do as you have done; but as he feels his freedom, even if only to repeat an old pattern, he has chosen for himself and begins to know his own worth and what it means to be responsible. This sense of achievement will foster originality. There is no danger in this if, as he gains his power, he uses it for others and not alone for himself. Individuality cannot really grow without helping all who are in relation to it.

When the child completes a, to him, difficult task, recognize the effort, however small it is. If he can only repeat an old pattern let him choose a new combination of colors. When he has a distinct idea of what he wishes to do in form and color, he should be allowed to do so even if his idea is not the best. If you want to accomplish much with any form of hand-work, develop in the children thought, power to work alone, to choose for themselves and then for those who know less than themselves; and second, make definite each difficult step with a simple means of mastering it, and have them learn to work consecutively.

Color Sequence.

I. Gray LL mat, red standard strips.
II. Gray LL strips, blue S mat.
III. Gray LL mat, yellow strips.
IV. Child choosing colors — one, two, three, four.
V. White mat, red tint strips.
VI. White mat, blue tint strips.
VII. White mat, yellow strips.
VIII. Union of two or three colors in a mat; his own choice.

Remember what influences children's choice of colors: first, striking colors; second, colors they have used before; third, colors that the kindergartner likes; a color near another color that he likes or that brings it into contrast. After a few choices have been made by the child, have him take plenty of time in making his next choice.

Follow this sequence by the use of orange, green, and violet with white or gray. Then use colors together, as red, green, and violet, or blue, green, and

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yellow. White and black, in small amounts, may both be used to advantage in conjunction with other colors, but give these to older children.

The first step is to give the single colors with a neutral, then gradually combine colors. Some care should be exercised in letting children work with trying combinations, such as red and yellow or red and green. Mats cut with wide and narrow strips help in appreciation of form and in securing pleasing proportions of color. Be careful in the use of standard blue and standard orange. These are best used with self-tones, orange standard with a dark tone or shade, blue with lighter tints. It is a mistake to begin by using large mats, but a large mat may follow the smaller one as soon as the child is equal to it. It will discourage a little child, and the mat should not be so large that he cannot take it in as a whole. It is most interesting to note how children like little things, the more tiny the better. This desire is supplied in the wonderful toy-shops of Nuremburg, where may be found every tiny thing to delight a child's heart and ofttimes a grown up heart as well. The big and the little mutually interpret one another.

No one color sequence needs to be used at the expense of all others. The chief thing is to find the shortest way to impress certain ideas, and thus cover the field of materials within the child's grasp, so he may have a wide choice to cull from in his creative work, not forgetting that he must grow to things, not learn them.

Never be afraid to give exactly and definitely the next step needed by the child until he sees the continuity or that one step follows another; then he can look out for each new step, and you will find he will give it you. Knowledge comes through doing; then freedom to use this new knowledge gained. Very much may be accomplished if you let individuals progress as rapidly as they see the steps, and there is no danger of nervous strain if each step is taken. There is plenty of time to grow quiet in working out the step. A great danger lies in not giving an adequate task; this leads to indifference and to indolence.

Now as to a scheme of work that will give the child or beginner the necessary experiences. Remember there is a vast difference between child and adult in the way of viewing things. The world of feeling belongs to the child, with its color, rhythmic movement, pleasure, and pain. From this he builds up his ideas. His intellections are simple ones, and consist largely of characteristics understood through personal feeling. Mathematical ideas are enveloped in things from which they must be abstracted before they can be intelligently applied. With older pupils this has been accomplished, but not with the little child. For this reason systematic and orderly work is so necessary and is a golden thread to hold by in this land of delights and variety. But do not let this order or system be something apart from life, even if you have gone through the process of abstraction yourself. Let the child world remain — the child world with its life and interest — while you keep the guiding hand.

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In weaving we have number and color, a knowledge gained in other things (the gifts) being applied here. We develop the idea of series and combinations of number and of color. When the child has finished with the kindergarten, he has gained all the fundamental conceptions of form, color, and number, and these all relate to some form which the mind holds and uses as it gradually separates ideas from things and processes. In Froebel's scheme three years were given to this development. Under each occupation is a skeleton of the elements of form, number, color, position, direction, size, planned so that the individual may acquire a given amount of knowledge. But form, number, and color in the little child's world are inseparably related to things, and should be.

The gain from weaving is not alone in learning a distinctive process, but in acquiring clear perceptions of form and color; in receiving a certain amount of technical training and exercise of both hands and eyes; and in developing concentration, patience, industry.

WALKS IN THE COUNTRY — A TALK GIVEN TO NURSES.

CHILDREN'S senses are keen and alert. They want to see, and to touch, taste, and handle everything they see. Their eagerness makes us want to see too, and through being with children there is a chance for our eyes to be opened a second time. Seeing, touching, tasting, smelling, the activity of all the senses is greater between the ages of two and six than at any other time of a child's life. If he learns at this period to use them aright, he will be apt to go on developing them all his life.

At first bright colors please, and things that have sound and movement. All colors are one until the child has picked out separate colors, and all sounds are one until he has distinguished separate sounds. Froebel says, "Ever through the senses nature woos the child." This is true of us also. This means that nature is always talking to us. She says, "Look, see all these beautiful things! Listen, hear these many sounds! Taste and smell, oh, how sweet!" We are not only to look but also to understand the things we see, and, as we understand, learn to love them too. So our part will be to help the children to observe, then to answer their questions as well as we can, and to lead them into sympathy with all living things.

It is winter time; are we to go walking? Yes, indeed, every day. Now we will look, listen, smell, and taste, and see what we find. All the trees are brown, so are the bushes and ground. If you will look closely you may find a cocoon or chrysalis, hanging on a brancn or under the leaves, carefully tucked away from harm and so cleverly covered that no bad weather disturbs it. What is inside? Well, a sleeping moth or butterfly. It will come out some warm day in the spring. Take it home if you like, and put it where

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air, sunshine, and rain will reach it, and you may see the butterfly or moth emerge. That is a great and wonderful thing to see. Now look at the buds on the trees; every tree covered. Safely tucked away inside waterproof coats are the leaf-buds for next year, not green yet, but they will be when spring comes. You can take them home, put the branches in a jar of water in the window, watch and see what happens. If the room is warm, they will open. Look, see how the twigs grow. Here is the large one, and then these two branches from it, and then two from each of them, and so on until we come to the buds. When the trees have no leaves they look stern and cold, and say nothing beyond creaking and groaning when the wind blows. Some people used to say there was a dryad in the tree — a personified life to the tree. When spring comes, there is a great deal of movement and the leaves talk to each other and to the wind. Look at the sky, it looks white all over. When the sun goes down you will see color — red, orange, yellow, perhaps, and then violet.

When it snows all children love to be out of doors. Now is the time for play, but there is also something to see. The trees and bushes appear dark against the white background, and branches are outlined and piled up with snow. The older children may look at the snow-stars through a magnifying glass, but the little ones do not care for this. Now we can look for the birds and see them every day, and watch for the tracks of birds and animals in the snow and see if we can tell which is pussy's and which the rabbit's.

When spring has begun to show signs of coming, and the snow has melted under the sunshine of a warm day, we may look in swampy places and we will see green beginning to show. The willow and maple stems are tinged with color. In the swamp, where it is warmer than other places and more sheltered, we shall see color first. The skunk-cabbage and the pussy-willows come out together. Two kinds of pussy-willows are there. Look carefully at each; one cannot get along without the other, so they are not very far apart. With older children, you might put your glass over each and see what the difference is. Now other buds have begun to unfold a little too; the maples, why, we did not know they were in blossom! Yes, they are the kind of maple trees that do not want to wait; they are always ready to respond to a warm day. The sugar-makers will have to hurry up, or the sap will be gone to the blossoms and they will not catch it for sugar. Is there a sugar-bush near you? I hope so. If a light fall of snow comes, then make the sugar-bush a visit and let your children see, touch, taste, and understand. To-day we saw a bluebird and a troop of snowbirds. What can the birds do? They twitter, fly, hop about, or run. They have come from the South or from secluded warm places among the trees in the valley. They like evergreen trees best; the wind and snow cannot get in, and there is food, and they find it as cosy as can be. I wonder what stories they tell each other in the winter time, what adventures they talk about? They fly so very far that they must see a great deal of life.

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Now the flowers are beginning to come up and blossom. Let us watch them day by day, if we can; however, this is often not practical, for much rain comes and the woods are wet. But look on the sides of the hills and under the leaves. Learn to watch things grow rather than to pick them. Name the places where flowers are found from the flower,—"Violet fields," "Anemone hill," etc.,—and name flowers too—white-bells, or fur-flower, or sun-flower, as the children see resemblances; then they have two names to call the flowers by, the ones they have given and the book-names the flowers are known by.

When walking, have times of stopping and looking around. What colors do we see, what odors do we smell! Keep very still and listen to the sounds and tell what they are, and notice every movement you see. Cultivate the stopping and looking, listening, smelling, and naming; the last is important.

If the children have home-work with kindergarten materials, such as stringing beads, using colored papers, laying patterns with tablets, etc., they will gain ideas of form, number, color, and size that will help them to see and know names of things on their walks. For instance, you can ask them, How many of each kind did we find? or, Where did you find these things? In what kind of a place? What direction from here? Tell me how you would go to the place. How did the animal move? Show me. Children can always show you how when they cannot tell you. This is why drawing comes naturally to them. They do something, then draw a line the way they do it. Then various ways of picturing things come next—very simple and crude at first, and then better and better as they gain clearness in their ideas. We talk over these pictures; they tell us what they have made, and their language becomes clear and definite. Now the second point I would emphasize is to bring the children into sympathy with all life. It is natural to them to think that all things are alive, like themselves—sticks, trees, and stones even; so one may see how very easy it may be to learn to love and protect all things that have life, plants and animals as well as younger brothers and sisters. Step softly, touch gently! some baby thing is here. We will care for it and love it. It shall be ours. Watch and leave it alone. See how it does things. This life so often like ours in many particulars: for example, bird life—coming to settle near us, singing, building homes, good and bad, raising and caring for little ones; parents hunting food, always busy like mother and father; life like our own—working, sleeping, eating, drinking, singing and twittering, and sometimes quarreling. We will help with food and place for a home, and watch and visit them every day.

There are certain dangers in nature that must be avoided; poisonous ivy, for instance. Learn to know it and avoid it; never sit down where it is. The young leaves in spring are always red. They spring up everywhere. This ivy has three leaves in a group; five-leaved ivy does not poison. White berries are almost always poisonous. Red berries can more often be touched. Never eat things in the woods; take them home to be examined. Do not

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kill spiders and snakes; very few are poisonous. Spiders and ants are most interesting. For insect stings, extract the sting by pressing a hollow key over it and cover the wound with mud or diluted ammonia.

Children always want to grasp things, to take them in their hands. Always let them when you can, with thoughtful care teaching them how to handle and move the delicate and tender ones. When children are watching life they see many changes, and these changes make them ask questions. Be honest in your answers. If you do not know, say so, and add, "I will find out"; then remember to find out.

A COLOR LESSON FOR THE TRAINING-CLASS.

M. M. Glidden.

APPRECIATION of harmonious color combinations is largely a matter of education, and all sound education takes time. There is no royal road to learning of any kind, but in the matter of gaining power to combine color harmoniously, certain exercises in the use of colored papers have been found helpful. The kindergarten normal students who make use of these exercises have already come under the influence of the Art Department, and have been gradually coming to a truer and deeper appreciation of the beautiful in color and in form.

The materials necessary for this color lesson are sample books of colored papers, Prang's and Milton Bradley's; inexpensive mounting-books containing gray paper; and paste of some kind.

Prang's colored papers seem to have a little more white in each color than Bradley's, and therefore in a color-wheel they blend better. Some people consider them more artistic; others prefer Milton Bradley's, saying that Bradley's colors are clearer and truer to nature's spectrum. Kindergartners should become familiar with both, making two work-books showing color combinations, one book containing one set of colors and a second book containing the other.

Suppose that we begin with Bradley's colors. Each student has a sample-book, and rapidly examines the arrangement of colored papers and records in her note-book the grouping. She sees, for instance, that there are five tones of red and five of orange, and between red and orange groups of half-tones. Then she notices that this is the plan of the book, for there are the six standard colors,—red, orange, yellow, green, blue, violet,—each group containing five tones, with the half-tones between every two standards and each half-tone having its scale of five tones. After the standards (primaries and secondaries) are disposed of, the tertiaries and neutrals are given,—citrine, olive, russet, brown, gray,—each in five tones; then black and white.

Not until the entire book is completed with Bradley's colors and each stu-

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dent knows the colors and names used, are the Prang colors introduced; or vice versa. This is to avoid confusion, for the two who furnish us with colored papers use entirely different nomenclature and even furnish a different number of colors, Prang giving three half-tones to Bradley's two. Personally I have found Bradley's nomenclature simpler and handier; his color-wheel (complementary colors) is perhaps not quite so beautiful, the red-violet not blending with the red so perfectly as Prang's, but for all practical purposes one set of colored papers is as good as the other. As said before, a kindergartner should have a complete mastery of both.

The student has now recorded a list of colors in her note-book, grouping and naming them as in the sample-book, so that she has learned one orderly arrangement of colored papers. She next removes the metal fastener at the end of the sample-book and sets free the colored slips. She is now told to select the six standards, red, orange, yellow, green, blue, violet, (middle tone of each group of five,) and lay these six pieces of paper in spectrum order upon the first page of her book. In class she merely arranges them; at home she will paste them. The least possible paste should be used, and so neatly that no one can see where it has been placed. If each slip of paper is tacked down at the upper edge, the other edges will be entirely free so that the color catches the light. This is much more pleasing in effect than when the entire surface is tightly pasted down.

A few hints are given in regard to the reason for using gray as a background. We see brilliant colors in nature side by side, the atmosphere softening the effect. Gray paper has somewhat the same office, but pure color and pigments are two very different things and have to be handled differently. Pure color is found in light, in precious stones, the wings of birds, scales of fishes, or in the lovely coloring of sea-shells. Pigments contain an earthy substance which takes away from the beauty of the color. When brilliant colors are placed side by side in pigments, the effect is not always pleasing, for one color acts upon another, "kills it," as we say. There are various ways of avoiding this, such as putting a narrow band of gray, black, gold, or white between; but one should learn what colors combine well, and why.

The second exercise is to select standard red, its tint and shade, making a group of three; or a group of five may be made, if preferred, but kindergarten children should not have more than the three tones (and they can make color-books, too, though in a simpler way). This group of three tones of red is placed on the second right-hand page, no work being mounted on the left.

Each of the standards is treated in the same way, reserving a page between every two standards for the half-tone. For instance, we have red (three tones) on one page, next the half-tone, then three tones of orange, and so on. After these are arranged, a word is said about the derivation of secondaries, tertiaries, and neutrals. Then citrine, olive, russet, brown, and gray are arranged, each on a page, in similar groups of three.

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Next comes the work which leads directly into the color harmonies, prefaced by a brief explanation of how all color harmonies are governed by law; that while mathematical precision can never take the place of an educated color sense, and feeling in such matters often counts for more than thought, yet a knowledge of these color laws does help.

At this juncture it is customary to exhibit some of the weaving, circular cutting, and color harmonies of former students, showing the application of these color laws. This awakens an interest and a desire to do likewise on the part of the students.

Directions are then given for making a complementary color-wheel of eighteen pieces of paper (sectors of a circle), if Bradley's colors are used; twenty-four, if Prang's. Opposite colors must be complementaries, the pieces fitted in with the utmost nicety, no paste showing anywhere. Absolutely perfect work is required.

Then the definition of a scale of tones is stated, and students illustrate it. As this is a work-book, the definition may be neatly written on the left-hand page, the illustration being placed on the right. In the same way definitions and illustrations are given for a scale of hues and each of the five harmonies: dominant, analogous, complementary, contrasted, and perfected. About thirty examples of perfected harmonies (which give the numerical formulæ for securing correct proportions of the different colors combined) are given, and students are required to illustrate them with slips of colored paper. This is done at home. The book is now complete, and its companion book, in which the other manufacturer's colors are used, is ready to be made.

A color lesson for one or two periods has been given above; but this will be followed by a number of talks upon color theory, and each student will make and illustrate, with colored papers and water-color sketches, a book on this theory. But before much is done along theoretical lines, the students apply these color laws in their handwork, usually with very great success.

In closing, a word should be said about the value of using colored papers in kindergarten prior to the use of water-colors. Colored papers present a color in its purity and intensity. Standard red in paper, for example, is the most intense expression of red. So with blue and yellow: each is the most intense expression of its kind. Water-colors at best give a diluted color, but often the child, in using paints, deals with more or less muddy colors. First impressions are deepest, therefore a knowledge of true color as gained from colored papers should come before the use of water-colors. Further, the handling of paints demands considerable technical skill, so that painting in kindergarten too frequently becomes mere daubing. If the use of the brush is desired for freedom of expression, then one pure, clear color should be provided and the little child's work limited to that. Simple color materials are needed at first, so that the child can become familiar with color in its purity and definiteness. When he has mastered these materials, he can freely use them as the mere tools of his creative impulse.

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Saw work. Children's Handwork Class. (Ages 8 to 11 years.)

WOOD-WORK.

IN October, a class of a dozen children, in age from eight to eleven years, began a course of wood-work under the direction of Mr. Pierce, of the Department of Science and Technology. This was the outgrowth of simple construction work done in our connecting class. This work was planned, too, with the thought of completing and extending experiences already begun in the kindergarten. It was eminently successful. The children were delighted and so was the teacher with what they did, and a request came from the parents for a class for the older children. The class was started and extended through two terms.

The first work done was with hammer and nails—simple constructions: houses, benches, ladders, street-car, etc. Some plans were given the children with materials prepared; others they thought out before the materials were presented, and some were worked out from materials selected by themselves.

The next work was sawing and construction. This work was done in a standing position with a small bow-saw, on adjustable tables held to the side of the school-room desk. It was especially pleasing to the children, as they obtained results quickly, and yet the work had definite value in training in use of saw, simple construction, and development of accuracy and patience. The first step was to learn to control the saw, following straight and curved lines. Then the children were given designs and models from which they constructed rocking-chairs, chariots, sleighs, etc. This was followed by creative work in which the children worked out their own designs and constructed objects from them. They were allowed to choose their own material from pieces of wood of various sizes and shapes. The results were crude but were entirely original, and each object showed the individuality of the child to

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whom it belonged. Toward the end of the term the children made looms, preparatory to weaving, which was to be taken up after Christmas.

Then followed the use of the knife as well as the saw, cutting straight and curved lines and experimenting with the grain of the wood. The models used were a "label," "heart-puzzle" for Valentine's Day, sled, stool, and, by a few, "the flyer." In connection with this work the children have done some simple mechanical drawing, learning the use of the triangle and T-square in drawing perpendicular, horizontal, and diagonal lines.

Construction work. Children's Handwork Class. (Children from 8 to 11 years old.)

All of the work has been attended with interest on the part of the children, and the testimony from the parents shows its value in the home life of the children. There have been a number of reports to the effect that the children have been doing satisfactory constructive work in their playrooms and workshops at home. The illustrations do not adequately represent the work accomplished.

The illustrations in this MONTHLY were all made from either students' or children's work.

Respectfully submitted,

Alice E. Fitts.

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LIST OF APPOINTMENTS OF GRADUATES SINCE 1902.

Class of 1902.

Louise S. Atkinson, assistant in "E. W. Bliss Kindergarten," under Brooklyn Free Kindergarten
Fannie P. Bond, director in Free Kindergarten at Perth Amboy, New Jersey. [Society.
Antonie W. Brahe, director of Kindergarten in Public School No. 103, Brooklyn.
Mabel Donovan, assistant in "Froebel League" Connecting Class, New York city.
Agnes Dougherty, director of Kindergarten in Public School No. 136, Brooklyn.
Alice C. Eastman, director of Free Kindergarten, Bar Harbor, Maine.
Lucile Griffith, director of Kindergarten in Public School No. 2, Brooklyn.
Willa Hagerman, director of Kindergarten in Public School No. 64, Brooklyn.
Frances M. Merchant, director of Kindergarten in Public School, New York city.
Elizabeth Morris, assistant in "The Astral Kindergarten," under Brooklyn Free Kindergarten Society.
Esther Mulford, director of Kindergarten in Public School No. 59, Brooklyn.
Nana Pratt, married (now Mrs. Edgar M. Hawkins).
Edith Rice, director of Kindergarten in Public School No. 30, Brooklyn.
Cornelia Ryan, director of Kindergarten in Public School No. 134, Brooklyn.
Edith M. Rockwell, assistant in "Bedford Kindergarten," under Brooklyn Free Kindergarten Society.
Margaret Simmons, director of Kindergarten in Public School No. 137, Brooklyn.

Class of 1903.

Mary F. Aldrich, director of Kindergarten in Public School No. 141, Brooklyn.
Marjorie Anness, director of Kindergarten in Public School No. 73, Brooklyn.
Evelyn B. Bailey, assistant in Free Kindergarten, Bar Harbor, Maine.
Lois D. Blake, director of Kindergarten in Public School No. 53, Brooklyn.
Marion P. Brown, assistant in "Anne Brown Memorial Kindergarten," under Free Kindergarten Association, New York city.
Maude E. Connelly, director of Kindergarten in Public School No. 140, Brooklyn.
Harriette de Capdevila, director of Free Kindergarten, Hazelton, Pennsylvania.
Gertrude H. DuBois, assistant in Brooklyn Free Kindergarten Society.
Carolyn L. Fetter, director of Kindergarten in Public School No. 130, Brooklyn.
Helen A. Foster, director of Kindergarten in Public School No. 105, Brooklyn.
Evelyn Friend, at home.
Marjory Halstead, director of Kindergarten in Public School No. 123, Brooklyn.
Evelyn Higenbotham, assistant in "Hoagland Kindergarten," under Brooklyn Free Kindergarten Society.
Alleine Hitchcock, director of Kindergarten in Public School No. 65, Brooklyn.
Ethel L. Kirkus, director of Kindergarten under Public Schools, Flatbush, Brooklyn.
Helen Magalhaes, assistant in "Friends' School Kindergarten," New York city.
Grace Paterson, assistant in "Cuyler Chapel Kindergarten," under Brooklyn Free Kindergarten Society.
Martha J. Ross, director of Kindergarten in Public School No. 13, Brooklyn.
Blanche Seabury, assistant in "Pratt Institute Kindergarten," Brooklyn.
Clara D. Smith, at home.
Edna C. Smith, assistant in "Hans S. Christian Kindergarten," under Brooklyn Free Kindergarten Society.
Mary Steinecke, director of Kindergarten in Public School No. 123, Brooklyn.
Katherine S. Varney, director of Kindergarten in Public School No. 23, Richmond, Staten Island.
Ethel Ward, assistant in Kindergarten under Public Schools, Providence, Rhode Island.

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FREDERIC B. PRATT, *Secretary.*

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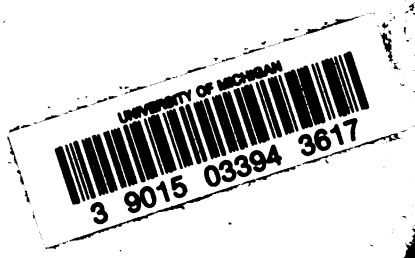

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