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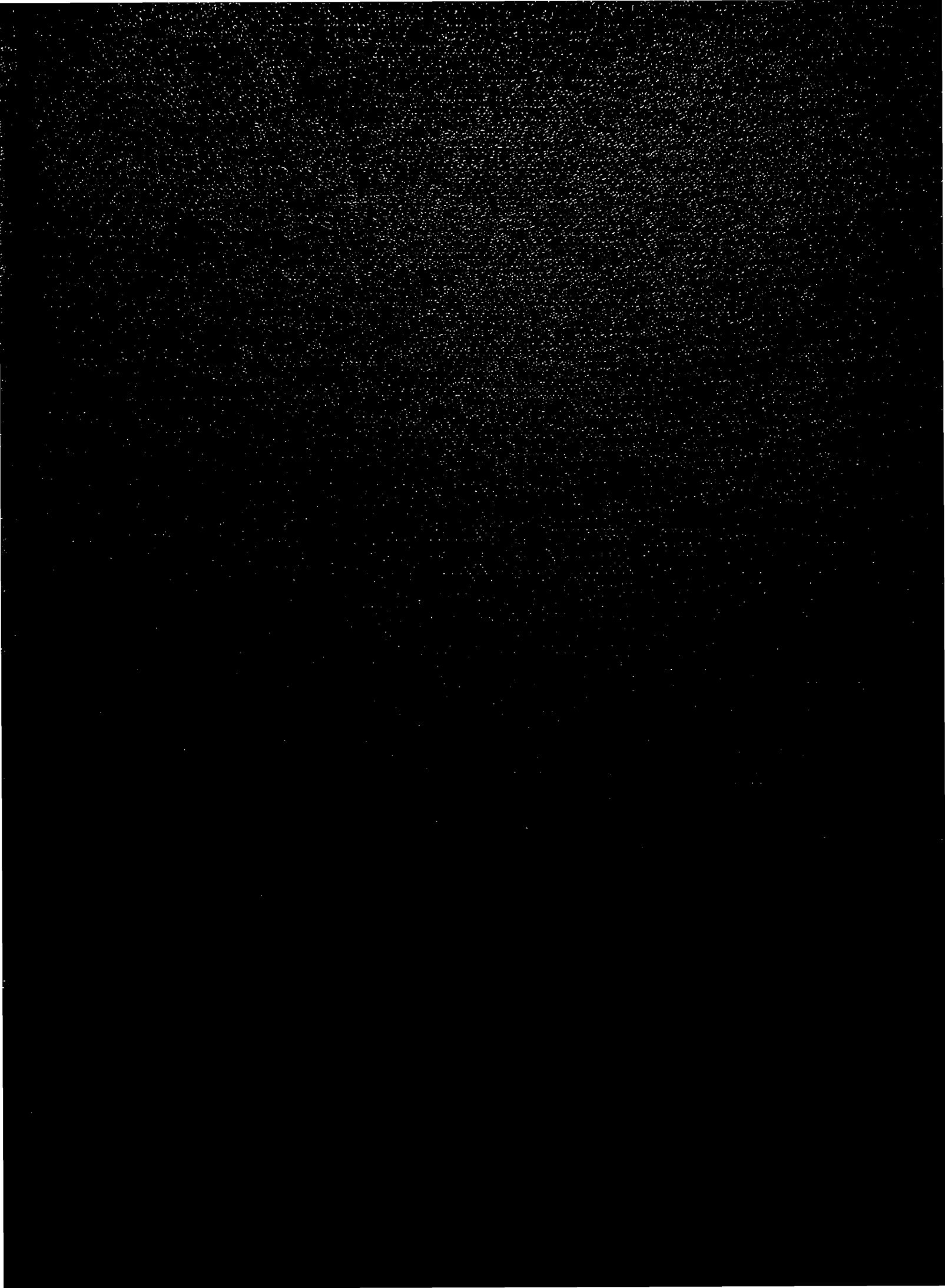

INDUSTRIAL EDUCATION IN MASSACHUSETTS

By

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INDUSTRIAL EDUCATION IN MASSACHUSETTS.

A study of the history of industrial education in Massachusetts is instructive and of peculiar interest for several reasons. She was the first state to scientifically investigate industrial education, and to pass laws committing the state to actively engage in the establishment of industrial schools. She has had a more varied history in the administration and control of this form of education than any other state, and she exceeds all other states, with the possible exception of New York, in the number and the variety of types of industrial schools. And in regard to this subject, she is in many respects, the most advanced and is employing the most progressive policy of any state in the Union.

Of course, like many other States, she has long recognized the wisdom of industrial education for the physically crippled and the mentally and morally weak, and has even passed laws requiring that manual training be introduced into the high schools; but very little time was alloted to this subject, and its aim became cultural rather than vocational.

But not until very recently, has it been at all generally realized in this country that it is a wise policy and a

duty for the State and cities to provide industrial education for normal youths who are to become industrial workers.

Before 1905, when the State became active in this field, there were several industrial schools in this State under private management and a few have sprung up since that time. Some were conducted for philanthropic reasons and others managed by manufacturing companies to train apprentices for work in their own factories, and yet a few schools were conducted by individuals for profit from tuition fees.

In Lowell, New Bedford and Fall River, were textile schools managed by local boards, composed chiefly of textile manufacturers and supported by the State and city. Also, two or three cities administered and supported evening industrial schools for men, already engaged in industrial work. Following is a descriptive list of these industrial schools which were established before the Independent industrial schools:

SCHOOLS SUPPORTED THROUGH PRIVATE BEQUESTS AND CONTRIBUTIONS.

The Massachusetts Charitable Mechanics Association Trade School is an evening school located in Boston, and was established in 1900 to afford supplementary instruction in the Building Trades to young men of from seventeen

to twenty-four years of age already engaged in those trades. The school is supported by the Massachusetts Charitable Mechanics Association and a small endowment. The tuition is twelve dollars for a six months term. Three year courses are offered in Plumbing, Carpentry, Sheet Metal Work, Bricklaying and Mechanical Drawing. Work is also given in Reinforced Concrete, Tile Setting and Electricity. Nearly two hundred students are enrolled.

The Lowell Institute for Industrial Foremen in Boston is an evening school conducted by the Massachusetts Institute of Technology. The school is supported by the Lowell Institute, while the buildings and equipment of the Massachusetts Technology are utilized in its conduct. The aim of the school is to fit young men, who are engaged in industrial pursuits, for higher positions by bringing a study of Applied Science within their reach. Applicants must be at least eighteen years of age and must pass examinations in Arithmetic, Algebra, Geometry and Mechanical Drawing. There are two courses, Electrical and Mechanical. Each year of the two year course consists of twenty-eight weeks and four hundred hours work in mathematics and physics is required for graduation.

The first year work is general, the second, specialized. The tuition is free. In 1909 and 1910 two hundred students were enrolled.

The Franklin Union, in Boston, Massachusetts was established in 1908. The financial foundation of the institu-

tion is a bequest of five thousand dollars left to Boston over one hundred years ago by Benjamin Franklin. A portion of the earnings of the original amount, four hundred thousand dollars, became available several years ago for expenditure on public works, and it was decided that the money would be best expended on an industrial school. So the Franklin Union was built and equipped . Andrew Carnegie gave the school a maintenance fund yielding twenty thousand dollars a year. The buildings and equipment are valued at four hundred and eighty-five thousand dollars and the cost of maintenance for 1909 and 1910 was twenty-five thousand dollars. Tuition fees usually six dollars per year are charged.

It is an evening school for men who are employed during the day. Two year courses are offered in Machine Construction, Industrial Electricity, Steam Engines and Boilers, Structures, Architectural Working Drawing and Industrial Chemistry. To anyone satisfactorily completing any of these courses, a certificate is granted. There are one year courses in sheet metal Drafting, Mechanical Drawing, Heating and Ventilating, Gas and Gasolene Engines, Practical Science and a preparatory course for the Lowell Institute. Four courses are offered on Saturday afternoons for twenty-four Saturdays beginning in October. The principal one of these is a two year course in Machine Construction.

This school is a successful benefaction and it is evident from its increasing enrollment that it is of that sort which is desired and appreciated. The first year five hundred and

thirty-three men were enrolled, the second, eight hundred and forty-four, this year twelve hundred thirty-eight. In March, 1911, eighty-seven certificates were granted.

The Young Men's Christian Association has Educational Departments in many cities throughout the State and country in which industrial subjects are taught. In Boston, Brockton, Lynn, Quincy, Salem and Worcester, courses in several industrial subjects are offered. In these schools instruction is given two nights per week for half a year. Some of the courses offered in these schools are Mechanical Drawing, Designs, Shop Mathematics, Physics, Electricity, Automobile Work, Chemistry, Carpentry and Pattern Work, Forging and Tool Work, Plumbing and etc. This organization has secured some excellent teachers of these subjects, thereby greatly aiding ambitious young men in their efforts to advance themselves.

APPRENTICESHIP SCHOOLS.

A new type of apprenticeship schools when the General Electric Company at West Lynn, Massachusetts, was established in 1902. This school is administered and supported by the Company, and the apprentices are paid for all hours during their term of apprenticeship, whether at theoretical or shop work. The school aims to produce expert mechanics,

who, in time, will be fitted to take positions as foreman, shop engineer, and etc. Applicants must be fifteen years of age, and possess a grammar school education. Five courses are offered: a Mechanic's Course of four years, a Moulder's Course of three years, a Tester's Course of three years, and a special course of two years. Shop course is given in training rooms especially fitted for this purpose, and instruction is given in theoretical principles related to the shop work in order to insure an intelligent understanding of the machines and of manufacturing methods. Two thousand hours constitute one year of apreticeship. Fifty-five hours make up a week's work, seven and one-half of which are devoted to instruction in theory. Examinations in school work are held frequently and a final examination at the end of the course largely determines the wage which the Company is willing to give to the new journeyman. The apprentices' wages are nine cents an hour the first year, twelve the second, fourteen the third, and sixteen and a half the fourth. At the end of his course the graduate is given a certificate of apprenticeship and a bonus of one hundred dollars. A great many enter the employ of the Company after the completion of apprenticeship.

The Ludlow Textile School at Ludlow, Massachusetts was established in 1907 and is supported and conducted by the Ludlow Manufacturing Associates. The School aims to give

such a training that in time the pupils may become foremen in the mills. To enter the school, pupils must be from fourteen to sixteen years of age and have reached the sixth grade of the grammar school. The school instruction includes work in Arithmetic, Algebra, Shop Mechanics, Physics, History, Mechanical Drawing and English. The boys are employed eight hours a day. Five hours are spent in practical work at the mill and three are devoted to instruction in school. The pupils are divided into two classes, so that the work done by one class in the morning is continued by the other class in the afternoon. The mill work is supervised by the regular mill overseer, and the school work, which is given in an old office building, is in the charge of an experienced teacher. The apprentices are paid a certain amount per hour for all time spent in the mill work, and a smaller sum for the hours spent in the school. The term of apprenticeship is four years of eleven months each year.

The Fore River Shipbuilding Company's apprenticeship school at Quincy, Massachusetts, was established in 1907. It is managed and supported by the Fore River Shipbuilding Company. Apprentices must be between fifteen and seventeen years of age and possess a grammar school education. Each boy is indentured for some branch of the shipbuilding trade, Blacksmithing, Brass Foundry, Ship Carpentry, or Machinery. There is a trial period of forty-eight days. The school period extends from October to April and two hours a day for two

days a week are given to school work and the pupils are paid the shop wage for this time. The apprenticeship term is four years, but pupils do not graduate in classes as instruction is largely individual, and credit is given for overtime and school work done outside, such as taking the industrial courses at the local Young Men's Christian Association.

The School of Printing of the North End Union was established as an evening school in 1900 but was reorganized as a day school five years later. The school is administered and partly supported by the Master Printers Association. A tuition fee of one hundred dollars is charged, and is sometimes paid by the master with whom the apprentice is indentured. The term is four years in length; one year being spent in school and the other three in shop work. In school is taught page, book and advertisement composition and practice is given in the making of book pages, pamphlets and commercial forms. When the apprentice starts to work for his employer, he is given nine dollars a week and is raised one dollar every six months for the first eighteen months and two dollars every six months for the last year and a half.

INDUSTRIAL SCHOOLS SUPPORTED AND CONDUCTED BY CITIES BEFORE THE ESTABLISHMENT OF THE COMMISSION ON INDUSTRIAL EDUCATION.

The Springfield Evening School of Trades was opened in 1898, " the first trades school in the United States to be supported at public expense" Its aim is " to supplement the imperfect and highly specialized training of modern shops by giving machine hands, helpers and apprentices an opportunity to gain practice in the greater variety of work that would ever be open to any one man under the modern system of machine production. " Practical shop courses are offered in Machine Shop Practice, Tool Making and Electricity. These are three year courses. Shorter courses are given in Wood Turning, Plumbing, Pattern Making, and Shop Mathematics. Courses for women have now been introduced in Household Decoration, Household Science, Dressmaking, etc. Over five hundred people are enrolled.

The Cambridge Evening Industrial School was established in 1905 to supplement the shop work of men engaged in the trades. It was supported and administered by the city. But in 1907 it was approved by the Commision on Industrial Education and is now partially supported by the State. Courses in Wood Turning, Pattern Making, Blacksmithing, Mechanical Drawing and etc., are offered. In 1910 two hundred and fifty students were enrolled.

The Lowell Public Evening Trade School was established in 1872 and is supported and conducted by the city.

This school offers courses in Mechanical and Freehand Drawing and Modeling only.

TEXTILE SCHOOLS.

The movement for the establishment of these schools began with the textile manufacturers. The whole movement was undertaken for commercial reasons. Educators were concerned but little, if at all, in the efforts for their establishment. It was a purely business proposition. Southern States had entered into the textile business and were competing with this State in that line. They had the advantage of a lower wage scale and of being where the raw material was grown. So the Massachusetts manufacturers realized, that to maintain their supremacy in this line, their methods of manufacture and their goods would have to be better than those of their Southern competitors, and for this reason they would require skilled workers and excellent supervisors. They could not develop such men in their mills so they called on the State and the big mill cities to aid them in the establishment and support of schools that would produce the kind of workers desired.

So, in 1895, a bill was passed by the legislature, which provided that: "In any city in Massachusetts, having in operation 450,000 or more spindles, twenty citizens of the Com-

monwealth may associate themselves together by agreements in writing, for the purpose of establishing and maintaining a textile school for instruction in the theory and practical art of textile and kindred branches of industry. The twenty citizens forming the corporation to be known as the trustees of the Textile School of the place in which it is located, shall be empowered to hold personal real estate to the amount of $300,000 and shall have power to fill all vacancies in their number with the following exceptions: The Mayor and the Superintendent of any city which appropriates to the Trustees of the Textile School, a sum of money, not to exceed $25,000, shall be ex-officio members of the Board, and on payment by the State of an amount equal to that paid by the city, the Governor shall have power to appoint two members to the Board. Only one school is to be incorporated under this act in any one city.

The first school to be established under this law was the Lowell Textile School, which opened in 1897. According to the by-laws, at least three fourtsh of the trustees must be persons actually engaged in or connected with textile manufacture. Onemember of this Board is a representative of the Trade Union. The land and buildings are valued at $36,000, the equipment at $220,000, and the cost of supplies is about $13,500 a year. In 1909-1910 the school

was conducted at net cost of $59,000. There are day courses and evening courses. For day courses, tuition for residents of Massachusetts is $100 a year; for residents of other states $150.; for foreigners $300. A high school diploma or its equivalent is necessary for admission to day courses. There are five three year courses; they are Cotton Manufacturing, Wool Manufacturing, Textile Design, Chemistry and Dyeing, and Textile Engineering. Classes are conducted daily from 8:30 A.M. to 4 P.M., except Wednesday and Saturday afternoons from September to June. In 1909-1910 in the day courses, 185 were enrolled.

This school, in respect to its entrance requirements is much like a college. Herein it differs from the other textile schools. A fairly large number of the students enrolled, are college graduates.

In the evening department courses are offered which are much like those given in the day time. Instruction is given from October to April. For admission, applicants must possess a grammar school diploma or pass examinations in English and Arithmetic. The school is free to residents of Lowell, others are charged $5.00. Upon the completion of any of the evening courses, a certificate is granted; and if one gains certificates enough to show that he has completed a number of courses equivalent to a full day course, he is given

the diploma of the school.

In 1909, 623 students were enrolled in the evening department.

The New Bedford Textile School, the second of these to be instituted, was established in 1899. The majority of the trustees are connected with Textile manufacture and three of them are Trade Union representatives. The building and equipment cost $185,000. The cost of maintenance in 1909-1910 was $25,000. In the day department tuition is free to residents of New Bedford. The fee is $50 a year for residents of Massachusetts outside of New Bedford, and $150. for those who come from outside the State. Applicants must be at least 16 years of age. High school graduates are admitted without examination, others must pass examinations in English, Arithmetic and Commercial Geography. There is a three year course in cotton manufacturing offering instruction in every detail of this industry . Two year courses are given in Chemistry, and Dyeing; Designing, Seamless Hosiery Knitting, and Latch Needle Underwear Knitting. In 1909-1910, 43 day students were enrolled.

In the evening school, courses, similar to those given in the day time are offered and are conducted by the same teachers.For admission a knowledge of Arithmetic and English is necessary. Tuition is free. The school is

in session from October to April. In 1909-1910, 671 students were enrolled.

The Bradford Durfee Textile School in Fall River, Massachusetts, was opened in 1904. The majority of the Board are textile manufacturers and several trade union representatives are on the Board. The school building is valued at $120,000 and the equipment at $75,000. The cost of maintenance is about $25,000. Tuition is free to residents of Massachusetts; others enrolled in the day schools pay $150. For admission to the day courses, applicants must be at least 16 years of age. Those who possess a high school diploma are admitted without examination; others must pass examinations in English, and Arithmetic. There is a three year course in cotton manufacturing. All work in this course is directly related to textile manufacturing. Two year courses are offered in Chemistry and Dyeing, Designing and Weaving and Engineering. The goods produced by the school are sold in the open market. In 1909-1910, 38 pupils were enrolled in the day classes. In the evening school smaller divisions of the day courses are offered, upon the completion of which certificates are given. Each evening course covers two evenings per week from October to April. In 1909-1910 824 students were enrolled in the evening school.

In the above ennumeration and description of industrial schools the large number of these schools that were in existence in this state before 1905, compared with the few in most states, shows how much had been done in that line in Massachusetts even then.

But in that year, a great impetus was given to the movement for industrial education, when Govenor Douglass appointed a commission to investigate the subject of Industrial and Technical education. Employers and employees were represented on the commission. This body investigated the industries of the state and the needs of industrial education and made a special inquiry into what becomes of the children in the first three or four years after leaving the grammar schools.

Its reports were published in 1906. The conclusions of this commission "may be said to mark an epoch in educational progress, not only for Massachusetts but for all the country as a whole".

This report was of the utmost importance for the advancement of industrial education in this country, and it did morethan anything else to further the cause of this kind of education in our land. Paul Hanus, Chairman of the Commission on industrial education said of this report:" A very valuable document it is, one of the best educational

documents which has been published in this country for many years." The findings of this commission were printed in magazines and ndwspapers throughout the country and brought the subject of industrial education before the people. In its special investigation the commission found that 55,000 people in the State were taking correspondence school courses and that 25,000 children between 14 and 16 years of age, were idle, or engaged in unskilled "blind alley" occupations. It also found that it was financially possible for the parents of a large proportion of these children to have kept their boys and girls at school, and that they would willingly have done so had they regarded it as a real advantage to them.

The commission further concluded as a result of public hearings, that there was a general interest in industrial education among students of education and a practical interest among manufacturers and wage earners in this subject as the probable successor to the old apprenticeship system. It also reported that, though there was a lack of clear ideas as to the scope and methods of the industrial schools desired, yet it was possible to establish schools, free from the dangers, which the trade unions pointed out, and it recommended that a commission be appointed to establish schools in cooperation with the local authorities throughout the state.

A bill, containing the recommendations of this commission passed the legislature that year and a commission on industrial education was appointed.

The law, establishing the commission contained the following provisions: first, the commission, to be known as the Commission of Industrial Education, shall be composed of five persons, appointed by the governor, to serve for three years; second, it shall be the duty of this commission to extend the investigation of methods of industrial training and local needs; third, this com-

mission shall advise and aid in the establishment of industrial schools, which must be independent of existing public schools; fourth, it shall initiate and supervise in the establishment of these schools with the cooperation and consent of the city or district involved; fifth, cities and towns may establish independent industrial schools for instruction "in the principles of agriculture and the domestic and mechanic arts;" sixth, cities, raising by local taxation and expending more than five dollars for each one thousand dollars of valuation, for the support of public schools and maintaining industrial schools at public expense, shall be reimbursed by the commonwealth to the amount of one half the cost of maintenance, and those expending between four and five dollars per one thousand dollars valuation, be reimbursed to one third the cost of maintenance; those expending less than four dollars per one thousand dollars of valuation, to be reimbursed one-fifths the cost of maintenance; seventh, the commission shall report annually to the legislature on the condition and progress of industrial education, stating what industrial schools have been established and the appropriations necessary for their maintenance; eighth, the committee shall consider and report on the advisability of establishing an industrial college; and ninth, that the Massachusetts

Agricultural College shall establish a normal course to give instruction in the elements of agriculture to persons wishing to teach that subject in the public schools.

The commission set to work immediately to urge the different cities in the state to establish industrial schools. Members of the commission addressed local organizations of employers and labor men and assemblies of citizens generally on the advantages of industrial education and tried to discover the kinds of industrial schools favored by the different bodies of citizens, and the sort of courses that they thought would best satisfy the local industrial needs.

The public industrial schools in Europe, particularly in Germany, were investigated in detail and agents of the Board reported on the administration, courses and methods of instruction generally in the private industrial and apprenticeship schools in this country. As a result of this investigation, in Europe and in this country, the commission formulated in a general way, courses of studies for the proposed industrial schools.

In these addresses, the commission pointed out how especially necesaary industrial schools are for the continued prosperity of Massachusetts. The poverty of the state in natural resources and thedensity of her pop-

ulation compared with most other states in the Union, make Massachusetts much like most European countries in natural industrial conditions. In order to prosper, Massachusetts must rely on the superior quality of her manufactured goods, and to maintain this superior quality, industrial schools are necessary to train skilled workers, capable of producing such goods. For the old apprenticeship system, which formerly looked out for the training of skilled workmen, has almost entirely passed away.

The commission said that the aim of the schools, which it desired to see established, was to give a training that would at least be the basis for the development of intelligent workmen, men who knew their trade from A to z, and understood the why as well as the how of everything they did in their work. Investigations showed that such men were scarce in this country and many leading manufacturers said that in times of prosperity, because of the lack of such men, their output was only one half of what it might be, if a sufficient number of skilled workers were available. Skilled workmen are seldom out of a job, and it is the man who knows but one or two of the perhaps more than fifty processes involved in the manufacture of an article, who is most often without employment and for whom progressive well being is well nigh impossible.

These addresses and conferences proved very effective and the commission's work bore fruit in 1907, when independent industrial schools were established in Northampton, Beverly, Waltham, New Bedford and Taunton. This number continued to increase under the administration of this commission for the next two years.

Then there came a change in the central authority, administrating state-aided trade schools.

In her appointment of a commission that should have control of Industrial education and be entirely independent of the State Board in charge of other forms of public instruction and in her requirement that the Board of trustees in each locality should be legally free of the local school committee, Massachusetts had adopted a policy in the administration of industrial education, which no other state has followed.

It appeared to be the general belief of the advocates of industrial education in this state that industrial education must be kept apart from general education, even in its administration; that the two were inimical and that the interests of industrial education would be sure to suffer, did the two kinds of education become connected in any way. This was the opinion of many educators throughout the country and it is still the

belief of some, although no other state has legislated on the matter in accordance with this opinion. And Massachusetts changed her mind in this matter in 1909, when a bill was passed by the Legislature, abolishing the commission on Industrial education and the old Board of Education and establishing in its place a new Board of Education, having all the rights, duties and authority of both the old commissions. This legislation is only in accordance with what, in this country, now seems to be regarded as the best method of control. It has been found, that, though vocational and cultural education differ widely, it is not only not harmful to the former to have both forms under the same central authority but that, in some respects, it is the better way for both. This new law also provided for the appointment by the new board of education, of a commissioner of education and two deputy commissioners, one of whom should be especially qualified to deal with the subject of industrial education.

This new board has proceeded with the work of promoting industrial education in the state with all the zeal of the old commission. The new Commissioner of education shows a very great interest in this subject and, together with t

the deputy commissioner of industrial education, is doing the utmost for this form of education so that, to the schools already established, by the old commission, many others have since been added. The number of schools has continually increased, and, although one or two of the independent industrial schools established have since ceased to exist, almost all have prospered and won general approval; and their success is encouraging more and more cities and towns, throughout the state, to appropriate money for the establishment of such schools. At present, there are sixteen cities in the Commonwealth in which there are one or more independent industrial schools approved by the State Board of Education, and receiving support from the state. Following is a description of these schools:

The Beverly Industrial School at Beverly, Massachusetts, was established in 1907. It was originally an evening school, but this was discontinued in 1909 and a day school, offering part-time instruction only, was established. This is a unique school. It is under a board of trustees, consisting of the mayor and five members of the school committee, appointed by the chairman, and one or more citizens, appointed by the mayor, through the following provision: "Each proprietor of an industry, who shall provide facilities satisfactory to the

board of trustees for the practice work of the pupils of the school, shall be represented by one member of the board of trustees to be nominated by the proprietor of the industry and appointed by the mayor."

The course consists of alternate weeks of shop work in the plant of the United Shoe Machinery Company and book work in a regular school building maintained by the city of Beverly. The shop work is done in a special department of the factory which is equipped with sufficient machinery to accommodate twenty-five boys at one time. The company furnishes the raw materials and the drawings for the work and purchases the finished product. One half of the piece price goes to the boys and the other half to the Company for the maintenance of the shop. If there is a deficit between the earnings of the shop and the cost of maintenance, the company bears the expense; if there is a profit, it goes to the support of the school. The shop instructors are paid by the Company. All pupils must be residents of Beverly. The school instruction consists of industrial drawing, shop mathematics, industrial science, English, and civics. The work at the factory is from 7 A. M. to 5 P.M., at school from eight to five. The course, three years in length.

The Boston School of Printing and Book Binding was established in March, 1910, and reorganized as an independent industrial school in September, 1910. The school has a capacity of 40 pupils. The courses are for four years. There is shop practice in printing and book binding and instruction in drawing, English, mathematics, industrial history, spelling, current events and civics. The instrudtors in book binding and printing are men well versed in their trade. There is also an advisory committee of nine members consisting of master and journeymen printers who take an active interest in the school.

The Boston Trade School for Girls was established as an independent industrial school in 1909. The school was formerly the Boston Trade School for Girls under private management. It was transferred to city authority by its founders, and the city installed it in a new building. The building and equipment are valued at sixty thousand dollars. There are four courses, one year in length, in dressmaking, millinery, clothing-machine operating, and straw-machine operating. Five and a half hours a day are given to practical work in the trades and instruction is given in spelling, business English, industrial conditions, color study and design, personal hygiene, and gymnastics. A certain amount of

domestic science is also taught each girl. About 400 pupils are enrolled.

The Boston Evening Industrial School was established in 1908. Applicants must be at least fifteen years of age. Courses are offered in machine work, pattern making, janitor work, building estimating, interior decorating, sheet-metal and ship drafting, steam engineering, electrical engineering mechanical drawing, free hand drawing, cooking, and millinery. Over 1000 students were enrolled.

The Brockton Evening Industrial School was established in 1909. The school offers courses in sewing, dressmaking, millinery, mechanical drawing, and engineering. Some 600 pupils are registered.

The Cambridge Evening Industrial School was established by the city and approved by the Commissioner of Industrial Education in 1907. For men, courses are offered in machine shop work, wood turning, pattern making, machine drawing, etc. 250 pupils are enrolled in these courses. There are courses for women in sewing, dress making and millinery, and about 500 women and girls are registered.

The Chicopee Evening Industrial School was established in 1908. Classes are conducted in mechani-

cal drawing, wood working, cabinet work and machine shop practice for the term of twenty-four weeks per year. Over 100 students are registered.

The Hyde Park Evening School was established in 1910. There is an advisory committee connected with the school composed of men of experience in the metal working trades, either as workmen or as superintendents, who reside in the town. The instructors in the school are practical workmen, of long and successful experience in their trade, and have had some technical training. The school offers courses in shop drawing, shop science, and shop mathematics. One hundred hours' instruction is offered in each course for a term of twenty-five weeks per year.

The Lawrence Industrial School was established in 1908 and offers day and evening courses. The school has courses in textile arts, mechanical arts, and in trades for girls. Twenty-three specific courses are offered in both the day and evening classes. Some of these courses are: woolen and worsted yarn manufacturing, as far as combing; woolen and worsted loom fixing and calculating, cotton spinning, experimental dyeing, industrial chemistry, mill arithmetic, elementary electricity, industrial and shop English, etc. The instructors are practical workmen, who know the needs of the students, and

the problems taken up in the class room are obtained through the use of a question box, placed in the school and in the mills. The school has evening classes for women in sewing, shirt-waist making, skirt making, making of children's clothes, garment making, etc. The equipment of the school is valued at $50,000, and the cost of maintenance is over $15,000 per year. The registration in the day school is about 200; in the evening classes for men, 700; and in the classes for women, 600.

The Montague Industrial School was established in 1908 and offers day courses in agriculture, carpentry, and mechanical work for boys and domestic science and domestic arts for girls. This school displaced the Montague High School. In 1909-10, thirty-six pupils were enrolled.

The Natick Industrial School is an evening school, established in 1909. Courses in sewing, dressmaking and cooking are offered. Over 100 pupils are enrolled.

The New Bedford Industrial School was established in 1907 and offers day courses in metal working, wood working, industrial drawing, and applied science, and evening courses in house framing, shop drafting, shop work, motors, gas engines, machine shop work for men, and

dress making and millinery for women. About 75 pupils attend the day classes and about 400 people are enrolled in the evening classes.

The Newton Industrial School was established in 1909. Day courses are offered in wood work, machine work, etc. This school is conducted by the city and has the approval of the State Board of Education, but the expense of maintenance is almost entirely met by private contributors. In 1910, fifty-one pupils were enrolled.

The Newton Evening Independent Industrial School was established in 1910. Courses are offered in machine drawing, shop mathematics, industrial drawing, cooking, sewing and dressmaking. 194 people are registered in this school.

Smith's Agricultural School and Northampton School of Industries at Northampton was instituted in 1907. There are courses in agriculture, mechanical arts and household arts. The financial basis of the school is a private fund of over $300,000. But the school is maintained in part by the taxpayers of Northampton. The schools have splendid equipment and buildings worth nearly $100,000. In 1910, the total registration was 101.

The Somerville Industrial School was established in 1910. Courses for boys are offered in wood working and metal working. Instruction is given in shop drawing, shop science, elementary physics and chemistry, industrial history and civics. 44 pupils have been enrolled.

The Taunton Industrial School was established in 1907. Evening classes are conducted in industrial drawing and design. In 1910, 120 pupils were registered.

The Walpole Industrial School was established in 1908. Evening courses are offered in mechanical drawing, architectural drawing and cooking. In 1910, 14 pupils attended the school.

The Worcester School of Trades was established in 1909. The city appropriated $135,000 for the building, equipment and maintenance of the school. There are day and part time courses in wood working and metal working and a course in brick laying will open in the Fall. The courses offered in conjunction with the shop work, include shop computation, formulas, geometry, commercial arithmetic, commercial geography, commercial law, natural science, strength of materials, English, history of commerce and inventions, citizenship and drawing. Shop work occupies one half the time of the pupil, and the articles produced are sold in the open market. 44 hours a week are given to instruction and practice and the full day course covers four years of eleven months a year. Unlike any other independent industrial school in the state, this school, in its day courses, aims to turn out thoroughly skilled journey men.

This school established an evening department in 1910. Machine shop courses are offered. They include lathe work, grinder work, pattern making, gasoline engine practice, blue print reading and shop mathematics. In this school, there are 140 full time pupils, 60 half time pupils and 209 evening pupils.

In this descriptive list of independent industrial schools, are boys' trade schools, agricultural schools, and girls' trade schools; all these forms of industrial education

receive the closest attention of the board of education.

SECONDARY AGRICULTURAL EDUCATION.

Thus far, there are but two independent industrial schools in the state that give instruction in agriculture. This is not strange because this is a manufacturing rather than an agricultural state, and even those states that are almost wholly agricultural have done but little in this line until recently. Within the last year however the state has accomplished a great deal of work in regard to this matter. In 1910 the Legislature passed two bills relating to this subject; one, requiring the State Board of Education to investigate the desirability of establishing a farm school in the city of Worcester, and to report on the matter to the present session of the Legislature, January 1911, the other directing the State Board of Education to investigate the advisability of establishing a system of agricultural schools, throughout the state and requiring that a report on the result of its investigation be made to the Legislature in January, 1911.

Many experts in agriculture and agricultural education assisted in this investigation and a study of the situation in Worcester County and other parts of the state was

made and the results given to the Legislature in a special report.

Briefly stated, the investigation showed that,

1. Farming in Massachusetts is a highly important vocation.

2. Massachusetts farming is peculiarly dependent on and responsive to scientific knowledge and improved methods.

3. Agencies for carrying improved methods to adults have been carefully considered and well established.

4. There is a lack of and a demand for scientific and practical agricultural training for boys of fourteen years and upwards, who expect to gain their livelihood from Massachusetts farms.

5. The present commercial and industrial schools tend to lure boys away from the farm who might be kept at home, were opportunities for competent agricultural education offered.

6. The demand of the farmers for secondary agricultural schools shows the need of additional legislation providing for this kind of schools.

7. Instruction in gardening and in other matters relating to the farm should be encouraged and guided in all the elementary schools of the state where home environment or school facilities make productive work possible.

8. Guidance and encouragement should be given toward the introduction of agricultural subject matter in all rural high schools.

As a result of this investigation, the Board recommends that-

1.- State aid for agricultural schools be continued and-

2.- That provision be made for the establishment of agricultural departments in existing high schools with state aid.

In this document the system of agricultural schools, recommended for Massachusetts, is described and the requirements of the Board as to location and plant, support and control, conditions of admission and promotion, teaching staff, course of preparation for general farming, methods of instruction, gradation of farming activities, home work, school supervision, student ownership, etc., are set forth in detail.

The Board also reported that the principal present need of agricultural education in Massachusetts is agricultural departments in public high schools. There are many reasons why, for the present at least, the best plan for the development of secondary agricultural education is through the establishment of agricultural departments in the high schools. The larger cities in the state that could establish independent agricultural schools do not need them so much

as they do trade schools and so they would not support them. The smaller towns and districts could not support a high school and a separate agricultural school. Northampton is the only place in the state where both schools are maintained, and the Smith's Agricultural School of that place would not be in existence except for the very large private bequest.

And there are many difficultues and objections in the matter of independent, agricultural schools for large districts such as counties. For a school in a district large enough to establish and support a properly equipped institution of this kind would have the serious disadvantage of being too far away from the homes of many of the pupils, thereby compelling them to bear transportation expenses and to be away from early in the morning until late in the evening,thus depriving the parents of their boy's services, which are so greatly needed in so many rural homes. Moreover, there is the big question of cost. The Board claims that at least ten good agricultural departments would not cost so much as one good independent agricultuural school. An agricultural course that is strictly vocational, should be readily introduced in rural high schools, as is evident from experiments elsewhere, and when the recommendation in regard to state aid for this form of instruction becomes a law, such a course would be but little additional expense to the community. The agricultural departments in the rural high schools, with the opportunities of

practically applying at home the methods told and shown in school, should develop capable and scientific farmers. Moreover, such departments have long been advocated by Davenport of the Illinois University and other authorities, and these departments can be made to give a better cultural and as effective a vocational education as the separate school. The findings of investigators in this state and the opinions of experts elsewhere make it seem probable that if an effort is made to acquaint the people with the advantages of such departments, a rapid growth in secondary agricultural education in this state may be looked for within the next few years.

At the present time there is a hot discussion going on in the Legislature connected with secondary agricultural education. A delegation from Essex County appeared before the Committee on Education in March and asked the Committee to recommend that the County of Essex, be allowed to construct and equip a separate agricultural school, to be known as the Essex Independent Agricultural School, and that a Board of Trustees of this school, whose members are to be appointed by the Governor, be authorized to expend the sum of $75,000 on the construction and equipment of this school, one half of this sum to be provided by the county, and the other half by the state. The Committee refused to recomm end that money be appropriated for the construction of this school and gave the delegation permission to withdraw their p etition . The delegation, however, refused to give up and a bill, embodying what was con-

tained in the petition, was introduced and passed by the House against the recommendation of the Committee on Education. But it has not yet come up before the Senate and it is now believed that it will be vetoed by the Governor. This bill passed the lower body of the Legislature not on its merits but because of trading on the part of the Representatives. For it is against present legislation and against the recommendations of the Board of Education to appropriate state money for the construction and equipment of industrial schools. The Board of Education is against such appropriations because it is evident from the rapidity with which new industrial schools are opening that even meeting the cost of one half the maintenance charges of such schools is soon going to be a considerable tax on the resources of the state. The Committee of Education is in accord with the Board of Education on this question and it is preparing to substitute for the bill that passed the House another one which provides that "at the next state electionsthere shall be placed on the ballots for the counties of Suffolk, Worcester and Essex the following question:- Shall this county establish an independent industrial school?" If the majority of the voters are in favor of establishing a county agricultural school, this bill provides that the county shall be reimbursed by the state to the amount of one half the cost of maintenance. The outcome of this matter will be awaited with considerable anxiety by those interested in the progress of industrial education

here for a precedent may be established that will be harmful to the cause of public trade instruction.

INDUSTRIAL EDUCATION FOR GIRLS.

In only two of the state aided industrial schools, namely, at Boston and at ~~Lynn~~ Lawrence, is day instruction in some specific trade given to girls, ~~in Boston schools~~. This lack of trade training for girls is largely due to the fact that the local needs of such instruction for girls were not so thoroughly investigated as the local need of trade education for boys. Now, however, this sort of education has been investigated by the Research Department of the Women's Educational and Industrial Union under theauspices of the State Board of Education. The various cities throughout the State have been visited and an inquiry made into the local industries employing chiefly women. The number employed in the various industries, the demand for workers in the different trades, the seasonal changes, the type of training that should be given in order to meet the needs and demands of the trades, and the type of worker that should be trained for certain industries in order that she might reach the highest fulfillment of her powers, were inquired into last year. Schedules with certain leading questions were prepared and sent out to the schools and to the young women in the factories, for the purpose of finding out the causes leading so many young girls to leave school. Industries that were drawing the girls from

the schools were visited. A report of the result of the investigation was made recently. Here in Worcester it was found that a large percentage of the girls who left school at the age of fourteen, were not forced to do so by their parents, but left of their own free will. Of the last year more than seven hundred girls who took out certificates to go to work, sixty per cent left school at the earliest age which the law allows and these "go to the mill, the factory and the store at one dollar, two dollars or two and one half dollars a week , which in many cases is more than they are worth to their employers." The investigators found that the factories of Worcester were employing more than eight thousand women. Machine operating, textiles, wire and metal goods receive more than ninety per cent of the women workers, and thirty-seven per cent of these are engaged in machine operation. The investigators concluded therefore that " the industry which centers around electrically driven sewing machines offers the best trade training in Worcester." They reported that the training in Worcester should concentrate on this type of industry, with some training in the needle trade and in domestic economy and that full time, part time, and evening courses be offered.

The report on the local conditions and needs in this matter of the several cities investigated has produced a big effect already; for in the light of that report, girls' trade

schools, with courses along the lines suggested for the different cities, are being organized in Worcester, Somerville, Cambridge, and New Bedford.

PART TIME COURSES.

Part time instruction, probably the most discussed problem in industrial education, is given in three cities in the State, at Beverley, at Worcester, and at Fitchburg. I have already described the course at Beverley. In Worcester, the part-time course is attended by apprentices from seven or eight manufacturing companies in the city, who come one half a day per week, and are taught such subjects as shop mathematics, English, drawing, and shop instruction.

The Shop instruction includes the study of gearing, tapers, cutting speeds, construction of machine tools, and methods of doing machine work.

In Fitchburg, there is a half time plan in operation under city auspices which has become well known throughout the country. Under this plan, boys who have completed the grammar school course and who desire to take the industrial course, are given a two months' trial in the summer. If they prove satisfactory, they spend the first year in the high school taking a course of studies that is practical and

related to the sort of work they intend to follow. For the next three years, they spend one week in certain shops in the city and the next week at class work in the high school. For their work in the shops, the boys are paid 10 cents an hour the first year, 11 cents the second year, and 12-1/2 cents the third year. The pupils are divided into two groups and while one group is at school, the other is in the shop so that work goes on without interruption. Shop mathematics, English, Free-hand, Mechanical and Machine Drawing, Commercial Geography, Civics, Physics and Chemistry are taught in the school, and in the shop, instruction is given in operation of lathes, planes, drilling machines, bench work, etc.

This Fitchburg plan has proved most successful, and seems to have come up to the highest expectation of both the school authorities and the manufacturers, and it offers a most admirable solution of the expense problem that is so prominent in industrial education.

INDUSTRIAL EDUCATION IN ELEMENTARY SCHOOLS.

The movement for industrial education, has now reached the elementary schools and it is influencing the method of teaching nearly all subjects. Not only have manual training, garden work, etc., begun to be something more than cultural, but such subjects as arithmetic, history

and geography, are beginning to be taught with some relation to the practical and the concrete.

Of course, industrial education in strict sense is not attempted, but what may be called a preliminary vocational training is being given in a few schools. In this country, it has been the custom in elementary education to require all pupils to take all the subjects offered, whether they intended to go to higher schools or to work as soon as the law allowed; and as a great many subjects are offered in the upper grades, the program of studies has become overcrowded. This is now generally recognized but until recently, no one in this country has tried to remedy this evil by allowing the pupil to choose a course, embodying the studies that would have some general relation to that in which he intended to employ himself, when he left the grammar school. One of the few schools in this country that have done this, is the Manual Arts School at Fitchburg. This school opened last Autumn, admitting pupils of the three highest grades. Four courses are offered with common elements in English, Geography and History and each having special studies not found in the other courses. One course for boys offers ten hours a week in manual arts; another course for girls gives ten hours to household arts; a third course for boys and girls offers five hours of manual work and five hours of commercial subjects, such as typewriting; and a fourth course, intended for those

going to enter high school or college offers five hours work in a foreign language. The State Board urges the adoption of such courses in the upper grades everywhere, but reports that school authorities seem reluctant to undertake the new work.

The Manual training in many cities is being given a more practical bent and begins much earlier than formerly, for it is now believed that the sooner a boy is given manual training, the more dexterous and efficient will he be as an adult manual worker.

The things that the boys make in the manual training courses, are beginning to be of some use to them. A few years ago, pupils made brackets, racks and boxes that were entirely useless to them. Nothing that the boy would take an interest in, and that he would try to make as perfect as possible; because he would find more enjoyment in its use, was considered for a moment. Now, however, matters are a little better. A few teachers allow the boys to make something that they really want and which they will use in their work or play outside school hours. In this city, one manual training teacher has permitted the boys to make several articles which they use in their games. In Boston, boxes and other articles, needed by the supply department of the schools are being made by a few, small groups of grammar school boys, whose members are frequently changed. They devote one hour a day to this work, and are paid for their products.

The girls too are being better provided for in their special subjects. Sewing is now begun as early as the fifth grade in many cities and cooking a year later, so that present graduates should know much more about these two important arts than did those of five years ago.

Nature Study and Garden Work have become very prominent within the last ten years. These studies are the basis of agricultural education. But they gain supporters for many other reasons. Garden work is regarded as of great cultural, vocational and moral value, and it has more encouragement given it by those who have no connection with the schools than has any other part of the curriculum. Philanthropic societies and associations, business firms, manufacturing companies and private individuals further this kind of instruction in every way. Prizes are offered to those children raising the prettiest flowers and the best vegetables. Seeds are sent to the school authorities, which are sold to pupils at half price or less. On April 29th, official notice is taken of Arbor Day and prominent public officials plant trees in public parks. In some places in the State, the children parade to public parks and playgrounds and themselves plant trees and shrubs. Commercial and manufacturing companies give away thousands of trees to the pupils of the public and parochial schools in the State. Here in Worcester for example, one firm distributed 30,000 trees among the school children. Literature, treating of the conservation of trees, tree planting and culture is sent out to the schools and

everything possible is done to arouse the interest of the children and induce them to actively engage in the advancement of the "city beautiful"idea. The older boys, who sometimes regard some of this work as too childish are allowed by some principals to care for the big trees on the school property and to cut off dead limbs etc. All this work has the hearty endorsement of the State Forester, who says that the practical good which will result from it, cannot yet be realized. The Board of Education, too is doing its utmost for agricultural instruction in elementary schools, especially in the rural districts and their efforts have met with such success, that grade work in agriculture is now done in 150 towns.

Recently, Potato and Corn clubs have started up under the auspices of the Massachusetts Agricultural College. These clubs have been organized for the purpose of raising staple articles in accordance with the best scientific methods. Seeds and full directions, are distributed. exhibitions held and prizes awarded. Some excellent results have been obtained through this movement in the culture of corn and potatoes and the fact that in Lynn alone, 1400 children recently joined the movement, shows how rapidly it is growing in this State.

But the most startling effect of the industrial movement on the elementary school is the new way in which many studies, like geography and history are beginning to be taught in

the upper grades. This effect is most evident in the way Normal School students are now trained to teach these subjects. They are made more practical and have some reference to what the pupil sees and hears outside the school. For example, at the Worcester Normal School, the pupils of one class were required to make out a lesson plan, employing the description of some local industry as a new method of teaching geography and history to their prospective pupils. They were required to tell everything connected with this industry from the obtaining of the raw material to the turning out of the finished product. In this, they were to use as much illustrative material as possible. Many girls chose to speak of the shoe industry, which is one of the greatest in the State. These girls told about the chief places where leather is obtained, gave a history of footwear from earliest times up to the present, and described the various processes, involved in the making of shoes, mentioning some of the inventions in this line and telling what they did for the advance of the industry. They obtained illustrated booklets, gotten out by the United Shoe Machine Company, containing cuts of the old all hand work method of making shoes and photos of the more than eighty processes employed in the manufacture of the shoe of today. For the history of footwear, they used booklets, sent out by the Queen Quality Shoe Company. These booklets give a history of footwear with many pictures of the successive styles of footgear, the Roman sandal, the first

high heeled slipper, etc., up to the latest style of the season.

In many cities now, the children are told of the opportunities offered for learning a trade and of the better prospects of earning a good living for those who attend these schools, compared with those, who leave school as soon as the law permits them to escape.

TRAINING OF TEACHERS.

The training of teachers in industrial subjects is one of the big problems of industrial education in this country. This was immediately recognized here, and, in the law establishing the commission on industrial education, provision was made for the opening of a normal course in the Amherst Agricultural College for training in elementary agriculture.

The securing and training of capable teachers of agriculture in secondary schools is not so difficult as the training of teachers of trades, for many graduates of agricultural colleges have had experience in practical farm work and, with but little teaching experience, such men usually make very satisfactory teachers. For the teachers of mechnical arts in the secondary schools however, no adequate methds of training have been devised, but the old commission on

industrial education insisted that the instructors in mechanical courses in state-aided schools be skilled workmen and, if possible, have some tech nical training. Of course, politics has played a part in many of the appointments, yet the commission seems to have employed a wise policy in this matter, for in most of these schools the work of such instructors has proved satisfactory and many of them make excellent teachers. And, considering the many difficulties that they labor under in the newness of the field with no traditions as to gradations of work and no text-books, the work of most of these men is deserving of praise.

The State, however, is now doing a great deal in the training of teachers of industrial subjects in the elementary schools. Teachers in the rural schools are visited by agents of the board and instructed in the teaching of elementary agriculture. At present an agent of the board is preparing a manual for the instruction of teachers in this subject, which describes in detail how the children, under the teacher's guidance, may raise all kinds of vegatables . It also contains directions for garden work, laboratory work, and collateral work. The board feels that this manual will greatly advance practical work in the upper grades, "because it puts at the command of teachers and superintendents a body of exercises that has been carefully prepared for use under the usual school conditions."

That the different Normal schools are doing their part is evident for, at the Normal Schools at Lowell and Salem, especial attention is given to gardening as it can be practised under city school conditions. In the North Adams Normal School, thorough courses fitting teachers for work in manual training are given and special attention is directed there to the sort of agricultural instruction that should be given by rural school teachers. At the Framingham Normal School, there is a large department in which young women are given a three years' training, fitting them for positions as teachers of household arts and the Boston Normal Art School conducts evening courses for those wishing to perfect themselves in the teaching of Manual Arts. The Summer School at the Massachusetts Agricultural School offers a fine training to a large number of teachers of elementary agriculture in the rural schools.

In 1909, the Legislature appropriated $75,000 for the construction of a building at Fitchburg to be used in connection with the Normal School there for the training of teachers of manual arts. As has been shown in many investigations, manual arts have been undergoing a transformation in recent years. Formal courses are being replaced by ones more in accord with practical life, and it is this fact that is being fully realized in this new school. Several young

men are preparing to be special teachers of manual arts along these new lines and are receiving a splendid training in this new school. This is encouraging, and it is hoped that the attendance of men will greatly increase as educators are convinced that, in the teaching of manual arts to boys from twelve to fifteen years of age, there is a great need of men instructors with some industrial experience.

The establishment of this school and the work along industrial lines in the other Normal schools show that Massachusetts is not lagging behind in the efforts to further industrial education in the elementary schools and that, in the training of teachers in this phase of school work, she is doing as much, if not more, than any other state in the country.

VOCATION BUREAUS.

A Massachusetts born institution that has sprung up in connection with industrial and vocational education is the Vocation Bureau.

The Vocation Bureau is an institution that had its origin in Boston. That city was the first to take up the work under the leadership of the late Dr. Parsons. He sought to aid boys in their choice of a vocation by studying the physical, mental, and moral powers of each boy that

came to him for advice. By a few simple tests and skillful questioning, he was enabled to learn the strong and weak points of each boy, and, through this knowledge, he could direct the boy to the vocation he was best fitted for. This Bureau has been very successful and has aided men in business and in trades, college students, but chiefly boys of high school age in choosing their life work. Cases illustrating the principles and the methods employed by Doctor Parsons have been published and are well known.

The greatest possible progress of industrial education requires that bureaus of this sort should be established in every city, for as S. D. Brooks, Superintendent of Schools in Boston, in urging the establishment of these bureaus, said , " Educational methods and educational machinery are being overhauled in the light of a new purpose namely, the more specific preparation of pupils for particular vocation in life. Manifestly, if a boy is to be prepared for a particular vocation, the schools must know, in advance, just what that vocation is to be. A perquisite of industrial educational therefore is the selection of life work on entering the school instead of leaving it. The most important immediate effect for the movement of industrial education has been to move forward suddenly the time of choice, and it is this necessity to choose early a definite career that makes desirable a consideration

of vocational direction. The schools of the past have presented the same type of education for all pupils, and vocational direction consisted mainly in advising a boy to take or not to take additional education. But under new conditions vocational direction will not only be concerned with advising a boy to take additional education but with deciding what particular kind of additional education. But under new conditions, vocational direction will not only be concerned with advising a boy to take additional education but with deciding what particular kind of additional education he should take in order to be of the greatest service to himself and the Commonwealth."

Girls attending the Boston Trade School for Girls are given vocational guidance of another sort. Two women, Wellesley graduates and experienced social workers are employed by the city as vocational assistants to find employment for girls after they leave the trade school. They see to it that the girls get the best positions obtainable and that they are treated with due consideration by their employers. These assistants visit the homes of the girls and try to improve conditions there. They advise the girls in matters pertaining to health and personal appearance and instruct them how to spend most advantageously, both time and money, and in fact promote the well being of the girls in every possible way.

SUMMARY.

The history of Industrial Education in Massachusetts, shows that Massachusetts has made great progress in this line, that she is learning from experience and is continually advancing in everything that is connected with this form of education. She started to investigate the subject in 1905 and is still examining its every angle, and no state has been more active than she in furthering this sort of education. She has all types of public and private industrial schools within her borders, Apprenticeship Schools, private philanthropic trade schools, state aided industrial schools, and the trade schools conducted by the cities are surpassed by no similar institutions in the country.

The public and private evening industrial schools throughout the state, are giving instruction to many thousands of people. In the independent evening industrial schools alone over 4,000 people are enrolled, and this does not take into account the three textile schools, with the total enrollment of 2500 in their evening courses, or such schools as the Franklin Union, with its registration of more than a thousand men.

In the day courses of her independent industrial schools, several hundred boys and girls are being given the

sort of training that should make the ideal workman.

The investigation last year with the conditions of agriculture and trades for women and the local needs of trained workers in these occupations are beginning to do a great deal for educational progress along these lines.

In the elementary schools, the movement for industrial education has begun to effect a change in the methods of teaching, and the practical and vocational aspects of these subjects are being emphasized. And in the Normal Schools of the state, the training of teachers in these new methods of instruction is being cared for. In a word, Massachusetts is perhaps the leading state in the land in Industrial Education.

However, very few of the 25,000 children in the state between the ages of fourteen and sixteen years, who are idle or at work are being benefited by the industrial schools and as a remedy, I suggest that a law be enacted, compelling children, from fourteen to sixteen years of age, who have left the regular day schools, to attend school for at least six hours a week for instruction in practical subjects, with manual arts for boys and domestic arts for girls. I further suggest that, in connection with these continuation classes, vocational assistants be employed to secure suitable positions for the boys and girls - all this to the end that these children may be in some way prepared to happily and effectively fill the positions for which they are adapted by nature and circumstances.

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