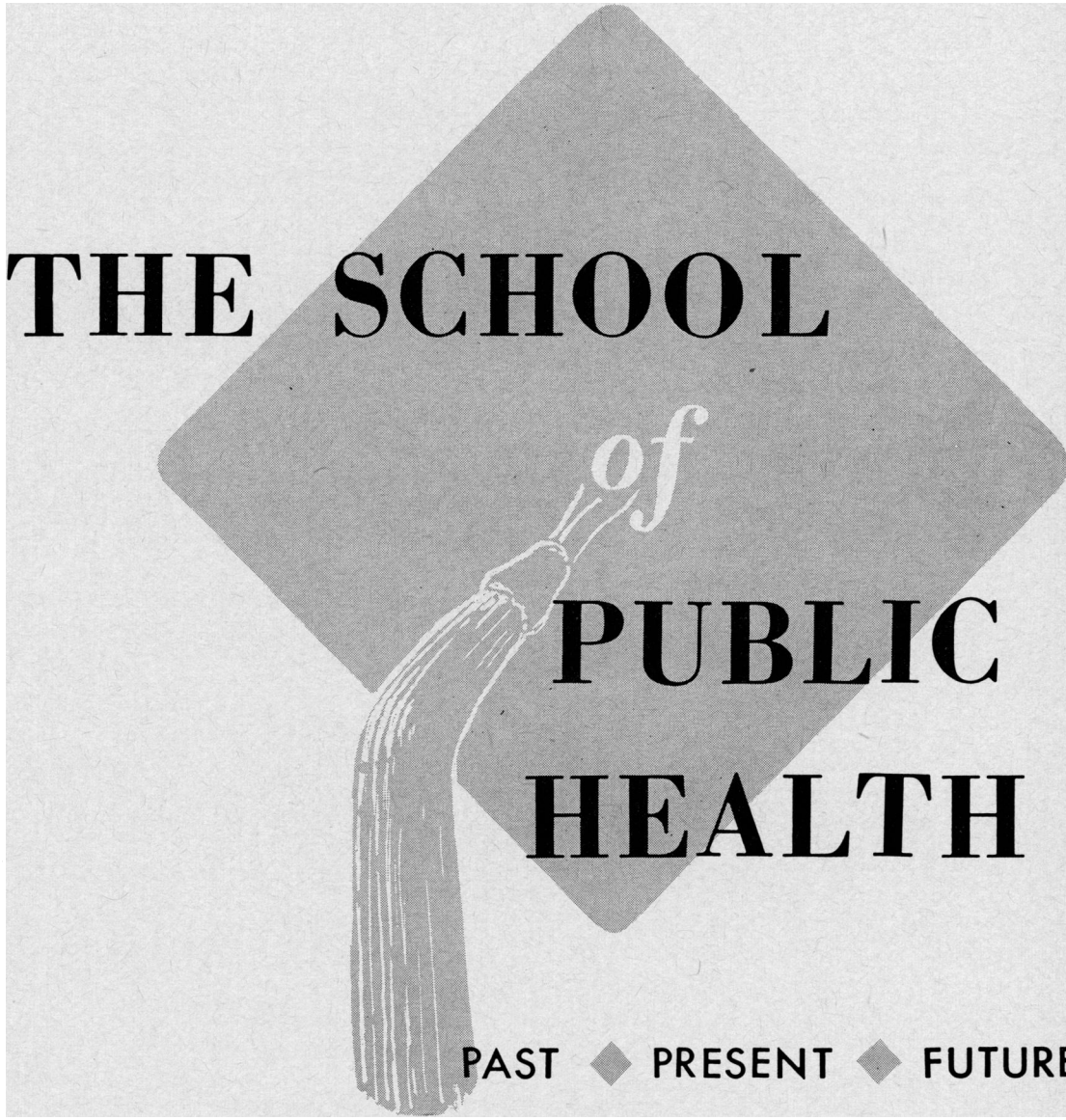

Dedication of the new building of the School of Public Health of the University of North Carolina on April 6 and 7, 1963, brought to Chapel Hill an array of public health men. Educators and public officials came not only to celebrate the addition to the school's physical plant but to reexamine the process of education in the nation's schools of public health. They participated in a series of discussions on the past, present, and future of the schools.

Tracers of the past were Dr. George Rosen, Columbia University School of Public Health and Administrative Medicine, who described the derivation of the schools (p. 869), and Dr. Wilson G. Smillie, professor emeritus of Cornell University Medical College, who told of the start of academic training in public health (p. 873).

Dr. Henry F. Vaughan, dean emeritus of the University of Michigan School of Public

Health, pointed to the varied patterns of organization and instruction that have evolved in the schools although, with few exceptions, their nucleus was a hygienic laboratory or a department of preventive medicine in a medical school. "The schools grew under a diversity of faculty opinion as to what they should be. It was fortunate," he declared, "that there was no early effort to formulate agreement and uniformity as to who should be students and how they should be taught."

While most speakers agreed that the schools' general functions should continue to be education, research, and community service, there was general concern about the methods followed in fulfilling these functions. Several educators favored a longer period of training for the master of public health degree because of the impossibility of fitting into a 1-year curriculum the burgeoning new areas that public health now encompasses. Dr. Myron E. Wegman, dean, University of Michigan School of Public Health, outlined a plan for 2 years of training following the baccalaureate (p. 875).

Dr. Edward McGavran, dean, University of North Carolina School of Public Health, predicted that, in the future, education in public health would consume a minimum of 2 years. He urged that the present lack of uniformity in degree structure be scrutinized by the Association of Schools of Public Health (p. 883).

Dr. Donald J. Galagan, chief, Division of Dental Public Health and Resources, Public Health Service, suggested that the core curriculum might be revised to permit more latitude in the development of individual talents and fields of interest. "Perhaps it could be dispensed with altogether," he proposed. "The very diversity of backgrounds which make up the public health profession plus the increasing possibilities for specialization argue against requiring every student to complete a set core of courses."

Dr. Abel Wolman, professor emeritus, Johns Hopkins University School of Hygiene and Public Health, questioned the effectiveness of interaction between the school and the community under present systems of teaching. "The community health center promised great returns for teaching purposes if and when attached to a school. How completely have these promises been fulfilled? Of even greater importance, perhaps, is a determination of how significant has been the contagion from such a center to the community as a whole. One has the uncomfortable feeling that neither of these objectives has been universally attained."

Dr. Gaylord Anderson, director, University of Minnesota School of Public Health, suggested that the schools should strive to make the interdisciplinary approach a reality rather than a platitude. "The school must give something more than lip service to the various professional groups that must inevitably comprise the public health team," he declared. "If public health is indeed a synthesis of the contributions of diverse professional disciplines, each of which focuses its special competencies upon the many facets of a community health problem, then it must follow that a true school of public health cannot restrict its instructional program to one or two professional groups, rejecting the rest as though they did not exist or, if existing, deemed unworthy of the attention of the school and its faculty."

Dr. Malcolm Merrill, director, California State Department of Public Health, declared that the professional public health worker of the future will need both greater breadth and greater depth of scientific knowledge. He must also be informed of significant public health developments in areas outside his own field of specialization. Merrill proposed that all workers in public health become knowledgeable about the role of social and political science in public health.

Another advocate of broader training in the social sciences was Dr. Ira V. Hiscock, former chairman, Yale University Department of Public Health. "If public health programs are set up to effect changes in behavior, then those working in these programs need to be well-versed in knowledge about human nature and human behavior as well as the so-called health sciences. Human ecology, cultural anthropology, and health education of the public are needed," he said.

Dr. David Price, Deputy Surgeon General, Public Health Service, posed another question for educators. "How do you plot a course of education so that its trajectory will intersect with the course of the man's development 10 and 20 years hence?" he asked.

Dr. Leroy E. Burney, vice president of health sciences, Temple University, questioned whether it was more difficult to predict change today than it had been in the past. He cited the career of a student who attended a school of public health 32 years ago. During a year of courses the only mention of venereal diseases was in the student's term paper. Four years after he was graduated, Dr. Thomas Parran, former Surgeon General of the Public Health Service, launched his nationwide attack on syphilis and gonorrhea.

The changing roles of the schools were analyzed by Dr. Ruth B. Freeman, Johns Hopkins University School of Hygiene and Public Health (p. 879). One role, greater leadership by the schools, was urged by Dr. Cecil G. Sheps, University of Pittsburgh Graduate School of Public Health. "Society has a right to expect its schools of public health to give leadership in terms of insight, knowledge, and skills in the struggle for improved physical, mental, and social function—in the direction of optimum levels of activity for all people everywhere," he said. "It is less a matter of using skills peculiar to public health than it is a matter of focusing a wide range of skills on the problems of public health. This will lead to knowledge of a special kind which is the special province of schools of public health—knowledge with which the public health campaign may be waged more successfully."

The school's services to the international community were discussed by Dr. Hugh R. Leavell, Harvard School of Public Health. In addition to the foreign students they teach, he pointed to the surprising amount of service to the international community as consultants, lecturers, and committee members of faculties of North American schools. A very incomplete tally of international service time during the past 5 years by staff members of schools comes to more than 33 man-years, he said. Present faculty members have served on the staffs of international health agencies an additional 48 man-years, some of this before coming to the school, but some on leave. There is every reason to believe that future demands may be even greater, he observed.

Dr. James A. Crabtree, dean, University of Pittsburgh Graduate School of Public Health, warned that the schools must reserve their facilities for the exacting role of higher education. "When one adds up the pitifully small number of schools of public health in the United States," he declared, "and then considers the unique educational opportunities entrusted to so few, it is clear that no single element of our national interest of comparable importance has such limited and tenuous safeguards in its highest educational resources as does public health."

An encouraging portent of future cooperation between the schools and members of the profession is the existence of the Shepard study on graduate education in schools of public health, declared Dr. William F. Mayes, then chief, Office of Research Grants, Bureau of State Services, Public Health Service. This joint undertaking of representatives of the Association of Schools of Public Health, American Public Health Association, Association of State and Territorial Health Officers, Department of National Health of Canada, and the Public Health Service represents a mounting concern over lack of solid information as to what is being taught, how, by whom, and for whom in this complex field of public health, he declared. Dr. Mayes is the new dean of the School of Public Health, University of North Carolina, succeeding Dr. McGavran, who is now on a 2-year leave of absence.—M.K.P.

a look back

Derivation of the Schools

The school of public health did not immediately come into being when modern public health emerged in the United States during the 1860's (*1*). It was created some 50 years later as part of a specific phase in the evolution of public health, in response to recognized social needs, and within a definite context resulting from the convergence of various public and private factors.

Excerpted from a paper by George Rosen, M.D., Ph.D., professor of health education, School of Public Health and Administrative Medicine, Columbia University.

Organized public health, modern style, was created to deal with mass outbreaks of communicable disease. During the middle and latter part of the 19th century, it developed under the banner of sanitary reform to reduce the mortality and morbidity caused by epidemics of cholera, smallpox, typhus, and typhoid fevers. No matter what theory of causation was upheld, it was generally accepted that communicable disease was related to filthy environmental conditions caused by lack of drainage, water supply, and proper means for removing refuse from houses and streets. What was needed was a preventive program applying engineering knowledge and techniques in a consistent manner.

Concurrently, knowledge was accumulating that pointed to an animate contagion as the cause of infectious disease. Koch's demonstration, in 1876, of the microbial origin of anthrax marked the beginning of the golden age of bacteriology. By the end of the 19th century, some of the pertinent questions concerning contagious diseases and their prevention had been answered by demonstrating specific causative organisms in numerous instances.

During this period, the sanitation of the environment and control of communicable diseases comprised the whole of public health practice, with the sanitary engineer and the physician as the chief figures. Training needs were conceived of in modest terms because the objectives of public health were themselves relatively modest. Such special training as these workers received for their tasks was highly practical and secured chiefly through short periods of apprenticeship, followed by long experience. The earliest academic teaching for public health personnel was conducted in medical schools where public health was identified with bacteriology. This was the situation at the turn of the century.

The first decade of the present century coincided with a desire to improve rural living and an effort to halt the movement from the country to the city. President Theodore Roosevelt, concerned with the decline of rural life, appointed a Country Life Commission in 1908 to investigate economic, social, and sanitary conditions. Among its members were Charles Wardell Stiles and Walter Hines Page. Stiles, a zoologist in the Public Health and Marine Hospital Service, had discovered *Necator americanus* in 1902 and was profoundly concerned with the hookworm problem in the south. Page, editor, writer, and ambassador to Britain during World War I, crusaded for improved education around the turn of the century. His campaign in the press and on the platform led John D. Rockefeller to found the General Education Board in 1903.

At a conference connected with the work of the Country Life Commission in the fall of 1908, Page introduced Stiles to Wallace Buttrick, secretary of the General Education Board. Stiles' description of the ravages of hookworm and of its devastating economic, social, and cultural consequences deeply stirred Buttrick, and on his return to New York he initiated steps which led to the establishment of the Rockefeller Sanitary Commission on October 26, 1909. At the end of that year Wickliffe Rose was appointed administrative secretary, while Stiles became scientific secretary. Page was a member of the commission, as were William H. Welch and Simon Flexner (*2–4a–6*).

When the Rockefeller Sanitary Commission began its work, public health organization was relatively undeveloped. Conditions in rural areas were particularly deplorable. Shortly after Rose assumed the direction of the commission, he observed that its activities got underway more rapidly and that results were more easily achieved in some States than in others. "I became convinced," he wrote, "that one important factor entering into this difference in results was difference of effectiveness in the State organization of the public health service" (*7a*). This conviction led Rose in 1910 to make a survey of State public health systems in the 12 States that comprised the hookworm belt. From the findings he concluded that the county health service in these States was primitive and strikingly inefficient. Furthermore, it was evident that an effective county health service could not be expected until the county had "a capable health officer devoting his whole time to the service" (*7b*). The same point was stressed by Stiles (*8*).

Lack of competent, trained health personnel was also recognized as a major problem by a number of other contemporary observers and investigators. Hermann Biggs, in 1897, called

attention to the need to train physicians for careers in public health and advocated the establishment of a school for this purpose (*9*). In 1908, Norman E. Ditman of New York urged that "the efficiency of the administration of our public health service can be best assured only by a demand on the part of the State that its medical officers shall have had the full special training requisite for the performance of their particular duties." As a prerequisite he proposed the creation of "a school of preventive medicine which would train future health officers in methods of administering their positions properly" (*10*).

The following year Irving Fisher, the Yale economist, emphasized the need to obtain special training "for what is really a new profession, that of public health officer." He proposed, furthermore, that the curriculums of medical schools should be rearranged with a greater emphasis on prevention and on the training of health officers (*11*). Fisher also called attention to a committee of the American Medical Association which had been appointed to study and improve medical schools. In 1913, a subcommittee of this group, comprising Charles V. Chapin, John S. Fulton, Milton J. Rosenau, Victor C. Vaughan, and Fisher, issued a report calling for institutes of public health financed and equipped to offer instruction and to carry on research. This group also urged the organized teaching of preventive medicine to medical students and the development of courses for health officers and allied professional groups (*12*).

In 1913 the Rockefeller Foundation took the initiative. The work of the sanitary commission for the eradication of hookworm became part of the activities of the Rockefeller Foundation that year, and Rose continued to work for adequate county health agencies staffed with thoroughly trained, full-time men. His expanding international program also required trained staff. Apparently in the fall of 1913, Rose began to consider how to educate young men in the principles and methods of public health. As a result, in December the Rockefeller Foundation requested the General Education Board to look into the subject of professional training for public health work.

The request was referred to the board's Committee on Medical Education, and in January 1914, Abraham Flexner wrote to a number of persons in leading medical schools asking what opportunities and instruction their schools offered for the training of public health officers (*13*). Among those consulted were M. J. Rosenau, Harvard; Linsley R. Williams and C.-E. A. Winslow, New York; A. C. Abbott, Pennsylvania; W. W. Ford, Baltimore; Ludwig Hektoen, Chicago; and E. P. Lyon, Minnesota.

These preliminary inquiries led to a conference on training for public health services, which was held on October 16, 1914, at the offices of the General Education Board in New York. Present at the conference, in addition to some of those previously consulted and representatives of the Rockefeller boards, were outstanding leaders of American public health: Hermann M. Biggs, William H. Welch, William H. Park, Theobald Smith, and George C. Whipple. Discussion led to essential agreement on several points: (*a*) a fundamental public health need was adequately trained personnel; (*b*) a distinct contribution toward meeting this need could be made by establishing a school of public health of high standards; (*c*) such a school should be closely affiliated with a university and its medical school; and (*d*) it should be organized as a separate entity with an institute of hygiene as the nucleus (*14*).

Rose and Welch were asked to formulate a plan for such a facility, and on May 27, 1915, their report was presented to the General Education Board. The report was then submitted to the Rockefeller Foundation on January 12, 1916. During November 1915, a small group consisting of Abraham Flexner, Rose, and J. D. Greene, secretary of the foundation, visited Harvard, Massachusetts Institute of Technology, Johns Hopkins, University of Pennsylvania, Columbia University, University of Chicago, Washington University, and Tulane to select a location for the institute of hygiene. Actually the decision had already been made (*4b*, *15*). As Flexner (*16*) admitted a quarter of a century later, he had reported to Rose "that it was immaterial where the school was located; it mattered only who directed it. The only possible director was Dr. Welch; it might be placed wherever he wished." (Correspond-

ence at the time (*17*) indicated that the decision was also influenced by the existence of a medical school in Baltimore.) In June 1916 the School of Hygiene and Public Health was established at the Johns Hopkins University with William H. Welch as director. On October 1, 1918, the school opened.

A pattern had been set, and the Rockefeller Foundation now made more funds available for the creation of similar schools in the United States and abroad. The foundation assisted in the establishment of the Harvard School of Public Health in 1922 and the Toronto school in 1924. The creation of these schools has had a great influence in the development of schools in other educational institutions right up to the present. What, then, was the pattern? On what principles was it based? And what have been the consequences?

Welch and Rose proposed that the school train the various types of officers and experts required in public health administration. These included full-time health officers for Federal, State, and local service, statisticians, epidemiologists, sanitary engineers, chemists, bacteriologists, and public health nurses as well as several kinds of sanitary inspectors. They were fully aware that public health is a broad and varied field, actually comprising a group of diverse sciences or the application of certain disciplines. Welch and Rose recognized that "the end to be accomplished—the preservation and improvement of health," rather than the means, gives coherence to the organized body of knowledge embraced under the designation public health. Their suggested curriculum included practically all the subjects that have been offered in the schools of public health up to the present.

Because of the extent to which social and economic factors enter into questions of public health, they urged that students receive training in social science and emphasized the need to relate the school of public health not only to the medical school but also to the social science department. Finally, Welch and Rose observed that "The far-reaching influence of the institute should be felt in the advancement of the science and the improvement of the practice of public health, in establishing higher standards and better methods of professional education in this field and in stimulating the foundation of similar institutes in other parts of the country" (*14*).

The time setting in which the first schools emerged is significant in understanding the further development of the school of public health and in relating this process to the factors and pressures that have influenced it (*1b*). During the decades preceding World War I, the orientation of public health was beginning to shift from the environment to man himself. As health authorities became aware of noxious influences other than those emanating from the physical environment, as activities in connection with maternal and child health, industrial hygiene, tuberculosis, venereal disease, and nutrition developed, the concept of public health practice expanded. This continuing trend has exerted a deep and pervading influence on the evolution of public health teaching. As new areas of concern became part of public health and health departments developed new programs, the need to provide a supply of well-qualified persons to fill available positions led schools to give special emphasis to particular disciplines. In turn, the faculties and graduates of the schools of public health accelerated this development. Thus, as Welch and Rose envisioned, the schools have acted as seedbeds for practice and research.

Concurrently, the circumstance that the decades between 1900 and 1920 marked a major period in the formulation of American social policy and of social action in relation to health intensified the trends arising from new medical and scientific knowledge. As part of this development, there was a great increase in activity by government at all levels, as well as by nongovernmental agencies. Indeed, one may consider the appearance of the first schools of public health as a consequence of this process. Most significant, however, was the increasing role of the Federal Government, which entered upon a new stage of development with the enactment of the Social Security Act of 1935. Funds made available through grants-in-aid greatly stimulated the education and training of public health personnel. This use of Federal monies represented an important innovation in public policy, which has ramified in various directions to the present.

Forty-five years have elapsed since the School of Hygiene in Baltimore opened. Today there are 12 schools of public health in the United States, of which 6 are tax supported. Historically, their emergence may be classified in three phases: the period up to World War I, the period between the two world wars, and the period after World War II. Produced by the convergence of various interests, orientations, and developments, they differ considerably in policy, organization, and teaching practice. Similarly, the schools vary in the amount and nature of research conducted by their faculties or under their auspices. Nonetheless, they are all recognizable as variants of the model initially created at Johns Hopkins.

Unfortunately, the basic mission of the schools, to provide trained personnel for health agencies, was not fulfilled in sufficient numbers, through no fault of theirs. Despite the best efforts of the schools, careers in public health did not prove as attractive as others in the competition for staff. [This was an early illustration of the prediction by Derek Price that scientific professions eventually may expand only by depriving other professions—Ed.]

REFERENCES

(*1*) Rosen, G.: A history of public health. MD Publications, New York, 1958, (*a*) pp. 245–248; (*b*) pp. 344–349, 463–469.

(*2*) The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease: Organization, activities, and results up to December 31, 1910. Office of the Commission, Washington, D.C., 1910, pp. 2–3.

(*3*) Flexner, S.: Wickliffe Rose, 1862–1931. Science 75: 504 (1932).

(*4*) Flexner, S., and Flexner, J. T.: William Henry Welch and the heroic age of American medicine. Viking Press, New York, 1941, (a) pp. 351–352; (*b*) p. 508, note 14.

(*5*) Fosdick, R. B.: The story of the Rockefeller Foundation. Harper & Bros., New York, 1952, pp. 9–10.

(*6*) Wish, H.: Society and thought in modern America. A social and intellectual history of the American people from 1865. Longmans, Green & Co., New York and London, 1952, pp. 55–57, 114.

(*7*) State systems of public health in twelve southern States, Rockefeller Sanitary Commission, Publication No. 4, Washington, D.C., 1911, (*a*) p. 3; (*b*) pp. 66–67.

(*8*) The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease: Second annual report. Offices of the Commission, Washington, D.C., 1911, p. 13.

(*9*) Biggs, H.: Sanitary science, the medical profession and the public. Medical News 72: 44 (1898).

(*10*) Ditman, N. E.: Education and its economic value in the field of preventive medicine. The need for a school of sanitary science and public health. Columbia University Quarterly 10: 57–61 (Supplement to number 3), June 1908.

(*11*) Fisher, I.: Report on national vitality, its wastes and conservation. Bulletin of the Committee of One Hundred on National Health, No. 30: 55–56, 128, July 1909.

(*12*) A.M.A. Council on Medical Education: Report of the Sub-Committee on Hygiene, Jurisprudence and Medical Economics: Report of the Committee of One Hundred on a standard curriculum for medical colleges, Chicago, 1913.

(*13*) Welch Papers, box 46. Institute of the History of Medicine, Baltimore.

(*14*) Rockefeller Foundation: Annual report, 1916. Appendix V, pp. 415–427.

(*15*) Welch Papers. Institute of the History of Medicine, Baltimore. Correspondence between Abraham Flexner and Wickliffe Rose.

(*16*) Flexner, A.: I remember. Simon & Schuster, New York, 1940, p. 305.

(*17*) Welch Papers. Institute of the History of Medicine, Baltimore. Correspondence between Charles W. Eliot and Abraham Flexner, Feb. 1–18, 1916.

Start of Academic Training

Lemuel Shattuck in his 1849 Report of the Sanitary Commission of Massachusetts recommended "that persons be specially educated in sanitary science as preventive as well as curative advisors." "Sanitary professorships should be established in all our colleges and medical schools and filled by competent teachers. The science of preserving health and preventing disease should be taught as one of the most important sciences." Many years were to elapse before this far-sighted recommendation became effective.

Excerpted from a paper by Wilson G. Smillie, M.D., consultant, Committee on Professional Education, American Public Health Association, and professor emeritus of public health and preventive medicine, Cornell University Medical College.

There was no lack of textbooks and material for instruction. Dr. E. A. Parker published his "Manual of Hygiene" in 1859. It was concerned chiefly with military hygiene but contained material on hospital construction, food and nutrition, vital statistics, communicable disease control, and other sanitary matters. Dr. H. H. Buck's great text, "Hygiene and Public Health," was published in 1879. It was concerned with environmental sanitation, communicable disease control, quarantine, food sanitation, vital statistics, and child health. Harrington's "Manual of Practical Hygiene for Students, Physicians and Health Officers" went through several editions. It encompassed more than 1,000 pages and introduced microbiology, insects and disease, industrial health, and many other public health topics.

But physicians were given no formal academic training in public health. Buck, for example, was an otologist at Bellevue Medical College. The subject of public health in all schools was casually assigned to one or more professors who gave a few lectures to an indifferent student body.

Microbiology emerged about 1880. Dr. William H. Welch at Johns Hopkins became interested in public health through bacteriology, and in 1888 Dr. Victor Vaughan at the University of Michigan began his career in teaching and research in bacteriology. His department was among the first to offer advanced academic degrees in sanitary science.

Finally, in 1910, Lemuel Shattuck's recommendation of 1850 was implemented. Charles W. Eliot, president of Harvard, established a full-time professorship of preventive medicine and public health. Dr. Milton J. Rosenau was appointed to this position. It was a most fortunate choice.

For sanitary engineers and sanitarians, however, the early training ground was the Lawrence Experimental Station established in 1888 by the Massachusetts State Board of Health to study the principles of water and sewage purification. Allen Hazen was in charge. William T. Sedgwick was director of bacteriological research. Dr. E. O. Jordan, Ellen Richards, W. F. Miller, Dr. George C. Whipple, and many others who were to play an important role in the rapidly developing new science all received their early training here.

Sedgwick went to the Massachusetts Institute of Technology in 1883 and, single-handed, developed formal academic training of a high quality in sanitary science. He was the school. Whipple went to the Harvard School of Engineering as an expert in water purification. He also became adept in biostatistics and published the first standard text in this field.

Sedgwick believed in a true career in public health for the man trained in sanitary science. He felt that a medical degree was not a prerequisite. He had had 2 years of basic training in a medical school but emphasized the fact that the clinical years of medicine were concerned with the individual whereas the sanitarian's major interest was the community. Sedgwick carried his ideas into execution, and for a time practically all public health experts of the nation were trained at the Massachusetts Institute of Technology. Most of them did not have a medical degree.

The first school for broad, formal, well-rounded training of public health personnel was organized in 1913 by Sedgwick, Rosenau, and Whipple and was called the Harvard-Massachusetts Institute of Technology School of Public Health. The three were an inspiring team. Rosenau, from the Public Health Service, had long experience in epidemiology, microbiology, and administration. Sedgwick was a master teacher and fine investigator. Whipple was skilled in sanitary engineering and also in biostatistics. From the outset they set the pattern of our present concepts of broad training for a career in public health.

Basic courses at the school were public health administration, epidemiology, biostatistics, and environmental sanitation. Emphasis was placed on microbiology; field experience was combined with lectures, symposiums, and laboratory work. Young men of talent began to realize the opportunities for a career in public health and came to the school for their training.

The joint school was forced to discontinue in 1922, after 9 years, because the Massachusetts courts ruled that the charters of the two institutions did not permit the granting of a joint academic degree. The schools were then separated and continued as the Harvard School

of Public Health and the School of Sanitary Science at the Massachusetts Institute of Technology.

a look at

Current Dilemmas

If I were asked to use a single word to characterize the feelings of faculty about present-day education in public health, I should use the word "dissatisfaction." On the one hand, there are eagerness, wide experience, and competence in imparting basic knowledge and skills of various specific phases of public health, but, on the other, there is great uncertainty in how to bring these skills into proper balance for the professional public health worker.

Public health is no single profession, but a field for the efforts of many groups and specialties. Statisticians, nutritionists, administrators, physicians, educators, engineers, laboratory technicians, and experts in a variety of specific health and disease problems are united by responsibility for the health of the community and its individual human components. The school of public health today recognizes its responsibility to teach each of these groups both needed specific skills and how the many disciplines can work together.

Herein lies the fundamental source of the dissatisfaction and uncertainty. The statistician has a good idea of what the statistical specialist needs to learn to fulfill his individual function as a member of the team, but the teacher of statistics is not so sure what other health workers ought to learn about statistics, both from the individual's standpoint and for the needs of the team. Similar doubts trouble the epidemiologist, public health engineer, public health administrator, health educator, maternal and child health specialist, and others.

Today public health has grown so broad and inclusive that any extension beyond traditional areas highlights the dangers of diffuseness and excessive dispersion. The educational patterns laid down by such men as Lowell Reed and Wade Hampton Frost have lost little of their vitality, but so much has had to be added that the student often suffers from an embarrassment of riches. Herewith the paradox—the new courses are needed yet unassailable arguments for adding them cause grumbling, however illogical, about proliferation of courses.

Listing a few of the courses now taken by many students may emphasize the increasing complexity. Medical care organization occupies a prominent role in the curriculum and is likely to grow even larger. Radiological health attracts more and more students, and those who are not specialists are eager to learn more about it. Problems of international health and the related subject of community development concern U.S. students as well as those from other countries. Techniques of survey research, problems of air pollution, approaches to mental health, epidemiology of chronic diseases, protection of water resources and study of their interrelationships with problems of conservation, instrumental methods of chemical analysis, and social determinants involved in persuading people to change their health behavior—all form a crazy quilt of important subjects, each significant, but each needing to be viewed in perspective.

We lack a meaningful framework for the average student. Demand for specialized competence in many technical fields, fitted into the strait jacket of a single year of training, results in constant attempts to restrict the core of common training and narrow the field of specialization. As a result, the administrator learning the intricacies of social insurance in relation to medical care organization, the physician working on the virology and epidemiology of influenza, and the nurse learning problems of child growth and development are likely to feel little interrelationship and may even wonder why they are in the same school.

In the light of both past heritage and future responsibility, how may a school of public health provide a core, a central theme for its students? Fundamentally, it seems to me that this requires indoctrination in the interrelationship and independence of the natural sciences and the social sciences as well as an understand-

---

Based on a paper by Myron E. Wegman, M.D., dean, University of Michigan School of Public Health.

ing of the specific tools of epidemiologic method and organizational theory. For years we in public health have said that we represent a unique combination of the natural sciences and the social sciences, but we have done little about it.

Most of the schools, Michigan's included, are justifiably rigorous about the required natural science background for all applicants. One can scarcely work in epidemiology and environmental health or understand public health administration without a basic knowledge of the pertinent natural sciences. On the other hand, a student cannot readily see the community and interpersonal implications of his actions in the absence of proper background in social sciences, but we are far less insistent that physicians, engineers, and others have this kind of preparation.

Certain gaps in preparation may be compensated for by throwing students of different types together, but such a plan has obvious dangers. Physicians can be bored at being taught epidemiology of acute infectious disease at a level adapted to the engineer, while the engineer can be offended by a course in environmental health understandable to a statistician or nutritionist. At the School of Public Health at Michigan we try to group those with relatively similar backgrounds in a particular course of instruction, thus subdividing most of the "core" courses. For a seminar involving analysis of the total health program in a given county or city, the entire class is divided into groups of about 12, each including physician, nurse, engineer, and a selection of other disciplines, such as statistician, nutritionist, dentist, laboratory technician, and industrial hygienist. This step has been most successful for those with little previous contact with community health, filling an orientative function, but it should be possible to use it as an analytic laboratory exercise even for experienced people. As public health recognizes its broader responsibilities beyond those of the official department of health, it becomes vitally important to study the health problems and services of an entire community, yet it is exceedingly difficult to do this during the relatively short existing public health curriculum.

A difficulty of the educational plan in schools of public health stems from our present transitional stage. In past years it was necessary to train those who were already practicing public health without the theoretical background and extensive knowledge which we believe characterize the professional. In an era when there is strenuous competition for the bright minds finishing baccalaureate training we need to attract them promptly to public health. This might well be accomplished through a curriculum combining formal instruction and supervised experience for at least a 2-year period, providing both orientation and graduate instruction. A relatively simple proposal would consist of a preliminary brief period at the school of public health, a short orientation in a community, return to the school for a longer period of theoretical instruction, followed by a year of carefully supervised experience, comparable to the public health residency now required of physicians. The training would end with a final brief period at the school to review progress and make the kind of critical evaluation which should set the stage for continued eagerness to learn throughout the student's career. Such a plan involves many complications, particularly in an era when many students are married and have families. Complications, however, should stimulate us to apply further ingenuity to solutions.

In one important aspect schools of public health today differ little from those of the 1920's and 1930's. Our students come from all sections of the United States and many other countries. Therefore instruction must completely avoid provincialism and increasingly be applicable to situations varying widely in political organization, economic status, and cultural background. Furthermore, an increasing number of students need to be prepared for service in more than one country.

I shall dwell only briefly on the school's responsibility for research and service. An academic institution can be consistently stimulating to graduate students only in a climate of investigation and curiosity. No disagreement exists on this point, and every school has research-minded faculty members. Because of varied interests as well as differences in the evolution of research techniques, uneven development has been common.

The general research support grant from the Public Health Service affords each school an opportunity to use funds imaginatively to broaden the research base to all sections of the school. Perhaps it is unreasonable to expect everyone to do research, but certainly every major unit of the school needs to participate in extending knowledge. We are proud that research at Michigan runs the gamut from studies on the organization of medical care to investigations on the nature of viruses, but there are still many gaps.

A particular strength of schools of public health has been development of cooperative studies involving widely different skills and experience. At our school two significant long-range research projects represent logical developments of established public health ideas. Built around a comprehensive study of the health of an entire small city, we have established a center for research on diseases of the heart and circulation and related disorders. Parts of the research effort are periodic history and physical examination of all inhabitants, sociologic and ecologic studies, and review of environmental status, including such factors as air pollution and ionizing radiation. Through this means there is hope that some of the precursors of heart disease may be identified and protective measures devised.

The second project is a full-scale investigation of the kinds of evaluative procedures which can be applied to the specific level-by-level objectives of the public health program. A parallel study will seek the factors which determine whether or not a person follows advice on health matters. For years we have let sound motives and noble desires determine programs with far too little attention to rigorous scientific measurement of the impact of these programs on health behavior. Large-scale support from the Public Health Service has made possible truly multidisciplinary teams to conduct both these projects.

The last sentence points up some of the great changes in support of today's school of public health. It was obvious from the outset that to be successful, a school of public health needed to draw from a wide area and today 12 schools serve a national population rapidly approaching 200 million people and an international population of many millions more. In the past decade the Federal Government has given increasing recognition to its responsibilities to this branch of education.

Federal support to schools of public health, in contrast to other fields, has been as significant in the educational aspect as in the research phase. The schools' use of these funds for improvement of education will have great significance in regard to needs which are developing for other health professions. There is, thus, an even greater charge on our schools to demonstrate leadership in this sphere of relations between universities and government.

Just as medical education would be meaningless if teachers did not care for the sick, so the faculty of a school of public health needs to participate in service to the community in its most inclusive sense. Although all of the schools subscribe to this thesis, service activities often vary with the interest of a particular staff member. It is curious that the parallel with medical schools' responsibility for hospital wards and outpatient departments has not been extended. In the early days of professional education in public health it seemed logical that similar relations might develop between public health school faculty and local health centers or health facilities. Obviously, much still needs to be done to correlate both research and service with the teaching program.

In general, educational institutions have paid little attention to the orientation of community policy in matters of public health importance. There is natural reluctance to interfere with the prerogatives of the local, county, or State health officers who are authorized to establish policy. Nevertheless, it is only realistic to recognize that for most laymen, academic robes betoken a special kind of competence and a breadth and depth of knowledge which merit special respect. For a faculty to speak out on a health problem in no way foments town-gown rivalry. Common interests and goals should help to avoid rancorous competition. For example, our faculty in concert with those of medicine and dentistry recently issued a forthright public statement on fluoridation in the hope that it will affect balloting in a number of communities in Michigan.

Fluoridation causes little professional dis-

sent, but we of the public health profession need to face realistically the charge by economists and demographers that we are indifferent to the consequences of our efforts in saving and sustaining human population. Are we justified in eradicating malaria if we are not ready to plan for the consequences of increased population? Are we ready to think of all of the health aspects of the population problem and to lend the prestige of the faculty to guide thoughtful public opinion? These are new and difficult roles for the school of public health, but they cannot be relegated to the distant future.

Schools of public health in this country exist within great universities, offering unequaled opportunity to work with colleagues in other schools not only to teach and to acquire new knowledge but to take positive action so that the university's traditional community of scholars becomes a vital part of the community at large. Today's schools of public health, young as educational institutions go, have made gratifying progress in many areas but have hardly begun to realize their potential.

Educational Infrastructure

All 12 schools of public health in the United States are part of universities; 6 are in State-supported schools (University of California at Berkeley and Los Angeles, Michigan, Minnesota, North Carolina, and Puerto Rico), and 6 in privately endowed universities, (Pittsburgh, Columbia, Harvard, Johns Hopkins, Tulane, and Yale). The schools are accredited through the mechanism of the professional education committee of the American Public Health Association, which establishes minimum standards for faculties, curriculums, and financial support.

Faculty. A recent study by the committee showed the following disciplines represented on the faculties in the order of their frequency: physician, microbiologist, statistician, sanitary engineer, nurse, sociologist, health educator, chemist, sanitarian, biologist including entomologist, nutritionist, social worker, and dentist. The size of the faculties varies considerably, but a recent report listed 689 full-time faculty members in the schools of public health, 229 full-time in the universities but part-time in public health schools, and 526 part-time faculty members.

Degrees. The basic course in most schools leads to the master of public health. In 1961 the schools granted 562 master of public health degrees, 20 doctor of public health degrees, 93 master of science in public health or master of science in hygiene degrees, and 23 master of hospital administration degrees; 58 students received other master's degrees; and 14 students were awarded either a doctor of science degree or a doctor of philosophy degree either through the school of public health or the graduate division of the parent university.

Students. Manpower shortages in the health field are serious; it has been variously estimated that from 5 to 10 percent of budgeted positions in health departments are vacant because qualified personnel cannot be recruited. Graduates of the schools of public health at present probably do not even meet the needs for additional personnel lost to attrition. According to the results of a recent questionnaire circulated by the Association of Schools of Public Health, the 12 schools, on an average, could increase enrollment between 50 and 60 percent if additional teaching space were available. Many schools do not have sufficient qualified applicants to fill present capacity.

Students are drawn from all 50 States, and in 1961, included persons from 45 foreign countries. Rather consistently in recent years, the proportion of foreign students in the schools ranged from 25 to 30 percent.

Courses and costs. Recently the schools have had to enlarge faculties and develop courses to provide training in new and important areas of activity, and some schools report more courses than they have students. Small classes and even individual instruction have been necessary, which adds materially to the cost of education. The cost per student per year has been rising constantly. A recent estimate showed that tuition pays for only 11 percent of the cost of training. Research grant funds account for more than 50 percent of the total budget of several institutions. The 12 schools

---

Excerpted from a paper by Ernest L. Stebbins, M.D., dean, School of Hygiene and Public Health, Johns Hopkins University.

estimated that in order to provide for present students and necessary expansion, filling their building needs would entail an expenditure of more than $50 million.

a look forward

The School's Changing Role

While it is difficult to identify consistent trends, the school of public health appears to be changing in four respects: in its social and professional role, areas of concern, curriculum, and organization.

Social and Professional Role

The primary social functions of the school are to prepare competent public health practitioners to meet the needs of society and to enlarge the horizons of knowledge in the field. This broad social obligation is likely to remain constant since it characterizes every professional school. However, in terms of specifics, the role of the school of public health does appear to be changing.

If the future school of public health is to prepare practitioners to meet both the qualitative and quantitative needs of society, the size of the student body must be enlarged and the proportion of those receiving training in depth must be increased. It has been estimated that the schools could increase their output by as much as 50 percent, provided recruitment and facilities were adequate. However, this estimate may be optimistic in view of increasing concern about qualitative aspects of preparation. There are recurring suggestions for a longer period of training, greater concentration on preparation at the doctoral level, and extension of the training period through a residency experience. All these plans place additional demands on available resources. There can be no denial of the need for well-prepared leaders of high caliber to meet the tough decisional and action demands of the dynamic and extremely complex field of public health service. The school may have to decide whether expansion to meet quantity demands can be achieved without detriment to quality and, if not, what role it should assume in relation to the total task.

Schools of public health might well reconsider the production of those categories of personnel that are employed in large numbers to see if less intensive and less expensive training might suffice for those with lesser responsibility or those whose interest is primarily in preventive medicine rather than in community care. For example, some schools in the past have conducted undergraduate programs to prepare the graduate nurse for beginning public health work. As schools of nursing have achieved greater academic status, this preparation can take place within the basic school of nursing. Schools of public health have or will soon relinquish responsibility for such undergraduate preparation. Thus, it is possible to reserve the less plentiful and more costly training facilities of the school of public health for leadership personnel in this field. Similar sharing of responsibility with basic professional schools may develop for other categories of workers, such as sanitarians or clinicians in medical care programs.

The teaching of preventive medicine in schools of public health will undoubtedly be somewhat reduced as schools of medicine strengthen this area in the basic medical curriculum. In the future the school of public health may prepare persons for leadership positions, relying on professional schools to provide preparation for beginning work in some categories. On the other hand, the schools may expand and modify programs so as to encompass preparation of professional public health workers at all levels. Present programs and policies would suggest the former course of events as more likely to occur.

Should other professional schools accept responsibility for educating some beginning practitioners, the school of public health cannot relinquish its obligation to provide stimulation and leadership to these efforts. The quality and direction of education in any one of the health and health-related professions inevitably

---

Based on a paper by Ruth B. Freeman, M.A., Ed.D., professor of public health administration, School of Hygiene and Public Health, Johns Hopkins University.

affects public health education and service. The school of public health in the future will need to develop a system of liaison with the professional schools from which it draws students that will coordinate and enhance the efforts of both. The relationship between schools of public health and schools of medicine has traditionally been close, but no such liaison with other basic professional schools has been developed, although it is undoubtedly needed.

The influence of the school of public health in developing and delineating public health practice appears to be expanding. Within the professional association the school must increasingly engage in both scientific and philosophical research and investigation directed to understanding the professional values, processes, and methods through which the practitioner operates. There seems at present no consensus within and among schools of public health as to the nature of public health practice. No agreement exists concerning the ways in which it is distinguished from the basic disciplines from which it draws and its acceptance as a professional field or simply as locus in which a variety of discrete professional activities go on.

As nonmedical aspects of community health care expand, dependence on nonmedical skills for evaluative, organizational, and mobilizing facets of the work correspondingly increase, and the interdependence and overlapping functions of different disciplines become greater. However, there is no clear trend toward recognition of this new set of relationships by schools of public health in the United States. While some schools are moving toward a truly multiprofessional student body and content, others appear to be drawing back to a more sharply defined medical affiliation. This ambivalence is reflected in admission and degree policies, composition of the faculty and student body, and the direction of research activities. On paper the required "core" courses appear similar, but they differ considerably in the educational exposure they afford and in the image of public health practice projected to the student.

The participation of the school in improvement of practice through linkage with operating public health agencies has waxed and waned. Consultant and research assistance to operating agencies is common. Much less frequently, the schools assume a continuing and substantively responsible role in agencies. All too often the school works on the community instead of in it. The community is seen as a research laboratory rather than a resource for uncovering problems of practice, or as a reality test for the philosophy and methods taught. If this tangential rather than central relationship pertains, it is possible that highly sophisticated research may be directed toward answering questions that are inconsequential or more related to the past than the present.

Areas of Concern

The areas of concern of the future school will reflect the expansion of public health practice as well as changing health conditions. Much has been said and written about the "new" problems of public health: air pollution, long-term illness, mental health, and others. The school must be responsive to these program needs as they arise while not neglecting more traditional areas.

It seems likely that the nature of these problems will create the need for highly specialized training areas. Public health engineering, for example, must concern itself with subspecialties such as air pollution, large facilities construction, industrial or agricultural toxicology, and radiation phenomena. Medical care programs may demand a level of clinical specialization. Complexities of planning, budgeting, evaluation, or service place more critical demands on the expert in management. This demand for specialization combined with a relatively small total student load has obvious repercussions on the size, qualifications, and coordination of faculty.

Health per se as distinguished from illness seems likely to grow in public health concern. The implications of physiological change in the absence of diagnosed disease or the level of physiological reserve for health promotion offer entrancing opportunities for study and action. The relationship between family ability to meet the demands and stresses of daily living and the health of its members and the importance of attitudes toward health as determinants of health behavior are beginning to take their places along with disease- or disability-oriented problems as areas of serious study.

It seems inevitable that more concern will be given to public health practice as distinguished from public health programs and from the professional practice of each of the disciplines concerned. If public health practice has its own particular skills of diagnosis and planning of community mobilization, of the synthesis and coordination of organized multiprofessional and public action for health, and of program evaluation and research, it becomes apparent that virtually no systematic theoretical base for the practice of public health has been developed. Bits and pieces of the practice or techniques of other professional and scientific groups have been applied to public health, and some methods, especially in epidemiology and in laboratory procedures, have been carefully and systematically developed. However, there is no comprehensive, rational framework of practice within which these can be reconciled.

The development of such a theory is a task toward which schools of public health appear to be moving. Increasing concern with the concepts and methods of coping with health problems characterized by multiple causation, strengthening of curriculum content in governmental theory and structure and in the dynamics of social action, and increasing attention to the socioeconomic and cultural affects within public health work attest to the growing concept of public health as a field of practice based on many fields of knowledge. However, the proliferation of unrelated courses and the sketchy and disjointed content of many courses in public health administration or practice reveal the need for much more systematic delineation of the nature and process of public health practice.

The content of many fields needs to be assessed for its relevance to public health practice, modified, sorted out, and synthesized in much the same way the content of physiology, anatomy, psychology, and other basic sciences are synthesized and rearranged into a process in the art of medical diagnosis. The common and interchangeable public health skills and, even more important, the common public health values that apply to all public health disciplines must be as clearly understood, as wholeheartedly accepted, and as fully mastered as those of the particular discipline. The interdependence, overlapping, and potential reenforcement values of the various disciplines must be clarified, systematically studied, and convincingly taught.

Research is bound to continue and increase as a major area of concern, though it seems likely that the directions and methods in use will be expanded. Philosophical research, administrative research, and micro research—intensive descriptive studies of small groups designed to illuminate the nature of a complex phenomenon rather than to establish generalizations or comparative evaluations—currently have little place in research activities in schools of public health. Methods of studying multiple-causation health phenomena are relatively underdeveloped. These, among other research activities, must be developed if knowledge of public health practice and service is to be extended.

Because public health knowledge is so dynamic in character and because it may be assumed that education and service revitalize and reinforce one another, the future school of public health must increasingly concern itself with continuing education and with the realities of the application of new knowledge. This is not a new direction for the school of public health, but the pattern by which these concerns are expressed may differ. The educational and consultative efforts of schools today are far flung and often scattered. Their arena is the world; a faculty member may be advising today in Pakistan, tomorrow in Argentina, and the next day in Lapland. This provides a new dimension for comparative observation and research. However, continuing education, that is continuing for the faculty as well as for the agency—sustained, intimate, long-term affiliations with groups or with agencies—makes a different kind of contribution. Studying and participating in the growth and development of groups and communities provides for greater impact of the educational institution on practice, and at the same time it may deepen the faculty's perception of the difficulties of moving from precept to implementation.

Curriculum Organization

The incessant enlargement of the body of knowledge from which public health can draw is provoking greater attention to methods of ac-

complishing the teaching task of the schools. The objective of the school is to optimize the professional and personal potential of the individual in relation to his work. Hopefully, it will provide him with beginning skills of sufficient depth to permit him to enter the mainstream of public health comfortably and usefully while equipping him to challenge and change any or all of the methods he has been taught; it will kindle excitement about the purposes and significance of public health action while cultivating sufficient patience to cope with the laborious process by which these purposes are realized; it will encourage a research attitude while developing respect for the wise administrative decision. To accomplish these purposes within a reasonable span of time and with a reasonable expenditure of money and of scarce teaching personnel is no mean feat. More hours, more instructors, more classrooms, more books cannot in themselves provide the ultimate answer.

To consider in depth all of the fields of knowledge that have significance for public health would require unconscionable amounts of time. The answer must rest in large measure on better utilization of the available time. There are indications of some experimentation in this respect. The use of case and problem methods to synthesize content from several fields, panel teaching, independent self-directed study that provides practice in methods of problem solving, emphasis on principles and sources rather than on content which will be soon outdated, extended opportunities for field experience, research preceptorships or residencies, and interprofessional courses and team assignment are being tried in various combinations. The future school may be expected to subject these methods to rigorous scrutiny as they relate to the goals of the educational system and to base selection of a particular approach on evidence rather than solely on personal predilection. Patchwork, timid changes in curriculum, and constantly increasing courses or areas of study may be expected soon to reach feasible limits. When this occurs, comprehensive review of the curriculum in terms of the educational product desired rather than in terms of professional personnel now engaged or courses now being taught would seem inevitable.

Institutional Organization

Within the university structure, schools of public health have been established as independent schools or, in some instances, as a department within a medical school. Their traditional linkage to schools of medicine and growing linkage with other basic professional schools has already been discussed. Greatly increased interchange between the school of public health and other units such as departments of government, anthropology, social work, sociology, behavioral sciences, biochemistry, engineering (including electronics), or physics must be expected in the future. Considering the number of students that are likely to require the rather specialized facilities of a school of public health, it is manifestly impossible for each school to develop and to utilize fully a faculty sufficient to cover the many areas of knowledge that must be represented in some measure in the teaching staff.

It seems likely that some organizational structure will be developed that will permit the school to function with sufficient autonomy to develop its own unique channels while taking advantage of faculty and facilities much greater than might be justified by the size of the student body. Conceivably, the school might assume some characteristics of an independent institute, with a relatively small core staff supplemented by a large faculty resource group representing many areas of expertness and different professions in a flexible staffing pattern. Thus, it is possible to meet the educational and research demands of a relatively small group, some with narrow fields of specialization, or to adjust to educational demands that may arise only periodically or for a limited time. This pattern would require full integration of the school within a comprehensive university. Such an organization might grow naturally from the present trend toward greater utilization of personnel from other departments and schools to assist with teaching and research. It might be expected, however, to provide for systematic integration of continuing, periodic, or temporary faculty and more efficient application of educational resources to the school's task of education.

Some specialization seems likely to develop among the schools of public health. This has

already occurred to some degree; prospective students are often aware that a school is strong in a particular field or is especially interested in a research area. However, more comprehensive, consciously undertaken planning would permit schools to elect areas of special emphasis. For instance, the complex job of incorporating international health content in the curriculum might be simplified and the depth of teaching increased if each school were to agree to concentrate on a particular geographic area or on particular countries. Similarly, a school might elect to concentrate its efforts on a particular field of public health service such as occupational health, rural health, or chronic disease. In this way, faculty, laboratory, and clinical resources for teaching and research might be concentrated for deeper and more inclusive investigation and training in a particular field.

Closely associated with curriculum reconstruction and organizational change is the likelihood of serious consideration of the costs of education and of cost control in schools of public health. The accounting method being developed by the Association of Schools of Public Health should provide a useful base for such considerations.

Perhaps this picture of the school of public health of the future has been too rosy. Perhaps the sense of purpose, the depth of commitment to public health as a professional field, or the taste for leadership that extends beyond institutional limits is lacking. Perhaps preoccupation with an insistent present obscures the opportunities of the future. Perhaps precarious financial support or comfortable tradition inhibits vigorous innovation and courageous change. But it is certain that if the school of public health does not move to meet these challenges, some other institutions or systems will do so. The needs are the needs of society, and they will not in the long run be denied.

The Issues

No one doubts that education in public health will continue and will expand in some form and under some auspices. Whether this education will be a part of an official health agency, and be service-oriented and heavily weighted with inservice training of all kinds—"trade schools" for those who do not like the method—or whether it will become so academically dominated that it will deserve the epithet of "ivory tower impracticality" is in question.

What is not certain is whether schools of public health will survive. The issues are fairly simple; strangely, public health leaders have not taken any stand. No professional school can long survive without a distinctive profession to educate—a distinctive body of knowledge, skills, and competence to teach. Indeed, seldom are professional schools formed until distinctive professional status is accepted and stated. Public health is no exception. The October 1914 conference on public health training, composed of Dr. A. C. Abbott, Dr. Hermann M. Biggs, Dr. Simon Flexner, Dr. Jerome D. Greene, Dr. Victor G. Heiser, Dr. Edwin O. Jordan, Starr J. Murphy, Dr. William H. Park, Dr. Wickliffe Rose, Dr. M. J. Rosenau, Dr. Theobald Smith, Dr. George C. Whipple, Dr. C.-E. A. Winslow, Dr. William H. Welch, Prof. D. D. Jackson, Dr. F. Cleveland, Dr. Wallace Buttrick, Dr. E. C. Sage, and Dr. Abraham Flexner, said, "It is becoming increasingly clear that public health work constitutes a distinct profession, and the wider recognition of this fact will be an important result of the creation of institutes or schools of hygiene."

Clearly they thought in 1914 that public health had become such a distinctive profession and therefore recommended that schools of public health be established. This was accomplished with the assistance of the Rockefeller Foundation. By some quirk of fate this mandate seems to have been forgotten and the schools that were established have turned to a theory that public health is only a specialty of medicine. Logically, one can only deduce that they should never have been created in the first place.

This is not an academic issue or a semantic issue; it is a fundamental issue for schools of public health. It cannot be settled by schools alone but by the public health profession itself. If we are not a profession of public health dis-

---

Based on an address by Dr. Edward R. McGavran, dean, University of North Carolina School of Public Health, Chapel Hill.

tinct in purpose and function, with a distinctive body of knowledge and competence—then the quicker we return to medical schools and to the schools of nursing, dentistry, veterinary medicine, engineering, education, the better. There we can be trained as public health specialists in those professions.

The very indecision in public health leadership marks the failure of schools of public health more clearly than any words can describe. Whatever the decision, let us make it.

I am not as pessimistic as this may sound. If we face the issues, I do not doubt that we will find the right answer. We will accept our professional status and reaffirm the 1914 conference conviction that we, as a distinctive profession, need schools of public health and more of them.

Once this decision is made, the future of schools of public health becomes much more clear and our problems fall into logical patterns; and their solutions, though no less difficult, become evolutionary and sound.

Given independent professional status, future schools of public health must concentrate upon training leaders in public health. Now, of course, this is a ridiculous statement. No professional school trains leaders. It gives the student the background, knowledge, philosophy, concepts, and a modicum of skill and technique as a base upon which to build first competent professional practice and, later, leadership. Leadership is earned, not given.

Given these dimensions of distinctive public health competence, every faculty will vary the mixture of essential knowledge, philosophy, skill, and technique (call it the core curriculum), but no faculty would dare to do what many schools of public health are now doing—grant public health degrees to people who have received little or no public health knowledge, philosophy, or technique in their whole academic experience. Since according to some people, there is no distinctive body of knowledge which is public health, they feel they can therefore teach anything that appears in the curriculum of any of the 20 odd professions who have specialization in public health. I do not question the need for super specialization in public health, but all other professions call for a sound professional education and degree before specialization. In the future, schools of public health with professional status will grow up and come to the same policies.

If we are a distinctive profession of public health, we shall probably follow in broad outline the developmental experiences of other professional educational schools. The hue and cry for unfettered license to go in any direction is well enough for a kindergarten stage of development. Just as the public eventually wanted assurance that anyone with a medical degree had a grasp of the fundamentals of medical science, so we hopefully will provide a basic minimum in public health. In this task the Association of Schools of Public Health can play a leading role, and we have a right to look to that association for leadership.

If we are distinctive professional schools of public health, we shall also learn from the experiences of other professional schools and develop those methods of education that are most effective in the learning process. For example, all other professional schools have accepted the superior quality of education at the patient's side. In medicine, the teaching in wards and clinics that originally occurred only after graduation later became the major learning period in the last half of a 4-year program and recently has spread throughout the entire medical curriculum. This is no accident or fad; the learning situation is vastly superior despite the tremendously increased cost and difficulty of patient-side instruction.

The effort at "community-side teaching" in public health has been pitifully small and inadequate, with only lip service given to the concept that none dare deny. The community is and will remain our patient, and the future schools of public health will develop means of providing education at the community side. Many practitioners of public health must become clinical professors of public health, serving as part-time and then full-time faculty members of the schools. They must assume a large part of the curriculum of the school, be paid by and responsible to the school, and be qualified not only in their public health specialty but in the educational process. How soon this will come about is only a guess, but if we do not move promptly, schools in other countries will soon outstrip us.

Another knotty problem of the future is the length of the curriculum. It is obvious that the 1-year degree is an emergency measure not based upon sound analogy or experience. A 1-year master's program is characteristic of advanced or specialized work in an already established profession. We used 3-month courses for awhile. To meet emergency situations we must develop shortcuts and adapt to them. But this does not mean that we accept the shortcut as desirable routine or an acceptable education and training procedure. I predict that education in public health will consume a basic 2 years, 1 for core curriculum sciences basic to public health, philosophy and concepts of public health, and some methods and techniques of public health. This year may also include certain courses in physical and social sciences that most students lack upon entrance. For the generalist, a second year of school will be required for greater depth in areas of interest, for patient-side instruction, given concurrently, integrated into the curriculum, or in a block.

For the specialist the second year will be spent in intensive work in maternal and child health, mental health, medical care, radiological health, teaching, or other specialty. For certain disciplines, a third year of residency training will be added as part of the school's responsibility, exactly as medical schools provide residency even if all residencies are not in a school setting.

Part of our difficulties stem from lack of uniformity in degrees. We would be in utter confusion if all schools of medicine gave different degrees, with different meanings. The present degree structure in public health is impossible. We can accept and understand variant degree structure in schools of other countries, but some order must be established in the United States. This is a function and responsibility of the Association of Schools of Public Health.

Accreditation of professional education is strictly the responsibility of that profession. The public health profession and the American Public Health Association have failed in carrying out this responsibility. If public health is a specialty of all other professions, other professions are going to accredit schools training public health specialists in medicine, nursing, dentistry, engineering, and education. This is what is happening. If public health is a distinctive profession, then no nursing league or association should set standards for training public health nurses. The Association of Schools of Public Health should not accredit itself, but it should put pressure upon the American Public Health Association to take on the job and do it right promptly.

The future of schools of public health will be as bright as the vision, dedication, and devotion of its faculties. We have not risen to the necessary heights of leadership in our profession in the past; we have been too concerned with leadership roles in other professions. The time has come to put public health in first place, above all other professional loyalties.

New Welfare Periodical

The first issue of *Welfare in Review*, the monthly periodical of the Welfare Administration, was published in July 1963. *Welfare in Review* will contain operating statistics, research reports, and other information on public welfare programs such as old age assistance, aid to families with dependent children, child welfare services, and maternal and child health services. Also, programs in juvenile delinquency, aging, and Cuban refugee resettlement will be covered.

Subscriptions are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, at $2.50 a year ($1 additional for foreign mailing) or 30 cents for a single copy. A limited number of copies for official use are available upon request to the Editor, *Welfare in Review*, Welfare Administration, Department of Health, Education, and Welfare, Washington, D.C., 20201.

Program Notes

Needs of Cancer Patients

"A Study of the Needs of Cancer Patients in California" indicates that many of the patients and their families, being unaware of community resources available to aid them, create new problems by overtaxing their own resources. The report also suggests the need for new community resources, to provide, for example, recreation at home and transportation to and from treatment.

This 4-year study by the California Division of the American Cancer Society on nonmedical needs of 876 cancer patients, selected randomly from 8 hospitals in 5 California communities, was based partly upon opinions and observations of physicians, patients, and relatives.

Copies of the study and mimeographed "Summaries of Major Findings and Conclusions" are available from the American Cancer Society, California Division, 875 O'Farrell Street, San Francisco, Calif.; $1.50 for the study.

Accident Control

An interim report on the development of an experiment to determine whether group discussions will modify driving habits and accident records, partly supported by the Public Health Service, is described in "Progress Report—Mass Communication and Group Discussion Techniques" by Harold L. Henderson, Ph.D., and Theodore Kole, M.A., Drivers Safety Service, Inc., 298 Broadway, New York, N.Y., March 1963. Study subjects were drawn from "re-offending" New Jersey drivers previously counseled in accident prevention clinics.

Day Care for Mental Patients

More mentally ill patients might be treated successfully in day hospitals, suggests a recent study conducted by the Albert Einstein College of Medicine (Yeshiva University, New York). Sixty percent of 200 such patients, selected at random at the Bronx Municipal Hospital Center and including the most acutely ill, were successfully treated in a day hospital setting without spending a night away from home. The majority resumed normal functioning much sooner than would have been predicted under full-time hospitalization, reports Dr. Israel Zwerling, associate professor of psychiatry at the college.

Housing Code Violations

When a New York City landlord fails to repair a dilapidated building, the city may seize it, fix it up, and then make the owner pay if he wants it back. In the first 13 months of operation of this receivership program, action was started on 163 buildings and 7 were seized. The threat of receivership also spurred many other landlords into action to meet requirements, reported Harold Birns, New York City's commissioner of buildings.

In Chicago and Denver, to speed imposition of criminal penalties, housing code violations are handled like traffic violations. Building owners who do not correct a violation in a specified time receive a ticket and can post collateral.

Reduced Tooth Decay

Maryland, with about 90 percent of all water from public supplies fluoridated, leads the States in fluoridation. Post-fluoridation records of communities such as Hagerstown, Md., lend support to the Maryland State Department of Health, division of dental health, in its strong drive to expand the program.

Hartford, Conn., has closed one of its three dental clinics for pre-school children "because of lack of customers," with a saving of $5,000 to $6,000 a year to the city. Until Hartford started adding fluoride to drinking water in 1960, the clinics treated 300 to 400 children a year.

In Philadelphia, the American Dental Association has reported reductions up to 75 percent in the prevalence of tooth decay in school children after 7 years of fluoridation.

Buddies for Elderly Patients

A buddy system tried at Northern State Hospital, Sedro Woolley, Washington, improved the daily management of older women patients and contributed to their emotional well-being. Each patient aide helped her less capable buddy follow the hospital routine, assisting her in matters not requiring qualified nursing skills. Most of the aides derived satisfaction from the responsibility and those aided benefited from the emotional comfort and friendly affection they received. The nurses, relieved of minor tasks, had more time for professional services.

Award to Handicapped Physician

Dr. Arthur S. Abramson has received President Kennedy's Citation for Meritorious Service in appreciation of his "exceptional contribution in furthering the employment of the handicapped." The handicapped physician is professor of rehabilitation medicine and chairman of the department of rehabilitation medicine at the Albert Einstein College of Medicine of Yeshiva University in New York.

Foster Homes for Mental Patients

Veterans Administration mental patients by the thousands are finding a home away from home and a road to recovery by living with adopted parents near the VA hospitals, the agency reported. Many patients who had reached a standstill on improvement in the hospital responded to home living with increased interest and further recovery. These included some Spanish-American War and World War I veterans who had been hospitalized for 20 years or more.

The foster home program, which began in the VA hospital at Northport, N.Y., in 1953, last year counted 3,241 patients from 58 VA hospitals living in 1,240 foster homes.