It may well be that the fad offers the only way to really introduce a new concept into the botanical world. By this I do not mean merely to get the idea into literature, but to get in into botanical thinking.

In his "Leaven of Science" Sir William Osler cites the following story, told by Sir Robert Christian, about Barclay, one of the leading anatomists of the early part of the nineteenth century. Barclay spoke to his class as follows:

Gentlemen, while carrying on your work in the dissecting room, beware of making anatomical discoveries; and above all beware of rushing with them into print. Our precursors have left us little to discover. You may, perhaps, fall in with a supernumerary muscle or tendon, a slight deviation or branchlet of an artery, or, perhaps a minute stray twig of a nerve—that will be all. But beware! Publish the fact, and ten chances to one you will have it shown that you have been forestalled long ago. Anatomy may be likened to a harvest field. First come the reapers, who, entering upon untrodden ground, cut down great stores of corn from all sides of them. These are the early anatomists of modern Europe, such as Vesalius, Fallopius, Malpighi and Harvey. Then come the gleaners, who gather up ears enough from the bare ridges to make a few loaves of bread. Such were the anatomists of last century—Valsalva, Cotunnius, Haller, Vicq d'Azyr, Camper, Hunter and the two Monroes. Last of all come the geese, who still contrive to pick up a few scattered grains here and there among the stubble, and waddle home in the evening, poor things, cackling with joy because of their success. Gentlemen, we are the geese.

Osler's comment on this story is:

Yes, geese they were, gleaning amid the stubble of a restricted field, when the broad acres of biology were open before them. Those were the days when anatomy meant a knowledge of the human frame alone; and yet the way had been opened to the larger view by the work of John Hunter, whose comprehensive mind grasped as proper subjects of study for the anatomist all the manifestations of life in order and disorder.

To Osler's comment I beg leave to add that probably only by strength of interest in various fads were the geese called away from their gleanings and but for the widening of interest induced by fads they and their successors might well have remained in the stubble.

OBITUARY

WICKLIFFE ROSE[1]

1862–1931

WICKLIFFE ROSE was educated in his native state of Tennessee and at the University of Chicago. The scope of his intellectual interests was manifested early and changed only in outward appearance as time and circumstances carried him into unfamiliar and unexpected fields. It is worth noting that his first teaching position was in history and mathematics—subjects which, while disparate in content, were yet both congenial to his mind. It was in philosophy, however, that he found his real vocation. He filled chairs of philosophy and the philosophy of education for more than ten years at Peabody College and the University of Nashville. Never afterwards did he lose the general and analytical point of view acquired in those formative years. In all his subsequent, varied activities he looked instinctively not only into, but around, his problems.

During this period his recognized talents, executive ability and devotion to education led to his selection as dean of Peabody College and the University of Nashville, as agent of the Peabody Fund and trustee of the John F. Slater Fund, both the latter appointments having to do with furtherance of education in the South.

It was doubtless while administering these funds that Dr. Wallace Buttrick, president of the General Education Board, came to know Dr. Rose and to appreciate his gifts. Thus it resulted that Dr. Rose was chosen in 1910 to be the director of the Rockefeller Sanitary Commission for the Eradication of Hookworm in the South, an undertaking which started him on the amazing career for the betterment of health and the upbuilding of science that was to assume world-wide dimensions.

It was not without trepidation that Dr. Rose entered upon the anti-hookworm campaign. The field seemed far removed from philosophy and education. He gave the opportunity minute thought and consideration, and it may well be believed that his natural humanitarian impulses and love of his country contributed to the affirmative decision. A wakeful night, it is said, brought conviction and yielded also a plan of operations. As many of us know the dangers and pitfalls of midnight vigils, it is proper to state that Dr. Rose's visions when tested proved to be realizable. It is an historical fact that the methods he put into practice at the outset later called for little modification even when applied on an international scale.

There was a critical moment in the year 1910 when Dr. Rose might have been lost to the great career

[1] Read at the meeting of the National Academy of Sciences, Washington, D. C., April 26, 1932, at the posthumous award on Dr. Wickliffe Rose of the Marcellus Hartley medal for eminence in the application of science to the public welfare.

awaiting him in the yet distant future. When the presidency of Peabody College was offered him, his heart returned to his first loves—philosophy and education. The decision to be made was difficult and had to be a final one. We met at Lake George, where, as I recall it, the Southern Education Board was in session. Dr. Rose, who was at home on the water, rowed me well out on Lake George, and then resting the oars told of his struggle. Tears came into his eyes as he described the pull of the old, academic life, and also the attraction of the opportunity for useful work just opening before him. My sympathies were deeply stirred, and I rejoiced when I felt that Dr. Rose would go on with the health project. No one could, of course, advise the choice, although the extraordinary future in store for him had already become apparent to his associates.

A notable authority has said that Dr. Rose was a pioneer in devising the best methods of applying private philanthropy to the problems of preventive medicine. The tribute may justly be broadened: he was equally a master in the difficult art of applying private philanthropy to the highest purposes of scientific education and research. The beginning was made in public health work, and for this hookworm eradication was the instrument. Here it was necessary to proceed with tact and caution. The sensibilities of states were aroused. Dangers were averted by the policy adopted at the outset of entering a field only upon the invitation of the government, to operate as an integral part of the constituted health authorities, to exalt the importance and efficiency of the official health agencies, and to avoid all appearance of outside intrusion.

These, which have proved to be sound principles, rested in their successful application on knowledge of the extent of hookworm infestation, of the terrain which differed with locality, the economic status of the region, and on a fundamental understanding of the biology of the hookworm and the best available methods for its eradication.

Here were scientific questions to be answered and problems to be solved—things very appealing to Dr. Rose's mind. The relief work was gotten quickly under way, and very soon the scientific studies followed. The booty was a wealth of new facts, and in time the mere eradication of hookworm infestation became the wedge for the enlargement of public health activities and the undertaking of scientific investigations in the field and laboratory of public health problems.

The difficult matter of a personnel trained for scientific public health work became increasingly pressing. The solution sought by Dr. Rose was characteristic of him. Looking ahead a long time, he saw public health officers of various kinds as constituting a virile force in modern civilization. Thus he became the prime mover and influence in leading the Rockefeller Foundation to create schools of hygiene, with large funds, in Baltimore, Boston, London and elsewhere. The results of this vast public health program, which was extended to more than fifty countries and nations often diverse in populations and local conditions, with adaptations suited to each, have been astounding as measured in health, wealth and good will.

In due time an attack on malaria was begun, first on a local and later on an international scale. Here again scientific studies preceded or went hand in hand with practical relief operations. And then came the great problem of yellow fever in the Western Hemisphere and in Africa. It is not, I think, too much to say that next to Walter Reed and his associates the world owes most in this respect to the fundamental conceptions of Wickliffe Rose. Employing scientific expeditions sent to the "seed beds" of the disease in order to establish its nature and if possible to discover its cause, and by bringing into play the resources of present-day science, he is responsible for Dr. Noguchi's discovery of the *Leptospira icteroides* and Dr. Stokes' discovery of the African virus of yellow fever. It now appears that the yellow fever of the Western Hemisphere is dual in character, being composed of two diseases—one produced by the leptospira, the other by an agent identical with the African virus. This discovery promises to have far-reaching implications in the efforts to eradicate the Western disease.

As is well known, the two intrepid investigators just mentioned, as well as still other scientists, lost their lives in the course of their studies on yellow fever. Out of these profound tragedies has already come a means of protecting laboratory workers from infection by a method of immunization which may prove to have great importance for the future.

In 1923, when Dr. Rose became president of the General Education Board and the International Education Board, he returned to the educational field. Applying his accumulated experience, he set to work at once in the building up of science in its teaching and research aspects, and addressed himself again to the essentials of the undertaking at home and abroad. Knowing the value of good counsel, he sought to obtain the best available. The resources at his command were large; he knew the value of conservation and of use. Characteristically he struck again at the root of opportunity. Seeking to advance knowledge, his method was to strengthen the strong; he was attracted to leading men, strong laboratories, present opportunity. His aid was given widely but irregularly, as the circumstances seemed to warrant. In

every instance, first a survey and then an analysis were made. After due consideration, fortified by conference, judgments were reached. When action came, it was decisive and often courageous. Magnitude with him was a wholly relative matter: he weighed his acts in results to be achieved, rather than in costs to be met. Moderate expenditures were the rule, but large ones, as notably for the erection of the great two hundred inch telescope building at Pasadena, did not daunt him.

Although he was not a technical scientist, Wickliffe Rose became a great force in science. The temper of his mind was essentially scientific and he found no difficulty in dealing with scientists on their own grounds. I believe that he never discerned a problem in an unscientific manner; surely he never entered upon a project which he did not comprehend fully. It may be said of him that he enriched every field in which he worked; this is true of hookworm disease, malaria, yellow fever, and of the aid, small and large, which he gave to physics, chemistry, astronomy and biology.

In an interlude to his constructive activities he rendered valuable service as chairman of the War Relief Commission of the Rockefeller Foundation. In Belgium, Poland, Serbia and other countries ravished by war the assistance given under his direction to refugees, children and the destitute is gratefully remembered. He was responsible for the creation of the hospital unit at Compiègne where Drs. Carrel and Dakin worked out their method of treating infected wounds which played so beneficent and large a part in the late years of the war and afterwards in civil life.

Dr. Rose was remarkable in his self-effacement. No man, I believe, was ever more successful in this respect. He was moved by the opportunity for human betterment—of health, of knowledge, of personal relations. To those of us privileged to work beside him he was a constant wonder and joy. The ideality of his purpose, the clarity and comprehensiveness of his vision, the lucidity of his exposition, the security of his judgment, his good companionship, his love of a good story (especially a fish story, for he was an enthusiastic fly fisherman)—these are things not to be conveyed in mere words.

SIMON FLEXNER

MEMORIALS

THE annual meeting of the Research Club of the University of Michigan each year honors the work of some leader of science whose birth occurred one hundred years ago or some multiple thereof. The meeting on April 20 was a memorial to Benedictus de Spinoza and Anthony van Leeuwenhoek. The paper on Spinoza was read by Professor DeWitt H. Parker, of the department of philosophy; that on van Leeuwenhoek by Dr. C. V. Weller, head of the pathological laboratories. President Alexander G. Ruthven discussed the importance of research to the university.

THE *Zeitschrift für Tuberkulose* has published a special Robert Koch issue containing his portrait and two facsimile letters, as well as original papers by E. von Romberg and Sauerbruch, each of Munich; Sir Robert Philip, of Edinburgh; Calmette and Léon Bernard, of Paris; Bruno Lange, of Berlin; Bang, of Copenhagen, A. Stanley Griffith, of Cambridge, and others.

THE fourth "Victor Horsley Memorial Lecture" will be delivered this year, and the trustees (who consist of the presidents of the Royal Society, the Royal College of Surgeons of England, and the British Medical Association, the senior physician to the National Hospital, Queen Square, the senior surgeon to University College Hospital, and Mr. Stanley G. Robinson, the son-in-law of Sir Victor Horsley) have invited Professor E. D. Adrian, of the University of Cambridge, to give the lecture, and he has consented to do so. The lecture will be delivered on July 20 on the subject of "Visceral Sense Organs."

RECENT DEATHS

PROFESSOR JAMES W. TOUMEY, a member of the faculty of the School of Forestry at Yale University since it was established in 1900, formerly dean of the school, died suddenly on May 6, at the age of sixty-eight years.

DR. CHARLES DWIGHT MARSH, formerly physiologist in the U. S. Bureau of Animal Industry, died in Washington on April 23, at the age of seventy-seven years.

DR. WILFRED W. SCOTT, head of the department of chemistry at the University of Southern California, died suddenly on May 3, at the age of fifty-six years.

DR. T. C. JOHNSON, horticulturist and director of the Virginia Truck Experiment Station, died on March 31, at the age of sixty-two years.

THE death is announced at the age of thirty-three years of Dr. George Janssen, assistant professor of agronomy and assistant agronomist at the Experiment Station at the University of Arkansas.

Nature reports the deaths of Professor W. R. Dron, Dixon professor of mining in the University of Glasgow; of Dr. Alfred Hay, sometime professor of electro-technology, Royal Indian Engineering College, Coopers Hill, and afterwards at the Indian Institute