NINTH ANNUAL
CATALOGUE

Throop Polytechnic Institute...

PASADENA, CALIFORNIA
1900-1901

Calendar

1900—1901

Meeting of Board of Trustees	Tuesday, September 11, 1900
Entrance Examinations	Monday and Tuesday, September 24, 25, 1900
Fall Term begins	Wednesday, September 26, 1900
Thanksgiving Vacation	Thursday and Friday, November 29, 30, 1900
Meeting of Board of Trustees	Tuesday, December 11, 1900
Founder's Day	Thursday, December 13, 1900
Fall Term ends	Friday, December 21, 1900

Christmas Vacation

Winter Term begins	Wednesday, January 2, 1901
Washington's Birthday	Friday, February 22, 1901
Meeting of Board of Trustees	Tuesday, March 12, 1901
Winter Term ends	Friday, March 29, 1901

Spring Vacation

Spring Term begins	Monday, April 8, 1901
Memorial Day	Thursday, May 30, 1901
Baccalaureate Sunday	June 9, 1901
Graduating Exercises, Sloyd Grammar School	Tuesday, June 11, 1901
Alumni Reunion	Tuesday evening, June 11, 1901
Commencement	Thursday Evening, June 13, 1901
Exhibition Day and End of Term	Friday, June 14, 1901
Annual Meeting Board of Trustees	Tuesday, June 18, 1901

Ninth Annual Catalogue

of

Throop Polytechnic Institute

and

Manual Training School

PASADENA, CALIFORNIA

1900-1901

JUNE, 1900
PUBLISHED BY THE INSTITUTE

Founder

HON. AMOS G. THROOP

Born at De Ruyter, New York, July 22, 1811
Died at Pasadena, Cal., March 22, 1894

Board of Trustees

JOHN W. HUGUS	Pasadena	Term expires 1901
WILLIAM STANTON	"	1901
HIRAM W. WADSWORTH, A. B.	"	1901
EVERETT L. CONGER, D. D.	"	1902
MRS. LOUISE T. W. CONGER	"	1902
CYRUS M. DAVIS	"	1902
CHARLES D. DAGGETT	"	1903
H. M. HAMILTON	"	1903
A. R. METCALFE	"	1903
PERRY M. GREEN	"	1904
NORMAN BRIDGE, M. D.	"	1904
THOS. C. HOAG	"	1904
E. E. SPALDING, A. M.	"	1905
MRS. CLARA B. BAKER BURDETTE	"	1905
JAMES H. MCBRIDE, M. D.	"	1905

Officers of the Board

NORMAN BRIDGE, President — C. D. DAGGETT, Vice-President

P. M. GREEN, Treasurer — THOS. C. HOAG, Auditor

THEODORE COLEMAN, Sec'y and Business Agent
Residence, 472 Benefit Court

Executive Committee of the Board

NORMAN BRIDGE, *ex-officio* — E. L. CONGER — C. D. DAGGETT

THOS. C. HOAG — H. W. WADSWORTH

Officers of Instruction and Government

1899–1900

WALTER A. EDWARDS, President

Professor of Ancient Languages and German

A. B. and A. M., Knox College, Galesburg, Ill.; Instructor in Latin and Greek, High School, Peoria, Ill., 1883–6; Student, Universities of Berlin and Tübingen, 1886–9; Principal High School, Decatur, Ill., 1889–90; Principal High School, Rockford, Ill., 1891–5; Instructor, Latin and Greek, High School, Pasadena, Cal., 1895–6; Instructor History and Greek, Throop Polytechnic Institute, 1896–7; Instructor in Ancient Languages and German, 1897–9; Professor of Ancient Languages and German, 1899–

356 W. California St.

HERBERT B. PERKINS

Professor of Mathematics and Instructor in Mechanical Drawing

S. B., Massachusetts Institute of Technology, 1874; Professor of Mathematics and Astronomy, Lawrence University, 1878–80 and 1882–86; Student of Mathematics, Physics and Astronomy, University and Polytechnikum, Munich, Germany, and University of Geneva, Switzerland, 1886–2; Student Mechanical Engineering, University of California, 1886–8; Professor of Modern Languages, University of Southern California, 1890–2; Instructor in Mechanical Drawing and Higher Mathematics, Throop Polytechnic Institute, 1892–9; Professor of Mathematics, 1899.

186½ E. Colorado St.

WALLACE K. GAYLORD

Professor of Chemistry; Registrar

S. B. Massachusetts Institute of Technology, 1893; Instructor in Chemistry and Mathematics, Throop Polytechnic Institute, 1893–9; Professor of Chemistry, 1899–; Member American Chemical Society.

304 Cypress Ave.

LUCIEN H. GILMORE

Professor of Physics and Electrical Engineering

A. B., Stanford University, 1894; Acting Assistant Department of Physics, Stanford University, 1894–5; Instructor in Physics and Electrical Engineering, Throop Polytechnic Institute, 1895–9; post graduate student, University of Chicago, 1898–9; Professor of Physics and Electrical Engineering, Throop Polytechnic Institute, 1899–

250 Concord Court

ARTHUR H. CHAMBERLAIN

Professor of Pedagogy and Instructor in Sloyd

Graduated Cook County Normal School, 1892; Teacher in the Public Schools of Cook County, Ill., 1892–4; Principal W. Harvey Public Schools, 1893–4; Graduated Normal Department Throop Polytechnic Institute, 1896; Instructor Pedagogy and Sloyd, Throop Polytechnic Institute, 1896–9; Graduate Deutsche Lehrerbildungsanstalt für Knabenhandarbeit, Leipzig, Germany, 1899; Graduate Slöjdlärareseminarium, Nääs, Sweden, 1899; Professor of Pedagogy, Throop Polytechnic, Institute, 1899–; Member Deutscher Verein für Knabenhandarbeit; Member National Association of Manual Training Teachers, Great Britain; Member Sloyd Association of Great Britain and Ireland.

337 N. Los Robles Ave.

MRS. JENNIE COLEMAN

Professor of English and History; Librarian

Instructor in Latin and English, High School, Rochester, N. Y., 1867–8; Principal Grammar School, Lakeport, Cal., 1884–6; Member County Board Education, Lake Co., Cal., 1883–7; Vice-Principal High School, Pasadena, Cal., 1888–96; Instructor in English and History, Throop Polytechnic Institute, 1896–9; Professor of English and History, 1899–; Holder of California High School Life Diploma.

472 Benefit Court

EDWARD W. CLAYPOLE

Professor of Geology and Biology; Curator of Museum

B. A. and D. Sc. of the University of London; Fellow of the Geological Societies of London, Edinburgh, and America; Professor of Natural Science at Antioch College, Ohio, 1873–81; Palaeontologist to the Second Geological Survey of Pennsylvania and Author of Report F^2; Professor of Natural Science at Buchtel College, Akron, Ohio, 1883–98; Instructor in Geology and Biology, Throop Polytechnic Institute, 1898–9; Professor of Geology and Biology, 1899–

125 N. Marengo Ave.

BONNIE BUNNELLE

Principal Sloyd Grammar School

Student in Normal Training School under Prof. P. W. Search, Sidney, Ohio, 1888–91; Student Pueblo Industrial School, Pueblo, Colo., 1892–4; Instructor Public School, Pueblo, Colo., 1891–4; Principal Sloyd Grammar School, Throop Polytechnic Institute, 1894–

308 Lincoln Ave.

FANNIE F. STERRETT

Instructor in Free-hand Drawing, Painting, and Clay-modeling

Portrait Artist five years, Springfield, Ohio; Student Chicago Art Institute, 1891–2; Graduated Normal Art Department, Pratt Institute, Brooklyn, N. Y., 1894; Instructor Drawing and Painting, Throop Polytechnic Institute, 1894–

CHARLES H. WRIGHT

Instructor in Wood and Iron Shops

Graduated Manual Training Department, Washington University, St. Louis, 1885; Principal Haish Manual Training School, Denver University, 1885–7; Student Mechanical Engineering, Ohio State University and Colorado School of Mines, 1887–9; Instructor Iron Shop, Throop Polytechnic Institute, 1894–

N. Marengo Ave.

MRS. GRACE E. DUTTON

Instructor in Domestic Science

Graduated Pennsylvania State Normal School, 1885; Instructor in Public Schools of Twin Oaks, Pa., 1885–8; Graduate of Mrs. S. T. Rorer's Philadelphia School of Domestic Science, 1897; Instructor Domestic Science, Throop Polytechnic Institute, 1897–

327 W. California St.

ROBERT E. FORD

Instructor in Machine and Pattern Shops

B. E. E., Engineering College, University of Minnesota; with D. & D. Electric Manufacturing Co., Minneapolis, Minn., 1895; Consulting Steam and Electrical Engineer, Minneapolis, Minn., 1896–7; Instructor Machine and Pattern Shops, Throop Polytechnic Institute, 1897–

CHARLES E. BARBER

Instructor in Mathematics

Graduated Northwestern Normal School (now Greer College), 1887; M. Sc., Greer College, 1896; Student and Teacher, 1887–91; Principal High School, Sidney, Neb., 1891–2; Principal High School, North Platte, Neb., 1892–3; Superintendent City Schools, North Platte, Neb., 1893–6; Head Master and Executive Officer, St. John's Military Academy, Salina, Kan., 1896–9; Instructor Mathematics, Throop Polytechnic Institute, 1899–; Professional Life Certificate, Neb., 1891; Member American Academy of Political Science.

272 N. Marengo Ave.

PEARL B. FISHER

Instructor in French and Assistant in Free-hand Drawing

Student Mary Institute, St. Louis, Mo.; Student in Paris, France, and in Lacaze Institute, Lausanne, Switzerland; Graduated Normal Sloyd Department, Throop Polytechnic Institute, Pasadena, Cal., 1897; Instructor French and Assistant Free-hand Drawing, Throop Polytechnic Institute, 1899–

148 N. Marengo Ave.

GEORGE W. BRADEN

Instructor in Gymnastics

Student in High School, Cedar Rapids, Iowa, 1893–6; Student of Physical Culture and Heavy Gymnastics Y. M. C. A Gymnasium, Cedar Rapids, Iowa, 1892–6.; Member Society of American Physical Directors; Instructor Throop Polytechnic Institute and Y. M. C. A. Physical Departments, 1899–

103 Marengo Court

HARRY D. GAYLORD

Instructor in Wood-carving

Graduate Pasadena High School, 1893; Student Art Department Throop Polytechnic Institute, 1894-6; Teacher Private Classes in Carving, 1896-9; Instructor in Wood-carving, Throop Polytechnic Institute, 1899-

304 Grove St.

CHARLES DUDLEY TYNG

Instructor in Spanish

Secretary with Caleb Cushing, U. S. Minister to Spain, 1874-6; Teacher Private Classes in Spanish, 1895-; Instructor in Spanish, Throop Polytechnic Institute, 1899-

191 S. Los Robles Ave.

MRS. L. V. SWEESY

Instructor in Music

Studied for five years with Manuel Kierolff of Berlin, and later at Chicago Music College; Supervisor of Music, Pasadena Public Schools, 1898-

309 Henrietta Court

WALTER W. MARTIN

Assistant in Wood Shop

Graduated Rockford High School, Rockford, Ill., 1898; Student Throop Polytechnic Institute, 1898; Journeyman Turner and Cabinet-maker; Assistant in Wood Shop, Throop Polytechnic Institute, 1899-

66 N. Euclid Ave.

ELIZABETH GRAHAM

Assistant in Sloyd Grammar School

Student Curry Institute, Pittsburg, Pa.; Instructor Public Schools, Niles and Cleveland, Ohio, 1877-88; Principal Miles Park Building, Cleveland, 1888-93; in charge of Primary Department Southwest Institute, San Diego, Cal., 1896-9; Assistant Sloyd Grammar School, Throop Polytechnic Institute, 1899-

306 N. Raymond Ave.

CLARA J. STILLMAN

Assistant in Sloyd Grammar School

Graduate of Terry Kindergarten Institute, Bridgeport, Conn., 1878; Student Henniker, N. H., Academy, 1878-9; Inspector and Instructor, Public Schools, Arizona, 1881-4; Instructor, Public School Coronado, California, 1895-9; Assistant Sloyd Grammar School, Throop Polytechnic Institute, 1899-

91 S. Los Robles Ave.

STELLA M. METCALF

Assistant in Domestic Science

Graduated High School, Greenfield, Ill., 1898; Student Throop Polytechnic Institute, 1899; Assistant in Domestic Science, Throop Polytechnic Institute, 1899-

525 N. Raymond Ave.

IDA M. MELLISH

Assistant in Sloyd

Graduated Pasadena High School, 1892; Graduated Sloyd Department, Throop Polytechnic Institute, 1897; Student in Art, Stanford University, 1898-9; Assistant in Sloyd, Throop Polytechnic Institute, 1900-

423 Lincoln Ave.

Executive Committee of the Faculty

W. A. EDWARDS, Chairman
BONNIE BUNNELLE
A. H. CHAMBERLAIN
E. W. CLAYPOLE
MRS. JENNIE COLEMAN
W. K. GAYLORD

General Information

Historical

Throop Polytechnic Institute was founded by Hon. Amos G. Throop in 1891, and during the remainder of his life received his consecrated energy and hearty support, and at his death the greater part of the remaining accumulations of his life were bequeathed for its maintenance. Articles of incorporation were filed September 23d; the first Board of Trustees was organized October 2d. The doors of the Institute were opened to students November 2d. It was established to furnish to students of both sexes and of all religious opinions, a liberal and practical education, which, while thoroughly Christian, should be absolutely non-sectarian in character. A clause of the charter provides that a majority of the Board of Trustees "shall not belong to any one religious denomination or sect, and the institution shall be maintained and administered as an undenominational and non-sectarian school."

During the first year the Wooster Block was used for school purposes. In 1892 it was determined to make manual and industrial education the characteristic feature of the school, and the building now known as Polytechnic Hall was erected. In the following year East Hall was built.

Location

Pasadena is generally acknowledged to be one of the most beautiful residence cities in California. It is situated within ten miles of the city of Los Angeles, at the head of the San Gabriel valley and at the base of the picturesque San Gabriel mountains. In beauty and healthfulness, in the culture of its homes, and in its high social and moral tone, Pasadena has no superior on the Pacific Coast. It is reached by the Santa Fe, Los Angeles Terminal, Southern Pacific, and Los Angeles and Pasadena Electric railways. The last named passes in front of each of the halls. Students living along these lines are enabled to make the daily trips to and from the Institute in seasonable hours and at reasonable rates.

Departments

The Institute comprises four departments; the Sloyd Grammar School, the Manual Training Academy, the Normal Department, and the College.

Libraries

The books belonging to the Institute are located with reference to convenience to students, special libraries being placed in the various department rooms. These contain works bearing on English Literature, Latin and Greek, History and Civics, Psychology and methods, Physics and Electricity, Chemistry, Physiology, Botany, Bacteriology, Zoölogy, etc., while a general assortment is found in the main library room in East Hall. Students also have access to many works from the private libraries of the various instructors, as also to the Pasadena Public Library, situated near the Institute. The library also receives regularly several periodicals which have been selected with considerable care, so as to be of the greatest use to the students.

Accrediting

The Institute is included in the list of schools accredited by the State University. The Leland Stanford Jr. University and Vassar College also accept the certificates of the Institute and similar privileges are accorded to its graduates in other institutions.

Admission

Applicants for admission to any department of the Institute will be required to furnish satisfactory evidence of good moral character and of honorable dismissal from the schools with which they were last connected. They are also urged to bring such statements from previous teachers concerning studies completed in other schools as will be helpful in determining their classification.

Discipline

It is taken for granted that students enter the Institute with serious purposes and that they will cheerfully conform to such regulations as may be made by the Faculty. The moral tone of the school is exceptionally good, and cases requiring severe discipline seldom occur.. Any conduct harmful to the moral standing of the school will, after due admonition, render a student liable to dismissal. Parents may at any time be asked to withdraw students from the Institute whose work is unsatisfactory by reason of lack of diligence.

Athletics

Encouragement is given to athletics, and the athletic organizations are under the immediate care of a committee of the Faculty. Membership in these organizations is subject to forfeiture for failure in any regular line of school work.

Societies

Three literary societies, the Gnome Club and the Debating Club, for young men, and the Omega Zeta Pi, for young women, are maintained by the students of the Institute with the coöperation of the Faculty, and are doing good work ; they afford an opportunity for training in debating, essay writing, declamation, extempore speaking, parliamentary practice, etc.

A Camera Club and a Mandolin and Guitar Club find also a hearty support among the students of the Institute.

The POLYTECHNIC, a monthly paper devoted to the interests of the school, is maintained by the students.

Exhibition Day

The last day of the spring term is devoted to an exhibition of the work of the year in the different departments. Articles made in the shops and studios remain in the charge of the various instructors until the close of Exhibition Day, when they may be claimed by their respective owners.

Scholarships

Through the generosity of some of the citizens of Pasadena a number of free scholarships have been founded for the benefit of worthy and needy students. The trustees have, in addition to those who are now enjoying these scholarships, a list of worthy applicants, and any person desirous of extending the influence of the school in this way may obtain full information from the Secretary.

Finances

The tuition fee, the same in all departments, is $75 a year, payable in advance, as follows:

First term	$30
Second term	30
Third term	15

Students in attendance only one or two terms pay at the rate of $30 a term.

Deposits are required in the following departments, payable at the beginning of each term. Unused portions thereof are refunded at the end of each term.

Biology	$1 00
Chemistry	5 00
Electrical Engineering	2 00
Geology	1 00
Physics	2 00

Laboratory and shop fees are required in the following departments, payable at the beginning of each term and not returnable:

Clay-modeling	$ 75
Cooking, Academy	4 00
Cooking, Normal	5 50
Forging	2 50
Free-hand Drawing and Painting, either or both	50
Pattern and Machine Shop	1 50
Sewing and Dress-making, either or both	50
Sloyd, Grammar Grades	1 00
Sloyd, Normal	1 25
Wood Shop	1 50
Wood-carving (1st year, 1st term)	50

In the Wood-carving, Drawing, Painting, Sewing and Dress-making departments, pupils will furnish their own materials; and in all other departments, where extra large or unusually costly articles are desired, the material for same will be paid for by the student.

Any damage done to the buildings, books, furniture, equipment, etc., or any tools lost, will be charged to the student responsible for same.

Term bills are payable strictly in advance, and students must submit the Secretary's receipt for the same to each instructor whose classes he may seek to enter.

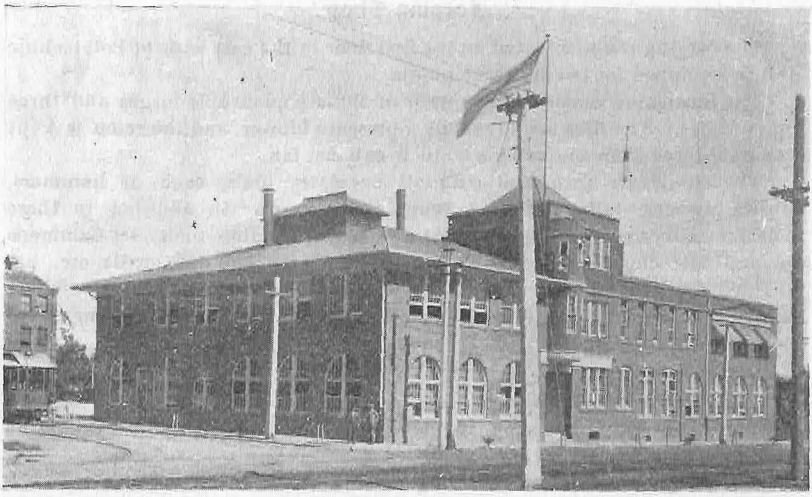
Diploma Fees

College	$5 00
Normal Department	1 25
Academy	1 25

Board

Good board can be obtained at from $4.50 to $6 per week. Any change in boarding place must be immediately reported at the office.

At the request of parents the Institute will assume responsibility for the care and oversight of students who board in homes approved by the officers of the Institute.



Polytechnic Hall

Most of the shops and laboratories of the Manual Training Department are located in Polytechnic Hall, which is a two-story brick structure with a frontage of 148 feet on Fair Oaks avenue and 80 feet on Chestnut street.

Wood Shop

The wood shop, which is located on the second floor, is provided with twenty work benches, at each of which four students can work daily. The benches are provided with a drawer for each student, in which, under lock, are placed the planes, chisels, and turning tools used by the student to whom that drawer is assigned. He is held responsible for these tools and is taught how to keep them in good condition for use.

Each bench has, besides, a set of tools which are used in common by four students.

At each student's right hand, on the bench, is a fourteen-inch lathe, while at the opposite end of the bench is placed his bench-shop and lightning grip wood-worker's vise. The shop is supplied with a large band-saw for cutting up stock, a fine fret-saw and a sand-papering machine for polishing large surfaces. It is thus equipped with all the appliances and tools necessary to do thorough work in joinery, turning, inlaying and scroll-sawing. A special pattern-maker's lathe and well equipped bench are provided for the use of the instructor.

Pattern Shop

The pattern shop adjoins the wood shop, and its equipment is similar. In addition, it is provided with a molding bench where the students may test their patterns and gain some knowledge of the principles of molding.

Forging Shop

The forging-room, situated on the first floor in the east wing of Polytechnic Hall, is equipped for twenty-three pupils.

The furnishing consists of five nests of Buffalo quadruple forges and three single forges. The fires are urged by a pressure blower, and the room is kept reasonably free from smoke by a 60-inch exhaust fan.

The anvils are furnished with all necessary tools, such as hammers, hardies, swages, fullers, flatters, tongs and squares. In addition to these tools for individual use, special sets of sledges, heading tools, set-hammers, hot and cold cutting chisels, punches, calipers, taps and dies, drills, etc., are provided for general use. A hand blower, double emery grinder, combined hand and power drill, and four blacksmith vises, complete the furnishing of the room.

Machine Shop

The machine shop is situated in a large room on the first floor.

The machines in this shop, including a 20-horse-power 3-phase induction motor, are of the latest style.

The shop contains the following machines: A 24-inch x 6-foot Powell planer; a Hendy shaper, 15-inch stroke; a 24-inch Prentiss Bros. drill; a Sigourney sensitive drill; a Brown & Sharp No. 1 universal milling machine; a two-wheel emery grinder; a grindstone; one 24-inch x 10 foot, one 16-inch x 8-foot and four 14-inch x 6-foot Reed lathes, one of which has a taper attachment; two Prentiss Bros. lathes, one Putnam & Sons lathes and one Hendy-Norton lathe, all 14-inch x 6-foot; and two speed lathes. In the tool-room are an 8-inch x 32-inch Mosely & Company bench lathe, and a Barnes foot-power lathe.

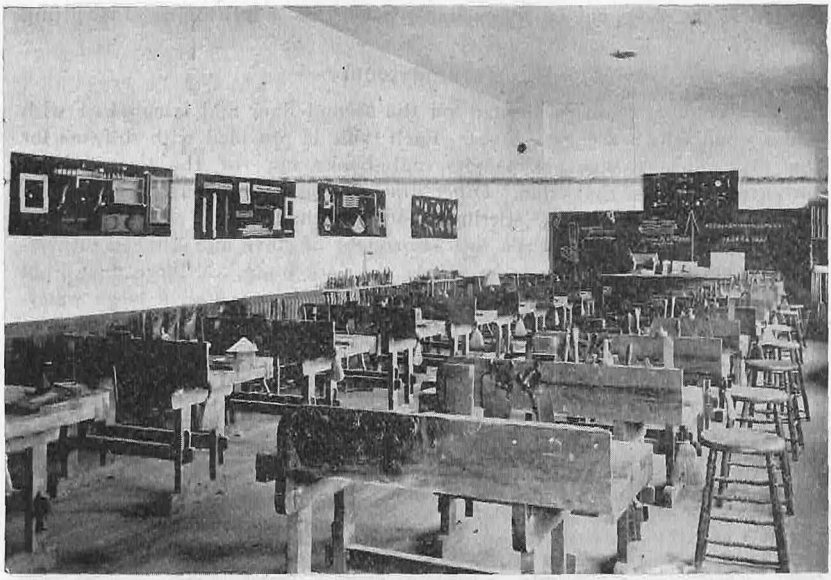
The following is a partial list of tools in the tool-room: One 24-inch, one 16-inch and three 12-inch four-jawed independent chucks; three 12-inch, two 9-inch and two 6-inch three-jawed universal chucks; milling and gear cutters, end mills and attachments for a milling machine; a set of twist drills from ¼-inch to 1¼-inch by 32nds; from 1¼ to 2-inch by 16ths; a set of hand reamers from ¼-inch to 1¼-inch by 32nds; a set of Rose reamers from ¼-inch to 1¼-inch by 16ths; a set of taps and dies from 7-64 to ¼-inch by 64ths, and taps from ¼ to 1 inch by 16ths; a full set of dogs and two sets of arbors. A revolving frame contains calipers, squares, etc.

A check system is used in giving out tools, the students in turn caring for the tool-room.

Sloyd Department

The Sloyd department occupies two adjacent, well lighted rooms on the first floor of Polytechnic Hall. One of these rooms is devoted to the work of the grammar grade pupils; the other is used exclusively by normal students. They are well equipped with Sloyd working-benches, each provided with a set of high grade cabinet-makers' tools. Chart, models, blackboards, cases for finished and unfinished work and compartments for drawing-materials, etc., are provided. A grindstone, run by motor, is placed in each room, together with all necessary appliances for thorough work.

The library of the normal department comprises works on psychology, pedagogy, history of education and manual training subjects.



SLOYD ROOM FOR GRAMMAR GRADES.

Sewing-room

The sewing and garment-making room is located on the first floor. It is equipped with large tables, six sewing machines, a gas iron-heater and pressing-boards. Along two sides of the room are high, narrow tables containing large, deep drawers for the individual use of students in this department. One

SEWING-ROOM.

portion of the room, cut off by curtains, is used as a retiring room for fitting purposes.

Cooking-room

The cooking-room is located on the second floor and is supplied with tables upon which are gas stoves. Each table is provided with drawers for the caps, aprons, sleeve-protectors, note-books, etc., of the two students assigned to work at that table. Other drawers contain cooking utensils, mixing and measuring-dishes, stirring-spoons, kitchen knives and forks, etc., while in cupboards beneath is a full assortment of stove and kitchen furnishings. At either end of the table towels, etc., are hung. A large dust-proof cupboard, containing meal and flour bins, dish closets, etc., a large water-

COOKING-ROOM.

heater, a gas range, a large refrigerator, and cupboards for furnishings are also provided.

Mechanical and Architectural Drawing-room

This is an east room, situated on the second floor, and is well lighted. It is furnished with tables which have lockers for each student. This room is also provided with models and casts illustrating the five orders of architecture. A number of valuable imported models for work on machine design are in use.

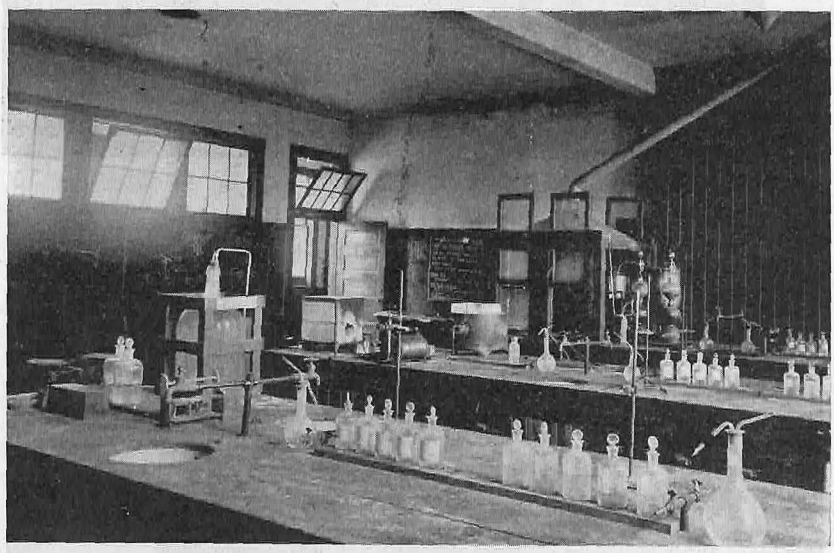
Chemical Laboratory

The department of Chemistry occupies three rooms on the second floor of Polytechnic Hall. They are well furnished with the usual tables, shelves, closets, hoods, etc., for convenient experimental work in general, analytical

and organic chemistry, and assaying, and are supplied with a large assortment of glassware, apparatus and chemicals.

The library of the department is kept in one of these rooms and contains standard works on general, analytical, theoretical and organic chemistry, and assaying.

Among the special apparatus in use in the department may be mentioned the following: Automatic gas generators, combustion furnace, assaying furnaces with Hoskins burner, apparatus for analysis of baking powders, apparatus for milk analysis, analytical and assay balances, Westphal specific gravity balance, mercurial barometer, spectroscope, and other apparatus for advanced work.



CHEMICAL LABORATORY.

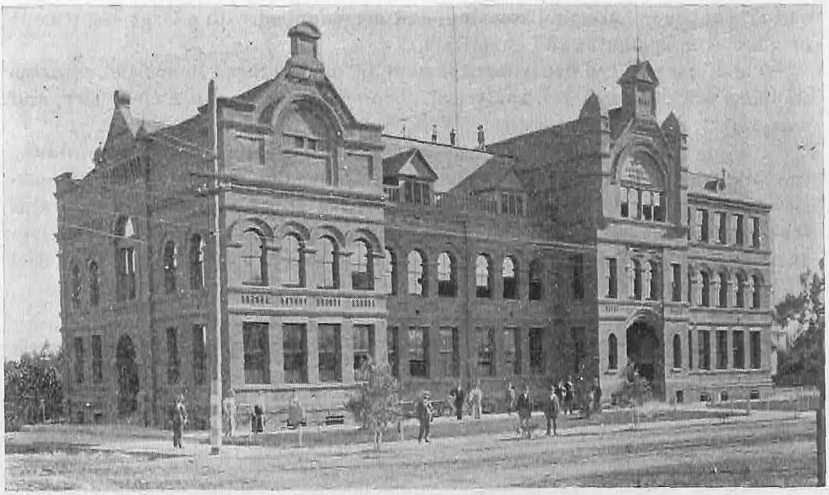
East Hall

This building stands on Chestnut street and Raymond avenue.

On the first floor are class-rooms for Latin and Greek, Mathematics, History, and the Sloyd Grammar School. A double office is located at the left of the main entrance, on the right is the physical laboratory, while at the rear are cloak and toilet-rooms for both ladies and gentlemen.

On the second floor are the assembly hall, the general library, cloak and toilet-rooms for ladies and gentlemen, and the quarters of the department of Biology.

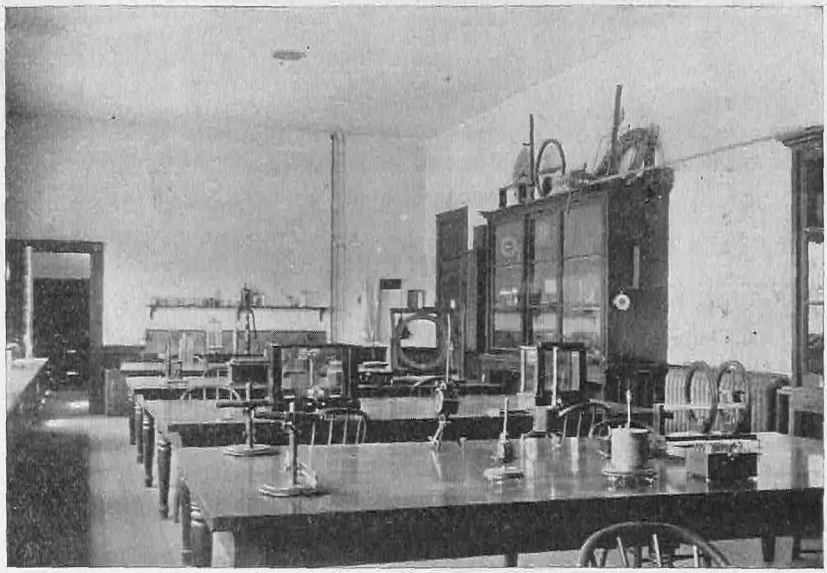
On the third floor are located the rooms for free-hand drawing, photography and blue printing, the society hall and the museum.



EAST HALL.

Physical and Engineering Laboratories

The department of Physics and Electrical Engineering occupies two rooms in East Hall. The Physical Laboratory is a large, well lighted room, fitted with gas and water pipes, electric wires, tables, lockers, cases, etc. This room is used for the elementary work in physics.

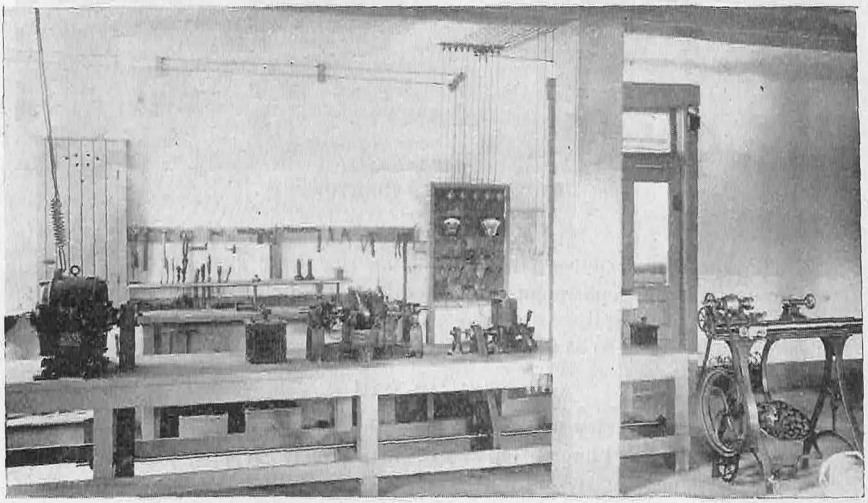


PHYSICAL LABORATORY.

On the basement floor of the East Hall is the Engineering Laboratory, a large room with cement floor, three heavy piers of brick and cement, work benches and cases. It is piped for gas and water and steam, and is wired for electric light and power. Here are found the facilities for precise work in advanced physics and electricity, in the solid foundations and freedom from outside disturbances.

In addition to much other apparatus for qualitative and quantitative experiments may be mentioned the following: Becker balance, micrometer calipers, aneroid and mercurial barometers, spectroscope, revolving mirror, compound microscope, Bunsen photometer, arc lamp for projection purposes, Deprez-D'Arsonval mirror galvanometer, Thompson tripod galvanometer, Queen ballistic galvanometer, universal and ordinary tangent galvanometers, resistance boxes, Queen testing set, earth inductor, Queen quadrant electrometer, one-third microfarad condenser, standard cells, slidemeter bridges, scales and telescopes, 6x12 inch induction coil, direct and alternating current voltmeters and ammeters, Prony brakes, cradle dynamometer, steam engine indicator, Amsler planimeter, speed indicator, direct and alternating current dynamos and motors, distributing switchboard, storage batteries, etc.

The Physical Laboratory also contains the library for this department, to which are continually being added the latest works on physics and electrical engineering.



A CORNER IN THE ELECTRICAL LABORATORY.

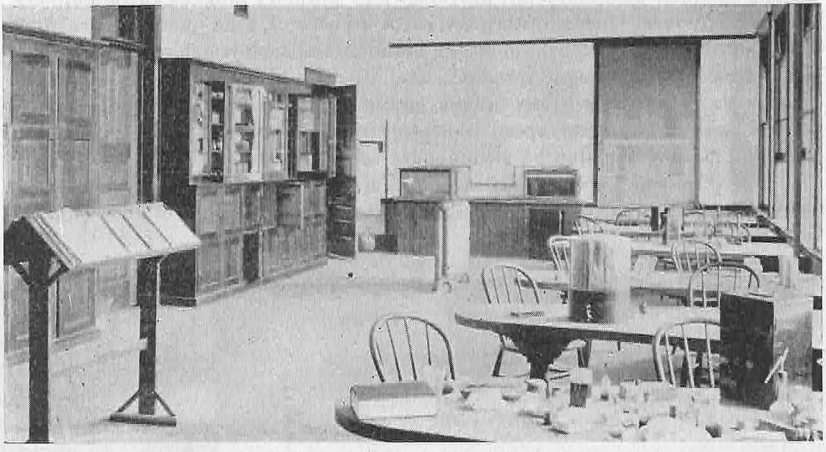
Biological Laboratory

The Biological department is on the second floor. Facing the north is the laboratory (50x19) lighted by nine large windows, with tables and lockers for the use of students, an aquarium, book-cases and shelves, with other acommodations necessary for the work of the department in the different fields of natural science. Each table is supplied with its own gas burner.

The laboratory is furnished with seventeen compound microscopes, by Bausch and Lomb, thirty dissecting microscopes, a microtome, camera lucida, steam and dry sterilizing ovens, an incubator and other appliances required in the higher grades of work.

Adjoining the laboratory is a large class-room, well lighted and fitted with darkening shutters which render it possible to exhibit objects on a screen either by solar or artificial light.

A small intermediate room furnishes accommodation for the collection required for the purposes of class teaching and individual study. Such collection is of course distinct both in purpose and nature from that of a museum, and must adjoin the laboratory and class-room.



BIOLOGICAL LABORATORY.

Museum

The museum occupies a large room on the third floor and contains the collections in the departments of Mineralogy, Geology, Botany, Zoölogy and Archæology. During the past year part of the material has been arranged, cleaned and ticketed so as to become of value for the purposes of study.

Society Hall

The various literary and art clubs of the Institute share in the use of a large hall on the third floor. This hall is attractively carpeted and furnished, and is provided with electric lights.

Free-hand Drawing, Painting and Designing Room

This room is fully equipped with all necessary appointments. The equipment is as follows: Adjustable desks, which can be transformed into tables or easels, at any angle desired; a large table with water connection adapted for mounting designs and grinding colors; blackboards for class demonstrations of perspective principles; a full line of wooden models, type solids, from which first lessons in perspective are given; a case of bric-a-brac and objects

of still-life furnishing material for sketches; a complete set of charts used in study of historic ornament and design; plaster casts of historic ornament, natural leaf-forms, masks, heads and full-length figures which serve as models in the rendering of light and shade in charcoal drawings.

Wood-carving and Clay-modeling Rooms

The departments of Wood-carving and Clay-modeling occupy rooms in the basement of East Hall, fitted with work tables, lockers with tools for students' use and cases for exhibition of work. These rooms are furnished with a good selection of casts and charts showing the various styles of historic ornament and a complete set of anatomical charts.

Gymnasium

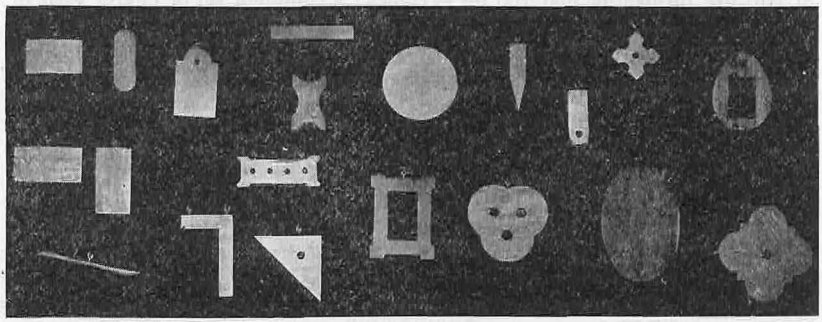
A large, well lighted room in the basement is occupied by the classes in gymnastics. It is provided with dumb-bells, Indian clubs, horizontal bar, and other gymnastic apparatus.

Sloyd Grammar School

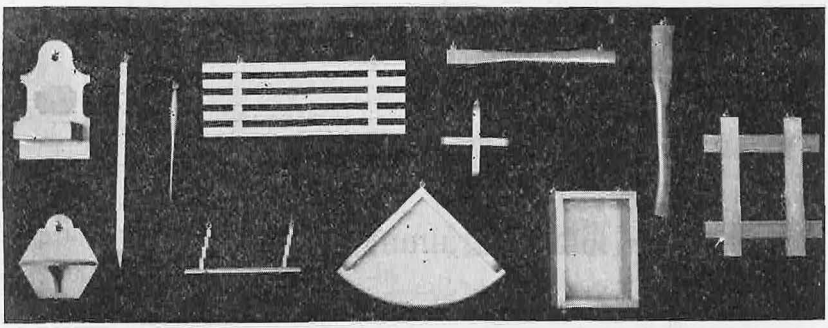
Pupils are admitted to this department who have completed the usual third year of the public school. All pupils not bringing certificates from other schools are required to pass an examination before being classified. The work, as arranged for this department, consists of two lines—the ordinary book work and the manual work.

Schedule of Work

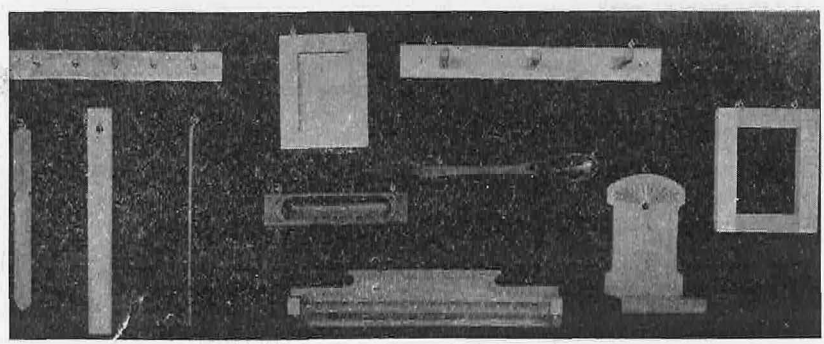
4TH GRADE	Arithmetic—Fundamental Operations. English—Language Lessons from Hyde's Book I. Myths, Miss Harrison's In Story Land, and Supplementary Reading. History and Geography—Elementary Work with Sand-modeling Science—Elementary Work on Plants and Animals. Drawing—Clay-modeling. Brush Work. Ambidextrous Drawing on Black-board. Writing—Vertical. Manual Work—Card-board Construction.



SLOYD MODELS.



SLOYD MODELS.



SLYOD MODELS.

5TH GRADE

Arithmetic—Review of Fundamental Operations. Factoring. Greatest Common Divisor. Least Common Multiple. Simple Work in Fractions. Regular Work in Wentworth's Grammar School Arithmetic.

English—Language Lessons in Hyde's Book II. Frank Carpenter's Geographical Reader. The Song of Hiawatha.

History and Geography—Montgomery's The Beginners' American History. Frye's Primary Geography with Sand-modeling.

Science—Elementary Work on Plants and Animals.

Drawing—Clay-modeling. Brush Work. Ambidextrous Drawing on Black-board.

Writing—Vertical.

Manual Work—Card-board Construction.

6TH GRADE

Arithmetic—Fractions. Denominate Numbers completed. Regular Work in Wentworth's Grammar School Arithmetic.

English—Language Lessons in Hyde's Book II completed. The Song of Hiawatha completed. John Burroughs' Birds and Bees. Evangeline. Rice's Speller.

History and Geography—Montgomery's The Beginners' American History completed. Frye's Advanced Geography with Map Drawing and Modeling.

Science—Elementary Work on Plants and Animals.

Drawing—Outline Drawing of Objects with Pencil. Water Color.

Writing—Vertical.

Manual Work—Sloyd.

7TH GRADE

Arithmetic—Applications of Percentage and Supplementary Work. Wentworth's Grammar School Arithmetic completed.

English—Elements of Grammar and Analysis. Regular Work in Reed and Kellogg's Higher Lessons in English. Evangeline completed. Charles Dudley Warner's A Hunting of the Deer. Lady of the Lake. Rice's Speller.

Geography—Geography completed. Fiske's United States History begun.

Elementary Science.

Drawing—Free-hand and Mechanical.

Writing—Vertical.

Manual Work—Sloyd.

8TH GRADE

Arithmetic—Arithmetic Reviewed, using the Algebraic Equation, and introducing Elementary Geometry. Regular Work in Walsh's Higher Arithmetic.
English—Reed and Kellogg's Higher Lessons in English completed. Lady of the Lake completed. Six Selections from Sketch Book. Rice's Speller.
History—Fiske's United States History completed.
Elementary Science.
Drawing—Free-hand and Mechanical.
Writing—Vertical.
Manual Work—Sloyd.

The course in English includes a thorough drill in writing, spelling and composition.

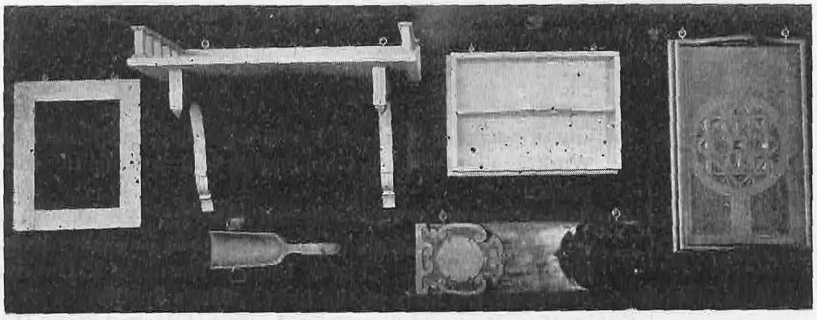
Instruction is given in Vocal Music—Theory and Sight-reading.

Systematic work in the gymnasium is offered.

Fourth, fifth and sixth grades will spend forty-five minutes daily in the Sloyd-room, the seventh and eighth grades, ninety minutes.

Working-drawings of all models precede their construction in wood. There are forty-eight models arranged in four courses. The models follow a natural sequence, proceeding from simple to more complex forms and introducing tools and exercises at proper intervals.

Each student will require the following articles: a drawing-board, a T-square, triangles, set of drawing instruments, thumb-tacks, drawing-paper, pencils and erasers, which need not cost over $4, and will be useful later in the Academy.



SLOYD MODELS.

Academy

Requirements for Admission

All candidates for admission to the Academy will be required to show their ability to compose, spell and punctuate, and to use capital letters correctly.

Students holding a certificate of graduation from a California Grammar

School, or any other school of equivalent grade, will be admitted without further examination. All other applicants will be subject to examination in Arithmetic, Grammar, English, Geography, and United States History.

In Arithmetic the examination will be upon the following subjects:

Fundamental Operations, Factoring, Greatest Common Divisor, Least Common Multiple, Fractions, Denominate Numbers, Applications of Percentage, Involution, Evolution, Mensuration, and the Metric System.

In Grammar and English, upon Elements of English Grammar and the Analysis of the Sentence, Lady of the Lake, and Evangeline.

Courses of Study

1. Roman numerals in the following table refer to subjects outlined on pages 25 to 36.

2. A subject once selected may not be dropped after two weeks from the time of choice, and must therefore be pursued until successfully completed. In special cases, for reasons satisfactory to the Executive Committee, this provision may be set aside.

3. If Latin, French or German be chosen it must be pursued for not less than two years to receive credits for the work. In the Literary Course two years of Spanish may be substituted for two years of Latin.

4. Girls may take Sloyd in place of Wood-carving and Clay-modeling.

5. In special cases courses may be arranged substituting book subjects for manual training work. A student completing such a course will be graduated and granted a diploma reciting that fact.

6. To a limited extent gymnastics may be substituted for other manual work.

7. The diploma of graduation is granted upon the completion of one of the following courses:

	Classical	Literary	Scientific
First Year	English I Mathematics I Latin I Drawing I Shop-work	English I Mathematics I German I, French I, or Latin I Drawing I Shop-work	English I Mathematics I Physical Geography and Physiology Drawing I Shop-work
Second Year	English II Mathematics II Latin II Drawing II Shop-work	English II Mathematics II German II, French II, or Latin II Drawing II Shop-work	English II Mathematics II Zoölogy and Botany Drawing II Shop-work
Third Year	English III History I Latin III Drawing III Shop-work	English III History I or II German I or French I Drawing III Shop-work	English III German I or French I Chemistry I Drawing III Shop-work
Fourth Year	History III Zoölogy and Botany, Chemistry I or Physics I Latin IV Drawing IV Shop-work	History III Zoölogy and Botany, Chemistry I or Physics I German II or French II Drawing IV Shop-work	History III Physics I Mathematics III German II or French II Drawing IV

Normal Department

Admission to this department can be gained by persons holding teachers' certificates and by graduates of High or Normal Schools or Colleges, or by others giving satisfactory evidence of attainments necessary to secure a teacher's certificate in this State. Three courses are offered — Sloyd, Domestic Science and Art. These courses are designed to fit persons to teach these subjects.

Sloyd

Teaching of students' classes and grading of finished work (drawings and models) are requirements, also the writing of a thesis on some subject relating to educational Manual Training. Occasional lectures are delivered by prominent professors, physicians and others apropos of the work.

To complete the course requires at least one school year.

The work is as follows:

THEORY.—The theoretical work includes general pyschology and pedagogy (see p. 38); also the mechanics, history, psychology and pedagogy of Sloyd. A comparative study of the various phases of manual training, and a study of woods, their physical and chemical properties, will also be taken up.

MANUAL WORK.—Drawing, including (1) Geometrical constructions; (2) Principles of representation; (3) Representation in reduced size by the use of scales; (4) Orthographic and isometric projections; (5) Linear perspective; (6) Inking and tracing; (7) Blue-printing and mounting; (8) Free-hand drawing throughout the course.

Completion of forty-three Sloyd models.

Completion of twelve wood-turning models.

Sharpening and care of tools.

There are eighty-one different tool exercises, involving the use of forty-six tools.

Domestic Science

1ST TERM:

Psychology; Physiology of Digestion; Chemistry of Fuels; Study of Cereals; Plans for Lessons in the Fifth Grade Cooking.

Practical work in cooking consists in preparing breakfast dishes; cooking and serving breakfasts; planning lessons and making models for sewing in Third, Fourth, Fifth, and Sixth Grades.

2D TERM:

Psychology; Pedagogy; Bacteriology; Chemistry of Human Body; Chemistry of Foods; Cooking and Serving Dinners and Luncheons. Plans for Sixth Grade Cooking and Sixth and Seventh Grade Sewing; Laundry work; Practice in Teaching; Drawing.

3D TERM:

Fancy Cooking; Catering; Demonstration Work; Sick Diet; Models for Eighth and Ninth Grade Sewing; Cutting; Fitting; Designing; Practice in Use of Water Colors; Thesis.

Lectures on the following subjects will be given during the year:

Digestion; Milling; House Sanitation; Public Hygiene; Emergencies

and Home Nursing; Domestic Architecture; Ornament in the Home; Manufacture of Cloth; Historic Costumes.

TEXT-BOOKS.—Mrs. Rorer's Cook Book; Applied Physiology, Overton; Corn Plants: Their Uses and Ways of Life, Sargent; Food, Church; Food and Feeding, Thompson; Eating and Drinking, Hoy.

Art

The Normal Art Course of one year aims to give students a training that will qualify them to fill positions as teachers and supervisors of art education in public schools. Students who enter must have a good general knowledge of drawing. The course includes work in perspective, both free-hand and mechanical.

Work in light and shade using pencil, pen and ink and charcoal as mediums; this includes still-life and cast-drawing, also sketching from life.

Water color.

History of ornament.

Work in design and applied ornament.

Clay-modeling.

Pedagogy and Psychology.

After completing the year's course, students may take an advanced course, and become qualified as instructors in higher grades of work.

HEADING FOR THE POLYTECHNIC.
Drawn by a Student in the Art Department.

College

The requirements for admission to the college department are as follows: (1) The completion of one of the Academy courses outlined on page 21; or (2) the completion of a course in an accredited High School or an approved Preparatory School; or (3) passing an examination upon English I, II and III, and Mathematics I and II, and any seven of the following subjects, as outlined on pages 25 to 36: Physical Geography, Botany and Zoölogy, Physics I, Chemistry I, Latin I, Latin II, Latin III, Latin IV, German I, German II, French I, French II, History I, History II, History III, Mathematics III. Any applicant offering Latin, French or German must present at least two years of each.

The following tables show the work required of students, beginning September, 1900, for the degree of A. B. in each department. To the subjects named below must be added elective work to make a total of 32 credits, two credits being allowed for each annual subject except Drawing, for which one credit is given.

	Chemistry	Electrical Engineering	Physics	Natural Science
First Year	Chemistry I Mathematics IV English V { French I or German I	Physics II Mathematics III English V Drawing—Mech. Shop-work	Physics II Mathematics III English V Chemistry II Drawing—Mech.	Intermediate Zoölogy and Botany
Second Year	Chemistry II Physics II Mathematics V { French II or German II	Electrical Engineering I Math. IV and V Chemistry II Drawing—Mech. Shop-work	Physics III Math. IV and V Chemistry III English VI Drawing—Mech.	Mineralogy Chemistry
Third Year	Chemistry III Mathematics VI Mineralogy History IV	Electrical Engineering II Math. VI and IX Drawing—Mech. Shop-work	Physics IV Math. VI and IX Drawing—Mech.	Advanced Botany and Zoölogy
Fourth Year	Chemistry IV	Electrical Engineering III Mathematics X	Physics V Mathematics VII	Geology and Palæontology

Roman numerals above refer to the subjects described below, pages 37 to 40.

The Institute reserves the right not to organize classes in any given subject, unless at least eight students elect said subject.

Subjects and Methods of Instruction in the Academy

Mathematics

I. Elementary Algebra. Fundamental operations; special attention given to the reading of problems; to the subjects of factors, simultaneous equations, involution, evolution, theory of indices, surds, imaginary quantities and quadratic equations. This is first year work. The text-book used is Hall and Knight's Elementary Algebra, edition of 1896, or Algebra for Schools and Colleges.

II. Plane Geometry. The usual college preparatory work in the five books of Plane Geometry is the work of the second year. The work includes the original propositions and problems in the text-book, supplemented by other original work. The text-book used is Phillips and Fisher's Elements of Geometry.

III. (a) Higher Algebra. Indeterminate equations of the first degree, inequalities, ratio, proportion, variation, arithmetical, geometrical and harmonical series, permutations and combinations, proof of binomial theorem for any index, logarithmic calculations, convergency and divergency of series, undetermined coefficients, continued fractions, summation of series, theory of equations with solution of cubics and biquadratics having commensurable roots, determinants. Text-book, Hall and Knight's Elementary Algebra, edition 1896, or Algebra for Schools and Colleges.

(b) Solid Geometry. The course given in Phillips and Fisher's Elements of Geometry, books VI–IX, inclusive. This subject with Higher Algebra, comprises the work of the third year in the regular course.

English

All regular students are required to take instruction in English during the first three years of the Academic Course, and may continue the subject during the fourth year. Frequent and varied written excersies are required. Special attention is given to spelling (Rice's Rational Speller), punctuation, paragraphing, and the forming of a plain, natural style. The aim of the department is to give the student such a thorough and practical knowledge of English as will enable him to express himself clearly, correctly and adequately in either professional or business life, and also to aid him in understanding and appreciating good literature.

The following subjects are made the basis of study. Those marked (a) are to be read, and the student will be expected to gain a general knowledge of their subject-matter and of the lives of the authors. Those marked (b) are to be critically studied:

I. (a) The Alhambra, Prisoner of Chillon, Horatius.

(b) Classic Myths, Snow Bound, Deserted Village, Cotter's Saturday Night.

II. (a) Sir Roger de Coverley, Winter Morning Walk.

(b) Merchant of Venice, Julius Cæsar, L'Allegro, Il Penseroso, Tam O'Shanter.

III. (a) Warren Hastings, Rape of the Lock, Alexander's Feast, The Bard.

(b) Comus, Lycidas, The Elegy in a Country Churchyard, Milton's Sonnets II, XVI, XIX, XXII, The Ancient Mariner, Thomson's Winter.

History

Three courses of history are offered and Course III is required of all before graduation.

I. Greek and Roman History. Careful study of the chief epochs of Greek and Roman History, with special reference to the development of the institutions and the growth and influence of the arts and literature of each. Four weeks at the beginning of the year are devoted to the history and civilization of ancient eastern nations. The text-book used is Myers and Allen's Ancient History, but collateral reading will be assigned, especially in the literature of the period studied.

II. Mediæval and Modern History. Particular attention is paid to institutional growth and the social life of the people. The text-book used is Myers' Mediæval and Modern History. The pupil is expected to familiarize himself also with Emerton's Introduction to the Middle Ages and Seebohm's Era of the Protestant Reformation.

III. American History and Civics. This course will consist of one-half year of American History and one-half year of Civics. In the latter special attention will be given to the study of the development of constitutiona government in the United States. Pupils will be expected to prepare bibliographies and do collateral reading.

Latin

I. Special attention given to forms and vocabularies; translation of the exercises from Latin into English and from English into Latin. Structure of Latin sentence and comparison with English sentence-structure. Paradigms will be mastered, not simply to be recited by rote, but that the pupil may be able to compare them and to see the laws which govern their formation.

II. Introduction to Roman Literature. The readings comprise selections from Cæsar, with a generous amount of sight-reading. Critical study of text with translation into idiomatic English. Prose composition; incidental study of history and geography throughout the year. Allen and Greenough's Grammar, and New Cæsar.

III. Cicero's Orations. Textual study, as in Cæsar, sight-reading and composition; historical allusions investigated; the system of Roman government; powers of officers; customs and occupations of the people; geography involved in the text is made an incidental topic of study. Allen and Greenough's New Cicero.

IV. Vergil's Æneid. Structure of the poem, with the theory and practice of scansion of Latin poetry, especially of the hexameter; translation into idiomatic English; study of the superstitions and religious rites of antiquity, as well as of the myths and legends; minute word study and analysis. Allen and Greenough's text.

Modern Languages

German

I. Careful attention to correct pronunciation; thorough drill in forms, and in the common principles of syntax; practice in translation at sight and at hearing and in conversation.

II. Exercises throughout the year in conversation, translation at hearing and composition. Reading of standard German prose.

French

College Preparatory work. The course in French consists of

I. The Grammar and Vocabulary, reading French in order to obtain the pronunciation, a study of the verbs, and frequent dictations. French conversation required in class.

Whitney's Practical French Grammar.

Guerber's Contes et Légendes.

II. Special study of the syntax and idioms and practice in French conversation. La Tulipe Noire—Alexandre Dumas; Le Voyage de Monsieur Perrichon, Labiche and Martin.

Spanish

I. Spanish Method of De Tornos; Worman's First and Second Spanish Readers. The cost of the three books is $2 25. Special attention is given to grammar and conversation.

II. Knapp's Spanish Grammar; selections from works of the best modern writers; correspondence; essays.

Natural Science

Physical Geography

This subject occupies one period daily during the first half of the year. The principal topics studied are the relation of the earth to the other planets; the agents that affect its surface, rivers, waves, tides, currents, glaciers, etc.; winds and storms, etc. Man's relation to the plants and animals around him also receives consideration. Text-book: Physical Geography, by W. M. Davis.

Physiology and Anatomy

These sciences are treated during the second half of the year in a manner that will enable a student to know the position of the principal organs, and to understand the functions which they discharge in the processes of life. The hygienic importance of the study is kept in view throughout the course. Text-book: Martin's Human Body, last edition.

Zoölogy

The purpose of this study is to afford students an opportunity of exam-

ining the leading types of animal life, both vertebrate and invertebrate, and also of becoming acquainted with some of the common living objects with which they meet in daily life. The relation of man to the rest of the organic creation, the advantages which he derives, and the losses which he suffers from them also receive attention. Text-book: Packard's First Lessons in Zoölogy.

Botany

In this subject the elementary principles of the science are taken up, including the classification and structure of the plant. Some attention is given to the economic uses of the vegetable kingdom. Text-book: Rattan's Popular California Flora.

Chemistry

I. (a) General Chemistry. The first half-year's work consists of the study of the non-metallic elements and the essentials of chemical theory. Its principal aim is to develop scientific methods of observation and thought, to which the acquirement of the mere facts of chemistry is considered of secondary importance. To this end experiments are selected which require considerable care in manipulation, and illustrate quantitative relations of substances so far as possible. The time spent in laboratory work is 5¼ hours per week. The experimental work is individual, and careful notes must be daily submitted to the instructor for examination. Accompanying the laboratory work there are one lecture and two recitations per week. The lectures discuss some of the industrial applications of the chemistry of the elements studied in the laboratory. Considerable attention is paid to the solution of problems.

Text-book: Freer's Elements of Chemistry. Preparation required, Mathematics I, English I.

Students are strongly advised to defer beginning chemistry until the third year of their academy course.

(b) The metals are studied in the second half-year through the medium of qualitative analysis, and lectures are given on the metallurgy and industrial chemistry of the principal elements.

Text-book: Qualitative Analysis for Secondary Schools, Irish. Preparation required, Chemistry I a.

Physics

I. General elementary course in physics. Instruction is given by means of laboratory work with discussion of experiments performed and study of references to some text or books in library. Experiments are performed by the student himself. They are not illustrations of some principle already learned, but lead the student to deduce the principles from the phenomena

observed. Whenever possible quantitative experiments are employed. Careful notes are required in this and the following courses. The work is made as largely individual as possible, so that the student may proceed as rapidly as his ability permits.

Open to those who have completed algebra and plane geometry.

Shop-work

Wood Work

I. This course consists of work in joinery, turning and cabinet work. It has been the desire to arrange a course which would be valuable, considering it from both an educational and industrial standpoint. The exercises have been designed so that there would be a gradual growth in the difficulty of construction, and at the same time the presenting of practical, useful and aesthetic elements. Such a series of exercises would naturally call forth a gradual development in the ability of the student and also cultivate a sense for beauty and proportion.

The work is given to the student by means of blue-prints taken from working-drawings. From these he constructs his models. These drawings are made with the greatest care and accuracy. Helpful notes in reference to

ORIGINAL WORK IN JOINERY AND INLAYING.

the work accompany each drawing. This method acquaints the student with the practical use of accurate working-drawings. After the models have been made he then makes his own working-drawings from them.

The course in joinery is composed of eighteen progressive exercises,

involving the construction of sixteen different joints, the drawing of analytical and free-hand curves, and the use of fifty different tools and machines.

The student is allowed to display his individuality in the exercises in inlaying and cabinet-work These exercises are made from his own drawings and after his own designs, which are submitted to the instructor before the work is begun.

The course in turning consists of fifteen progressive exercises given in the following order: center-work, face-plate-work, chucked-work, and long-work.

The above problems in wood work are taken in the order of joinery, inlaying, turning and cabinet-work. This work is calculated to be finished by the average student in one school year, working one and one-half hours daily.

For students who have completed the Sloyd course a special course in wood work is offered, on the completion of which they will receive full wood-shop credit. This course consists of selected exercises in joinery and turning, and a finished piece in inlaying. The turning includes advance chucked-work and face-plate-work. This course occupies two terms.

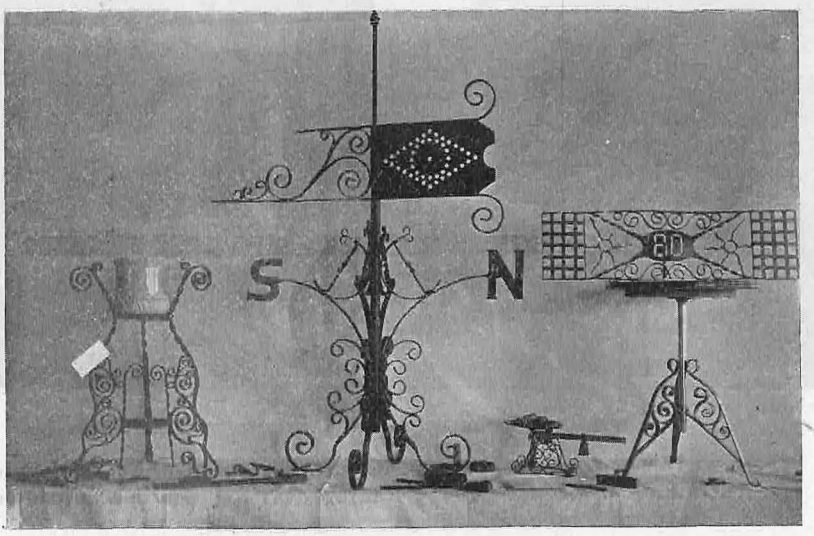
Forging

II. Forge. Mechanism and care of forge; preparation of forge for fire; building and managing fire.

Tools. Instruction in the care and use of tools.

Processes. The processes involved in the year's work are: drawing, bending, upsetting, different kinds of welding, punching, drilling, fullering, swaging, cutting cold, chipping, cutting hot, splitting, twisting, filing, brazing, hardening, tempering, and ornamental iron work.

Tempering. Hardening in water and oil, tempering or drawing, temper-



ORNAMENTAL IRON WORK.

atures and colors used, and processes in tempering tools for wood and iron work.

Ornamental Iron Work. At the close of the year each student will be required to design and make some special piece involving the various elements of forging mastered.

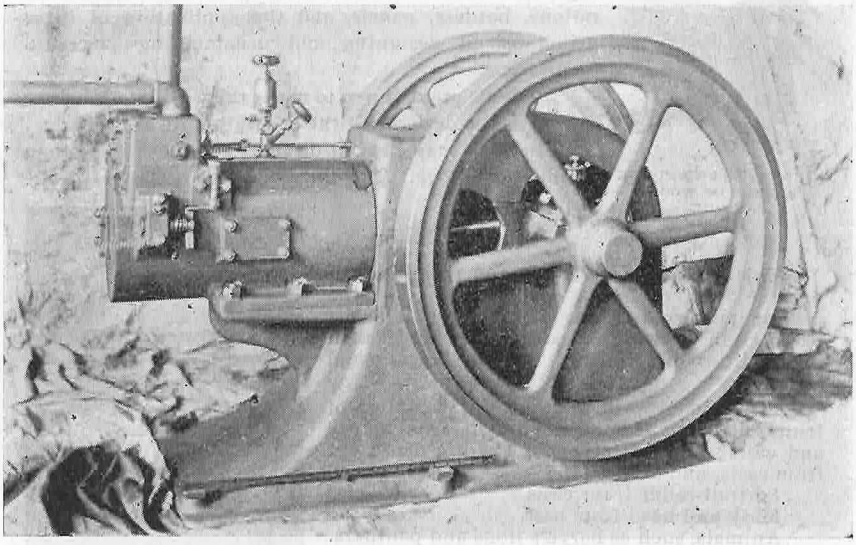
Pattern-making and Machine-shop Practice

III. The entire year is spent in two courses of exercises, one in pattern-making and the other in machine work. These courses are arranged to embody the different principles of pattern and machine work, and students are not allowed to do any finished pieces until these exercises are completed.

The course in pattern-making brings out the principles of drawing, allowing for finish and shrinkage, split-patterns, and rib-work, segment-work, simple and complex core-work, etc. Some work in molding is required, and a suitable bench and tools are provided.

In the machine shop the student begins with bench and vise work, including chipping, filing, polishing, and brass finishing.

The course in machine work includes also work on lathes, such as plain turning, right and left and inside thread-cutting, turning tapers, hand-tool work, and all kinds of chuck-work. Also each student does some work on the planer, shaper, milling machine, and drill-presses. Special attention is given to accuracy of measurements, finish of work, and care of machines and tools.



ENGINE FROM MACHINE SHOP.

IV. This course gives opportunity for original work, each student being expected to submit designs for some piece of machinery and, when these are

approved by the instructor, to make the necessary patterns and to complete the machine and finishing work. Two or more students may unite on some more complicated piece of machinery, and opportunity is offered for the equivalent work on pieces made for the Institute where students do not care to incur the expense of building machinery for themselves.

The scope of this course is illustrated by the following statement of work done this year: There have been constructed a 4-horse power gasoline engine, vertical, two-cycle, marine type; a 5-horse power horizontal gas engine, four-cycle (shown in illustration); a 2-horse power gasoline automobile motor; a set of tables, boring and facing heads, etc., for converting the 24-inch Reed lathe into a horizontal boring mill; a 4-inch jaw swivel vise; and various other special tools and apparatus.

Text-books are not used.

Subjects required in preparation are wood work, forging, and elementary geometry.

STUDENT'S PEN AND INK SKETCH OF WOOD-CARVING

Wood-carving

This work aims to give practical application to the principles gained in the study of drawing and modeling. The year's work includes preliminary exercises for the care and use of tools, horizontal and vertical decoration, plane and curved surface carving, incising and stamping, low relief in historic styles.

Instruction and practice are given in design, including elements of ornament, scroll patterns, surface decorations, borders, panels, and the application of these principles in designing and ornamenting pieces of furniture.

Students are required to make the working-drawings as well as the designs for the decoration of all work.

Students may elect to do more advanced work than is outlined above. The finished work belongs to the pupil.

Modeling

This work is of great value in comprehending the facts of form; as drawing is but the representation of form, the student is made stronger in drawing by coming in contact with the realities of form, viz., length, breadth and thickness.

First year's work includes the modeling of fruits, flowers and sprays of foliage from nature and casts; different styles of historic ornament from casts, and original designs.

Portrait-relief from casts.

Mask and head from cast.

Animals, such as Barye's lions and panthers.

Second year—modeling portrait busts from cast; full length figure from cast; portrait busts from life. No extra expense is attached to work in clay unless pupils wish to preserve their work in plaster.

MODELED FROM LIFE BY STUDENT IN CLAY-MODELING

Plain Sewing

(a) Two periods each day. The fundamental principles of hand-sewing, basting, running, hemming, hem-stitching, tucking, felling, sewing on lace, darning, etc.

(b) Machine-sewing, plain stitching, hemming, tucking and gathering.

(c) Continuation of plain sewing. Practical experience in shopping by each pupil.

During the year a complete suit of underwear must be made by each pupil; also a shirt waist, a cotton dress, and a wrapper or dressing sack. Some preliminary study in designing for the dressmaking course will be done. Neatness and accuracy are demanded in all work.

Dress-making

Two periods each day. Pupils must complete the plain sewing course before entering this class, the work of which includes the following:

(a) Taking measures for drafting; drafting tight-fitting basque with bias darts; cutting, fitting, and finishing waists; trimming and draping the same; putting on collars and revers; drafting, cutting, and making sleeves; cutting gored and circular skirts; lining, interlining, and hanging them.

(b) Choice of materials, cost, amount, harmony of colors; appropriateness of dress to individual; practical experience in shopping.

(c) Matching stripes, plaids and figured goods; fitting stout figures.

(d) During the year a gown, a house jacket and a waist must be made by each pupil.

Cooking

(a) The fundamental principles of cookery and practice in the preparation of vegetables, soups, meats, cereals, biscuits, eggs; cost of materials; care of kitchen; serving a simple dinner.

(b) Instruction in the preparation of more complicated dishes; bread, fish, oysters, poultry, etc.; setting and serving a table.

(c) Entrées, salads, desserts, pastry, cake and creams; jellies, canning of fruits and vegetables.

(d) Menus; marketing; giving of entire breakfasts, luncheons and dinners.

(e) In connection with cookery, instruction will be given in the classification and composition of foods, the action of water upon starch and albumen; tea, coffee and alcohol, their food value and effects upon the system; the yeast plant; fermentation—lactic, vinous and acetic; baking powders, soda and cream of tartar.

Other subjects treated will be the development of odors and flavors of foods; food for the sick; food adulterations; the cheapest and most wholesome foods; physiology of digestion, and a general plan of household work.

Special lectures on Chemistry of Cookery, and on Bacteriology.

Throughout the year dietaries and nutrition will be kept constantly in mind, the object being as much to study the scientific principles of foods as to prepare palatable viands.

Books required: Mrs. Rorer's cook-book, blank-books for chemistry notes.

A class in cooking will also be organized for gentlemen for a three months' course.

Drawing, Designing and Painting

Free-hand

I. Principles of perspective as applied in the drawing of simple type forms, beginning with cube, cylinder, sphere, etc., followed by objects based on type solids.

Parallel and angular perspective, convergence of lines, vanishing points and foreshortening are demonstrated on blackboard by the most simple and practical methods.

Perspective drawings of wood and iron shop exercises.

Outline, shade, shadow and artistic rendering of line are developed in the execution of drawings of rooms, houses and machinery.

Drawing of scrolls, and their original adaptation in prescribed borders, spandrels, and geometric fields.

Original designs for ornamental iron work and wood-carving.

II. Perspective as applied in the drawing of groups of objects ; relative proportion and study of values ; light and shade ; the artistic grouping of objects of still-life.

PEN AND INK DRAWING OF HEAD FROM LIFE

Drawings of the same are made in pencil, pen and ink, sepia and charcoal. Small sketchy effects, in which impressions of light and shade are jotted down, are the outgrowth of the pencil and pen and ink work. Charcoal studies are executed on a larger scale, requiring careful study of details.

Original adaptation of historic ornament in designs for tiles, book-covers and wall paper. Designing from natural plant forms, conventionalizing flowers, etc. Color is first introduced by flat washes of water color to these designs.

III. Painting in water-colors from groups of still-life, using full palette of color in portrayal of fruit and flowers.

Study of the history of art and leading styles of ornament.

Pupils must pass a written examination on history of art, illustrating the same with memory sketches.

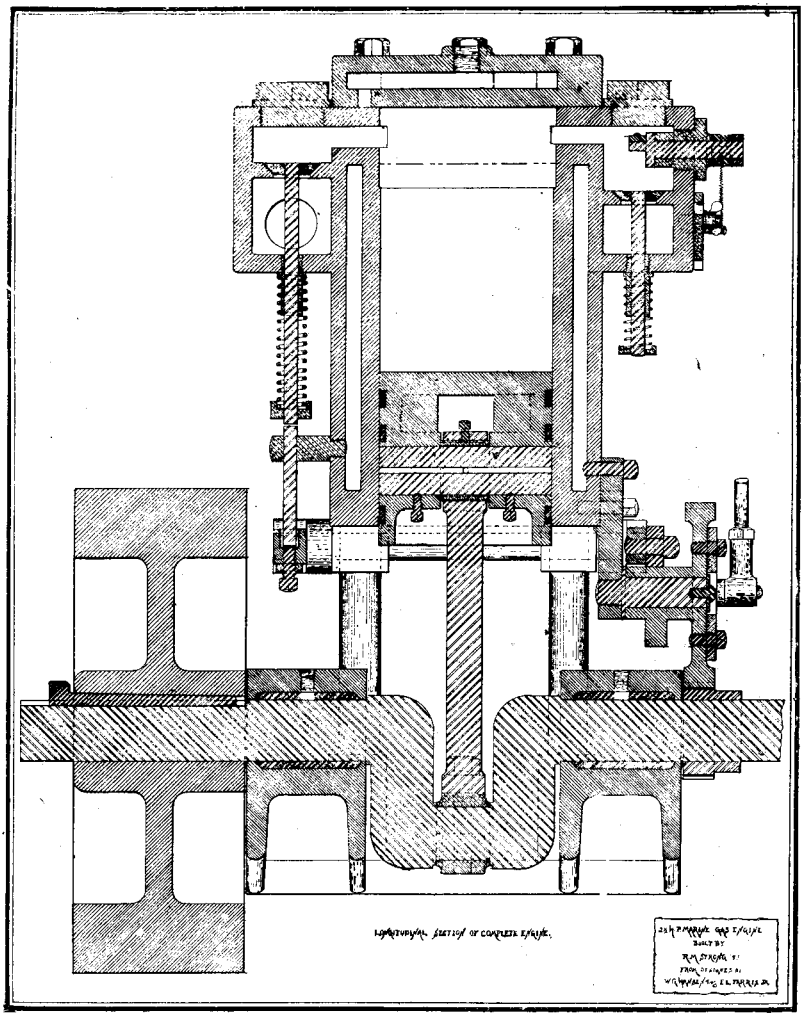
IV. Drawing of mask and head from plaster casts in pencil, pen and ink and charcoal.

Poster designing, drawing full length figure from cast, "Greek Slave," "Venus de Milo," etc.

Sketching from life and costumed model.

V. Special course for students in Sloyd Normal Department. An abbreviated course adapted to the requirements of public school work, introducing latest method of teaching children to handle brush prior to pencil.

Model drawing, perspective sketching, study of historic ornament and original designing.


LONGITUDINAL SECTION OF COMPLETE ENGINE.

Mechanical

It is designed to make the course in mechanical drawing auxiliary to other work at the Institute. Those who are intending to pursue special lines will have such work as seems best adapted to their needs. Those who desire it, for instance, can take a course which shall involve much study of the laws of perspective, using one of the best treatises in English—Ware's Modern Perspective. Again, others may take work especially adapted to the needs of civil, mechanical or electrical engineers.

When work, not in the regular courses, is taken by the student, it will be credited as regular course work should the student desire to enter the regular course at some subsequent time, provided that in quality and quantity it is a fair substitute for regular course work. At all times endeavor will be made to adapt the work to the needs and ability of the individual student.

Drawing instruments, paper, pencils, etc., are furnished by the student.

I. Selection and use of drawing instruments; fundamental principles of orthographic projection with applications in making working-drawings of articles constructed in the wood shop, illustrating different constructions used in carpentering and cabinet-making. Rectangular and circular forms are chiefly used in these models and other forms involving more difficulty are gradually introduced. Tracing and blue-printing of working-drawings. For those who do not take the course in wood work, models and copies are provided.

II. Shop-drawings of iron, brass and wood work; development of prismoidal, pyramidal and conical surfaces, and projections of the intersections of various surfaces with each other; isometric and cavalier projections; simple constructions of shades and shadows; fundamental principles of perspective; simple constructions of shades and shadows in perspective; methods of coloring drawings.

III. Drawings of plans, elevations and sections of machines; drawings of patterns to be made in the pattern-shop; drawings in perspective of furniture, rooms and buildings from actual measurements by the methods practically used by architects and designers; drawings of architectural detail; drawing of involute and epicycloidal gearing from models and with odontographs; topographical drawing; laying out railway curves, profiles, etc.

IV. Drawings of machines with practice in design, using the principles laid down by Unwin, Reauleaux and others; drawings of the architectural orders; methods of artistic rendering used by architects, applied to drawings of buildings; perspective of curved forms with their shades and shadows; elements of graphic arithmetic, composition and resolution of forces, studied graphically with diagrams of stresses for roof and bridge trusses.

Gymnastics

This course consists of both corrective and recreative work, for boys and girls. Advanced pupils will be given instruction in fencing and other heavy branches.

Students who desire special suggestions and advice regarding their physical work, should consult with the Physical Director.

Subjects and Methods of Instruction in the College

Mathematics

In all the courses given below, stress will be laid on such parts of mathematics as are of especial help in scientific work.

IV. (a) Trigonometry. The course comprises plane and spherical trigonometry. Problems from text-books proven in the field, also problems solved by the class.

(b) Plane Surveying. Survey with chain alone; with compass and chain; leveling with "Y" level; making profiles of elevations and grades. Adjustment of transit and level. Plotting the field-work, also field-work done from plottings.

Higher Surveying. Trigonometrical surveying. Running railroad preliminary lines; setting slope stakes; plotting cross-sections; calculating cut and fill, running grade lines for irrigating ditches, or roads.

(c) Field Engineering. Theory and practice of laying out curves, side-tracks, economic principles of railway location and construction. Carhart's Field Book will be used as a text-book.

Land Surveying. Plotting field-work, using various methods of representing topography, calculation of areas by latitudes and departures, also by use of the planimeter. Henck's and Searle's Field Books are used.

V. Analytic Geometry of Two Dimensions, Analytic Geometry of Three Dimensions. Both require one year.

VI. Differential and Integral Calculus. One year.

VII. A course in Differential Equations with especial reference to such applications as occur in Physics and Engineering. One year.

VIII. Mathematical theory of Alternating Currents in Electricity.

IX. A course in Descriptive Geometry.

X. A course in Theoretical and Applied Mechanics. The work in Statics will contain applications to the science of stresses in bridges and framed structures, and that in Dynamics to the theory of machines for measuring work, the theory of energy in its application to the theory of steam and other heat engines, etc.

English

IV. (a) Silas Marner, Vicar of Wakefield, Laodamia, Transcript from Euripides, Prologue to Canterbury Tales. (b) Burke on Conciliation with America, Webster in Reply to Hayne, Macaulay on Reform, Eve of St. Agnes, The Cloud, the Nightingale, The Skylark, Tintern Abbey, Ode on Intimations of Immortality, Ode to Duty, The Passing of Arthur, Vision of Sir Launfal.

V. Rhetoric and English Composition.

VI. The development of English Literature. Written exercises and themes will be required throughout these courses. Note-books and other written exercises in other departments will be subject to examination and correction by the English instructors.

History

IV. United States History ; European History since 1815.

V. History of England.

Latin

I, II, III and IV as outlined on page 26.

German

I and II as outlined on page 27.

French

I and II as outlined on page 27.

Pedagogy and Psychology

One year's work is offered in Psychology and Pedagogy. The work is planned so as to accommodate those who have pursued professional studies elsewhere.

For the first half year James' Psychology is made the basis of the work. Sully, Dewey, Compayré, and other authorities are freely used. The second half year's work deals mainly with a study of scientific pedagogy. Free discussion on means and methods, etc., is encouraged. McMurry's General Method; Talks on Teaching, by Parker; Putnam's Manual of Pedagogy; Elements of Pedagogy, by White ; and History of Education, by Seeley, are used.

To the end that the greatest possible good may be secured to the students, the aim is to keep the child and his needs and capabilities constantly in mind.

Students will provide themselves with the following books :

James' Psychology, McMurry's General Method, The Theory of Educational Sloyd, Salomon, The Educational Value of Manual Training, Woodward.

Natural Science

III. Intermediate Zoölogy and Botany. Text-books: Needham's Elementary Lessons in Zoölogy, Spalding's Introduction to Botany.

IV. Mineralogy. This course includes the elements of mineralogy or a study of the most important and abundant non-metallic and metallic minerals. For undertaking this subject an acquaintance with the elements of chemistry is required, and the following books are necessary: Crosby's Mineralogical Tables, Dana's Elementary Mineralogy.

V. Advanced Botany and Zoölogy. Text-books: Campbell's Structural and Systematic Botany, Orton's Comparative Zoölogy.

VI. Geology. The course in geology in the senior year includes a study of the processes and changes through which the earth has passed during its history, of the fossil remains that indicate the general course of the evolution of life, and of the principles of geological field-work and the representation of the results in maps and sections. Text-book: Scott's Introduction to Geology. Preparation required: Mineralogy (IV).

Advanced Work

Advanced work following the above preliminary studies may be taken later in the course by those who satisfy the professor in this department that they are qualified to undertake it. The work will be for the most part individual and students will be expected to conduct it with only general superintendence and advice. It will be arranged for those who wish to become practically acquainted with scientific methods and to study scientific subjects of a higher grade than those which can be taught in classes. Any of the many topics of natural science may be chosen according to the bent of the student, who must furnish the simpler and less expensive part of the outfit required, the more costly and valuable portion being supplied by the Institute, subject to compensation for damage during use.

Chemistry

I. Course outlined on page 28.

II. (a) Qualitative Analysis is reviewed and completed in the first half of the second year. The work consists of the analysis of unknowns of fairly complicated nature, including minerals and industrial products. The laboratory work is accompanied by critical study of the processes used. Text-book, A. A. Noyes' Qualitative Chemical Analysis Students are also advised to procure Prescott and Johnson's Qualitative Analysis. Preparation required, Chemistry I and Physics I.

(b) Inorganic Preparations. Method of preparation and purification of inorganic chemicals, starting with raw materials. Tests for impurities. Discussion of reactions. Preparation required, Chemistry II (a).

(c) Theoretical Chemistry. Important points of the theories of chemistry. Two recitations per week for seventeen weeks. Text-book, Remsen's Theoretical Chemistry. Preparation required, Chemistry II (a).

III. (a). Organic Chemistry. Recitations on typical members and reactions of the various groups of carbon compounds. Laboratory work upon class reactions. Text-books : Remsen's Organic Chemistry, Noyes and Mulliken's Class Reactions of Organic Compounds. Two recitations per week through the year. Laboratory work six hours per week for seventeen weeks. Preparation required, Chemistry II (a), (c).

(b). Quantitative Analysis. Typical determinations in gravimetric and volumetric analysis. Discussion of methods and solution of stoichiometrical problems. Seven and one-half hours per week for eighteen weeks. Text-book : Talbot's Quantitative Analysis. Preparation required, Chemistry II (a).

(c). Assaying. Fire assay for gold, silver and lead. Volumetric assay for copper and silver. Seven and one-half hours per week for twelve weeks. Preparation required, Chemistry III (b). This course must be accompanied by mineralogy.

IV. (a). Quantitative Analysis. Advanced work, comprising analysis of industrial products, minerals, milk, water, foods, air, etc. Preparation required, Chemistry III (b).

(b). Industrial Chemistry. Lectures and readings on important chemical industries, inorganic and organic. Two exercises per week for seventeen weeks.

(c). History of Chemistry, and reading of French and German chemical literature. Two exercises per week for eighteen weeks. Preparation required, German II, Chemistry II (a).

Physics

I. Course outlined on page 28.

II. General advanced course in Physics. This course is intended for those who wish to continue their work in physics or pursue the work in electrical engineering. Recitations are accompanied by laboratory work, consisting of a series of physical measurements intended to supplement Physics I.

Theory of Physics by Ames, and a Manual of Experiments in Physics by Ames and Bliss are used as texts.

Open to those who have completed Physics I and Chemistry I.

III. Electricity and Magnetism. This course is practically identical with Electrical Engineering I. The laboratory work in it and the following courses in Physics consist largely of quantitative experiments intended to acquaint the student with the use and adjustment of physical instruments, to familiarize him with and enable him to use with skill and precision the different methods for determining physical constants. A study is also made of the sources of error incidental to physical measurements, and the means of eliminating them or correcting for them.

Open to those who have completed Physics II.

IV. Mechanics and Heat.

V. Light and Sound. IV and V will not be offered in 1900–01.

Electrical Engineering

I. Electrical measurements. This course includes such work as determination of horizontal component of earth's magnetism, measurement of resistance, measurement of current, determination of galvanometer constants, measurement of electromotive force, measurement of capacity of condensers, study of magnetic qualities of iron, insulation tests, location of line faults study of characteristic curves of dynamos and motors.

Instruction is given by work in laboratory, together with discussion of experimental work and reading references. Experiments are selected from various manuals.

Open to those who have completed Physics II.

II. Theory and use of steam engine indicator, cradle dynamometer and Prony brake; efficiency tests of dynamos and motors; photometry; study of general technical applications of electricity as telegraphy, telephony, electric lighting, etc.

Instruction is given by means of laboratory work, recitations and lectures. Electrical Engineering by Slingo and Brooker is used as a basis for practical work.

Open to those who have completed Electrical Engineering I.

III. (a) Study of periodic currents by analytical and graphical methods.
(b) Design of dynamos, motors and transformers.
(c) Electric distribution and transmission of power.

Instruction is given by means of laboratory work, recitations and lectures. Periodic Currents by Bedell and Crehore is used as a text in (a). In the latter part of the year the usual methods of instruction are supplemented by visits to the various electrical plants in Pasadena and Los Angeles, and by talks from men engaged in commercial electrical work.

Open to those who have completed Electrical Engineering II, and Differential and Integral Calculus.

List of Students

1899–1900

College

Brown, Howell Chambers.....Pasadena
Buchanan, Jerome R.....Pasadena
Davidson, Leonard E.....Kingsburg
Dyer, Kirk Worrell.....Pasadena
Fordyce, Mabel.....Pasadena
Gaylord, James Mason.....Pasadena
Harris, Irving.....Pomona
Hayes, Frank.....Monrovia
Holton, Charles Rufus.....Ramona
Kellogg, Leda Fay.....Pasadena
Myers, Harry Eugene.....Pasadena
Nicholson, Maude Louise.....Pasadena
Olson, Albert L.....Kingsburg
Poage, Jewell Asberina.....Pasadena
Shoemaker, Richard Woolsey.....Pasadena
Traphagen, Arthur Romeyne.....Pasadena

Normal

Anderson, Lucy J.....Pasadena
Ball, Kate F.....San Bernardino
Brooks, Ada Mae.....Pasadena
Burt, Mrs. Frances S.....Pasadena
Collins, A. H.....Pasadena
Dobbs, Ella V.....Pasadena
Glenn, Maud.....Pasadena
Gower, Mary L.....Los Angeles
Hazzard, Mrs. Jessica C.....Whittier
Heald, Oscar Leslie.....Pasadena
Holton, Lola N.....Ramona
Lyde, Louise.....Pasadena
Martin, Walter W.....Pomona
Metcalf, Stella Mae.....Pasadena
Moore, Nellie.....Glendora
Morgan, Mabel V.....Los Angeles
Peabody, Sallie.....Santa Ana
Pearce, Mrs. Susan E.....Pasadena
Scott, Harriet M.....Detroit, Michigan
Stevens, Elizabeth.....Los Angeles
Toll, Mabel Edith.....Baldwinsville, N. Y.
Van Hook, Kate.....Hiawatha, Kans.
Wilde, Francenia.....Pasadena
Wright, Charles H.....Pasadena

Academy

Adams, Guy E.....Covina
Allen, Paul Joseph.....North Pasadena
Anderson, James Earl.....Exeter
Anderson, John.....Pasadena
Ayres, Enos.....Denver, Colo.
Baker, Edwin.....Pasadena
Bandini, Ralph.....Pasadena
Barker, Karl Herbert.....Pasadena
Bassett, Louis.....Pasadena
Beale, Nellie.....Ventura

Beeson, Edgar Washburn.....Los Angeles
Belknap, Fred Roland.....La Cañada
Bender, Wm. Burr.....Glendora
Bishop, Chas. A.....Alhambra
Bixby, Edward H.....Lordsburg
Blankenhorn, George Stevens.....Pasadena
Blankenhorn, Mac.....Pasadena
Bogue, Henry.....Glendale
Braddock, Fred B.....Pasadena
Bradley, Ernest.....Glendora
Brahm, Bertram.....Los Angeles
Brown, Walter M.....Pasadena
Burhans, Harry.....Pasadena
Burnham, Ralph F.....Orange
Burtt, Dodge.....Pasadena
Burtt, Fletcher Hines.....Pasadena
Campbell, Mabel.....Pasadena
Cartwright, Duff.....Alhambra
Case, J. Ovington.....Winchester
Cherry, James Stuart.....Los Angeles
Clark, Harriet Maude.....Pasadena
Covey, Clarence C.....Pasadena
Daggett, Maud.....Pasadena
Davis, Paul M.....Banning
Doolittle, Harold.....Pasadena
Duff, Hugh B.....Los Angeles
Dwight, Charles Sherwin.....Pasadena
Earley, Jessie.....Pasadena
Eddy, N. N.....Avalon
Eliot, Edward.....Pasadena
Eliot, John V.....Pasadena
Elliott, Chas. T.....Monrovia
Erickson, John A.....Los Angeles
Evans, Merton.....Los Angeles
Fassett, John G.....Pasadena
Fussell, Edwin B.....Pasadena
Gardiner, William Alexander.....Fullerton
Garratt, Graham Leslie.....Bhusval, India
Gaylord, John Clarence.....Pasadena
Giddings, Lawson Henry.....Pasadena
Gosnell, Ira.....Ventura
Gould, Porter.....Pomona
Gould, Robert.....Los Angeles
Graettinger, Darwin George.....Ontario
Grant, Allan D.....Highland Park
Gray, Eva J.....Pasadena
Gray, Mary Elizabeth.....Pasadena
Greenhaw, Hosea.....Phoenix, Ariz.
Greenhaw, Miriam.....Phoenix, Ariz.
Griffin, Jasper.....Los Angeles
Haig, Cecil S.....San Gabriel
Haskell, Beulah.....Pasadena
Haskell, Edward E.....Pasadena
Heath, Frank C.....San Diego
Helwig, Walter.....El Modena
Higley, Wynter Blaine.....Pasadena
Hill, Roland Varian.....Sierra Madre
Holcomb, John Delaney.....Pasadena
Hoose, James H.....Pasadena
Hornby, Ralph Walter.....Pasadena

Howe, Eliot.....Pasadena
Hughes, Ivy.....Los Angeles
Hughes, William.....Los Angeles
Hutton, William B.....Los Angeles
Jerauld, Edwin W.....Pasadena
Jerauld, Rodman.....Pasadena
Jewett, Pauline.....Pasadena
Jones, Grace Elizabeth.....Pasadena
Judson, Clarence B.....Los Angeles
Kays, James Walter.....Los Angeles
Kennedy, Lloyd B.....Ontario
Kysor, Chas. H.....Los Angeles
Lacey, Louise.....Pasadena
Lewis, Donald Fergus.....Colegrove
Linde, Eva.....Los Angeles
Lyon, Marion.....Santa Ana
MacMillan, John.....Los Angeles
Markham, Gertrude.....Pasadena
Mayo, William Riley.....Compton
McCauley, Alma Louise.....Pasadena
McQuiston, Henry.....Cleveland, Ohio
Mendelson, Clarence.....Capistrano
Metcalf, Mildred.....Pasadena
Moll, Walter E.....Los Angeles
Mosteller, Roy Wm.....Pasadena
Nevin, Clarence C.....Pittsburg, Pa.
Nevin, Lowrie Baird.....Los Angeles
Newport, Fred T.....Hanford
Niles, Porter H.....South Pasadena
Oliver, William Wallace.....Prescott, Ariz.
Packard, Florence M.....South Pasadena
Percy, Albert Emerson.....Chino
Phillips, Maisie Louise.....Pasadena
Phillips, Virginia.....Pasadena
Poage, Leland Starke.....Pasadena
Price, Jacob Meday.....Los Angeles
Putnam, Harry Rice.....Pasadena
Raynesford, Frank L.....Pasadena
Reed, Edna.....Deer Lodge, Mont.
Richards, Bessie Everett.....Pasadena
Richardson, Allen.....Prescott, Ariz.
Scott, Archie.....Duarte
Scudder, Jessie Ingram.....Pasadena
Shaw, Earl Selwyn.....Ventura
Shelhamer, Clarence A.....Pasadena
Shrode, D. Roy.....Murrieta
Sidwell, Chester Clarence.....Rivera
Smith, W. Sidney.....Hermosillo, Mexico
Stiner, Henry Mead.....Eagleville
Story, Henry.....Burbank
Strong, Robert Marquis.....Pasadena
Sweesy, Homer.....Pasadena
Swigart, DeWitt.....Norwalk
Thomas, Roger Ray.....Pasadena
Thompson, Harry Morse.....Murrieta
Tileston, Arthur.....St. Cloud, Minn.
Tweedy, James K.....Downey
Wadsworth, Whitney.....Pasadena
Ward, Ernest.....San Diego
Wardall, Ray Clifford.....Duarte

Webber, Frank Granville.....Highgrove
Webster, Lucile.....Pasadena
Webster, Mabel B.....Pasadena
Weymouth, Walter Alison.....Lamanda
Whitmore, Ben.....Pasadena
Williams, Gilbert R.....Pasadena
Winter, Frank C.....Pasadena
Winter, Mabelle.....Pasadena
Wood, Helen.....Glendora
Wood, Hilda.....Glendora
Woodbury, Fred Ralls.....Pasadena
Wonner, Walter Webster.....Pasadena
Wotkyns, Grosvenor L.....Pasadena
Wyckoff, Ralph F.....South Pasadena

Grammar School

Armstrong, Margaret.....Altadena
Atkinson, Ben Jesse.....Los Angeles
Babcock, Lynn Edgar.....Riverside
Balcom, Homer Ray.....Santa Ana
Ballou, Edward Allen.....Sierra Madre
Banbury, William.....Pasadena
Barnwell, Edwin.....Alhambra
Barnwell, Rex.....Alhambra
Bartels, Arnold.....Los Angeles
Bassett, Archie.....Pasadena
Bishop, Frank.....Los Angeles
Bixby, Jotham.....Long Beach
Botiller, Joe.....Los Angeles
Bolt, Marjory.....Pasadena
Brackett, Ross D.....Pasadena
Brackett, William F.....Pasadena
Brainerd, Edward.....Los Angeles
Brigden, Dwight.....Altadena
Brooks, Albert Barnes.....Pasadena
Burhans, Esther.....Pasadena
Cartwright, James Lawson.....Alhambra
Coffin, George Holman.....Pasadena
Coman, Meriam.....North Pasadena
Cook, Dorothy Glyde.....Philadelphia, Pa.
Cook, Helen.....Philadelphia, Pa.
Cotton, Catherine Mary.....Pasadena
Crossman, Charles Willett.....Pasadena
Currie, Nellie.....Pasadena
Daggett, Ethel.....Pasadena
Dancaster, Dunstan.....Los Angeles
Dickey, Florence.....Pasadena
Douglass, Benjamin Kaime.....Los Angeles
Douglass, Francis Archibald.....Los Angeles
Douglass, Margaret.....Los Angeles
Elliot, Hazel.....Pasadena
Embree, Roy.....Valley Wells
Franklin, Burnell Marian.....Pasadena
Frohman, Philip Hubert.....Cincinnati, Ohio
Fuller, Francis Sanborn.....Boston, Mass.
Gaylord, Ruth Louise.....Pasadena
Giddings, Joe.....Pasadena
Giddings, Levi Warren.....Pasadena
Gould, Howard.....Pasadena
Harris, Charles Amos.....Compton
Harris, Frank Wendell.....Pasadena

Hatch, Wilson.....Los Angeles
Hayes, Marshall C.....Lamanda
Hayes, Oliver B.....Lamanda
Hippach, Robert.....Pasadena
Holmes, John Dewing.....Pasadena
Hostetter, David Herbert.....Pittsburg, Pa.
Hughes, Fern.....Los Angeles
Hunt, Arthur Lewis.....Pasadena
Johnson, James.....Pasadena
Johnson, Ruth.....Pasadena
Jones, Nona.....Los Angeles
Jonson, William Max.....Los Angeles
Judson, Howard Wilcox.....Whittier
Kendall, Jennie Henrietta.....Pasadena
Kloeckner, Arthur L.....Pasadena
Knettles, Dudley.....Pasadena
Lowe, Harry.....Pasadena
McAulay, Calvin.....Los Angeles
McCauley, Mary Blanche.....Pasadena
McCoy, Ernest.....Pasadena
McLean, Jennie.....Pasadena
Mears, Margaret.....Pasadena
Mears, Nathan.....Pasadena
Moody, Graham.....Pasadena
Moody, Wilbur.....Pasadena
Painter, Ethel Martha.....North Pasadena
Painter, Harry.....North Pasadena
Parker, Merle.....Los Angeles
Patterson, Merritt J.....Los Angeles
Pearson, William George.....Pasadena
Phillips, Paul.....Pasadena
Pinkham, Robie.....Pasadena
Price, Ruth.....Pasadena
Reed, Allen.....Deer Lodge, Montana
Rider, Harold.....Pasadena
Rider, Lucretia.....Pasadena
Ross, Fred James.....Pasadena
Sharp, Clyde.....North Pasadena
Sherman, H. Lancey.....Pasadena
Smith, Kate.....Pasadena
Smith, Stanley.....Martinsdale, Montana
Strafford, John Everard.....Pasadena
Stuart, Wm. C.....Pasadena
Thomas, Jessie.....Pasadena
Tompkins, DeRonde.....St. Paul, Minn.
Townsend, Stanley N.....Pasadena
Visscher, Helen.....Pasadena
Wadsworth, Katharine.....Pasadena
Wadsworth, Mary Manter.....Pasadena
Ward, Nellie.....Pasadena
Warneke, Frank Hurd.....Hollywood
Welsh, Clyde M.....Los Angeles
Witte, James Bathgate.....Los Angeles
Wood, Helen B.....Pasadena
Wood, Willard Selwyn.....Glendora
Wood, Winifern.....Glendora

Special Students

Ashby, Mrs. H. M.....Pasadena
Backus, Chas. S.....Pasadena
Brooks, A. May.....Pasadena

Bundy, Percy G.....Pasadena
Clark, Oliver Cutter.....Pomona
Dutton, Horace Hervey.....Pasadena
Elleby, Mrs. F. W.....Pasadena
Finney, Martha.....Valparaiso, Ind.
Ford, Tod.....Altadena
Gaylord, Mrs. May.....Pasadena
Getchell, Daisy Orissia.....Pasadena
Ginn, Roscoe L.....Los Angeles
Howland, Elizabeth.....Pasadena
Levi, Sonia F.....Chicago, Ill.
Louthian, Laura Almeda.....Etiwanda
Markham, Alice.....Pasadena
McBride, James A.....Pasadena
Moore, Archie Wolcott.....Grass Valley
More, Rose.....Pasadena
Niosi, Nellie.....Pasadena
O'Donnell, Kate.....Pasadena
Peck, Florence.....Long Beach
Putman, Mrs. C. E.....Pasadena
Putnam, Louise.....Pasadena
Ross, Chas. F.....Pasadena
Ross, Donald A.....Los Angeles
Seay, Lorena.....South Pasadena
Smiley, Walter.....Pasadena
Stearns, Mrs. Susie L.....Pasadena
Story, Ada.....Altadena
Timmons, Flora.....Los Angeles
Van Dercar, Mrs. W. T.....Pasadena
White, Edith R.....Lamanda
Wonner, Lucy.....Pasadena

Summary

	Male	Female	Total
College	12	4	16
Normal	4	20	24
Academy	115	29	144
Grammar School	71	30	101
Special Students	11	23	34
Totals (no duplicates)	213	106	319

List of Graduates

1895

Sloyd Normal Course

Daniels, Esther C. (Mrs. Turner).....Corona
Gower, Hattie F.....Teacher of Sloyd, Los Angeles
Harris, Caroline E.....Teacher of Sloyd, Pasadena
Miller, Charles E.....Director Manual Training, Normal School, Los Angeles
Simcoe, Benjamin F.....Superintendent Manual Training, San Diego

Academy

Allen, Robert S.....Business Manager Electric Light and Power Co., Pasadena
Carlton, Don W.....In business, Los Angeles
Doty, George F.....In business, Pasadena
Ferguson, Clarence.....Clerk, L. A. Water Co., Los Angeles

1896

College

Haynes, Dian M.....Teacher, Weldon
Doty, George F. .....In business, Pasadena

Sloyd Normal Course

Burkhead, Ada H. (Mrs. Hale Weaver).....Grand Rapids, Mich.
Chamberlain, Arthur H.....Professor of Pedagogy, T. P. I., Pasadena
Johnson, Annette.....Teacher of Sloyd, Los Angeles
Keyes, Mrs. Helen B.....Hartford, Conn.
Mathews, Amanda.....Teacher of Sloyd, City of Mexico
McLaren, Jennie.....Pasadena
Riggins, Ara.....Teacher, San Bernardino

Academy

Arnold, Ralph.....Student Stanford University, Palo Alto
Conger, Lulu N.....Pasadena
Gray, Roy W.....Draughtsman, Los Angeles
Menner, Ivy.....Pasadena
Morrison, Margaret L.....Compton
Snyder, Blanchard N.....Assayer, Anaheim
Winslow, Edward F.....In business, Cedar Rapids, Iowa

1897

College

Grinnell, Joseph.....Stanford University, Cal.

Sloyd Normal Course

Batchelder, Lizzie.....Teacher of Sloyd, Los Angeles
Blanchard, Ada F.....Teacher of Sloyd, Los Angeles
Cleveland, Ada C.....Teacher of Sloyd, Honolulu, H. I.
Cook, Mary A.....Glendora
Coombs, Sarah C.....Teacher, Visalia
Fisher, Pearl B.....Teacher of French and Drawing, T. P. I., Pasadena
Holbrook, Lucy M.....Student Normal School, Worcester, Mass.
Mellish, Ida M.....Assistant in Sloyd, T. P. I., Pasadena
Smith, Mary M.....Teacher Normal School, Los Angeles
Wright, Charles H.....Instructor Wood and Iron Shops, T. P. I., Pasadena

Academy

Baker, Calvin.....In business, Pasadena
Baker, Ruth Ellen .....Pasadena
Barker, James Edmund.....Student M. I. T., Boston, Mass.
Blick, Kate Fay.....Pasadena
Conger, Lyda Browne (Mrs. Richard A. Vose).....Clinton, Iowa
Conger, Ray Everett.....Manager Royal and Santa Clara Oil Co., Coalinga
Farnsworth, John Arthur, Jr.....Book-keeper, Los Angeles
Jewett, Frank Baldwin.....Student University of Chicago, Chicago, Ill.
*Johnston, Blanche.....
McQuilling, William.....In business, Pasadena
Polkinhorn, Edwin J.....In business, City of Mexico
Reed, John O.....Chemist, Beet Sugar Factory, Alamitos
Russell, Emma.....Clerk, Pasadena
Stimson, Charles W.....Lumber business, Ballard, King Co., Wash.
Vose, Richard A.....In business, Clinton, Iowa

*Deceased.

1898

College

Blackman, Roy Beebe.....U. S. Army, Philippine Islands
Jewett, Frank Baldwin.....Student University of Chicago, Chicago, Ill.

Sloyd Normal Course

Elleau, Jeanette Marcelle.....Recorder's office, Los Angeles
Elleau, Pauline Margaret.....San Francisco
Faithfull, Claude A.....Teacher of Sloyd, Los Angeles
Hannah, Lillian.....Ontario
Hunt, Genie A.....Teacher Indian School, Phoenix, Ariz.
Jordan, Mabel (Mrs. Chas. F. Denison).....Pasadena
Olson, Albert L.....Student T. P. I., Pasadena
Russell, Emma.....Pasadena
Sanders, M. Frances.....Teacher, Los Angeles
Shields, Mrs. Alice.....Teacher of Sloyd, Los Angeles
Webber, Marie Bambrick.....Highgrove

Academy

Beery, Mary Ellen.....South Pasadena
Folsom, Harry G.....Student M. I. T., Boston, Mass.
Gaylord, Horace Amidon.....Student Baltimore Dental College, Baltimore, Md.
Gaylord, James Mason.....Student T. P. I., Pasadena
Menner, Lottie Ethel.....Pasadena
Monroe, Grace Ella.....Pasadena
Olson, Albert L.....Student T. P. I., Pasadena
Poindexter, Charles Lawrence.....Student Mining School, Houghton, Mich.
Sterrett, Roger Jordan.....Student Stanford University, Palo Alto
Wright, Rachel Edna.....Pasadena

1899

Normal Department

Barker, Katharine K.....Teacher University of Arizona, Tucson, Ariz.
Blanford, May.....Teacher of Cooking, Los Angeles
Burnett, Grace.....Los Angeles
De Yoe, Mrs. Rose J.....Teacher, Los Gatos
Fordyce, Mabel.....Assistant in Sloyd, T. P. I., Pasadena
Haller, Dora.....Teacher of Sloyd, Los Angeles
Jordan, Mabel (Mrs. Chas. F. Denison).....Pasadena
Read, Archie L.....Lytton
Sabin, Jessie.....Pasadena
Southwick, Clara.....Teacher of Cooking, Pasadena

Academy

Bixby, William F.....Draughtsman, Los Angeles
Clark, Adeline Orilla.....Teacher, Honolulu, H. I.
Davidson, Leonard.....Student T. P. I., Pasadena
Fordyce, Mabel.....Assistant in Sloyd, T. P. I., Pasadena
Raleigh, Carl.....Los Angeles
Wood, Clifford H.....Student University of California, Berkeley

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Officers of the Alumni Association

President, Arthur H. Chamberlain, '96 Vice-President, Grace E. Monroe, '98
Secretary, James M. Gaylord, '98 Treasurer, Emma Russell, '98
Historian, George Doty, '96