

The Journal of Experimental Biology

EDITED BY
J. E. TREHERNE
WITH W. A. FOSTER & P. K. SCHOFIELD

VOLUME 92
1981

CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE
LONDON NEW YORK NEW ROCHELLE
MELBOURNE SYDNEY

Published by the Press Syndicate of the University of Cambridge
The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, N.Y. 10022

© Company of Biologists Ltd 1981

Printed in Great Britain at the
University Press, Cambridge

CONTENTS

	PAGE
YAMAMOTO, DAISUKE, FUKAMI, JUN-ICHI and WASHIO, HIROSHI. Voltage clamp studies on insect skeletal muscle I. The inward current	1
YAMAMOTO, DAISUKE and WASHIO, HIROSHI. Voltage clamp studies on insect skeletal muscle II. The outward current	13
SCHIPP, R. and HEVERT, F. Ultrafiltration in the branchial heart appendage of di-branchiate cephalopods: a comparative ultrastructural and physiological study .	23
GEE, JOHN H. Coordination of respiratory and hydrostatic functions of the swim-bladder in the central mudminnow, <i>Umbra limi</i>	37
GELLER, ANNETTE and MÜLLER, D. G. Analysis of the flagellar beat pattern of male <i>Ectocarpus siliculosus</i> gametes (Phaeophyta) in relation to chemotactic stimulation by female cells	53
OGILVY, CHRISTOPHER S. and DUBOIS, ARTHUR B. The hydrodynamic drag of swimming bluefish (<i>Pomatomus saltatrix</i>) in different intensities of turbulence: variation with changes of buoyancy	67
CRUSE, H. Is the position of the femur-tibia joint under feedback control in the walking stick insect? I. Force measurements	87
CRUSE, H. and PFLÜGER, H.-J. Is the position of the femur-tibia joint under feedback control in the walking stick insect? II. Electrophysiological recordings . .	97
TAYLOR, E. W. and WHEATLY, MICHÈLE G. The effect of long-term aerial exposure on heart rate, ventilation, respiratory gas exchange and acid-base status in the crayfish <i>Austropotamobius pallipes</i>	109
WHEATLY, MICHÈLE G. and TAYLOR, E. W. The effect of progressive hypoxia on heart rate, ventilation, respiratory gas exchange and acid-base status in the crayfish <i>Austropotamobius pallipes</i>	125
BLONDEAU, JEAN. Electrically evoked course control in the fly <i>Calliphora erythrocephala</i>	143
BLONDEAU, JEAN. Aerodynamic capabilities of flies, as revealed by a new technique .	155
CARLSON, ALBERT D. Neural control of the male <i>Photuris versicolor</i> firefly flash .	165
PEQUEUX, A. and GILLES, R. Na ⁺ fluxes across isolated perfused gills of the Chinese crab <i>Eriocheir sinensis</i>	173
ROSE, R. M. and BENJAMIN, P. R. Interneuronal control of feeding in the pond snail <i>Lymnaea stagnalis</i> . I. Initiation of feeding cycles by a single buccal interneurone	187
ROSE, R. M. and BENJAMIN, P. R. Interneuronal control of feeding in the pond snail <i>Lymnaea stagnalis</i> . II. The interneuronal mechanism generating feeding cycles .	229
GRAHAM, D. and CRUSE, H. Coordinated walking of stick insects on a mercury surface	229
BURNETT, LOUIS E., WOODSON, PAUL B. J., RIETOW, MARTHA G. and VILICICH, VICTORIA C. Crab gill intra-epithelial carbonic anhydrase plays a major role in haemolymph CO ₂ and chloride ion regulation	243
FRIESEN, W. OTTO. Physiology of water motion detection in the medicinal leech .	255
PROTE, J. R. The effect of load on locomotion in crayfish	277

PERRY, S. F., HASWELL, M. S., RANDALL, D. J. and FARRELL, A. P. Branchial ionic uptake and acid-base regulation in the rainbow trout, <i>Salmo gairdneri</i>	289
WARD, T. M. and HUMPHREYS, W. F. Locomotion in burrowing and vagrant wolf spiders (Lycosidae)	305
WARD, T. M. and HUMPHREYS, W. F. The effect of filming speed on the interpretation of arthropod locomotion	323

SHORT COMMUNICATIONS

KIRSCHVINK, JOSEPH L. Ferromagnetic crystals (magnetite?) in human tissue	333
EVANS, DAVID H. The egg case of the oviparous elasmobranch, <i>Raja erinacea</i> , does osmoregulate	337
TAKAHATA, MASAKAZU, YOSHINO, MASAMI and HISADA, MITUHIKO. The association of uropod steering with postural movement of the abdomen in crayfish	341
WOLLBERG, Z. and COCOS, R. Steady state potential in the developing oocytes of <i>Locusta migratoria</i> : passive and active components	347