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# PROBLEMS OF VOCATIONAL EDUCATION IN GERMANY

## WITH SPECIAL APPLICATION TO CONDITIONS IN THE UNITED STATES

BY

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# LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
*Washington, May 29, 1915.*

SIR: In the manuscript transmitted herewith Dr. George E. Myers discusses in a clear and concise manner four interesting and important problems in vocational education in Germany, about which there is need of information in the United States:

I. Continuation schools for boys in unskilled occupations in Berlin.

II. Continuation schools for girls and women in Berlin.

III. The training of industrial continuation-school teachers in Prussia.

IV. Dual control in industrial education in Prussia.

This manuscript was prepared by Dr. Myers at my request after he had spent a year studying the problems of vocational education in Germany, with special reference to the application of German methods in American schools. I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
*Commissioner.*

The SECRETARY OF THE INTERIOR.

# PROBLEMS OF VOCATIONAL EDUCATION IN GERMANY,

## WITH SPECIAL APPLICATION TO CONDITIONS IN THE UNITED STATES.

## I. CONTINUATION SCHOOLS FOR BOYS IN UNSKILLED OCCUPATIONS IN BERLIN.

True to the traditions of education, the present vocational education movement in the United States began at the top, seeking first to provide adequate preparation for workers in the highly skilled industries. It soon became apparent that this was only part of the problem. Such special studies as Mr. A. D. Dean's "Education of Workers in the Shoe Industry" brought out clearly what was already known in a general way, that the modern factory system has transformed highly skilled trades of a century ago into industries of to-day in which the great majority of the work is low-grade skilled or unskilled. More recently Miss Anna Hedges, from her study of 617 girls at work, became so impressed with the fact that girls going into industry are destined to spend their time performing some one small process on the product of their shop, or mill, or factory, rather than to practice a trade that she exclaims: "Trade schools belong to the past when preparation for trades was needed." The Richmond survey showed that in that important industrial city of 135,000 population it was not wise to establish a trade school, because of the comparatively small demand for highly skilled labor. The experience of Massachusetts and New York, the two States which have been at work longest on vocational education, shows that far more is involved than the establishment and maintenance of trade schools for skilled industries, important as this is. There seems little doubt that additional investigation and experience will reveal still more clearly that the number of men and women engaged in skilled industries for which definite trade schools are desirable is much smaller than has been generally supposed, and that a system of vocational education which can lay any claims to completeness must make large provision for boys and girls who are engaged, or soon will be engaged, in unskilled and low-grade skilled industries.

This problem is less serious in Germany than in the United States, because the handicraft system there has withstood better the encroachments of the factory system. According to recent figures 30

per cent of German industry is still carried on under the handicraft system, while in this country the proportion has fallen to 3 per cent. Yet the comprehensive German scheme of industrial education includes provision for the unskilled worker as well as for the one who is employed in the most highly skilled occupation.

In view of growing interest in this phase of vocational education, it seems worth while to examine with some care the German plan for training unskilled workers. However, it is not the purpose at the present to present what is done in Germany, as a whole, or even in Prussia as a whole, but only in the capital city of both—Berlin. It should be kept in mind, also, that the discussion deals only with the training of unskilled workers and not with that of those engaged in low-grade skilled industries.

A few words concerning continuation school organization are necessary. These schools in Berlin operate under the national industrial law of 1891, which authorizes communities to establish such schools and require attendance. A city ordinance was passed in 1905 making attendance compulsory for all male industrial and commercial employees from the time they leave the elementary school at 14 years of age till their seventeenth year is completed. The ordinance provides, also, for not less than 4 nor more than 6 hours of instruction per week. In 1913 an ordinance was passed establishing compulsory continuation schools for employed girls between the same ages, or until marriage. During the year 1913–14 the enrollment of boys for the two semesters was distributed among the three types of continuation schools as follows: Industrial, 15,902; commercial, 6,261; unskilled, 13,874; total, 36,037. During the same year, which was their first year of existence, the compulsory continuation schools for girls enrolled: Industrial, 1,604; commercial, 2,798; unskilled, 1,890; total, 6,292. Only the first year's work of the girls' schools was offered in 1913–14. From the figures given it would appear that when the full three years' course is installed about half as many girls as boys will attend the compulsory continuation schools. It is also worthy of note that a considerably smaller proportion of girls are in unskilled occupations, the percentage of the total being about 30 for the girls and 40 for the boys. Since another section is devoted to vocational education for girls, the boys' schools alone will receive consideration here.

For the purposes of continuation school management the city of Berlin is divided into 10 districts. Each district has a continuation school, or group of schools, in a central building. Most districts have from one to two additional departments, located in elementary school buildings because the central buildings were found inadequate to accommodate all the pupils required by city ordinance to attend. Few of the trades are taught in more than one district, and none of

them in more than five. On the other hand, classes for unskilled workers are maintained in each of the 10 districts.

Boys engaged in unskilled occupations must attend a continuation school for unskilled workers in the district where their homes are located. Until recently they attended in the district where they were employed, because of greater convenience in reaching the school; but this was found unsatisfactory because changes in employment, which are frequent with these boys, often necessitated transfers from one school to another.

The boys are required to attend 4 hours per week, 2 hours less than the time required of apprentices in the trades and in commerce. In nearly all cases the 4 hours are divided into two periods of 2 hours each, coming at the same time on two nonconsecutive days of the week. School principals in arranging the schedule of classes and in assignment of pupils to classes consult the convenience of employers. For example, if an employer has several boys who are required to attend these schools, their hours are arranged so that only part of them are away from their work at one time. Also, out of deference to the wishes of employers, the great majority of classes meet late in the day. Half of the classes for unskilled workers have their sessions from 6 to 8 o'clock in the evening; about one-third of the remainder meet from 5 to 7 o'clock. Sixty per cent of all the continuation school work for unskilled workers is done after 6 o'clock in the afternoon. An instructor in the school of district number one remarked that classes meeting early in the morning are most satisfactory, not only because the boys are fresher then, but also because when they come directly from home they are more regular. There are certain conditions under which an employer may have a boy excused from school for a day, and he is more likely to take advantage of this privilege when the boy has been at work part of the day and is due at the school in the afternoon than if he has to arrange for this the day before. The same instructor assured me nevertheless that the school will not be imposed upon by employers in the matter of excusing boys, and that the attendance averages about 90 per cent. It happened that the day the writer of this report visited his class only 13 out of 30 boys were present, but he explained that an unusual number were excused because it was Holy Week and employers needed their unskilled helpers in preparation for Easter and the Easter holidays more than at any other time of the year.

The teachers of the continuation classes for unskilled workers are almost entirely from the elementary schools. In fact nearly all of them are now teaching in elementary schools as their principal work and spend from 2 to 6 hours per week in continuation-school teaching in addition. Possibly this accounts in part for the large amount of continuation-school work in the late afternoon or early evening.

though the principal reason is the one given above. A few teachers devote their entire time, 24 hours per week, to teaching these classes and the tendency is to increase this class of teachers, correspondingly decreasing the part-time teachers. The men of both groups have had the usual training of a Prussian elementary teacher, which covers 6 years beyond the elementary school, 3 years in a preparatory school, and the same length of time in a training school for teachers. They are selected because of special interest in and fitness for continuation-school work.

Employers do not feel as kindly toward the schools for unskilled workers as toward the industrial and commercial continuation schools. They recognize the value of the instruction given in the latter schools and see that their establishments are directly benefited by it. On the other hand, they, or many of them, can not see what benefit their business will derive from the instruction given their unskilled help. For this reason they chafe more under the necessity of excusing their unskilled employees.

The conditions of attendance at the continuation school for unskilled workers differ from those for the industrial and commercial continuation schools only in the employment of the boy. The age limits are the same. It is evident that these schools are a sort of dragnet to gather in all employed boys from 14 to 17 years of age, inclusive, who are not in the industrial or commercial continuation schools. Office boys, errand boys, shop helpers (not apprentices), house servants, and pages constitute the greater part of this large group. Some of them enter these occupations because of difficulty in obtaining apprenticeships, a very few changing to apprenticeships later. The majority go into unskilled occupations because they offer better wages to boys of 14, 15, and 16 years of age than can be earned in apprenticeship. The unskilled workers receive 8 to 10 marks per week the first year as compared with 2.5 marks for the apprentice, 10 to 12 marks per week the second year as compared with 3 or 4 marks for the apprentice, and 12 to 16 or even 18 marks the third year as compared with 5 to 7 marks for the apprentice. A few of these boys have not the ability or persistence necessary to learn a skilled trade if they could find the opportunity to do so. On the other hand, many of the brightest and most capable boys, as judged by their work in the elementary schools, are obliged to become errand boys, office boys, pages, etc., because the wages they can earn are absolutely necessary for the support of the family. Once one of these boys enters an unskilled occupation, it is next to impossible for him to break away from it. If his wages are needed for the support of the family when he is 14 years old, they will be needed when he is 15, 16, and 17. He can not prepare during this time, should he desire to do so, to enter a skilled trade when the

family no longer can claim his wages, for he must attend the continuation school for unskilled workers. He can not, however much he may wish to do so, attend an industrial continuation school, and even if he could, this would not pave his way for entrance to a trade, for the instruction in this school is only supplementary to the actual shop training acquired by the apprentice in the trade. Should he desire to attend a voluntary industrial continuation school evenings or Sundays in addition to attending the compulsory school for unskilled workers he can not, because none is admitted to these schools unless employed in the trade taught. Finally, he can not hope to enter one of the middle industrial schools when 18 or 20 years old, even if he were able to pay the fees, because no student is admitted to these schools who has not had trade experience or a 6-year secondary school course. On the other hand, his associations at work and in the continuation school are mostly with boys who have no ambition beyond unskilled labor. These associations, with his own discouraging outlook, an elementary schooling which leaves out of account the development of initiative, and a general organization of society based on class distinctions, help to bind him to a life of unskilled labor no matter how capable and industrious he may be when he completes the elementary school. The fact that in the year 1911–12 there were 2,636 boys in the first semester class and 2,775, an increase of 139, in the third semester class of unskilled workers, while the corresponding figures for metal workers were 1,576 and 1,344, a decrease of 232, suggests that far more drop from the skilled trades into unskilled occupations than are able to go the other way.

The course of study has much in common with those of the industrial and commercial continuation schools, though the latter give less time to these common features and focus on the technical aspects of the occupations which they supplement. The course is divided into three parts under the headings (1) "The youthful worker in his personal relations," (2) "The youthful worker in his activity," and (3) "The worker in community life." Each of these parts comprises a year's work. The work of each year is further subdivided into (1) knowledge concerning occupation and citizenship, (2) written work, and (3) arithmetic, all of which are carried on simultaneously and are closely coordinated.

The first five weeks of the first year are devoted to consideration of entrance into industrial life—choice of occupation, skilled and unskilled work, obtaining a position, meaning of work, and the continuation school. The written work of this period includes applications for positions, addressing envelopes properly, notices of change of work, and written exercises based on talks by the teacher, and submitted to him for correction. The teacher's talk takes its cue from the subject under consideration, but is not always closely

related to it, or of real practical value to the boys. In a class for unskilled workers in the Wartenburg Street school, visited in April, 1914, the teacher told the story of the discovery and development of printing. After questioning the class for some minutes and calling on individuals to repeat parts of the story, he told them to write in their exercise books on "Gutenberg, the inventor of printing"—a subject rather remote from the activities of the average errand boy or page. The arithmetic of the same period deals with the four fundamental operations with integers and fractions, and with percentage, all as applied to problems arising in connection with entrance into industrial life. For example, exercises are given in reckoning the cost of advertising in the newspaper for positions, and in reducing the cost by careful wording.

A period of six weeks follows, devoted to the boy's place in the new society of workers. The character and purpose of the work book and the wage book are considered, the usual regulations affecting unskilled work; moral restraints, obligations to the employer, and restrictions on the employee in dealing with other men. The written work of this period includes use of the work book and work ticket, both of which require filling out, writing excuses for absence from work on account of sickness, and exercise work similar to that mentioned above. The arithmetic consists of exercises connected with personal needs and with wages. Eighteen weeks are then occupied with care of the health, under the four headings (1) personal regimen—food, temperance, alcohol; clothing, care of the skin; (2) care of health in home and workshop—ventilation, heat, light; (3) first aid in accidents; (4) use of leisure time for physical training, travel, play, improvement, information, and amusement. The written work of this period is exercise work and letter writing and the arithmetic consists of exercises connected with the care of health.

A fourth period lasting seven weeks deals with welfare provisions—insurance and welfare arrangements (1) in case of sickness, (2) in case of accident, (3) in case of invalidity and old age. In addition to exercises closely related to insurance, the written work includes filling out accident notices, invalidity cards, etc. The arithmetic exercises are connected with cases arising under the insurance laws and welfare arrangements.

The remaining four weeks of the first year are used in summarizing or reviewing the work of the year.

The general topic of the second year is "The youthful worker in his activity." The first half of the year is devoted to his activities in trade, particularly to things likely to come in the work of an errand boy. A study of trade within the city, accompanied by written exercises connected with orders, bills, receipts, package delivery, etc., is followed by study of railway or freight trade,

with written exercises in filling out bills of lading, shipping tags, etc., postal trade with exercises in addressing ordinary and registered packages, and the transfer of money by means of money orders, checks, and drafts. Additional written exercises are given with each stage of the work; also many problems in arithmetic, such as come up in the usual activities of the errand boy, or other unskilled worker in local, freight, or parcel-post trade.

The second half year begins with the boy's activities in the workshop, taking up a study of the most important products of handwork and industry in Berlin, laws regulating workshops, examples of division of labor and cooperation of effort, with suitable written and arithmetical exercises. Then follows a consideration of (1) the meaning and kinds of wages, protection of wages, and intelligent expenditure of wages; (2) laws affecting work relations, service contracts, labor contracts, responsibility for performance of accepted commissions; and (3) the meaning of work, its value to the individual, possibilities of promotion, and value of labor to the State and to society.

During the third year the worker's social and civic relations are considered under the general topic, "The Worker in Community Life." Eleven weeks are devoted to the worker in the family. The place of the family in civilization and in human welfare, the responsibility of parents for providing food, clothing, and shelter, thrift in domestic management, the most important things connected with parental authority, with inheritances and wills, with guardianship and education of wards, and with the duties of children are considered. Arithmetic exercises of this period are based on home management, savings accounts, life insurance, and fire insurance, and include family bookkeeping. Three weeks are occupied with the "The Worker as a Member of Societies and Associations"—rent and building associations, savings and loan associations, trade-unions, improvement and social clubs. Attention is given during eight weeks to the worker as a member of the community. Arrangements of the community for the welfare of its citizens—public health provisions, care of the poor and of orphans, provisions for education, local taxes, and the principal features of local government are discussed. Finally, the last 14 weeks of the course, aside from 4 weeks for review, are devoted to "The Worker as a Citizen of the State." The organization and authority of the Empire, the Kaiser, the Federal Council, the Parliament, the revenues of the Empire, the army and navy are given attention in turn, followed by a similar study of the Kingdom of Prussia. The arithmetic exercises of this period center around taxes and customs duties. Much of the written work of the third year is on the subject of authority.

It is customary for one teacher to have charge of all the work of a class, just as in the elementary school. The purpose of this arrangement is to secure unity and to give the teacher greater personal interest in his boys. All of the work except arithmetic is taught without textbooks. In arithmetic a small paper-bound textbook, planned especially to meet the requirements of the course for unskilled workers, is used. This book is one of a series of 12 arithmetics prepared by a group of continuation school directors or principals, the others being for the principal trades. The methods of teaching are those of the elementary school, with such modifications as are required by the difference in content of the course. To be sure, some teachers succeed better than others in making these modifications.

Discipline is a much more serious matter than in the industrial or commercial continuation schools. On the one hand, most of the boys who are troublesome in the elementary school because of bad conditions at home or lack of ambition find their way into the continuation school for unskilled workers. On the other hand, the school lessons are less interesting, make a less direct appeal to them, are less closely related to their work than is the case with apprentices. Designed to meet the needs of boys in all classes of unskilled occupations, these lessons do not meet the needs of any with such definiteness as characterizes the courses of the industrial continuation schools. Also, differences in ability between the two classes of boys, taking them as a whole, which influence discipline, are very marked. The writer observed more disorder and lack of attention in one class of unskilled workers in Berlin, mostly when the teacher's back was turned, than in the scores of industrial and commercial classes visited in Berlin and other parts of Germany; and the instructor informed me that the boys in a certain other section of the city were much more disorderly than in his school. Though many boys dislike to attend these schools, truancy is infrequent because of the severity of the punishment. A teacher pointed out to me a boy who absented himself one day without excuse. He was notified to report the next Sunday afternoon at the school, to spend three or four hours in making up lost time. He failed to report and was absent the following week. The next Sunday at 6 a. m. a policeman roused him from sleep, took him to the police station till 1 o'clock and then turned him over to the school, where he was kept during the afternoon. There was a note of satisfaction in the teacher's voice as he added, "That boy has not been absent since."

The most important feature of these schools is compulsory attendance for three or four years after the elementary school course is completed. This lengthened period of State responsibility for the education of all its employed youth not only constitutes the basis of

all that has been accomplished, but also makes possible large developments and improvements in the future which would be out of the question without the adoption of this principle. Compulsory attendance means much more to the schools for unskilled workers than to industrial continuation schools, for the latter have the encouragement and support of the guilds, and the technical subjects taught in them are essential to success in apprenticeship. No workers' organizations concern themselves about schools for unskilled workers, and the very term "unskilled" implies what has appeared so clearly in the course of study outlined above, that no technical knowledge is necessary. There is every reason to believe that if the compulsory attendance ordinance were repealed the industrial continuation schools would be affected but little, while the schools for unskilled workers would have to be discontinued for want of pupils.

It would be difficult to find anywhere a better coordinated course of study than the one presented above, in which, throughout a wide range of topics, the instruction, the written work, and the arithmetic all focus on the same topic at the same time. Moreover, this course abounds in useful information and practice for the ordinary worker, covering a great variety of the aspects of his life. The teachers are mature men with thorough pedagogical training, and, generally, keen interest in their work. The facilities in every way appear to be quite as good, considering the work to be done, as those of the other continuation schools.

It must be admitted, however, that these schools do not compare in spirit, in interest, in quality of work done, or in benefits derived by the pupils with the industrial continuation schools. No one recognizes this condition more fully than the directors of the continuation schools themselves, one of whom said to me recently that the biggest problem of industrial education in Berlin lies with the 40 per cent who are in the continuation schools for unskilled workers. It may be argued with some justice that the course of study is too narrow and elementary; that it is worked out more with a view to improving industry than of making the largest contribution to the needs of the boy; that the aim is to produce healthy, thrifty, and efficient workmen and citizens without considering whether at the same time happy and contented workmen are produced. However, the problem is quite as much one of bringing the boy to the continuation school age with right attitudes, habits, and interests as it is one of providing him with a suitable course of study after he gets there. Here heredity and home factors enter, over which school authorities have little or no control. But the elementary school also enters as an important factor—a factor which must play a larger part in future consideration of the problem than German educators are yet willing to admit.

It is unfortunate that so many bright, capable boys who might render valuable service to society in skilled industrial, commercial, or even professional pursuits are bound to lives of unskilled labor simply because their parents are poor. To be sure this condition exists in all countries, and none can claim to have made great progress in remedying it. It is to be regretted, however, that the German scheme of industrial education, which is so comprehensive in character and has so many admirable features, should not only fail to provide a remedy, or partial remedy, but should actually close the door of opportunity on these boys. Some day we shall measure the efficiency of an educational system by its success in discovering and conserving ability and placing it where it can reach its highest development and render its largest service as well as by success in developing such ability as comes to the school in the ordinary course of events.

One other feature of these schools for unskilled workers must come in for a word of criticism, namely, the schedule of classes which places 60 per cent of the work after 6 o'clock in the evening. The objections to this are so obvious that it is not necessary to discuss them here. This compromise with employers, who objected to excusing boys during the busy part of the day, will, no doubt, be remedied in time.

## II. CONTINUATION SCHOOLS FOR GIRLS AND WOMEN IN BERLIN.

In the many reports published in the United States concerning industrial and commercial education in Germany, comparatively little space has been given to continuation schools for girls. This has been due to the relative unimportance of these schools industrially and commercially as compared with the schools for boys. Recently, however, this condition has been changing rapidly. Munich, in 1914, reorganized her compulsory continuation schools for girls, and adopted new courses of study, in an effort to make as practical provision for girls as for boys, though recognizing that girls will not have the same place in industry as boys. Berlin, in 1913, established a compulsory continuation school system for girls, little less comprehensive, account being taken of the industrial opportunities of girls, than that provided earlier for boys. For some years previous to these dates voluntary continuation schools for girls and women in all parts of Germany had been growing steadily in importance and in enrollment.

The new compulsory continuation schools for girls in Berlin are of sufficient importance to deserve all of this section, but, for the sake of completeness, a brief account of the voluntary schools will be given also.

## I. VOLUNTARY CONTINUATION SCHOOLS.

Voluntary continuation schools for girls and women in Berlin have been conducted for a number of years by the city deputation for trade and continuation schools. In addition, schools founded by nonpublic agencies have been carried on either solely or partly for the purpose of meeting the needs of ambitious girls and young women who are able to give only a few hours per week to further education after leaving the day school.

### 1. SCHOOLS ESTABLISHED BY THE CITY.

#### (1) VOLUNTARY CONTINUATION INSTITUTIONS FOR BOTH SEXES.

These were established originally for young men, but were opened to women in 1907. They are conducted in buildings used during the day by secondary schools. They are three in number, one in the Friedrichs Gymnasium, one in Bertram Realschule, and one in Dorotheen Städtischen Real Gymnasium. Attendance at these schools does not excuse from attendance at the compulsory continuation schools. Their aim is to offer opportunity for those having completed the equivalent of a middle school course to carry on their education, especially in English, French, and commercial subjects, after entering upon their occupations.

Fees are 1.25 marks per week-hour for each semester; that is, a pupil taking four hours' work per week would pay 5 marks, or $1.25, each semester. All but two classes in the three schools meet from 8 to 9.45 p. m., or from 8 to 10 p. m. One class meets from 5 to 7 p. m., and another meets Sundays from 8 to 10 a. m. Most classes meet twice per week, though in some subjects only one session per week is held.

The curriculum differs but little in these three schools. It consists of German, French, English, commercial arithmetic, drawing, stenography, typewriting, mathematics, bookkeeping, commercial correspondence, and penmanship. The enrollment of women in the three schools for the winter semester 1912–13 was 331 out of a total enrollment of 991.

#### (2) VOLUNTARY CONTINUATION SCHOOLS FOR GIRLS.

These schools, 12 in all, are conducted in elementary school buildings. Their aim is to strengthen and fill out the training received in the elementary schools.

Fees vary according to subjects taken, from 0.25 to 1 mark per week-hour for a semester. Singing and gymnasium work are free.

Nearly all of the classes meet between 2 p. m. and 9 p. m., though a few have forenoon sessions. In such subjects as tailoring, mending, and drawing the session usually lasts three hours, the class meeting only once each week. German, English, and French classes have two sessions of two hours each per week.

The curriculum is much the same in nine of the schools, consisting of German, citizenship, arithmetic, drawing, bookkeeping, commercial correspondence, commercial geography, French, English, stenography, typewriting, hand needlework, dressmaking, tailoring, ironing, mending, millinery, singing, gymnastics, and writing. Some of the schools do not have all of these subjects but have others, such as commercial arithmetic, machine embroidery, trade drawing for tailoresses, and costume drawing. Two of the remaining schools teach cooking only, and one combines cooking and housekeeping. Most of the cooking classes meet four hours, generally in two periods.

The attendance during the winter semester, 1913, numbered 7,537 in the 12 schools, only 667 of these being in the three cooking schools. Classes are most numerous in tailoring and dressmaking. Typewriting, German, and stenography come next in popularity.

(3) VOLUNTARY CONTINUATION SCHOOLS FOR UNFORTUNATES.

(*a*) *For feeble-minded.*—Continuation schools for feeble-minded meet at a special school for feeble-minded children. No fees are charged. Classes in hand sewing, machine sewing, embroidery and lace making meet two afternoons each week from 3.30 to 5.30. Their work in these subjects is preceded by an hour of gymnastics and followed by a half hour of singing. From 6 to 7 on the same days German is taught and from 7 to 8 arithmetic. Housekeeping is offered twice each week for four hours, either from 9 to 1 or from 3 to 7 o'clock. There were 119 girls in attendance at all the classes for the feeble-minded during the winter semester, 1912–13.

(*b*) *For deaf-mutes.*—Classes for these unfortunates meet three evenings each week, between the hours of 6 and 10 p. m. German, arithmetic, hand needlework, and cooking are taught. No fees are charged. The number of girls in attendance was 22 in the winter semester of 1913.

(*c*) *For the blind.*—The continuation school for the blind is connected with the city institution for the blind. No fees are charged. The work given consists of special instruction in reading and writing with characters for the blind, typewriting, gymnastics, singing, piano, musical theory, hand needlework, and housework. Forty girls were in attendance in the winter of 1912–13.

### 2. SCHOOLS ESTABLISHED BY NONPUBLIC AGENCIES OFFERING CONTINUATION COURSES FOR GIRLS.

#### (1) THE INDUSTRIAL AND COMMERCIAL TRAINING INSTITUTION FOR GIRLS AND WOMEN.

This school, conducted for some years by industrial and commercial organizations, was taken over by the city, April 1, 1913. Its work is carried on in an elementary-school building. Full-time day courses, covering 28 to 33 hours of class work per week are offered, for which the fees vary, from 80 to 120 marks per year. Also courses are offered in single subjects and in small groups of subjects, mostly in the evenings. German, English, and hand needlework may be had in the evening for 3 marks per quarter year, and bookkeeping, stenography, art needlework and ironing for 4.50 marks. Drawing, painting, and modeling are offered four hours per week for 11.25 marks. The school is organized into two general departments called the Commercial Preparatory School and the Industrial School, the former being considerably larger than the latter. Nearly a thousand students in all attend this institution, mostly in continuation classes.

#### (2) VICTORIA CONTINUATION AND TRADE SCHOOL.

This is one of the best known institutions for girls and women in Berlin, owing to the high grade of its work and to the fact that it was formerly under the patronage of the Empress and Queen Victoria, mother of Emperor William II. Full-time day courses, day continuation courses, and evening continuation courses are offered.

Fees in the evening school are from 1 mark to 1.50 marks per month, except for cooking, in which it is 10 marks for the semester. In the day school fees vary from 3 to 12 marks per month, according to the amount and kind of work taken. Free places are provided under certain conditions.

Courses offered in the day school include German, French, English, history, history of literature, history of art, hygiene, physics, citizenship, household bookkeeping, single and double entry bookkeeping, commercial arithmetic, citizenship arithmetic, household arithmetic, commerce and accounts, commercial geography, penmanship, stenography, typewriting, machine sewing, simple needlework, industrial needlework, art embroidery, drawing, millinery, tailoring, mending, cooking, ironing, and hairdressing. Nearly all of these subjects are offered in the evenings also.

The attendance in the winter of 1912–13 was 748, of whom 330 were in evening classes.

### (3) THE CONTINUATION SCHOOL OF THE BERLIN HANDWORKERS' ASSOCIATION.

This school, open to both sexes, enrolls about 120 women to 510 men. It offers elementary instruction in German, arithmetic, and penmanship; commercial instruction in bookkeeping, commercial arithmetic, commercial correspondence, French, English, and stenography; and technical instruction in freehand drawing for all callings, ornamental and figure drawing, painting from life, and several lines of trade drawing for men. Special classes in gymnastics and singing are conducted for women.

### (4) THE COMMERCIAL SCHOOL AND MERCHANTS' CONTINUATION INSTITUTION FOR GIRLS.

The corporation of the Merchants of Berlin established this school and still maintain it. As indicated by its name, it has a day department, though most of the instruction in this department is given between 3 and 8 o'clock p. m. In the continuation department where the hours are 8 to 10 p. m. it is possible for a student to take as little as two hours of work per week. Fees are higher than in most of the voluntary continuation schools, being 10 marks for two week-hours per semester and 15 marks for four week-hours.

The curriculum includes the principal subjects usually given in a German commercial school—English, French, German, penmanship, stenography, arithmetic, bookkeeping, typewriting, and German correspondence. The most popular subjects are stenography, with 555 pupils; penmanship, with 285 pupils, and typewriting, with 281 pupils. English comes next with 164 pupils and French next with 119 pupils. The total enrollment of the school for the winter semester 1912–13, in day and continuation classes, was 1,293, making this the largest of the nonpublic group of schools.

## II. COMPULSORY CONTINUATION SCHOOLS.

While for 10 years the city of Berlin has required all employed boys between the ages of 14 and 18 to attend continuation classes, similar provision for girls was not made until April 1, 1913. The law, modeled after that which established the compulsory continuation schools for boys, provides that: "All female unmarried workers employed in industrial or commercial pursuits within the precincts of the city of Berlin are compelled to attend and take part in the instruction of the established industrial and commercial continuation schools of the municipality of Berlin." This obligation lasts until the close of the school semester in which the pupil completes her seventeenth year. For those pupils failing in this time to complete the requirements of the continuation school, the period of compulsory attendance is extended to completion of the eighteenth year. This

law provides exemption for those attending a guild or other continuation school in so far as the work done in this school is recognized by the authorities as equivalent to that of the compulsory continuation school; for those who have completed a nine-year course of study in a higher school; for those suffering from too great physical or mental deficiencies for them to attend the special schools for unfortunates; and for foreigners living in the city.

The law prescribes that the instruction shall include occupation information, life information, arithmetic, bookkeeping, drawing, and housekeeping. It provides that the number of hours of instruction shall not exceed six per week and that they shall be between 7 a. m. and 7 p. m. Special schools may be established and special courses worked out for such girls as are incapable of doing the work of the regular continuation schools.

The employer is obliged to excuse girls from work in time to wash and dress properly to appear in class, and the duty of watching over their attendance also rests upon him. If a girl is prevented from attending continuation class on account of sickness, her employer must send a statement to this effect to the school the next time she goes. If she is absent from work more than a week, the employer must notify the director of the school at the end of the first week and again when she returns to work. If an employer for some particular reason (as, for example, on account of special sale) wishes a girl excused from a single period of attendance at the school, he must send such request to the director of the school before the time he wishes her excused, stating the reason for his request. A parent or guardian may not keep a daughter or ward from attendance at the continuation school. Persons violating any of the above regulations are subject to a fine of 20 marks ($5) for each offense.

No fees are required of girls attending these continuation schools.

### ADMINISTRATION OF THESE SCHOOLS.

The compulsory continuation schools for girls are placed under the same management as those for boys—the city deputation for trade and continuation schools. The same division of the city into 10 continuation school districts has been adopted. At present the schools are conducted in elementary school buildings, in many cases in the same buildings where voluntary continuation schools have been meeting for several years and where they still carry on their work.

During the year beginning with Easter, 1914, the second year after the law went into effect, seven types of compulsory continuation schools for girls were in operation—for unskilled workers, for feather and artificial flower workers, for bookkeepers, clerks, and copyists, for milliners, for tailoresses, for sales girls, and for seamstresses. A school for unskilled workers was opened in each of the 10 districts.

None of the special lines of work is given in more than four districts, and there is a single school for each of the following groups of workers: Feather and artificial flower workers, milliners, and sales girls.

### CURRICULA OF THE DIFFERENT TYPES OF SCHOOLS.

At least one-fourth of the instruction in every compulsory continuation school for girls in Berlin relates to housekeeping. The work includes plain sewing, mending, dressmaking, ironing, cooking, and study of foods. In the schools for unskilled workers the time given to this work amounts to one-half the entire time. The remaining three-fourths or one-half of the time is divided between what is called "occupation information" and "life information," and subjects relating to the occupation. This can be seen best by referring to the curricula of the schools for unskilled workers, sales girls, and seamstresses, as given below. It should be noted, however, as will appear more clearly later, that the "occupation information" differs materially in the different types of schools, depending on the occupations in which the girls are engaged.

CURRICULUM OF SCHOOL FOR UNSKILLED WORKERS.

| Semester. | I. | II. | III. | IV. | V. | VI. | Total. |
|---|---|---|---|---|---|---|---|
| Occupation information [1] | [2] 2 | 2 | 2 | 2 | ..... | ..... | 160 |
| Life information [1] | ..... | ..... | ..... | ..... | 2 | 2 | 80 |
| Arithmetic and household bookkeeping | 1 | 1 | 1 | 1 | 1 | 1 | 120 |
| Housekeeping: | | | | | | | |
| Plain sewing and mending | 1½ | 1½ | 1½ | 1½ | ..... | ..... | 120 |
| Dressmaking, making over, washing, and ironing | 1½ | 1½ | 1½ | 1½ | ..... | ..... | 120 |
| Cooking and study of foods | ..... | ..... | ..... | ..... | 3 | 3 | 120 |
| Total hours | 6 | 6 | 6 | 6 | 6 | 6 | 720 |

CURRICULUM OF SCHOOL FOR SALES GIRLS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Occupation information [1] | 1½ | 1½ | 1½ | 1½ | 1½ | ..... | 120 |
| Life occupation [1] | ..... | ..... | ..... | ..... | 1½ | 1½ | 60 |
| Arithmetic and bookkeeping | 1½ | 1½ | 1½ | 1½ | 1½ | 1½ | 180 |
| "Wares" and economic geography | ..... | 1½ | 1½ | 1½ | 1½ | ..... | 120 |
| Writing | 1½ | ..... | ..... | ..... | ..... | ..... | 30 |
| Housekeeping: | | | | | | | |
| Plain sewing and mending | 1½ | 1½ | ..... | ..... | ..... | ..... | 60 |
| Dressmaking and ironing | ..... | ..... | 1½ | 1½ | ..... | ..... | 60 |
| Cooking and study of foods | ..... | ..... | ..... | ..... | ..... | 3 | 60 |
| Total hours | 6 | 6 | 6 | 6 | 6 | 6 | 720 |

CURRICULUM OF SCHOOL FOR SEAMSTRESSES.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Occupation information [1] | 2 | 2 | 2 | 2 | ..... | ..... | 160 |
| Life information [1] | ..... | ..... | ..... | ..... | 2 | 2 | 80 |
| Arithmetic and bookkeeping | 1 | 1 | 1 | 1 | 1 | 1 | 120 |
| Trade drawing | 1½ | 1½ | 1½ | 1½ | 3 | ..... | 180 |
| Housekeeping: | | | | | | | |
| Plain sewing and mending | 1½ | 1½ | ..... | ..... | ..... | ..... | 60 |
| Dressmaking and ironing | ..... | ..... | 1½ | 1½ | ..... | ..... | 60 |
| Cooking and study of foods | ..... | ..... | ..... | ..... | ..... | 3 | 60 |
| Total hours | 6 | 6 | 6 | 6 | 6 | 6 | 720 |

[1] With German and written exercises.
[2] Figures in the first six columns indicate hours per week and in the seventh column hours for the entire course of 6 semesters.

## COURSES OF STUDY FOR UNSKILLED WORKERS.

The occupation information given in these schools is similar in many respects to that given in the schools for unskilled boys, discussed in Section I. The following topics are considered:

The industrial worker in the continuation school.

The industrial worker at her place of work—choice of work, seeking a position (use of the newspaper, oral and written applications, assistance of teachers, references, recommendations), discharge of the worker (work book, laws governing discharge and strikes, regulations providing for adjustment of differences), relations to fellow workers and to foremen.

The young worker in her occupation—organization of the occupation, the placing of the worker, the worker on the machine (care in handling the machine, safety appliances, the factory fire brigade, first aid), hygiene of work (lighting, heating, ventilation, work clothing, the wash room, rest and recreation).

The young worker in a shop or store position.

The girl as packer and bundle wrapper.

The girl in the shipping room—sending by special delivery, by post, by railway freight, by water.

The girl and her wages—kinds of wages, wage computation, savings banks, receipts, industrial tribunal, reasonable spending of wages, wage deductions for insurance against sickness, accident, and invalidity.

The girl's employer—the meaning of capital for business, forms of business.

Life information includes the following:

The girl as daughter—the family as the foundation of morality and welfare, care of the parents in maintaining and supplying the home, parental authority, duties of children, duty of self-maintenance, inheritances and wills, guardianship.

The girl as future housewife—betrothal, marriage, marriage dowry, the place of the wife in industrial life, the wife in places of honor (as guardian, in care of orphans, in community welfare work), the wife as companion of her husband, and as preserver and increaser of his property.

The girl as future mother—education of the child, institutions for care and education of small children, the child in school, authority of the state, the son becomes soldier, universal conscription, authority of the empire.

What the wife should know about matters of health—air, water, care of skin, clothing, the house, care for a comfortable home, activity and recreation, care of flowers, meaning of housework, dangers to health from outside influences (weather changes, tuberculosis, children's diseases, alcohol, corsets, tobacco, accidents), care of the sick, care of infants.

Instruction in German composition related to occupation information and life information paralled these courses throughout. Girls write brief compositions on such subjects as "Also housework is worthy work," "Work makes life sweet," "Speak the truth," "In danger remain calm and self-possessed," "Our first-aid cabinet," "Modern lighting," "Uses of good air," "Health is wealth," "What regulations should I observe as a patient," "Junges Blut, Spar dein Gut," "Berlin institutions for care of the aged," "Paper factories," "What one should do in case of the death of a relative," "Care for a comfortable home," "How do I guard against taking cold," "What a good housewife is worth." They are taught, also, letter writing,

filling out the blanks of the work book, addressing packages, making out orders, bills of lading, money orders, receipts, and other papers common in business.

Instruction in arithmetic, carried along with the other subjects and closely related to them, deals with advertising for a job, clothing, laundry, division and grouping of work, exercises on machine work and handwork, value of the machinery of a workshop with allowance for additions and wear of machines, problems derived from lighting, heating, and ventilating, from hauling, packing, and shipping; in calculating wages, savings, insurance, and other wage deductions, and costs of food supply and other household items. This is followed by a half year of household bookkeeping.

Housekeeping instruction is divided into three parts: Plain sewing and mending; dressmaking, making over, washing and ironing; and cooking and study of foods.

Plain sewing and mending includes both machine and hand work. The girls are taught how to make an apron and a simple underskirt, and how to darn cotton and woolen stockings. This is followed by making underwear and nightgowns, infants' clothing, and men's shirts, and mending by hand and on the sewing machine.

The dressmaking includes simple tailoring. Among other things, the girls are taught to make a child's jacket out of a man's coat, and to use up pieces and remnants of goods in various ways.

Cooking and study of foods includes discussion of the most important foods in relation to kind, origin, food value, quality and price, preserving, and practical exercises in preparing simple meals with special regard for the value of "left overs." The dishes are adapted to different seasons of the year.

### COURSES OF STUDY FOR SALES GIRLS.

Occupation information for this group of young workers differs from that provided for girls in unskilled occupations in almost all topics except personal hygiene and even differs in some respects in this. Omitting some of the details the course as outlined by the deputation for trade and continuation schools follows:

Entrance into industrial life—choice of occupation, meaning of the occupation of sales girl.

The new community of interests with workers—the continuation school—working papers, apprentice agreements, business regulations, duties toward the owner of the business (regard for his interests, honesty, punctuality, orderliness, avoidance of disputes, and of private business), personal hygiene, use of leisure time for physical training, walks, play, recreation, and amusement.

Receiving and sending out goods—the store and its arrangement, storage of goods, unpacking, arranging, shipping, insuring, paying customs duties.

Selling—easy cases: Greeting the customer, asking what he wishes, directing him, laying out the goods, giving the price, closing the sale, cutting, weighing, or counting the goods, recording the sale, making change, dismissing the customer. Difficult

cases: Attitude toward customers who wish only to look at goods, serving customers who are undecided and hard to please, serving several customers in a group, timely summoning of expert help when the sale threatens to miscarry, attitude toward a customer to whom a sale is not made, exchanging goods, attitude toward just and unjust complaints. Tact in selling: Duty of uniform politeness without regard to the position of the customer or the value of the article wanted, handling different kinds of customers according to age, position, and appearance, attitude of sales girls who are not busy toward each other and toward the busy sales girl and her customer. The sales girl as adviser to her customer: Value of thorough knowledge of the goods, knowledge of current correct taste and styles, skill in showing goods to the best advantage, interesting the customer in goods not asked for, sketching desired articles quickly with a pencil, warning against false statements. Settlement for the purchase: By payment of money or by check or by other means. Correct statements concerning the purchase: Without trial, on trial, with privilege of exchange, etc. The girls are put through practical exercises which illustrate the theoretical lessons in selling outlined above.

Decorating display windows—purpose of display windows, means for tasteful decoration of windows (skillful grouping of objects, tasteful arrangement of colors, correct lines, ornamentation, lighting).

The legal position of the sales girl.

The economic meaning of retailing and wholesaling.

Life information for sales girls is divided into two parts: The sales girl in community life and the sales girl in home and family relations. The latter is treated much the same as in the classes for unskilled girls. The former includes such topics as the value of her calling; duties of the sales girl to herself, to society, and to her employer; provisions of the community and of the State for care of workers in her occupation, in sickness, in case of accident, and in old age.

The work in German composition for sales girls is less general in character, and bears more directly on their occupation than is possible with the unskilled workers. It includes letter writing, especially necessary communications to the employing firm, written descriptions of the various steps involved in selling goods, and similar topics in addition to filling out blanks and writing on some of the more practical topics used in the course for unskilled workers.

In arithmetic attention is given to the four fundamental operations with integers and fractions in relation to selling, rapid calculations, reckoning personal receipts and expenditures, tables of weights and measures, exercises in connection with the care of health, and with shipping goods, percentage, rents, discounts, etc. This is followed by double-entry bookkeeping and household bookkeeping.

Information concerning wares or goods includes qualities, distinguishing marks, faults, and adulterations of wares under consideration; raw material related to their production; production of the wares; uses of wares. A rather careful study is made of textiles, industrial art wares, and food supplies. In each class of sales girls, that one of these three principal groups of wares is considered which directly concerns the pupils.

Economic geography occupies 30 hours of instruction. Sources of supply, places of distribution, and routes of shipment are considered. Berlin as a center of production and distribution is studied. The economic relations of Germany, countries with which she trades, and the German colonies are discussed. However, these matters are considered only as far as necessary for a general comprehension of their economic relations.

Instruction in writing also occupies 30 hours. The aim is to increase both speed and legibility in writing and in the making of figures. Pen and pencil are both used in this work.

Housekeeping instruction for sales girls covers practically the same ground as for girls in the unskilled occupations, but in one-half the time, and therefore less thoroughly.

### COURSES OF STUDY FOR OTHER TYPES OF CONTINUATION SCHOOLS.

It is not necessary to take up each type of school and examine its courses of study in detail. For each type, courses have been worked out which present the proper subject matter in some such manner as in the school for sales girls. Girls in the plain-sewing industry give particular attention to study of raw materials from which textiles are made, and of different methods of making cloth; to study of finished goods and their uses; and to study of the various processes involved in plain sewing. Trade drawing also is an important feature of the curriculum for these girls. This consists of line drawing, ornamental drawing, designs, drawing of embroidery and lace patterns, of plaits, collars, sleeves, and trimmings; drawing of garments from models, measuring and pattern drawing for women's underwear and kimonas; measuring and pattern drawing for men's nightshirts, overshirts, collars, and cuffs.

Girls in the schools for bookkeepers, clerks, and copyists focus attention on the many blank forms that must be used, on German composition, on commercial arithmetic, and on bookkeeping. Those in the feather and artificial-flower industry, in addition to a careful study of the technic of their trade, give 150 hours, nearly one-fourth of the entire time, to very practical work in trade drawing. In a similar way the schools for milliners and for dressmakers and tailoresses, while possessing common elements in housekeeping, in hygiene, and in life information with the other schools, are quite distinctive in reality as well as in name in the greater part of their instruction.

The law establishing compulsory continuation schools for girls in Berlin provided that no girls who had reached the fourteenth year prior to October 1, 1912, should be required to attend. When the schools opened April 1, 1913, there were in attendance, therefore, no girls older than 14½ years, unless they attended voluntarily. This means that the schools will not be fully established and reach their

full attendance till the fourth year of their operation—1916–17. The attendance during the first year totaled 6,292, distributed as follows: In mercantile occupations, 2,798; in clothing industries, 1,115; in other skilled industries, 489; in unskilled occupations, 1,890; total, 6,292. During the same year the total attendance at the compulsory continuation schools for boys, which had been in full operation for several years, was 36,037.

In an earlier chapter it was noted that the compulsory continuation schools for unskilled boys in Berlin reach practically all boys 14 to 18 years old who are not attending higher schools or continuation schools for skilled workers. It can not be said that the girls' schools will be as successful in reaching the girls of these ages. The reason is that these schools are only for employed children. A large number of girls in this age group are at home, without other employment than helping their mothers with housework, and are thus exempt from compulsory attendance. That the number is considerable is indicated by the comparison of the attendance figures for the girls' and boys' schools, as given above. In this connection it should also be taken into account that a much larger number of boys than of girls are free from the compulsory attendance requirement because they are in the higher schools and voluntary continuation schools. It is unfortunate that this considerable number who remain at home without employment should escape the excellent training of these schools.

Another factor which will tend to keep the number of girls in compulsory continuation schools smaller than the number of boys is the provision that when a girl marries she is exempt from further compulsory attendance. A considerable number marry before reaching 18 years of age.

Girls engaged in unskilled occupations obtain in continuation schools a more valuable training than boys in unskilled occupations. The former are required to attend 6 hours per week, the latter only 4 hours. Half of the work for unskilled girls relates directly to housekeeping, with such subjects as sewing, dressmaking, remodeling, ironing, cooking, and study of foods, which are vitally related to the daily lives of girls and women. There is no such common interest of vital importance for unskilled boys around which to center any considerable amount of instruction; or, at any rate, the Berlin continuation schools for boys do not recognize such interest. Citizenship does not have the same appeal to the Berlin boy that dress and housekeeping have to the Berlin girls.

It was to be expected that the Berlin authorities, having made continuation school attendance compulsory for boys, would soon find that the voluntary plan for girls was inadequate. The voluntary continuation schools for girls in Berlin have rendered excellent service, and will continue to hold an important place in the educa-

tional scheme of the city; but after years of successful operation the total annual enrollment, including many adult women as well as girls of all ages over 14 years, is 10,792. In a single year the compulsory schools gathered in 6,292 14-year-old employed girls. When the plan is in full operation these schools will undoubtedly furnish instruction to more than twice as many as were in the voluntary schools in 1912–13; and all of these will be under 18½ years of age, while very many of the former were older. Berlin has found that voluntary continuation schools, like voluntary elementary schools, fail to reach effectively the majority of those who most need their help.

## III. THE TRAINING OF INDUSTRIAL CONTINUATION SCHOOL TEACHERS IN PRUSSIA.

Every American student of vocational education in Germany has noted the difficulty experienced by the authorities in obtaining suitable teachers of industrial subjects. The difficulty has been more serious in the part-time or industrial continuation schools, attended a few hours per week by apprentices, than in the full-time higher grade industrial schools. The greater part of continuation school teachers have come from the corps of teachers in the elementary schools. Care has been exercised to choose, as far as possible, men who show natural aptitude for the work to be done, and who have made some preparation in the subject by attendance upon special technical or drawing courses in the higher industrial schools, like the Handwerkerschulen or Tischlerschule of Berlin, or by work out of school hours in commercial shops. They are men who are willing to teach from two to six hours per week in the continuation schools after completion of the elementary school day for the additional income which this extra work affords, or who are still more willing to be transferred to full-time work in the continuation schools, where the annual salary is 600 marks ($150) larger than in the elementary schools. It should be remembered that these men have gone through an extended course of training in preparation for elementary teaching. The standard of such training is completion of an elementary school course, three years in a preparatory school, and three years in a teachers' training school. Then follow a year of military service, and two or three years of assistant teaching before the second or final examination for full entrance into the teaching profession can be taken.

The other source of teachers for the schools in question has been the industries themselves. Those who have come from this source have been, for the most part, master workmen with teaching ability who were willing to take a few hours per week from their shops to serve

as teachers of apprentices attending the continuation schools, or who have given up the practice of their trades altogether in order to devote their entire time to teaching this work.

The proportion of professional trachers to practical men in the corps of industrial continuation school teachers of Prussia has always been large. On December 1, 1912, there were 13,161 of the former and 3,015 of the latter. This does not take account of commercial continuation schools, of continuation schools for unskilled workers, or for girls, or of the schools maintained by guilds. By far the larger part of the above number are part-time teachers, giving not to exceed six hours per week of instruction, the men from the industries teaching only trade subjects, including drawing, and the professional teachers having charge of all the general subjects and a considerable part of the trade subjects. Among the teachers giving their full time to industrial continuation school work the proportion of practical men is much larger. There were 242 of these to 460 professional teachers in 1912. Prior to April 1, 1914, the full-time teachers were drawn chiefly from those who had first served in part-time work.

From the first the management of industrial schools, which is lodged in a department of the ministry of commerce and industry, has recognized that this method of selecting teachers was temporary, to be continued only till a more satisfactory plan could be worked out and put into operation. Most of the professional teachers lacked the technical and practical knowledge and the familiarity with the daily shop environment and conditions to make their teaching of greatest value to apprentices. On the other hand the practical men lacked pedagogical knowledge, and often failed to achieve desired results because of unwise methods. Many of them also were deficient on the theoretical side of their trade.

To remedy these defects short full-time courses, given usually in the summer, were established in different parts of Prussia. These courses were primarily for those already appointed to continuation school positions, and have been attended principally by these; though a few, also, who are seeking appointment attend.

This arrangement was a decided improvement, particularly in case of the practical men. Moreover, it seemed to embody all that could reasonably be required of part-time teachers, who at most would give only a few hours a week to continuation school teaching while continuing their regular work in Volksschule or shop the rest of the time. However, for Hauptamtlichelehrer, whose entire time was to be devoted to industrial continuation school teaching, more thorough and systematic preparation seemed desirable and justifiable. Furthermore, it was deemed wise to reduce gradually the part-time teaching, which in 1912 was two-thirds of the whole, and increase the full-time teaching.

In September, 1912, the ministry of commerce and industry announced that a Seminar Kursus, or teachers' training course, of one year's duration would be opened the following Easter in the Industrial Art School of Charlottenburg. The purpose of the course would be the preparation of full-time teachers for the industrial continuation schools. At first the course would be limited to three principal groups of trades, namely, the metal-working trades—machine making, instrument making, plumbing, and sheet-metal working; the building trades—house construction, interior finishing, roof construction, and cabinet making; and certain industries in which ornament and design are prominent, as painting and interior decorating, bookbinding, and printing, and lithography. The announcement stated further that the entrance examination would be partly written and partly oral, and that both general knowledge and practical ability of candidate would be tested. Three classes of candidates would be admitted to the examination: (1) Artisans possessing a good general education and satisfactory practical experience, covering at least three years in the trade which they aspired to teach. Preference would be given to those who were already teaching part time in continuation schools. (2) Elementary teachers who had passed the second examination, who had made themselves familiar with the technic and trade drawing of an important branch of industry, and, as far as possible, who had already had experience as part-time teachers in the industrial continuation schools. Those would be given preference who could furnish evidence of having had industrial experience. (3) Others possessing, in the judgment of the examining committee, qualifications equivalent to the above. Those candidates would be exempt from the practical part of the examination who had spent at least two years in one of the recognized Prussian middle (full-time) industrial schools, or the same length of time studying in an industrial art school a trade belonging to any of the three groups mentioned above. Teacher candidates would be exempt from the general examination; also other candidates who could present evidence of completion of a 9-year school course. The age limits of candidates would be 24 to 35 years.

This announcement aroused keen interest, especially among men already engaged in part-time continuation-school teaching, and 299 candidates presented themselves for the entrance examination to the new course. Four-fifths of these were artisans. Statistics showed that only 90 full-time teachers were needed in Prussia each year for the continuation schools of the three groups of trades which this course was to serve. It was decided to fill 30 of these places by promoting the best of the part-time teachers, thus encouraging efficiency among this important group of continuation-school workers. This left 60 places to be filled by graduates of the one-year course and 299 candidates for entrance to the course. It was necessary to elimi-

nate five-sixths of the candidates, and thus avoid training men for positions which they could not hope to obtain. The sifting process is interesting. Among the candidates were found 18 practical men and 3 teachers whose qualifications exempted them from examination. Fifty were eliminated who did not measure up to the previously announced requirements. A large number of others were eliminated because their applications showed important mistakes in German grammar and composition, or whose submitted drawings were unsatisfactory. The number of teachers was now reduced to 31, but the practical men were still so numerous that the committee arbitrarily selected 36 whose general qualifications, judged by experience, applications, and drawings, were the best. This left 67 candidates to take the examination for the 37 remaining places in the training course. Fifteen places were won by practical men and 24 by teachers. No doubt the result was determined in some measure by the policy of the management to keep the number of teachers and practical men about equal in the course.

The general examination of the men from the trades (teachers were not required to take this) consisted of three parts: (1) An essay on "Experiences and Observations from the Life of an Apprentice," for which three hours were allowed; (2) a test in arithmetic, largely in the applications of percentage; and (3) oral questions concerning the candidate's education, trade activities, experience in part-time teaching in continuation schools, birthplace, place of employment, personal interests and reading, and historical and scientific facts which should be common knowledge. The practical tests differed according to the trades which the men aspired to teach, the principal part of the test consisting in each case of making as carefully and accurately as possible a working drawing of some project connected with the trade. The oral part of this test was technical in character, but not difficult. For example, candidates for the builders' class were asked to explain how to make the different kinds of roof joints, and how simple arches, window openings, and doorways are constructed in building a brick wall.

The training course opened after the Easter vacation, 1913, with a faculty of 20 members, most of whom give only part time to this institution. Five of the number are directors of industrial continuation schools, two are lawyers, three are engineers, three painters and graphic artists, three master workmen, and the remainder are selected continuation-school teachers.

The curriculum is divided into four parts or groups of subjects. The first part consists of pedagogical and general subjects, which must be taken irrespective of the trade the student is preparing to teach. However, certain subjects are required of the practical men and not of the teachers, and vice versa, as will be noted later. The following

subjects are included in the first group: The purpose and meaning of industrial education, continuation-school methods, practice teaching, elementary psychology and ethics, arithmetic, German, bookkeeping, projective drawing, and citizenship. About 20 hours per week out of a total of 32 are devoted to this part of the course. The second group of subjects is for those who are preparing to teach the metal-working trades, and comprises technology of iron, machine drawing, study of machines, plumbing drawing and theory, sheet-metal drawing and theory, drawing methods, and trade knowledge or information, such as sources of materials, cost of materials, etc., for machine builders. The third group is for those preparing for the building trades, and includes theory and drawing for builders and interior finishers, theory and drawing for cabinetmakers, theory and drawing of roof construction, methods in drawing, and trade information for builders and interior finishers. The fourth group of subjects is for the ornamental industries, and includes drawing methods, drawing from objects, lettering, painting, trade theory, and such special subjects as bookbinding and printing, with appropriate drawing.

From one-fourth to one-third of the student's time is occupied with drawing, almost all of which is closely related to the trade he expects to teach.

The course is arranged differently for the two classes of students, the practical men giving more time to pedagogy and the professional teachers more time to technical subjects and drawing. For example, the practical men have three semester hours of psychology and ethics, while these subjects are omitted from the program of the teachers, since they studied them in preparation for elementary teaching. The practical men must take 7 semester hours of practice teaching, 2 the first semester and 5 the second, while this work is reduced to 5 semester hours for the teachers. In addition the practical men take 6 hours of observation work per week for one-fourth year. On the other hand, the teachers alone have projective drawing and in the metal industry group technical study of iron.

The practice teaching is, of course, done in an industrial continuation school under the direction of the professor of pedagogy in the seminar course. Classes are divided into groups of 15 for this work. The first few hours are spent in observation and the rest in actual teaching after carefully prepared lesson plans. The criticisms of the professor follow, with questions and discussions.

Moreover, much attention is given to methods in each of the subjects taught. The aim is to give the student practical methods of presenting his subject, as well as to review him and strengthen him in the subject matter, the assumption being that he already has considerable knowledge of the subject matter. This was quite marked in two trade drawing classes visited, one of them taught by the director of the school.

Extensive use is made of *Lehrmittel*, or teaching materials, such as parts of machines, fine mechanical and optical instruments, plumbing supplies and fixtures, ornamental iron work, models of buildings and parts of buildings, etc., most of which serve as models for trade drawing, as well as for illustrative material. The institution, young as it is, already has a good collection of *Lehrmittel* and is constantly adding to its collection.

That this youngest of Prussian educational institutions is considered a permanent and important feature of the educational system is shown by the plans for its development. There will be added at the beginning of the next school year, Easter, 1915, two other groups of industries to the three already included in the course. The first of these, *Nahrungsmittelgewerbe*, includes the trades which have to do with the preparation and service of foods—bakers, butchers, cooks, waiters, etc. The second, *Bekleidungsgewerbe*, includes the two principal clothing industries, those of the tailor and shoemaker. This will, of course, necessitate increasing the number of students in attendance by whatever number of teachers are needed each year in these groups of trades.

It is proposed to extend the course to two years and thus make of it a seminar or training school, instead of continuing it as a training course. The experience of the first year has convinced those in charge that one year is entirely too short a time for the proper training of either the professional teachers or the practical men. One year's training might suffice if the former were to teach only arithmetic, German, and citizenship, and the latter only drawing and trade theory and practice. It has been accepted, however, as one of the fixed principles of continuation school instruction in Prussia that a full-time teacher in these schools should teach all subjects to each class of boys placed in his charge. It is maintained that in this way the subjects are correlated, the training as a whole given unity, and the teacher made to feel responsibility for the success of his pupils to a degree impossible of attainment when the class is taught by two or three teachers. This requires, however, that the teacher shall be thoroughly trained; hence the necessity for expanding the course.

It is proposed also to start in the near future short courses at this institution for the further training of part-time teachers. Such courses, as has been pointed out, have been given for some years in different parts of Prussia, attended mostly by those already teaching in part-time positions. This training school, with its able faculty, its special equipment and definite pedagogical aims, should, say the authorities, become the principal place for such work.

It is the ambition of Prof. Hecker, who has charge of this new institution, to make this the center of the industrial continuation-

school activities in Prussia. He proposes the erection of a specially designed group of buildings to house a *Kunstgewerbeschule*, or industrial art school; a *Gewerbeschule*, or industrial school, offering full-time courses in a variety of trades; a *Gewerbliche Fortbildungsschule*, or industrial continuation school, with courses in all of the principal trades, and this seminar, with its course expanded to two years. Prof. Hecker expressed confidence that such a group of buildings will be constructed within a few years. The seminar would thus have immediately at hand the best of facilities for practice teaching and observation work. Opportunity would also be provided for more extensive study of trade technic and drawing on the part of students who showed weakness along these lines. Prof. Hecker hopes also to develop the present collection of teaching materials (*Lehrmittel*) into a State continuation-school museum and library, where may be found all kinds of models, materials, and publications of use to the continuation-school teacher.

It must be admitted that at present the scope of this institution is quite limited in comparison with the possibilities of teacher training in the continuation-school field. It does not attempt to provide for the training of teachers for boys' commercial continuation schools, which enroll nearly half as many pupils as the industrial, or for the schools for unskilled workers, which in Berlin are attended by 40 per cent of the total number in continuation schools, or for the girls' commercial, trade, or homemaking continuation schools, which have hardly begun to find a place in German educational organization. It trains only industrial continuation-school teachers. Nor does it train all of these. It confines its attention to full-time teachers, leaving to accident or to short-course temporary schools organized here and there the training of that large group of part-time teachers who do two-thirds of the work in these schools. Moreover, it concerns itself only with the three most important groups of industries—the metal working, building, and ornamental trades—which employ the majority of skilled workers. Finally, it trains only about two-thirds of the teachers appointed each year in the schools teaching these groups of trades, the remaining third being promoted from part-time positions.

However, the significant fact remains that a perfectly definite and highly important step has been taken in the direction of providing adequate training for continuation-school teachers, and this where the need was greatest. The rest will undoubtedly follow, including first, some such development of this school as outlined above, and later, provision in other schools for the training of teachers for boys' commercial and general, and for girls' commercial, trade, and homemaking continuation schools.

## IV. DUAL CONTROL IN INDUSTRIAL EDUCATION IN PRUSSIA.

In the discussion of dual versus unit control in connection with vocational education in the United States much has been said concerning the efficiency of the dual system in European countries, particularly in Germany, and some of the strongest advocates of dual control are men who base their position on investigation of industrial education in the German States. While the American problem differs in essential features from that of Germany, owing to markedly different social and industrial conditions, there can be no doubt that the German system offers many suggestions of value to this country and that it deserves careful study. Such study must be discriminating, however. It must not assume that the dual character of the German system is essential to its success, and least of all that, because part of a successful system there, it should be adopted here. Nor is it sufficient to consider the dual system in relation only to the efficiency of vocational education. Its effect on education as a whole, especially its elementary stages, must not be overlooked.

It seems, therefore, worth while to make a more careful examination than has yet been made of dual control in one of the German States. Prussia is selected because of its importance in the Empire and also because it furnishes the best example of dual control.

In Prussia the ministry of commerce and industry is charged with responsibility for technical, commercial, and industrial education for both sexes with the exception of that carried on in institutions of college and university grade. Under the direction of this ministry are (1) many kinds of full-time middle technical, trade, and commercial schools such as builders' schools, cabinetmakers' schools, machinery schools, merchants' schools, and industrial art schools; (2) voluntary continuation schools, both industrial and commercial, meeting evenings and Sundays and attended chiefly by adult workers; and (3) all kinds of compulsory continuation schools, including industrial, commercial, and general schools for boys, and industrial, commercial, and homemaking schools for girls. The continuation schools were added to this list some thirty years ago when it was decided to make them more industrial in character. Within the last two years there has been a further development of the system. A Prussian seminar or normal school, for training teachers for the industrial continuation schools, has been established by the ministry for commerce and industry. It seems probable that schools for training teachers for other types of continuation schools will follow.

It is obvious, therefore, that Prussia has not one but two systems of education under different departments of the Government. One system has charge of all children up to 14 years of age, or till such time as the elementary course is completed, and such others as continue their general education to a later age. The other system concerns itself only with such as go into industry or commerce at 14 years of age or devote themselves to special training for technical or commercial pursuits. Not only are these two systems of education under different ministries or Government departments, but they are organized locally in each city under different authorities. In the case of vocational education much care is taken to obtain the cooperation of local industrial and commercial interests in the management of the schools.

Dual control has been in effect so long in Prussia that there is little disposition to question its wisdom. If an American raises the question, he is met by arguments that have a familiar sound to those who have followed the vocational education movement in this country. In this way, and in this way only, it is claimed, can the industrial schools be made and kept practical. If placed under the same management as the elementary schools, they become academic, and the very purpose for which they were established is defeated. In fact, it is pointed out, the continuation schools were taken away from the ministry in charge of education and placed under the ministry for commerce and industry, because the former failed to adjust them to the needs of the boys in attendance. Moreover, changes are constantly taking place in industry. The ministry of commerce and industry is sensitive to these changes, and is therefore in better position to adjust the training of its youthful workers to them. Again, the management of the regular schools, from the State ministry down to the local officer or board, is handicapped by decades, and even centuries, of educational tradition, while the present management of industrial and commercial schools is entirely free from this handicap. The men in charge have not been thinking in the grooves of educational tradition; they are therefore freer to determine what industry and commerce need through these special schools, and they are more ready to provide it. Finally, the policy of dual control places the industrial and commercial schools in charge of men who have a definite problem. Vocational education could not receive as thorough consideration from officials concerned with all the various problems of educational administration as from a board and executive officer whose sole business it is to look after vocational education, particularly if the latter are in close touch with industry and the former are not.

In practice there is a considerable degree of cooperation between the two systems. Many of the administrative and executive officers

of the industrial education system were drawn from the general education system. Elementary school buildings and equipment are used extensively for continuation school classes. Most important of all, the great majority of continuation school teachers come from the elementary schools. In 1912, of the 16,176 industrial continuation school teachers in Prussia, 13,161 had received the pedagogical training of elementary teachers and were then serving in the elementary schools, teaching in the continuation schools only from two to six hours per week in addition to their regular work, or had served in elementary schools and had been taken over for full-time work in the continuation schools. This cooperation does not affect the middle technical schools, however. To be sure, it is a one-sided cooperation, the continuation schools receiving much more benefit from it than the elementary schools, as will appear more clearly later; but it is important that the relation is one of cooperation rather than opposition. There appears to be no feeling on the part of the authorities of either system that the other is receiving more than its share of financial support.

That the Prussian plan of organization has resulted in the development of an efficient system of vocational education, especially in the larger cities, can not be questioned. Granting that there are certain weaknesses, one must readily admit that in completeness of organization to care for the vocational needs of her boys and girls and in the thorough and practical character of vocational instruction given, Prussia with her dual system has gone much farther than any other State or country, except some of her sister States of the German Empire.

However, in considering the question of dual control in Prussia, it should be borne in mind that her industrial and commercial schools, both the continuation schools and the full-time middle schools, are intended for those who have already entered definite occupations or trades in industry or commerce. In the continuation school, instruction, largely of a technical character, merely supplements the training of the workshop or store in trades or in unskilled work already chosen. The middle schools are for those who have worked two or three years at a skilled trade and are able to devote all their time for from one to five semesters to further training in that trade or its engineering aspects. Prussia does not have schools like the *écoles professionelles* of Paris, or like some institutions in the United States, which take the place or seek to take the place of apprenticeship.

It should be remembered, also, that nearly all the boys and girls in the elementary schools leave school and begin work at the age of 14 years. The only day schools open to them, were they able and disposed to continue their education, are the schools that prepare for teaching, which limit attendance to the needs of the profession.

It must not be forgotten, moreover, that the problem of dual control presents different aspects in case of the middle technical and voluntary continuation schools from those presented in the compulsory continuation schools. The former are more remote than the latter from the elementary schools. Such of their pupils as enter with an elementary training—as most of them do—have been out of school two or more years, except as they have attended continuation schools while employed as apprentices. On the other hand, pupils in the continuation schools have come directly from the elementary schools. It is obvious that separate control is more logical in the former case than in the latter. In fact, such control was originated for the middle technical schools and was later extended to include the compulsory continuation schools.

One effect of dual control in Prussia has been to hinder adjustment of the elementary school to present-day needs through introduction of industrial arts and appeal to vocational interest. It has already been noted that a large proportion of teachers in continuation schools come from the elementary schools. Most of these give only a few hours per week to continuation-school teaching, continuing their regular work as elementary teachers. Naturally these would carry back to their daily work in the classroom something of the methods, the interests, and even of the content of the vocational schools. This has little opportunity to function, however, as will appear more clearly later. On the other hand, 460 of the 702 teachers in Prussia who give their entire time to continuation-school work, have been drawn from the elementary schools, and nearly 50 are added to the list each year in the metal and building trades alone. These are attracted to the continuation schools by the larger salaries and the practical character of the work. It is probable that the increase in salary, amounting to about 600 marks per year, is the stronger attraction; but it is the elementary teacher who has shown the keenest interest and greatest ability in part-time vocational teaching in the continuation schools who is chosen for full-time work, with this substantial increase in salary. In most cases he has given many nonteaching hours to study of trade technic or drawing in a middle technical school or to actual trade experience in a commercial shop. The elementary schools thus lose each year to the vocational schools, which is the same as to another system, many of their most ambitious teachers, those who are most willing to make sacrifices in order to fit themselves for better positions. What is still more important, the loss is in teachers to whom the industrial element and vocational interest in education make the strongest appeal. This in part accounts for the failure of Prussian elementary schools to make use of these important factors in geography, language work, arithmetic, history, and other subjects—a failure which has been noted by

American students of German elementary education. Prussian elementary-school teachers do not, with rare exceptions, believe in things industrial or vocational in the elementary school; this is the place for the "fundamentals" of education, with a traditional definition of "fundamentals." This attitude may be accounted for, in some measure, by the fact that the men who do believe in introducing the industrial element in elementary education and are best qualified to do it are annually removed to the vocational system. It may be argued that these men would be drawn off to the vocational schools just the same under unit control, but they would then remain in the same educational system and their separation from elementary education could not be so complete.

However, it is of much more serious consequence in keeping the industrial element and vocational interest out of the elementary school that, because of the dual system, the management of elementary schools is cut off from contact with the problems of vocational education. From the State minister in charge of education down to the humblest local official, it is understood that vocational education belongs to another department of the Government. The usual school authorities are not expected to concern themselves about it. It is noteworthy that even manual training, which American educators still measure more in educational than in vocational values, is taught in very few Prussian elementary schools, and where taught at all is elective as an additional subject to the required course, has meager equipment, and is taken by very few pupils. For example, in Berlin this subject is not taught. In Steglitz, an important suburb of Berlin, one of the large elementary schools equipped for manual training had only two boys taking this subject at the time the school was visited. True, sewing, darning, mending, and similar handwork for girls have had a place in the curriculum, but their teaching has had little industrial significance. As pointed out above, little attempt is made to vitalize the usual school subjects by introduction of the industrial element or appeal to vocational interest. School administrative and executive officials are not expected to concern themselves with this phase of education. If they were obliged to face day after day the task of training 14 to 18 year old boys and girls for the positions they fill or hope to fill in commerce and industry, they would probably feel more keenly the value of the industrial element in elementary education.

Still another aspect of this absence from the elementary school of the industrial element and appeal to vocational interest deserves consideration, namely, its effect on the boy's preparation for industry and the continuation school. Prussian teachers take the stand that the elementary school as now conducted, with its thorough training in religion, reading, writing, arithmetic, geography, history, nature

study, and drawing affords the best preparation that can be given up to the age of 14 years, no matter what the boy's occupation is to be, unless he is going into one of the professions. The German teacher emphasizes the principles of his subjects rather than their applications. On the other hand, in the continuation school and industry emphasis is entirely on the applications. When the boy reaches the age of 14 years, work of one character is broken off abruptly and work of a distinctly different character is taken up in a school which has very different aims and is under an entirely different management. At the same time the boy is thrown into the busy world of industry or commerce and compelled to make new adjustments there. The much-discussed gap between the American elementary and high schools is not so great as that which the Prussian boy of 14 faces as he leaves the elementary school. To be sure, one purpose of the continuation school is to bridge this gap between school and industry, but it is built on the industry side and reaches only halfway across. It is worth noting that the one city in Germany which has done significant work in putting real life into the elementary school is Munich, the largest city in the Empire where unit control is in effect.

It should also be observed that the dual system apparently discourages the development of a wise plan of vocational guidance. In the United States consideration of vocational education quickly led to the conclusion that boys and girls need assistance other than that usually afforded by parents in choosing the vocation they will enter, as well as training for efficiency after the choice has been made. To be sure, this movement is comparatively new, and there is much discussion as to the measure of responsibility to be taken in the matter by the parent, by the school, by the State, and by industrial and commercial organizations. Nevertheless, the need of a rational plan has become obvious, however responsibility may be shared; and the conviction is growing that the elementary school must be so organized and conducted as to be the prime factor in this plan. Prussia, with her comprehensive and efficient system of vocational schools in operation for years,[1] has done little in the way of vocational guidance. What is done is chiefly in the hands of guilds, chambers of industry, and other industrial or commercial organizations, which look at the problem from the point of view of industry and commerce rather than from that of the boy's needs. In Berlin not even this organized effort at vocational guidance exists, though the need is recognized. The old German custom of a son taking up the occupation of his father has broken down under modern industrial and social conditions, the rapid development of the factory system being in large measure responsible for this. Choice of occupation must

[1] The period varies with different cities; in Berlin compulsory continuation schools for boys have been maintained since 1908, and for girls since 1913.

be made by the great majority of boys, or by their parents for them, before the age of 14 years is reached. They can not expect help in this important matter from the industrial or commercial continuation schools, for these have nothing to do with the boy till he has entered upon his apprenticeship.

If the perplexed parent turns to the elementary school, he finds that his boy has had nothing there to help him discover his aptitudes or to give him information concerning the different industrial and commercial activities of his community. Directors of schools report that the parent sometimes asks advice of the teacher, but as a rule the teacher has had slight contact with industrial activities, and has had opportunity only to observe the boy in school work of an academic character. At best he can advise the parent only as to the general qualities of mind and temperament which have marked the boy's work along nonindustrial lines. The administrative authorities of elementary schools, as has been noted, have no occasion to consider, are not expected to consider, questions pertaining to vocations; the fundamentals of elementary education constitute their problem. This important matter fails to receive consideration through division of responsibility between two independent educational authorities.

The advantages claimed for the dual system in Prussia have been suggested in an earlier part of this chapter. There can be no question that both the industrial continuation schools and middle technical schools are practical. Their work is closely related to the industries in which their pupils are engaged. The organization is simple and reasonably flexible. Cooperation of employers and workers in the industries has been secured. The officials know what is going on in industry and show no hesitancy in adjusting the work of these schools to changing conditions and processes in industry. Given a definite task, they are performing it well. The same can be said, though a little less emphatically, concerning the commercial continuation schools, and part of it can be said concerning the continuation schools for unskilled workers.

Undoubtedly these conditions, or most of them, are essential to the success of any system of industrial education. However, two questions naturally arise: (1) "Are the advantages limited to the dual system?" and (2) "Are the disadvantages discussed above inherent in the dual system?" In considering these questions it must be remembered that the German elementary school system dates back to the Reformation and has centuries of tradition behind it; that its administrative and executive personnel changes very slowly; that industrial education in Prussia is supplementary to trade experience and not preliminary to it, and that the situation is different in case of the middle technical schools, which receive a rela-

tively small number of pupils after two or three years of trade experience, than it is in case of the continuation schools, which receive all, or practically all, pupils when they leave the elementary schools.

Yet none of these conditions, nor all of them, seem to make necessary a separate school system. The regular school system of Prussia, supported jointly by the State and community, was organized for the service of society. Indeed it had its origin, as has all education, in the desire to fit the youth for his work as an adult. In other words, it was originally vocational in purpose.

Possibly it would have taken longer to develop through existing educational organization the different industrial and commercial schools of various types that have grown up under the dual system, but it could have been done if the same energy and intelligence had been focused on the educational organization that were centered on building up the new system.

Dual control sets apart the elementary school from industry, and emphasizes the academic character of its work in the minds of teachers, pupils, school authorities, and parents alike. It tends in this way to justify itself and to make itself appear the more necessary by widening the gap between elementary education and industrial life—the gap which industrial education seeks to bridge. This condition also makes it impossible for the elementary school to take its proper place either in the preparation of the boy for industry or in a rational plan of vocational guidance, for both depend on a different kind of elementary school than exists in Prussia to-day—an elementary school in which the industrial element and vocational interest have found a place.

# BULLETIN OF THE BUREAU OF EDUCATION.

[NOTE.—With the exceptions indicated, the documents named below will be sent free of charge upon application to the Commissioner of Education, Washington, D. C. Those marked with an asterisk (*) are no longer available for free distribution, but may be had of the Superintendent of Documents, Government Printing Office, Washington, D. C., upon payment of the price stated. Remittances should be made in coin, currency, or money order. Stamps are not accepted. Numbers omitted are out of print.]

### 1908.

*No. 3. State school systems: Legislation and judicial decisions relating to public education, Oct. 1, 1904, to Oct. 1, 1906. Edward C. Elliott. 15 cts.

### 1908.

*No. 5. Education in Formosa. Julean H. Arnold. 10 cts.
*No. 6. The apprenticeship system in its relation to industrial education. Carroll D. Wright. 15 cts.
No. 8. Statistics of State universities and other institutions of higher education partially supported by the State, 1907-8.

### 1909.

*No. 1. Facilities for study and research in the offices of the United States Government in Washington. Arthur T. Hadley. 10 cts.
No. 2. Admission of Chinese students to American colleges. John Fryer.
*No. 3. Daily meals of school children. Caroline L. Hunt. 10 cts.
No. 5. Statistics of public, society, and school libraries in 1908.
*No. 6. Instruction in the fine and manual arts in the United States. A statistical monograph. Henry T. Bailey. 15 cts.
No. 7. Index to the Reports of the Commissioner of Education, 1867-1907.
*No. 8. A teacher's professional library. Classified list of 100 titles. 5 cts.
*No. 9. Bibliography of education for 1908-9. 10 cts.
No. 10. Education for efficiency in railroad service. J. Shirley Eaton.
*No. 11. Statistics of State universities and other institutions of higher education partially supported by the State, 1908-9. 5 cts.

### 1910.

*No. 1. The movement for reform in the teaching of religion in the public schools of Saxony. Arley B. Show. 5 cts.
No. 2. State school systems: III. Legislation and judicial decisions relating to public education. Oct. 1, 1908, to Oct. 1, 1909. Edward C. Elliott.
*No. 5. American schoolhouses. Fletcher B. Dressler. 75 cts.

### 1911.

*No. 1. Bibliography of science teaching. 5 cts.
*No. 2. Opportunities for graduate study in agriculture in the United States. A. C. Monahan. 5 cts.
*No. 3. Agencies for the improvement of teachers in service. William C. Ruediger. 15 cts.
*No. 4. Report of the commission appointed to study the system of education in the public schools of Baltimore. 10 cts.
*No. 5. Age and grade census of schools and colleges. George D. Strayer. 10 cts.
*No. 6. Graduate work in mathematics in universities and in other institutions of like grade in the United States. 5 cts.
No. 7. Undergraduate work in mathematics in colleges and universities.
No. 9. Mathematics in the technological schools of collegiate grade in the United States.
*No. 13. Mathematics in the elementary schools of the United States. 15 cts.
*No. 14. Provision for exceptional children in the public schools. J. H. Van Sickle, Lightner Witmer, and Leonard P. Ayres. 10 cts.
*No. 15. Educational system of China as recently reconstructed. Harry E. King. 10 cts.
No. 19. Statistics of State universities and other institutions of higher education partially supported by the State, 1910-11.

### 1912.

*No. 1. A course of study for the preparation of rural-school teachers. F. Mutchler and W. J. Craig. 5 cts.
*No. 3. Report of committee on uniform records and reports. 5 cts.
*No. 4. Mathematics in technical secondary schools in the United States. 5 cts.

*No. 5. A study of expenses of city school systems. Harlan Updegraff. 10 cts.
*No. 6. Agricultural education in secondary schools. 10 cts.
*No. 7. Educational status of nursing. M. Adelaide Nutting. 10 cts.
*No. 8. Peace day. Fannie Fern Andrews. 5 cts. [Later publication, 1913, No. 12. 10 cts.]
*No. 9. Country schools for city boys. William S. Myers. 10 cts.
No. 11. Current educational topics, No. 1.
*No. 13. Influences tending to improve the work of the teacher of mathematics. 5 cts.
*No. 14. Report of the American commissioners of the international commission on the teaching of mathematics. 10 cts.
*No. 17. The Montessori system of education. Anna T. Smith. 5 cts.
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*No. 19. Professional distribution of college and university graduates. Bailey B. Burritt. 10 cts.
No. 22. Public and private high schools.
*No. 23. Special collections in libraries in the United States. W. D. Johnston and I. G. Mudge. 10 cts.
No. 26. Bibliography of child study for the years 1910-11.
No. 27. History of public-school education in Arkansas. Stephen B. Weeks.
*No. 28. Cultivating school grounds in Wake County, N. C. Zebulon Judd. 5 cts.
No. 29. Bibliography of the teaching of mathematics, 1900-1912. D. E. Smith and Chas. Goldziher.
No. 30. Latin-American universities and special schools. Edgar E. Brandon.

1913.

No. 1. Monthly record of current educational publications, January, 1913.
*No. 2. Training courses for rural teachers. A. C. Monahan and R. H. Wright. 5 cts.
*No. 3. The teaching of modern languages in the United States. Charles H. Handschin. 15 cts.
*No. 4. Present standards of higher education in the United States. George E. MacLean. 20 cts.
No. 5. Monthly record of current educational publications, February, 1913.
*No. 6. Agricultural instruction in high schools. C. H. Robison and F. B. Jenks. 10 cts.
*No. 7. College entrance requirements. Clarence D. Kingsley. 15 cts.
*No. 8. The status of rural education in the United States. A. C. Monahan. 15 cts.
No. 11. Monthly record of current educational publications, April, 1913.
*No. 12. The promotion of peace. Fannie Fern Andrews. 10 cts.
*No. 13. Standards and tests for measuring the efficiency of schools or systems of schools. 5 cts.
No. 15. Monthly record of current educational publications, May, 1913.
*No. 16. Bibliography of medical inspection and health supervision. 15 cts.
*No. 18. The fifteenth international congress on hygiene and demography. Fletcher B. Dresslar. 10 cts.
No. 19. German industrial education and its lessons for the United States. Holmes Beckwith.
*No. 20. Illiteracy in the United States. 10 cts.
No. 21. Monthly record of current educational publications, June, 1913
*No. 22. Bibliography of industrial, vocational, and trade education. 10 cts.
*No. 23. The Georgia club at the State Normal School, Athens, Ga., for the study of rural sociology. E. C. Branson. 10 cts.
*No. 24. A comparison of public education in Germany and in the United States. Georg Kerschensteiner. 5 cts.
*No. 25. Industrial education in Columbus, Ga. Roland B. Daniel. 5 cts.
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No. 32. Educational survey of Montgomery County, Md.
*No. 34. Pension systems in Great Britain. Raymond W. Sies. 10 cts.
*No. 35. A list of books suited to a high-school library. 15 cts.
*No. 36. Report on the work of the Bureau of Education for the natives of Alaska, 1911-12. 10 cts.
No. 37. Monthly record of current educational publications, October, 1913.
*No. 38. Economy of time in education. 10 cts.
No. 39. Elementary industrial school of Cleveland, Ohio. W. N. Hailmann.
*No. 40. The reorganized school playground. Henry S. Curtis. 10 cts.
*No. 41. The reorganization of secondary education. 10 cts.
No. 42. An experimental rural school at Winthrop College. H. S. Browne.
*No. 43. Agriculture and rural-life day; material for its observance. Eugene C. Brooks. 10 cts.
*No. 44. Organized health work in schools. E. B. Hoag. 10 cts.
No. 45. Monthly record of current educational publications, November, 1913.
*No. 46. Educational directory, 1913. 15 cts.
*No. 47. Teaching material in Government publications. F. K. Noyes. 10 cts.
*No. 48. School hygiene. W. Carson Ryan, jr. 15 cts.
No. 49. The Farragut School, a Tennessee country-life high school. A. C. Monahan and Adams Phillips.
*No. 50. The Fitchburg plan of cooperative industrial education. M. R. McCann. 10 cts.
*No. 51. Education of the immigrant. 10 cts.

*No. 52. Sanitary schoolhouses. Legal requirements in Indiana and Ohio. 5 cts.
No. 53. Monthly record of current educational publications, December, 1913.
No. 54. Consular reports on industrial education in Germany.
No. 55. Legislation and judicial decisions relating to education, Oct. 1, 1909, to Oct. 1, 1912. James C. Boykin and William R. Hood.
No. 58. Educational system of rural Denmark. Harold W. Foght.
No. 59. Bibliography of education for 1910–11.
No. 60. Statistics of State universities and other institutions of higher education partially supported by the State, 1912–13.

1914.

*No. 1. Monthly record of current educational publications, January, 1914. 5 cts.
No. 2. Compulsory school attendance.
*No. 3. Monthly record of current educational publications, February, 1914. 5 cts.
No. 4. The school and the start in life. Meyer Bloomfield.
No. 5. The folk high schools of Denmark. L. L. Friend.
No. 6. Kindergartens in the United States.
No. 7. Monthly record of current educational publications, March, 1914.
*No. 8. The Massachusetts home-project plan of vocational agricultural education. R. W. Stimson. 15 cts.
No. 9. Monthly record of current educational publications, April, 1914.
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