

outside India, of Europe and Australia. Plants of Africa and America are far less perfectly represented. The Herbarium is an essential adjunct to a botanical garden of this standard.

Introduction of quinine, rubber, ipecacuanha, various timber trees, fibre- and oil-yielding plants and other plants of great economic value is mainly due to exploration by the scientific officers of the Garden. Almost all the road-side trees and ornamental garden plants now found widely growing throughout India and Burma were first acclimatized in this Royal Botanic Garden. They were then distributed all over India and abroad. Of recent introduction is the tung oil tree, which is a source of considerable revenue in China. Experiments at this Garden indicate possibilities of cultivation of tung oil in suitable areas of Bengal in the drier lower ranges of the Himalayas at 2,000–5,000 ft. There is no reason why India should not

be made self-supporting with regard to the supply of this oil, so useful for various purposes. The Garden distributes seeds to various parts of India.

The garden roads were never intended for the heavy traffic that daily passes over them. In this sense the Calcutta Gardens must be unique. In most Gardens of similar dimensions and with similar objects the visitor passes on foot; the restrictions placed upon him read very much alike wherever one goes. Custom and long precedent have allowed greater latitude to the visitor to Sibpur. Except in some of the nursery plant houses he can wander where he likes; he picnics anywhere and he even lights fires in approved spots when he wishes to cook his food. It is all to the benefit of the Garden, in that greater public enjoyment and therefore support is ensured, and on the whole it must be said advantage is not taken of the latitude allowed.

## OBITUARIES

### Mr. H. J. Carter

BY the death of Herbert James Carter on April 16, Australia has lost one who had taken a prominent part in both educational and scientific affairs. He was born at Marlborough, Wilts., on April 23, 1858, the son of James Carter, and was educated at Aldenham School and the University of Cambridge, where he was a scholar of Jesus College. He was a mathematics master at Sydney Grammar School during 1881–1901 and was principal of Ascham Girls School from then until 1914. He was president of the Linnean Society of New South Wales during 1925–26, and a member of its Council from 1920 until 1939; also a fellow of the Royal Entomological Society of London. For many years he was honorary entomologist to the Australian Museum. He was science editor of the "Encyclopædia of Australia" published in 1926, and author of "Gulliver in the Bush" in which he related many of his experiences in pursuit of his scientific work.

Carter's special work was with the Australian Coleoptera, especially the families Tenebrionidae, Buprestidae, Cistelidae, and Dryopidae. In addition to descriptions of large numbers of new species, he paid particular attention to matters of synonymy, and published a number of check-lists of the families, and revisions of the Australian species of various genera. He did not shirk the drudgery of the work on synonymy, but often deplored the practice of some European colleagues who, on what he considered inadequate evidence, described large numbers of Australian species as new, and so added to the difficulties of Australian coleopterists.

His papers appear in a number of scientific journals from 1905 onwards, chiefly those of the Linnean Society of New South Wales, the Royal Zoological

Society of New South Wales, and the Royal Society of South Australia. His last completed work was a short note on Dryopidae, handed to the Linnean Society of New South Wales only a few days before his death, with the comment that he found such small objects trying to his sight and that this would probably be his last contribution on the family. His fine collection of Australian Coleoptera, including many types, will go to the Division of Economic Entomology of the Council for Scientific and Industrial Research at Canberra. A charming personality, he left a host of friends in his scientific colleagues and in his former pupils now scattered throughout Australia.

### Prof. C. L. Boulenger

PROF. CHARLES L. BOULENGER, who died on May 21, aged fifty-five, will be remembered as a successful professor, an authority on freshwater medusæ and the trainer in helminthology of a large band of biologists who were scattered through the East for disease diagnosis in the War of 1914–18.

His father was G. A. Boulenger, F.R.S., a Belgian who became a great authority on reptiles and fish at the British Museum (Natural History). The son was a scholar of St. Paul's School and entered King's College, Cambridge, in 1903 as Lawrence Saunders scholar. He obtained first classes in the Natural Sciences Tripos and in 1906–7 occupied his University's table at the Stazione Zoologica, Naples, for the study of medusæ. He then visited Birket el Qurun (the remains of Lake Moeris) to investigate its medusa, discovering that its stinging cells are formed in the endoderm of the manubrium and in the ectoderm of the swellings at the bases of the tentacles

before migrating to accumulate in surface batteries in the manubrium and tentacles respectively. This work was followed up by nine reports on medusae from Tanganyika, Rhodesia, the Limpopo and the Caspian, chiefly concerned with their development and meristic and genetical variation.

After a year's demonstrating at Oxford, Boulenger returned to Cambridge in connexion with the museum, also demonstrating, particularly taking charge of Sir Arthur Shipley's advanced classes on the flatworms, nematodes and other parasites. In 1910 he went to Birmingham as lecturer and three years later was appointed reader in agricultural zoology. This was preceded by important work on the Myzostomida, external parasites of starfish, of which he received 170 specimens collected by Crossland from the Red Sea, this collection about doubling the known specimens. They were referred to six species with a full account of their anatomy. A report on a sheep's nematode (*Nematodirus*) followed, important for the development of cultural methods that enabled him to present its full life-history.

In 1915-16, Boulenger, under the Royal Society's scheme, lectured and demonstrated at Cambridge on the higher parasites of man. He then proceeded to Basra (Captain R.A.M.C.), where he acted as referee for worm parasites while making routine examinations for amoebic dysentery. He tabulated the stools of 1,180 patients, finding the British (about a third) quite free, while of the whole number 18.5 per cent had hookworm, 5.2 per cent *Ascaris* and 5 per cent *Trichiurus*, not large numbers, since Turkish prisoners proved to have four times these infestations. Unfortunately, he contracted amoebic dysentery, but in 1920 returned to India as professor at Lahore, working in the Punjab Veterinary Laboratory and specializing in the strongylid parasites of camels and horses. In 1921 he was appointed professor at the Bedford College for Women. To this he gave all his powers, fighting ill-health, for he never recovered from his Mesopotamian breakdown. He never married.

As a student Boulenger was very competent, but shyness caused him to be a solitary person and to build up a life within himself, ceramics and mezzotints then attracting him. This character he never lost, and perhaps it is the key to his life, if coupled with a strict obedience to duty. His lectures were models of clarity and balance, relieved by a marked touch of humour. He kept a high standard before his students, but was singularly understanding of their difficulties and always helpful; as an examiner he was remarkable for his judgment and appreciation of originality. With Prof. D. Mackinnon he effectively collaborated in providing a course in parasitology for the University of London. Every year he sent one of his students to Plymouth, providing anonymously the necessary funds by means of a prize. He was an admirable colleague, his views on college policy sound and strongly held. As he grew older his health became worse and he only found relief in the 'long' vacations at Algeria and Tangiers where he almost lived in the sea. In the

winters he had his ticket for Covent Garden and gave play to his collector's instincts, especially in philately and oriental jewellery. J. S. G.

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### Prof. Michael Siedlecki

PROF. MICHAEL SIEDLECKI, who, during the occupation of Cracow by the Germans in November 1939 was imprisoned with the majority of the professors of the Jagellonian University, and transferred to the concentration camp in Oranienburg near Berlin, died there in January 1940.

Prof. Siedlecki was professor of zoology and director of the Zoological Laboratory and Museum of the Jagellonian University of Cracow, member of the Polish Academy of Sciences, honorary doctor of the University of Strasbourg, and member of many Polish and foreign scientific societies, including the Zoological Society of London. He was born in Cracow in 1873, and having taken the Ph.D. of the University of Cracow in 1895, he spent some years abroad completing his studies in zoology in the Universities of Berlin and Paris and at the Zoological Station in Naples. After his return to Cracow he continued zoological research in the University, first as an assistant, then as a lecturer in 1900, and finally as a professor without a chair. During 1908-9 he made a scientific expedition to Java and in 1912 succeeded Prof. Antoni Wierzejski in the chair of general and systematic zoology at the Jagellonian University.

In 1919, Siedlecki went to Vilna, to organize the new Polish university there, and remained until 1921, as the first rector of the University. He then returned to Cracow, to his former post as professor of zoology. Since 1923, Prof. Siedlecki represented the Polish Government on the Conseil Permanent International pour l'Exploration de la Mer in Copenhagen. He devoted much time to the organization of the Polish fisheries in the Baltic, and in the North Sea. He also organized the scientific investigation of the Baltic adjacent to the Polish sea-coast. Thanks to his efforts the marine stations at Hel and Gdynia were formed as the centre of scientific research of marine biology in Poland.

Most of Prof. Siedlecki's scientific researches concerned protozoology, especially the parasitic protozoans of the groups Sporozoa and Flagellata. He discovered and described a number of new and very important facts concerning the structure and development and reproduction in these groups, which are frequently cited in treatises and text-books on zoology. He was also interested in many other problems of animal biology, as is evidenced by his studies on tropical insects and amphibians. In the last years of his life his research was devoted almost entirely to marine biology, particularly to the biology of fishes inhabiting the North and Baltic Seas.

Prof. Siedlecki also took a great and active interest in the preservation of wild life. He organized the Polish Section of the International Committee for Bird Preservation, and was its chairman until 1937,