

Educational.

WORCESTER FREE INSTITUTE.

TECHNICAL EDUCATION IN MASSACHUSETTS.

Upon the brow of a commanding eminence, at a distance of two miles from the picturesque little city of Worcester, Mass., stands the handsome and imposing building known as the Worcester Free Institute. The school was founded by John Boynton in 1865, a gentleman who began life as a tinsmith, and who, after a brave and earnest struggle, came out victorious—his honor lily white, his name a synonym for directness of purpose and commercial integrity in the purest acceptance of the somewhat hackneyed term. Having borne the heat and burden of the day, it came to John Boynton to ponder over what he had gone through—this with a view towards smoothing the path for others who were preparing to gird on the armor ere entering the arena in which he himself had striven so gallantly against such heavy odds, who had not the same chances even as he had—and the outcome of honest John Boynton's cogitations may be given in his own words:

"Being desirous to devote a portion of the property, which, in the good providence of God, has fallen to my lot, for the promotion of the welfare and happiness of my fellow-men, I have determined to set apart, and do hereby set apart and give the sum of one hundred thousand dollars for the endowment and perpetual support of a Free School or Institute, to be established in the County of Worcester, for the benefit of the youth of that county.

"The aim of this school shall ever be the instruction of youth in those branches of education not usually taught in the public schools which are essential and best adapted to train the young for practical life; and, especially, that such as are intending to be mechanics, or manufacturers, or farmers, may attain an understanding of the principles of science applicable to their pursuits which will qualify them in the best manner for an intelligent and successful prosecution of their business; and that such as intend to devote themselves to any of the branches of mercantile business shall in like manner be instructed in those parts of learning most serviceable to them; and that such as design to become teachers of common schools, or schools of the like character as our common schools, may be in the best manner fitted for their calling; and the various schemes of study and courses of instruction shall always be in accordance with this fundamental design, so as thereby to meet a want which our public schools have hitherto but inadequately supplied."

Then out steps the Hon. Stephen Salisbury, another of Worcester's thinking sons—a graduate of Harvard, by-the-way—and with a gift of \$200,000, specially to enable the Institute to receive students who are not residents of the County of Worcester, quoth he: "There is no intention and no desire to establish here a rival or substitute for the college. This school will not attempt to turn out, in this short period, an Arkwright, a Stephenson, or a Fulton, but it may give facilities and helps which these great mechanics did not possess."

It was on a glorious day in last week that I arrived in the City of Worcester. The railway depot, a charming specimen of twelfth-century Gothic, is, as regards appearance, convenience and comfort, an absolute model for boards of directors possessed of architectural proclivities. Worcester dates from 1685, but its gradual uprise began in 1713, the Indians, who called it "Quinsigamond," having assiduously depopulated it upon more than one occasion, notably in 1702. Worcester now boasts 60,000 souls.

The Free Institute is situated about two miles from the city, and to reach it one has to pass through avenues of the most quaint and picturesque residences, one vieing with the other in being "utter," "consummate" and "intense"—as the æsthetic jargon goes; while churches, of pure Gothic, with cloisters and gables and flying buttresses, and chapels of the mediæval, line the way, causing the wayfarer to stop and let the mind leap into those early days when ecclesiastical architecture meant poetry in stone. To all the rich ones of the earth who would build themselves lordly places, I recommend a peep at Mr. Jonas Clark's mansion on Elm Avenue.

The neighboring hill is topped by the Free Institute, an imposing building of granite, with a frontage of 146 feet, a depth of 61 feet, and boasting a tower 85 feet high. The Institute was built by contributions from the City of Worcester, over \$15,000 having been subscribed by workmen in twenty shops and factories, a donation doubly welcome, as furnishing evidence of the appre-

ciation of an enterprise intended to promote their special interests and to give dignity and character to their calling. To day the entire plant is valued at \$630,000.

Ascending the hill, my ears were greeted by the well known throb of steam-power and the million-bee hum of the circular saw. I found Dr. Charles Thompson, A.M., Ph.D., Principal and Professor of Chemistry, in an office the dryness of whose surroundings was agreeably relieved by the blaze of Spring sunshine. Dr. Thompson bears all the unmistakable stamp of a worker. His brow denotes thought, his sharp grey-blue eye questions more sharply than his tongue can speak, and his manner is thoroughly impressive from the earnestness of the man.

"We are justly proud of our Institute, sir," he exclaimed, after I had presented my *Frank Leslie* credentials. "We are, I may say, unique in our way. We have never been in debt, for we believe that solvency is the boundary line of success. Our available income is \$22,000, and from tuitions we receive \$3,000. We show a surplus, and have all the pupils we can accommodate, and have all the work we can possibly do."

"Will you kindly explain to me the exact objects of the Institute, doctor?"

Dr. Thompson leaped into his subject.

"This Technical School was chartered by the Legislature of Massachusetts, May 10th 1865, and opened for the reception of students November 12th, 1868. It is authorised to hold property to the amount of one million dollars. The City of Worcester, where it is located, contains about 60,000 inhabitants, who are largely engaged in manufactures, and characterized by unusual intelligence, sobriety and thrift. A great variety of work is always available through the liberality of the proprietors of Worcester shops, for the advantage of the students of the Institute."

"How many classes have you graduated?"

Ten, aggregating two hundred and two students. The ease with which more than ninety per cent. of these young men have secured honorable and lucrative employment in stations for which their training especially prepared them confirms the confidence of the trustees in the soundness of the general principles upon which the school is organised.

"This Institution arose from a conviction on the part of its founders that there is need of a system of training boys for the duties of an active life, which is broader and brighter than the popular method of "learning" a trade, and more simple and direct than the so-called "liberal education." It is the undoubted opinion of the managers of the Institute, and all who have watched its operation, that the connection of academic culture and the practical application of science is advantageous to both, in a school where these objects are started together and carried on with harmony and equal prominence. The academy inspires its intelligence into the work of the shop, and the shop, with eyes open to the improvements of productive industries, prevents the monastic dreams and shortness of vision that sometimes paralyze the profound learning of a college.

What is desired is, that all practice in engineering should spring from a clear comprehension of its principles. If the student's school training is conducted on this plan, his entrance upon the life of an engineer is an expansion of his course of study, rather than an abrupt transition to a new mode of life.

"In acquiring knowledge of any form of handicraft, or of the practical industries by which society is supported and carried on, it is essential that the student should practice under conditions as like as possible to those he will meet in life. The more his work is subjected to the inexorable tests of trade, and the more he feels just the same responsibility that rests upon an actual workman, the better he is. He must make the things that are to be used, rather than those contrived to suit the peculiarities of his temperament, the exigencies of his situation, or the mere purpose of instruction."

"What is the practice of this school, professor?"

"Practice, in this school, is subjected to three conditions: First, it shall be a necessary part of each week's work; secondly, it shall be judiciously distributed, and momentarily supervised; and thirdly, the students shall not expect or receive any immediate pecuniary return for it.

"At the middle of the first year, every student (except the mechanical section) chooses some department, under the advice of the instructors, and, until his graduation device ten hours a week and the month which follows the second examination, to practice in that department—that is, for two and a half years. Students who select chemistry, work in the laboratory; the civil engineers, at field work or problems in construction; those who select drawing, in the drawing-room; and physics, in the physical laboratory. The mechanical section practice in the work-