of collaboration as might be practicable to strengthen the programmes of the two organisations within the limits of their joint concern; the Executive Committee of the Council has appointed a committee to consult with representatives of the new Organisation, and it is hoped that much may arise from their discussion to the mutual advantages of both bodies. The clause introducing this resolution may well be taken as defining the task now facing the International Council of Scientific Unions:

"Il est urgent de reconstituer et de développer les moyens permettant aux savants de tous les pays d'échanger des renseignements et de travailler en commun au développement de la science et à son utilisation au service de l'humanité".

OBITUARIES

Andrei Petrovich Semenov-Tian-Shanski

THE whole development of insect taxonomy and biogeography in Russia during the last half-century has been most closely connected with the name of A. P. Semenov-Tian-Shanski, whose death from pneumonia during the blockade of Leningrad in 1942 has now been reported.

Andrei Petrovich was born on June 9, 1866, the son of the famous geographer, Peter Semenov, who was later granted the addition Tian-Shanski to his name as a tribute to his exploration of the Central Asian ranges. The father's love of Nature and serious interest in its study were inherited by the son, who published his first scientific paper while still a student at the University of St. Petersburg, from which he graduated in 1889. This paper was the forerunner of a long series (more than 250) of works on entomology, many of them monographic in character. The official career of Andrei Petrovich was brief, as he was on the scientific staff of the Zoological Museum of the Academy of Sciences only for a short period (1890-96) and then again some years before his death. As he had, however, considerable private means, he was able to devote himself entirely to his scientific work.

Semenov's main interest was the taxonomy of the Coleoptera, but no less outstanding were his contributions to the systematics of the Hymenoptera (particularly Chrysidae and Siricidae) and the Dermaptera. His renown as a taxonomist was not due merely to the large number of descriptions (some eight hundred new species, about a hundred new genera and one new family), but also to their unique precision, combined with a profound critical appreciation of the value of morphological characters, which he never studied on a 'type' but always on a large series of specimens. Theoretical problems of taxonomy attracted him strongly, and in 1910 he produced a paper on the limits of species and of lower taxonomic categories, where morphological, phylogenetic and biogeographical criteria were used to define the categories and to represent them as phases of a dynamic system of organisms in process of evolution.

Biogeographical and evolutionary aspects always loomed largely in Semenov's taxonomic work, and many of his masterful monographs have a much wider interest than for specialists in the particular group. His contributions to the zoogeography of Central Asia are particularly noteworthy, and his crowning

achievement was a zoogeographical map of the Palearctic Region published in 1936.

As a president of the Russian Entomological Society for most of his life; joint founder of the *Revue Russe d'Entomologie*; initiator and most active member of the Biogeographical Commission of the Russian Geographical Society; and one of the most prolific writers on entomology, Semenov had a profound influence on the development of Russian entomology. A large number of insect taxonomists and biogeographers now working are proud to call themselves his pupils, though he never taught except by example and by incisive criticism of published papers in his many reviews. He was also a most conscientious correspondent, and I was one of the many who derived great benefit from his thorough, and often very outspoken, discussions of scientific problems submitted to him.

Most entomologists tend to be one-sided specialists, but A. P. Semenov, with his aristocratic, highly cultured background, was anything but narrow in his interests. Protection of Nature; organization of museums; geographical exploration; game laws—such was the range covered by his writings in the technical and general Press. A problem that particularly attracted his attention was that of the Russian Navy, and he was even elected in 1914 the president of the Russian Naval League. His most serious hobby, however, was the study of the classics, and he specialized in verse translations of Horace. His knowledge of classical languages found its use in diagnoses of insects, which are written not in the usual 'entomological Latin', but in a Latin which is beyond most entomologists. In the later years of his life, when he had almost lost his sight, he concentrated on the theory of verse, and wrote a book on Pushkin's life and poetry.

Although he travelled abroad only once, when young, Semenov-Tian-Shanski was probably the best-known Russian entomologist in every country of the world. He was an honorary fellow of the Royal Entomological Society of London and of the Prague Entomological Society; life-member of the Société Entomologique de France; and of course honorary member of a score of Russian entomological and natural history societies.

Vast private entomological collections (more than 700,000 specimens, including hundreds of types), library and archives were all presented by Semenov during his life to the Academy of Sciences.

B. P. UVAROV.

Mr. Alfred Lucas, O.B.E.

THE death of Mr. Alfred Lucas at Luxor on December 10, at the age of seventy-six, marks the close of many years of useful service to chemistry and archaeology. His scientific career began with the analysis of foods and drugs at the Government Laboratory, London; but persistent ill-health forced him, after several years, to withdraw to the warmer climate of Egypt. Recovered somewhat, he joined the Egyptian Government service and in time became responsible for the Survey Department Laboratory which, under his able direction, developed beyond recognition. From a concern devoted primarily to the analysis of minerals, it became the Chemical Department of the Ministry of Finance, embodying the Assay Office and the petroleum refinery at Suez. By the routine testing of materials in this laboratory, considerable economies were

effected and many problems of national importance were made the subject of special study: such contributions were of the utmost value during the First World War and for this work Mr. Lucas was awarded the O.B.E. A few years later he retired on pension. The fruits of these various experiences form the material for his "Forensic Chemistry", now in its third edition.

Egypt became the land of Lucas's adoption, and Egyptology the main hobby of his retirement. A stimulus was given to these studies by his association, as official chemical adviser, with Dr. Howard Carter at the opening of the tomb of Tut-ankh-Amūn; and his contributions on the "Chemistry of the Tomb" in

vols. 2 and 3 of Carter's book ("The Tomb of Tut-ankh-Amen") are of outstanding interest and lasting importance.

Lucas has done much by example and precept to establish safe laboratory methods for the treatment of antiquities. His book on "Antiques, their Restoration and Preservation" is deservedly well known, and his "Ancient Egyptian Materials and Industries" is already a classic.

His life was a triumph over illness and circumstances; it left him with a deep sympathy for his fellow-men, and with a quiet but keen sense of humour which was the delight of his friends.

H. J. PLENDERLEITH.

NEWS and VIEWS

Royal Astronomical Society: Award of Gold Medal

THE Gold Medal of the Royal Astronomical Society has been awarded to Prof. J. H. Oort, for his investigations on the dynamics and rotation of the galactic system. The hypothesis of the rotation of the galactic system about a point near the centre of the system of globular clusters was suggested by Lindblad in 1925 as a possible explanation of the systematic differences of the motions of the globular clusters and R. R. Lyra variables from those of the brighter stars in our neighbourhood. Prof. Oort provided the first direct observational evidence that the galactic system was rotating. For this purpose he employed several groups of stars of high luminosity and analysed both their radial velocities and proper motions. A series of brilliant investigations fully established the rotation of the galaxy, provided estimates of the distance of the centre of rotation, of the velocity of rotation at the sun's distance, and of the total mass of the system. Important conclusions about the distribution of mass and the absorption of light in the galactic plane were obtained. Determinations were also made of secular parallaxes and of the precession and motions of the equinox. Investigations of the dynamics of the galactic system established that both star-streaming and the systematic motions of stars of high velocity can be considered as steady phenomena. Prof. Oort has made many other contributions of importance to astronomy. During the German occupation of the Netherlands, Prof. Oort resigned his professorship, along with most of the other professors of the University of Leyden, rather than submit to Nazi dictation. He has recently been appointed director of the Leyden Observatory. Since 1935 he has been general secretary of the International Astronomical Union.

Institution of Electrical Engineers Awards: Honorary Membership

THE Earl of Mount Edgcumbe has been elected an honorary member of the Institution of Electrical Engineers, in recognition of his distinguished work as an electrical engineer, and of the services rendered by him to the Institution. Lord Mount Edgcumbe, who is a fellow of University College, London, served his pupillage with Crompton and Co. at Chelmsford, and in 1897 joined the staff at Northampton Polytechnic Institute in London. In 1900 he founded the firm of Everett Edgcumbe and Co., Ltd., of which he is chairman and managing director.

He has been associated with the Institution of Electrical Engineers since 1897, and was president during 1928-29. He is the author of a number of papers read before the Institution and published in its journal, for which he has received several premiums, including the Ayrton Premium and the Silvanus Thompson Premium. Lord Mount Edgcumbe has also contributed valuable assistance in the international field, particularly in his capacity, from 1927, as honorary secretary of the International Electrotechnical Commission. He is also a vice-president of the International Commission on Illumination, vice-president of the British Electrical and Allied Manufacturers' Association and a past president of the Illuminating Engineering Society of Great Britain.

Faraday Medal

SIR EDWARD APPLETON has been awarded the Faraday Medal of the Institution of Electrical Engineers, for the conspicuous services rendered by him in the advancement of electrical science, particularly in the field of radio propagation. This Medal is awarded not more frequently than once a year, either for notable scientific or industrial achievement in electrical engineering or for conspicuous service rendered to the advancement of electrical science, without restriction as regards nationality, country of residence or membership of the Institution. Educated at Bradford, and then at St. John's College, Cambridge (scholar and exhibitioner), Sir Edward became, in 1920, assistant demonstrator in experimental physics at the Cavendish Laboratory. He was Wheatstone professor of physics, University of London, during 1924-36 and Jacksonian professor of natural philosophy, Cambridge, during 1936-39. His early researches in connexion with the propagation of radio waves, and particularly on their reflexion and refraction, have been acknowledged by naming one of the ionospheric layers after him. His work was of fundamental importance in the development of radio-location. In his capacity of secretary of the Department of Scientific and Industrial Research, which he has filled since 1939, his inspiration and guidance of the use of science in many fields of national activity have been major factors in the success of the scientific effort of Great Britain. Sir Edward, who was elected to the Royal Society in 1927, is chairman of the British National Committee for Radio-telegraphy, vice-president of the American Institute of Radio Engineers and president of the International Scientific Union.