



Marie V. Lebour



DR MARIE V. LEBOUR

(Facing p. 777)

OBITUARY

DR MARIE V. LEBOUR

Marie Victoire Lebour was born on 20 August 1876; she died on 2 October 1971 at the age of 95.

Marie Lebour was the third daughter of Professor George Alexander Louis Lebour. Her mother was Emily Nora, daughter of Dr Hodding, a London surgeon. Professor Lebour was born in St Omer of French parents, his father being an artist of some note. The family moved to England in 1849, and the son George grew up in literary and artistic circles in London. A man of considerable talents he became a geologist and, after short periods in the Geological Survey and practising as a consultant geologist, he was appointed in 1875 as Lecturer in geological surveying in Durham College of Science (later Armstrong College) at Newcastle upon Tyne. In 1879 he was elected to the Chair of Geology, a post he held for 39 years until his death on 7 February 1918. In 1902 he was appointed Vice-Principal of Armstrong College. He was awarded the Murchison Medal of the Geological Society in 1904.

Marie, the youngest of three daughters, was born when the family were living at Woodburn, in Northumberland. Brought up in Northumberland she soon acquired an interest in natural history, no doubt accompanying her father on his geological excursions, including one to Skye which she especially remembered. She must have started her science training rather late, obtaining her A.Sc. of Durham University in 1903, her B.Sc. in 1904 and her M.Sc. in 1907. She was awarded a D.Sc. in 1917. It appears that from 1904 she was a member of the staff of Durham University. By October 1906 she had been appointed a Junior Demonstrator in the Zoology Department of the University of Leeds, becoming Demonstrator by October 1908 and Assistant Lecturer and Demonstrator by October 1909. She remained at Leeds until 1915, when, no doubt by personal arrangements between E. J. Allen and Walter Garstang, she was loaned 'for the duration of the war' (expected to end in 1916!) to the Plymouth laboratory. Although in 1917 she was offered a permanent post in the Department of Agriculture at Leeds, she preferred to remain at Plymouth as it had then become possible to arrange a permanent post for her on the laboratory staff. She remained on the staff of the laboratory until her retirement in March 1946, after which she continued working at the laboratory until 1964, when in her 88th year she was finding work difficult and the journey in from Cawsand too much for her.

Marie Lebour must have started research in her early student days, for her first published paper was in 1900 on land and freshwater molluscs, chiefly from the lower Tweed and round Corbridge-on-Tyne where they were then living. Her first interest was thus in molluscs, on the life-histories of which she was in later years to make such significant advances in knowledge. It is interesting to read in the Report of the Council of the Natural History Society of Northumberland, Durham and Newcastle-upon-Tyne for 1916-17 that Miss M. V. Lebour, D.Sc., had presented her fine collection of foreign

shells, containing specimens from every quarter of the world. This comprised 28 small cabinets of four drawers each and one large box of shells too large for the cabinets.

Her interests in molluscs probably resulted in her research on parasites, for in 1905 she published a note on a trematode parasite in the cockle, to be followed by other publications on trematodes from Northumberland.

She was loaned to Plymouth when the staff had been greatly depleted by the absence of E. W. Nelson, J. H. Orton, E. Ford and L. R. Crawshay on war service, and of R. S. Clark on Shackleton's expedition in the Antarctic. The staff in 1916 consisted of E. J. Allen, D. J. Matthews, Miss Lebour and Mrs Matthews.

Marie's first research at Plymouth started her off on the study of planktonic stages of marine animals, for she described in 1916 the developmental stages of the copepod *Calanus*, which had been provided by L. R. Crawshay. These he had reared in E. T. Browne's plunger jar, which was to play so vital a role in all Marie Lebour's future research. At the same time she continued her interest in parasites, reporting on some in medusae. From this beginning she was eventually to cover the planktonic stages in the life-histories of a number of major groups of the animal kingdom, as well as to become an authority on dinoflagellates and diatoms. The outstanding pioneer quality of her researches will become evident in the following pages, in which specialists in different groups have kindly contributed.

Marie Lebour was a naturalist with acute powers of observation, who worked at great speed and intensity with almost primitive equipment. All her illustrations were made roughly on squared paper in pencil, using a squared micrometer eyepiece in her microscope. These were later redrawn on Bristol Board. She once told me that she had had a training in art. This probably accounts for the fact that her drawings were not of the mechanical nature advocated by some, with extreme evenness of line and stipple. All her drawings were more like sketches, but they never failed to emphasize the important critical diagnostic characters. Her training in art was also at Armstrong College and this may have accounted for her late entry into zoology at the University, if she had first been to the school of art.

Marie worked with great enthusiasm and energy and was never still; she walked always at a little jog-trot and I can well remember the sound of her footsteps as she pattered back and forth from her cubicle to her plunger-jars.

She was very kind and helpful and loved children. For instance, Lady Hardy, whose father, Professor Walter Garstang, appointed Marie at Leeds, writes: 'My sisters and I were school children when she came, and she was fond of children, and we all remember many happy times with her, making paper animals for Zoos and Noah's Arks, cut out and folded in her special way. Or we would sometimes have tea with her in her flat, where everything was made by herself - no bought cakes - just as at Cawsand, when you had tea with her and her sister.'

Soon after her father's death in 1918 her mother came to Plymouth and lived in Mannamead with Marie and her sister Yvonne, who was a masseuse. Her mother soon became ill and the sisters were unable to leave her. Marie's time at the laboratory was cut to two-thirds, yet she still managed to continue her great output of work. As a result of this she also she was not able to travel.

After the mother's death in 1937 Marie resumed full-time work at the laboratory. The two sisters then bought a bungalow in Cawsand. There they had a garden on a very steep slope, and one has vivid memories of them climbing about this garden in advanced years still with the agility of mountain goats. But Marie was now also free to travel, and it was soon arranged for her to go to Bermuda with Professor Garstang and Dr Robert Gurney to study crustacean larvae. This was at the time when the Royal Society had made available the ship 'Culver' for the Bermuda station, and she had just recently arrived. Unfortunately, on this, her only trip abroad, for the war was soon to start, her full enjoyment was marred by a sad accident. I am grateful for details from Professor Talbot H. Waterman, who was in Bermuda at the time. Full of energy, Marie took every possible opportunity to go collecting. One evening after dinner, in the dark, she went out in a rowing boat with Dr Jacques, a member of the staff of the Rockefeller Institute working on ionic exchange in large unicellular algae. Neither could swim, and while dredging the boat capsized. Marie hung on to the boat and shouted for help and was saved, but Jacques disappeared and his body was not found until the next day.

Marie Lebour returned to Plymouth from Bermuda in 1939. That year she received a medal from H. M. King of the Belgians for help in classifying natural-history collections made during his voyage in the East in 1928-9. She was a Fellow of the Linnean Society and became a life fellow of the Zoological Society in 1914. In connexion with her F.Z.S. she used to tell an amusing story. One day Lawrence of Arabia, then serving as Aircraftman Shaw in the Royal Air Force at Mount Batten, came to the front door of the aquarium and asked to see a member of the research staff. On being asked whom he wished to see he replied that he did not mind who it was. The caretaker, newly appointed and an ex-serviceman, refused on the grounds that any aircraftman could not just walk in and ask to see any member of the staff without an appointment. At that moment Marie came down the stairs and enquired what was wanted. Lawrence wanted to find a F.Z.S. who would give him a Fellow's ticket to visit the Zoo on a Sunday. Marie immediately invited him upstairs and gave him a ticket, but it was only after he had left the building that she realized who he was!

But enough of reminiscences, let others now speak about her and about the importance of her researches.

Of her work on microplankton, Dr G. T. Boalch says: 'On her arrival in Plymouth in 1915, Dr Marie Lebour started an intensive survey of the microplankton off Plymouth. This survey was based on species counts in centrifuged water samples and examination of regular tow nettings and was the first comprehensive seasonal survey of the phytoplankton of the Plymouth area. In 1917 she published the two classical papers which resulted from this work, "The microplankton of Plymouth Sound from the region beyond the breakwater", and "The Peridinales of Plymouth Sound from the region beyond the breakwater". Counts and lists of species from stations worked by Plymouth research ships continued and these have proved invaluable to later workers, who have used changes in the distribution of plankton species to indicate physico-chemical changes in the waters around Plymouth. The taxonomic studies necessary for these species surveys led to the two books on phytoplankton for which Dr Lebour is held in world-wide esteem. *The Dinoflagellates of Northern Seas* was published by the Marine Biological Association in

1925 and *The Planktonic Diatoms of Northern Seas* by the Ray Society in 1930. These books were the first comprehensive ones in the English language to deal with the phytoplankton in the North-Eastern Atlantic and they are still the starting-point for anyone working on the marine planktonic diatoms and dinoflagellates of the seas around Europe. Dr Lebour has had no fewer than seven species of dinoflagellates named in her honour, and in the Checklist of British Marine Algae, Second Revision, by Parke and Dixon (1968) there are 28 species of dinoflagellates listed as being described by Dr Marie Lebour.'

One group on which she did outstanding research was the decapod Crustacea, and Dr D. I. Williamson says: 'Miss Lebour's contribution to the study of crustacean larvae is remarkable firstly for its sheer volume; she published original descriptions of the larval stages of well over 100 species of Euphausiacea and Decapoda. It is notable that so many of these descriptions cover the full larval development of the species and not merely isolated stages. Her realization of the potentialities of the plunger-jar and her resourcefulness in finding suitable foods for larvae enabled her to rear very many species from egg to juvenile in the laboratory at a time when failure in this field was the general rule. Her establishment of the two new species *Caridion steveni* and *Spirontocaris occulta* added a new importance to larval taxonomy at the specific level, for in each case she first recognized the larvae as being specifically distinct and this led her to re-examine the adults. At a higher taxonomic level, mention must be made of her revision of the classification of the Brachyura, based largely on larval characters. Even when the main purpose of her larval investigations was taxonomic, she never ceased to think of the larvae as living animals, and her papers contain numerous references to the swimming and feeding habits and the colours of living larvae.

'Marie Lebour and Robert Gurney produced three joint publications on larval Decapoda, but, important though these papers are, they give little indication of the full extent and significance of their collaboration in this field. She gave "ungrudging assistance at every point" in the preparation of Gurney's invaluable *Larvae of Decapod Crustacea* (1942), and he made it clear in the preface to this book that he placed very great value on their association, which included the exchange of specimens, drawings and ideas.

'In the latter years Marie Lebour continued to identify decapod larvae for workers in all parts of the world, until failing eyesight eventually prevented her from using a microscope'.

On her studies on Euphausiacea, Dr J. Mauchline remarks: 'Dr Lebour pioneered the studies of the development of euphausiids by describing the larvae of the different species resident in the Plymouth area. This series of papers, published between 1922 and 1926, contains the earliest detailed descriptions of euphausiid larvae, those of *Nyctiphanes couchii*, *Meganyctiphanes norvegica* and *Thysanöessa inermis*. She extended her interests to the larvae of Mediterranean species, producing descriptions of larvae of species of *Stylocheiron* and *Nematoscelis* in 1926. Dr Lebour was the first to recognize that all sequential forms of larvae did not occur during the development of any one animal but that several forms were omitted. Thus, this work led to the theory, later shown to be fact, of dominance of certain types of larvae in the development of different species. Later, in 1950, she described larvae of species in the genera *Thysanopoda*, *Euphausia*, *Nematoscelis* and *Stylocheiron* from the seas around Bermuda. Her early papers stimulated

other workers and accounts were published in the late 1920s and through the 1930s of the development and biology of Antarctic and boreal species. This plus her own work forms the foundation of our present-day understanding of the biology of this very important group of organisms.'

The other group on which she made the greatest advances in knowledge of life-histories is the Mollusca, and of her work on these Dr Vera Fretter writes: 'Marie Lebour's first studies on molluscs were faunistic. They were carried out around her home town at Corbridge and during family holidays to other parts of Northumberland, Yorkshire and the lower Tweed valley. The studies were concerned with terrestrial, freshwater and marine species and are incorporated in papers published between 1900 and 1907. In addition to these there are other early papers which reveal the breadth of her interests and her ability to perceive something significant in apparently trivial observations such as variations in the radulae of certain members of the family Buccinidae and the feeding habits of slugs. It was after working on trematodes that she returned to molluscs, this time studying molluscan larvae and producing a series of publications during the period 1931-46. The first were concerned with prosobranch gastropods from Plymouth waters and these studies culminated in 1937 in the publication of a paper entitled "The eggs and larvae of British prosobranchs with special reference to those living in the plankton." In this she summarized current knowledge of egg capsules and larvae, bringing together all her original findings and those of others. She pioneered these studies in the British Isles and this publication remains a standard reference work. At the outset of the investigations knowledge of egg masses and, in particular, planktonic veligers was very limited. Even the larvae of such a common genus as *Nassarius* were uncertainly known until they were hatched from egg masses and reared to metamorphosis in plunger-jars in the Plymouth Laboratory. The results were described in her first paper in 1931, which includes the only accurate account of the egg capsules of *N. incrassatus* and *N. reticulatus* and the original description of the veliger of the former species. Marie Lebour was a genius in rearing larvae, and this is reflected in the fact that she was successful with over 50 species. Her observations were recorded by means of simple drawings which capture accurately the essentials of the living forms. Paintings of similar quality illustrate her masterly achievement in rearing the six British species of lamellariaceans with echinospira larvae. The later discovery of the echinospira of *Capulus* necessitated a revision of the classification of this genus. During a visit to Bermuda Marie was challenged by an even more varied and less known assemblage of egg masses and veligers to which she brought a considerable degree of order. The rearing of lamellibranch larvae at Plymouth followed the main bulk of the prosobranch work and resulted in the description of a number of common species with drawings by which they are readily identified. She would have been the first to confess that she found this problem a much less tractable one than the gastropods.'

Marie Lebour also made significant contributions to our knowledge of the eggs and young stages of fishes. Especially noteworthy were her studies on the larval and post-larval stages of the clupeids, sprat, pilchard and herring, and on the eggs and young of the gobies. I have recently had occasion to make a detailed survey of the literature on larval and post-larval clupeids and I find that her paper on these fish is indeed the most

accurate and detailed of any paper published. It is a good example of her acuity, for the changes in body and meristic proportions during growth of these young fish are very complicated.

In addition to her descriptive studies of the eggs and young she also did pioneer research on the food and feeding of young fish. Indeed, this was only one aspect of a general study she made of the food and feeding of plankton animals, and on this aspect of her work Sir Alister Hardy says: 'There are few more beautiful marine studies than those made by Marie Lebour on the feeding of plankton animals by the direct observation of their behaviour in plunger-jars. Day by day she kept a diary of the capturing of prey by many different species of hydromedusae, by the young stages of the larger jellyfish and also by ctenophores; and she illustrated their methods of predation with charming life-like drawings. She patiently watched, for example, one small *Phialidium* medusa only 6 mm across as it captured many young fish and grew larger over a period of 26 days. Such observations of living animals were supplemented by the examination of the food found within the stomachs of many different plankton animals in freshly caught tow-net samples. She thus supplied our first knowledge of many of the links in the food chains connecting different members of the plankton community. It was also these studies that drew attention to the role played by such small medusae and ctenophores, as well as animals like *Sagitta* and *Tomopteris*, as voracious carnivores levying a heavy toll on the populations of newly hatched fish - an important factor in the ecology of many commercial species. She made the interesting discovery that the young jellyfish *Aurelia* first feeds on young fish as other medusae do, but then, when just over an inch across, change over to a diet of small plankton animals, copepods, crab larvae, etc.; at Plymouth in the same year Professor Orton independently showed that the adult *Aurelia* was entirely a plankton feeder. Marie Lebour also made pioneer studies of the food of the young herring, showing that larval molluscs were an important element in their diet in the Plymouth area.'

One of the first groups studied by Marie Lebour was the Trematodes, and I end with a tribute on this work by Dr the Hon. Miriam Rothschild, for it also includes a sensitive impression of this remarkable woman:

'Students of human nature with a systematist's turn of mind will tend to classify the expressions on the faces they see emerging from certain cubicles in the laboratory: Room No. 1 (on the left) *Smiling*.

'This was the first impression I received at the laboratory on Citadel Hill - everyone came out of M.V.L.'s room looking happy. It was an impression that remained and defied the passage of time. Possibly at 70 years of age the rapid bob of the head became a little less bird-like, the quick stride down the corridor a trifle less determined, a few more wisps of hair escaped from combs set firmly in the Edwardian bun, but a charming and welcoming smile continued, unflinching, to dispense a lift of the heart.

'One of the familiar and nostalgic sounds which has now vanished from the entrance to the laboratory at Plymouth is the complicated, rhythmical cadence of creaks and tinkles which indicated that the plunger-jars were stirring Dr Lebour's plankton. This was essentially her world - to which she introduced me with her inimitable mixture of diffidence and enthusiasm - the world of miniature sails and delicate floats, of waving

cilia, of twitching swimmerets, of ruby eyes, of pulsating hearts and beating flame cells suspended miraculously in transparent, translucent flesh. M.V.L. combined a simple and infectious love of nature with a stubborn, almost steel-like, determination to record hard facts. The two qualities combined to produce an intuitive and gifted observer, and a scientist of discrimination and shrewd, objective truthfulness. The drawings she produced of her veligers and cercariae and larval Crustacea were not only morphologically accurate but they embodied the *feel* of the creature in question, and possessed the quality of affectionate portraits as well as that of scientifically accurate diagrams. The most genuinely modest and self-effacing of all women, M.V.L. was nevertheless perfectly aware of the subtle quality of her marvellously gifted pencil, and smiled with evident pleasure when you expressed appreciation of this particular point. Furthermore she enjoyed the rather rare ability, the flair, for breaking fresh ground, and with a few deceptively simple publications - for instance, 'A review of the British marine Cercariae'¹, opened up new and fruitful areas of research. Forty years ahead of her day she realized that the morphology and biology of the *larval* Trematoda were the essential keys to this difficult and fascinating group. Then, of course, she had green fingers. The plankton in her plunger-jars and glass dishes flourished and metamorphosed while other people's sunk to the bottom and disintegrated.

'Do these rare qualities seep out of the conventional printed pages and the rather indifferent reproductions of her drawings describing the larval Digenea of the U.K.? Somehow I rather doubt it. A melancholy aspect of zoology is the dry, impersonal presentation of the facts collected with such delight by M.V.L., and which, with a purity of heart and shining integrity, she passed on to those of us who were fortunate enough to know her.'

I am grateful to all those who have kindly contributed to this obituary notice; and also to Miss S. Cowen of the University of Newcastle and Dr S. V. Loach, Registrar of the University of Leeds, for supplying details about Marie Lebour's University career. Much of the information on her father came from the obituary in the *Transactions of the Natural History Society of Northumberland and Durham*. I am also grateful to G. M. Spooner and to Marie's nephew, Mr O. L. Jessop, for their help.

A list of her publications subdivided under the different aspects of Marie Lebour's research follows.

The photograph on the right is an enlargement from a group taken by Dr D. P. Wilson at Cawsand on 4 July 1937. The full-length photograph is an enlargement of one in my own possession taken earlier.

F. S. RUSSELL

¹ *Parasitology*, Vol. 4, no. 4, pp. 416-56 (January, 1912).

LIST OF DR M. V. LEBOUR'S PUBLISHED WORKS

Dinoflagellates and Diatoms

1917. The peridinales of Plymouth Sound from the region beyond the Breakwater. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 183-200.
 1922. Plymouth peridinians. I-III. *J. mar. biol. Ass. U.K.*, Vol. 12, pp. 795-818.
 1923. Plymouth peridinians. IV. The plate arrangement of some *Peridinium* species. *J. mar. biol. Ass. U.K.*, Vol. 13, pp. 266-70.
 1924. *Coccolithophora pelagica* (Wallich) from the Channel. *J. mar. biol. Ass. U.K.*, Vol. 13, pp. 271-5.
 1925. *The Dinoflagellates of Northern Seas*. vii + 250 pp. Plymouth: Marine Biological Association of the United Kingdom.
 1928. Dinoflagellates. *Sci. Prog., Lond.*, Vol. 23, pp. 124-34.
 1930. *The Planktonic Diatoms of Northern Seas*. xi + 244 pp. London: Ray Society.

Trematodes

1905. A preliminary note on a trematode parasite in *Cardium edule*. *Rep. scient. Invest. Northumb. Sea Fish. Comm.*, 1904, pp. 82-4.
 1905. Notes on Northumbrian trematodes. *Rep. scient. Invest. Northumb. Sea Fish. Comm.*, 1905, pp. 100-4.
 1907. Larval trematodes of the Northumbrian coast. *Trans. nat. Hist. Soc. Northumb. (N.S.)*, Vol. 1, pp. 437-53.
 1907. On three mollusk-infesting trematodes. *Ann. Mag. nat. Hist.*, Vol. 19, pp. 102-6.
 1907. Some trematodes in *Mytilus*. *Proc. Univ. Durham phil. Soc.*, Vol. 2, pp. 231-8.
 1908. A contribution to the life history of '*Echinostomum secundum*' Nicoll. *Parasitology*, Vol. 1, pp. 352-8.
 1908. Fish trematodes of the Northumberland coast. *Rep. scient. Invest. Northumb. Sea Fish. Comm.* 1907, pp. 23-67.
 1908. Trematodes of the Northumberland coast, no. II. *Trans. nat. Hist. Soc. Northumb. (N.S.)*, Vol. 3, pp. 28-44.
 1909. Trematodes of the Northumberland coast, no. III. A preliminary note on *Echinostephilla virgula*, a new trematode in the Turnstone. *Trans. nat. Hist. Soc. Northumb., N.S.*, Vol. 3, pp. 440-5.
 1910. *Acanthopsolus lageniformis*, n.sp., a trematode in the catfish. *Rep. scient. Invest. Northumb. Sea Fish. Comm.*, 1909, pp. 29-35.
 1912. A review of the British marine Cercariae. *Parasitology*, Vol. 4, pp. 416-56.
 1913. A new trematode of the genus *Lechriorchis* from the dark green snake (*Zamenis gemonensis*). *Proc. zool. Soc. Lond.*, 1913, pp. 933-6.
 1914. Some larval trematodes from Millport. *Parasitology*, Vol. 7, pp. 1-11.
 1916. Medusae as hosts for larval trematodes. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 57-9.
 1917. Some parasites of *Sagitta bipunctata*. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 201-6.
 1918. A trematode larva from *Buccinum undatum* and notes on trematodes from post-larval fish. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 514-18.
 1923. Note on the life history of *Hemiurus communis* Odhner. *Parasitology*, Vol. 15, pp. 233-5.
 1935. *Hemiurus communis* in *Acartia*. *J. mar. biol. Ass. U.K.*, Vol. 20, pp. 371-2.
 1922 (with R. Elmhirst). A contribution towards the life history of *Parorchis acanthus* Nicoll, a trematode in the herring gull. *J. mar. biol. Ass. U.K.*, Vol. 12, pp. 829-32.

Pycnogonids

1916. Notes on the life-history of *Anaphia petiolata*. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 51-6.
 1949. Two new pycnogonids from Bermuda. *Proc. zool. Soc. Lond.*, Vol. 118, pp. 929-32.

*Crustaceans**Copepoda*

1916. Stages in the life history of *Calanus finmarchicus* (Gunnerus), experimentally reared by Mr L. R. Crawshaw in the Plymouth Laboratory. *J. mar. biol. Ass. U.K.*, Vol. 11, pp. 1-17.

Decapoda

1925. The eggs and newly hatched larva of *Typton spongicola* O. G. Costa. *J. mar. biol. Ass. U.K.*, Vol. 13, pp. 848-53.
1927. Life history of the edible crab. *Fishg News, Aberd.*, Vol. 15, No. 742, pp. 32-3.
1927. Researches on rearing a crab. *Discovery, Lond.*, Vol. 8, pp. 311-13.
1927. Studies of the Plymouth Brachyura. I. The rearing of crabs in captivity, with a description of the larval stages of *Inachus dorsettensis*, *Macropodia longirostris* and *Maia squinado*. *J. mar. biol. Ass. U.K.*, Vol. 14, pp. 795-820.
1928. The larval stages of the Plymouth Brachyura. *Proc. zool. Soc. Lond.*, 1928, pp. 473-560.
1928. Studies of the Plymouth Brachyura. II. The larval stages of *Ebalia* and *Pinnotheres*. *J. mar. biol. Ass. U.K.*, Vol. 15, pp. 109-22.
1930. The larvae of the Plymouth Galatheidae. I. *Munida banffica*, *Galathea strigosa* and *Galathea dispersa*. *J. mar. biol. Ass. U.K.*, Vol. 17, pp. 175-86.
1930. The larval stages of *Caridion*, with a description of a new species, *C. steveni*. *Proc. zool. Soc. Lond.*, 1930, pp. 181-94.
1931. Further notes on larval Brachyura. *Proc. zool. Soc. Lond.*, 1931, pp. 93-6.
1931. The larvae of the Plymouth Caridea. I. The larvae of the Crangonidae. II. The larvae of the Hippolytidae. *Proc. zool. Soc. Lond.*, 1931, pp. 1-9.
1931. The larvae of the Plymouth Galatheidae. II. *Galathea squamifera* and *Galathea intermedia*. *J. mar. biol. Ass. U.K.*, Vol. 17, pp. 385-8.
1932. The larvae of the Plymouth Caridea. III. The larval stages of *Spirontocaris cranchii* (Leach). *Proc. zool. Soc. Lond.*, 1932, pp. 131-7.
1932. The larval stages of the Plymouth Caridea. IV. The Alpheidae. *Proc. zool. Soc. Lond.*, 1932, pp. 463-9.
1934. Larval crustacea (Decapoda and Stomatopoda). Expedition S.A.R. Prince Leopold of Belgium, Duke of Brabant, to the extreme East (1932). *Bull. Mus. r. Hist. nat. Belg.*, T. 10, No. 8, 24 pp.
1934. The life-history of *Dromia vulgaris*. *Proc. zool. Soc. Lond.*, 1934, pp. 241-8.
1934. Stomatopod larvae. Résultats scientifiques du voyage aux Indes orientales néerlandaises. *Mém. Mus. r. Hist. nat. Belg.*, Hors série, Vol. 3, Fasc. 16, pp. 9-17.
1936. Notes on the Plymouth *Processa* (Crustacea). *Proc. zool. Soc. Lond.*, 1936, pp. 609-17.
1936. Notes on the Plymouth species of *Spirontocaris* (Crustacea). *Proc. zool. Soc. Lond.*, 1936, pp. 89-104.
1937. The newly hatched larvae of *Spirontocaris spinus* (Sowerby) var. *lilljeborgi* Danielssen. *J. mar. biol. Ass. U.K.*, Vol. 22, pp. 101-4.
1938. The newly-hatched larva of *Callianassa affinis* Holmes. *Proc. zool. Soc. Lond. B*, Vol. 108, pp. 47-8.
1938. Decapod crustacea associated with the ascidian *Herdmania*. *Proc. zool. Soc. Lond. B*, Vol. 108, pp. 649-53.
1940. The larvae of the British species of *Spirontocaris* and their relation to *Thor* (Crustacea Decapoda). *J. mar. biol. Ass. U.K.*, Vol. 24, pp. 505-14.
1940. The larvae of the Pandalidae. *J. mar. biol. Ass. U.K.*, Vol. 24, pp. 239-52.
1941. Notes on the thalassinid and processid larvae (Crustacea Decapoda) from Bermuda. *Ann. Mag. nat. Hist.*, Vol. 7, pp. 401-20.
1943. The crab. *Sch. Sci. Rev.*, No. 94, pp. 319-27.
1943. The larvae of the genus *Porcellana* (Crustacea Decapoda) and related forms. *J. mar. biol. Ass. U.K.*, Vol. 25, pp. 721-37.
1944. Larval crabs from Bermuda. *Zoologica, N.Y.*, Vol. 29, pp. 113-28.
1944. The larval stages of *Portunus* (Crustacea Brachyura) with notes on some other genera. *J. mar. biol. Ass. U.K.*, Vol. 26, pp. 7-15.
1944. Shrimps and prawns. *Sch. Sci. Rev.*, No. 96, pp. 209-16.
1945. The lobster and its relatives. *Sch. Sci. Rev.*, No. 99, pp. 208-14.
1945. Notes on the Pycnogonida of Plymouth. *J. mar. biol. Ass. U.K.*, Vol. 26, 139-65.
1949. The last larva and post-larva of *Typton spongicola* from Plymouth (Crustacea Decapoda). *J. mar. biol. Ass. U.K.*, Vol. 28, pp. 667-72.
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