

THE RETIREMENT OF LIEUTENANT-COLONEL SEWELL.

Lt.-Col. Robert Beresford Seymour Sewell, the second permanent Director of the Zoological Survey of India, was born at Leamington, England, on 5th March, 1880, and after a very distinguished career of nearly 25 years of service in India has gone on leave preparatory to retirement from 22nd April 1933.

Sewell was a Scholar of Weymouth College from 1894-98, and for a short time in 1899 studied Zoology under Welden, Chemistry under Ramsay and Physics under Callender in the University College, London. In 1899 he joined Christ's College, Cambridge as an Exhibitioner, he later became a Scholar, and was connected with this institution till 1905. He took the Natural Science Tripos, Part I, of the Cambridge University in Class I in 1902, and was awarded the Bishop Porteus Gold Medal the same year. The following year he took part II of the Tripos in Class I, and for the research work done by him during his residence in the University was awarded the Darwin Research Prize in 1904. From 1902-05 he served as a Junior Demonstrator in Human Anatomy and from 1903-05 in Physiology in the University Laboratories. Sewell continued his medical studies in St. Bartholomew's Hospital, London, in 1905, in which year he was awarded the Shuter Scholarship, while the Matthews Duncan Prize in Midwifery and Gynaecology was bestowed on him in 1907. He took the M.R.C.S., L.R.C.P., of London in 1907, and passed the competitive examination for the Indian Medical Service in 1908.

After his arrival in India Sewell served as a medical officer in the Indian Army for about two years when, in view of his special scientific qualifications, he was selected for the post on board the R.I.M. S.S. "Investigator" of Surgeon Naturalist to the Marine Survey of India and he joined the ship in September 1910. Though his Zoological career starts from this date, Sewell had when posted as a medical officer at Sialkot, Punjab, made valuable observations on freshwater fishes which are particularly efficacious as destroyers of mosquito larvae; this work was published in 1912, in the form of a special pamphlet issued by the Trustees of the Indian Museum, in collaboration with the late Dr. B. L. Chaudhuri. In December 1911, Sewell was appointed as Officiating Professor of Biology in the Calcutta Medical College, and it was not till July, 1913, that he resumed his office of the Surgeon Naturalist. On the outbreak of the War in 1914, Captain Sewell reverted to military duty, and was attached as medical officer to 1/23 Sikh Pioneers. During the War he was in Aden, Egypt and Palestine and was mentioned in Despatches. While stationed at Aden he also served for a short period as the Health Officer of the Port of Aden. In 1919, his services were replaced at the disposal of the Civil authorities, and after serving for a year as the Officiating Superintendent, Zoological Survey of India, he reverted to his permanent post of Surgeon Naturalist. He continued in this capacity till 1925, when he was appointed Director of the Zoological Survey of India.

The biological work of the Marine Survey of India had been carried on for some thirty-five years when Sewell succeeded Captain Stewart as Surgeon Naturalist in 1910. This work had been carried out in close, though informal, connection with the Natural History Section of the Indian Museum. Except for the Survey Season of 1888 when Giles paid special attention to the nature of the sea-bed and the bottom deposits and which work was to some extent continued by Alcock, his successor, during the first year or two of his office, the biological investigations had been mainly confined to a systematic survey and making collections of the marine faunas of the various areas visited by the survey ship. Very rich and valuable collections of marine animals of almost all groups from different parts of the Indian Ocean had been obtained by the successive Surgeon naturalists, and for several years the work had been specially concentrated on the bathybial fauna. The reports on these collections have been published as "Natural History Notes from the R.I.M. S.S. 'Investigator'" in the *Annals and Magazine of Natural History* and in the *Journal of the Asiatic Society of Bengal*, and later in a series of monographs published by the Trustees of the Indian Museum and by the Zoological Survey of India since 1916. On his appointment as Surgeon Naturalist, however, Sewell found that the opportunities for deep-sea trawling, etc., were less frequent, and that with the changed conditions it would not be possible to carry out the programme of the biological work on the deep-sea fauna on the lines followed by his predecessors. He also recognised quite early in his career that there was an almost virgin field of study regarding the physical conditions under which the marine fauna exists. Soon after his appointment, therefore, he started his investigations of these conditions in detail, and as a result of his work came to the conclusion that "so far as this branch of Oceanography is concerned, the value of such expeditions as those of the 'Challenger', 'Valdivia', 'Siboga', etc., has steadily diminished. Each succeeding expedition has added less and less to the sum-total of our knowledge, and what seems to be urgently required now-a-days is an intensive study of comparatively small areas over a considerable period of time." Luckily for his researches the work of the "Investigator" during the greater part of his tenure was concentrated on specially interesting areas, such as the Andaman Sea, the Maldives, etc. The so far published results of his researches consist of six elaborate memoirs in a special volume of the *Memoirs of the Asiatic Society of Bengal*. In these memoirs Sewell has described in a masterly manner and in great detail the geography of the Andaman Sea and the Bay of Bengal, the temperature and the salinity of the coastal waters of the Andaman Sea and the temperature and the salinity of the deeper waters of the Andaman Sea and the Bay of Bengal. He has also collected materials on the Oceanography of that part of the Arabian Sea known as the Laccadive Sea and the results, when published, are sure to fill up a hiatus in our knowledge of the Oceanography of the Indian Ocean as a whole.

In addition he has studied in great detail the question of the formation of coral reefs and coral islands in the Andamans, the Gulf of Manaar and the Maldives. The first paper in this series entitled "A study of

recent changes of sea-level based largely on a study of coral-growths in Indian and Pacific Seas" was read before the International Congress of Zoology at Budapest in 1927, and a second paper on "The Coral Coasts of India" was published in the *Geographical Journal* last year.

In spite of his time being fully taken up with Oceanographical work, Sewell did not neglect pure biological investigations. With restricted facilities for such work he concentrated on the littoral fauna and a detailed systematic study of some of the organisms in the plankton, particularly the surface-living Copepoda. He was the first to introduce on the "Investigator" the use of nets for fishing in mid-water and the results obtained by him in 1911-12 showed how highly promising this new field for biological work is. The results of some of his work on the surface and mid-water fauna were published as papers in the *Records of the Indian Museum* on "The Capture of *Limulus* on the Surface", "Development of the Larva of *Lingula*", "Surface Living Copepoda of the Bay of Bengal" and "The Salps of the Indian Seas", while his paper on *Lithotrya nicobarica*—an interesting pedunculate Cirripede, and "Observations on growth in certain Molluscs and changes correlated with growth in the radula of *Pyrazus palustris*" resulted from his studies on the Littoral fauna of the areas he visited. Sewell did not neglect the deep-sea fauna also, for in 1912 he published a paper on the deep-sea fishes and another in collaboration with Dr. S. W. Kemp on the Decapods dredged by the "Investigator" during the Survey Season 1910-11.

In connection with the systematic survey of the freshwater molluscs of India started by the Zoological Survey of India in 1918 at the request of the medical authorities, Sewell in 1921 published a very detailed anatomical and bionomical work on the common banded snail—*Viviparus bengalensis*. About the same time he took up the study of the cercariae which occur in the indigenous freshwater molluscs of India. This work resulted in a number of papers and a very elaborate monograph which is thus described by Prof. H. B. Ward :

"The especial attention of workers in Medical Zoology is to be called to a monograph by R. B. Seymour Sewell from the laboratory of the Zoological Survey of India, published in the 'Indian Journal of Medical Research' (10, suppl. ; June 1922) in a study covering nearly 400 pages of text and illustrated by 32 full-page plates in colour and numerous text figures. The author has given a study of the cercariae of India that surpasses in extent and thoroughness any study hitherto made of this group in any part of the world. It would be hopeless to attempt a detailed review of so large a work here. Suffice it to say that it is sure to be indispensable to all workers in this field."

Since his appointment as Director, Zoological Survey of India, Sewell has published two elaborate monographs on some families of marine Copepods, and several contributions on the biological conditions governing the life of animals in estuaries and in restricted areas of freshwater such as the tank in the Museum Compound.

Soon after graduating at Cambridge, Sewell turned his attention to anatomical studies which were of special importance from the biological and anthropological points of view. He was attracted to this work by the researches of Professor Havelock Charles, who from his studies on the morphology of the lower extremity of the Punjabi had concluded that the skeletal peculiarities in the "hip-, knee-, and ankle-joints of the Punjabi skeleton are owing to the influence of the squatting and

sartorial postures which are commonly assumed by Orientals when engaged in their daily avocations or when indulging in rest after their labours” Further studies on foetal skeletons had led Professor Havelock Charles to the conclusion that the facets on certain bones of the lower extremity offer a good example of the inheritance of a character acquired by the Punjabi in the evolution of its racial type. Sewell from a careful study on the *astragalus*, published in a series of four papers in the *Journal of Anatomy and Physiology, Cambridge*, and based on the skeletons of Egyptians of the pre-dynastic Nagdah race, of the Fifth Dynasty to the Ptolemaic and Roman Period, of Europeans and others was able to show that the peculiar “ facets occur in the foetus of the European, and probably all other races, whether the facets are found to be present in the adult or not ” ; and was thus able to disprove the hypothesis of the inheritance of an acquired character as postulated by Professor Havelock Charles. He also published about the same time two other anatomical papers in the same journal.

The Director, Zoological Survey of India, also has under his charge the Ethnological and Anthropological collections of the Indian Museum, but no specially trained officer was in charge of these collections prior to Sewell's appointment as Director of the Zoological Survey. In 1925 Sewell strongly represented to the Government of India the necessity of the appointment of an anthropologist on the staff of the Zoological Survey for looking after the very valuable anthropological and ethnological collections in the Indian Museum, and a special officer was sanctioned for this work in 1927. Sewell was also from this time onwards able to revive his early interest in Anthropology, and since 1927 has published a number of valuable contributions on the racial ethnology of the Indians. Special attention may be directed to his presidential address delivered at Madras in 1929 to the Anthropological Section of the XVI meeting of the Indian Science Congress on “ The origin of Man and the Population of India in the Past and in the Future.” He has also published a number of interesting papers on human and animal remains excavated from the pre-historic site at Mohenjo-Daro and in Mekran ; the papers on the human remains were prepared in collaboration with Dr. B. S. Guha, Anthropologist of the Zoological Survey of India.

Sewell was elected a Fellow of the Asiatic Society of Bengal in 1917, and was awarded the M.A., and Sc.D. degrees of the Cambridge University within recent years. He was a Fellow of the Calcutta University in 1930-31, and did very valuable work in connection with the organisation of teaching of Zoology in the Calcutta University. He was elected President of the Zoology Section of the Indian Science Congress in 1927, and of the Anthropological Section in 1929, while he was the President of the Indian Science Congress in 1931. In 1930 he was appointed Chairman of the Quiquennial Reviewing Committee of the Indian Institute of Science, Bangalore. He was the President of the Asiatic Society of Bengal from 1930-32 and was awarded the Barclay Memorial Medal in 1932. For his services to the cause of Science in India he was awarded the title of the Companion of the Indian Empire in the New Year's Honours List of 1933.

Since his appointment as Director, Zoological Survey of India, a great deal of Sewell's time was taken up by administrative work, and he worked out in detail several schemes of far-reaching importance in connection with the work of the department under his care. As his distinguished predecessor, the late Dr. N. Annandale had pointed out, the staff of the department was hardly sufficient for carrying out a detailed zoological survey of the vast continental area of India. The valuable collections of the department are for want of sufficient space not only overcrowded but the rooms in which they are kept are not at all suitable for the storage of either spirit-preserved or dry collections, and owing to the absence of a marine biological station there is no possibility of any work on marine fauna being undertaken. Sewell soon after his appointment put up proposals for a five-year expansion scheme for the department ; these included, among other greatly needed improvements, the erection of a fire-proof spirit building for the reserve collections and offices of the department, an increase in the staff and the establishment of a marine biological station at Karachi. After long struggle most of the schemes were administratively approved, and it appeared almost a certainty that the department would before long be properly housed, equipped and manned for survey work. Unfortunately, however, as a result of the acute financial depression during 1931-32 not only were all the schemes of expansion shelved, but very drastic reductions were effected both in the personnel and in the annual budget grants of the department. The same circumstances are responsible for his premature retirement, but it is to be hoped that with the return of normal conditions the schemes for the expansion of work of the department initiated by Sewell will be revived and that it would be possible to carry out the programme of the work of the department as outlined by him.

Col. Sewell is personally a very charming man, always ready to help his colleagues and assistants in every possible way, and his loss to the Zoological Survey, due to his premature retirement, will be very keenly felt. Though his time was fully occupied with his own researches and administration, he was always ready to help young workers and encourage them in every possible way. He spared neither time nor energy for the progress of his department, while his work in connection with the administration of the Asiatic Society of Bengal and the Indian Science Congress, the reorganisation of teaching of Zoology in the Calcutta University and reviewing the work of the Indian Institute of Science at Bangalore was carried out with the same zeal and thoroughness which mark his scientific researches.

Fortunately, retirement from service does not mean severing his connection with Indian Science, as he has been selected as the leader of the "John Murray Oceanographical Expedition" This Expedition will be working in the Arabian Sea from the Persian Gulf down to the level of Madagascar, and east to west between India and Africa. The investigations will be carried out in special reference to the zonation of the fauna on the continental slopes between 50-1,000 fathoms. In addition to general Oceanographical investigations the nature of bottom deposits will receive special attention, and depth soundings carried

out in traverses extending over the entire area will, it is hoped, provide definite data regarding any old land connections or bridges between the two continents. The Expedition will enable Col. Sewell to extend further his Oceanographical investigations in the Arabian Sea and complete his earlier work. His colleagues and other scientists in India will follow the progress of the "John Murray Expedition" with great interest and the completed results of his work on this Expedition are sure to bring credit to his old department.

CALCUTTA,
April 28, 1933.

BAINI PRASHAD.

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