The Journal of Experimental Biology

J. E. TREHERNE

WITH W. A. FOSTER & P. K. SCHOFIELD

	PAGE
HARIYAMA, TAKAHIKO, MEYER-ROCHOW, V. BENNO AND EGUCHI, EISUKE. Diurnal changes in structure and function of the compound eye of <i>Ligia exotica</i> (Crustacea, Isopoda).	1
PIIPER, JOHANNES, SCHEID, PETER, PERRY, STEVEN F. AND HUGHES, GEORGE M. Effective and morphometric oxygen-diffusing capacity of the gills of the elasmobranch Scyliorhinus stellaris	27
Wells, R. M. G., Forster, M. E., Davison, W., Taylor, H. H., Davie, P. S. and Satchell, G. H. Blood oxygen transport in the free-swimming hagfish, <i>Eptatretus cirrhatus</i>	43
GOVIND, C. K., MEAROW, K. M. AND WONG, A. Regeneration of fibre types in paired asymmetric closer muscles of the snapping shrimp, Alpheus heterochelis	55
WHITTEMBURY, GUILLERMO, BIONDI, ANGELA C., PAZ-ALIAGA, AZAEL, LINARES, HENRY, PARTHE, VALENTÍN AND LINARES, NANCY. Transcellular and paracellular flow of water during secretion in the upper segment of the Malpighian tubule of <i>Rhodnius prolixus</i> : solvent drag of molecules of graded size	71
MILLIGAN, C. LOUISE AND WOOD, CHRIS M. Intracellular and extracellular acid-base status and H ⁺ exchange with the environment after exhaustive exercise in the rainbow trout	93
MILLIGAN, C. LOUISE AND WOOD, CHRIS M. Tissue intracellular acid-base status and the fate of lactate after exhaustive exercise in the rainbow trout	123
BOUTILIER, R. G., IWAMA, G. K. AND RANDALL, D. J. The promotion of catecholamine release in rainbow trout, <i>Salmo gairdneri</i> , by acute acidosis: interactions between red cell pH and haemoglobin oxygen-carrying capacity	145
FERGUSON, GRAHAM P., PARSONS, DAVID W., TER MAAT, ANDRIES AND PINSKER, HAROLD M. Spontaneous and elicited bag cell discharges in gonadectomized Aplysia	159
Brezden, B. L., Gardner, D. R. and Morris, C. E. A potassium-selective channel in isolated Lymnaea stagnalis heart muscle cells	175
BARTHOLOMEW, GEORGE A. AND LIGHTON, JOHN R. B. Oxygen consumption during hover-feeding in free-ranging Anna hummingbirds	191
Stephens, Philip J. The fused thoracic-abdominal ganglion of the hermit crab (<i>Pagurus pollicaris</i>): neuromuscular relationships in the thoracic and abdominal flexor muscles.	201
STEPHENS, PHILIP J. Electrical and chemical synapses between giant interneurones and giant flexor motor neurones of the hermit crab (Pagurus pollicaris)	217
DUNN, J. F. AND HOCHACHKA, P. W. Metabolic responses of trout (Salmo gairdneri) to acute environmental hypoxia	229

ILLUSTRATIONS should be assigned figure numbers. Photographs should only be used where essential, for example for electron micrographs. Wherever possible, oscillographs should be made suitable for reproduction as line drawings. The cost of colour plates must be defrayed by the author.

Line drawings must be no more than twice final size. Maximum final size is 200×130 mm. Pen drawings should be in black Indian ink on unfolded heavy white paper or good quality tracing paper. Oscillographs should have a white background. Lettering will be inserted by the printers and should be indicated on the duplicate copies.

Photographs should be at final size. Maximum final size is 200×130 mm for a single plate, and 200×290 mm for a double plate. Photographs should be glossy bromide prints with good definition. They should be gummed on to white card and grouped as they are to appear. Numbering and lettering will be inserted by the printers and should be indicated on a tracing paper overlay. Magnification should be indicated, when relevant, by a scale line drawn on the overlay or beside the illustration.

SHORT COMMUNICATIONS must be original contributions to the literature and not preliminary reports. Methodological papers will only be accepted as *Short Communications*. All above instructions apply except that the communications must not exceed four published pages in length (including illustrations), no *Summary* is required, and line drawings must be at final size.

WORD-PROCESSOR DISKS. JEB can now use author's word-processor disks for setting accepted articles. If available, please send a copy of the disk plus details of the word processor and program used with your manuscript after final revision. Disks will be returned after use.

PROOFSHEETS AND OFFPRINTS. Authors will receive one set of slip proofs for correction and return to the Editor. A page proof will also be sent if the slip proof is marked by the author 'Revise'. An allowance of 50p per sheet of sixteen pages will be made for alteration errors not made by the printers: any excess may be charged to the author. Authors will receive 200 complimentary copies of their papers: additional copies may be purchased at modest cost, and should be ordered when the proofs are returned to the Editor.

The Company of Biologists Limited is a non-profit-making organization whose directors are active professional biologists. The Company, which was founded in 1925, is the owner of this journal and the Journal of Cell Science and Journal of Embryology and Experimental Morphology.

Copyright and Reproduction. Authors may make copies of their own papers in this journal without seeking permission from The Company of Biologists Limited, provided that such copies are for free distribution only: they must not be sold.

Authors may re-use their own illustrations in other publications appearing under their own name, without seeking permission.

Specific permission will *not* be required for photocopying copyright material in the following circumstances:

- 1. For private study, provided the copying is done by the person requiring its use, or by an employee of the institution to which he/she belongs, without charge beyond the actual cost of copying.
- 2. For the production of multiple copies of such material, to be used for *bona fide* educational purposes, provided this is done by a member of the staff of the university, school or other comparable institution, for distribution without profit to student members of that institution provided the copy is made from the original journal.

For all other matters relating to the reproduction of copyright material written application must be made to Dr R. J. Skaer, Company Secretary, The Company of Biologists Limited, Department of Zoology, Downing Street, Cambridge CB2 3EJ, UK.

ISI Tear Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA is authorized to supply single copies of separate articles for private use only.

Subscriptions. The Journal of Experimental Biology (ISSN 0022-0949) is published as seven volumes a year in January, March, May, July, September, October and November. The subscription price of volumes 120–126 (1986) is £140.00 UK (USA and Canada US \$370.00, Japan £158.00) per annum, payable in advance; postage is included. Individual volumes may be purchased at £25.00 (USA and Canada US \$62.00) each, plus postage. Orders for 1986, which must be accompanied by payment, may be sent to any bookseller or subscription agent or direct to The Biochemical Society Book Depot, P.O. Box 32, Commerce Way, Colchester CO2 8HP, UK. Copies of the journal for subscribers in the USA and Canada are sent by air to New York to arrive with minimum delay. Second class postage paid at New York, NY and at additional mailing offices.

POSTMASTER, send address corrections to: The Journal of Experimental Biology, c/o Mercury Airfreight International Inc., 10B Englehard Avenue, Avenel, New Jersey 07001, USA (US Mailing Agent).

Claims for missing parts can only be considered if made immediately upon receipt of the subsequent issue.

Back Volumes. Please contact The Biochemical Society Book Depot (see above) for prices.

Index. An annual index will appear in the last volume each year.

This Publication is available in Microform

University Microfilms International

300 North Zeeb Road, Dept. P.R., Ann Arbor, Mi. 48106

The Journal of Experimental Biology

EDITED BY

J. E. TREHERNE

WITH W. A. FOSTER & P. K. SCHOFIELD

VOLUME 123 1986

THE COMPANY OF BIOLOGISTS LIMITED CAMBRIDGE

Published and Printed by The Company of Biologists Limited, Department of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ

© The Company of Biologists Limited 1986

Errata

Correlation of iridescence with changes in iridophore platelet ultrastructure in the squid *Lolliguncula brevis*By KAY M. COOPER AND ROGER T. HANLON

J. exp. Biol. 121, 451–455.

The publishers regret that there are three errors on page 452 of this article. Lines 9 and 10 should read:

water) resulted in the blue and colourless cells turning to metallic iridescent reds and golds, with some iridescent blues and greens visible in the iridophores (Fig. 1C);

The last three lines of text should read:

Tetrodotoxin $(10^{-7} \text{ mol } l^{-1})$ also had no effect. The iridophores themselves may be the target cells in this excised tissue. The iridophore platelets are bound on their planar sides by membranes that often appear to be continuous with the plasma

Line 10 to the end of the legend to Fig. 1 should read:

Scale bar, 200 nm. (E) Ultrastructural correlate to C. Compare the uniformly densely granular appearance of these iridescent platelets with the fragmented ultrastructure of non-iridescent platelets in D. Scale bar, 200 nm.