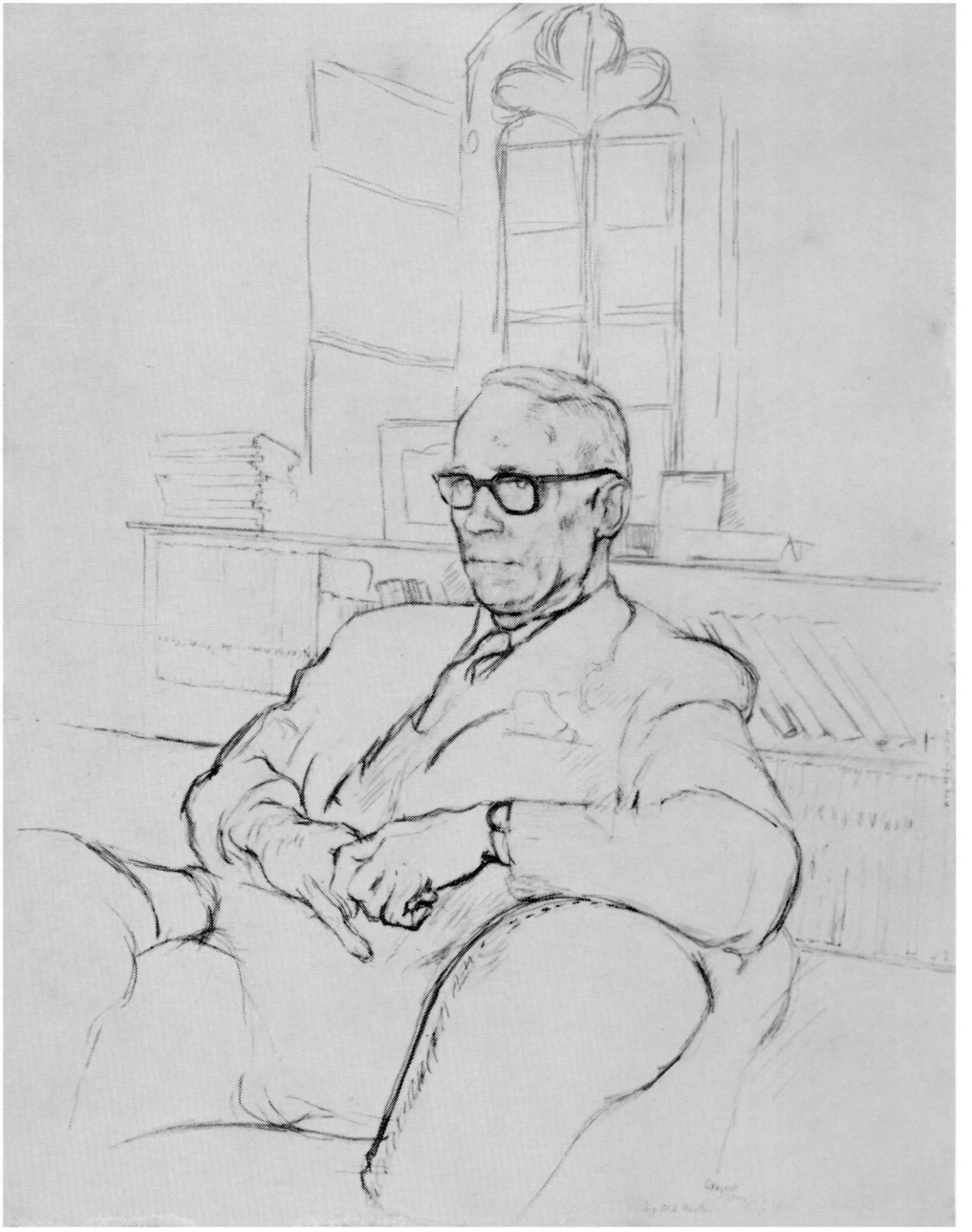

https://doi.org/10.1017/S0025315400056368 Published online by Cambridge University Press

J. mar. biol. Ass. U.K. (1967) 47, 255–258
Printed in Great Britain

OBITUARY

Carl Frederick Abel Pantin

1899–1967

By the death of Carl Pantin on 14 January 1967 the Marine Biological Association has lost one of its most ardent supporters. Full obituary notices of his biological research and of his influence on biology in general will appear elsewhere. The following account is therefore limited to his connexions with the Plymouth Laboratory.

Born on 30 March 1899, Pantin was of the age that was just caught in the last stages of the First World War and he was delayed until October 1919 in taking up a scholarship at Christ's College, Cambridge. The Master of that College was then Sir Arthur Shipley who was Chairman of the Council of the Marine Biological Association from 1906 until his death in 1927.

Pantin's first experience of Plymouth was the Easter Course in 1921 under the supervision of J. H. Orton, a student class of which I was also a member. In those days there was no Easter Course building, nor, as now, a well-equipped lecture hall and laboratory. The Course was held in the Royal Corinthian Yacht Club situated on the sea front just below the laboratory. But the interest and enthusiasm aroused by visits to the classic collecting grounds were just as great as they are for students today, and Orton was an inspiring teacher. Trips to sea were on the M.Y. 'Oithona', the sailing boat 'Anton Dohrn' being replaced by the 'Gammarus' in 1923.

After taking a first in zoology Pantin's first post was at Plymouth where he was appointed Assistant Physiologist in 1922, and he was to remain on the staff until 1929.

From its foundation the Association had had close connexions with physiologists. No less than ten of the provisional Council elected to start the Association were members of the recently formed Physiological Society. This close connexion exists to the present day and Carl Pantin was to be a key figure in the development of comparative physiology. It was pointed out at the Association's inaugural meeting by both T. H. Huxley and G. J. Romanes that one of its functions would be to foster the study of invertebrate physiology.

The first years of the Association's staff, until the First World War, had had naturally to be devoted to faunistic investigations and to preparation of the background for our knowledge of the habits and biology of our food fishes and of the environment in which they lived. But just before the outbreak of war

in 1914 a scheme had already been put forward for enlarging the building at Plymouth so as to provide properly equipped laboratories for work in general physiology. Everything was of course delayed, but in 1921 W. R. G. Atkins was appointed Head of a new department of general physiology at Plymouth. He at once began his remarkable pioneering investigations on the relations between plant life in the sea and the chemical and physical conditions of the environment. Atkins was basically a plant physiologist, and the appointment of Pantin, a zoologist, in 1922 completed the team.

Pantin, who had been influenced by James Gray at Cambridge, set to work on research on the fundamental problem of contraction in living tissue and selected the most primitive organism possible, a marine amoeba. During the next few years there resulted a series of remarkable papers on the physiology of amoeboid movement.

But, apart from his own research, Pantin was to have a very great influence on the work at Plymouth, and indeed throughout the country as a whole. In 1925 he ran an advanced course in Comparative Physiology and Experimental Biology in September in the old Easter Class building. The course was repeated the following year, when two distinguished physiologists, A. V. Hill and E. H. Starling, were among those attending. It was continued each year up to 1929. In this way by his infectious enthusiasm and undoubted gift for teaching he must have introduced to a great many scientists, both young and older, the possibilities provided for comparative physiological studies by the wealth of invertebrates to be found in the sea. As G. P. Wells[1] has said, 'these courses broke entirely new ground'. They influenced also those engaged in marine research. For instance, R. S. Wimpenny tells me that he received a stimulation which was to have a permanent effect on his outlook in marine biology.

In 1924 Lancelot Hogben was appointed Ray Lankester Investigator at the Plymouth Laboratory. It was he and Pantin who together worked out a simple accurate method of determining the dissociation curve of crustacean haemocyanin, and showed its suitability for class work.

Robert Chambers also came to Plymouth in 1925 and the following year Pantin visited Woods Hole and studied with Chambers his micro-dissection techniques. While there he also received guidance from Jacques Loeb. In 1927 he was given leave of absence for some weeks to conduct a course of lectures and practical work in Comparative Physiology at University College London, a course which he repeated in 1928.

In September 1929 Pantin left the Plymouth staff on election to a Fellowship at Trinity College, Cambridge, and a lectureship at the same college. But his association with Plymouth still remained very close. In 1930 he repeated his course at Plymouth with A. D. Ritchie as joint supervisor, a course which was conducted by Ritchie and R. J. Pumphrey the next year.

[1] *The Times*, 18 *January* 1967.

In these years he also did research at Plymouth on the effect of ions on crustacean muscle, the adaptation of *Gunda* (now *Procerodes*) to freshwater and marine conditions, the respiratory pigment of cucumarians, and in 1932 on osmotic control in amphipods.

Immediately after he had left the staff Pantin was elected a member of the Council of the Association and he remained a regular member until his death, having only just completed a six-year term of office as President of the Association.

Enough has been said to indicate that the influence he had on biology in this country as a result of his Plymouth connexion must have been very considerable. It was noticeable not only in the work at Plymouth but also at other marine laboratories, and many must have been the research workers who visited the Plymouth laboratory as a result of his inspiration.

After the Second World War his interest in the nervous and locomotory systems of anemones brought him and his co-workers Miss E. J. Batham and Miss E. M. Robson regularly to Plymouth, where his presence was always so exceedingly welcome. It had been everyone's hopes that after his retirement from the Chair of Zoology at Cambridge he would be able to spend long periods at Plymouth doing the research he enjoyed so much and bringing pleasure and enthusiasm to all who were working in the laboratory. But this was not to be. During his last two years he was burdened by illness that made life a struggle, yet with magnificent courage he never ceased to give himself uncomplainingly in the service of others and was an inspiring example to all.

Pantin was a true scientist, but he was also an unusually attractive personality. In the words of O. D. Hunt[1], 'he was endowed with a kind of boyish charm and humorous valour, innocent of all ostentation'. He gave of his wisdom and time generously, never counting the cost. It seemed fitting that it should be he who was the Association's President at the close of an era under the aegis of the Development Commission and still in office to bridge the transition to the new sponsorship of the Natural Environment Research Council—a period, incidentally, which included my own last year as Director at Plymouth and the first of my successor J. E. Smith, who had previously been a colleague of Pantin's before the war at Cambridge. Having started our careers together as students at Cambridge and then as colleagues on the Plymouth staff, this last association with him gave me a sense of deep satisfaction.

Times change and one recalls with nostalgia the vivid memories of a part of the active development of science. This is a prerogative of advancing years and I have no doubt that the young scientists of today will in their turn in due course recall periods in their youth when development was just as active. It is indeed a privilege to have been, during one such development, among the colleagues and friends of one of the chief actors on the stage, Carl Pantin.

[1] *Western Morning News*, 16 January 1967.

His widow, Amy, who enjoyed with him the freshness of those early days at Plymouth, was herself a zoologist and collaborated with him in his research, later qualifying in medicine. Our sympathy goes to her and their two sons, Henry and John.

F. S. RUSSELL

The portrait of Professor Pantin is reproduced by kind permission of the Master and Fellows of Trinity College, Cambridge.