SOME PERTINENT ASPECTS OF HIGHER EDUCATION.*

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As our civilization has advanced, the periods of educational preparation demanded for the various professions have been steadily lengthened. Graduation from high school and from three to six or seven years of collegiate training are now generally required for admission to our health professions. Indeed, among the candidates for degrees here to-day, there are many who have spent a whole decade in high school, in collegiate study and in formal professional training in preparation for their life's career.

While this decade has been one of steady progress for them in their academic and professional education, it has, however, been a period of most extreme economic, industrial and educational changes in this country and in the world as a whole. A consideration of some of these changes, and their influence on higher education, especially as they refer to the professions dealing with the conservation of health, may not be out of order at this time.

Ten years ago, this country was in an era of unprecedented prosperity. As one of the results of the great war, orders in large volume came to us from all over the world. Unheard of industrial expansion followed. It was during these years that unquestioned world leadership in industry and finance passed from Europe to the United States. As a consequence, conservatism and moderation were soon ruled out of court, and uncontrolled optimism became the order of the day. A period of wanton and reckless speculation with "the sky as the limit" followed.

Then suddenly, the country was plunged from the high crest of prosperity and optimism into the deep trough of the most violent crash known in the economic history of the world. Pessimism, despondency and even hopelessness and futility seemed to gain the upper hand in industrial and financial circles. And just now, after a period of careful inventorying, much sober thinking and wide-spread attempts at stabilization, we seem to be slowly emerging into an era of saner living and thinking in which it is hoped that less emphasis will be placed upon the material and temporal things and a greater appreciation developed for the eternal, spiritual values of life.

During the early and middle twenties, American industrial, social, financial and educational methods and policies attracted world-wide attention. They were studied by experts and commissions from all over the world, who came to our shores to gain first-hand knowledge of the secret of our success and prosperity. Among the very first to study our methods, policies, and institutions, intensively and critically, were the Germans. As a defeated nation, with industry and foreign trade wrecked, and burdened with huge debts, they were faced with the great problem of rehabilitation. The impressions and reports of the German experts and commissions appeared, upon their return, in a steady stream of publications ranging from small pamphlets to volumes of impressive size, and were in the main most favorable to us.

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As a result, numerous American books on manufacturing processes and business administration were translated. Many of our methods were soon installed in some of the leading German industrial plants. Also, American products were imported in increasing quantities. This had progressed to such an extent that in February 1926, while in Germany, I was taken by a German engineer from Berlin to Eberswalde in a Willys-Knight car to inspect a new brass and copper rolling mill with a layout and installation patterned after that of one of our great mills at Bridgeport, Connecticut. Moreover, the administration building of this great concern was equipped with typewriters, adding and calculating machines, and other office devices imported from this country.

All this was in striking contrast to the attitude of the leaders and thinkers, and of the Germans as a whole, at the beginning of the twentieth century. In those days, our country was looked upon as being an excellent outlet for goods labeled "Made in Germany," but of little significance in industry, education or world affairs.

The lead taken by the Germans was soon followed by the French, English and others. The expression, the "Americanization of Europe," was soon read and heard on every hand by the traveler abroad. It was shortly followed by the "Americanization of the world." But, alas, our prosperity was not enduring. On account of our preëminent world position the economic crash in this country was felt the world over. Accordingly, other nations are also passing through experiences similar to ours of the past two years. This period has been, and still is, the world over, one of the severest testing of the character not only of individuals, but of nations, as well. We all hope a new and better world may emerge.

With this hasty and quite incomplete survey of the industrial and economic conditions of the past decade before us, let us now briefly consider some of the things that have transpired in the realm of education. For no matter what the economic status of the municipality, commonwealth or nation may be, the training of the youth must go forward. Indeed, this training should be on a progressively higher plane if the younger generation of to-day is adequately to meet the problems of our civilization that is ever becoming more complex.

From the very beginning an intense passion for education has characterized the American people. As soon as they possibly could, the early settlers established schools for the education of the younger children. And only sixteen years after the pilgrims landed at Plymouth, Harvard College, our oldest collegiate institution, was founded. Indeed, during our colonial and expansion periods, schools and colleges followed closely the westward movement of our pathfinders and settlers. This interest in education has constantly increased so that to-day it is greater than ever before.

During the decade just closed, the growth in education in the United States has been most extraordinary, especially at the high school and college levels. In this period the number of pupils in our elementary schools increased by about three million. High school enrollment nearly doubled, so that to-day nearly five million young men and women are studying in our secondary schools. This was to be expected for the facilities for education at this level have been expanding at a rapidly increasing rate since 1890. And, in the field of higher education our colleges and universities have been taxed to the utmost during this ten-year period, for here, too, the enrollment has shown an increase of about 100 per cent.

In the early days of our country, we were chiefly concerned with providing educational facilities at the elementary level, so that the rudiments of education might be made available to all of our children. Of course, high schools and academies, and colleges and universities were established and developed, but the number of our young people availing themselves of the opportunities at these higher educational levels was rather restricted. But about 1890, greater emphasis began to be placed upon the need of high school education for the great mass of our young men and women. New high schools were established at the rate of one a day, and that has continued almost uninterruptedly down to the present time. With rapidly increasing numbers graduating from our secondary schools, the attendance upon our colleges and universities went up by leaps and bounds. Since 1900, there has been an increase of about 50 per cent in the enrollment in our elementary schools, an increase of about 700 per cent in our secondary schools, and one of nearly 600 per cent in our colleges and universities.

To-day, about one in every four of our population is attending some educational institution. We have more students in our high schools and our colleges and universities than all the countries of the rest of the world have in similar institutions. These figures are not only interesting to us but also very impressive to foreign educators.

Thus, in the spring of 1928, for the first time in history, a group of thirty men and women representing all phases of education in Germany spent, with great profit, three months in this country studying the various phases of our educational methods from the kindergarten to the graduate school. And only a few months ago Sir Michael Sadler, Master of University College, Oxford, England, in commenting in England upon the progress of education in this country, pointed out that in the United States about one out of every 120 of our population is a college or university student. In Germany the ratio is only one out of 650, in France one out of 700, and in Great Britain one out of 1000. In fact, in the State of Illinois with a population about one-sixth of that of Great Britain there are twice as many students in its institutions of higher education than in all the institutions of similar character in England, Scotland and Wales.

Moreover, while thirty years ago it was almost imperative that students, desiring advanced academic and professional training, spend some time in foreign study, to-day this is not so necessary because of the great educational advances we have made on the university level. Formerly but few foreign students came to our shores for study, but to-day, as Duggan informs us, more than 10,000 students from other countries are enrolled in our colleges and universities. They come from all parts of Europe, Asia and Latin America. In fact, this group is twice as large as the number of American students now studying abroad.

These very significant facts clearly indicate that our people have a passion for education, and that the training of our youth has long been recognized as a fundamental function, an essential safeguard, and a chief responsibility of a democracy such as ours. Indeed, this passion is greater than ever before. To-day we spend well over three billion dollars annually to provide educational facilities for the somewhat more than thirty million who are enrolled in our various schools and colleges, staffed by a million teachers. The amount thus spent has doubled during the decade we are considering.

While this sum seems to be enormous, it amounts to only twenty-five dollars per capita. Indeed, it is no larger than the amount that is spent annually in this country for life insurance. And recent investigations by the Bureau of Education clearly indicate, that although we place strong emphasis upon education, we spend more than twice as much for the luxuries of life, such as tobacco, confectionery, theatre, jewelry, perfumes and cosmetics; moreover, our annual expenditure for the purchase of new automobiles is much larger than what we pay for education.

In discussing education in the United States the eminent English economist, J. Ellis Barker, in his critical survey entitled, "America's Secret," says: "The United States owe their vast wealth not merely to the great extent of their territory and of the natural resources contained in it, but also, and particularly, to the energy and ability with which the resources of Nature have been exploited by the people. The energy and ability of the American people are very largely due to the practical and thorough education and character training which they have received. Their abilities are rather acquired than inborn." Barker says further: "America's economic success is largely due to the fact that, in the words of the late Mr. Choate, 'Education is the chief industry of the nation.' "

Although the decade, just passed, has been marked by the greatest interest and expansion in educational affairs and facilities in the history of the country, or, for that matter of the world, it has also been a period during which education in all its phases has been subjected to intense criticism and severe testing. The objectives and the value of many of our educational projects and methods were repeatedly questioned, for growth and expansion do not necessarily result in genuine and permanent advance.

Much of this criticism came from within the ranks of the educator. Naturally, some of it was sincere and constructive, but much was not. Fortunately, the various groups of stalwart men and women who have had long experience in shouldering the burden of educational problems, and have been the motive power behind some of the great forward movements can usually, and without much difficulty, differentiate between the sincere effort of tried educators for advancement, and the fanatic agitation of those, who commonly are young and more or less inexperienced, but have exceedingly active minds and vivid imaginations. It is members of the latter group who are constantly advocating that we throw into the discard the existing order and substitute all manner of educational will-o-the-wisps.

It was only natural that our rapid expansion should permit such pseudo-educators to flourish. The decade has, hence, seen many fanciful experiments tried at all levels of education, and then discontinued a few years later. One may, however, safely say that we are to-day, on the whole, educationally much wiser and farther up the ladder of progress than we were ten years ago.

Of special interest to the group here to-day is the splendid progress that has been made during the last decade in advancing the educational requirements for admission to the health professions. At present, we take great pride in the high standards that now, or shortly will, obtain in medical, dental, pharmaceutical, and nursing education. But we commonly forget that the present advanced preparation demanded for these professions is of comparatively recent date. Indeed, as recent as sixty years ago, the teaching of medicine in this country was considered a social disgrace. At that time the requirement for graduation in medicine at Harvard University, and other leading medical schools, consisted in the attendance upon two sessions of lectures of four months each. The degree of Doctor of Medicine was usually conferred after the passing of a nominal examination, and upon the presentation of evidence of having studied medicine for three years, including the time spent in medical school. In 1870, shortly after he became president of Harvard University, C. W. Eliot endeavored to persuade the medical faculty of that university to advance its requirements for graduation. Among other things, President Eliot suggested that a written examination be substituted for the final five-minute oral examinations given by the professors in charge of the various subjects. The dean of the faculty, however, immediately pointed out that it would be impossible to hold written examinations for he knew that the students of medicine could not write well enough. What marvelous advances in medicine and medical education have been made in these sixty years! In fact, these advances are greater than those made by any other profession.

In considering this great progress in medical education we must not overlook the fact that much of it has taken place since the famous Flexner study, made in 1910. During the decade we are discussing there has been continued advance. And in spite of the present high demands, medical study had increased in popularity. We are told that last year more than 800 American students applied for admission to one of the medical schools in Scotland, and that the number of physicians graduated in 1930 by the sixty-six approved medical schools on the four-year basis was as large as the number that completed their medical training twenty years ago when we had twice as many institutions. To-day the United States has more physicians than any other of the leading countries, for our ratio is one doctor to every 800 persons; while in Switzerland it is one to 1250, in England and Wales one to 1490, in Germany one to 1560, in France one to 1690, and in Sweden, one to 2860.

Dental education has also marched forward. The advances in this field are of even more recent date than those in medicine. Although the first college of dentistry in the United States was established in Baltimore in 1840, the teaching of dentistry was not recognized by any of our well-established universities until 1867, when the Harvard School of Dentistry was organized. Similar units were then established at other leading universities. Interest in this phase of the conservation of health increased, and the number of young men and women preparing themselves for the profession of dentistry grew rapidly.

Although the requirements for admission to the study of dentistry and for graduation were advanced from time to time, the standards lagged much behind those of medicine. During the decade we are discussing, Dr. W. J. Gies made his searching and constructive study of dental education under the auspices of the Carnegie Foundation for the Advancement of Teaching. Just as advances in medical education were greatly stimulated by the Flexner report, so the study by Gies contributed in no small way to the adoption of the present requirements of one or two years of college training in preparation for the professional work of three or four years. These advances have placed dentistry on an exceedingly high plane. By the general public the profession is held in high esteem, for the importance of the care of the teeth in the conservation of health is more intelligently understood than ever before.

The most striking progress during the ten years, that we have been reviewing, has probably been made in pharmaceutical education. Although historically, pharmacy may be considered the mother of both medicine and dentistry, she has permitted her progeny to outdistance her in educational advancement and achievement, as well as in the recognition, at present, given by the public to these health professions.

Ten years ago many colleges of pharmacy in this country were admitting students with but two years of high school preparation, and graduating them after two years of professional study. The demands, however, of pharmaceutical educators, especially those associated with our state universities, were such that the requirements for admission to and graduation from the colleges constituting the American Association of Colleges of Pharmacy were steadily advanced, so that to-day all colleges of the Association demand high school preparation for admission, and already more than one-third of them have made the four-year course obligatory for graduation. In 1932 this requirement will become compulsory for all members of the Association.

During this decade, a study of pharmacy, in many ways comparable to that of dental education made by Gies, was conducted under the auspices of the Commonwealth Fund by Dr. W. W. Charters of Ohio State University. Although Dr. Charters confined his investigations chiefly to the functions and responsibilities of the neighborhood pharmacy, his observations on other phases of the profession, and upon pharmaceutical education, were most significant and helpful. The Charters report contributed very materially to the extraordinary advance in pharmaceutical education made during the past ten years.

Observations similar to those which have been made for medicine, dentistry and pharmacy, might also be cited in the case of nursing education. Better preparation and higher standards for the professional training have been insisted upon. Marked advances have, accordingly, been also made during the past ten years in this very important phase of the promotion and conservation of health.

Not only has there been marked improvement in the character and the quality of the students entering and being graduated from our institutions giving instruction in these disciplines, but much higher standards have also been set for those seeking teaching positions in these fields. Then, too, the teaching facilities have been greatly improved, for at many of our universities splendid new buildings and laboratories for instruction in medicine, dentistry, pharmacy and nursing have been built during this decade.

Furthermore, the period has been marked by unusual progress in hospitalization, not only as to the number of new hospitals, but also with regard to generally improved facilities. The planning and constructing of the very beautiful and efficient medical centers in many of our leading cities give striking testimony to the fact, that our citizenry is more vitally interested in health than ever before, and that the health professions are earnestly striving to render a wider and better service to a larger proportion of our population. Indeed, the older idea of the hospital as a "house of death" has given way to the newer and more appropriate conception of it as a "house of life."

In the furthering of these newer conceptions of health, the Federal Government has aided materially through its national conferences on child welfare, by the work of the committee on the costs of medical care, and by the splendid assistance given by its health service, and its many other agencies. And the very important activities of such organizations as the Red Cross, the Rockefeller, Milbank, and Commonwealth Foundations must not be overlooked.

That our people consider the promotion of the physical health of our communities as one of their precious assets, and accordingly desire to learn how to live better and more effectively, is clearly evidenced, I believe, by the fact that as a nation we spend more than three billion dollars a year for medical care. This sum is as large as that expended for all educational purposes. Moreover, our leaders fully realize that if the public is to receive the best possible service, there needs to be close and sympathetic coöperation on the part of the great health professions—medicine, dentistry, pharmacy and nursing.

The decade under review has also been marked by great advances in scientific medicine, for many extremely important discoveries and contributions have come from the research laboratories of our universities and our great pharmaceutical manufacturing plants. All I need to do is to remind you that insulin in the treatment of diabetes and liver extract in pernicious anæmia were developed during these ten years. The Kahn and Dick tests are also contributions of this decade. The present-day emphasis on vitamins, the synthesis of thyroxin, the intensive research on hormones and the extensive production of efficient synthetic organic medicinals are developments of the last few years. Many other achievements might be cited, but enough has been said to show that the scientific advances made in the various fields related to health have been extraordinary during the period that you, who are candidates for graduation here to-day, have received your training in secondary schools and colleges.

I hope that this survey, although very hurried and quite incomplete, has clearly indicated that in spite of the recent serious, economic and industrial reverses in this country, education and scientific achievement have moved steadily forward. And that it is also evident, that the last decade has been marked by advances of far-reaching importance to the health professions. Accordingly, one may sincerely affirm that the candidates for graduation here to-day have had the benefit of the best facilities ever provided by this University in their respective fields. You will enter upon your life's work with an excellent preparation and a superior scientific knowledge. That you are aware of this, I am confident. I am also confident, that while you rejoice that you have been so privileged, you are cognizant of the enlarged responsibilities that these advantages impose. It is therefore incumbent upon you constantly to strive to render to humanity a service as full, efficient and self-sacrificing as has ever characterized your professions. To you, much has been given, and from you, much will be expected.