Obituary Notices

Prof. E. M. East

PROF. EDWARD MURRAY EAST, whose death has recently been reported, belonged to the group of Mendelian pioneers who began their investigations in the first decade of the present century. His most important contributions to plant genetics were in connexion with the breeding of potatoes, maize and tobacco. Not only was some of his work of great practical value, but he also made fundamental contributions to various aspects of plant breeding, especially to inbreeding and hybrid vigour, selection and the explanation of the phenomena of self-sterility in plants. He was one of the leading American plant geneticists of his time.

Dr. East was born at Du Quorn, Illinois, on October 4, 1879, and graduated at the University of Illinois in 1900. He became assistant chemist and then assistant in plant breeding at the Agricultural Experiment Station of the University of Illinois, and in 1907 received the Ph.D. degree for a thesis entitled "A Study of the Factors Influencing the Improvement of the Potato". This, like much of his later work, was characterized by quantitative as well as qualitative treatment of his material, at a time when nearly all the early Mendelian work was mainly qualitative and descriptive in character.

East was shortly appointed agronomist at the Agricultural Experiment Station, Storrs, Connecticut, whence in 1909 he went to Harvard as assistant professor of experimental plant morphology at the Bussey Institution. Since 1926, he has been professor of genetics in Harvard University. East's work on inbreeding, begun at Storrs, culminated in a book, "Inbreeding and Outbreeding", published in collaboration with D. F. Jones in 1919. His investigations of maize were especially valuable as indicating at an early period that quantitative characters such as length of cob are inherited and segregated according to the Mendelian rules. Part of this work was done in collaboration with Dr. H. K. Hayes. The inheritance of flower size in interspecific crosses of *Nicotiana* was one of the earliest studies of its kind.

Probably East's most important contribution to plant genetics was his masterly analysis of self-sterility in tobacco, in a series of papers beginning about 1915. He first crossed *Nicotiana glauca* with *N. sandwiczii*, and by analysis of the offspring and the crosses which could be made between them, he discovered that they fell into three groups of plants, each heterozygous for two different sterility factors or *S*-genes. These he called $S_1 S_2$, $S_2 S_3$, and $S_1 S_3$. A plant which was $S_1 S_2$, for example, could only be successfully pollinated by pollen carrying the S_3 factor. The other types of pollen tube grow so slowly in the style that the flower drops off before the pollen tubes reach the ovary. But he showed that by opening the buds, and so giving the pollen tubes a longer interval for growth, self-fertilization

could take place, producing plants homozygous for particular *S*-factors. The number of such *S*-factors in *Nicotiana* was finally increased to fifteen, all allelomorphic, that is, representing different changes in one locus of a chromosome. Similar conditions have since been found in various other plants, such as red clover and *Brassica*.

East was always interested in the general biological principles related to genetics, and in his later years was particularly concerned with questions of human population and related problems. "Mankind at the Crossroads" (1923), which was widely read, was a valuable study of population problems and the world's food supplies, although the emphasis on overpopulation has been partially negated by the continued fall in birth-rates. A volume entitled "Biology in Human Affairs", was edited in 1927.

During the period 1908-18, East was a collaborator in the tobacco breeding investigations of the United States Department of Agriculture, and during the Great War he was chairman of the Botanical Raw Products Commission.

R. RUGGLES GATES.

Prof. A. K. Mordvilko

ALEXANDER KONSTANTINOVICH MORDVILKO, an aphidologist and parasitologist of world repute, who died on July 12, was born in 1867 in the village of Stolovichi, Minsk province of Russia. As a son of a minor cleric, he received his general education in the Minsk seminary, but then entered the University of Warsaw and after taking his degree in natural sciences in 1893, obtained a post-graduate scholarship which enabled him to study, first at Warsaw, then at the zoological stations of Naples, Marseilles and Villefranche. Two years as lecturer (on animal parasitology) at the University of Kiev were followed by an appointment to that of St. Petersburg, then of Moscow. In 1911 he joined the staff of the Zoological Museum of the Russian Academy of Sciences, where he spent the rest of his life, while giving lectures at the University and the Agronomical Institute.

As the theme of his first scientific work written at the end of his university studies, Mordvilko took the investigation of the Aphididae (plant-lice) of the Vistula region, including their bionomics and anatomy. This group of insects is remarkable for exhibiting a wide range of biological phenomena of great general significance, such as polymorphism, change of hosts, variations in the life-cycle and types of reproduction, etc. Their study became his life work.

The execution of this work by Mordvilko is an outstanding example of results that can be achieved by a thorough and many-sided study of a single group of organisms. His morphological work is remarkable for its accuracy and abundance of exactly observed details, while the biological significance of various structures was kept in view. His systematic

work, which resulted in a mass of most carefully described new genera and species and in revisions of whole difficult groups of aphids, can be taken as a standard for any taxonomist. His main interest was, however, the intensive study of the bionomics of aphids, most particularly with regard to the evolution of the life-cycle and the change of hosts. Exhaustive studies of many groups of aphids with alternate hosts led Mordvilko to the elaboration of a remarkably well-documented theory of the origin and evolution of the habit of changing hosts in Aphididae, which he has later extended to the explanation of a closely parallel phenomenon in the fungi causing rust (Uredinales). Connected with these specialized series of investigations were the more theoretical works of Mordvilko on parasitism in general, as well as on the problem of evolution and species formation.

As a man, Mordvilko was almost unbelievably modest and unassuming, and, on the first encounter with him, created a wholly false impression of a bashful and probably narrow-minded person, interested in nothing but his plant-lice. On a closer acquaintance, he appeared as an exceptionally widely educated man, with far-reaching and original ideas on many aspects of biology. The outstanding features of his character were deeply felt kindness and sincere friendliness to everybody, outwardly expressed in a most charming, quiet, endearing smile. All his acquaintances were regarded by him as friends and became so, and he was incapable of making any enemies.

It can be truly said that A. K. Mordvilko's death closes a long and most fruitful chapter in the study

of the Aphididae, to the knowledge of which he has contributed more than anybody else.

B. P. UVAROV.

DR. UVAROV has outlined Prof. Mordvilko's contribution to science and it remains to me to add my personal tribute to the memory of one who over a long number of years and often at great difficulty to himself, proved such a valued correspondent. His vast knowledge was ever at our service; he put himself to endless trouble to satisfy our needs for study-material; his books and papers were generously presented. He was a man of infinite pains and the embodiment of the patient investigator, taking sometimes twenty years to elucidate a single point. For forty-three years, Mordvilko was carrying on his aphidological and other studies, and during the last twenty broadened his basis so much that for years to come the suggestions contained in his works will give rise to new lines of research, and though some of his theories may have to be modified, he will remain an outstanding builder.

F. LAING.

WE regret to announce the following deaths:

Sir Thomas Callendar, deputy chairman and managing director of Callendar's Cable and Construction Co., Ltd., a pioneer in electricity supply, on December 2, aged eighty-three years.

Mr. W. P. Dreaper, O.B.E., formerly superintendent of H.M. Factories at Sutton Oak and Ellesmere Port, lately editor of the *Chemical World*, on December 2, aged seventy years.

News and Views

Publication of Scientific Research

A LARGE part of Sir William Bragg's presidential address to the Royal Society, delivered on November 30, was concerned with scientific publications, and he referred particularly to the duty of the Society in connexion with the encouragement of research to secure the preparation and presentment of its results, so that they can be sufficiently appreciated and incorporated with understanding into every activity, intellectual or physical, to which they apply. Though he does not think that men of science can claim to be given the direction of affairs in which their discoveries play a great part simply on that account, they are at least bound to see that acquired knowledge is rightly stated so that it can be rightly used, and he regards the vigorous action of the British Association in such matters as a commendable extension of its original purpose. This consideration of opening to mankind the new fields of natural knowledge strengthens the case for reconsidering the arrangement and presentation of research results which arise from the voluminous character of present-day research. Commenting on the small

attendances and lack of good discussion when papers are presented before a scientific society, Sir William Bragg referred to greater stress which has recently been made on the provision of opportunities for organized discussions in which some important subject of recent development was considered by the workers in that field. Very satisfactory attendances have been obtained at such meetings.

SIR WILLIAM BRAGG considers that the recent plan of publishing summaries of papers as an appendix to the *Proceedings* as soon as the papers are received, while publication of the papers themselves is deferred in the usual way, not merely secures an earlier announcement of the discovery, but also the collection of summaries presents the general trend of research to those who are not specialists. With regard to summaries, he pointed out that the ideal is more than a mere digest or shortened form of the paper, and should be different from the paper itself, in that it is addressed to a wider circle of readers, which may include the experts, but includes also many others, who should, in fact, receive the principal attention.