This is not the proper occasion for further citation of such facts, but is the occasion for directing attention to the significance of such facts in relation to fundamental problems of our day. Persons who have had the benefits of higher education are needed as informed leaders. Instead of accepting and contributing to the disquiet of misunderstanding, instead of encouuraging the wishful thinking about the good old days, which can not come again, we need to redirect education in accord with the difficult but better present day and those which we should like to believe may be ahead of us.

The highly educated minority seems to be close to the crossroads in the progress of higher learning. Their leadership in thought and practice can continue only as they find effective ways to distribute useful knowledge and service and to lead the majority toward sympathetic participation in advancing knowledge. The mass of knowledge-consumers and users, even though they are not primarily discoverers, now need, and sometimes expect or demand, enough insight into new knowledge that they may appreciate its significance.

The older idea was based upon an authority possessed by the leader, who was an inventive scientist. But in our country, authority of persons as such will rapidly diminish. Known and demonstrable truth must be the final authority. They told Louis Pasteur in 1881 that he could not prevent anthrax in cows and sheep by his claimed vaccination. What authority did he use in proving his case? He said: "Provide cows and sheep for a public demonstration and we shall see the truth." On May 5, 1881, he vaccinated 6 of the 10 cows and 25 of the 58 sheep. Four cows, 23 sheep and 2 goats and 10 control sheep were not vaccinated. On May 17, 1881, the same sheep and cows were again vaccinated. On May 31, 1881, all cows and all sheep except the 10 control sheep were given fully virulent anthrax germs. On June 2, 1881, all unvaccinated cows, sheep and goats, except the 10 controls, were dead or severely ill. The truth was demonstrated and accepted.

Not only the material benefits from modern knowledge, but the science man's way of working need to be more fully understood and more widely used. Pasteur did little arguing. He presented truth and demonstrated the meaning of truth. He withheld nothing for himself. He sometimes expressed regret that so many uninformed people could not, or did not, wish to understand, but he found encouragement from those who did understand.

One of the biggest, probably the biggest, problem for an educated minority is that of extending the way of working, which is characteristic of discoverers, the real desire to know and use proved knowledge. Much has been said about this, but not enough has been done.

Man's inquiring and daring mind is a scientific fact of the greatest significance. Man is an adventurous animal, always attempting something which no one has yet succeeded in doing. At his best, man always wants to do something for society which has not yet been accomplished. His worthy curiosity is a catalyst by which new knowledge and new services may come to society.

Whose is modern knowledge? Is it the property of such workers as the scientist? The administrator? The practitioner? The inventor? The manufacturing industrialist? Or is it held in trust by the better educated, but with the unavoidable obligation that all may be led into its benefits?

Surely, society has the right to expect the educated minority to be its sure-footed leaders, rather than that their superior education may be used by them merely to gain increased personal benefits through exploitation of their advantages.

The creative scientist, the scientific practitioner, the trained social worker, the educator, indeed all those who have benefited through higher education, have their largest, the most difficult and the best task still to be met.

OBITUARY

ELMER PETER KOHLER

THE following minutes were placed upon the records of the Faculty of Arts and Sciences of Harvard University at the meeting of February 14, 1939:

ELMER PETER KOHLER

Sheldon Emery Professor of Organic Chemistry

Elmer Peter Kohler was born on November 6, 1865, in the village of Egypt, Pennsylvania. His immigrant ancestor, Jacob Kohler, from Mühlhausen in Switzerland, in 1728–30, was the first settler in the vicinity of Egypt and acquired there a large tract of fertile land by warrants from the Penn Heirs. Through succeeding generations the Kohlers remained in Egypt as prosperous farmers, millers and merchants.

Elmer grew up on the ancestral farm and in the ancestral mill, profiting greatly from the education that they afforded. An alert, venturesome, self-reliant boy, unusually observant and thoughtful, he made botanical and mineralogical collections and learned the peculiarities of plants and the ways of animals. In the mill and among the farm machines which his progressive father installed he developed that mechanical skill which proved so useful to him in his later life. Above all, and by much hard work, he mastered the science and the practice of farming.

In 1886 he graduated, with honors, from the classical course at Muhlenberg College, in nearby Allentown. Shortly thereafter he journeyed West to seek his fortune and became a Special Passenger Agent on the Santa Fé. He was successful in this work and liked it, particularly the trips all over the Southwest, but he soon longed for wider intellectual horizons and in 1888 returned to Muhlenberg for another year of study.

At this time, through his own reading rather than by formal instruction, his interest in chemistry was awakened and in the following year he went to Johns Hopkins University to study organic chemistry under Ira Remsen. Johns Hopkins was then the Mecca in our country for those interested in the advanced study of this subject. Kohler developed rapidly in this environment and though previously untrained in chemistry obtained his doctorate in three years (1892).

Appointment to an instructorship at Bryn Mawr promptly followed and he was the first to teach organic chemistry at that institution. There he won recognition as a stimulating lecturer, an efficient teacher and a productive scholar. He soon became influential in the college at large and was recognized as the informal counsellor of the president, M. Carey Thomas, whose robust and discerning personality had so much in common with his own.

In 1912, after twenty fruitful and happy years at Bryn Mawr, Kohler came to Harvard to give the courses in elementary chemistry and in advanced organic chemistry, previously given by Charles Loring Jackson and Henry B. Hill, respectively. In 1914 he was appointed Abbott and James Lawrence Professor.

Kohler's academic career was interrupted in 1918 when he was granted leave of absence to assume the direction of research in the Offense Section of the Chemical Warfare Service of the United States Army. There, thanks to his broad knowledge of applied as well as theoretical chemistry, his good sense and his active and resolute leadership, he soon rescued this branch of the army's work from the confusion in which he had found it and made it a conspicuous success. He returned to Harvard in the fall of 1919.

Kohler's mature wisdom, keen insight and inveterate fairness were recognized at Harvard as they had been at Bryn Mawr and he was called upon to serve on many important committees. He was a member of the Administrative Board of the Graduate School for many years and in 1926 was Acting Dean of that School during the absence of Dean Chase. In 1934 he was appointed Sheldon Emery Professor of Organic Chemistry and in the same year he took over the chairmanship of the Department of Chemistry.

Kohler was in the full tide of his multifarious activities as investigator, teacher and administrator when he was overtaken by his brief, final illness. He died on May 25, 1938.

Kohler was preeminently an investigator, and as such was outstanding both in the extent and in the quality of his achievements. Arriving at Bryn Mawr young, inexperienced and isolated, he promptly began a long succession of significant, carefully planned, skilfully executed and elegantly reported experimental investigations in his chosen field of organic chemistry. In some of the experimental work he was assisted by able young women students whom he had himself trained, but most of his researches were carried out entirely with his own hands. At Harvard, in spite of his numerous duties as teacher, committeeman and administrator, his scientific productivity increased. He had, of course, many more collaborators and assistants than at Bryn Mawr, but he continued unremittingly his own personally executed investigations. Indeed, one searches in vain for any chemist in recent times who has turned out so great a quantity of experimental investigation performed with his own hands. He was a virtuoso in the experimental art. He had an encyclopedic knowledge of his whole field, keen insight and sound judgment.

Kohler possessed phenomenal powers of observation which functioned not only in his work but in all his daily contacts. A walk in the country or through city streets yielded him a surprising amount of information and his memory was unusually retentive. To the end of his life the physical minutiae of his observations as a lad on the farm or of his youthful experiences in the Southwest were as fresh as though they were of yesterday.

Most remarkable of all was the continued flexibility and freshness of his mind. He was always abreast of the times and to the last was as receptive and sympathetic to new ideas as the most enthusiastic youngster. His mental as well as his physical vigor was maintained undiminished up to his last brief illness.

Kohler was a great teacher. His skill as a lecturer and his wide, first-hand familiarity with the everyday applications of chemistry to agriculture, to industry and to physiology brought him success in Chemistry A, the introductory course in general chemistry. His astonishing grasp of the bewilderingly multiplex and protean science of organic chemistry and his flair for simple and lucid presentation established his Chemistry 5 as a veritable masterpiece famous among organic chemists the country over.

More important, however, than his activities as a lecturer were his daily associations with his students in the laboratory. It was here that he left an indelible imprint. A thorough training in organic chemistry was the immediate goal of his teaching, but diligence, forethought, independence, enterprise and integrity were his more fundamental objectives. Practicing what he preached, a zealot in his science and a master of his craft, he taught as much by example as by precept. Truly Spartan in his own life, Kohler scorned sentimentality and always told the simple truth as he saw it, no matter how unpalatable it might be. Firm, courageous and indomitable, he was a wise and kindly counsellor and a loyal friend.

ARTHUR B. LAMB, *Chairman*
LIONEL S. MARKS,
LAWRENCE J. HENDERSON,
Committee