

Arthur Knyvett Totton

ARTHUR KNYVETT TOTTON, the well-known coelenterate taxonomist who worked for many years at the British Museum, died on January 12, 1973.

He was born on January 6, 1892, at Wallington, in Surrey, and was educated at Berkhamsted School. Wishing to prepare himself for a vacancy in the Natural History Museum he went in 1910 to the Royal College of Science. At the beginning of 1914 he joined the museum staff, becoming an associate worker in 1953 and, until he finally retired in 1967, his contributions to zoology were interrupted only by the two world wars.

As a student he was interested in the breadth of zoology, and the thoroughness with which he gained a wide knowledge of the subject and his early ability as an investigator were both characteristic. He attended some of Sedgwick's last classes, and his other teachers included E. J. Allen, W. T. Calman, A. D. Darbishire and C. Dobell. He studied entomology under H. M. Lefroy and could have made it his career. The systematic study of vertebrates and invertebrates, and experimental embryology, he took under E. W. MacBride, and at the latter's suggestion he began his first research, appropriately enough using material which the trustees of the museum had handed to the college for description. The resulting paper on the development of the vertebral column in a teleost fish (1914) is critical and mature in style. It is significant that in his later work problems of development and homology are often discussed with great insight, and with an indelible interest in evolution.

Captain Totton, as he is remembered by colleagues, served with distinction in the 1914-18 war, and was commissioned in 1915 in the Duke of Cornwall's Light Infantry. He went to France in 1914 with the 28th Battalion of the London Regiment. He served at Ypres, the Somme District and Arras, and in 1916 received the Military Cross. He was severely wounded in the Somme in 1916, and was invalided out in 1918. He never gave in to the trying after-effects of his injuries, and at the outbreak of World War II he joined the Army Officers' Emergency Reserve, and took on the duties of ARP warden for the entire British Museum.

On returning to the museum in 1918 he was given sole charge of the coelenterate section. The broad range of his curatorial and other work is reflected in diverse publications extending from accounts of the *Antipatharia and Hydroids of the British "Terra Nova" Expedition* (1923, 1930) to notes on Australian corals (1952), and up to 1935 he contributed to *Zoological Record*. His major interest, however, lay with the siphonophores, among the most complex and exotic of organisms, and among the most challenging to the taxonomist. He set to work on them almost unaided and later said (1954) that it was the study of Bigelow's Albatross Report (1911) which first lured him to examine these animals and to build up an enormous collection of them at the British Museum. His first major work on the group was in 1932, on the siphonophores of the Great Barrier Reef Expedition. Amongst many subsequent papers, the outstand-

ing landmarks are the *Siphonophores of the Indian Ocean* (1954), the monograph on *Physalia* (1960) and the crowning achievement, the great *Synopsis* of 1965. Totton was without peer as a siphonophore specialist. His descriptions were based on the most exact study of great masses of material from sundry sources. He took endless pains to present a faithful account of the findings of his predecessors and to set them in just relation to his own. He wrote simple, vivid English, and his works are as readable as taxonomy could conceivably be. In several of his major works he attempted to present a simplified account for non-specialists along with the more technical parts.

His paedophore hypothesis (1960) has been influential among younger workers and his opinions are convincing because he distinguished carefully between "stimulating speculation on phylogeny" and "descriptive matter", although even he thought that it was no easy task to reconstruct the zigzag course of evolution in this group. First and foremost, however, he was a taxonomist, to whom a library of specimens was as essential as access to books. The examination of plankton samples (many from Discovery collections) and the analysis of fragmented specimens involved no little labour, and he was fortunate in the help given over many years by his assistant Mr Ernest White, for whom he expressed his esteem by conferring his name on a new species. Similar tributes were paid to other colleagues, and Totton's nomenclature has a zest of its own, of which anyone who knows of his lifelong interest in the Scout movement will find *Lensia lelouveteau* a good example.

His essential and very exact taxo-

nomic groundwork has made it possible to follow the movements of water masses in the sea by studying the distribution of siphonophore species, as, for example, in Dr J. H. Fraser's work in the Northeast Atlantic. Such water movements have very profound effects on fisheries.

Opportunities to work with living siphonophores afforded him joyful delight, and in the tradition of great naturalists he conveyed his enthusiasm to all who worked with him. His writings continually bring out the need to observe, or to revise facts, and are never for a moment dull. All beginners, he maintained, should see living material, and today all zoologists would agree with him. He himself had few such opportunities in earlier days, although in 1930 he visited the Caribbean on HMS Rodney. In 1955, following Haeckel's geographical intuition, he went to Arrecife with G. O. Mackie to work on *Physalia*, and from 1949 he made visits to Villefranche year by year so that the Station Zoologique became a second home.

Totton was the least stuffy of men. He could utter outrageously reactionary views but this was often done mischievously to provoke a response, and arguments often ended in his yielding his position in an apparent state of apoplectic self-restraint, somehow gratifying to his antagonist. He had remarkable ability to enlist the efforts of others on behalf of his projects, combining the qualities of Ancient Mariner, Svengali, and Portuguese Man-of-War. His friends will remember his sardonic humour, his innate romanticism, his warmth and his *esprit*.