# The Journal of **Experimental Biology**

(Late The British Journal of Experimental Biology)

### EDITED BY J. GRAY ASSISTED BY J. Barcroft A. J. Clark J. B. S. Haldane J. S. Huxley W. H. Pearsall S. C. Brooks F. A. E. Crew E. Newton Harvey M. H. Jacobs E. Ponder R. Chambers W. O. Fenn L. T. Hogben C. F. A. Pantin J. T. Saunders Vol. IX, No. 4 Price 12s. 6d. net *October*, 1932 SUBSCRIPTION PRICE PER VOLUME 40s. NET CONTENTS Duration of Testis Activity of Sturnus vulgaris in Relation to Type of Illumination. (With 2 Plates and 1 Text-figure.) By THOMAS HUME BISSONNETTE AND ARTHUR PEHR ROBERT WADLUND. The Heart Rate of the Developing Chick. (With 2 Text-figures.) By J. YULE BOGUE. Studies on the Nutrition of Blow-fly Larvae: III. The Liquefaction of Muscle. IV. The Normal Rôle of Micro-organisms in Larval Growth. (With 2 Text-figures.) By R. P. Hopson. Iodine Compounds and Fertilisation: VIII. The Effects of Thyroxine and Des-iodo-thyroxine on the Oxygen Consumption of the Sperm of the Rabbit. (With 7 Text-figures.) By G. S. CARTER. Experimental Studies on the Struggle for Existence: I. Mixed population of Two Species of Yeast. (With 4 Textfigures.) By G. F. GAUSE. Fertilisation in the Rabbit. (With 5 Text-figures.) By G. PINCUS AND E. V. ENZMANN. Observations on Digestion in the Ruminant. (With 9 Textfigures.) By H. E. MAGEE. The Reactions of Normal and Mutant Types of Gammarus chevreuxi to Light. (With 5 Text-figures.) By A. WOLSKY AND J. S. HUXLEY. Published for The Company of Biologists Limited

by THE CAMBRIDGE UNIVERSITY PRESS LONDON: Fetter Lane, E.C. 4

### ТНЕ

### QUARTERLY JOURNAL

#### $\mathbf{OF}$

## MICROSCOPICAL SCIENCE

### EDITOR :

### EDWIN S. GOODRICH, M.A., LL.D., F.R.S.

CONTENTS OF NO. 299-NEW SERIES

#### MEMOIRS

- DAPHNE ATKINS. The Ciliary Feeding Mechanism of the Entoproct Polyzoa, and a comparison with that of the Ectoproct Polyzoa. (With 12 Text-figures.)
- PETER GRAY. The Development of the Amphibian Kidney. Part II. The Development of the Kidney of Triton vulgaris and a comparison of this form with Rana temporaria. (With Plates 22-26 and 6 Text-figures.)
- MARGOT E. METCALFE. Notes on the Structure and Development of the Reproductive Organs in Philaenus spumarius L. (With Plates 27 and 28.)
- P. ULLYOTT. Notes on Planaria vitta Dugès. (With 4 Text-figures.)
- CARL H. MCCONNELL. The Development of the Ectodermal Nerve Net in the Buds of Hydra. (With Plates 29-31 and 1 Text-figure.)
- MURIEL ROBERTSON. The Effect of Gamma-Ray Irradiation upon the Growth of a Protozoon, Bodo caudatus. (With 5 Tables and 4 Graphs.)
- VISHWA NATH. The Spermatid and the Sperm of the Crab, Paratelphusa spinigera. (With Plate 32.)
- W. F. H. STRÖER. The Development of the Pronephros in the Common Perch (Perca fluviatilis L.) (With Plate 33 and 4 Textfigures.)

Subscription Price per Volume, £3 3s. net. Single Parts £1 1s. net.

OXFORD UNIVERSITY PRESS AMEN HOUSE, LONDON, E.C. 4

### CONTENTS OF NEW SERIES, Vol. XVIII., N

1.	THE NATURE OF THE INTERTIDAL ZONATION OF PLANTS AND ANIMALS. B JOHN COLMAN. With 15 Figures in the Text	
2.	THE BRITISH SPECIES OF TRIVIA: T. arctica AND T. monacha. O. MARIE V. LEBOUR. With 1 Plate	
3.	THE LARVAL STAGES OF <i>Erato voluta</i> (MONTAGU). By MARIE V. LEBOUR. With Plates 1-2.	485
4.	THE LIFE-HISTORIES OF Cerithio <sub>2</sub> sis tubercularis (MONTAGU), C. barleei JEFFREYS AND Triphora perversa (L). By MARIE V. LEBOUR. With Plates 1-2	491
5.	THE EGGS AND LARVE OF Turritella communis LAMARCK AND A porrhais pes- pelicani (L). By MARIE V. LEBOUR. With Plates 1-2.	499
6.	THE EGGS AND LARVÆ OF Philbertia gracilis (MONTAGU). By MARIE V. LEBOUR. With Plate I	507
7.	THE LARVAL STAGES OF Notomastus latericeus SARS. By DOUCLAS P. WILSON. With 1 Plate.	511
8.	THE NAUPLH OF Notodelphys agilis THORELL AND Doropygus porcicauda BRADY. By PETER GRAY. With 1 Figure in the Text	519
9.	Mycophilus rosorula n. sp., A NOTODELPHOID COPEPOD PARASITIC WITHIN B. (Botrylloides) leachii SAV., WITH A DESCRIPTION OF THE NAUPLIUS AND NOTES ON THE HABITS. By PETER GRAY. With 2 Figures in the Text.	523
10.	THE DEVELOPMENT STAGES OF Oithona helgoland ca AND Oithona spinirostris, WITH A NOTE ON THE OCCURRENCE OF BODY SPINES IN CYCLOPOID NAUPLH. By S. G. GIBBONS and H. S. OGILVIE. With 1 Figure in the Text and Plates 1-3	529
11.	ON THE OCCURRENCE OF YOUNG STAGES OF CALIGID.E ON PELAGIC YOUNG FISH IN THE PLYMOUTH AREA. By F. S. RUSSELL	551
12.	ON THE BIOLOGY OF SAGITTA. III. A FURTHER OBSERVATION ON THE GROWTH AND BREEDING OF Sagitta setosa in the Plymouth Area. By F. S. RUSSELL. With 1 Figure in the Text	555
13.	ON THE BIOLOGY OF SAGITTA. IV. OBSERVATIONS ON THE NATURAL HISTORY OF Sagitta elegans VERRILL AND Sagitta setosa J. MÜLLER IN THE PLYMOUTH AREA. By F. S. RUSSELL. With 3 Figures in the Text	559
14.	VERTICAL DISTRIBUTION IN Calanus finmarchicus. By A. C. GARDINER. With 9 Figures in the Text	575
15.	RAYS AND SKATES OF DEVON AND CORNWALL. III. THE PROPORTIONS OF THE SEXES IN NATURE AND IN COMMERCIAL LANDINGS AND THEIR SIGNIFICANCE TO THE FISHERY. By G. A. STEVEN. With 1 Figure in the	2
16.	Text Some Records of Parasitic Worms from Marine Fishes at Plymouth.	611
17.	By H. A. BAYLIS and E. IDRIS JONES	627
	OF THE ENGLISH CHANNEL OFF PLYMOUTH. By F. S. RUSSELL and ANNA B. HASTINGS	635
18.	SYLLIDIAN MISCELLANY. By YÔ K. OKADA. With 6 Figures in the Text .	641
19.	Remarks on the Reversible Asymmetry in the Opercula of the Polychæte Hydroides. By YO K. OKADA. With 5 Figures in the Text .	655
20.	THE EFFECT OF CYANIDES ON THE GILL COLOUR OF FISH. By R. BASSIN- DALE, B. A. SOUTHGATE, and F. T. K. PENTELOW	671
21.	CHEMICAL CONSTITUENTS OF BIOLOGICAL IMPORTANCE IN THE ENGLISH CHANNEL, NOVEMBER, 1930, TO JANUARY, 1932. PART I. PHOSPHATE, SILICATE, NITRATE, NITRITE, AMMONIA. By L. H. N. COOPER. With 15 Figures in the Text	677
22.	CHEMICAL CONSTITUENTS OF BIOLOGICAL IMPORTANCE IN THE ENGLISH CHEMICAL CONSTITUENTS OF BIOLOGICAL IMPORTANCE IN THE ENGLISH CHEMICAL CONSTITUENTS OF BIOLOGICAL IMPORTANCE IN THE ENGLISH ION CONCENTRATION, EXCESS BASE, CARBON DIOXIDE, AND OXYGEN. BY	011
	L H. N. COOPER. $W_{*,2}$ 2 Figures in the Text	729

NOTICE.

The Council of the Marine Biological Association wish it to be understood that they do not accept responsibility for statements published in this Journal excepting when those statements are contained in an official report of the Council. https://doi.org/10.1017/S0025315400043782 Published online by Cambridge University Press