

HOUSE No. 867

The Commonwealth of Massachusetts.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled.

In compliance with chapter 248, Acts of 1904, entitled "An Act to provide annual reports of trustees of textile schools," approved April 22, 1904, the trustees of the Bradford Durfee Textile School of the city of Fall River have the honor to respectfully submit the following report for the calendar year 1909.

TREASURER'S REPORT, 1909.

MAINTENANCE ACCOUNT.

Paid for teachers and employees,	\$19,036 65
Paid for general expenses,	3,366 26
Paid for power and light,	2,321 59
Paid for repairs,	647 70
Paid for supplies,	745 24
Paid for raw material,	300 77
Paid for insurance (net),	330 29
	\$26,748 50

SPECIAL EQUIPMENT ACCOUNT.

	Appropriated.	Expended.	
Department of mechanism,	\$4,600	\$4,454 48	
Department of steam engineering, ¹	950	259 10	
Department of electricity, ¹	1,500	2 00	
Department of weaving, ¹	750	449 45	
Department of mechanical drawing,	400	399 23	
Department of additional equipment,	1,800	1,800 00	
	\$10,000	7,364 26	
Expended for completion of new building,		\$10,541 20	
Expended for construction account,		182 30	
Expended for general equipment,		5,822 02	
Expended for interest,		56 67	
		16,602 19	
		\$50,714 95	

¹ Contracts not completed, — unexpended, \$2,635.74.

RECEIPTS.

From Commonwealth of Massachusetts for purposes of school,	\$25,000 00	
From Commonwealth of Massachusetts for special equipment,	10,000 00	
From city of Fall River,	6,000 00	
From tuition,	397 50	
From sales of manufactures,	124 92	
From interest,	418 20	
	<hr/>	\$41,940 62

SUMMARY OF RECEIPTS AND EXPENDITURES.

	Received.	Paid.
Cash on hand Jan. 1, 1909,	\$13,568 88	—
Cash for maintenance and purposes of school,	31,522 42	\$26,748 50
Cash for special equipment,	10,000 00	7,364 26
Cash for interest,	418 20	56 67
Cash for construction new building,	—	10,541 20
Cash for construction account,	—	182 30
Cash for general equipment,	—	5,822 02
	<hr/>	<hr/>
	\$55,509 50	\$50,714 95
Loan,	7,500 00	7,500 00
Cash on hand Jan. 1, 1910,	—	4,794 55
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	\$63,009 50	\$63,009 50
Donations of equipment, 1909,		\$1,610 30

FINANCIAL CONDITION, DEC. 31, 1909.

<i>Assets.</i>	
Construction,	\$119,348 34
Equipment,	71,434 41
Real estate,	22,394 06
Cash,	4,794 55
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	\$217,971 36
<i>Liabilities.</i>	
Capital (construction, equipment, real estate),	\$213,176 81
General fund,	1,580 08
Extension account,	578 73
Department of mechanism,	145 52
Department of steam engineering,	690 90
Department of weaving,	300 55
Department of mechanical drawing,	77
Department of electricity,	1,498 00
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	\$217,971 36

I hereby certify that the foregoing is a correct statement of the receipts and expenditures on account of the Bradford Durfee Textile School during the calendar year of 1909, and of the financial condition of the corporation at the close of said year.

EDWARD S. ADAMS,
Treasurer.

Subscribed and sworn to before me, this seventeenth day of January, 1910.

F. O. DODGE,
Justice of the Peace.

Approved as to form.

WM. D. HAWLEY,
Deputy Auditor.

Correct.

GEO. R. LAWTON,
Auditor.

JAN. 17, 1909.

Mr. LEONTINE LINCOLN, *President Bradford Durfee Textile School, City.*

DEAR SIR : — I have this day completed the auditing of the accounts of Mr. Edward S. Adams, treasurer, for the year ending Dec. 31, 1909.

There are vouchers for all recorded expenditures. The receipts have been properly entered and deposited in banks. The balance of cash called for I find covered by deposit in bank and in cash at the office of the school.

The books have been correctly kept, and the treasurer's statement, signed by me this day, showing the condition of the school after closing books Dec. 31, 1909, is correct.

Respectfully submitted,

GEO. R. LAWTON,
Auditor.

JAN. 17, 1910.

REPORT OF TRUSTEES.

BUILDING.

The school building, which is of modified colonial design, is located at the corner of Durfee and Bank streets, near the center of the city.

The basement is constructed of quarry-face Fall River granite, laid in coursed ashlar; the first story is of six-cut Fall River granite, laid in courses; the two upper stories are of gray mottled press brick, with trimmings of Fall River granite; and the main cornice is of copper.

The location of the building is such that the light is unobstructed on all sides. Large and well-lighted class rooms are provided for designing, carding, and spinning, chemistry, and dyeing, weaving and mechanical drawing and engineering. There is also a room for making blue prints, and a dark room for photographic purposes. The locker rooms and lavatories are large, well lighted and ventilated, and convenient to the class rooms and mill rooms.

The building is divided by brick party walls into two parts, — the administration or school part, and the machinery part.

The heating system in the administration part consists of direct radiators. In addition to the direct radiation, the class rooms are supplied with fresh air from indirect radiators located in air rooms in the basement. Air is carried to the rooms through brick ducts, which are supplied with dampers and mixing valves operated from the class rooms. In the air rooms are also electric fans run by direct-connected motors, to supply air to the rooms at all times, regardless of weather, and to force fresh air into the rooms in warm weather.

The mill part is of modern mill construction, with large windows on three sides and skylights in the roof. It is thoroughly equipped with automatic fire sprinklers, and is heated and ventilated by the most approved systems. All the rooms

in both parts of the building have brick ventilation ducts supplied with regulating dampers. All the piping is arranged so that any part may be shut off without interfering with any other part of the building.

A four-story addition was erected last year, in order to give the additional space for machinery and class rooms that the large classes required. It is of modern mill construction, 66 feet by 70 feet, and is connected to the main building by a covered bridge. The first two floors contain the weaving; the third floor, the spooling, warping and slashing; and the top floor, the cloth room and hand looms.

EQUIPMENT.

Through the liberality and courtesy of the various machine builders, our equipment is especially adapted for giving thorough instruction in the manufacture of cotton goods, from the raw material to the finished fabric. The past year we have added a number of machines to our equipment.

The equipment is made up as follows :—

Carding and Spinning Department.

One opener picker.	Five spinning frames (732 spindles).
One breaker picker.	One mule (192 spindles).
One finisher picker.	Two twistors (128 spindles).
Three revolving flat cars.	One gassing machine.
One railway head.	Two braiding machines.
Two drawing frames (8 heads).	One banding machine.
Two sliver lap machines.	Six models differential motion.
One ribbon lap machine.	Two models fly frame builder motion.
Three combers (20 heads).	One model spinning frame builder motion.
One slubber (48 spindles).	One model card bend.
One intermediate (64 spindles).	Necessary machines for sizing and testing yarns.
One roving frame (90 spindles).	
One jack frame (96 spindles).	

Warp Preparation and Weaving Departments.

Four spoolers (130 spindles).	One slasher.
One reel (50 spindles).	Two beamers.
Four knotters.	Four drawing-in frames.
Two cone winders (16 spindles).	One harness finding machine.
One quiller (30 spindles).	Twenty-seven plain looms.
Two warpers.	Eight automatic looms.

Warp Preparation and Weaving Departments. — Concluded.

Four gingham looms.	Four models box motion.
One lappet loom.	Eight models dobby heads.
Ten dobby looms.	Five models Jacquard machines.
Six Jacquard looms.	One model let-off motion.
Twenty hand looms.	One model cam motion.
Two card cutters.	Necessary machines for sizing and testing cloths.
One card-lacing frame.	

Cloth Room.

One inspecting machine.	One shearing machine.
One railway sewing machine.	One folder.
One brusher and calendering machine.	One napping machine.

Chemistry and Dyeing Departments.

The chemical laboratory is at present equipped with desks for 90 students, each desk being provided with a locker and two drawers for each student, and separate set of common reagents; also desk, water and sink. Commodious hoods, connected with forced draft, insure good ventilation of the room. The lecture desk is of large size, and well adapted for conducting experiments for the illustration of lectures. The dye house is a separate building, especially designed and constructed. The dyeing equipment includes :—

Six skein vats.	Two experimental dyeing baths (44 cups).
Two bleaching kiers.	One steam chest.
One chain dyeing machine.	One winding-on machine.
One chain sizing machine.	One winding-off machine.
One chain drying machine.	One sample printing machine.
One size kettle.	
One hydro-extractor.	

Machine Shop.

Seven engine lathes.	One twist drill grinder.
Three speed lathes.	One emery grinder.
One milling machine.	One hack saw.
One Universal grinder.	One Arbor press.
One planer.	One hardening and annealing furnace.
One shaper.	One pressure blower.
Two drills.	One anvil.
One wet tool grinder.	One work bench with four vises.

Experimental Steam and Electrical Department.

- One high-speed slide valve engine, 30 horse-power.
- One Corliss engine, 80 horse-power.
- One steam engine indicator.
- One reducing wheel.
- One planimeter.
- Two injectors.
- Two steam traps.
- Three steam pumps.
- Various models of valves, inspirators, traps, engines, etc.
- One 15 kilowatt alternating current generator.
- One 7½ horse-power alternating current motor.
- One 12 kilowatt direct current generator.
- One 7½ horse-power direct current motor.
- One 5 horse-power direct current motor.
- One combination switchboard with recording and measuring instruments.
- One transformer.
- Two arc lamps.

Power Department.

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| <ul style="list-style-type: none"> One 150 horse-power boiler. One direct steam feed pump. One compound injector. One feed water heater. One oil separator. One reducing valve. One steam damper regulator. One automatic non-condensing engine, 75 horse-power. | <ul style="list-style-type: none"> Two 22½ kilowatt generators coupled together. One 5 horse-power motor. One 7 horse-power motor. Three 10 horse-power motors. One 20 horse-power motor. One 25 horse-power motor. One combined generator and feeder switchboard. |
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The general equipment also includes : complete equipment of humidifiers, automatic sprinklers, shafting, pulleys, belting, etc.

Drawing Department.

The equipment consists of twenty-four desks, giving accommodations for about 120 students.

Designing Department.

The designing department is equipped with forty-seven desks, with a full equipment of supplies for a thorough course.

RESOURCES.

The resources of the school are shown by the treasurer's report, which is submitted herewith.

COURSES OF STUDY, DAY CLASSES.

The following regular courses are offered to students :—

- No. 1. General cotton manufacturing, three years.
- No. 2. Designing and weaving, two years.
- No. 3. Chemistry and dyeing, two years.
- No. 4. Engineering, two years.

SPECIAL COURSES.

Instruction in special courses is arranged whenever possible.

COURSES OF STUDY, EVENING CLASSES.

- No. 1. Picker and card rooms, two years.
- No. 2. Ring spinning, twisting and warp preparation, one year.
- No. 3. Mule spinning, one year.
- No. 4. Mill calculation, one year.
- No. 5. Plain weaving and fixing, one year.
- No. 6. Box and dobby fixing, one year.
- No. 7. Jacquard weaving and fixing, one year.
- No. 8. Designing, three years.
- No. 9. General chemistry, one year.
- No. 10. Qualitative analysis, one year.
- No. 11. Dyeing, one year.
- No. 12. Commercial analysis, one year.
- No. 13. Elementary designing and cloth analysis, one year.
- No. 14. Jacquard designing, two years.
- No. 15. Steam and electrical engineering, two years.
- No. 16. Machine shop and drawing, one year.
- No. 17. Cotton grading and stapling, one year.

METHODS OF INSTRUCTION.

The instruction covers carding, spinning, weaving, designing, chemistry, dyeing, mechanical drawing, machine shop and engineering; and consists of lectures, recitations and demonstrations, in addition to a large amount of practical work required in operating, setting, repairing and caring for the different machines.

The classes are divided into small sections, enabling instructors to give each student a large amount of individual attention, thus making the courses as practical and thorough as possible.

NUMBER OF INSTRUCTORS.

The regular corps of instructors consists of: the principal; one instructor in carding and spinning; one instructor in weaving; one instructor in designing; one instructor in chemistry and dyeing; one instructor in drawing and engineering; nineteen assistant evening instructors.

NUMBER OF STUDENTS.

The school opened March 7, 1904. Since opening, the attendance has been as follows : —

Year ending June, 1904,	5 day students, 163 evening students, total 168.
Year ending June, 1905,	8 day students, 122 evening students, total 130.
Year ending June, 1906,	11 day students, 419 evening students, total 430.
Year ending June, 1907,	11 day students, 332 evening students, total 343.
Year ending June, 1908,	11 day students, 531 evening students, total 542.
Year ending June, 1909,	38 day students, 701 evening students, total 739.
Present year,	41 day students, 812 evening students, total 853.

TRUSTEES OF THE BRADFORD DURFEE TEXTILE
SCHOOL,

By LEONTINE LINCOLN,
President.

OFFICERS, DIRECTORS, AND STANDING COMMITTEES.

President, LEONTINE LINCOLN.

Vice-President, WILLIAM EVANS.

Clerk, WILLIAM HOPEWELL.

Treasurer, EDWARD S. ADAMS.

DIRECTORS.

WILLIAM S. GREENE.

LEONTINE LINCOLN.

THOMAS O'DONNELL.

JAMES TANSEY.

JOSEPH G. JACKSON.

ARTHUR S. PHILLIPS.

JOHN W. COUGHLIN.

WILLIAM MORAN.

JOHN MCCARTHY.

JAMES WHITEHEAD.

JOHN T. COUGHLIN, *Mayor*.

EVERETT B. DURFEE, *Superintendent of Schools*

JAMES E. CUNNEEN, *Appointed by the Governor*.

GEORGE W. WRIGHT, *Appointed by the Governor*.

EDWARD B. JENNINGS.

WILLIAM EVANS.

P. AUGUSTUS MATHEWSON.

JOHN H. HOLT.

WILLIAM HOPEWELL.

JOHN S. BRAYTON.

JAMES M. MORTON, JR.

SIMEON B. CHASE.

JAMES MARSHALL.

EDWARD S. ADAMS.

EXECUTIVE COMMITTEE.

LEONTINE LINCOLN.

JAMES E. CUNNEEN.

WILLIAM EVANS.

SIMEON B. CHASE.

ARTHUR S. PHILLIPS.

EDWARD S. ADAMS.

JAMES TANSEY.

TEACHERS' COMMITTEE.

EVERETT B. DURFEE.

EDWARD B. JENNINGS.

JOHN S. BRAYTON.

GEORGE W. WRIGHT.

P. AUGUSTUS MATHEWSON.

JAMES MARSHALL.

JAMES M. MORTON, JR.

JAMES WHITEHEAD.

THOMAS O'DONNELL.