stratified for considerable periods; at such times plant nutrients in the surface waters are reduced to very low values. However, when thermal stratification is broken down and water from the deeper layers is brought to the surface, high concentrations of nutrient salts are found in this water. It has been shown³ that in the waters of East Africa sulphates are frequently in short supply; they may therefore be used as a suitable and convenient chemical label or indicator of the potential fertility of the water. At those times when Lake Edward is thermally stratified, sulphates are reduced to one or two parts per million; but after 'turn over', values as high as one hundred and twenty parts per million have been recorded.

It is probable that significant amounts of certain plant nutrients, such as phosphates, are supplied to Lake Albert by the water derived from the Ruwenzori, but there are few adequate observations on this.

There is little doubt that the water from the Ruwenzori streams is colder than the water from Lake Edward, and that at those times when the Semliki contains a high proportion of water from Ruwenzori, it will be at a lower temperature than

when more of the water is derived from Lake Edward. Further observations need to be made, but it seems that the influx of this cooler water into Lake Albert may explain the periodic mortalities of Nile perch in this Lake. This water may be expected to flow into Lake Albert beneath the surface and, while flowing along the bottom of the Lake in contact with the warmer bottom deposits, may become deoxygenated. Fish swimming into this water are likely to be asphyxiated. This hypothesis is discussed in a paper by Fish⁴ on the oxygen requirements of certain fish.

It is submitted that further hydrological data collected on the head-waters of the White Nile should include records of the electrical conductivity of the waters of the Semliki and the Albert Nile, as these observations are likely to add considerably to our understanding of the biology of Lake Albert and may also be of great importance with regard to projects aimed at making greater use of these waters for irrigation in the Sudan and Egypt.

¹ Hurst, H. E., "The Nile Basin". First Supplement to vol. 2, 727

² Hurst, H. E., "The Effect of the Salinity of Lake Albert on Future Irrigation in Egypt". Unpublished report (1950).

³ Beauchamp, R. S. A., *Nature*, **171**, 769 (1953).

⁴ Fish, G. R., *J. Exp. Biol.*, **33**, 186 (1956).

OBITUARIES

Mr. L. Bainbridge-Bell

LABOUCHÈRE BAINBRIDGE-BELL, who died on August 7, interrupted his education at Emanuel College, Cambridge, in 1914 to join the Signals Branch of the Royal Engineers and won the Military Cross in the battle of the Somme. Later he served in Egypt as a wireless officer in the R.F.C. and R.A.F. After demobilization, he spent six years with the Radio Communication Co., and in 1927 joined the Radio Research Station, Slough. In 1935 he became one of the group of scientists working, under the direction of R. A. (now Sir Robert) Watson-Watt, on what is now known as radar. For his part in this development he received an award of £2,400 from the Royal Commission on Awards to Inventors, and it was characteristic of Bainbridge-Bell that he immediately gave the money to charity.

In the first week of the Second World War he was seconded to H.M. Signal School at Portsmouth and shortly afterwards flew to Montevideo, when the German battleship *Graf Spee* was scuttled in the River Plate; after many adventures, he was able to confirm that the enemy was using shipborne radar, and he returned to Britain with invaluable details of the equipment.

After the War, Bainbridge-Bell re-organized the arrangements at the Admiralty Signals Research Establishment for producing technical reports, establishing a system of centralized editing which not only relieved harassed laboratory workers of much paper work but also ensured uniformity of layout, presentation and illustration. He represented the Admiralty on the Glossaries and Symbols Panel of the Armed Services and was also a member of the British Standards Institution committees dealing with graphical symbols and with the glossary of terms used in telecommunications. It was mostly due to his efforts that the Services standard of graphical symbols and the British Standard were each modified so that they became identical, with the

logical next step that the Services could cease a separate publication and use the British Standard. Bainbridge-Bell retired from the Royal Naval Scientific Service in August 1953, on reaching the age of sixty, joined the British Standards Institution and became secretary of the committees on which he had served as a member for many years.

Bainbridge-Bell was one of the few men who have combined science with classical scholarship and hence was most valuable on a committee dealing with the definitions of technical terms. At times, his ruthless exposure of false or incomplete reasoning, of lack of precision, or of attempted concealment of ignorance by verbosity, could be embarrassing. Yet he was essentially kind and had the respect and regard of numerous friends for his tremendous energy and enthusiasm.

J. READING

Mr. J. W. Lester

JOHN WITHERS LESTER, whose death at the untimely age of forty-seven occurred on August 9, was born in Walsall, Staffs, in 1908 and was educated at Wrekin College where, besides taking a prominent part in Rugby football and boxing, he devoted much of his spare time to natural history, either in the field or in reading books on the subject. In fact, from a very early age he displayed an interest in animals, particularly reptiles and amphibians, and even when only five had acquired a sure skill in catching them. This strong interest his parents wisely encouraged, and when during his later school-days the family moved to Cornwall, Jack, as he was known to all, continued his field excursions, becoming in particular very skilled in the hunting of badgers. His early career was with the Bank of British West Africa, and during his six years in Sierra Leone he devoted much of his spare time and energy to collecting animals of all kinds. He sent home many interesting specimens to several zoos, especially

that at Primley, Devon, owned by the late Herbert Whitley, and when he resigned from the Bank on his marriage in 1936, he became actively associated with the Primley Zoo, being responsible for the building up of the reptile and tropical house there.

During the Second World War, Lester was an officer in the R.A.F., and then in 1946 he was appointed curator of reptiles at the London Zoological Gardens, where it soon became evident that he was the right man for the job. During the next few years he made several trips to West and East Africa on behalf of the Zoological Society, collecting and bringing back many specimens of mammals, birds and insects, as well as reptiles and amphibians, of interest and rarity. In 1954 he led an expedition to Sierra Leone in conjunction with the B.B.C. Television Service, the outcome of which was the greatly appreciated television series "Zoo Quest",

and last year he led a second such expedition to British Guiana.

In January last he was awarded the Zoological Society's Silver Medal. He was a founder-member of the British Herpetological Society.

Throughout his years at the Reptile House of the London Zoo, Lester was unstinting of the time he gave to advising visitors on the care of reptiles, as well as to giving evening lectures to schools and many small societies, and he was always keen to encourage the growth of natural history interests in the young. He made many broadcasts and television appearances. A man of charming, yet unassuming personality, always so willing to share his love of natural history and to help others to that end, his death is a sad loss to his many friends, both at home and overseas as well as to the Zoological Society.

L. C. BUSHBY

NEWS and VIEWS

Astronomical Society of South Africa:

Gill Medal

THE Astronomical Society of South Africa announces the first award of the newly established Gill Medal to Dr. Harold Knox-Shaw, "For outstanding services to Astronomy and in particular to South African Astronomy in the successful establishment of the 74-inch Radcliffe Reflector at Pretoria". The Gill Medal commemorates the work of Sir David Gill, one of the most distinguished scientists to work in Southern Africa. Gill was H.M. Astronomer at the Cape during 1879-1907, and is celebrated for his numerous contributions to astronomy, notably

more than once in any year for services to astronomy, preference being given to services to astronomy in Southern Africa.

Dr. H. Knox-Shaw

DR. KNOX-SHAW was educated at Wellington and Trinity College, Cambridge. He began his astronomical career in 1908 as an assistant at the Helwan Observatory in Egypt. He took charge of the newly installed 30-in. Reynolds reflector and used it to photograph southern nebulae as far as south declination 40°. In addition to purely astronomical work, his duties covered the usual scope of a government observatory—time service, gravity survey, geodesy, meteorology and the like. In 1913 Knox-Shaw was made director of the Helwan Observatory, and in 1918 also of the Meteorological Service of Egypt and the Sudan. In 1924 he returned to England to become Radcliffe Observer at Oxford. Two pieces of research in this period are especially noteworthy: the determination of the proper motions of more than 30,000 faint stars in the northern selected areas, and the reduction (in collaboration with Dr. J. Jackson) of the meridian observations of Thomas Hornsby, the first Radcliffe Observer, made between 1774 and 1798. The latter part of Knox-Shaw's term of office as Radcliffe

his determination of the solar parallax, his leading part in the introduction of photography into astronomy, and his design of the Cape Transit Circle, a model for many later instruments. The Medal, which is in silver, of a diameter of two inches, bears on the obverse a portrait of Gill in low relief, and on the reverse, a representation of Gill's favourite instrument, the 7-in. heliometer. On the same face is the inscription—"Awarded for services to astronomy". The Gill Medal is probably unique among honorary awards by scientific societies in that it was designed by a president of the Society during his year of office, for Dr. Peter Kirchhoff of Johannesburg, the well-known sculptor, is also a keen amateur astronomer, and executed the design during his presidential year. The medal is to be awarded not

Observer was concerned with the transfer of the Observatory to Pretoria, Union of South Africa, and the erection there of the 74-in. reflecting telescope. This change was successfully carried out in face of a long series of obstacles and delays. Knox-Shaw was president of the Astronomical Society of South Africa during 1941-42, and of the Royal Astronomical Society during 1931-33.

Scientific and Technological Man-power in the United States and the U.S.S.R.

ESTIMATES issued by the National Science Foundation, Washington, D.C., on August 3 give the number of graduates in scientific fields in the United States in 1955 as 59,000, or about 20 per cent of those obtaining first degrees, compared with 126,000 in the