The Commonwealth of Massachusetts

NEW BEDFORD TEXTILE SCHOOL

CATALOGUE

1924 - - 1925

NEW BEDFORD, MASSACHUSETTS
1171-1213 PURCHASE STREET

Machinery Building

THE BOARD OF TRUSTEES.

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FREDERIC TABER, *Treasurer.*
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Ex officio, ALLEN P. KEITH, Superintendent of Schools.

Term expires June 30, 1924.

JOSEPH W. BAILEY, Agent, Butler Mill.
LEWIS E. BENTLEY, Former Superintendent, New England Cotton Yarn Company.
CHARLES F. BROUGHTON, Treas., Wamsutta Mills.
CHARLES M. HOLMES, Treasurer, Holmes, Gosnold, Page & Fairhaven Mills.
JAMES O. THOMPSON, Jr., Agent, New Bedford Cotton Mills Corporation.

Term expires June 30, 1926.

JOHN L. BURTON, Agent, Nashawena Mills.
THOMAS F. GLENNON, Agent, Quissett Mill.
JOSEPH H. HANDFORD, Assessor, City of New Bedford.
JOHN SULLIVAN, Agent, Taber Mill.
FREDERIC TABER, President, Taber Mill.

Term expires June 30, 1925.

CHARLES O. DEXTER, Agent, Beacon Manufacturing Company.
Hon. SAMUEL ROSS, Secretary, Mule Spinners' Union.
ABBOTT P. SMITH, Director, Quissett, Taber, Soule, Butler, Nemasket and New Bedford Cotton Mills Corporation.
FRED W. STEELE, Treasurer, Booth Mill.
GEORGE WALKER, Overseer, Mule Spinning and Twisting, Nashawena Mills.

ADMINISTRATION AND INSTRUCTION.

ADMINISTRATION.

Abbott P. Smith, *President.*
William Smith, *Principal.*
Frederic Taber, *Treasurer.*
Maud L. Clark, *Chief Clerk.*
Ellen Broadmeadow, *Bookkeeper.*
Irene Goulart, *Junior Clerk.*

INSTRUCTION.

Heads of Departments.

Daniel H. Taft, *Carding and Spinning.*
William Acomb, *Warp Preparation and Weaving.*
Samuel Holt, *Weaving and Designing.*
Lewis G. Manning, *Knitting.*
Fred E. Busby, S.B., *Chemistry, Dyeing and Finishing.*
Morris H. Crompton, *Engineering and Mechanical Drafting.*

Instructors.

Frederick Garlington, Stephen R. Moore, *Designing and Weaving.*
Adam Bayreuther, *Machine-shop Practice.*
Wm. T. Walton, *Mechanical Department.*
Frank Holden, Joseph Woollam, *Carding and Spinning.*
Albert H. Grimshaw, Abram Brooks, Everett C. Glover, *Chemistry, Dyeing and Finishing.*
John F. Judge, *Engineer.*
John P. Rooney, Robert Wilson, Jr., *Firemen and Watchmen.*
Edwin Johnson, Alfred Makin, Alfred J. Makin, *Janitors.*

The principal and heads of departments constitute the faculty of the school.

The day instructors serve both day and evening.

Assistant Evening Instructors.

Carding and Spinning.

Edgar Crosby.
Richard Green.
Robert Greenhalgh.
Herbert Higgins.
John H. Moss.
Daniel C. Stephenson.
Melville F. Vincent.
Walter C. Wilbor.

Warp Preparation and Weaving.

Fred Beardsworth.
John Brown.
Peter Czarnota.
Leon Dumas.
Omer Dumas.
Eli Heyes.
Adolph Herzog.
Adelard J. LaChapelle.
Antonio R. Martins.
Arthur J. O'Leary.
Joseph E. Pageotte.
Joseph Pedro.
Thomas Pilkington.
Frederick Roberts.
William Sharples.
Anthony R. Silva.
George Southworth.
Joseph Wilkinson.
Joseph E. Wilkinson.

Warp Drawing.

Annie V. Burke.
Hilda M. Kenworthy.

Mill Calculations.

Cost Finding.

George W. Pope.

Designing.

Lewis Hamer.
Jean C. Uberti.

Mechanical Drawing.

Wallace B. Baylies.
Arlington Craig, Jr.

Electrical Engineering.

Arthur M. Kelley.

Steam Engineering.

Amos G. Taylor.

Machine Shop Practice.

Louis Culver.
Joseph Holgate.
Simeon B. Livesley.
Byron M. Pardee.

SCHOOL CALENDAR.

1924.

Friday, September 5, 9 A.M. Second entrance examinations.
Monday, September 8. Beginning of first semester, day classes.
Thursday, September 25, and Friday, September 26. Enrollment, evening students, 7.30 to 9 P.M.
Monday, September 29, 7.30 P.M. Beginning of first term, evening classes.
Wednesday, November 26, 12 M., to Monday, December 1. Thanksgiving recess.
Monday, December 15, to Friday, December 19, inclusive. Examinations, evening classes.
Friday, December 19. Close of first term for evening classes.
Wednesday, December 24, to Friday, January 2, inclusive. Christmas recess.

1925.

Friday, January 2, 7.30 to 9 P.M. Enrollment, evening students, second term.
Monday, January 5, 7.30 P.M. Beginning of second term, evening classes.
Monday, January 26, to Friday, January 30. Midyear examinations, day classes.
Monday, February 2. Second semester begins, day classes.
Monday, March 23, to Friday, March 27. Examinations for evening classes.
Friday, March 27. Close of second term, evening classes.
Saturday, March 28, to Monday, April 6. Spring recess.
Monday, June 1, to Friday, June 5. Final examinations, senior class.
Monday, June 8, to Friday, June 12. Final examinations, other classes.
Wednesday, June 10, 9 A.M. Entrance examinations.
Friday, June 12, 8 P.M. Graduating exercises, school hall.

New Bedford Textile School.

THE SCHOOL AND ITS PURPOSE.

The Legislature of the Commonwealth of Massachusetts, in the act under which the Trustees of the New Bedford Textile School were incorporated, gives as the purpose of the incorporation that of establishing and maintaining a textile school for instruction in the theory and practical art of textiles and kindred branches of industry.

As New Bedford is primarily a cotton manufacturing city, this school confines itself principally to instruction in the cotton branch of the textile industry, and seeks to perfect itself in this line. Its course of instruction is arranged to subserve the interests of two general classes of students: (1) day students, — those who give their whole time for two or three years to acquiring the theory as well as the practice of cotton manufacturing in all its details, from the raw cotton to the finished fabric, and also have instruction in the scientific principles which underlie the construction of the machinery and its operation, and the artistic principles which are involved in the production of desirable and ornamental fabrics; (2) evening students, — those who are employed in the mills during the day and who, by attending the Textile School evenings, are able to learn other phases of the industry from that in which they are employed, or to perfect themselves in their special lines of work, and become more efficient workmen. The courses of instruction for these two classes of students are given fully on other pages of this catalogue.

The whole of the machinery in the school is absolutely modern, being constructed especially for the school. It is all high grade, has latest improvements, and is especially built to afford facilities for all kinds of experimental work, and represents all the leading types of machines from the best builders in the United States, and several English builders.

There is no mill in which there is so large a variety of machinery as in the New Bedford Textile School. This consequently affords the student a better opportunity to become acquainted with various machines and methods than could be found in any one manufacturing establishment.

Each instructor in the day school is a man who is thoroughly conversant with the work of the department under his charge by thorough training and long experience. Each one has charge of the work in his department at night also, assisted by experienced assistants from the mills, many of whom are graduates of this school.

The school went into operation in the fall of 1899, and the first class was graduated in 1900. The regular courses were one year in length for the first few years, but were afterwards increased to three years. Special shorter courses are given, however, for which certificates are granted.

For nineteen years the school was a semi-private institution, but supported by appropriations made each year by the State and by the city of New Bedford. It was managed by a Board of Trustees, two appointed by the Governor of the Commonwealth, two representing the city (the mayor and the superintendent of schools, ex officiis), and twenty organized under the general statute by which the school was founded, a perpetual body, with power to fill vacancies other than the four created for and representing the Commonwealth and city.

On July 1, 1918, it became a State institution by an act amending the State Constitution. It is still maintained with appropriations made by the State and city.

It is managed by a Board of Trustees consisting of eighteen members, the Commissioner of Education, ex officio, fifteen appointed by the Governor of the Commonwealth, and two, the mayor and the superintendent of schools, ex-officiis, representing the city. Most of the trustees are men who either are or have been connected actively with the manufacture of cotton textiles.

The number of individual students attending the school since its opening is 8,923, the number graduated, 2,631. Many evening students who attend regularly do not take the examinations, and therefore do not appear as graduates, though they may have had a good record as students, especially in practice. This shrinking from examinations is natural, for many of them have little or no command of English, or are not accustomed to examinations.

A large number of those who do not appear as graduates, however, are benefited by the instruction given in the school, and have acquired a knowledge and skill that have enabled them to rise in the industry and improve their financial and social condition.

THE LOCATION OF THE SCHOOL.

The school is situated in the center of the city of New Bedford, Mass., on the main car line of the city, which connects the mill districts, and is readily accessible to mill operatives who attend the evening sessions of the school. It is near the residential part of the city, and is therefore conveniently situated for non-resident pupils who take up a temporary residence in the city.

New Bedford is an especially suitable location for an institution of this character. It is the largest cotton manufacturing city of fine yarns and fancy woven fabrics and novelties in the country. Its spindles number 3,571,254, and looms, 54,017; and employees, 41,530.

High-grade combed yarns are produced in New Bedford to a greater extent than in any other city, while the mills are engaged in the manufacture of fine shirtings, muslins, lawns, sateens, lenos, checks, piqués and other fancy fabrics to an extent unknown elsewhere. New Bedford's great advantage in this respect can be attributed principally to the fact that her mills are nearly all of recent construction, with the most improved and up-to-date equipment. The environment of these mills is in itself a benefit to the students who select the New Bedford Textile School as the institution in which to learn the mill business, as they have opportunity to observe their construction and operation, and to find employment in them during the long summer vacations and upon finishing their course in the school.

New Bedford is within short distance of Hopedale, Whitinsville, Hyde Park, Providence, Pawtucket, Woonsocket, Taunton and other large cotton machinery centers. It is one of the healthiest of the manufacturing cities in the United States. Picturesquely situated on the extreme south shore of Massachusetts, it enjoys one of the mildest winter climates in New England, and thus offers peculiar residential advantages for non-resident students.

THE BUILDINGS.

The school is housed in two separate buildings connected by a tunnel in the basement and by covered bridges overhead. They are constructed of red brick with trimmings of Indiana sandstone. They are classified as the machinery building and the recitation building.

The first now comprises the original building, erected in 1898–99, and the first two additions, erected in the years 1901–02 and 1905, respectively, and the latest addition 1922 and 1923. This building is 164 feet in length, with an average depth of 112 feet. It is three stories high, with basement under most of it, and contains a floor space of 59,600 square feet. In it are situated the administration offices, the power house and all the departments comprised in a cotton yarn and cotton cloth mill. In addition, it has two large thoroughly equipped rooms for instruction in the art of knitting, both for hosiery and underwear, and a gymnasium.

The recitation building was completed and occupied in the fall of 1911. It consists of a main building 108 by 93 feet 6 inches, three stories high, with a deep well-lighted basement under the whole of it, and contains 40,392 square feet of floor space. It also has an annex 68 feet 3 inches long by 19 feet 3 inches deep, one story high, with basement, and contains 2,634 square feet of floor space. This annex is used as an experimental laboratory and as a storeroom for chemical supplies.

The main building, besides being equipped with recitation and lecture rooms of various sizes, has a thoroughly equipped chemical laboratory, dyeing and finishing rooms, engineering laboratories, a commodious machine shop, drafting rooms, a designing room especially fitted, an exhibition room, and an assembly hall that will seat 400 persons.

Both structures are of the slow-burning mill construction type, approved by the leading fire insurance associations and mill engineers, while the general equipment of the plant is also illustrative of the best methods of lighting, heating, ventilating, humidifying and fire-protecting mills. Great attention has been paid to the planning and arranging of these buildings for the school, to make them suitable for the purposes of imparting textile instruction, and in order that the machinery building should give an object lesson in cotton mill engineering.

The Legislature of 1922 appropriated $50,000 for an addition to the present machinery building, and the city of New Bedford appropriated $10,000 for the purchase of the land for the building. This building has now been completed and is partially equipped. Other improvements will be provided that will aid working conditions and produce greater economy and efficiency in administration.

Power and light are purchased from the local electric power company, and the school supplies its own heat and the steam needed in its finishing plant. The fire protection was designed and installed by the General Fire Extinguisher Company of Providence, R. I., the well-known Grinnell sprinkler being used. The American Moistening Company and the Bahnson Humidifier Company have installed complete humidifying apparatus. The whole equipment is approved by the Massachusetts State inspectors of public buildings.

DAY CLASSES.

The regular day courses of the school are as follows: —

General Cotton Manufacturing.
Chemistry, Dyeing and Finishing.
Designing.
Carding and Spinning.
Seamless Hosiery Knitting.
Latch Needle Underwear Knitting.

All the above courses are diploma courses, three years long, and are intended to qualify students to hold positions of responsibility in textile manufacturing and allied establishments.

The advantages of these courses to qualify men to hold responsible positions in

cotton mills, dyeing and finishing plants, commission houses, etc., are many. These industries, as conducted, are not adapted to give a young man a technical education. The opposite is the case where the primary object is to impart knowledge and to train in the correct method of doing things.

It is not expected that a young man, going from this school, will at once secure an executive position. It is expected, on the contrary, that he will begin in a more humble fashion, that with the knowledge acquired in the school and the experience gained in the mill itself, he will be qualified to hold higher positions, and that his advancement will be much more rapid and his knowledge broader than one who has not had the school instruction and training. That such is the case is shown already by the positions now held by the graduates of the school.

Many of them are occupying positions of trust and responsibility in the textile and allied industries as manufacturers, treasurers, agents, superintendents, assistant superintendents, designers in mills and commission houses, overseers, chemists and dyers, etc. Some have been called to good positions as designers directly from the school, and many who have attended the evening classes have so improved in skill and knowledge that they have advanced in position and earning power.

That the work of the school is recognized by textile manufacturers and those engaged in allied industries is attested by the fact that applications are constant for men of the school — more than can be supplied. One of the largest bleaching establishments in the country has assured us that it is ready to take all the men from the chemistry and dyeing department that we will recommend.

But this school does not agree to make successful men out of lazy, careless and indifferent boys, nor does it care for such boys as students. But for those who wish to learn, who are ready to work, who are willing to bide their time, it does offer an opportunity that will supply them with an honorable vocation, with many opportunities for advancement in the world, with good remuneration.

In case a prospective student feels that no one of the diploma courses meets his particular needs, he is requested to communicate with the principal, stating his wishes. Whenever possible, special courses will be given in the various departments, for which certificates will be granted, stating the subjects taken and the time given to them. The limitations of these special courses will be determined in every case by the management.

General Cotton Manufacturing Course.

First Year.

First Term.	*Second Term.*
Pickers and Cards 101 (6½ hrs.).	Cards and Drawing Frames 102 (6½ hrs).
Weaving 111 (6½ hrs.).	Weaving 112 (6½ hrs.).
Cloth Analysis 121, 151 (3½ hrs.).	Warp Preparation 122 (3½ hrs.).
Designing 131 (1½ hrs.).	Designing 132 (1½ hrs.).
Hand Loom 161 (1½ hrs.).	Cloth Analysis 152 (3 hrs.).
Principles of Mechanics 171 (1 hr.).	Hand Loom 161 (1½ hrs.).
Mechanical Drawing 172 (4 hrs.).	Mechanical Drawing 172 (3 hrs.).
Chemistry 182 (6½ hrs.).	Textile Chemistry and Dyeing 222 (6½ hrs.).
Yarn Calculations 121 (1½ hrs.).	

Second Year.

First Term.	*Second Term.*
Roving and Spinning Frames 103 (10 hrs.).	Doubling and Drafting 104 (6½ hrs.).
Weaving 113 (3½ hrs.).	Cotton Sampling 107 (1½ hrs.).
Designing 133 (3½ hrs.).	Weaving 114 (5½ hrs.).
Cloth Analysis 153 (3½ hrs.).	Designing 134 (2 hrs.).
Machine Drawing 173, 175 (2 hrs.).	Cloth Analysis 154 (5 hrs.).
Machine-shop Practice 174 (3 hrs.).	Machine-shop Practice 174 (3 hrs.).
Steam Engineering 176 (1 hr.).	Machine Drawing 175 (1 hr.).
Dyeing 223 (6 hrs.).	Steam Engineering 176 (1½ hrs.).
	Textile Chemistry 234 (6½ hrs.).

THIRD YEAR.

First Term.

Combers and Mules 105 (10 hrs.).
Weaving 115 (6½ hrs.).
Designing 135 (1½ hrs.).
Color 145 (2 hrs.).
Cloth Analysis 155 (4½ hrs.).
Machine-shop Practice 174 (3 hrs.).
Elementary Electricity 177 (2 hrs.).
Option of Carding and Spinning or Knitting 294 (3 hrs.).

Second Term.

Carding and Spinning, Practice Work 106 (8 hrs.).
Weaving 116 (6½ hrs.).
Designing 136 (1 hr.).
Color 146 (2 hrs.).
Cloth Analysis 156 (3½ hrs.).
Mill Engineering 178 (3½ hrs.).
Cost Finding 179 (1½ hrs.).
Option of Converting 235–260 or Knitting 294 or Carding and Spinning (6½ hrs.).

General Cotton Manufacturing Course.

The course in cotton manufacturing is designed to give the student a thorough fundamental knowledge of the different processes entering into the construction of a piece of cloth from the raw staple to the finished product.

During the first year the student takes up the study of yarn preparation, weaving, designing and cloth analysis. The study of mechanics, mechanical drawing and chemistry is also pursued the first year, the work in these subjects being designed especially for men who are to take up the cotton mill work. Practical work in the machine shop is entered upon the second term. Instruction in yarn calculations, spooling, warping and slashing is also offered during the first year.

In the second and third years sufficient time is given to instruction in picking, carding and spinning, while the subjects of weaving, designing and analysis are continued.

Dyeing is begun the first year, the work being such as is of especial interest to the student of cotton manufacturing. The student is also given instruction in steam engineering during the second year, while in the third year, work in electrical engineering and cotton mill construction is offered. The study of color is taken up during the third year.

The work in all subjects is so arranged that the student is taken gradually from the simpler to the more difficult problems. Much of the work in the last year is original, and the student is thrown on his own resources.

The work in chemistry, dyeing, mechanics and shop practice is all arranged with special reference to the student of cotton manufacturing.

This course is very thorough, and is always recommended to the student who is to make cotton cloth manufacturing his future work.

Designing Course.

FIRST YEAR.

First Term.

Weaving 111 (10 hrs.).
Cloth Analysis 121, 151 (13 hrs.).
Designing 131 (1½ hrs.).
Hand Loom 161 (1½ hrs.).
Principles of Mechanics 171 (1 hr.).
Mechanical Drawing 172 (5½ hrs.).

Second Term.

Weaving 112 (8½ hrs.).
Warp Preparation 122 (3½ hrs.).
Designing 132 (1½ hrs.).
Cloth Analysis 152 (11 hrs.).
Hand Loom 161 (1½ hr.).
Mechanical Drawing 172 (3 hrs.).
Machine-shop Practice 174 (3½ hrs.).

SECOND YEAR.

First Term.	*Second Term.*
Weaving 113, 114 (10 hrs.).	Cotton Sampling 107 (2 hrs.).
Designing 133 (2 hrs.).	Weaving 115 (10 hrs.).
Color 145 (2 hrs.).	Designing 134 (2 hrs.).
Cloth Analysis 153, 154 (9½ hrs.).	Color 146 (2 hrs.).
Machine Drawing 173, 175 (1½ hrs.).	Cloth Analysis 155 (7½ hrs.).
Machine-shop Practice 174 (3 hrs.).	Machine-shop Practice 174 (3 hrs.).
Steam Engineering 176 (1½ hrs.).	Machine Drawing 175 (1½ hrs.).
General Chemistry 182 (3 hrs.).	Steam Engineering 176 (1½ hrs.).
	Textile Chemistry 222 (3 hrs.).

THIRD YEAR.

First Term.	*Second Term.*
Weaving 116 (10 hrs.).	Weaving 116 (10 hrs.).
Jacquard Designing 135 (6½ hrs.).	Jacquard Designing 136 (9 hrs.).
Cloth Analysis 156 (6 hrs.).	Cloth Analysis 156 (2½ hrs.).
Machine-shop Practice 174 (3 hrs.).	Commission House Work 157 (3 hrs.).
Elementary Electricity 177 (2 hrs.).	Finishing 235 (3 hrs.).
Color 146 (2 hrs.).	Mill Engineering 178 (3½ hrs.).
Textile Chemistry 222 (3 hrs.).	Cost Finding 179 (1½ hrs.).

Designing Course.

Designing is a branch of textile manufacturing of sufficient importance to call for a separate diploma course, extending over three school years. Since the major subjects in this course are confined to designing, cloth analysis and weaving, the work is somewhat more intensive than in the general course.

The student, during the first year, takes up the study of the plain loom, the more simple designs and the analysis of such fabrics as contain designs similar to those being studied in the designing lessons.

Instruction the first year is also offered in the preparation of warps for the loom, while work in the mechanical department is entered upon the first year, and extends through all three years of the course.

Instruction in the mechanical department is considered essential to the student of designing, as many of the new fabrics brought out by designers from year to year are based as much upon the mechanism of the loom as upon pure design.

During the second year more advanced fabrics, such as double cloths, Bedford cords, piqués and lenos, are studied, both in designing and analysis, while much of the work in the weave room consists of putting original designs into the looms and weaving a short length of each.

Commencing with the first term of the second year, a practical course in color is offered the student, who is required to work out a series of color scales and apply them in coloring designs.

In the second term of this year cotton sampling is introduced.

The third year is largely devoted to the subject of Jacquard designing in both the designing and weaving departments. During this year the subject of commission house work, as it applies to the styling and finishing of new fabrics, is dealt with, and the student is given a close insight into the requirements of this branch of designing.

For the student who wishes to perfect himself in the subject of cloth designing, as applied to the cotton trade, this course will be found very complete.

Chemistry, Dyeing and Finishing Course.

First Year.

First Term.

Principles of Mechanics 171 (1 hr.).
Mechanical Drawing 172 (4 hrs.).
General Chemistry 181 (19½ hrs.).
Inorganic Preparations 183 (8 hrs.).

Second Term.

Mechanical Drawing 172 (3 hrs.).
Machine-shop Practice 174 (3½ hrs.).
Qualitative Analysis 191, 192 (13 hrs.).
Organic Chemistry 212 (6½ hrs.).
Textile Chemistry and Dyeing 222 (6½ hrs.).

Second Year.

First Term.

Color 145 (2 hrs.).
Machine Drawing 173, 175 (1½ hrs.).
Machine-shop Practice 174 (3 hrs.).
Steam Engineering 176 (1½ hrs.).
Quantitative Analysis 202 (11½ hrs.).
Organic Chemistry 213 (6½ hrs.).
Dyeing 223 (6½ hrs.).

Second Term.

Color 146 (2 hrs.).
Machine-shop Practice 174 (3 hrs.).
Machine Drawing 175 (1½ hrs.).
Steam Engineering 176 (1½ hrs.).
Dyeing 224 (10 hrs.).
Textile Chemistry 234 (3½ hrs.).
Cotton Sampling 107 (1½ hrs.).
Cotton Manufacturing 230 (1½ hrs.).
Quantitative Analysis 203 (8 hrs.).

Third Year.

First Term.

Machine Shop 174 (3 hrs.).
Elementary Electricity 177 (2 hrs.).
Dyeing 225 (6½ hrs.).
Singeing 240 (2 hrs.).
Scouring 241 (5 hrs.).
Bleaching 242 (3 hrs.).
Mercerizing 245 (1 hr.).
Textile Chemistry 234 (10 hrs.).

Second Term.

Machine Drawing 175 (2 hrs.).
Drying 250 (4½ hrs.).
Calendering 255 (4½ hrs.).
Putting up 260 (2 hrs.).
Thesis 269 (13 hrs.).
Textile Chemistry 234 (6½ hrs.).

Chemistry, Dyeing and Finishing Course.

The object of this course is to give to the student a thorough knowledge of the chemistry of the textile processes involved in the manufacture of cotton cloth. To insure a perfect foundation, the first two years are devoted almost entirely to chemical subjects and laboratory work. During this period the subjects of general chemistry, inorganic and organic, are taught, the preparation and properties of various chemicals and dyestuffs, the properties of the various fibers, and the coloring of them.

The third year is devoted almost entirely to the practical dyeing and finishing of cotton goods. The best current practice is followed, but the underlying principles are thoroughly taught in order that the student may understand the limitations and purpose of each process.

The subjects of machine drawing, principles of mechanics, electricity and shop work are taught. These allied subjects are arranged with special reference to the major subjects, and are considered very important, as they give the student a first-hand knowledge of the construction of the various machines.

The graduates of this course find employment with dyestuff makers and dealers, with manufacturers of chemicals used in dyeing, with bleacheries, dye houses and finishing works.

It is desirable that students entering this course shall have successfully completed a scientific course in high school or its equivalent. Any one, however, who can show by examination his ability to profit by the instruction given is admitted.

Seamless Hosiery Knitting Course.

FIRST YEAR.

First Term.	*Second Term.*
Pickers and Cards 101 (6½ hrs.).	Cards and Draw Frames 102 (6½ hrs.).
Principles of Mechanics 171 (1 hr.).	Mechanical Drawing 172 (3½ hrs.).
Mechanical Drawing 172 (4 hrs.).	Machine-shop Practice 174 (3 hrs.).
Chemistry 182 (6½ hrs.).	Textile Chemistry and Dyeing 222 (6½ hrs.).
Knitting 271 (13 hrs.).	
Yarn Calculations 121 (1½ hrs.).	Knitting 271 (13 hrs.).

SECOND YEAR.

First Term.	*Second Term.*
Roving and Spinning Frames 103 (6½ hrs.).	Doubling and Drafting 104 (6½ hrs.).
Machine Drawing 173, 175 (1½ hrs.).	Cotton Sampling 107 (1½ hrs.).
Machine-shop Practice 174 (3 hrs.).	Machine-shop Practice 174 (3 hrs.).
Steam Engineering 176 (1½ hrs.).	Machine Drawing 175 (1½ hrs.).
Dyeing 223 (6 hrs.).	Steam Engineering 176 (1½ hrs.).
Knitting 272 (14 hrs.).	Textile Chemistry 234 (6 hrs.).
	Knitting 273 (12½ hrs.).

THIRD YEAR.

First Term.	*Second Term.*
Combers and Mules 105 (6½ hrs.).	Carding and Spinning Tests 106 (6½ hrs.).
Machine-shop Practice 174 (3 hrs.).	
Elementary Electricity 177 (2 hrs.).	Machine Drawing 175 (2 hrs.).
Dyeing 226 (3 hrs.).	Mill Engineering 178 (3½ hrs).
Knitting 274, 293 (18 hrs.).	Dyeing 226 (3 hrs.).
	Knitting 274, 293 (17½ hrs.).

Seamless Hosiery Knitting Course.

The course in seamless hosiery knitting is adapted to the needs of those students desiring a thorough knowledge of the hosiery industry.

The instruction given covers both the technical and practical parts of the business, including cost finding.

A large part of the time is devoted to instruction work on the knitting machines.

During the first year the student takes up the winding and preparation of cotton, lisle, wool, worsted and silk yarns for use on hosiery machines; also the principle of circular latch-needle knitting, and the setting and adjusting of different makes of rib-leg and rib-top machines.

In the second and third years the time is given up to a study of the different makes of automatic hosiery machines, knitting men's half hose, ladies' hose, footing children's and infants' hose, looping, welting and mending; method of handling and keeping track of goods through the mill; cost of manufacturing from yarn to the box.

Instruction is also given in cotton yarn preparation, yarn calculations, cotton sampling, mechanics, steam engineering, chemistry and dyeing, the work in these different subjects being arranged to meet the special needs of the student.

This course is recommended to those students who intend to become connected with a hosiery mill.

Latch Needle Underwear Knitting Course.

FIRST YEAR.

First Term.	*Second Term.*
Pickers and Cards 101 (6½ hrs.).	Cards and Draw Frames 102 (6½ hrs.).
Principles of Mechanics 171 (1 hr.).	Mechanical Drawing 172 (3½ hrs.).
Mechanical Drawing 172 (4 hrs.).	Machine-shop Practice 174 (3 hrs.).
Chemistry 182 (6½ hrs.).	Textile Chemistry and Dyeing 222 (6½ hrs.).
Knitting 281 (13 hrs.).	
Yarn Calculations 121 (1½ hrs.).	Knitting 281 (13 hrs.).

SECOND YEAR.

First Term.	*Second Term.*
Roving and Spinning Frames 103 (6½ hrs.).	Doubling and Drafting 104 (6½ hrs.).
Machine Drawing 173, 175 (1½ hrs.).	Cotton Sampling 107 (1½ hrs.).
Machine-shop Practice 174 (3 hrs.).	Machine-shop Practice 174 (3 hrs.).
Steam Engineering 176 (1½ hrs.).	Machine Drawing 175 (1½ hrs.).
Dyeing 223 (6 hrs.).	Steam Engineering 176 (1½ hrs.).
Knitting 282 (14 hrs.).	Textile Chemistry 234 (6 hrs.).
	Knitting 283 (12½ hrs.).

THIRD YEAR.

First Term.	*Second Term.*
Combers and Mules 105 (6½ hrs.).	Carding and Spinning Tests 106 (6½ hrs.).
Machine-shop Practice 174 (3 hrs.).	Machine Drawing 175 (2 hrs.).
Elementary Electricity 177 (2 hrs.).	Mill Engineering 178 (3½ hrs.).
Dyeing 226 (3 hrs.).	Dyeing 226 (3 hrs.).
Knitting 284, 293 (18 hrs.).	Knitting 284, 293 (17½ hrs.).

Latch Needle Underwear Knitting Course.

The course in latch needle underwear knitting is adapted to those students intending to become connected with this branch of the textile industry.

As in the case of the hosiery course, the larger part of the student's time is devoted to instruction work on the knitting machines. Instruction is also given in cotton yarn preparation, yarn calculations, mechanics, steam engineering, cotton sampling, chemistry and dyeing. As is the case with all other courses offered, instruction in these correlated subjects is arranged best to meet the needs of each individual course.

Both of the knitting courses are very thorough, and give the student a good working knowledge of the different processes and the machinery connected with the same. The knitting department of the New Bedford Textile School contains a larger variety of knitting machinery than is found in any similar school in the United States, and the courses offered in this department cannot fail to be of very great benefit to any one desiring knowledge along these lines.

Carding and Spinning Course.

FIRST YEAR.

First Term.	*Second Term.*
Picking, Carding, Roving 300 (14 hrs.).	Drawing, Spinning, Doubling and Drafting 302 (13½ hrs.).
Mechanical Drawing 172 (4 hrs.).	Machine Shop 174 (3 hrs.).
Chemistry 182 (6½ hrs.).	Mechanical Drawing 172 (3 hrs.).
Knitting 301 (6½ hrs.).	Chemistry and Dyeing 222 (6½ hrs.).
Yarn Calculations 121 (1½ hrs.).	Knitting 301 (6½ hrs.).

SECOND YEAR.

First Term.	*Second Term.*
Combers and Mule Spinning 303 (14 hrs.).	Twisting and Cotton Classing 304 (14 hrs.).
Knitting 301 (6½ hrs.).	Knitting 301 (6½ hrs.).
Steam Engineering 176 (1½ hrs.).	Steam Engineering 176 (1½ hrs.).
Machine Drawing 173–175 (1 hr.).	Machine Drawing 175 (1 hr.).
Dyeing 223 (6½ hrs.).	Textile Chemistry 234 (6½ hrs.).
Machine Shop 174 (3 hrs.).	Machine Shop 174 (3 hrs.).

THIRD YEAR.

First Term.	*Second Term.*
General Test Work and Roll Covering 305 (21 hrs.).	Yarn Testing and Comber Reneedling 306 (19 hrs.).
Knitting 301 (6½ hrs.).	Knitting 301 (6½ hrs.).
Elementary Electricity 177 (2 hrs.).	Mill Engineering 178 (3½ hrs.).
Machine Shop 174 (3 hrs.).	Machine Drawing 175 (2 hrs.).
	Cost Finding 179 (1½ hrs.).

Carding and Spinning Course.

The course in carding and spinning is designed to give the student a thorough knowledge of cotton yarn manufacture.

The larger part of the student's time is devoted to instruction on the different machines used in the preparation of cotton yarn.

Instruction is also given in knitting, mechanics, steam engineering, chemistry and dyeing. Considerable time is given to knitting, as that industry is closely related to cotton yarn manufacture.

This course is recommended to those students who intend to become connected with cotton yarn mills or to become cotton yarn salesmen.

REFERENCES FROM TABULATED COURSES.

101. Pickers and Cards.

Cotton yarn mill machinery. Lists of processes in cotton mills for different numbers of yarn. Proper sequence of processes.

Objects of blending cotton. Methods of mixing same. Bale breakers.

Picker rooms. Automatic feeders. Construction of different varieties of feeders. Their capacity and suitability for the purpose intended.

The cotton opener, its use and object. Various styles of openers. Setting and adjustment of openers. Connection of feeders to openers. The various styles of trunks. Calculations in connection with openers. Breakers. Intermediate and finisher lappers. Different styles and makes of machines. Use and object of the lapper. Construction of aprons, beaters, bars, screens, fans, lap heads, evener and measuring motions, etc. The setting and adjustment of lappers. Calculations in connection with lappers.

The revolving flat card. Its principal parts described, including feed, licker, cylinder, doffer, coiler, screens and flats. Different setting arrangements. Speeds of different parts. Top flat cards, roller and clearer, and other cotton cards. Clothing, grinding, setting and stripping cards.

102. Cards and Drawing Frames.

Study of the card continued.

The railway head as used either independently or combined with sections of cards. Single and double railway heads. Eveners, draft calculations, metallic and other rolls.

Method of arranging and constructing drawing frames. The use and objects of the frame. Gearing, weighting, stop-motions, varieties of rolls, etc.

103. Roving Frames, Spinning Frames and Twisters.

Slubbers. First and second intermediates. Roving or jack frames. The construction and use of the fly frame. Description and use of the different parts. Calculations in connection therewith. Changing and fixing frames, etc.

The spinning frame. Its construction and use. Its principal parts, such as creels, rolls, rings, travelers, speeds, builder motions, etc.

The objects of twisting. Wet and dry twisting. The direction and amount of twist in different ply and cord threads; different methods used in preparing yarn for twisting. Size of rings and travelers for different counts of yarn. Methods of winding, speeds and production.

104. Doubling and Drafting.

Figuring the number of doublings and drafts from picker to spinning frame or mule. Calculations for schedules of machinery required for different counts and amounts. Cost and production of yarn.

Practice work consists of carrying work through picker to spinning frames.

105. Combers and Mules.

The sliver and ribbon lap machines. Construction of American and English machines. Methods of operating same. Setting and adjusting same, and calculations in connection therewith.

The cotton comber. The construction of the comber, its use and objects. Comber setting. Comber calculations. Operation and management of combers.

The spinning mule and its uses. The special features of the mule. Description of the head stock, the cam shaft, mule carriage and other parts. The construction and use of each part of the mule. Different movements in the mule and the timing of the same. The copping rail and the building of a cop. Faults in mule spinning and their correction.

106. Tests.

Original work in laying out processes for different counts of yarn, and carrying the same through from raw cotton to finished yarn. Tests for different processes.

107. Raw Cotton.

Raw cotton. Its varieties. The cultivation of cotton. The preparation of cotton for the market. Cotton ginning. Cotton as an article of commerce. The selection of cotton, its suitability for different purposes.

111. Plain Looms.

The construction of the plain loom. The principal movements in weaving. Methods of shedding. Shedding motions. Shedding by cams. Auxiliary shafts. Varieties of cams. Construction of cams. Timing cams and effect on the cloth.

Picking motions. Different methods of picking. Shuttles. Shuttle boxes. Shuttle guards. Protector motions. Reeds. Let-off motions. Take-up motions. Calculations in connection with take-up motions.

Filling-stop motions.

Temples. The various makes and their uses.

The Draper loom. Special features of its construction.

Automatic shuttle and bobbin changing looms.

Special features of various makes of looms, including Crompton & Knowles, Kilburn & Lincoln, Whitin, Mason and Stafford looms.

The management, operation and fixing of looms. Putting in warps. Faults and remedies in weaving and fixing. Calculations directly connected with plain looms.

Looms adapted to weave twills and satins.

Electrical and mechanical warp stop-motions.

112. Fancies.

Looms adapted to weave fancy cloth with dobbies. Dobbies with single and double cylinders. Chain pegging for dobbies.

Tying in and starting up warps for which the student has worked out some design.

113. Box Looms.

Looms for the use of various colors of filling. Drop box motions. Box chain multipliers. Multiplier motions. Still box motion.

114, 115. Special Loom Attachments.

Dobby looms combined with other motions for special purposes, such as looms adapted to weave lenos, checks, blankets, handkerchiefs, towels and other goods.

116. Jacquards.

The principle of construction of Jacquard machines. Single and double lift machines. Jacquard machines for special purposes. Principles of harness tying. Practical work in cutting cards and weaving the student's own designs.

121. Yarn Calculations.

Definitions. Calculations for finding length, weight or counts of single yarns, whether cotton, woolen, worsted, silk, etc. Ply yarns.

122. Spoolers, Warpers and Slashers.

Various methods of preparing cotton warps.

The spooler, its use and construction. Production per spindle. Spindle speeds. Builder motions. Thread guides. Different makes of spoolers.

The operation and setting of the spooler.

Warpers. The object of the warper. Its construction and operations. Speeds, settings, etc. Warpers with and without cone drive. Warper slow motions. Faults in warping and their correction.

The slasher. Its use. Construction of the different parts of the slasher.

Sizing or dressing yarns. Materials used. Methods of mixing same. Suitable materials for various purposes.

Preparing the warp for the loom. The construction of reeds and harnesses.

Variations from the above system for special purposes, such as used in gingham and other mills.

131. Designing.

Definitions of the words and terms used in designing and analysis. Characteristics of the various classes of fabrics. Design paper and its application to designing and analysis. Cloth structure, with a study of the various sources from which the patterns of fabrics are obtained. Twills. Wave effects. Diamonds. Sateens. Granites. Checkerboards. Rearranged twills. Figured twills.

132. Designing.

Designs for single fabrics continued, such as honeycombs. Mock and imitation lenos. Entwining twills. Spot weaves arranged in various orders. Cord weaves. Imitation welts. Elongated twills. Checks effects. Corkscrew weaves. Four change system of designing. Damask weaves.

133. Designing.

Designing for more complicated fabrics, such as figuring fabrics, using extra material. Fabrics backed with extra material. Fabrics having the face and back of different material or pattern. Double plain fabrics. Reversible fabrics. Embossed effects, such as Bedford cords, piqués, Marseilles weaves.

134. Designing.

Designing for leno, pile and lappet fabrics, such as methods of obtaining leno patterns. Mechanical appliances for the production of lenos, yoke and jumper motions. Bottom doups. Top doups. Check lenos. Jacquard leno effects. Weaving with wire doups. Weaving with the bead motion. Russian cords. Full turn lenos.

Pile fabrics, such as velveteens, corduroys, velvets, plushes, carpets, terry toweling.

Lappet weaves. Description of the various lappet motions. Designing for original lappet effects. Reproduction of woven lappet patterns. Chain drafts. Locking motions. Spot effects.

135. Jacquard Designing.

Design paper. How to figure the design paper necessary to reproduce any Jacquard pattern. Defects of Jacquard patterns and how to avoid them. Transferring designs to plain paper. Transferring sketches to design paper. Changing the sley of Jacquard fabrics. Method of casting out. Ground weaves. Rules for finding sley, pick, warp and filling. Foundations upon which Jacquard patterns are based.

136. Jacquard Designing.

Different methods of making designs. Sketching original designs by the different methods commonly used. Working out the sketches upon design paper. Cutting cards on the piano card-cutting machine. Card lacing. Weaving of at least one original design. Method of weaving Jacquard leno designs. Mechanisms required in weaving Jacquard lenos. Making Jacquard leno designs.

Harness tying. Various systems of tying Jacquard harnesses. Lay-over ties. Center ties. Compound ties.

145. Color.

Theory of colors. Complementary colors. Hue, value and chroma scales. Practical work in color scales.

146. Color.

Munsell system of coloring. Color harmony, color effects. Analyzing color effects. Practical work in making sequences and in producing colored designs.

151. Analysis.

Standard methods of representing harness and reed drafts. Harness drafts on design paper. Written harness drafts. Chain drafts. Lay-out plans. Finding weight of warp yarns, weight of filling yarns. Yards per pound of cloth.

152. Analysis.

Finding counts of warp and filling by various methods. Finding yards per pound of cloth from a small sample by weighing. Making original designs and weaving them on the power loom. Reproduction of woven samples.

153. Analysis.

Analyzing more difficult samples. Finding average counts. Percentage of each material. Production of loom. Price per yard for weaving. Weaving of more difficult original designs.

154. Analysis.

Analysis of leno fabrics, making both written drafts and harness drafts on design paper. Chain drafts. Weaving of original leno designs. Changing the construction of fabrics and preserving balance of structure.

155. Analysis.

Analysis of more difficult samples continued. Weaving of original samples. Work on changing over samples to different constructions.

156. Analysis.

Continuation of the work outlined in 155. Weaving of students' original Jacquard designs. Work on cost of manufacturing fabrics.

157. Commission House Work.

Study of fabrics known as standard goods, such as prints, percales, satins, lawns, organdies, chambrays, voiles, etc.

Figuring to obtain material for the reproduction of cloths of standard construction.

Methods of ascertaining counts of warp and filling; also sley and pick for new fabrics.

Determining the manufacturing cost of fabrics.

Working out sketches and writing specifications for new fabrics.

161. Hand Loom.

The hand loom, its construction and use. Harness drafts as affecting the weave. Building harness chains. Practice on the hand loom in weaving fabrics from original and other designs, and putting into practice the designing lessons.

171. Mechanics.

The fundamental principles of mechanics and physics, with special reference to practical uses in textile machinery and to future application in the engineering courses, are given in a series of lectures. Practical problems illustrating these principles are worked out in the classroom. A study is also made of the strength and nature of the different materials used in machine construction.

Textbook: "Practical Mechanics," Hale.

172. Mechanical Drawing.

The object of this course in mechanical drawing is to give the student a good foundation for reading drawings and for making such sketches and drawings as he will be likely to be called on to make in practice. Thoroughness, accuracy and neatness are insisted upon throughout the course. The work in mechanical drawing begins with instruction in the use and care of drawing instruments. The following is a general outline of the work to be covered: plain lettering, geometrical constructions, orthographic and isometric projection, inking and tracing, standards, conventions and tabulation as used in the modern drafting room. Simple working drawings are to be made to scale, and the final work of the year consists of free-hand sketching of machine details from parts of textile machinery. This brings into use at one time all the work covered during the year, and serves as a test of the student's grasp of the subject.

173. Mechanism.

In view of the large number of mechanisms used in textile machinery this course is a very important one. The subject is given by means of lectures and recitations, the work in the drawing room being closely related to the classroom instruction. This course includes studies and graphical solutions of cams, gears, etc.

174. Machine Shop.

Shopwork and drawing are organized as one department for the purpose of securing close correlation of the work. Many exercises are common to the drawing room and the shop. In the machine shop an effort is made, not only to train the student manually, but also to teach him correct shop methods and practice. Carefully graded exercises are arranged to teach him the use of measuring instruments, hand tools and then machine tools. The different measuring tools and devices, with advantages, methods of use and limits of accuracy of each, are considered. Each cutting tool is taken up, its cutting angles and general adjustments are described, together with the "feeds" and cutting speeds suitable for each material worked and for each machine. The course includes instruction in centering, squaring, straight and taper turning and fitting, outside and inside screw cutting, chucking, reaming, finishing and polishing, drilling, tapping, grinding, boring, planing flat and V surfaces, filing and gear cutting, including spur, bevel, rack and worm gears.

When the student becomes proficient in handling the tools and machines, he is given work in fitting and assembling, and also repair work from the other departments.

175. Machine Drawing.

Machine drawing is a continuation of the mechanical drawing of the first year, and the work is dependent upon a thorough knowledge of how to apply the conventions of drawing which custom has made standard as given during the first year. The work consists of proportioning of machine details as fixed by practice, making assembly drawing from detailed sketches, and also detailing parts from assembled machines.

176. Steam Engineering.

A typical power plant, including the boiler, steam engine and all necessary auxiliary apparatus such as is found in a modern cotton mill, is studied in detail. Prepared outlines are discussed in lecture periods, and the details supplied by the student after reading assignments in standard text and reference books. Practice is given in handling engines, apparatus and equipment in the laboratory. Exercises consist in adjusting, starting and running engines, taking and working out indicator cards, prony brake tests, pump and injector tests, etc.

177. Elementary Electricity.

The elementary principles of magnetism and electricity are taken up in lecture and recitation, and are supplemented by laboratory exercises. Emphasis is placed on the different wiring systems and electric drives as used in mills and factories. A general study is made of a typical electrical power plant, and of the apparatus required to generate and distribute electrical energy.

Textbook: "Essentials of Electricity," W. H. Timbie.

178. Mill Engineering.

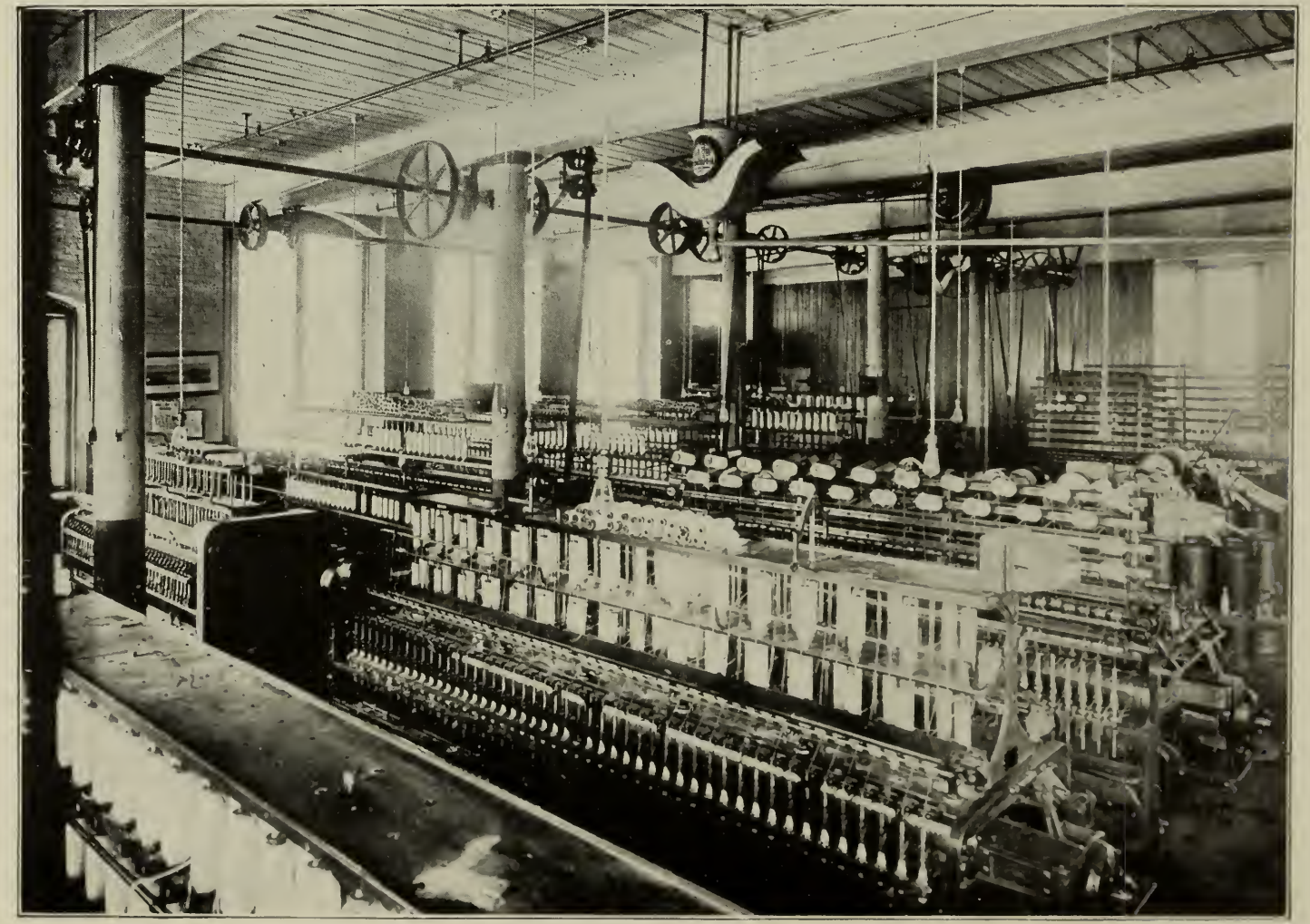
Proficiency in this course depends on the thoroughness with which the work of the previous courses was carried on. The course consists of lectures supplemented by work in the drafting room. Problems in design, construction and equipment of mills and factories are taken up. The subject includes foundations, walls, floors, roofs and mill construction in general. The choice of location and the methods of transmitting power are discussed. The following outline shows the scope of the course: principles underlying the design and construction of framed structures, involving the use of wood, steel, brick, stone, concrete and reinforced concrete, methods of lighting, ventilating and protecting from fire.

179. Figuring Costs.

One and a half hours a week, during the last term of the general course, is devoted to methods of cost finding in a cotton mill. A complete mill is taken for an illustration, and the reports of both the expense and production are used to work with.

181. General Chemistry.

This course comprises three lectures of one hour each and sixteen hours of laboratory work each week. The laboratory work is closely criticized by the instructor, and individual effort encouraged. Careful manipulation, thoroughness in observation,



Carding and Spinning Department, showing Roving and Spinning Frames

accuracy in arriving at conclusions and neatness are required of each student. The fundamental principles of the science are taught in connection with the descriptive chemistry of the elements.

No previous study of chemistry is required for admission to this course, but the instruction is so arranged that students having already spent considerable time in chemistry in other schools are given advanced work in which the knowledge already acquired is utilized.

Textbook: Smith's "General Chemistry for Colleges."

182. General Chemistry.

The training afforded by a course in general chemistry is considered of value to all the students of the school, and also lays the foundation for the subsequent course in dyeing. Hence students taking courses in the cotton or knitting departments are required to take general chemistry during the first term of the first year. This subject covers the same ground as subject 181, but in a briefer manner. Five hours per week are spent in the laboratory, and one hour in the lecture and recitation room.

Textbook: Morgan and Lyman's "Chemistry."

183. Inorganic Preparations.

The time in this subject is devoted largely to laboratory work, with an occasional explanatory lecture. First the student is taught the best methods of carrying on the usual laboratory operations, as forming of crystals, precipitates, filtering, evaporating and drying. This is followed by the preparation of several salts and industrial products, substances being selected that are of particular interest to the textile industry. The work is progressive in subject-matter, and so arranged as to be co-ordinate with the subject of general chemistry.

191-192. Qualitative Analysis.

This course comprises one lecture of one hour and twelve hours' laboratory work a week during the second term of the first year. The student is taught the principle of systematic qualitative analysis and the application of the principles to detect the base-forming elements, the acid-forming elements, and the various classes of compounds of the bases and the acids. Especial attention is paid to the inorganic materials ordinarily met with in the manufacture, dyeing and finishing of cotton piece goods. The student is required to analyze correctly a sufficient number of unknown substances to demonstrate his ability to detect any of the elements ordinarily met with.

Textbook: Noyes' "Qualitative Analysis."

202. Quantitative Analysis.

The course in Quantitative Analysis is divided into two parts each requiring one term for its completion. Stress is laid on the accuracy and integrity necessary for quantitative work. Each student is required, under supervision of the instructor, to adjust his own balances, and calibrate the weights, burettes, flasks, etc., that he uses, that he may understand the nature and amount of error in his work, thus giving him confidence in his results. In connection with the course a thorough training in the solution of chemical problems is given. The course comprises one lecture each week, the remainder of the time being devoted to laboratory practice. The first term is spent in gravimetric determination of chlorine, sulfuric, carbonic, and phosphoric acids, and iron, aluminum, calcium and magnesium.

203. Quantitative Analysis.

This course is a continuation of Course 202 and comprises volumetric analysis involving the use of acids, alkalis, oxidizing and reducing agents, and chlorimetry. The work on chemical problems is also continued through this term, the problems being such as to apply the principles of volumetric analysis.

212. Organic Chemistry.

This course is divided into two terms, the first term giving a general survey of the subject, a thorough training being given in the reactions and properties of the various compounds met with in textile industries. The two lower members of the paraffines and their derivatives are exhaustively treated. Then the study of the higher members is taken up, the unsaturated hydro-carbons and their derivatives.

Textbook: Remsen & Orndorff's "Organic Chemistry."

213. Organic Chemistry.

The work of the second term is devoted exclusively to the study of dyestuffs and their preparation. The constitutions of various typical dyestuffs are studied to determine their influence on coloring power, dyeing properties and fastness to light, acids, alkalis, bleaching, etc. In the limited time afforded, the number of dyestuffs studied is necessarily limited, but the training is made so thorough that the student is enabled to take up further investigation intelligently should his future work demand it.

222. Textile Chemistry and Dyeing.

These subjects open with a study of the chemical and physical technology of the fibers. Lectures are given descriptive of the action of heat, moisture, acids, alkalis, oxidizing agents, reducing agents, salts, organic ferments and coloring matter upon the fibers. Parallel with these lectures laboratory experiments are carried out by the performance of which the student becomes familiar with the chemical and physical properties of the various fibers and the actions of the several agents upon them.

This is followed by a series of lectures and experiments that illustrate the application of the above principles to practice. The student is taught how to scour cotton, wool and silk; how to bleach these fibers by the use of sulphur dioxide, chlorine compounds and oxygen compounds. The mercerizing, fireproofing and waterproofing of cotton, the chlorination of wool, and the waterproofing of silk are also demonstrated.

Now the application of the dyestuffs to the various fibers is studied. For convenience the dyestuffs, whether of natural or synthetic origin, are classed as either substantive, acid, basic or mordant. The best method of application of each of the above groups is then taught. The dyed fibers are tested for their fastness to light, water, acid, alkalis, milling, stoving, chloring, crocking and hot finishing. Modified methods are then considered for the production of especial degrees of fastness to certain agents by after-treating of the dyed fibers.

223. Dyeing.

This course is supplementary to the course in textile chemistry and dyeing and consists principally in the application of dyes to cotton and practice in color matching. Lectures are given as the occasion requires, but most of the time is spent in the laboratory.

At the end of the course the general principles of cotton matching are taken up, and experimental work is carried on demonstrating the proper method of obtaining a given shade by mixing several dyes. Obtaining the value of a dye is taught, and the detection of adulterants. Finally, methods for determining the dye, either in the form of a dyestuff or on the dyed fabric, are considered.

The lectures during this term are mainly descriptive of the converting of gray cotton piece goods into the finished state. Machinery used in connection with the processes of singeing, bleaching, scouring, mercerizing, drying, mangling, dyeing, starching, tentering and calendering is explained. The effect of each machine upon the properties of the fabric is studied. Some time is devoted to the consideration of the use of starches, filling agents, soap and oil, and the filling, softening and stiffening action they produce. The student is required to take notes during these lectures, and from such notes write for his own reference a complete text on the subject. In this connection he is encouraged to consult various standard works to amplify his knowledge of textiles.

Samples acquired in connection with the laboratory practice are mounted and bound with the above notes, which they serve to illustrate.

224. Dyeing.

The laboratory work of this term is mainly devoted to the printing of textile fabrics, especial emphasis being laid on cotton. The theory and practice of the various styles, such as the pigment style, the direct printing style, the steam style or metallic or tannin mordants, resist and discharge dye styles, the developed azo style, the printing of indigo and similar dyestuffs and aniline black, are studied. The student makes as many different prints as the time will allow. The course is concluded by experiments illustrating the practice of mercerizing cotton fabrics and a study of the various functions of the various stiffening and softening agents used to produce the different finishes required by the trade. The lecture course during this term covers practically the same ground as the laboratory work, especial emphasis being laid on the mercerizing and finishing of cotton yarns and cloth. During the entire course the student accumulates several thousand samples which he is required to mount in a specially designed sample book for his reference in the future. Special stress is laid on quality rather than quantity of work done. As often as time permits and circumstances demand it, lots of yarn, hosiery, etc., of commercial size are dyed by the students for other departments.

225. Dyeing.

Construction and operation of jiggers. Speed of operation. Penetration of solutions used. Selection of dyestuff. Preparation of dye liquor. Dyeing, washing and after-treating.

Construction of dye padders. Selection of materials for rolls. Speed of machines. Penetration of materials. Selection of dyestuffs. Washing off. After-treatment.

226. Dyeing of Knit Goods.

The object of this course is to give the student an opportunity to dye commercial size lots of knit goods and hosiery. Lectures describing the various processes are given, and the necessary calculations are taught in connection with this course. Scouring and bleaching are also taught. The student is required to make use of knowledge acquired in the previous courses in dyeing.

230. Cotton Manufacture.

Cotton Manufacture is the name assigned to a course of lectures given to the second year students in chemistry, so that they may become acquainted with the methods employed in the manufacture of cotton yarn and cloth. The various machines are thoroughly described and the methods of using them discussed in the lecture room. Because of the limited amount of time allowed for this subject the students are not taught to operate the machines, but are given an opportunity to examine them at rest, and later to observe them in operation.

233. Textile Chemistry I.

This subject comprises a study of the properties and analysis of water, coal, oil, soap, mordants and other chemicals used in the textile industries. One lecture of forty-five minutes' duration is given each week, and frequent conferences are held with the student in the laboratory. The student is required constantly to consult standard books of reference in connection with his laboratory work. While the limited time devoted to this course does not give enough time for the student to make many complete analyses, it does illustrate to him the application of the knowledge acquired in the previous subjects of qualitative and quantitative analysis and organic chemistry.

234. Textile Chemistry II.

This subject deals with coal, oil, soap, water, starches, sizing and softening compounds, and textile fabrics. The commercial methods of obtaining the above substances, their usual composition and application, is discussed in lectures. The laboratory work consists of the analysis of typical compounds, obtained from the consumers when possible. The detection of the various starches and fibers by the microscope is taught, and their separation and estimation by chemical methods. Sizing and loading of fabrics is also discussed. This course is very practical in its application, and *accurate* work is required.

235. Finishing of Cotton Fabrics.

The object of this course is to give to the designer a knowledge of the various methods used in finishing, and the effect of the same on the appearance and construction of the fabric. Simple methods of distinguishing between different fibers and finishes, filled and pure starched cloths, are taught. The instruction is given by means of one lecture a week and two hours' laboratory practice.

240. Singeing.

Construction of machine. Function of air pump. Adjustment of gas. Speed of operation. Singeing for a face finish. Singeing for a body finish. Determination of best conditions for a particular cloth.

241. Scouring.

Construction of kiers. Methods of circulation. Packing of goods. Time of boiling. Washing down. Use and operation of washing machines. Choice of scouring agent.

242. Bleaching.

Construction of chemic vats and cisterns. Application of bleaching solution to the goods. Squeezers. Piling down. Precautions to prevent tendering action of bleaching agent. Washing. Use of "Antichlors." Openers and scutchers. Selection of bleaching agent.

245. Mercerizing.

Construction of mercerizing machine. Design of tenter clips. Proper tension in tenter frame. Removal of caustic by washing. Neutralization of last traces. Selecting of mercerizing agent. Variation in conditions to suit cloth treated.

250. Drying.

Preparation of goods for drying. Importance of proper mangling. Construction and operation of a mangle. Construction of the drying cylinders. Mechanical limits of speed of operation. Best speed in view of results obtained on goods. Static electricity and its grounding.

Construction and use of tenter frames. Methods of heating, direct and indirect. Direction of air currents in relation to that of the cloth. Conditions giving the most rapid drying; the best width. Choice of tenter clip for a specific purpose.

255. Calendering.

Types of calenders and various finishes obtained. Construction of a simple calender, friction calender, chasing calender, Schreiner and embossing calenders. Speeds and conditions governing the operation of the above machines. Use of scrimp bars and stretchers. Gas and steam heating. Metallic rolls, fibrous rolls, and finishes produced by them. Care of rolls. Use of water. So-called permanent calender finishes. Use of beetles and hot presses for preparation for calendering. Top finishing.

260. Putting up.

Inspection of goods for faults. Classing as firsts, seconds, thirds and remnants. Yarding by flat folding, by rolling machines. Construction and operation of these machines. Various folds and put-up required by the several trades. Ticketing, banding and papering. Assortment in cases and storage of goods.

269. Thesis.

Each student who is to graduate from the course in chemistry and dyeing must devote twelve hours per week during the last half of his third year to original work, and at least one week before graduation must submit to the principal of the department a thesis of not less than two thousand words based upon the results of his own investigations.

271. Winding and Rib-top Knitting.

Winding and preparation of cotton, lisle, wool, worsted and silk yarns for running on rib-top, rib-leg and hosiery knitting machines.

Construction of circular rib-top knitting machines, principle of circular latch-needle knitting, setting and adjusting of different makes of machines.

Rib-top knitting on 12, 18, 24, 30, 36 and 42 gauge needle machines, with cotton, lisle, wool, worsted and silk yarn.

272. Rib-leg Knitting.

Rib-leg machines, with knee and ankle splicer, chain and chainless measuring devices.

Rib-leg knitting. Different classes of ribs, lace effects, spliced knee and ankle, for children's, boys' and misses' stockings.

Plaiting. Silk yarn on cotton and worsted yarn, also worsted on cotton yarn, for rib tops and rib legs.

273. Hosiery Knitting.

Principle of latch needle seamless hosiery knitting. Constructing, setting and adjusting three-quarter, seven-eighth and full automatic hosiery machines.

Knitting on three-quarter automatic hosiery machines, cotton and wool stockings, fine split sole, hose and half hose.

Seven-eighth automatic hosiery machine, medium and fine gauge hose and half hose.

Knitting men's half hose, ladies' hose; footing children's, boys' and misses' rib legs. White feet and black legs ladies' stockings, double sole, reinforced heel and toe; plaited hose and half hose with white heel and toe, fancy lace effects, on full automatic hosiery machines.

274. Hosiery Finishing.

Hemming and embroidering stockings. Looping, mending and singeing. Boarding, drying and pressing. Inspecting, pairing, stamping, folding and boxing, keeping stock and handling boxed goods.

Method of handling and keeping track of goods through the mill.

Cost of manufacturing different classes of seamless hosiery from yarn to box.

281. Winding and Knitting Cuffs and Sleeves.

Winding and preparation of the different classes of yarns used in the knitting of underwear.

Construction of circular latch needle rib cuff machines, two feed automatic tuck and plain sleevers, with slack course and welt attachments; the principle of plain and tuck stitch knitting.

282. Underwear Knitting.

Knit to shape ladies' underwear on latch-needle circular rib body machines; different principles of this class of knitting. Construction and adjustment of the machines to knit cotton, lisle, worsted and silk yarns; different methods of plaiting on these machines.

283. Underwear Knitting.

Knitting plain 1 & 1 cloth for cut-to-shape union suits and fancy rib cloth for ladies' underwear on plain latch needle body machine.

Latch needle, balbriggan, plain web knitting for plain and fancy stripes, in light-weight underwear.

Rib cuff and shirt borders knitting on circular latch needle rib border and cuff machinery.

Spring needle circular rib, plain, backing and trick needle knitting.

284. Underwear Finishing.

Cutting men's shirts and drawers, ladies' vests, infants' wrappers, children's, boys' and misses' vests and union suits.

Looping, seaming and finishing of underwear in detail.

Fixing and adjusting of the principal styles and makes of sewing machines used in the manufacture of underwear.

Method of handling the goods in process of manufacture from yarn to box.

293. Miscellaneous Knitting.

Knitting fine French balbriggan cloth, worsted and merino cloth, single and double plush cloth, for fleeced-lined underwear, made on spring needle frame.

Sweater knitting, with racked rib and cuffs, pineapple stitch and fancy-colored effects, on circular rib machines.

Full-fashion sweater knitting on the Lamb full-fashion, hand power machine.

Knitting golf gloves on the Lamb hand-power machine.

Different processes of finishing balbriggan, worsted, merino and fleeced cloth into underwear ready for market.

294. Knitting (Optional to Third-year General Students).

To those students of the general course who desire some information on knitting machinery, the school offers this option during the last year. The aim of this work is to give to the student an insight into the class of work for which a large part of the yarn in a yarn mill is made.

The different types of knitting machines are studied, and in each case the effect upon the machine and fabric of imperfect yarn is gone into carefully.

300. Picking, Carding and Roving.

Cotton yarn mill machinery. Machines required for making different numbers of counts of yarn.

Picking Room. — Bale breakers or openers, their use and how operated.

Automatic feeders, their construction, methods of setting and adjusting; evener motions, calculations.

Openers, their use and object. The different kinds used and the class of cotton for which they are best adapted. The different kinds of beaters used, and the speeds at which they should run.

Cleaning trunks, their uses and operation.

Breaker, intermediate and finisher lappers. Different style and makes of machines. The construction and operation of the different parts, setting and adjusting the different parts, and arranging the speeds to give the best results. Calculations for speeds, drafts, weights and production on the different machines.

Cards. — The different kinds of cards used; their construction and operation.

The revolving flat card. Its principal parts. Different methods of setting, different settings for different classes of work. The speeds of the different parts, and their effect on the quality of the work produced. Construction of card clothing. Clothing cylinder

doffer and top flats. Stripping and grinding cards. Grinding and testing top flats. Covering grinding rolls. Splicing driving ropes and belts.

Calculations for speeds, drafts, production, per cent of waste, etc.

Roving Frames. — The different processes used. The construction and use of the roving or fly frame.

Speeds of the different size frames and the different parts of the frame.

The different styles of differentials used and their object.

Cone drums. The effect of the shape of the cones on the running of the frames. Leveling and adjusting roving frames. Balancing flyers, and the effect of unbalanced flyers on the running of the frame.

The effect of draft and twist on the quality and quantity of the work produced.

Roller setting. Calculations for speeds, draft, twist, tension and lay. Calculations for differentials, cone drums and productions.

301. Special Knitting.

Operations preliminary to knitting. Winding, cone winding, bobbin winding. Development of knitting. Knitting needles. Construction and operation of latch and spring needles. Knitting on circular and flat machines. Study of the results of uneven, mixed and otherwise imperfect yarns in the knitting process, and the effect upon the machine and fabric.

302. Drawing Rolls and Drawing Frames. Ring Spinning. Doubling and Drafting.

Drawing Rolls. — The different kinds of rolls used, their construction, methods of covering, setting and adjusting for different kinds of work. Clearers for drawing rolls.

Drawing Frames. — The railway head and evener draw frame. The construction and arrangement of drawing frames. Different methods of gearing, weighting and stop-motions for draw frames. Calculations for speeds, drafts, dividing drafts, production, etc.

The Ring Spinning Frame. — Its construction and use. The construction and adjustment of the different parts, such as spindles, rings, travelers, rollers, builder motions, etc. Making bands. Comparing different drives for spindles. Twist in yarn, its effect on strength and production. Calculations for speeds, drafts, twist and production.

Doubling and Drafting. — Laying out drafts and weights at the different machines from picker to spinning frame for making different numbers of yarn.

Calculating the number of machines required at the different processes to produce a required amount of yarn of different numbers.

Calculating the labor cost of making roving or yarn, using different methods.

Calculating the effect of draft at the different machines on the production and cost of the yarn made.

303. Combing and Mule Spinning.

Sliver and ribbon lap machines. Construction of the different machines. Methods of setting and operating same.

Combers. — The different kinds of combers used; their speeds and productions. Comber setting and adjusting and methods of operating.

Roll varnishing. The percentage scale and its use. Practice work in setting and operating the different combers.

Calculations for speeds, drafts, productions, etc., on the lap machines and combers.

Mules. — The spinning mule and its uses. The special features of the mule. Description of the construction and operation of the different parts of the mule. Calculations for speeds, drafts, etc., and all calculations required in making changes.

Practice work in laying out and carrying through the work for making different counts of yarn from the raw stock to the finished thread.

304. Twisting and Cotton Classing.

The Object of Twisting. — Different styles of twisters used. Wet and dry twisting. Direction of twist. Effect of twist on the strength, weight or counts.

Preparing yarn for twisting.

Making ply threads, cords, cordonnet and sewing threads.

Sizes of rings and spindle speeds for different threads. Calculations for speeds, twists and productions.

Cotton Classing. — Different species of cotton plants.

Cultivation of cotton. The different varieties of cotton and the class of goods for which they are best adapted.

Cotton picking, ginning, baling and marketing. The selection of cotton for different classes of goods.

Cotton grading and stapling.

Practice work in running work from raw stock to spinning and twisting.

305. Test Work and Roller Covering.

Test Work. — Testing different classes of cotton and comparing results for waste removed and strength of yarn made. Testing different methods of handling cotton, using different speeds; drafts and numbers of processes used and comparing results.

Roller Covering. — Covering top roll and under clearers.

Cutting, piecing, drawing on, burning down and burnishing.

306. Yarn Testing and Comber Reneedling.

Yarn Testing. — Testing yarns for weight or counts, breaking weight (skein or single). Inspecting yarn, testing for moisture, amount of twist in single or ply yarn. Testing for contraction in single yarn; for contraction or expansion in ply threads. Testing for elasticity.

Comber Reneedling. — Cleaning off, setting needles, soldering on, building half laps, polishing and finishing same.

Practical work in running tests through the machines.

TEXTBOOKS AND LECTURE SHEETS USED IN THE SCHOOL.

Chemistry Department.

Morgan and Lyman's "Chemistry," Noyes' "Qualitative Analysis," Talbot's "Quantitative Analysis," Remsen & Orndorff's "Organic Chemistry," Blanchard's "Synthetic Inorganic Chemistry," Smith's "General Chemistry for Colleges."

Mechanical Department.

"Practical Mechanics," Hale; W. H. Timbie's "Essentials of Electricity."

Other Departments.

No textbooks are used in the departments other than those named above. Lectures are prepared by the heads of the departments covering the work in detail, multigraphed, and sold to the students at cost. These, with design books, design pads and notebooks, constitute the working material to be provided by students.

EVENING CLASSES.

Evening instruction, similar to the day, on the same machinery and by the heads of the day departments assisted by practical skilled men from the mills, is given for the benefit of workers in local mills and machine shops. The instruction in the evening classes is divided into sections so as to give the greatest possible facilities to the students in these classes.

Certificates are granted to all students in the evening classes who have successfully completed the equivalent to two years' work, two evenings a week. The certificate states the subjects that the student has passed in, and the length of time he has devoted to the work.

Evening students are enrolled at the commencement of both the fall and spring terms. The subjects taken up in the different evening courses follow the detailed topics as specified on pages 24 to 26.

Students enrolling in the regular Chemistry and Dyeing Course are required to make a deposit of $5 for breakage. In case the breakage caused by any student does not equal the amount of his deposit, the balance is returned to him at the end of the school year.

The school is in session four evenings a week for twenty-four weeks, — Monday, Tuesday, Thursday and Friday, from 7.30 to 9.15 for all classes except those taking the Chemistry and Dyeing Course. Those classes are held three nights a week, — Monday and Tuesday, from 7 to 9.30, and Thursday, from 7.15 to 9.15.

For terms of admission, see page 26 of this catalogue.

COURSES OF INSTRUCTION, EVENING CLASSES.

Carding and Spinning Department.

Picking, Carding and Drawing: one year, two evenings a week.
Advanced Picking and Carding: one term, one evening a week.
Combing: one term, two evenings a week.
Roving Frames: one term, two evenings a week.
Advanced Drawing and Roving Frames: one term, one evening a week.
Ring Spinning and Twisting: one term, two evenings a week.
Mule Spinning: one year, two evenings a week.
Cotton Sampling: one term, one evening a week.
Advanced Calculations in Carding and Spinning: one year, one evening a week.

Weaving and Warp Preparation Departments.

Spooling, Warping and Slashing: one term, two evenings a week.
Automatic Loom Fixing: one term, two evenings a week.
Plain Loom Fixing: one term, two evenings a week.
Fancy Loom Fixing: one term, two evenings a week.
French, Portuguese and Polish Classes in Loom Fixing.
Advanced Calculations in Weaving: one term, two evenings a week.
Warp Drawing for Women: one term, two evenings a week.

Designing Department.

Elementary Designing: one term, two evenings a week.
Advanced Designing: one term, two evenings a week.
Elementary Analysis: one term, two evenings a week.
Advanced Analysis: one term, two evenings a week.
Jacquard Designing: one term, two evenings a week.

Knitting Department.

Special Knitting: two evenings a week each term.

Engineering Department.

Mechanical Drawing: one year, two evenings a week.
Advanced Drawing: one year, two evenings a week.
Machine Drawing: one year, two evenings a week.
Mechanical Designing: one year, two evenings a week.
Machine-shop Practice: one year, two evenings a week.
Advanced Shop Work: one year, two evenings a week.
Steam Engineering, Boilers: one term, one evening a week.
Steam Engineering, Engines: one term, one evening a week.
Elementary Electricity: one year, one evening a week.

Chemistry Department.

General Chemistry: one year, two evenings a week.
Qualitative Analysis: one year, two evenings a week.
Quantitative Analysis: one year, two evenings a week.
Organic Chemistry: one year, two evenings a week.
Textile Chemistry I: one year, two evenings a week.
Textile Chemistry II: one year, two evenings a week.
Dyeing I: one year, two evenings a week.
Dyeing II: one year, two evenings a week.
Dyeing III: one year, one evening a week.

Mathematics.

Cost Finding: one term, two evenings a week.
Arithmetic: one term, two evenings a week.
Mill Calculations: one term, two evenings a week.

Weaving Department, showing Fancy-weave Room

Evening Diploma Courses.

The school diploma will be granted to those students of the evening classes who successfully complete the work specified under the following courses: —

I. Carding and Spinning. — Picking and Carding, Drawing and Roving Frames, Combing, Ring Spinning and Twisting, Mule Spinning, Cotton Sampling, Advanced Calculations in Carding and Spinning, Mechanical Drawing, Advanced Drawing.

II. Weaving and Designing. — Spooling, Warping and Slashing, Plain Weaving and Fixing, Fancy Weaving and Fixing, Elementary Designing and Cloth Construction, Advanced Designing and Cloth Construction, Jacquard Designing, Cotton Sampling, Mechanical Drawing, Advanced Drawing.

III. Chemistry and Dyeing. — General Chemistry, Qualitative Analysis, Quantitative Analysis, Organic Chemistry, Textile Chemistry I, Textile Chemistry II, Dyeing I, Dyeing II, Dyeing III, Mechanical Drawing, Advanced Drawing.

Courses for Women.

Several courses are open for women in both the day and evening classes, and a number have pursued them successfully. They are as follows: —

Textile Designing.
Chemistry and Dyeing.
Cost Finding.
Cotton Sampling.
Warp Drawing.

GENERAL INFORMATION.

CONDITIONS OF ADMISSION TO DAY CLASSES.

Candidates for admission to the regular day courses must be at least sixteen years of age. Those who have been students of other technical institutions, colleges or universities are required to furnish a certificate of honorable dismissal from those institutions. Candidates having a graduate's certificate from a high school or other educational institution of equal standing are admitted without examination. Other applicants for admission to courses other than the Chemistry and Dyeing Course are required to undergo examinations in arithmetic, English, and commercial geography. Candidates for the Chemistry and Dyeing Course are required to pass, in addition, examinations in elementary algebra and plane geometry.

A candidate, whether desiring to be enrolled on certificate or by passing the entrance examination, must fill out an application blank, which should be delivered at the school as early as possible before the opening of the year.

Applicants desiring to take up special studies in the school may be admitted, provided their applications are approved by the Principal. Such students shall be known as specials, and, upon satisfactory completion of their work in the school, shall be given certificates stating the work they have covered and the time they have been in attendance.

No applicant is admitted to the regular courses of the school after the first four weeks unless he has already covered the work of the school for the time preceding the date of his application; nor shall any change in any student's course be made after the first four weeks of admission except by permission of the Principal.

ENTRANCE EXAMINATIONS FOR DAY STUDENTS.

The examinations for those desiring to enter the school at the opening of the fall term of 1924 will be held at the school only, on Wednesday, June 11, and on Friday, September 5, at 9 A.M.

The detailed topics dealt with in the entrance examinations are as follows: —

Algebra, to quadratics; geometry, plane geometry. Required for admission to Chemistry Course only.

Arithmetic.

Definitions, addition, subtraction, multiplication, division, factors, multiples, cancellation, fractions, decimals, percentage, interest, ratio and proportion, square root, compound quantities, mensuration, metric system.

English.

The candidate will be required to show his ability to spell, capitalize and punctuate correctly; to show a practical knowledge of the essentials of English grammar, a good training in the construction of the sentence, and familiarity with the simple principles of paragraph division and structure.

He will be required to write a business letter, and one or more short articles on subjects assigned from which he may select. Ability to express himself clearly and accurately will be considered of prime importance.

Commercial Geography.

Farm products of the United States, where raised; our mines, and where located; our manufactures, and where established; our exports, and to what countries; our imports, and from what countries; our transportation facilities.

CONDITIONS OF ADMISSION TO EVENING CLASSES.

Candidates for admission to evening classes must be at least *fourteen* years of age.

Those desiring to enter any of the courses in the various departments must satisfy the head of the department which they desire to enter that they have sufficient knowledge to be benefited by the instruction offered.

FEES.

Day Students. — No tuition fee is charged day students who are residents of Massachusetts. For non-resident students the fee is $150 a year, payable in advance in two equal installments, — at the opening of the fall term and at the end of the first semester. No student shall be admitted to the classes until his tuition is paid. No fees are refunded except by special action of the Board of Trustees.

The above fee includes admission to any of the evening classes in which there is accommodation, and which the day students may desire to attend.

A deposit of $10 is required of all day students taking the regular Chemistry and Dyeing Course. A deposit of $5 is required of students taking chemistry in connection with any other course. This deposit is to cover the cost of any breakage that may occur, but in case the actual breakage exceeds this amount an additional charge is made. Any unexpended balance is returned at the end of the year. To non-resident students a further charge of $10 for chemicals is made.

Students are required to supply themselves with such books, tools and materials as are recommended by the school, and pay for any breakage or damage that they may cause in addition to the above-named fee. A fee of $3 is charged each day student, to be used for assisting in the maintenance of athletics in the school.

Evening Students. — No tuition fee is charged evening students. Students enrolled in the Chemistry and Dyeing Course are required to make a deposit of $5 for breakage. In case the breakage caused by any student does not equal the amount of his deposit, the balance is returned to him at the close of the school year, but if the breakage is in excess of this deposit, the student is charged the additional amount. Evening students are required to supply themselves with such books and materials as are recommended by the school, but this charge is small.

SCHOOL HOURS.

The school hours for the day classes are from 8.30 to 12 each morning except Saturdays, with afternoon sessions from 1.30 to 4.30 except Saturdays. For sessions of evening classes see page 23.

EXAMINATIONS, CERTIFICATES AND DIPLOMAS.

Written examinations are held twice a year, and other tests from time to time to determine the standing of students in their work.

The final examination is held at the end of the spring term. Results of these examinations, together with the student's marks recorded from recitations, practical demonstrations and student's books, are taken into account in ranking students at the end of each year and for graduation. Unsatisfactory progress necessitates the student's repeating his studies.

Diplomas are given on the satisfactory completion of a course of study extending over a period of three years in connection with each course, if the student's record is otherwise satisfactory.

Students taking special courses, in most cases, are entitled to a certificate if they honorably and satisfactorily complete the course of instruction scheduled.

Day students are required to spend as much time daily out of school hours in study, such as recording lectures and other notes, as may be necessary to maintain proper standing. The students' books are examined by the instructors periodically, and the care and accuracy with which they are kept is considered in ranking students.

CONDUCT.

Students are required to conduct themselves in an orderly and gentlemanly manner while in attendance at the school. When the conduct of any student is considered by the Principal of the school detrimental to its best interests, he will be suspended by him and the case reported to the Board of Trustees for action.

Any student who presents at any time work as his own which he has not performed, or tries to pass an examination by dishonorable means, shall be regarded as having committed a serious offence.

Students shall exercise due care in the use of the school apparatus and machinery. All breakages and accidents must be reported at once to the instructor in charge, and the student will be held liable for any wilful damage or the result of gross carelessness.

ATTENDANCE.

Day students taking the regular courses are required to attend every exercise of the school; special students, every exercise called for by their schedules. For every case of absence or tardiness students must present an excuse to the Principal. A certain number of unsatisfactory excuses will render the student liable to suspension and further action if cause is sufficient.

When the attendance of an evening student is unsatisfactory he will render himself liable to be dropped from the school.

BOARD AND ROOMS.

New Bedford is unusually desirable as a residential city, and students will find numerous houses of private families and boarding houses where they may obtain room and board.

No requirements are made as to residence of out-of-town students, although facilities are given by having addresses of suitable houses on file at the school.

No definite estimate can be made of the cost, as this depends entirely on the tastes of the student, but board and room may be obtained for from $12 per week upwards.

TOOLS AND MATERIALS.

Students are required to purchase such materials, textbooks, tools and apparatus as may be required from time to time by the school authorities, or make deposits on such as are loaned to them. The supplies required vary with the courses for which the students enter, the cost being from $15 to $25 per year.

LIBRARY.

The school maintains a library that contains all the best works on carding and spinning, weaving, designing, knitting, dyeing and mechanics; also a consulting encyclopedia and an international dictionary. Catalogues and pamphlets dealing with machinery or processes related to textile work are also on file, as are all the leading textile journals and trade papers. The students have access to the library during school hours.

ATHLETICS.

The school has an athletic association, and the students participate actively in various sports and games. There are several athletic fields open to the students for their outdoor sports. The management of the school will give all reasonable encouragement and support to the furtherance of healthful recreation and manly sports for its students.

For fee for same see page 26 of this catalogue.

THE WILLIAM FIRTH SCHOLARSHIP AT THE NEW BEDFORD TEXTILE SCHOOL.

The donation of William Firth, Esq., has established a scholarship at the New Bedford Textile School, primarily for the benefit of a son of a member or of a deceased member of the National Association of Cotton Manufacturers, furnishing to the recipient of such scholarship $180 a year for the course. Candidates for this scholarship must apply by letter only, addressed to the National Association of Cotton Manufacturers, P. O. Box 3672, Boston, Mass. The candidates must be at least sixteen years of age and furnish certificates of good moral character, and those who have been students of other technical institutions, colleges or other universities are required to furnish certificates of honorable dismissal from such institutions. Those applicants conforming to the above conditions are nominated by the Board of Government to the New Bedford Textile School, and the selection of the candidate for the scholarship is made as the result of an examination held at New Bedford, Mass. Every candidate, previous to the examination, must file an application at the school for admission, agreeing to observe the rules and regulations of the school. Candidates are eligible for any of the courses included in the curriculum of the school.

In case the son of a member or of a deceased member of the National Association of Cotton Manufacturers does not apply for the scholarship, any person eligible for entrance to the school may make application.

This scholarship will be available in the fall of 1924.

THE MANNING EMERY, Jr., SCHOLARSHIP AT THE NEW BEDFORD TEXTILE SCHOOL.

The donation by the Passaic Cotton Mills Corporation and its employees of the sum of $3,000 has established a scholarship at the New Bedford Textile School, primarily for the benefit of the employees of the Passaic Cotton Mills Corporation and in accordance with an indenture entered into between the above-named Passaic Cotton Mills Corporation and its employees and the Trustees of the New Bedford Textile School.

In default of any application from an employee of the Passaic Cotton Mills Corporation who is deemed by the Trustees of the New Bedford Textile School as qualified to enter that institution, the Trustees of the New Bedford Textile School may, at their discretion, nominate, with the approval of the Passaic Cotton Mills Corporation, some other person to be the beneficiary of this scholarship. Such applicants must comply with such reasonable regulations and conditions as said New Bedford Textile School may from time to time adopt in relation thereto.

From said applicants one shall be selected by the Trustees of the New Bedford Textile School as a beneficiary of said scholarship.

This scholarship will be available in the fall of 1924.

Designing Department, showing Design Classroom

THE MASSACHUSETTS CHARITABLE MECHANICS ASSOCIATION SCHOLARSHIP.

The Massachusetts Charitable Mechanics Association are giving one scholarship of $250 a year to this school to be given to some deserving student to assist him in obtaining a technical education. It is understood that the person securing this scholarship must prove himself worthy in order to retain it.

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS' MEDAL.

The National Association of Cotton Manufacturers offers a medal to be awarded each year to the student in the graduating class who shows the greatest proficiency in scholarship. This is determined by an examination of the records of the students' progress throughout their studies, which are recorded and reported upon by the instructors and kept permanently on file.

The competition for this medal is open to all day students who graduate in the Complete Cotton Manufacturing Course, or to evening students who have completed studies comprised in that course and graduated therein. The association offering the medal has made it a condition of the award that at least four members of the graduating class be eligible to the competition.

THE WILLIAM E. HATCH MEDAL.

This medal is awarded to the member of the freshman class, taking the General Cotton Manufacturing Course, who ranks the highest in scholarship for the year. It is presented by Mr. Allen K. Remington, president of the Alumni Association, to commemorate the day of Mr. Hatch's retirement from the presidency of the school.

THE PETER SLATER MEDAL.

This medal is presented by Mr. Victor O. B. Slater, a graduate of the evening classes of the school, in memory of his father, Peter Slater, who was a loyal friend of the school. It is awarded to the student, graduating from the evening classes in Textile Design, who has attained the highest standing for the two-year course.

THE TEXTILE COLORIST AWARD.

The "Textile Colorist" of New York City has placed at the disposal of this school an annual sum of one hundred dollars for the purpose of encouraging original investigations in the science of dyeing and similar treatments. This award is made to the student in the graduating class of the Chemistry, Dyeing and Finishing Course whose thesis based upon his personal researches and experiences indicates the greatest practical value to the dyeing, bleaching, finishing or textile printing industries.

EQUIPMENT.

COTTON CARDING AND SPINNING DEPARTMENT.

This department occupies nearly the entire first floor of the machinery building, and has approximately 9,000 square feet of floor surface. The equipment is large and diversified, enabling the students to become acquainted with practically all the leading makes of machines found in the carding or spinning departments of cotton mills.

A special feature of the equipment is the large number of models of the principal parts of the different machines in this department. These models are so mounted that the different settings and adjustments can be made equally as well as on the machine itself, and thus enable the student to grasp more readily the essential points, since the parts are much more readily accessible.

The department is humidified by the system of the American Moistening Company and by Bahnson humidifiers.

Carver Cotton Gin Co.: 1 18 saw cotton gin.
Saco-Lowell Shops: 1 roving waste machine; 1 automatic feeder; 1 opener and breaker lapper; 1 finisher lapper; 1 card; 1 evener draw frame; 1 two-head draw frame; 1 fine roving frame; 2 spinning frames.
H. & B. American Machine Co.: 1 finisher lapper; 2 cards; 1 drawing frame; 2 roving frames; 2 spinning frames.
Mason Machine Works: 1 card; 1 railway head; 1 mule.
John Hetherington & Sons, Ltd.: 1 card; 1 sliver lap machine; 2 combers; 1 mule; 1 camless winder.
Potter & Johnston: 1 card.
Whitin Machine Works: 2 cards; 1 sliver lap machine; 1 ribbon lap machine; 3 combers; 1 drawing frame; 2 roving frames; 2 spinning frames.
Woonsocket Machine & Press Co.: 1 card; 2 drawing frames; 2 roving frames.
Dobson & Barlow: 1 fine roving frame.
Fales & Jenks Machine Co.: 3 spinning frames; 1 twister.
Draper Corporation: 2 twisters; 1 banding machine.
Collins Brothers: 1 twister.
Universal Winding Company: 4 winders.
Foster Machine Co.: 2 doubling winders.
Miscellaneous Equipment: Roller covering machinery; apparatus for comber re-needling; card clothing machine; ball and spool winding machines.
Testing Apparatus: Single thread tester; skein and cloth tester; conditioning and testing machine; inspecting machine; yarn and roving reels; yarn balances; percentage scale; micro-photographic machine; twist counters; thread splicers.

WEAVING AND WARP PREPARATION DEPARTMENT.

This department occupies all of the second floor of the machinery building and contains about 15,000 square feet of floor area. The equipment is very complete and includes sufficient machinery to enable each student to obtain all the practical experience required in connection with his studies. All of the latest machinery is represented in this equipment, and, as the machinery is made especially for use in the school, it fully meets the needs of the students. Besides the machinery listed below there are models for demonstrating leno motions, box motions, warp-stop motions, etc.

Draper Corporation: 4 automatic looms, plain, 2-harness; 1 spooler; 2 warpers.
Mason Machine Works: 1 Standard print loom; 1 plain, 5-harness loom.
Crompton & Knowles Loom Works: 1 plain, 2 plain 3-harness, 2 plain 4-harness, 3 plain 5-harness looms; 1 6 x 1 gingham loom; 1 2 x 1 automatic bobbin changing gingham loom; 1 4 x 1 gingham loom; 1 3 x 1 12-harness towel loom; 1 4 x 1 20-harness No. 13 multiplier loom; 1 20-harness double cylinder loom; 2 20-harness dobby looms; 2 2-bar lapper looms; 3 25-harness 2 x 1 box and leno motion looms; 8 16-harness 2 x 1 box and leno motion looms; 3 25-harness leno motion looms; 6 20-harness leno motion looms; 1 rise and drop Jacquard, 200 hook, loom; 1 double-lift Jacquard, 208 hook, loom; 1 double-lift Jacquard, 300 hook, loom; 1 double-lift Jacquard, 400 hook, loom; 2 4 x 1 20-harness dobby looms; 2 4 x 1 20-harness dobby looms, automatic bobbin changing; 2 4 x 4 20-harness dobby looms.
Whitin Machine Works: 2 plain, 3-harness looms; 2 plain, 4-harness, looms; 9 plain, 5-harness, looms; 1 25-harness 2 x 1 box motion loom; 1 25-harness 2 x 1 box motion and leno motion loom; 3 25-harness leno motion looms; 1 20-harness leno motion loom.
Stafford Co.: 1 20-harness automatic shuttle changing loom; 1 25-harness dobby loom.
Kilburn, Lincoln Machine Co.: 3 25-harness dobby looms.
Easton & Burnham Machine Co.: 1 spooler.
T. C. Entwistle Co.: 1 warper; 1 ball warper; 1 beamer.
Howard & Bullough Machine Co.: 1 slasher.
12 drawing-in frames.

DESIGNING DEPARTMENT.

The design classroom is located on the third floor of the recitation building, and is a large, well-lighted room containing all the appliances necessary for instruction in this important subject. Special attention has been given to the method of lighting this room to give the best results, and the desks are made with special reference to the needs of the student of designing.

The hand loom work is located in a large room on the third floor of the machinery building. This room contains twenty-seven hand looms adapted to the use of students in experimental work, and in putting into practice the theory of designing, and also to enable them to produce certain of the designs that they are taught in the designing class. There is also a 20 spindle bobbin winder and 1 hand winder. The room is well-lighted by a saw-tooth roof.

The card cutting room contains two Royle card cutting machines and a card lacing frame, thus enabling the students working Jacquard designs to cut their own cards.

MECHANICAL DEPARTMENT.

Instruction in the mechanical department is carried on in five different rooms located in various parts of the recitation building. These rooms are arranged and fitted out with apparatus to meet the needs of the students following this course. The department is subdivided into the following sections: mechanical drawing, textile engineering and machine-shop work.

Mechanical Drawing. — The drafting room is located on the second floor of the recitation building and is well lighted by northern and western exposures. It is equipped with independent drawing tables and lockers for the drawing boards and materials. For the students' use in connection with their drafting instruction there is a collection of models, mechanical apparatus and machine parts. On the third floor there is a swinging blue-print frame mounted on a track, and a large dark room fitted with a Wagenhorst Electric Blue Printer and modern conveniences for blue printing.

Steam Engineering and Elementary Electricity. — Instruction in steam engineering and elementary electricity is given both in theory and practice. The theoretical part of the course is carried on in a large recitation room on the second floor, while the practical side is studied in the engineering laboratory in the basement of the recitation building. The laboratory is supplied with steam direct from the boiler room and also has gas and water connections 1 12″ x 24″ Wetherill Corliss Engine; 1 5-horsepower Sturtevant vertical Steam Engine, and models of boilers, engines and pumps.

For the study of electricity there is provided a source of alternating current at 110 volts and 220 volts pressure.

1 2 KW Holtzer-Cabot direct current Generator; 1 5 horse-power Holtzer-Cabot Induction Motor; 1 2½ KW Holtzer-Cabot compound wound Converter; an assortment of voltmeters, ammeters, wattmeters, galvanometer, foot candle meter, transformers, etc.

Machine Shop. — This department occupies about 2,800 square feet of floor surface on the first floor of the recitation building. The machinery is electrically driven and the equipment modern.

7 12″ x 5 ft. Reed Prentice engine lathes; 3 12″ x 6 ft. Reed Prentice engine lathes; 1 18″ x 8 ft. Reed Prentice Engine lathe; 1 14″ x 6 ft. Reed Prentice quick change gear engine lathe; 1 14″ x 6 ft. Whitcomb-Blaisdell quick change gear engine lathe; 1 14″ x 6 ft. Hendey quick change gear engine lathe; 2 14″ x 6 ft. Flather engine lathes; 1 7″ x 5 ft. Reed Prentice speed lathe; 1 10″ x 5 ft. speed lathe; 1 20″ Prentice drill; 1 No. 4 Reed "Barr" single sensitive spindle drill; 1 No. 1½ Brown & Sharpe universal milling machine; 1 No. 2 Brown & Sharpe universal milling machine; 1 16″ Potter & Johnson universal shaper; 2 16″ Ohio shapers; 1 24″ x 6 ft. Woodward & Powell planer; 1 Morse plain grinder; 1 Greenfield universal grinder, complete; 1 2½″ x 20″ Diamond water tool grinder; 1 2″ x 12″ Builders bench grinder; 1 4″ x 28″ Douglas grindstone;

1 Millers Falls power hack saw; 1 Peerless electric tool post grinder; 1 Cincinnati electric hand drill; 1 Westmacott gas forge; 1 Wallace circular saw; 1 4″ Wallace planer; 1 Cabinet containing milling machine attachments, small tools and minor apparatus.

CHEMISTRY, DYEING AND FINISHING DEPARTMENT.

This department occupies about 13,600 square feet, situated in the basement and on the first and third floors of the recitation building. This space is divided into four laboratories, a lecture and recitation room, a reading room and office for the principal of the department, and two store-rooms. The general chemistry and dyeing laboratory is a large, well-lighted room, 63 feet 6 inches by 20 feet, on the first floor, and is especially designed to meet the needs of the students in the general courses. This laboratory is equipped with forty-two double desks in rows of three desks each. At the end of each row is situated the sink and dye bath. Along the wall, on the opposite side are the hoods. In the main special laboratory each student has desk space, 2 feet by 8 feet, and his own desk, dye bath and draught hood. Conveniently located are a large drying oven, four 10-gallon dye kettles, and one 20-gallon dye kettle. This laboratory is equipped at each desk with gas, water and suction in order that the student's work may be carried on with the utmost celerity conducive to the best results. This laboratory is also equipped for analytical work and has 9 balances, a polariscope, 1 Spencer microscope No. 5, triple nose piece, objectives 16, 4, and 1.8 oil immersion, mechanical stage; 1 Spencer rotary microtome, 2 other microscopes, an Emerson calorimeter, a Westphal balance, a Saybolt universal viscosimeter, and other special apparatus. The laboratory for converting cotton textiles is located in the basement. It contains the machines necessary to demonstrate in practical proportions the operations involved, such as a single-burner Butterworth gas singer complete with air pump and spark extinguisher, a 100 lb. Jefferson kier, an experimental piece mercerizing machine, a 3 roll padding machine, a 6 cylinder horizontal drying machine, equipped with the Files exhausting system, 2 40″ jigs, a steam heated calender, and a 30 foot automatic tentering machine with Butterworth patent automatic clips. In this laboratory there is also a small Hussong dyeing machine and a Franklin dyeing machine for yarn dyeing. On the Hussong machine there is a Tagliabue temperature controller. A high top cloth folder and a Dinsmore portable sewing machine are part of the equipment, although situated in another room.

KNITTING DEPARTMENT.

The knitting department occupies two large connecting rooms on the top floor of the machinery building, and contains about 6,600 square feet of floor area. The equipment is very complete, there being a greater number of machines and a larger variety than can be found in any similar school in the world. The work that has been produced by the students of this department has received high praise from some of the leading experts in the knitting trade, the hosiery and underwear taking especially high rank.

Crane Mfg. Co.: 1 36-gauge spring needle table, 18″ and 21″ cylinders; 1 15″ 8 cut rib body machine; 1 19″ 14 cut rib body machine with Crawford stop motion.

Hemphill Co.: 1 "Banner" $3\frac{3}{4}$″ 176 needle automatic footer; 1 "Banner" $3\frac{1}{2}$″ 220 needle automatic footer; 1 "Banner" $3\frac{1}{2}$″ 240 needle automatic footer.

Jenckes Knitting Machine Co.: 1 "Invincible" 4″ 108 needle automatic footer; 1 "Invincible" $3\frac{3}{4}$″ 188 needle automatic footer; 1 "Invincible" 3″ 120 needle automatic footer; 1 "Invincible" $3\frac{3}{4}$″ 240 needle automatic footer.

Lamb Knitting Machine Co.: 1 6-cut scarf machine; 1 flat 8-cut glove machine.

Mayo Machine Co.: 1 $3\frac{3}{4}$″ 176 needle automatic footer; 1 $3\frac{1}{2}$″ 188 needle automatic footer; 1 $3\frac{1}{2}$″ 200 needle automatic footer; 1 $3\frac{1}{2}$″ 220 needle automatic footer.

Chemistry and Dyeing Department, showing Main Chemical Laboratory

Scott & Williams: 1 3¾″ 176 and 200 needle automatic ribber; 1 3¼″ 176 and 180 needle automatic ribber; 1 4¼″ 180 needle automatic ribber; 1 4¼″ 216 needle automatic ribber; 1 4¼″ 276 needle automatic ribber; 1 4¼″ 300 needle automatic ribber; 1 3¼″ 160 needle automatic sleever; 1 3¼″ 264 needle automatic ribber; 1 10″ 8 and 10-cut automatic rib-body machine; 1 13″ 10-cut automatic rib-body machine; 1 20″ 12-cut plain and 2-2 body machine; 1 20″ 16-cut Balbriggan body machine; 1 20″ 14-cut rib-border machine; 1 3½″ 240 needle Model K machine; 1 3½″ 200 needle Model HH machine; 1 3¾″ 160 needle Model RI machine; 1 3¼″ 140 needle Model RI machine; 1 finishing machine; 1 bar-stitch machine; 1 chain machine; 1 12-point looper.

Wildman Mfg. Co.: 1 3¾″ 200 needle fancy pattern automatic ribber; 1 2¾″ 120 needle neck tie machine; 1 3½″ 188 and 200 needle automatic ribber; 1 3½″ 220 and 240 needle automatic ribber; 1 4½″ 180 needle automatic sleever; 1 4½″ 216 needle automatic ribber; 1 4¼″ 272 needle automatic ribber; 1 13″ 8 and 12-cut automatic rib-body machine; 1 18″ 14-cut plain and 2-2 rib-body machine; 1 Ballard electric cloth cutter.

Merrow Machine Co.: 1 60D overseaming machine; 1 60E hemming machine; 1 60AD overedging machine; 1 60UD cloc stitch machine; 1 15F crochet machine; 1 35FJ schell machine.

Metropolitan Sewing Machine Co.: 1 150CD lace neck machine; 1 50CH-10 taper collarette machine; 1 30TC seaming machine; 1 251 cover-seaming machine; 1 192BX facing machine; 1 28GC-1 stay machine; 1 192W-5 elastic machine.

Singer Sewing Machine Co.: 1 44 lock stitch machine; 1 24 chain stitch machine; 1 24-8 drawer finishing machine; 1 32-29 eyelet machine; 1 68-7 button sewing machine; 1 79-6 button hole machine; 1 79-1 tacking machine.

Standard Sewing Machine Co.: 1 button hole machine.

Union Special Sewing Machine Co.: 1 class 3,000 lace machine; 1 class 5,800 collarette machine; 1 class 16,100 facing machine; 1 class 6,000 chain stitch machine; 1 class 2,300 chain stitch machine with Dewee's trimmer; 1 class 11,900 12-gauge cover seaming machine; 1 class 11,900 16-gauge cover seaming machine; 1 class 15,400 seaming machine; 1 grinder.

Wilcox & Gibbs Sewing Machine Co.: 1 lock-stitch machine; 1 flat-lock machine; 1 over-lock machine.

Stafford & Holt: 1 14″ 6-cut sweater machine.

Tompkins Bros. Co.: 1 spring needle table, 22 gauge 20″ and 36 gauge 18″.

United Shoe Machinery Co.: 1 metal eyelet machine.

The Beattie Mfg. Co.: 1 16-point looper; 1 22-point looper.

Grosser Knitting Machine Co.: 1 Koehler 20-point looper; 1 Kochler 24-point looper.

Southern Textile Machinery Co.: 1 Wright steady dial 22-point looper.

Saco-Lowell Shops: 1 24-end camless winder.

W. D. Huse & Sons: 2 bottle bobbin winders.

George W. Payne & Co.: 1 bottle bobbin winder.

Universal Winding Co.: 1 No. 50 cone winder.

Henry H. Skevington & Co.: 1 floating thread cutter.

Excelsior Cloth Dryer: 1 Excelsior cloth dryer.

Philadelphia Drying Machine Co.: 1 Hurricane steam press; 1 Hurricane hosiery and underwear dryer.

Lewis Jones: 1 hosiery and underwear brushing machine.

Paramount Hosiery Form Drying Co.: 1 set metal hosiery forms, men's, ladies' and children's.

Joseph T. Pearson: 120 hosiery boards, men's, ladies' and children's.

Stampagraph Co.: Dry transfers for hosiery and underwear.

POWER, HEAT AND LIGHT PLANT.

For some years the school manufactured its power and light, but owing to the growth of the school plant it became necessary either to make a large expenditure for a new power plant or to purchase power and light and the latter plan was determined upon.

The equipment in this department consists of 1 Cahall 60 H.P. vertical boiler; 1 Stirling 105 H.P. water tubular boiler; 1 B. & W. 155 H.P. water tubular boiler; 1 Deane $4\frac{3}{4}''$ x $4''$ duplex double outside packed plunger steam pump connected to a receiver tank; 1 Deane $4''$ x $3''$ x $4''$ single steam pump; 1 Riley 100 H.P. feed water heater; 1 Atwood and Morrill damper regulator; 1 Sturtevant 75 H.P. horizontal center crank engine; 1 Westinghouse 50 K.W., 220 volt, 3 phase, alternating current generator, direct connected; 1 Westinghouse 4 K.W., 125 volt, direct current generator; 1 General Electric recording wattmeter; 1 W. S. Hill 4 panel switchboard equipped with 9 Wagner indicating ammeters, 2 Wagner indicating voltmeters, 1 Thomson 50 K.W. 3 phase integrating wattmeter, 2 direct reading K.W. meters, 14 Wagner current transformers, 1 Westinghouse combination rheostat, 1 General Electric combination rheostat, 2 Condit Electrical Manufacturing Company's 250 volt circuit breakers, all necessary switches, bus bars, etc.; 2 wing turbine fans for forced draft; 1 Cochrane oil separator; 1 Sturtevant heating and ventilating outfit; 1 American Moistening Co.'s humidifying outfit; also 1 Parks-Cramer Company's, 1 Bahnson Company's and 1 American Portable humidifying outfit; and 43 electric motors ranging from $\frac{1}{8}$ H.P. to 15 H.P.

GRADUATION EXERCISES.

PROGRAMME.

Selection ("Crinoline Days") . . . . . *Berlin*
OLYMPIA STUDIO ORCHESTRA

Prayer
Rev. F. TAYLOR WEIL

Resolutions from the Graduating Class

Opening Address
ABBOTT P. SMITH
President of the Board of Trustees

Selection ("Parade of the Wooden Soldiers") . . . . . *Jessel*
OLYMPIA STUDIO ORCHESTRA

Address
THOMAS H. SULLIVAN
Member of the State Advisory Board of Education

Selection ("Wonderful One") . . . . . *Paul Whiteman*
OLYMPIA STUDIO ORCHESTRA

Presentation of Diplomas and Certificates to Graduates of Day and Evening Classes
ABBOTT P. SMITH

Presentation of Medals
National Association of Cotton Manufacturers Medal JOHN L. BURTON, Trustee
William E. Hatch Medal . . Hon. WALTER H. B. REMINGTON, Mayor
Peter Slater Medal . . . . . GEORGE WALKER, Trustee

Presentation of two Cups to Winners of Tennis Tournament

Selection ("Liza") . . . . . *Pinkard*
OLYMPIA STUDIO ORCHESTRA

GRADUATES — 1923.

Day Classes — Diploma Courses.

General Cotton Manufacturing

Leon Alfred Braun.
Victor Herbert Bruneau.
Frank Emil Checkman.
Albert Cookson.
Harry Kanter.
Edwin Haffords Macy.
Edward John Ross.
William Joseph Savers.
Wesley Lloyd Schiller.
George Earle Whitehead.

Chemistry, Dyeing and Finishing

James Howard Ewing.
Roger Augustus Heath.

Seamless Hosiery Knitting

George Papageorge.

Certificate Courses — Day Classes.

Three-year Courses

Edmond Cody.
George H. Duckworth.
Louis Jones.
Christopher E. Rigby, Jr.
Joseph L. Robinson.

Two-year Courses

Harold Heap.
W. Mark Redfern.
Poy Ngo Siu.
Harold Hsiang-ho Yuan.

One and One-half Year Courses

Annie C. Chan.
Alfonso Perez.

One-year Courses

John Barrows.
Romeo Brunette.
Fred Bottomley.
Fa-Kien Chang.
Powhatan F. Harper.
James C. Smith.
H. Comer Howell.
Daniel A. Lane.
J. K. Theodore Lee.
Joseph E. Mason.
Walter E. Morton.
Waldemar Wallner.[1]

Theses presented.

The Bleaching of Blue Stained Cotton . . . . . James H. Ewing
The Penetration of Dyes on Various Vegetable Fibres . . Roger A. Heath

Diploma Course — Evening Classes.

Carding and Spinning

Pharus T. Kelty
Manuel A. Resendes
Edward Slater
J. Arthur Tripp
George Walker

[1] Out of course.

Certificate Courses — Evening Classes.

Two Years

Francisco d'O. Abreu
Joseph Albin
Earle V. Almy
William C. Arnold
Robert Astley, Jr.
Francisco Baldo
Joseph R. Barrows
Winselau P. Barrows
Lawrence P. Bascom
Joseph Bauer
Roger E. Bavoix
Ernestine Belanger
Eric Brierley
James R. Bulcock
Henry A. Buntschuh
Thomas Calderbank, Jr.
Charles A. Calverley
Thomas Carter
James W. Connulty
Joseph Dawson
Philip E. Deschenes
Robert Downey
A. Farnham Dunham
James H. Ewing
Charles W. Feldon
William Fornaciari
Cyryl Gesiak
Joseph Gonet
Romeo Gosselin
George W. Hacking
Herbert Hacking
John R. Hargreaves
Frederick Jackson
Earle R. Janak
George Krauss
Lucien Landry
Eli S. Lestage
John Machado, Jr.
Arthur Margerison
Maurice Margerison
George H. S. Matthews
Joseph Matyianowksi
Lawrence J. McGrath
William J. McGurk
John R. McWicker
Bagdallar Melkonian
Wesley Mills
Alice Monjeau
William Monk
John L. Moriarty
Joseph Pacheco
Albert Pate
Frank Pelczar
Gaspard Pellerin
Louis Peltz
Anthony Puchlapek
Adam Pykosz
Harry L. Ray
Arthur F. Resendes
Freida Richards
William Riley
William J. Robinson
Manuel Roderiques, Jr.
William J. Sayers
Herbert Smith
Joseph Spragg, Jr.
Joseph Sykes
Joseph Szyndlar
William Travers
Harry A. Tripanier
Oswald P. Turner
John F. Wareing

Three Years

Ellsworth D. Baker
Harry Barker
George F. C. Burke
William Catlow
Ernest Collinge
Leo Desorcy
William Desorcy
Leonard S. Dodge
Alfredo Duarte
Edmond G. Dupuis
Horace E. Johnson
William LaChapelle
John J. Mahoney
Lewis A. Padelford
Charles Page
Antone P. Simmons
Norman Singleton
Clifford Smith
Herbert H. Tiffany
Richard Whelan
George Wright, Jr.

Four Years

James T. Moriarty
Thomas F. Quigley
John A. Rothwell
Ernest P. Serra
John A. Valentine
William C. Zylstra

Five Years

Rudolph G. Blanchette
Alfred J. Gibbs
John H. McCartney

Six Years

Leon F. Dumas
Thomas Townson
Frank Trojan

ALPHABETICAL LIST OF GRADUATES.

The following list has been corrected in accordance with information received previous to March 1st, 1924. Any information regarding incorrect or missing addresses is earnestly solicited.

D indicates a diploma; C indicates a certificate (covering a partial course only); S indicates special course.

Achorn, Robert E., Jr., I, '15 (D). Agent, Prudential Life Insurance Co., 96 William St., New Bedford, Mass.
Adams, Elbert V., I, '22 (D). With Utica Spinning Co., Utica, N. Y.
Allan, William W., I, '15 (D). Overseer of cloth room, Grosvenor Dale Co., North Grosvenor Dale, Conn.
Amarantes, Jerry O., VI, '19 (C). Clerk, Amarantes' Garage, New Bedford, Mass.
Ambler, Harry, III, '17 (D). With the Gerald Cooper Co., 1 Pomfret St., Providence, R. I.
Amona, Cheng Q., I, '17 (D). Engineer, Bureau for the Improvement of Cotton Industry, Ex-Austrian Concession, Tientsin, China.
Amos, Howard C., II, '17 (C). 513 Main St., Acushnet, Mass.
Anderson, Hilmer H., S, '22 (C). Franklin, Mass.

Babcock, Howard L., VI, '21 (C). Student, Saquoit Spinning Company, Utica, N. Y.
Baldwin, Fred L., S, '05 (C). With Sulloway Hosiery Mills, Franklin, N. H.
Balloch, Roger T., IV, '21 (D). Foreman, Ashley Knitting Co., 81 No. Water St., New Bedford, Mass.
Barrett, Edward W., I, '21 (C). With Manomet Mills, New Bedford, Mass.
Barrows, John, III, '23 (C). Student, Tufts Dental School, Boston, Mass.
Barrows, Murray F., S, '05 (C). Bond Salesman, 1118 Guardian Bldg., Cleveland, Ohio.
Bates, Merton H., II, '20 (D). Painter, Osterville, Mass.
Bearcovitch, Alfred J., I, '15 (D). Second Hand in Dye House, Imperial Printing and Finishing Company, Bellefont, R. I.
Bentley, Milton J., I, '11 (D). Superintendent, American Linen Company, Fall River, Mass.
Besse, Allen D., I, '22 (D). Student, Wamsutta Mills, New Bedford, Mass.
Besse, Edward L., Jr., I, '22 (D). Fixer, Loray Mills, Gastonia, N. C.
Bessette, Leo A., I, '15 (D). Tester, Manomet Mills, New Bedford, Mass.
Bister, Frederick J., I, '09 (D). With John Bister, 920 Broadway, New York City.
Blair, William G., Jr., I, '08 (D). In charge of Cotton Testing Project, Bureau of Markets and Crop Estimates, Department of Agriculture, Washington, D. C.
Blake, John J., I, '15 (D). Draftsman, Palmer Mill, Three Rivers, Mass.
Blaubelt, John J., I, '22 (D). Assistant Superintendent, Belmont Silk Co., Kingston, Pa.
Blossom, Carlton S., I, '16 (D). Head of Textile Dept. Putnam Trade School, Putnam, Conn.
Blossom, James W., I, '17 (D). Second Hand, Sharp Manufacturing Company, New Bedford, Mass.
Booth, William, VI, '08 (D).
Bottomley, Fred, S. '23 (C). Milling Machine Operator, Brown & Sharpe Mfg. Co., Providence, R. I.
Boyd, W. Macpherson, I, '22 (D). Superintendent, Canadian Cottons, Ltd., Hamilton, Ontario, Canada.
Braun, Leon A., I, '23 (D). In Card Room, Nashawena Mills, New Bedford, Mass.
Brend, Albert, II, '15 (C).
Brooks, Ruby E., II, '22 (C). Designer, Nashawena Mills, New Bedford, Mass.

Brown, James P., VI, '11 (C). Secretary, Glencairn Manufacturing Company, Pawtucket, R. I.

Brown, Walter A., I, '17 (C). Overseer, Sharp Manufacturing Company, New Bedford, Mass.

Brownell, Ulysses G., Jr., I, '21 (D). Secretary to Agent, Wamsutta Mills, New Bedford, Mass.

Bruneau, V. Herbert, I, '23 (D). Superintendent, Canada Mill, Canadian Cottons, Ltd., Cornwall, Ontario, Canada.

Brunelle, Laurier O., I, '19 (D). In Office of City Treasurer, New Bedford, Mass.

Brunette, Romeo, VI, '23 (C). Comber Tender, Nonquitt Spinning Company, New Bedford, Mass.

Buckley, Charles E., II, '01 (D). General Superintendent Gosnold and Page Mills, New Bedford, Mass.

Burt, Raymond A., III, '14 (D). With Hampton Company, Easthampton, Mass.

Cairns, James J., S, '19 (C). Mechanical Draftsman, B. F. Sturtevant Company, Hyde Park, Boston, Mass.

Campbell, Malcolm E., I, '22 (D). Assistant Instructor, Carding and Spinning, Clemson College, S. C.

Carvalho, Joao B. De M., I, '20 (D). 207 7 de Setembre, Sala 1, Sobrado, Rio de Janiero, Brazil, S. A.

Cassidy, Elizabeth B., III, '22 (D). 69 Tremont St., New Bedford, Mass.

Cazenove, James O'H., I, '05 (D).

Chan, Annie C., IV, '23 (C). 25 E. Yuhang Road, Shanghai, China.

Chang, Chih Y., I, '08 (D).

Chang, Fa K., I, '23 (C). Chantung, China.

Chang, Mu W., S, '21 (C). With Fales & Jenks Machine Company, Pawtucket, R. I.

Chase, Alton W., II, '09 (D). Overseer of Carding, Gosnold Mills Company, New Bedford, Mass.

Chase, Raymond H., I, '10 (D). Assistant Superintendent Crown Manufacturing Co., Pawtucket, R. I.

Checkman, Frank E., I, '23 (D). West Wareham, Mass.

Chen, Ting F., I, '12 (D).

Chow, Frank L. H., S, '14 (C). Mill Manager, Loo Fong Cotton Mill, Shantung, China.

Church, Morton LeB., S, '04 (C). Southern Representative, Catlin & Co., Charlotte, N. C.

Clark, Kenyon H., V, '11 (D).

Clarke, Edward W., I, '13 (D).

Coates, James E., I, '22 (D). With Consolidated Textile Corp., 245 State St., Boston, Mass.

Cody, Edmond, I, '23 (C). Installer, Barber-Coleman Co., Rockford, Ill.

Cookson, Albert, I, '23 (D). With Passaic Print Works, Passaic, N. J.

Cooper, John J. W., I, '05 (D). Manager, The Cooper Textile Laboratory, 90 Marion Road, Watertown, Mass.

Cornell, Harold C., I, '11 (D). Cotton Classer, Jenckes Spinning Company, Pawtucket, R. I.

Cornell, Maurice A., I, '21 (D). With Butler Mill, New Bedford, Mass.

Cornish, Ruth C., II, '22 (C). Assistant Buyer of Cotton Goods, Slattery's, Boston, Mass.

Corson, Sidney W., I, '05 (D). Overseer of Carding, Oneita Knitting Mills, Utica, N. Y.

Crawford, Fred E., II, '22 (D). Paper Broker, Service Paper Co., Pawtucket, R. I.

Crossley, Lawton, III, '16 (C). Assistant Chief Chemist, Montgomery, Ward & Co., Chicago, Ill.

Currie, Andrew Jr., I, '02 (D). Vice-President, Erie Oil Company, Inc., Shreveport, La.

Dalrymple, George S., III, '22 (D). With U. S. Finishing Co., Pawtucket, R. I.
Darling, Elton R., III, '13 (D). Professor of Chemistry, James Milliken University, Decatur, Ill.
Davis, Albert H., I, '16 (C). Commission Merchant & Broker of cotton yearns and fabrics, 79 Verndale Ave., Providence, R. I.
Deane, Robert J., III, '17 (D). Assistant Chief Chemist, American Printing Company, Fall River, Mass.
Delano, Lloyd S., I, '07 (D). Designer and Overseer of Weaving, Warren Manufacturing Co., Warren, R. I.
Delay, John T., III, '17 (D). Chemist, Merrimac Chemical Company, North Woburn, Mass.
DeMartin, Richard S., VI, '06 (D). Overseer of Carding, Menomet Mill, No. 4, New Bedford, Mass.
Deu, Yee B., I & IV, '08 (D).
Devoll, Milton C., II, '09 (D). Cotton Classer, W. M. Drake & Co., Memphis, Tenn.
Dewey, Edward W., V, '11 (D). Superintendent and Buyer, Bennington Hosiery Company, Bennington, Vt.
Dick, Rudolph C., I, '13 (D). Superintendent, No. 5 Mill, Renfrew Manufacturing Company, Adams, Mass.
Dickinson, Arthur R., I, '01 (D). Agent, Lancaster Mills, Clinton, Mass.
Dixon, Fred M., Jr., S, '17 (C).
Doherty, Bernard J., S, '21 (C). In Order Dept. Augusta Knitting Corporation, Utica, N. Y.
Doherty, Edward P., II, '04 (D). Chief of Police, New Bedford, Mass.
Dolan, Edward F., S, '14 (C). Proprietor of Ohio Threading and Supply Company, Burkburnette, Texas.
Donaghy, Paul A., III, '22 (D). Chemist, Beacon Mfg. Co., New Bedford, Mass.
Duckworth, George H., S, '23 (C). Instructor in Mechanical Drawing, U. S. Veterans' Bureau, Vocational School, 1010 Commonwealth Ave., Brookline, Mass.
Duncan, Donald T., II, '21 (C). With Cannon Mills, Inc. 55 Worth St., New York City.
Dunmore, Earl W., V, '11 (D). Superintendent Utica Knitting Company, Mill No. 2, Utica, N. Y.

Edwards, Harold G., I, '19 (D). Foreman, Cleaning and Dyeing Department, Bush & Co., New Bedford, Mass.
Espriella, Antonio J. de la, II, '15 (D). Manager, Weaving and Designing Department, Espriella & Co., Cartagena, Colombia, S. A.
Espriella, Justo de la, S, '13 (C). Manager Cotton Yarn Department, Espriella & Co., Cartagena, Colombia, S. A.
Espriella, Luis C. de la, I, '16 (C). With Espriella & Co., Cartagena, Colombia, S. A.
Ewing, James H., III, '23 (D). Laboratory Assistant, Pacific Print Works, Lawrence, Mass.

Fagan, Francis J., V, '12 (D). Foreman of Underwear Department, Utica Knitting Company, Utica, N. Y.
Farrar, Hersey W., I, '17 (D). Assistant Designer, Acushnet and Hathaway Mills, New Bedford, Mass.
Feen, Edward F., I, '21 (D). Erector, Whitin Machine Works, Whitinsville, Mass.
Fessenden, Charles E., II, '14 (D). Cloth Broker, Ruprecht Brothers & Early, New York City, N. Y.
Few, George P., VI, '17 (C). Superintendent, Profile Cotton Mills, Jacksonville, Ala.
Fish, Myron C., VI, '02 (D). Secretary, American Supply Company, and Treasurer, Rhode Island Yarn Company, Providence, R. I.

Flaherty, Matthew W., III, '22 (D). Assistant Boss Bleacher, New Bedford & Agawam Finishing Co., East Wareham, Mass.
Forbes, Esley H., I, '02 (D).
Foster, James E., S, '22 (C). Student, Pratt Institute, New York City.
Freeman, Elmer L., V, '06 (D). President and Manager, Freeman Manufacturing Company, Detroit, Mich.
Freeman, Leo, III, '20 (C). Chemical Engineer, 657 Boyd Ave., Baton Rouge, La.
French, Dean A., VI, '19 (C). Boss Comber, Grinnell Manufacturing Company, New Bedford, Mass.
French, Morton T., IV, '12 (D). With Scott & Williams, Inc., 366 Broadway, New York City.
Freschl, Max A., IV, '09 (D). Vice-President, Holeproof Hosiery Company, Milwaukee, Wis.
Fuller, Everett H., III, '17 (D). Chemist, Farwell Bleachery, Lawrence, Mass.

Gallagher, John V., IV, '08 (D).
Gammons, Molly N., II, '18 (C). Designer of Woven Fabrics, "Bitter-Sweet Studio", Hathaway Road, New Bedford, Mass.
Gast, Paul R., III, '16 (C). Research Fellow, Harvard Cancer Commission, 695 Huntington Ave., Boston, Mass.
Gay, Paul A., I, '10 (D). Boss Comber, City Manufacturing Company, New Bedford, Mass.
Gifford, Thomas T., I, '01 (D). With Pierce Manufacturing Company, New Bedford, Mass.
Gillingham, Dana H., III, '10 (D). Cotton Merchant, 91 Union St., New Bedford, Mass.
Gilmore, Daniel R., I, '22 (D). With Nonquitt Spinning Co., New Bedford, Mass.
Goff, Russell E., VI, '15 (C). Cotton Broker, Boston, Mass.
Goldberg, Bertram, IV, '13 (D). Chief Chemist, Julius Kayser Knitting Company, Brooklyn, N. Y.
Goodwin, Albert W., II, '11 (D). Assistant Manager and Styler, Eldredge & Snyder, 73 Worth St., New York City.
Gordon, Beirne, Jr., I, '04 (D). Manager, Skenandoa Cotton Company, Utica, N. Y.
Goulet, Henry J. O., I, '04 (D). Overseer of Weaving, Dartmouth Mfg. Co., New Bedford, Mass.
Goward, Niles W., I, '15 (D). In Laundry Business, 866 De Kalb Ave., Brooklyn, N. Y.
Grady, John H., III, '07 (D). Manager, John Campbell & Co., 33 India St., Boston, Mass.
Green, Charles H., S, '22 (C). Jersey Shore, Pa.
Greene, Dan E., S, '18 (C). Electrician, Woonsocket Rubber Company, Millville, Mass.
Grimshaw, Albert H., III, '16 (C). Assistant Instructor in Chemistry and Dyeing Department, New Bedford Textile School.

Hadley, Wade H., VI, '00 (D). Secretary and Treasurer, Gregson & Dorsett, Siler City, N. C.
Hahn, Louis H., II, '18 (D). Proprietor, Novelty Fabric Co., 1244 Acushnet Ave., New Bedford, Mass.
Hale, Charles E., Jr., I, '22 (D). In Efficiency Dept., Ludlow Mfg. Associates, Ludlow, Mass.
Hall, Lincoln, S, '14 (C). Head Bookkeeper, City Mfg. Co., New Bedford, Mass.
Hall, Walton, Jr., VI, '06 (D). Judge of Probate, District of East Haddam, Moodus, Conn.
Hamer, Allan K., S, '15 (C). Foreman of Heat Treatment Department, Continental Wood Screw Company, New Bedford, Mass.
Hamlen, Carleton LeB., III, '11 (D). Chemist, Nestles Food Company, Chesterville, Ontario, Canada.

Hamlen, Walter G., Jr., III, '17 (D). Branch Manager, E. I. Du Pont de Nemours & Co., 126–128 South Front St., Philadelphia, Pa.
Hamrick, Lyman A., VI, '20 (C). Superintendent and General Manager, Musgrove Mills, Gaffney, S. C.
Harney, Joseph J., I, '22 (D). Textile Assistant, Cotton & Fabric Dept., Firestone Tire & Rubber Co., Akron, Ohio.
Harper, Powhatan F., VI, '23 (C). Foreman of Yard Force, Receiving & Shipping Clerk, Cotton Classer, Spray Cotton Mills, Spray, N. C.
Hathaway, Russell, I, III, '16 (D) (C). Research Chemist, Cotton Research Company, Inc., 1020 Washington St., Boston, Mass.
Hawes, Lester E., II, VI, '02 (D). Chauffeur, New Bedford, Mass.
Hayward, Caleb A., Jr., V, '11 (D). Salesman, C. A. Hayward & Son, Confectionery Agents, Brokers and Jobbers, New Bedford, Mass.
Hayward, Harold W., I, '16 (D). With D. E. H. Chemical Co., 277 Highland Ave., Somerville, Mass.
Heap, Harold, II, '23 (C). Assistant Designer, Bristol Mfg. Co., New Bedford, Mass.
Heath, Roger A., III, '23 (D). Assistant Colorist, Passaic Print Works, Passaic, N. J.
Hinckley, Frank E., III, '12 (D). Chief Pharmacist's Mate, United States Navy, c/o Bureau of Navigation, Washington, D. C.
Holland, Warren E., II, VI, '11 (D). Treasurer Darlington Warehouse Company, Darlington, R. I.
Horton, Harold W., I, '19 (D). Head of Carding and Spinning Division, Clemson College, S. C.
Horvik, Sigurd, IV, '22 (D). Salhus, near Bergen, Norway.
Howell, H. Comer, VI, '23 (C). With Bibb Mfg. Co., Macon, Ga.
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Hung, Shao Y., III, '16 (C).
Hunt, Russell W., III, '21 (C). Chemist, Eddystone Mfg. Co., Eddystone, Pa.
Hutchinson, John J., I, '02 (D). Laundry Proprietor, Los Angeles, Cal.

Jackson, S. Eugene, VI, '07 (D). Assistant Treasurer, Crown Manufacturing Company, Pawtucket, R. I.
Jay, A. Sidney, S, '21 (C). Assistant Superintendent, La Fayette Cotton Mills, Inc., LaFayette, Ala.
Jenks, Raymond M., I, '15 (D). Cost Clerk, West Boylston Manufacturing Company, Easthampton, Mass.
Jenks, Robert R., VI, '11 (C). President, Fales & Jenks Machine Company and Treasurer, Woonsocket Machine and Press Company, Woonsocket, R. I.
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Jewell, Robert H., III, '20 (C). Treasurer, Crystal Springs Bleachery Company, Chickamauga, Ga.
Johnson, Horace E., III, '16 (C). Foreman, Boiling Off Department, National Spun Silk Company, New Bedford, Mass.
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Judge, Edward E., I, '12 (D). Overseer, Gosnold Mills Company, New Bedford, Mass.

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Karl, Wm. A., I, '19 (D). Textile Assistant, Firestone Tire and Rubber Company, Akron, Ohio.

Kean, George P., II, '04 (D). Superintendent, Berkshire Cotton Manufacturing Company, Adams, Mass.
Kelty, Pharus T., I, '20 (C). Third Hand on Roving Frames, Page Manufacturing Company, New Bedford, Mass.
Ketcham, Melville K., S, '21 (C). Cloth Broker, Walker & Hetzel, 51 Leonard St., New York City.
Kinhow, Chu, VI, '04 (D). Managing Director, Peking-Mukden Line, Chinese Government Railway, Tientsin, China.
Kinney, C. Stanley, I, '15 (D). Manager, Troy Laundry Company, 183 Exchange St., Pawtucket, R. I.
Ko, Thomas S., S, '20 (C). Engineer, Textile Department, Anderson, Meyer & Co., Ltd., Shanghai, China.
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Lee, J. K. Theodore, VI, '23 (C). 3 Ta Hu Tung, West Gate, Tientsin, China.
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Lenhart, Edmund, III, '16 (C). Registered Pharmacist, Derick's Pharmacy, New Bedford, Mass.
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Lewis, Don C. C., S, '17 (C). Automobile Salesman, Boston, Mass.
Lewis, Maurice A., III, '13 (D). Head Chemist, Walter Sykes & Co., 85 Water St., New York City.
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Lipson, Edward, S, '21 (C).
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Luce, Bradford A., I, '22 (D). With United States Testing Co., New York City.

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Martins, Antonio R., S, '20 (C). Loom Fixer, Dartmouth Manufacturing Company, New Bedford, Mass.
Mason, Joseph E., II, '23 (C).
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McEvoy, Leo A., S, '22 (C). With Grinnell Mfg. Co., New Bedford, Mass.
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Mercer, George C., Jr., III, '22 (C). With Millbank Bleachery, Lodi, N. J.
Miller, Wallace J., I, '22 (D). With Crown Mfg. Co., Pawtucket, R. I.
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Morrison, Julian K., VI, '20 (C). With B. B. & R. Knight Company, Hospital Trust Building, Providence, R. I.
Morse, Alice L., II, '22 (C).
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Mung, Theodore C. S., VI, '22 (C).

Neel, Albert G., V, '09 (D). Superintendent, Olympia Knitting Co., Utica, N. Y.
Nelme, Bennett D., II, '03 (D). Farmer and Cattle Raiser, Wadesboro, N. C.
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Nichols, Henry W., II, '00 (D). Principal Bradford Durfee Textile School, Fall River, Mass.
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O'Neil, John J., V, '06 (D). Optician, 389 Main St., Springfield, Mass.
Osborn, John W., I, '02 (D).

Paine, Howard N., S, '21 (C).
Palmer, Myrtland F., I, '13 (D). With Wellington, Sears & Co., 93 Franklin St., Boston, Mass.
Pan, Chen C., III, '16 (C).
Papademetrius, Demetrius, S, '21 (C). Assistant Designer, Acushnet Mill Corporation, New Bedford, Mass.

Papageorge, George, IV, '23 (D). Knitting Machine Mechanic, Scott & Williams, Laconia, N. H.
Patt, Lester D., II, '08 (D). Claim Agent, United States Finishing Company, 320 Broadway, New York City.
Pease, Bryden, S, '14 (C). With Hazlip-Hood Cotton Company, Greenville, Miss.
Perez, Alfonso, S, '23 (C). Quito, Ecuador, S. A.
Peterson, Henry F., III, '22 (D). With Amoskeag Mfg. Co., Manchester, N. H.
Pickard, Walter D., I, '17 (D).
Pien, Ting K., I, '22 (C). Student, N. C. State College, Raleigh, N. C.
Pieraccini, Frank, Jr., II, '07 (D). Manager of Fabric Department, Ajax Rubber Company, Trenton, N. J.
Pittle, Charles, IV, '09 (D). Photographer, New Bedford, Mass.

Ragan, Caldwell, VI, '19 (C). Secretary and Assistant Treasurer, Ragan Spinning Company, Gastonia, N. C.
Rankin, William T., VI, '19 (C). Gastonia, N. C.
Redfern, W. Mark, I, '23 (C). Third Hand, Manomet Mills, New Bedford, Mass.
Reed, Francis P., III, '21 (D). Finisher, Sayles Finishing Plants, Saylesville, R. I.
Remington, Allen K., I, '20 (D). With J. & P. Coats (R. I.), Inc., Pawtucket, R. I.
Richards, Benjamin, VI, '02 (D). Manager, Underwriters' Service, 175 West Jackson Boulevard, Chicago, Ill.
Riding, Richard, S, '01 (C).
Rigby, Christopher E., Jr., I, '23 (C). Third Hand, Spinning Room, Hathaway, Mfg. Co., New Bedford, Mass.
Riley, George V., III, '16 (C). Prepairing Department, National Spun Silk Company, New Bedford, Mass.
Rivero, Ricardo J., VI, '04 (D). Monterey, Mexico.
Robbins, Lloyd, III, '20 (D). Onset, Mass.
Robenolt, Edward A., II, '11 (D). Boss Comber, Nonquitt Spinning Company, No. 2, New Bedford, Mass.
Robinson, Arthur J., III, '17 (D). Steamship Pilot, N. B., M. V. & N. S. B. Co., New Bedford, Mass.
Robinson, Chester A., I, '22 (D). Assistant to Superintendent, Massasoit Mfg. Co., Fall River, Mass.
Robinson, Joseph L., S, '23 (C). Machinist, Continental Wood Screw Co., New Bedford, Mass.
Rönne, Arthur H., I, '17 (D). Designer, W. J. Baxter, Inc., 62–64 Leonard St., New York City.
Ross, Edward J., I, '23 (D). With West Side Silk Mill, Norwich, Conn.
Rowan, Peyton, VI, '20 (C). Cotton Buyer, J. G. Boswell, Kerckhoff Building, Los Angeles, Cal.
Royster, David W., IV, '16 (C). Manager, Janet Hosiery Mills, Shelby, N. C.
Ruggles, John W., I, '20 (D). Cotton Classer, Taunton Cotton Mills Department of the Connecticut Mills Corporation, East Taunton, Mass.

Salter, Milton B., III, '19 (C). Student New York University, N. Y.
Salvati, Salvato, I, '20 (D). With Gioacchino Salvati & Co., New Bedford, Mass.
Sayers, Wm. J., I, '23 (D). Student, New Bedford Textile School, New Bedford, Mass.
Scharf, Elmer, III, '22 (D). Superintendent of Dyeing and Bleaching, Strutwear Knitting Co., Minneapolis, Minn.
Scheid, Alfred, VI, '11 (C). Bond Salesman, Clarence Hodson & Co., New York City.
Schiller, Wesley L., I, '23 (D). With Lebanon Mill Co., Pawtucket, R. I.
Scholze, Ernest A., II, '12 (D). With Lorraine Mfg. Co., Pawtucket, R. I.

Schoop, Hans, S, '22 (C). Zurich, Switzerland.
Searell, George W., III, '22 (D). Assistant Chemist, National Spun Silk Co., New Bedford, Mass.
Service, Louis B., S, '20 (C). With Gardiner Hall, Jr., Company, Thread Manufacturers, South Willington, Conn.
Shanks, James, Jr., III, '19 (D). Assistant Superintendent, Thistle Cotton Mills, Inc., Ilchester, Md.
Shill, Alexander, I, '15 (D).
Simmons, Charles G., S, '22 (C). Student, Pratt Institute, New York City.
Singer, Meyer K., I, '21 (D). Chemist, Tower Mfg. Co., 85 Doremus Ave., Newark, N. J.
Siu, Poy N., I, '23 (C).
Smith, Carlton W., III, '11 (D). With N. B. Gas & Edison Light Company, New Bedford, Mass.
Smith, James C., VI, '23 (C).
Snedden, George A., VI, '20 (C). Cotton Salesman, William Almy & Co., New Bedford, Mass.
Snyder, Arthur E., V, '09 (D). Worsted Yarn Salesman, Percy A. Legge, 185 Summer St., Boston, Mass.
Sotnick, George, IV, '22 (D). Machinery Fixer, Pawtucket Hosiery Company, Pawtucket, R. I.
Spare, Arthur F., I, '09 (D). With J. V. Spare & Co., New Bedford, Mass.
Spencer, Wm. A., VI, '04 (D). Superintendent, Martel Mills, Inc., Chester, Pa.
Stubbs, Guy P., S, '01 (C). Manager of an Estate, Monroe, La.
Sturtevant, Harold B., III, '15 (D). Superintendent, Waltham Bleachery & Dye Works, Lonsdale, R. I.
Sweeney, Eugene F., I, '22 (D). Second Hand, Card Room, Utica Steam & Mohawk Valley Cotton Mills, Utica, N. Y.
Swenson, Hilary S., III, '19 (C). With Morse Twist Drill & Machine Company, New Bedford, Mass.
Sylvester, Burton C., III, '18 (D). Overseer, Bleaching, Mercerizing and Grey Room, Ramapo Finishing Corporation, Sloatsburg, N. Y.

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Terry, Clifford B., VI, '04 (D). Salesman, Foster Machine Co., Westfield, Mass.
Thayer, Edward A., S, '14 (C). Superintendent, Lebanon Mill Company, Pawtucket, R. I.
Thayer, Ellis H., V, '07 (D).
Thornley, Clifton L., I, '22 (D). With J. & P. Coats, Pawtucket, R. I.
Tourtellot, Percy D., VI, '13 (C). Foreman, Whitin Machine Works, Whitinsville, Mass.
Tripp, Clifford H., I, '05 (D). Inspector of Textiles, Q. M. C., Boston General Intermediate Depot, Boston, Mass.
Tsang, Yiu S., I, '07 (D).
Tsu, Chee L., I, '08 (D).
Tu, Chung T., I, '22 (D). Student, Fairhaven Mills, New Bedford, Mass.
Turnbull, Walter, I, '03 (D). General Agent, Life Insurance Company of Virginia, Lawrenceville, Va.
Turner, James H., 3d, III, '22 (D). Chemist, Chemical Co. of America, 46 Murray St., New York City.

Urquhart, George C., III, '09 (D).

VanDyk, Francis R., II, '21 (C). Second Assistant General Manager, James Vandyk Company, 50 Barclay St., New York City.
Vera, Frederick J., I, '07 (D). Third Hand, Kilburn Mill, New Bedford, Mass.
Vieira, Nicholas R., III, '18 (D). Knoxville, Tenn.

Visbal, Luis C., IV, '12 (D). Manager, Knitting Department, Espriella & Co., Cartagena, Colombia, S. A.

Waldstein, Benjamin, I, '15 (D). Salesman, S. H. Waldstein, 10 High St., Boston, Mass.

Wallner, Siegfried, IV, '19 (C). Superintendent, Paul Knitting Mills, Inc., Pulaski, Va.

Wallner, Waldemar, IV, '23 (C). Superintendent Paul Knitting Mills, Inc., Radford, Va.

Walters, Harold J., IV, '07 (D). Assistant Superintendent, Thomas Develon, Jr., A Street & Indiana Ave., Philadelphia, Pa.

Watson, James, Jr., III, '22 (D). Marion, Mass.

Watkins, Charles F., Jr., III, '21 (D). Superintendent of Silks, Apponaug Co., Apponaug, R. I.

Waxler, Jacob H., I, '21 (D). Weaver of Tire Fabric, Fairhaven Mills, New Bedford, Mass.

Weller, George W., Jr., S, '18 (C). Comberman, Ponemah Mills, Taftville, Conn.

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Wheeler, William J., S, '22 (C). With National Spun Silk Co., New Bedford, Mass.

White, Clifford L., II, '09 (D). Second Hand, Winding Room, Home Bleach and Dye Works, Pawtucket, R. I.

Whitehead, George E., I, '23 (D). Third Hand Card Room, Booth Manufacturing Co., New Bedford, Mass.

Whitlow, Samuel A., Jr., III, '22 (D). With Glenlyon Dye Works, Phillipsdale, R. I.

Whitman, L. Clay, II, '22 (D). Assistant Styler, Stursberg & Schell, 45 East 17th St., New York City.

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Wilcox, Roger M. H., S, '10 (C). Special Agent, Union Mutual Life Insurance Company, Waverley, Mass.

Williamson, Thomas G., VI, '00 (D).

Williamson, Thomas W., I, '06 (D). Cotton Salesman, Grant Cotton Company, New Bedford, Mass.

Winnell, Lloyd H., III, '20 (D). With B. M. Cotton, Cleaners & Dyers, Hyannis, Mass.

Witherbee, Rex G., I, '05 (D). Plant Engineer, Utica Steam & Mohawk Valley Cotton Mills, Utica, New York.

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Wong, Ka L., I, '07 (D). Instructor, Peking Technical College, Peking, China.

Wong, Thomas G., I, '15 (D). General Manager, China A. B. C. Mill, and Superintendent, Tung Yih Cotton Mill, Shaghai, China.

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Ybarra, Andrew, VI, '04 (D).

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Young, Thomas, II, '21 (C). Cloth Inspector, Dartmouth Mill, New Bedford, Mass.

Young, Tsun S., I, '17 (D). Engineer, Dah Foong Cotton Spinning & Weaving Mill, Shaghai, China.

Young, Yolay, I, '21 (C). With Icemorlee Cotton Mills Company, Monroe, N. C.

Yu, Victor H., I, '20 (D). Superintendent, Tung Wie Kung Cotton Mill, Hong Chow, China.

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Bolton, Wright, Jr., III, '14. Master Mechanic, Acushnet Mill Corporation, New Bedford, Mass.

Bowen, Evan A., VI, '21. Student, Holmes Manufacturing Company, New Bedford, Mass.

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Carse, Henry G., VI, '21. Third Hand on Roving Frames, Manomet Mill No. 4, New Bedford, Mass.

Day, Andrew F., VI, '19. Boss Picker, Nonquitt Spinning Company, No. 1, New Bedford, Mass.

Flanders, Kenneth A., VI, '20. Manager, Sheet and Pillow Case Department, Wamsutta Mills, New Bedford, Mass.

Green, Jim, II, '06. Farmer, R. F. D. No. 4, New Bedford, Mass.

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Paull, Norman, M., III, '16. Civil Engineer, Fairhaven, Mass.

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Slater, Victor O. B., II, '07. Designer, Pierce Mill, New Bedford, Mass.

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Walker, George, VI, '23. Overseer, Nashawena Mills, New Bedford, Mass.

Winterbottom, George, VI, '06.

NEW BEDFORD TEXTILE SCHOOL

New Bedford, Mass.

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I hereby make application for admission to the day classes of the New Bedford Textile School.

Date 192

Name in full .....

Age last birthday .....

Home residence .....

Name of parent or guardian .....

Name of school last graduated from .....

State in what way you first learned of the school .....

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Mark X Against Course Desired

General Cotton Manufacturing Course
Designing Course
Chemistry and Dyeing Course
Carding and Spinning Course
Seamless Hosiery Knitting Course
Latch Needle Underwear Knitting Course
Special Course in

The above application should be filled out and mailed, or delivered, to

THE NEW BEDFORD TEXTILE SCHOOL
New Bedford, Mass.