

(pp. 248-49) and not a true cliff. Neil Ferguson of St. Kilda in a letter to me apropos of this writes: "I am sure the sheep on St. Kilda are now disturbing a lot of fulmars. At the time of their laying we used, as long as we lived on the island, to fence the sheep off the easiest places where they would 'spoil the fulmars' as we used to say, and used to repair the fence each season before the laying time."

On p. 249 some unusual nesting sites of the fulmar are recorded. On North Ronaldshay the species was nesting on ruined buildings in 1934, and on inhabited dwellings in 1937; on Sanda, an isle of the Orkney group, it nests on the ground among Arctic terns.

Several instances are on record of a fulmar attacking a herring gull, but the species as a rule seems to be harmlessly disposed towards its neighbours. Yet there are a number of reports to the authors of the paper that it causes other sea birds to leave the sites which it occupies.

## OBITUARIES

### Prof. L. Roule

PROF. LOUIS ROULE, whose death has recently been reported, was the fifth occupant of the Chaire de Zoologie (Reptiles et Poissons) at the Muséum National d'Histoire Naturelle of Paris, a chair which, as its present occupier, Prof. Pellegrin, has remarked, seems to confer the gift of longevity on its holder. Louis Roule was born in Marseilles in 1861 and studied in the school of medicine in his native town.

Prof. Roule's early zoological work was on worms and tunicates, and his doctorate, gained in 1884, was awarded for a thesis on the Ascidians of the coast of Provence. He became professor at the University of Toulouse in 1892 at the age of thirty, his duties including the direction of the station of pisciculture and hydrobiology associated with the University. It is here that the origin of Roule's interest in fishes is to be found; that he never lost interest in the economic aspect of ichthyology is evidenced by the publication in 1914 of his "Traité de pisciculture et de pêche", and the devotion of one of the ten volumes of his "Les Poissons et le Monde vivant des Eaux" to the same subject.

Nevertheless, during his tenure of the Museum chair, to which Roule succeeded in 1910, it was largely with those fishes most remote from man's practical interests that his original works were concerned. He produced important reports on the fishes collected by the French Antarctic Expedition led by Commandant Charcot, on oceanic fishes and their larvæ collected by Prince Albert I of Monaco, and on larval and adult deep-sea eels collected by the Danish oceanographical expeditions led by Johannes Schmidt. The handsome volumes published at Monaco were enhanced by the artistic collaboration of Fernand Angel, who also illustrated the work on deep-sea eels (done in collaboration with Leon Pertin) and many of Roule's smaller publications.

The strange forms and peculiar conditions of life of the fishes that dwell poised far below the broad surface of the ocean and as far above its deep floor never fail to grip the imagination of any zoologist fortunate enough to handle them. Roule was fond of generalizations, and his conception of some of the most aberrant of the bathypelagic fishes as "monstres normalisés" was characteristic. One of the ten volumes of the popular work referred to above was

devoted to abyssal fishes, and another (which was translated into English) to the migrations of fishes, a subject in which he was particularly interested. The philosophical vein in all ten volumes, and particularly in the last, allows one to suppose that he offered this book, not merely as a by-product of his scientific life, but also as a summing up of his experiences, the rounding off of a satisfying career.

E. TREWAVAS.

### Prof. J. H. Salter

WE regret to record the death of Prof. J. H. Salter on August 5 at the age of eighty-one. John Henry Salter was born in Westleton, Suffolk, on June 5, 1862. In 1869 his father died, and the family moved first to Woodbridge, and then to Scarborough. Dr. Salter attended Ackworth School and afterwards became an apprentice master at the school and studied at Flounders College. He graduated B.Sc. London, and taught at various schools during 1881-88. He then proceeded to Dalton Hall, Manchester, to read botany under Prof. Williamson and Mr. Hick at Owens College. In 1891 he demonstrated at University College, London, for a short time and was later appointed as the first professor of botany at Aberystwyth, under Principal T. F. Roberts. Obtaining a year's leave of absence in 1896, he went to Bonn and worked under Strasburger. He was replaced at Aberystwyth during this time by Keeble (later, Sir Frederick Keeble).

In later years Dr. Salter often spoke with pleasure of his time at Bonn, where he formed one of a group which included Harper, Swingle, Fairchild and Osterhout, as well as Schimper and V. H. Blackman. Harper, Swingle and Fairchild were studying the dividing nucleus and the spindle, Schimper was already interested in plant geography, and Dr. Salter was investigating the connexion between pyrenoids and starch grains. His drawings were beautifully executed in water colours, and were presented by him to the Botany Department of the University College of Wales, Aberystwyth, a week before his death. During the time that Dr. Salter worked under Strasburger, he learned from him the method of preparing herbarium sheets which he used and developed for the rest of his life. The plants were pressed between layers of cotton wool, each overlapping leaf was separated by a slip of drying paper, and the finished specimens showed all the care of the master hand. He specialized in *Salix* and *Mentha*, as well as collecting a large general herbarium, which he gave to the National Museum of Wales, Cardiff, a few months ago.

In 1897 he returned to Germany to work with Meyer at Marburg on the interrelationship between the algal and fungal components of lichens. He was convinced that the fungus obtained food from the alga, and his drawings, executed with meticulous care, form part of his recent gift to the University of Wales, Aberystwyth.

He married Adah S. Freeman of Birmingham in 1899. In 1908, he resigned from the chair at Aberystwyth, on account of a breakdown in his wife's health, and the family moved first to the Canary Islands, and then to the south of France. These countries gave wide scope for his interests and he added the record of several new species to the flora of the Canary Islands, as well as continuing his studies in conchology, ornithology and entomology.

The family returned to England in 1916 and, after

his wife's death in Dorsetshire, he returned to Aberystwyth in 1923 and settled at Llanbadarn Fawr. During the succeeding years he walked for miles among the mountains and vales of the Aberystwyth district and his wide knowledge of the flora was partly collected together in "The Flowering Plants and Ferns of Cardiganshire" which he wrote in 1935. His knowledge of bird life was very considerable, and he was instrumental in initiating the movement for the preservation of the Welsh kite in the Towy valley. He also made a collection of insects which is to be given to the National Museum of Wales, Cardiff.

Since his return to Wales, Dr. Salter has taken a keen interest in his garden, where he has kept records of the flowering periods of some six hundred plants. From the age of seven until the day before his death he kept a natural history diary, which is full of information on birds and plants. The volumes, beautifully written in his neat script, are to be housed in the National Library of Wales.

Dr. Salter was a member of the Society of Friends and a man of the highest principles. He was quiet and reserved in manner, but his knowledge was always freely at the disposal of those who sought it. The fragrance of flowers, the first seasonal appearance of a plant or a bird gave him profound pleasure. No trouble was too great for him if information was desired on a subject with which he was familiar. His tall spare figure will be greatly missed from the Aberystwyth district, for he walked easily, and regularly took a twenty-five mile walk until quite recently.

His passing means that many records will inevitably cease to be collected, for he devoted his whole time to work; it means that many of us will no longer have a fount of wide information generously at our disposal; and it means also that we shall be denied the privilege of his pleasure when an interesting plant is found. He was a true man of science, a seeker after truth in every sense of the word. It has been a source of deep regret to his friends that the last few months have demanded from him inactivity and suffering.

He was laid to rest at Llanbadarn Church on August 8. He is survived by two sons, one of whom is in Canada. As scientific workers we share with them some of the privileges of having known and learned from him.

LILLY NEWTON.

#### Mr. T. Harris

MR. T. HARRIS, who has recently died, joined the Research Department, Woolwich, in January 1921 at a time when the importance of the scientific approach to problems of war and defence was beginning to be realized. He became a member of the Ballistics Branch and immediately began experimental work of a fundamental character, to which he brought with enthusiasm his wide knowledge of physics and his skill as an investigator.

The policy in those early days was to build for the future, and it was wisely decided that long-term researches should be undertaken to lay sure foundations for further development. Most of Harris's energies were devoted to such work, and in the course of time he brought to fruition several of these projects about which, because of necessary secrecy, it is impossible to give much detail. It may, however, perhaps be permitted to mention the following items which he either initiated or whose development was directed by him: muzzle vibrations of rifles; temperature of combustion of propellants; development

of methods of photography of bullets in flight, both by single and multiple-spark photography; recoil problems—muzzle and chamber brakes; general internal ballistics of small arms. He was responsible for developments and improvements which have been embodied in weapons in use in the present War.

Harris's methods were essentially sound—careful, meticulous consideration of all aspects of the problem, never rushing to conclusions, and making sure of each step before proceeding further, and it should be said that his mathematical knowledge was considerable and was used with skill to keep theory and experiment in close touch.

The outbreak of war brought heavy demands on his strength and when he and his work were moved from Woolwich in September 1940 he was already a sick man. He never complained and gave unstintingly of his best to ensure the continuation of the investigations, but it was clear that the effort was costing him dear. He lived long enough to see things going satisfactorily at the new station, but a bad breakdown in July 1941 kept him away from work for about six months, and, although he struggled back for a few days in January 1942, it was apparent to all that the end was near. He inspired respect and affection in all his colleagues, and, to the writer of this notice in particular, he was a close and loyal friend, ungrudging in advice and help at a very difficult time. The country and the national war effort are the poorer by his death.

C. A. C.

#### Dr. Arnold Berliner

IN connexion with the obituary notice of Dr. Arnold Berliner (NATURE of September 5, p. 284), Mr. F. I. G. Rawlins writes: In the summer of 1928, the University of Berlin gave an *Abendessen* to graduate students attending the *Ferienkurs* in theoretical physics. Prof. von Laue was host, and I sat next to Arnold Berliner. His conversation was brilliant, over a wide range of topics, and his enthusiasm for straightforward scientific literature unbounded. A few years before he (with Karl Scheel) had produced the monumental "Physikalisches Handwörterbuch", in which I ventured to point out a few (obvious) omissions. He replied at once—"I prepare a new edition, and I promise that there shall be no gaps". Most of the evening, he continued to discuss everything conceivable, but not without betraying some strange—and even violent—likes and dislikes, doubtless the outlet for the "artistic temperament" which filled his whole being. He stood four-square for a culture altogether too broad and too maganimous ever to suffer complete eclipse.

WE regret to announce the following deaths:

Prof. L. Aschoff, professor of pathological anatomy in the University of Freiburg im Breisgau, aged seventy-five.

Dr. S. G. Barker, O.B.E., scientific adviser to the Indian Jute Mills Association, on August 28, aged fifty-five.

Dr. H. C. Lawrence, formerly of the Imperial Forestry Service, Burma, on August 25, aged sixty-seven.

Mr. P. A. Mytton, O.B.E., chief livestock officer for England and Wales, Ministry of Agriculture, on September 3, aged sixty-one.

Mr. Bernard Neville, formerly physics master at William Ellis School, aged fifty-five.