

## 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. sanderæ*, 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 allelomorphous, 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

ALEXANDR 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