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Organization of Education in the United States

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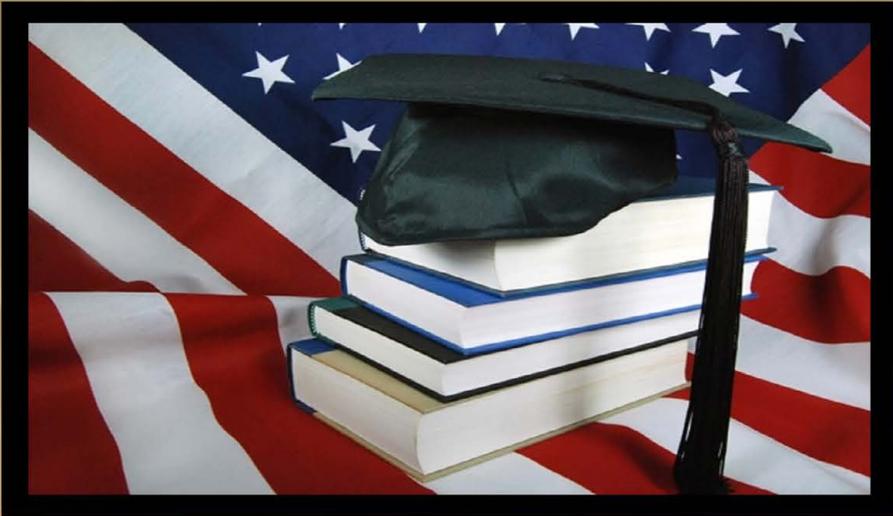
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DEPARTMENT OF INTERIOR

ORGANIZATION OF EDUCATION IN THE UNITED STATES



By
John Charles Muerman

EDUCATION



LIVRE DE LYON

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ORGANIZATION OF EDUCATION IN THE UNITED STATES.

STATE SYSTEMS.

The United States is a federation of 48 self-governing Commonwealths each of which exercises independently all powers not specifically conferred upon the Federal Congress by the Constitution or derived by implication therefrom. Since the Constitution does not provide for the control of education by the Federal Government, there is no national system; but the United States contains within its area 49 separate systems of education.

No two of the State systems are exactly similar, yet they possess certain common factors. For example, all States provide by law for elementary education at public expense. The usual length of the public elementary school course is eight years. Children commonly enter at the age of 6 or 7 and finish at the age of 14 or 15. In all States school attendance during a part or all of this period is compulsory.

Although many children enter school at the age of 6, the adoption of the kindergarten as a part of the school system has made it possible for over half a million children to begin their education at the age of 4 or 5. In the kindergarten there is no direct teaching in terms of reading, writing, and numbers, and no instruction from books. Ideas are necessary to understand books, and these must be gained through excursions, gardening, experimental and constructive handwork, cooperative play and the conversation needed to make these forms of activity intelligible. The kindergarten period is therefore an

experience-getting period for the children, and it is through the working out of the knowledge gained from this experience that the foundation is laid for the more formal work in language, writing, reading, and numbers in the grades that follow.

The name "kindergarten" was adopted by its founder, Friedrich Froebel, in Blankenburg, Germany, in 1840, to express two ideas concerning the education of young children—first, that education is the guidance of children's development rather than the imparting of instruction; and, second, that this guidance must be given by an expert. The institution founded on these principles has been adopted in some degree in all parts of the world, but to a greater degree in the United States than in any other country. It became known in the United States mainly through the Centennial Exposition in Philadelphia in 1876, and the establishment of kindergartens in the different cities soon followed.

The first of these were mainly private or charitable, but as they proved their worth they were made a part of the school system. There are at present approximately 1,300 cities in which the kindergarten forms an organic part of the school. All of the 48 States now have laws permitting the use of public funds for kindergarten education, and over 100 normal schools and colleges provide kindergarten training courses.

The kindergarten represents the active type of education as contrasted with the traditional academic type, and in demonstrating the worth of this type for young children it has exercised an appreciable influence upon the work of the primary grades. It is to its influence mainly that the introduction of nature study, constructive handwork, and cooperative games is due. In this and in other respects its work is in harmony with the newer ideals in elementary education.

Pupils who do not have the advantage of a kindergarten usually enter the elementary grades at the age of 6 or 7. After completing 8 years, or 8 grades, they are eligible to enter the high school, in which the course is 4 years. This completes the 12 years of instruction provided in the general public school system of the United States. Another division of the 12 years called the 6-3-3 plan is sometimes adopted. This plan provides for 6 years in elementary grades, 3 years in a junior high school, and 3 years in a senior high school.

The importance of the elementary grades is recognized and in most cities they are carefully cared for by expert supervisors.

Public secondary schools, called high schools, offering a course generally four years in length, except in the junior high school, are also maintained in every State. The high-school course is based on the elementary school course and is open to graduates of elementary schools or others of equivalent preparation.

The high school serves three main purposes. To the great mass of students who frequent it it offers four years of cultural and informational study designed to equip them for more intelligent and resourceful lives as citizens of a democracy. Its second purpose is to prepare students for various higher institutions. In the third place, a number of specialized public high schools fit young people for wage earning in trades and industries. In general, it may be said that the high school has tended more and more to adapt itself to the needs of the local community by introducing studies of a practical and vocational nature and by allowing its students increasing latitude in the choice of courses to be pursued.

The specialized public high schools are called commercial or business high schools, manual training, industrial trades, or

technical high schools. Nearly every large city supports one or more of these special high schools.

Most States maintain normal schools for the training of teachers, or a more or less well-developed State university, or both. The normal schools and certain departments of the State universities articulate with the public high school.

Many normal schools have increased their facilities for training teachers, and have developed strong courses fulfilling the requirements for the bachelor degree. These normals are usually known as State teachers' colleges.

The four-year courses of instruction are intended to give an opportunity to elementary-school teachers for more extensive training and also to train teachers for the secondary schools. So far the four-year courses of study have largely served the second group, primarily because many of the States require teachers in secondary schools to have a baccalaureate degree.

Alongside the public institutions various groups and individuals have founded elementary schools, high schools, academies, normal schools, and colleges. The most extensive system of private schools is that under the control of the Roman Catholic Church. The total enrollment of the Catholic parochial schools is approximately 2,000,000 students (1921). The entire number of Catholic schools is 8,706 with 4,760 professors and 49,505 teachers. Other religious sects have also established institutions to provide education under denominational auspices. Both the religious schools and the private schools under denominational control parallel rather closely the amount and character of the training afforded by the public institutions of the same grade. These nonpublic institutions and systems are allowed perfect freedom of development under the laws of the country.

The foreign observer, noting chiefly the dissimilarities of the State systems, is at first inclined to think that a hopeless confusion of standards and organization must characterize American education. But the differences are after all superficial rather than fundamental. The same general types of institutions are to be found in every State, whether they all belong officially to the State system or not. Their interrelations are also essentially the same. There are still certain inequalities of educational standards, especially among higher institutions; but these are not so great nor so widespread as is often believed.

STANDARDS.

The State educational systems have grown up independently of one another. If one takes account of the provisions for education made by a few of the colonial governments before the founding of the United States, the dates of establishment of the 49 systems of education have covered a period of something like two centuries and a half. In that time the social philosophy of the Nation has changed. The common conception of the part the State should play in fostering and controlling education has changed with it. According to a widely prevailing theory all grades of education, from the kindergarten to the university, should be supported and managed by the State or local government.

Whether American education ever will achieve complete uniformity in standards and methods of management is open to doubt. Uniformity is contrary to the genius of the Nation. The Americans are an individualistic people. Their educational systems and institutions have reflected this quality. These have maintained the right to expand as they chose and to adapt their courses to local needs, free from hampering restrictions. Their freedom is, in fact, one of the sources of their strength.

Nevertheless, it may safely be said that there is now a national consensus of opinion as to what the standards of admission to and graduation from the principal types of institutions should be, that the standards agreed upon coincide, in the main, with those in force in the corresponding institutions of other leading nations, and that they are already maintained by the best institutions of the United States. Indeed, students from abroad will find in those educational centers to which they will probably be attracted unsurpassed facilities for advanced academic and professional training.

EVOLUTION OF THE UNIVERSITY.

THE COLLEGE.

An explanation of the prevailing organization of higher education in the United States properly begins with a description of the American college, an institution which has no exact counterpart in any other country.

Historically, the college is the oldest of American institutions. The first one, Harvard College, was founded in 1636 by the early English settlers in Massachusetts. Cambridge and Oxford furnished its prototypes. Following the example of these institutions, Harvard College was designed to give training in the liberal arts, principally Latin, Greek, philosophy, and mathematics. Most of its earlier graduates entered the Christian ministry. In fact, to supply properly trained young men for this profession was one of the chief objects sought in the foundation of Harvard and of the other colleges established during the first century of colonial life in the United States. Gradually, however, the purpose and character of the college changed. The more elementary stages of the subjects taught were given over to lower schools. New subjects were

added to the curriculum. The college lost its theological bent, without becoming a training school for other professions. It still offered courses in the liberal arts, leavened more and more by the introduction of the sciences, and bestowed upon those who completed these courses the degree of A. B.

Three very significant changes in the relation of the college to the scheme of higher education occurred during the nineteenth century. The first of these was the founding of the professional schools of theology, law, and medicine. Although students were, and to some extent still are, admitted to these schools without a previous college education, the tendency has been constantly growing to demand a college degree or at least a period of collegiate study as a prerequisite for entrance. The college has thus become, in certain measure, a preparatory school for those who contemplate a course of professional training.

The second change to which reference has been made was the development within the college of departments of pure and applied science. By the middle of the nineteenth century the degree of B. S., granted for work done largely in the sciences, began to occupy a position of parity with the older degree of A. B. Gradually also these courses in science ramified further into courses in engineering. The engineering schools or divisions thus became coordinate parts of many colleges of liberal arts.

The third and most momentous change in the status of the college was brought about by the establishment in connection with certain colleges of graduate schools on the model of the faculties of philosophy of German universities. The graduate schools have grown up principally in the last 45 years; indeed, the movement received its first strong impetus with the found-

ing of Johns Hopkins University, incorporated in 1867 and opened for instruction in 1876. The graduate schools offer to college graduates courses leading to the degrees of A. M. and Ph. D. and degrees of corresponding grade in the technical branches. They provide opportunities for advanced study in the arts and sciences and for research similar to those provided by the leading European universities.

From the origin of colleges until the foundation of the graduate schools the college curriculum, aside from the development of separate courses in science and engineering, had undergone but slight changes. A few new subjects had been added to it from time to time. Options between certain studies, as, for instance, between a modern and an ancient language or between two elementary sciences, were slowly introduced. In general, however, the college program of studies was fixed and definite, centering about a core of Latin, Greek, and mathematics. With the growth of the graduate school and the changed social and educational ideals has come the introduction of many new branches of study. Columbia University, for example, now offers to candidates for the bachelor's degree instruction in 45 different subjects. Its offerings are almost paralleled by a number of other institutions.

The prescribed course of study for the bachelor's degree has been broken down, and there is now a general tendency to confine required work to but two or three subjects and to allow the student much freedom of choice with respect to the rest of his program; or to offer various groups of studies organized to correlate with a single central subject and to permit the student to choose one of these groups.

The college is the nucleus from which all higher institutions of learning have sprung. Before the nineteenth century

there were no universities in the modern sense of the word. With the rise of professional schools of theology, law, and medicine, most of which were outgrowths of colleges already established, American institutions began to approach university organization. The name "university" came also into common use to designate an institution composed of a college and one or more professional schools each under the control of a separate faculty.

Schools of dentistry, of various branches of engineering, of agriculture, of veterinary medicine, etc., are now frequently included in a single university. The University of California, for instance, has 19 such schools or divisions; the University of Chicago, 10; the University of Illinois, 13; the University of Michigan, 8. As each new profession develops, a special division designed to give the training requisite for it is added to the university. In this manner, schools or colleges of commerce, of business administration, of domestic science, of ceramics, and of journalism have recently been established at a number of the larger universities. The process will undoubtedly continue with the further multiplication of the professions.

ORGANIZATION OF THE TYPICAL UNIVERSITY.

THE COLLEGE OF ARTS AND SCIENCES.

The core of every university, except one; is the college, variously called the college of arts and sciences, the college of letters, the college of liberal arts, etc. Whatever its name, its scope and character are everywhere approximately the same. It offers to graduates of secondary schools a four-year course of study, leading usually to the degree of bachelor of arts or bachelor of science, or some other baccalaureate degree. Gen-

erally the work is in part prescribed according to one of two methods. Certain subjects, such as English, one or more modern languages, Latin, a science, history, and mathematics, are required of all students; or the courses are arranged in groups centering about a single subject, and each student may choose the group which best suits his individual tastes and purposes. In either case, a considerable portion of his course is elective; i. e., he may select at will from the subjects offered by the college enough to make up the number of courses required for graduation.

Collegiate instruction is carried on by means of lectures, recitations, discussions, laboratory practice, and various kinds of written exercises. In the work of the first two years and in the elementary courses in all subjects it has a tendency to be somewhat formal. The instructors assign definite tasks at each meeting of the class: A certain portion of the subject is to be mastered, a prescribed laboratory experiment is to be performed, a theme written on a specified subject, or a fixed number of pages read. At a subsequent meeting students are tested on the assignment. In the later years of the course there is less formal prescription, and the student is thrown as far as possible on his own resources. His knowledge is tested by periodic examinations.

Because of the long period devoted to elementary and secondary training American college students are generally older than students of other countries who have reached the same stage of academic advancement. The average age of entrance to American colleges is between 18 and 19 years, the average age of graduation between 22 and 23. A few colleges, however, allow students to complete the course in three years by taking extra work.

THE COLLEGE OR SCHOOL OF ENGINEERING.

Coordinate with the college of arts and sciences is the school or college of applied science or engineering. . This offers to graduates of secondary schools a four-year course leading to the degree of B. S. in some division of engineering, e. g., civil, mechanical, mining, metallurgical, electrical, hydraulic, architectural, chemical, and sanitary. engineering. In some institutions work in these various branches is organized in separate schools, e. g., school of mining engineering, school of civil engineering. The course of study for the first year is frequently uniform for students in all branches of engineering; indeed, the present' tendency is toward a still greater measure of uniformity in the early years, followed by specialization in the last year or the last two years.

The school or college of engineering is, in the scheme of American education, an undergraduate division coordinate with the college of liberal arts, admitting students with the same preparation and giving its graduates the bachelor's degree. It is, nevertheless, in spirit and tendency a professional school, fitting young men for the immediate practice of their professions as a means of livelihood. This fact affects the college of engineering in two ways. In the first place, its efficiency as a training school is constantly tested by the success of its graduates in actual professional work. It suffers the consequences without delay if its standards are not kept high. The college of liberal arts, whose purpose is to give general culture, is subjected to no such test.

Secondly, and as a result of its professional obligations, the work of the engineering school is, for the most part, more concrete and practical than that of the college of liberal arts. Not only in the extensive well-equipped laboratories and machine

shops of the university itself, but in shops and factories of industrial organizations and in the field, the engineer in training is given an opportunity to perform those operations by which he may later earn his living.

Recently a tendency to lengthen the period of preparation for the profession of engineering has manifested itself. Several leading universities now offer five and six year courses in the various engineering branches. Five-year courses, which are the commoner, include either a considerable amount of work in the college of arts and sciences designed to broaden the student's cultural training or a more extended specialization in the branch of engineering which the student has chosen. The degrees of E. E., M. E., C. E., A. E., and Arch, are generally awarded at the end of these more highly specialized courses. Such degrees rank higher than the degree of B. S.

Postgraduate work leading to the degrees of M. S., Ph. D., and Sc. D. in the engineering sciences is now given also at several of the foremost universities.

THE COLLEGE OR SCHOOL OF AGRICULTURE.

In 1862 the United States Congress, under the Morrill Act, made to each State grants of public lands, the proceeds from the sale of which were to form a fund for the maintenance of colleges of agriculture and the mechanic arts. Later acts provided for annual appropriations by the Federal Government for the support of these institutions and for the promotion of agricultural research and demonstration. In the 57 years since the passage of the original act these so-called land-grant colleges have become among the most important agencies for training in the technical professions. In a number of States the

land grant made possible the foundation of a State university, and the State universities of 20 States are now legally designated land-grant colleges.

The system of agricultural education in the United States has grown to be very comprehensive and exceedingly complex. Every State maintains a college of agriculture and mechanic arts, in some cases in connection with the State university, in other cases as independent institutions. All of these institutions maintain various specialized four-year curricula leading to the bachelor's degree in agriculture. The most common curricula are in fields of agronomy, horticulture, animal husbandry, dairy husbandry, agricultural engineering, and agricultural education. Practically every institution also offers the master's degree and many the doctor's degree in agriculture or agricultural education.

The influence of these colleges is extended to the general public through the extension service maintained cooperatively by the college, the United States Department of Agriculture, and the county. Through the extension workers the message of the agricultural college, experiment stations, and the United States Department of Agriculture is carried directly to the farmers and to their children, who may or may not be enrolled in the public elementary or secondary schools.

Agriculture in the secondary schools is predominantly of the vocational type, administered under the Smith-Hughes Act as a cooperative program between the Federal Board for Vocational Education and the State board for vocational education.

The typical secondary school program involves four years of instruction in vocational agriculture. The usual organization of the curriculum provides for three units (the unit is a recitation period of 45 minutes daily for a period of 26 weeks) of mathematics, three units of social science, three units of

science, four units of vocational agriculture, and four units of English. A typical course in vocational agriculture provides one unit of farm crops, one unit of farm animals, one-half unit of horticulture, one-half unit of dairying, one-half unit of farm management, and one-half unit of farm mechanics.

In actual practice the tendency is to break away from subject organization and to organize teaching about individual farm enterprises as the unit, making the jobs in actual carrying out of the enterprise the basis of study. Under such organization the development of the home project becomes the guiding factor in instruction, and such course units as swine production, poultry production, corn production, or cotton production displace farm crops and animal husbandry as course units. Farm shop-work, farm management, and marketing are taught in relation to a particular enterprise.

Every State has accepted the provisions of the Smith-Hughes Act, and Smith-Hughes departments of vocational agriculture are common in high schools, both rural and urban, of the country.

In the elementary schools agriculture is not so well organized, though required by law in 17 States and prescribed in the State course of study in 11 other States. Agriculture is further taught in local school systems in sections of practically every State in the Union.

A few States have rather well-developed programs of nature-study agriculture throughout the eight elementary school grades. The majority of States, however, where agriculture is taught in the elementary schools have introduced the subject in the seventh and eighth grades only.

The tendency in method is to carry the home-project method down to the elementary school and to develop the

course through selected “junior” projects. The prevocational aim, rather than the vocational, is dominant.

THE COLLEGE OR SCHOOL OF VETERINARY MEDICINE.

Several prominent universities and colleges of agriculture and mechanic arts now maintain schools of veterinary medicine, which provide instruction in the causes and treatment of animal diseases and in the principles of sanitary science as applied to live stock. The large proportion of the Nation’s wealth invested in live stock, the dependence of agriculture upon it, and the influence of certain animal diseases, notably tuberculosis, upon the health of the community give special importance to the profession of veterinary medicine.

The typical college of veterinary medicine offers to graduates of a secondary school a three-year course leading to the degree of D. V. M. or V. M. D. The course itself is closely prescribed. It combines instruction in the fundamental medical sciences—chemistry, anatomy, and physiology—with such special branches as animal pathology, surgery, veterinary and medicine. Clinical instruction is given in the veterinary hospitals connected with the school. There is generally provision also for graduate work in special branches of veterinary science.

THE COLLEGE OR SCHOOL OF COMMERCE.

Among the more recent additions to American universities are the schools or colleges of commerce or business administration. The typical college of commerce offers to graduates of secondary schools a four-year course leading to the degree of B. S. or A. B. The first part of the course is largely devoted to such fundamental subjects as mathematics, English, natural sciences, modern foreign languages, history, and economics.

These are followed in the last two years by the broader technical subjects designed to give general preparation for business life, such as various phases of business administration, commercial law, and advanced economics.

THE COLLEGE OR SCHOOL OF JOURNALISM.

Schools of journalism are also among the newer developments at several universities. These offer to graduates of secondary schools a four-year course leading to the bachelor's degree (A. B., B. Litt., B. J.). The foundation of the work in the schools of journalism is largely composed of courses in the social sciences and English, which are designed to familiarize the student with present economic and social conditions and to develop his power of written expression. These courses cover about two years and are followed by technical instruction in the methods of modern journalism. This includes actual practice in reporting, interviewing, and newspaper editing. The aim of all these schools is voiced in the official announcement of the school of journalism of Columbia University. It is "to make better journalists, who will make better newspapers, which will better serve the public."

THE COLLEGE OR SCHOOL OF PHARMACY.

The schools of pharmacy, which are now included in most of the larger universities, usually offer courses leading to three different degrees—Ph. G., Ph. C., and B. S. in Pharmacy or Phar. B. The entrance requirements are substantially the same as for those schools and departments already described. The degree of Ph. G. (graduate in pharmacy) is conferred at the end of a two-year course, consisting chiefly of instruction in botany, analytical chemistry, and pharmacy. Several States

demand as a prerequisite for a license to practice the profession of pharmacist either a certain amount of practical experience in a place where drugs and medicines are compounded or dispensed or a course of instruction in a school of pharmacy. Courses in pharmacy are adjusted to meet these requirements.

The course leading to the degree of Ph. C. (pharmaceutical chemist) is three years in length. It is "designed more especially for those who wish to enter the commercial field of pharmaceutical chemistry or food and drug analysis." More advanced instruction in pharmacy is given, together with such general studies as sciences and foreign languages.

The four-year course leading to the degree of B. S. in Pharmacy includes a combination of cultural studies and the advanced work in pharmacy taken by the candidates for the degree of Ph. C.

Opportunities for specialized graduate study and research in some department of pharmacy are frequently offered in the graduate schools of leading universities.

THE COLLEGE OR SCHOOL OF DENTISTRY.

The organization of 29 American universities and colleges now includes a school of dentistry, which offers to graduates of secondary schools a three-year course leading to the degree of D. D. S. or D. M. D. The curriculum provides first for a study of those elementary scientific subjects which form the groundwork of training in medicine: Anatomy, chemistry, bacteriology, physiology, and pathology. Instruction accompanied by extended clinical and laboratory practice in operative and prosthetic dentistry follows. The clinics of the best American dental schools furnish each student ample opportunity for practice in all branches of dentistry.

Although dentistry is a separate profession, and although training for it is quite fittingly carried on in a special professional school, nevertheless there is growing recognition of the fact that it is a branch of medical science. There has arisen in consequence a tendency to emphasize the affiliation of dental and medical education. Seven dental schools are now departments of medical schools. One State has already passed a law requiring that hereafter all practitioners of dentistry shall hold a medical degree. While there seems to be no immediate prospect that other States will take the same radical action, there is a very decided trend of opinion in the direction of lengthening the course in dentistry from three to four years. A number of dental schools are meeting this demand for further scientific training by offering postgraduate courses open to holders of degrees in dentistry and to others who have had practical experience.

It is appropriate to call attention to the excellence of American dental schools and clinics. The conspicuous success of American practitioners of dentistry is without doubt largely due to the splendid facilities for training in the profession that have been developed in the United States.

THE COLLEGE OR SCHOOL OF EDUCATION.

Among the important contributions which the United States has made to professional training may be counted the creation of special schools of education. Normal schools organized principally for the training of elementary-school teachers have existed for a long time. They owe their origin to European experiments in the same direction. But the schools of education whose aim is to prepare prospective high-school teachers, school principals, supervisors, and superintendents of

city school systems are relatively new and distinctly American institutions. Their establishment has come about because of the evident need of trained teachers and directing officers to carry on the work of public secondary education and the administration of school systems. With a few exceptions they have attained most vigorous growth in the States where the State university occupies a position of educational leadership.

The typical school of education offers to graduates of secondary schools a four-year course leading to the bachelor's degree. The course usually combines three distinct elements: General training in the arts and sciences, specialization in one or two subjects which the candidate proposes to teach later, and instruction in the theory and practice of teaching.

Among the strictly professional subjects emphasis is laid on educational psychology, the history and philosophy of education, and the organization and management of schools. The best-equipped schools of education now provide opportunities also for students to observe skillful teaching and for practice teaching under supervision.

There is a marked tendency toward extending the scholastic range of schools of education, and consequently increasing the amount of professional training demanded of secondary-school teachers. The addition of a fifth year to the course in education is a manifestation of this tendency. At the completion of the longer course, the degree of A. M. is conferred. In this way the school of education is gradually merging into the graduate school. It will probably not be long before the general cultural and informational subjects will be relegated to the college of letters, and the school of education will advance to the rank of a graduate school offering purely professional instruction to college graduates. Graduate courses

in education leading to the degree of doctor of philosophy are now commonly offered by the graduate departments of the best universities.

THE COLLEGE OR SCHOOL OF LAW.

English and American legal systems differ radically from those of most other nations. Because of this fact foreign students will probably not be attracted in any large numbers to American law schools for the purpose of fitting themselves for the immediate practice of their profession at home. Nevertheless there is a growing conviction among lawyers and jurists that a knowledge both of English common law and the code systems of continental Europe and Latin America is very valuable to the legal practitioner of any country. The spirit and motives of a country are reflected in its laws. An acquaintance with the latter tends to broaden international sympathies. It is for this reason, as well as to complete the account of the component parts of the American university, that the law school is mentioned here.

THE SCHOOL OR COLLEGE OF MEDICINE.

No other professional schools connected with American universities have made such noteworthy and gratifying advances within recent years as the schools of medicine. There have been three conspicuous lines of progress: The growth of laboratory equipment through liberal State appropriations and private benefactions, the increase in hospital facilities, and the raising of standards of admission. As a result of these developments the best medical schools of the United States are now unsurpassed in physical equipment and demand as thorough preparation for entrance and graduation as do those of other leading nations.

The high standards recommended by the American Medical Association and put into practice by the more progressive schools of medicine have been rendered permanent by the subsequent action of numerous State licensing boards which fix the educational preparation to be required of practitioners of medicine in their respective States. Medical education has therefore attained a status consonant with the antiquity and importance of the profession.

As a division of the university the medical school now ranks with the schools devoted to training for the other traditional callings.

The typical medical schools of the best universities require for entrance a four-year high-school course, including two years of Latin; and two years of college work, which must include at least a year each of physics, chemistry, and biology, and sufficient German and French to insure a reading knowledge of those languages. To such students the medical school offers a four-year course, consisting of laboratory, didactic, and clinical instruction in the theory and practice of medicine, and leading to the degree of M. D. Associated with all high-grade medical schools are hospitals, in which medical students study at first hand diseases and their treatment and in which they serve as internes.

Included in the "ideal standard" set up by the American Medical Association is the recommendation that a fifth year be added to the medical course, in which the student shall act as interne in a hospital. This recommendation has already been adopted by several of the leading medical schools of the country. Others, while not including the year's internship in the medical course, provide ample facilities for their graduates to secure this privilege.

A recent development in medical education has been the establishment of postgraduate courses in medicine devoted chiefly to advanced study and research. As yet there has been no general organization of these courses into curricula leading to higher medical degrees. Attention should be called, however, to one higher medical degree which has already gained recognition. This is doctor of public health. The degree is conferred upon holders of the degree of M. D. after one or two years of postgraduate study devoted to problems of sanitation and community diseases and to special research.

Most large universities now provide for a six or seven year course, combining work in the department of arts and sciences with the course in medicine and leading to the two degrees A. B. (or B. S) and M. D.

Students from tropical countries will be especially interested in the very excellent courses in tropical medicine offered by the medical schools of the Tulane University of Louisiana and Harvard University.

THE GRADUATE SCHOOL.

The capstone of the American university is the graduate school of arts and sciences. Originally planned to correspond to the faculty of philosophy of the German university and offering instruction merely in pure science and the humanities, the graduate school has far outgrown the first conception of its function. The graduate school of the large American university now usually organizes into one administrative unit all the advanced teaching and all the facilities for original research provided by the university in any of its departments. Under this arrangement holders of the bachelor's degree who desire to specialize, for example, in engineering, in medical science,

or in pharmacy, as well as in pure science and the humanities, enter the graduate school.

The American graduate school has a double aim. Chronologically, the first is to teach to properly prepared students the most advanced and specialized phases of the subjects offered by the university. More important, however, if second in point of development, is its obligation to increase the sum of human knowledge. Research is the lifeblood of the graduate school. The graduate school is differentiated from the ordinary professional schools by being devoted to the principle of research. As a rule, schools of medicine and engineering, for instance, aim primarily to pass on to the student a body of knowledge which is already organized and of accepted professional value, and so to train practitioners of already standardized professions. The graduate school places first emphasis upon the advancement of learning. Its teachers are expected to be actively engaged in extending the boundaries of knowledge and to direct students in the conduct of investigations. The vitality of the graduate school is properly judged by the amount and quality of its creative output.

Most graduate schools have been established within 25 years. National appreciation of the value of research, which has made this last expansion of the university possible, is hardly 15 years old; yet the enrollment in graduate courses in the United States has increased from 4,340 in 1893 to 7,911 in 1903, to 14,406 in 1918, and to 15,612 in 1920.

It is therefore safe to say that the students from abroad will now find in the graduate schools of the foremost American universities opportunities for special training and for research broadly equivalent to those provided by the faculties of philosophy and the scientific institutes of the universities of Europe.

Such students will naturally seek those institutions which offer the best facilities and which possess the most eminent teachers in the particular lines in which they are interested.

A subordinate function of the graduate school has been the training of teachers for higher institutions. Indeed, it is now customary for appointing authorities to demand of candidates for higher teaching positions a more or less extended period of graduate study.

The typical American graduate school admits as students only those who hold a bachelor's degree from a college or university of recognized standing. It confers two orders of degrees, the master's degrees and the doctor's degrees.

To secure a master's degree one year of postgraduate study devoted as a rule to not more than three subjects, one of which, called the major subject, receives the bulk of the student's attention, is usually required. Many universities also demand a thesis embodying the results of a small piece of research.

The minimum period of postgraduate study for a doctor's degree is usually three years. The time spent and the number of courses taken, however, are of secondary importance. To receive the degree it is necessary that the candidate not only demonstrate in examination his mastery of his special field but also by means of a dissertation or thesis make an original contribution to knowledge in that field. Most universities require the dissertation to be published. The examinations are both written and oral. In fact, the requirements for the American degree of doctor of philosophy parallel closely those proposed by the German universities for the same degree. But American universities have recently attempted to demand of candidates for the degree a somewhat longer scholarly preparation and a more substantial thesis.

INDEPENDENT TECHNICAL AND PROFESSIONAL SCHOOLS.

In addition to the great universities giving instruction in practically all the departments of knowledge and including in their organization all types of higher professional schools, there are numerous other institutions of less complex organization. In fact, as has already been stated, the university is a comparatively recent creation. Many of these other schools, colleges, and institutes antedate the origin of universities. It is also true that many kinds of professional training can be quite as successfully and often as economically carried on in separate institutions established for that purpose alone. Some of the foremost training schools for engineering, medicine, dentistry, law, theology, and other callings are independent institutions not connected with any university.

The Massachusetts Institute of Technology, for example, offers courses in the various branches of engineering and applied science. Rensselaer Polytechnic Institute is devoted chiefly to civil, electrical, mechanical, and chemical engineering. Stevens Institute of Technology gives only courses in mechanical engineering. The College of Physicians and Surgeons in Baltimore and Jefferson Medical School of Philadelphia are not affiliated with universities. Among theological schools the majority are independent institutions, as, for example, the Newton Theological Institution (Baptist), the Theological Seminary of the General Synod of the Evangelical Lutheran Church in the United States, and nearly all Catholic theological seminaries. Several States have established from the proceeds of the land grants special colleges of agriculture and mechanic arts separate from the State university, as, for example, the Kansas State Agricultural College, the Iowa State College of Agriculture and Mechanic Arts.

In range and content the courses given at these independent institutions are similar to those of the corresponding professional divisions of the large universities. Some of the schools of engineering, indeed, have become famous throughout the world for the high excellence of the work done in one or more departments.

INDEPENDENT AND DENOMINATIONAL COLLEGES.

Numerically the most important of the institutions not included in the organization of some university are the independent colleges offering courses in arts and sciences, the majority of which confer the bachelor's . degree. They present a wide variety of types and almost as great a variety of scholastic standards; nevertheless, certain generalizations can be made concerning them.

As a rule the independent colleges give instruction in a more limited range of subjects than are open to candidates for bachelor's degrees at the larger universities. For instance, as against the 45 branches which the Harvard undergraduate may select, Carleton College offers work in the following: Astronomy, Bible, biology, chemistry, economics, education, English, German, geology, Greek, Hebrew, history, Latin, mathematics, music, philosophy, physical education, physics, political science, public speaking, Romance languages, Scandinavian languages, sociology. Williams College in the following: Art, astronomy, biology, chemistry, economics, English, geology, German, government and political science, Greek, history, Latin, mathematics, military art, philosophy, physics, physiology and hygiene, public speaking, religion, Romance languages. Reed College in the following: Biology, chemistry, classical languages, economics, education, English, Germanic

languages, Greek, history and political science, Latin, mathematics, philosophy, physics, psychology, Romance languages, sociology.

The curricula of these institutions, then, are more nearly comparable to those of the French lycée and the German gymnasium and Oberrealschule, most of the studies included being sanctioned by age-long tradition as appropriate training for the first degree in arts.

The test of the excellence of a college, however, is not the multiplicity of its offerings, but the quality of work done. The stronger colleges, perhaps a quarter of the whole number, enforce a standard of accomplishment for the bachelor's degree every whit as high as that maintained by the best universities. The universities themselves readily concede this. They accept for advanced study the holders of degrees from these colleges on the same terms as their own graduates. The foreign student need have no hesitation, therefore, in choosing an independent college rather than the collegiate division of some larger university as the institution in which to secure the A. B. or B. S., provided he assures himself in advance that the degrees of the college of his choice are valid educational currency. Among the colleges recognized by the larger universities are, on the one hand, some which offer instruction only in the rather circumscribed group of studies which have for generations formed the basis of the A. B. course, and, on the other, institutions which more nearly approximate the scope of university undergraduate departments.

Probably the most striking difference between the independent colleges and the universities is the difference in size, which also involves a profound difference in the institutional life. The independent college is commonly known as the small

college, for the reason that its students usually number from 100 to 500. Universities of the type described frequently enroll from 1,000 to 5,000 students. The foreign observer may be led to wonder why it is that small colleges persist and multiply in a country so liberally provided with large institutions, many of them State supported, giving the same opportunities for general education. The principal reasons are the following:

The prime mover in the foundation of most American colleges has been some religious denomination. The college so founded draws chiefly children of members of its denomination, and in a peculiar sense may be said to serve the denomination, although communicants of other sects are, as a rule, freely admitted. Thus there are Methodist colleges, Presbyterian colleges, Catholic colleges, Lutheran colleges, and many more. Those who believe that higher education must not only be imbued with the spirit of religion, but definitely correlated with a particular religious doctrine, and interpreted in terms of that doctrine, generally patronize a college of the desired denominational affiliation. Many denominations have met and encouraged this tendency by establishing colleges all over the land, wherever the denominational membership was large enough to give promise of support. It is no unusual thing to find several colleges in the same city or located within a few miles of one another in country districts each serving a different religious constituency.

The typical denominational college emphasizes the religious life and makes a special effort to create a religious atmosphere. More or less religious instruction generally appears in the curriculum. Denominational religious services are held daily, and attendance is usually required. Religious associations often occupy a prominent place among the social organizations

which claim part of the student's leisure hours. It will be seen that the denominational college makes a very distinctive contribution to American higher education. The State university, owing to the nature of its support, must be nonsectarian. The large independent university, no matter under what auspices it was founded, can hardly have such complete denominational polarization. Foreign students of strong denominational attachments may well bear these facts in mind when selecting a college.

Neither in the United States nor in other countries is there consensus of opinion as to the extent to which sectarian influences and sectarian religious teaching should enter into higher education. In the last two decades the tendency has undoubtedly been toward the divorce of higher education and sectarianism, a tendency stimulated by the evident success of State universities. Consequently the sectarian affiliations of many colleges which started as strictly denominational institutions are all the time growing weaker. Some have even renounced their denominational connections and have frankly come forth as nonsectarian institutions. On the other hand, certain denominational colleges have, perhaps by way of protest, reaffirmed still more vigorously their denominational character. Several denominations also have been especially active in founding new institutions.

The college is coming to be regarded more and more as a local institution. It serves a larger area than does a public high school, but still the radius from which it draws its students is comparatively short, and is becoming annually shorter. This is a second reason for the large number of independent colleges. The number of persons securing college training in proportion to the total population has recently increased enormously.

A third reason for the persistent vitality of the independent college is the extraordinary influence it has had on the life and ideals of the Nation. The American college graduate generally cherishes the memory of his "alma mater" with a loyalty only second in intensity to that which he bestows on his family and friends. He is on all occasions her devoted and partisan champion. If he is an alumnus of a small college he is apt to attribute to its influence and training whatever measure of success he may have achieved. This generous habit, coupled with the fact that the independent colleges actually have furnished the country with a surprisingly—one might almost say a disproportionately—large number of the national leaders in politics, in the professions, and in commerce, has served to intrench the small college in the regard of the people. In many quarters it is believed to be the peculiar repository of healthy democracy, lofty ideals, and sound intellectual training. In consequence, it enjoys a prestige quite equal to that of the larger universities. Apparently it will long continue to do so.

HIGHER EDUCATION OF WOMEN.

Substantially all of the facilities for advanced and professional training which have been described above are available for women. Women seldom select certain professions, such as agriculture and engineering, from the nature of the demands which these callings make upon physical strength. On the other hand, increasingly large numbers of women are engaging in law, medicine, dentistry, teaching, and pursuing advanced studies in the arts and sciences.

The higher education of women is carried on both in institutions for the female sex alone and in colleges and universities where the sexes are educated together. In the East coeduca-

tion, as it is called, has not found general favor. The older colleges and the college departments of universities in this section of the country are usually exclusively for men. Beside them numerous colleges for women have been established, offering courses leading to the bachelor's and in some cases, even to the master's and doctor's degrees. In general, however, the older universities like Harvard, Yale, and the University of Pennsylvania, while excluding women from the undergraduate departments, admit them freely to graduate schools.

In the Middle West and West coeducation is the accepted educational policy. Nearly all colleges and universities are open in all departments to women on the same terms as to men. In particular, the State universities have been the most prominent exponents of this policy and have done much to give it national currency. Special supervision of the boarding and rooming accommodations of the women and a certain amount of chaperonage in social affairs are enforced. Otherwise perfectly free association between the sexes prevails. The policy of coeducation has proved almost universally successful and is now indorsed by the great majority of American educators.

The extent to which women have taken advantage of the higher educational opportunities is indicated by the following figures: Total enrollment of women in women's colleges, 1893, 12,300; 1903, 16,744; 1913, 19,142; 1916, 20,638; 1918, 25,495; 1920, 31,769. Total enrollment of women in coeducational institutions: 1893, 13,058; 1903, 26,990; 1913, 55,564; 1916, 69,543; 1918, 91,941; 1920, 96,908.

In addition to the coeducational and the separate method of the education of women has also grown up a method which has been denominated the coordinate system. It represents the affiliation of a college for women with a college for men. Examples

of this type of management are Barnard College, incorporated in the educational system of Columbia University; Radcliffe College, affiliated with Harvard; H. Sophie Newcomb Memorial College, affiliated with Tulane University of Louisiana; College for Women, affiliated with Western Reserve University; William Smith College, affiliated with Hobart College; Westhampton College, affiliated with Richmond University; Jackson College, affiliated with Tufts College; and the Women's College, Brown University. The academic relations of these colleges with the universities to which they are attached differ somewhat. Under one mode of affiliation the teaching in the woman's college is done by the faculty of the affiliated university. This plan prevails at Radcliffe. Another method is to provide an entirely separate faculty for the woman's college. This is the method of Western Reserve University.

THE SUMMER SCHOOL.

The academic year is, as a rule, approximately nine months long. It usually extends from the middle of September to the middle of June. Many universities and colleges now either maintain a special summer school during about six weeks of the vacation period or carry on a summer session lasting throughout the summer months. Summer schools, which generally are confined to the undergraduate and graduate departments of arts and sciences, serve two main purposes. They enable teachers in elementary and secondary schools to pursue special courses of study for professional advancement. They offer opportunities to college or university students who have failed to complete all the work required in the regular term to make good these deficiencies. In addition, summer schools are to some extent patronized by other classes of persons. While

in the majority of summer schools the courses are planned with special reference to the needs of teachers, nevertheless the student whose interests are not pedagogical generally finds summer courses in most of the subjects ordinarily offered by the institution during the regular winter terms. The more advanced courses usually are not given in summer.

Summer schools present special attractions to the foreign student. If he happens to arrive in the United States in June or early July, he may profitably use his time and prepare himself for his later regular matriculation by enrolling in a good summer school. Opportunities for the study of English are commonly offered. After he has begun his collegiate or professional course he may shorten the period of study and also learn something of different universities by frequenting summer schools. It is possible to complete from a sixth to a quarter of a year's work during a summer course.

SPECIAL RESEARCH FOUNDATIONS.

American higher education has recently been reenforced by a group of special foundations established to further scientific and sociological research. Most of these owe their origin to the generosity of a single individual of large means. While not educational institutions, these foundations have made possible numerous investigations which have not only affected educational thought and practice but have also raised the prestige of science throughout the United States. They should therefore be reckoned among the scientific resources of the Nation. Prominent among these institutions are the Russell Sage Foundation, the Carnegie Institution, the General Education Board, the Carnegie Foundation for the Advancement of Teaching, and the Rockefeller Institute for Medical Research.

COMPARISON OF AMERICAN AND FOREIGN INSTITUTIONS.

It will probably help the foreign student to adjust himself to educational conditions in the United States if his attention is called to the correspondences and differences between the principal types of American schools, on the one hand, and familiar European and Latin-American institutions on the other.

The most marked differences appear in the time allotted to secondary education and the ages at which it is begun in the countries mentioned. In fact, the position accorded the secondary school may be said to determine to a large extent the character of each country's educational system. In France and Germany the elementary and secondary school systems are entirely separate. They run along constantly diverging lines. It is only possible to transfer from the elementary to the secondary school at one or two points, and after the twelfth year not at all. To a certain extent the same conditions have prevailed in England also, although they have lately been somewhat modified. In all of these countries the elementary school has generally been regarded not as a place of preparation for the secondary school, but as furnishing a distinct and measurably complete scheme of education designed especially for the children of the laboring and artisan classes. The secondary school, on the other hand, is intended for children of prosperous parents who plan to fit themselves for the professions or to enter the civil service. The original and fundamental distinction between the two systems is a social one.

The figure of "the educational ladder" best expresses the popular conception of education in the United States. The schools must be so organized that the child of the hum-

blest parents may climb up in them and through them to the highest educational advantages. Anything else is felt to be undemocratic. The secondary school is therefore based on the elementary school and the college on the secondary school.

The other outstanding peculiarity in the United States plan of educational organization, namely, the inclusion of the college as an extra link between the secondary school and the university, has been alluded to in the brief statement of the historical evolution of the college.

The elementary schools of the United States and of Europe, notwithstanding minor differences, present nearly the same curriculum and aim at imparting approximately the same amount of training. The elementary school of Latin-American countries, like that of the United States and unlike those of Europe, is the regular preparatory institution for the secondary school or liceo. But the division line between the two institutions comes earlier in Latin America, at an age more appropriate for the beginning of secondary education. This, however, naturally reduces the range of the elementary curriculum.

European nations and Latin-American countries are substantially agreed as to the purpose and compass of secondary instruction. The practices of no two countries are alike in all details, but in general the secondary course is made up of languages, ancient and modern; mathematics up to or through calculus; the elements of the natural sciences; history; the literature of the vernacular; the outlines of philosophy and logic. In other words, secondary education is conceived as properly dealing with knowledge which has general use and validity, scientifically arranged and organized to show the casual relations between facts or phenomena. It includes training in orderly and independent methods of study. It aims to sharpen

the esthetic and moral perceptions. Secondary education concerns itself little with the purely empirical; that is more particularly the province of elementary training. It prepares for the philosophical or minutely specialized pursuit of knowledge, which is the field of higher education. The period of general cultural training of the individual properly terminates with the completion of the secondary school course, which is fittingly recognized by the bestowal of the bachelor's degree. The six, eight, or nine years of secondary instruction in the countries mentioned are held to be sufficient for the accomplishment of this general purpose.

The function which is fulfilled in France, Germany, and Latin America by the secondary school is shared in the United States by two institutions—the secondary school and the college. It is generally admitted that the American student who has completed a secondary school course and two years of a general course in arts or sciences at an American college may be ranked with the holder of the baccalaureate of the French lycee or the Abiturientenzeugnis of the German gymnasium. Those professional schools which demand two years of collegiate study for entrance maintain approximately the same standards of entrance, then, as the French and German universities, which are only open to holders of the two certificates just mentioned.

THE FOREIGNER AT AN AMERICAN UNIVERSITY.

It is essential that the foreign student who contemplates studying at an American college or university should first be fairly fluent in the use of English. He should at least know the language well enough to be able to read it and to follow lectures given in it. If he does not have this knowledge when he arrives

in the United States it will probably be best for him to spend several months (three or four should suffice) studying English under competent instruction before attempting to register in a university for either a general or professional course.

Once having mastered the vernacular sufficiently to make his way as a student and to take an intelligent part in the social activities of the university community the foreign student will find himself accepted as in every sense a full-fledged member of the institution. Then it rests with him what his place shall be. If he is agreeable, capable, and adaptable he will suffer no handicaps in his relations with the natives. On the contrary, he will receive a most cordial welcome.

The only national or Federal agency connected with educational interests is—

THE UNITED STATES BUREAU OF EDUCATION.

The purposes of the Bureau of Education, as defined in the act establishing it, are “to collect statistics and facts showing the condition and progress of education in the several States and Territories and to diffuse such information respecting the organization and management of schools and school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems and otherwise promote the cause of education throughout the country.”

The bureau was originally created an independent department by an act of Congress approved March 2, 1867, and continued as such until July 1, 1869, when, according to a provision contained in one of the annual appropriation acts, approved July 20, 1868, it was constituted an office or bureau in the Department of the Interior.

The subject of education is not specifically mentioned in the Constitution of the United States. The Federal Government maintains no national system of public schools, the establishment, maintenance, and control of such schools and school systems being left to the individual States. But from the inception of the Republic the Federal Government has encouraged education in the several States and made provision for schools in its Territories. The necessity of some central agency for the collection and study of educational statistics and data was early seen and appreciated.

As will be noted from the foregoing, the bureau is primarily an institution for educational research and promotion. The act creating it gives it no administrative duties. Such administrative duties as it possesses have been subsequently assigned to it. These include (a) the administration of the educational system, medical relief, and reindeer herds for the natives of Alaska; and (b) duties connected with the administration of the income resulting from the principal obtained by the sale of lands granted under the first Morrill Act (July 2, 1862), for the establishment of colleges of agriculture and the mechanic arts, an amount approximating \$1,009,225, and of the Morrill-Nelson fund, which amounts to \$2,500,000 annually, \$50,000 a year going to each State, Hawaii, and Porto Rico. The bureau is required to see that the annual income from the first fund is at least 5 per cent and that it is expended according to the requirements of the first Morrill Act. It must also audit the expenditure of the \$50,000 granted annually for the maintenance of colleges of agriculture and the mechanic arts.

The bureau has two general types of activities: First, those of a more or less routine character (called stated or continuing activities); and second, the activities of highly trained experts

in various fields of education, known as the technical staff. Of the first there are seven divisions, as follows: Editorial, library, statistics, Alaska, stenographic, mails and files, and messenger service. These are under the general direction of the chief clerk.

The technical staff is organized into four divisions under the direction of the assistant to the commissioner—higher education, rural schools, city schools, and service division. The latter includes physical education and school hygiene, industrial education, home economics, commercial education, educational legislation, and foreign education.

The bureau endeavors (1) to serve as a clearing house for accurate and comprehensive information in respect to all educational agencies and all forms of education in the United States and all foreign countries and to disseminate this information among school officers, teachers, students of education, and all others definitely interested in any form of educational activity; (2) to serve as a clearing house for the best opinions on school organization and administration, courses of study, methods of teaching, etc.; (3) to advise legislatures, school officers, teachers, and others engaged in promoting and directing education; (4) to determine standards of measurement in education and to conduct and direct experiments in education, etc.

The bureau reaches the country through its publications and through the activities of its specialists in the field. It has made a number of valuable surveys of city and State school systems, etc.

For carrying on the work of the bureau, exclusive of the work in Alaska, there are now in the offices in Washington 87 people. Of these approximately one-third are specialists in the various lines of educational research and promotion.

The present Commissioner of Education is Dr. John J. Tigert (June 2, 1921, to date).

