

OBITUARIES

Prof. Thomas Alan Stephenson, F.R.S.

MARINE biologists in many lands will learn with sorrow of the death on April 3, at the age of sixty-three, of Prof. Thomas Alan Stephenson, for he had travelled widely and visited many ocean shores. Alan Stephenson's first interest was sea anemones, a group of animals which no doubt appealed to his artistic nature, and this culminated in the beautifully illustrated Ray Society monographs on British sea anemones which appeared in 1928 and 1935. He was on the staff of the Department of Zoology at University College, London, during 1922-30, and in 1923 made a short investigation for the States of Guernsey on the biology of the ormer, *Haliotis*, with the view of legislation to check the noticeable decrease in supply.

In 1928 he joined the Great Barrier Reef Expedition under C. M. Yonge and led the shore party concerned with the ecological investigations on the reefs. His knowledge of anemones made him most suitable for this expedition, and he naturally devoted much time to the corals themselves, making also valuable observations on growth. But his wider interest in shore ecology found full scope in a general study of reef ecology, on which one of his joint papers with his wife, G. Tandy and M. Spender, will have lasting value as evidence of the state of Low Isles in that year. It has already formed the basis of two later small-scale surveys.

In 1930, Stephenson was elected to the chair of zoology in the University of Cape Town. It was then that he developed his grand idea of the comparison of shore faunas on a world-wide scale. Our knowledge of the distribution of the intertidal fauna and flora had been restricted to detailed surveys at isolated points either in easy reach of marine laboratories or at places visited by expeditions. Stephenson was the first to organize a continuous survey along a great length of coast and its value lay in the fact that the same people saw the whole length of coast so that their observations were as comparable as possible.

This first great survey, over a period of ten years, extended from Port Nolloth on the west coast of Africa, round the Cape, to Durban on the east coast. It thus covered regions in the south Atlantic, the Southern and Indian Oceans, and extended through a range of climates as well as areas influenced by different ocean currents. The work was done with all his usual exactitude, and the correct identification of species was ensured so far as possible. The great series of papers produced by Stephenson and his colleagues will remain as a lasting memorial to a unique zoologist and as a reference point for all time. It was then that he discerned the underlying simplicity of the zonation patterns on the shore.

In 1940, he was appointed professor of zoology in the University of Wales at Aberystwyth, where he had been a student, and here he continued to inspire research on shore ecology. But every opportunity was still taken to continue his chief aim of seeing for himself as much of the coastline of the world as possible. With his wife Anne, who was always his constant and devoted collaborator, he explored the coasts of North America and of Bermuda. He was to have visited the Mediterranean this summer.

It was Alan's hope to write a book bringing together all his vast knowledge, and it is sad that he cannot now

do this. But in fact a great deal has been published and is available to the world and the pioneering has been accomplished. The outburst of interest in marine science is ensuring that many more shores are being surveyed. The stimulus has been given and the standard set by Stephenson and his concept of three universal intertidal zones is being confirmed.

All Stephenson's work was characterized by its extreme finish, and everywhere could be seen his meticulous care for detail. But as well as being a first-class naturalist he was also an artist. His paintings of marine animals and plants are exquisite portrayals and their composition emphasizes his deep artistic appreciation and disclosure of pattern and rhythm, so beautifully exemplified in his little book on *Seashore Life and Pattern*.

The deepest sympathy of their many friends will go out to his wife in her bereavement.

F. S. RUSSELL

Dr. Daphne Atkins

DR. DAPHNE ATKINS, a familiar figure to workers at the Plymouth Laboratory during the past 35 years, died on March 1. She was born on March 4, 1896, at Oxted, Surrey, the daughter of N. E. W. and Elisa Atkins. She was educated at the Kent County School for Girls, Tunbridge Wells, and from there went on to Bedford College, London, where she took her degree, in zoology and geology, in the early nineteen twenties.

Her first visit to Plymouth was probably in 1922 when I well remember her as a fellow student at the Easter class. After graduation she was soon to return to Plymouth where, supported initially by a series of research grants, she continued to work for much of the rest of her life. Her only notable period of absence was during and for some time after the War when she returned to Oxted to care for her aged parents.

She made major contributions to our knowledge of marine invertebrates. She observed the living animal, she studied its anatomy by dissection and in sections, in exact detail she followed the course of the ciliary currents concerned with respiration, feeding and cleansing in bivalve molluscs, polyzoans and brachiopods. She published her conclusions in admirably presented and most beautifully illustrated papers. These must have numbered at least forty and were largely published in the *Journal of the Marine Biological Association*, the *Quarterly Journal of Microscopical Science* and the *Proceedings of the Zoological Society of London*.

Her earliest research, suggested by J. H. Orton, on the moulting stages of pea-crabs (*Pinnotheres*) was published in 1927. While this led to further work on post-embryonic development, it had very different and far-reaching side issues. These included accounts of a fungal infection and of an ontogenetic (Isopod) parasite on *Pinnotheres*, examples of contributions to parasitology which included descriptions of ortho-netid, rhabdocoel and copepod parasites in bivalves.

Observing the effects of *Pinnotheres* on the gills of *Mytilus*, she noted that the damage caused led to the appearance of secondary or supernumerary food grooves with an associated reversal of beat in the adjacent frontal cilia. This led to further work on