fellowmen, developed in the farming population a feeling of class consciousness, taught valuable lessons in cooperation and became an important agency for the dissemination of the new ideas and methods in farming which were being advanced by the agricultural colleges and experiment stations.

Of inestimable importance, finally, as an agency for the promotion of scientific knowledge relating to agriculture was the agricultural press. It would be difficult, indeed, to estimate the influence of the agricultural press on the development of scientific farming in the United States. From the beginning it has dealt with an infinite variety of subjects; it has been one of the most efficient agencies for the popularization of the results of scientific experiments conducted by the agricultural colleges and experiment stations, and it has accorded much space in its advertising columns to ways and methods of improving the practice of farming.

The significant aspects of the agricultural revolution in the United States may now be stated: (1) the passing of the public lands into private ownership; (2) the rapid growth of population and immigration; (3) the invention and popularization of improved farm implements and machinery; (4) the extension and development of transportation and communication; (5) the migration of industries from the farm to the factory; (6) the expansion of domestic and foreign markets; and (7) the establishment of agencies for the promotion of scientific knowledge relating to agriculture, among which may be mentioned, especially, the federal and state departments of agriculture, the agricultural colleges and experiment stations, including rural extension work, the farmers' organizations, with their economic, social, educational and political functions, and the farm press. These forces transformed farming from a pioneer and largely self-sufficing occupation into a modern business organized on a scientific, capitalistic and commercial basis. Farming became inextricably bound up with the business world. It had become indeed the warp, with industry as the woof, of our national economy. These new developments and relationships gave rise to many problems which to-day confront the nation and which require for their solution a thorough scientific knowledge of farming and a sound, far-sighted and well-balanced statesmanship.

The agricultural situation in the United States during the last decade has produced a large volume of discussion of the farm problem. "In considering this discussion," observes Dr. C. L. Holmes, "one is struck by the fact that almost all of it has been from the point of view of the immediate situation, and (that) but little has been said of the long-time aspects of the problem." Dr. Holmes then proceeds to state the long-time aspect of the problem in the following terms:

> An analysis of the present agricultural situation, and causes which have operated and are still operating to bring it about, seems to justify the conclusions: first, that the present depressed condition of our agriculture is due primarily to certain more or less permanent results of the World War, first, in the direction of expanding our agricultural output and, second, of impairing our foreign market for agricultural products and of redirecting the currents and changing the content of our international trade; second, that the recovery of our agricultural industry depends upon the adjustment of our agricultural production, both qualitatively and quantitatively, to the domestic market; and third, that the result of these necessary adjustments will be the beginning of a new era in American farming, representing as profound a change as that which came with the shift from self-sufficing to commercial agriculture.

Dr. Holmes adds, however, that this "does not point to a policy of inactivity and indifference. The emergency truly is great enough to demand the best thought and effort of our agricultural leadership. Probably no previous period has presented so great a need as the present for the best effort of educators, legislators and the leaders of the farmers' movement toward making general an intelligent view of the real nature of the situation, toward making as easy as possible the adjustment to the new alignment of forces, and toward developing unity of purpose and concerted action on the part of the agricultural class. There was never so great a need, and probably never so great an opportunity, for the development of a comprehensive and far-reaching agricultural policy."

OBITUARY

MEMORIALS

THE unveiling of a bronze memorial tablet of Dr. William Royal Stokes in the municipal building, Baltimore, took place on November 26. Dr. C. Hampson Jones, commissioner of health, presented the tablet and addresses were made by Dr. William H. Welch, professor of the history of medicine in the Johns Hopkins School of Medicine, and Dr. Hugh S. Cumming, surgeon-general, U. S. Public Health Service. The tablet bears the relief portrait of Dr. Stokes and underneath the inscription: "To the memory of an able physician and bacteriologist. A lover of art, music and poetry, who died a martyr to the cause of science, contracting psittacosis (parrot fever) in line of duty."

Under this is the inscription: "Erected by his fellow-employees of the Baltimore City Health Department, 1930."

IN the presence of relatives and friends, among whom were members of the faculty and many former students, a portrait of the late Dr. Henry P. Talbot, dean of students from 1921 to 1927, was recently shown for the first time in the office of Dean H. E. Lobdell, at the Massachusetts Institute of Technology. Dr. Talbot, whose death occurred in 1927, was a professor in the department of chemistry at Technology from 1892 to 1927, and he was head of the department from 1901 until 1922. The portrait was painted by E. Pollak-Ottendorff, of Boston. It is a gift to the institute from a group of former students, and its title plate bears this legend: "As alumnus, teacher, and administrator for forty years, he gave conscientiously and unselfishly of his brain and heart to the upbuilding of the institute."

AT the annual meeting of the Michigan Section of the American Institute of Chemical Engineers, held at Ann Arbor on November 11, the following memorial to Herbert H. Dow, founder of the Dow Chemical Co., was adopted: "The death of a leader brings to our minds a feeling of pride over his achievements as well as grief at our loss. It is with these mingled feelings that we pay tribute to the memory of Herbert H. Dow, recognized the world over as a brilliant leader in the field of chemical manufacture, but known to us also as a sincere and helpful associate and friend, willing to give freely from his store of knowledge and experience. We extend our deep sympathy to the family, and to those who labored so intimately with him in the great plant which will stand as a monument, not of dead stone, but of living service continuing as it did in his life time."

THE College of Physicians of Philadelphia held a meeting on October 23 to commemorate the anniversary of the birth of Galen, called the founder of experimental physiology. Ninety-three of the ninety-eight Galen publications, the property of the college library, were on exhibition. The meeting was addressed by Drs. William H. Welch, Charles W. Burr, Burton Chance and Giuseppe Franchini, of Bologna, Italy.

PROFESSOR ALBERT EINSTEIN made an address before the Prussian Academy of Sciences on November 26, in commemoration of the three hundredth anniversary of the death of Johann Kepler.

RECENT DEATHS

JAMES H. EMERTON, an authority on spiders, illustrator of scientific books and constructor of zoological and anatomical models, died on December 5 in his eighty-fourth year. From 1906 to 1919 Mr. Emerton was secretary of the New England Federation of Natural History Societies. He was a brother of Professor Ephraim Emerton, of Harvard University.

WILLIAM PENN RICH, botanist, for twenty-one years secretary and librarian of the Massachusetts Horticultural Society, died on November 30, at the age of eighty-one years.

PROFESSOR ALFRED ELY DAY, professor emeritus of natural sciences at the American University of Beirut, Syria, died on December 3.

DR. ERNEST ELLSWORTH SMITH, a specialist in experimental medicine and clinical pathology and president of the Medical Association of Greater New York, died on December 5 at the age of sixty-two years.

THOMAS G. GERDINE, engineer in charge of the Pacific division of the U. S. Geological Survey, with headquarters in Sacramento, has died at the age of fifty-eight years.

HEINRICH GUSTAV ADOLF ENGLER, long professor of botany at the University of Berlin and director of the botanical garden and museum, died on October 10, at the age of eighty-six years.

THE death is announced of Dr. Rudolf Disselhorst, professor of comparative anatomy at the University of Halle.

SCIENTIFIC EVENTS

THE LIBRARY OF THE DEPARTMENT OF AGRICULTURE

INCREASED appropriations made possible the addition of 16,563 books, pamphlets and maps to the Library of the U. S. Department of Agriculture in the fiscal year 1929, according to the annual report to Secretary of Agriculture Hyde, of Miss Claribel R. Barnett, librarian. This was 2,209 more than the number added the previous year. On June 30 the library contained 218,038 volumes on agricultural and scientific subjects and was receiving 4,080 periodicals. It receives 128 daily newspapers. More than 268,000 books and periodicals were circulated in this period. In addition to the main library, branch libraries are maintained in the various bureaus of the Department of Agriculture, dealing with the subjects of special interest to these bureaus.

In cooperation with the land-grant college and ex-