

of the peoples of Mesopotamia in this branch of science, and of the indebtedness of Greek thought to Babylonian and Assyrian conceptions of the nature and movements of the heavenly bodies. At the same time, research on the astronomical knowledge of the ancient Egyptians has shown that its basis of exact and scientific observation has, if anything, been overrated. At the recent autumn meeting of the National Academy of Sciences, held at Brown University, Providence, R.I., on October 23-25, Dr. O. Neugebauer, in a communication on "The Egyptian Picture of the Sky" (*Science*, 90, 410; Nov. 3, 1939), pointed out that while Egyptian and Babylonian astronomy are usually quoted as equivalent foundations of Greek, and, therefore, medieval and modern astronomy, really very little is known about Egyptian astronomy. Investigation of Demotic texts, however, has now shown that Egyptian methods of treating the movements of the moon and planets were only very approximate, and without any consideration of details. This picture, Dr. Neugebauer stated, has now been completed by a Demotic text recently purchased by the Egyptological Institute in Copenhagen, which shows how the aspect of the sky and the setting and rising of the stars was connected with the religious myths. The close connexion of religion, especially so far as the underworld is concerned, with the changing aspect of the sky during the year indicates that the main interest of Egyptian astronomy was not a mathematically detailed description of very complex effects, but merely a rough scheme, just good enough to reflect the main traces of the observed facts.

Submarine Valleys

DURING the last nine years, the United States Coast and Geodetic Survey has made an intensive acoustic survey of the Atlantic continental shelf and slope of the United States. The surveys are now so far advanced that the surface topography can be studied in detail. Charts of most of the slope have been published by the Geological Society of America (Special Paper No. 7; 1939). The *Geographical Review* of October 1939 publishes "Atlantic Submarine Valleys" by Mr. R. A. Smith, with a chart on a scale of 1:1,000,000 of the shelf and slope, and adjacent land, between New England and Albemarle Sound. Even on this reduced scale many striking features are shown. The flatness of the shelf is so remarkable that only by the use of a five-fathom contour interval can any noticeable relief be shown. The slope, on the other hand, shows a topography so irregular and broken that a 100-fathom contour interval has to be employed for the sake of lucidity. While the shelf, for a distance of 60-125 miles seaward, shows beach forms, the outcome of marine erosion, or modified river forms, the continental slope is deeply dissected and shows forms characteristic of subaerial erosion. In many places the complexity of relief is much greater than that found in the Appalachian Mountains and is more comparable, according to Mr. Smith, with that of the western mountains of North America.

Lancashire and Cheshire Fauna

THE twenty-fifth annual report of the Lancashire and Cheshire Fauna Committee adds a large number of insects to the dual county lists and also to the British area and some species new to science. Among Coleoptera, *Philonthus jurgans* Tott. was discovered new to science from a specimen obtained at Ashton-under-Lyme in 1935, since when it has been found widespread throughout the British Isles, also occurring in Cheshire at Tarporley and Arden. *Aphis davidsoniella* Theob., a species that has been separated from *A. rumicis* L., has been obtained on dock at Preston and Stalybridge. The fly *Bairamlia nidicola* Ferriere is described as new from material obtained from flies breeding in birds' nests at Mobberley, Cheshire. Six new moths are added to the dual counties' lists and one new to Lancashire. The bird, mammal and Lepidoptera notes are largely of local interest, but some of the more general items include the breeding of the death's head moth from larvae at Raby, Cheshire, a 1927 specimen of the rare migrant Camberwell Beauty at Alderley Edge, Cheshire, numerous foreign insects collected from imported fruit and other goods, the beetle *Cryptophagus acutangulus* Gyll feeding abundantly on the mould on damp plaster in almost all the new houses in the district, increasing numbers of red squirrels in the Ribblesdale valley and in west Cheshire, detailed reports of the surveys on reed-warblers, tufted duck and turtle-dove surveyed for the British Trust for Ornithology, Lapland bunting at Ainsdale, where the little tern is nesting again, the spotted crake nesting in Cheshire, the bittern at Rostlerne, the quail near Nantwich and increasing numbers of reports about many wading birds and duck formerly considered rare in the districts but which are obviously much more frequently seen now. The committee, of which Prof. J. H. Orton is chairman, has a membership of 280 and commences the year with a surplus of £146.

Merseyside Naturalists' President

THE annual meeting of the Merseyside Naturalists' Association (the Merseyside Branch of the British Empire Naturalists' Association), held at Liverpool Museum on December 3, elected Mr. R. K. Perry, keeper of vertebrates at the Museum, president for 1940, Dr. J. C. P. Miller, lecturer in applied mathematics in the University of Liverpool, as chairman, and Mr. Eric Hardy as honorary secretary. Formed last winter, the Society faces the War with a surplus in its ordinary and its sanctuary accounts, and will shortly issue a portfolio of its faunal and floral work during the past year.

Horticulture of the Lily

THE eighth number of the Royal Horticultural Society's Lily Year-book (from the Society's Office, Vincent Square, Westminster, S.W.1, 5s. paper, 6s. cloth), makes a very effective attempt to keep pace with the multitudinous variations of these plants. Mr. A. Simmonds lists the names and origins of 114 hybrid lilies, and there are papers which

clarify the taxonomic positions of *Lilium bulbiferum* and its varieties, by Dr. Fred Stoker, *L. myriophyllum*, by Mr. A. D. Cotton, and *L. pardalinum* and its allies, by Dr. Vollmer. A happy personal note is struck by Mr. A. D. Cotton, in a biography of the late Dr. E. H. Wilson, a vigorous botanical explorer who contributed greatly to liliaceous garden beauty. Capt. F. Kingdon Ward describes a new lily which he discovered in the Assam Himalayas, and Mr. M. Ogilvie-Grant has collected several new fritillaries in Greece. Other papers deal with the cultivation and horticultural grouping of the lilies which are now well-tried favourites of our gardens. Scientific work upon lily matters does not appear to have been great in amount. Dr. M. A. H. Tincker describes the rates of growth of roots in several species, and there is an account of a discussion on propagation. The net result, however, is to show the need for more accurate scientific knowledge of all phases of lily horticulture—the relation of lilies to soil conditions, to nutrition in general, to pests and diseases. There are, indeed, sufficient unanswered questions in the book to employ a lily research station for a considerable period.

Plant Growth-Substances

A RECENT report in the *Kew Bulletin* describes experiments conducted in co-operation with the garden staff but designed by Dr. C. R. Metcalfe and Dr. W. G. Templeman to test the influence of synthetic growth-substances upon the rooting of cuttings of many plants ("Experiments with Plant Growth-Substances for the Rooting of Cuttings". By C. R. Metcalfe and W. G. Templeman. *Bull. Misc. Information*, No. 8; 1939). Their results show that some 45 per cent of the species they selected have responded favourably to one or other of the treatments, which included the use of solutions of indolylacetic acid, indolylbutyric acid, and α -naphthylacetic acid, at different concentrations. The list of plants is a thoroughly representative one including many well known to practical propagators to be exceedingly difficult to root from cuttings. Their successes include some seventeen plants already listed by the Plant Hormone Committee as difficult to propagate in this way, but their results also show that other difficult plants have failed to respond to the treatments. The tabular presentation of the data affords ready reference, and many nurserymen and gardeners generally will consult their list, which, however, contains records of failures with a few species which have been successfully propagated elsewhere at perhaps other seasons of the year. It is hoped that this work will be extended to include tests of these substances applied in powder form.

Plant Disease Nomenclature

THE "List of Common Names of British Plant Diseases" compiled by a sub-committee of the British Mycological Society's plant pathology committee has been accepted by the principal societies and institutes in Great Britain which need to use such names. A certain number of emendations to the second edition are published in the Society's *Trans-*

actions (23, Pt. 3; October 1939). No major correction appears to be necessary; the changes are such as give increased exactitude about the authorities for the names adopted, or which remove doubts previously felt about the nature of some diseases. Reasons and references are given for the more significant changes, and any mycologist interested further in this standard nomenclature may obtain additional information from Dr. G. C. Ainsworth, secretary of the Plant Pathology Committee, Imperial Mycological Institute, Kew, Surrey.

Demography of Dublin

IN the recently published report on the State of Public Health of Dublin for the year 1938 the Medical Officer of Health, Dr. Matthew Russell, states that the estimated population of the city was 477,000, the density of the population being 25.4 per acre, compared with 40.4 in 1929. The birth-rate, which was 24.4 per 1000 of the population, has shown a continuous decline since the beginning of the century, when the rate was 33 per 1000. The death-rate has shown a continuous but greater decline. In 1900 it was 30.5, whereas in 1938 it was 13.31, a drop of approximately 57 per cent. The infant mortality, while showing a considerable decline from that in the previous two years, was 98 per 1000 births, as compared with 106 in 1937 and 115 in 1936, is higher than the average—97—for the previous ten years. In 1934 the figure was as low as 74. The maternal mortality in childbirth showed a rate of 2.5 per 1000 births; the average rate for the previous ten years had been 3.07.

Earthquakes Registered at Kew

DURING November 1939 eleven earthquakes were registered on the seismograms at Kew Observatory, this number being probably fewer than the average. Nine of these are reported to have been small or confused by microseisms, and the other two both occurred on November 21. The first was received at 8h. 55m. 8s. G.M.T. with the *P* and *S* waves of small amplitude followed by large amplitude surface waves, and is stated to have been destructive in north-east Anatolia. The second was registered at 11h. 10m. 30s. G.M.T. and has been estimated to have occurred about 85 degrees distant in a direction north-east of Kew, with a deep focus, approximately 175–200 km. below the earth's surface.

Earthquake in New England

ON November 15 at about 3h. G.M.T. an earthquake was registered on the seismograms at the observatories of Weston, Georgetown, Ottawa, Pittsburgh, Fordham, Williamstown and Philadelphia. The United States Coast and Geodetic Survey, in co-operation with Science Service and the Jesuit Seismological Association, has determined the probable epicentre of this shock to have been near latitude 39° 45' N., longitude 75° 18' W., and that it had an origin time 2h. 53m. 48s. G.M.T. with a depth of focus near 25 km. below the earth's surface. Large earthquakes are very rare in these regions,