

**New Foreign Members of the Linnean Society**

At the meeting of the Linnean Society of London on May 12, the following were elected foreign members:—Prof. Klas Robert Fries, director of the Botanic Garden, Stockholm, who has made very important contributions to our knowledge of the flora of South America, chiefly of the Argentine, Bolivia, and Brazil. His work on the tropical American *Anonaceae*, *Amarantaceae*, and *Colamniferæ* (Malvales) and his monographs of *Wissadula* and *Petunia* are especially noteworthy. He has also done valuable work on the flora of Rhodesia, the Congo, etc., and has made contributions to mycology. Prof. Eduard Fischer, professor of botany at the University and director of the Botanical Institute, Bern, distinguished for his works on a wide range of mycological subjects since 1883. He has devoted especial attention to the Gasteromycetes, on which he contributed the section in Engler and Prantl's "Pflanzenfamilien". He has produced monographic studies of the Rusts of Switzerland, and carried out extensive studies of the biology of heteroecious rusts. He collaborated with E. Gäumann in the most complete work on the biology of parasitic fungi that has yet been published. Prof. Ludwig Jost, director of the Botanical Institute and Gardens, University of Heidelberg, known for his work as a teacher of plant physiology and his influence on the development of his subject. Prof. Émile Topsent, professor of zoology and comparative anatomy, University of Strasbourg, the leading authority in the world on sponges. His first paper was published in 1887, since when he has published a number of papers and several important books, including reports for the Prince of Monaco. His large quarto volume—"Campagnes . . .", Monaco, 1928—is the most up-to-date monograph on sponges.

**U.S. National Academy of Sciences**

It is announced by Science Service that the following have been elected foreign associates of the U.S. National Academy of Sciences: Marchese Guglielmo Marconi; Prof. Karl von Goebel, Munich; Prof. H. Wieland, Munich; Prof. Fritz Haber, Berlin. Fifteen new members were elected: Dr. R. T. Birge, University of California, physics; Dr. E. G. Boring, Harvard University, psychology; Dr. S. R. Detwiler, Columbia University, anatomy; Dr. W. A. Jacobs, Rockefeller Institute for Medical Research, New York City, chemotherapy; Dr. D. W. Johnson, Columbia University, geology; Dr. L. O. Kunkel, Boyce Thompson Institute, Yonkers, N.Y., plant physiology; Dr. K. Landsteiner, Rockefeller Institute for Medical Research, New York City, immunology and pathology; Dr. W. C. Mendenhall, U.S. Geological Survey, geology; Dr. Marston Morse, Harvard University, mathematics; Dr. F. K. Richtmyer, Cornell University, physics; Dr. J. C. Slater, Massachusetts Institute of Technology, Cambridge, Mass., physics; J. R. Swanton, Bureau of American Ethnology, Washington, D.C., anthropology; Dr. R. J. Trumpler, Lick Observatory, Mt. Hamilton, Calif., astronomy; Dr. E. W. Washburn, U.S. Bureau of Standards, and editor-in-chief of International Critical Tables, chem-

istry; Dr. J. B. Whitehead, the Johns Hopkins University, mathematics and philosophy.

**Jericho**

RECENT correspondence in the daily Press on the Exodus and its relation to the fall of Jericho was no doubt to some extent responsible for the interest taken in the account of the third season's excavations on the site of that city given by Prof. John Garstang before the Royal Asiatic Society on May 12. Although two seasons' work had produced no certain evidence of dating, Prof. Garstang on opening his third season had arrived at an opinion, based on the evidence of stratification as well as the absence of any sign of Mycenaean contact, that the conflagration which destroyed the city, and of which there is abundant evidence, had taken place during the late Bronze Age, probably somewhere about 1400 B.C. With the view of obtaining datable objects which might or might not confirm this view, the Bronze Age cemetery some four hundred yards west of the city mound was attacked and twenty-five tombs were opened and cleared. Objects numbering eighteen hundred, the great majority pottery, were obtained covering the history of the site throughout the Bronze Age. Most significant of all, however, were ninety-four royal Egyptian scarabs, which have been examined by Prof. Newberry and pronounced by him to range from the Hyksos period to the reign of Amnhotep III. Egyptian influence first appears about 1500 B.C.; but nothing of the Tel el-Amarna period and the age of Akenaton has been found. It is, therefore, concluded that the city was destroyed at some date between 1411 B.C. and 1375 B.C. Evidence of re-occupation appears in the Iron Age; but the walls were not rebuilt until about 900 B.C.

**Excavation in Southern Palestine**

SIR FLINDERS PETRIE briefly summarises the results obtained by the British School of Archaeology in Egypt at Tel Ajjul up to the close of the past season's excavations, in the *Times* of May 13. The results fully bear out his opinion that the early history of Palestine has been more fully explained on this site than on any other in the country. The evidence it has afforded extends from the rock-cut tombs of the Copper Age, c. 3400 B.C., in which copper daggers and pottery were found, to the age of Thothmes III., after whose day the site was abandoned until it was occupied again by Arab squatters in the Middle Ages. No less than five palaces were erected on the limestone hill, of which the limits were artificially extended to take the greater area covered by the later buildings. The first palace was erected by the people who introduced bronze from North Syria and whose invasion founded the Eighth Dynasty of Egypt. The second palace, Sir Flinders Petrie considers, was probably erected by the founders of the Twelfth Egyptian dynasty, while the third and fourth were the work of the Hyksos. The later Hyksos palace has afforded evidence of a foundation sacrifice in which the body of a horse was flung into a pit. Its shoulders and the bodies of two other horses afforded the

material for a sacrificial meal. One of the most noteworthy finds was a gold torque, in form similar to the torque found at Troy and presumably of Irish origin. Lectures on the work of the season are being given at University College, London, on May 19 at 2.30 p.m. and May 21 at 3 p.m., entrance free, without ticket; and the usual exhibition will be open at the College on July 11-Aug. 6.

#### Animals and Electric Shocks

It is well known to electricians that animals are much more sensitive to electric shock than human beings. Quite low voltages, of the order of 20 volts, are dangerous to cattle and horses. About twenty years ago, when rural electrification began to increase on the Continent, fatalities to these animals began to occur, and it was found necessary to devise methods for mitigating the danger. As the electrification of farms has now been begun in Great Britain, the paper by T. C. Gilbert in the *Electrician* for April 29, in which he discusses some of the effective safety devices used abroad, should prove useful. Wiring systems where the 'live' wires are surrounded by metal which is connected to 'earth' are perhaps the safest, at least in towns, where the mains of the water supply system, into which any leakage currents usually flow, form an excellent earth. In rural districts, earths are made by burying metal plates or pipes. In this case the resistance of the earth may be of the order of 50 ohms, and so even if a leakage current be less than an ampere, the difference of potential of the ground near where the pipe is inserted and four feet away may cause a dangerous shock to a large animal standing with a foreleg near the pipe and a hindleg four feet from it. Mr. Gilbert records a very exceptional case where no less than six cows in one farm were killed from this cause. So far as we know, no fatalities to human beings have ever occurred in this way. We have heard of cases where mild shocks have been felt in the street, when a pedestrian steps from one part of the pavement to the other, due to a fault in an underground main. The effective methods used abroad show that the risks to cattle can be made almost negligible.

#### Spore Dissemination through the Upper Atmosphere

DURING the War, aeroplanes came to be used to an increasing extent for the direct investigation of meteorological conditions in the upper atmosphere. We learn from an article that forms one of the "Why the Weather" series, by C. F. Talman, issued by Science Service, Washington, D.C., that the aeroplane is being used in analogous biological investigations by the U.S. Bureau of Plant Industry to determine, among other matters, the height to which the spores of the dreaded black stem rust occur in the American spring wheat area. The spores are collected on glass microscope slides covered with a very thin coating of vaseline. It has been found that they extend up to a height of about 10,000 ft. above the earth. From the results of other investigators on the rate of fall in still air of the spores of white-pine blister rust, a spore only slightly smaller than the black stem rust spore,

it may be concluded that the black rust spores would occupy about two days in falling from 10,000 ft. to the ground, in the absence of any net upward or downward component of the wind. Since it is no rare event for the wind above the first few hundred feet to travel a thousand miles or more in a day, it is evident that regions lying far to leeward of infected areas may receive spores from these great altitudes.

#### Cave Exploration in Western China

THE United States National Museum has received a large collection of objects which have been obtained from the caves of Szechwan, Western China, by Mr. David C. Graham, of the Smithsonian Institution, Washington, D.C. This explorer has found that a large number of the innumerable caves of Szechwan and the Tibetan border were used as tombs by the Chinese at about the beginning of the Christian era; but no evidence is forthcoming to support the view that they were once inhabited by aborigines who preceded the coming of the Chinese. The caves are generally found in steep places, both singly and in groups. They are difficult of access, and vary in depth from a few feet to 130 feet, being about six feet wide and six feet high. Some show signs of chisel marks. Nearly all the caves have coffin niches, the coffins being of earthenware. Some coffins, however, are merely cavities chiselled in the stone and fitted with stone lids. Among the funerary offerings, the large number of figurines of human form is noteworthy. Some of these in costume and general appearance present a remarkable similarity to the people of to-day.

#### Norman Lockyer Observatory

SIR FRANK DYSON, Astronomer Royal, will open the new Mond photographic equatorial and dome at the Norman Lockyer Observatory, Salcombe Regis, Sidmouth, on May 28. The Norman Lockyer Observatory is the only astronomical observatory in Great Britain founded and maintained by a private corporation under the Companies (Consolidation) Act of 1908. Since it was started, nearly twenty years ago, it has been equipped and maintained entirely by private donations. The equipment includes two twin telescopes, one with a 10 in. object glass and a 12 in. prismatic camera, and the other with a 10 in. object glass and a 9 in. prismatic camera for photographing the spectra of stars and other celestial bodies. A very large collection of such photographs, numbering 6500, has already been taken at the Observatory, affording valuable records of the nature and movements of objects in the stellar universe. Dr. Robert Mond, who has been a generous supporter of the Observatory since it was founded, has now presented a unique photographic equatorial, with a separate building and dome to house it. The instrument consists of a battery of four cameras with clock mechanism, so that it will be possible to follow automatically movements of the heavens over a wide field of the sky.

#### Expeditions of the Soviet Academy of Science

THIS year the Soviet Academy of Science is sending out ninety-nine scientific expeditions to explore