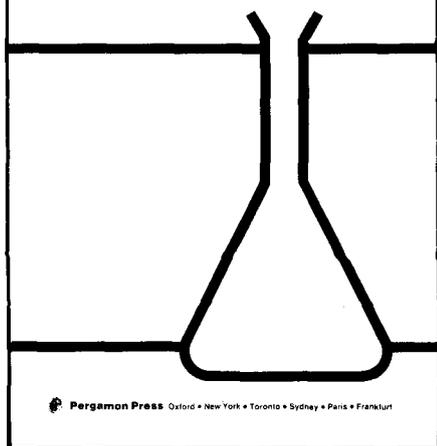


CURRENT AWARENESS IN  
**C A** BIOLOGICAL  
**B S** SCIENCES



 Pergamon Press Oxford • New York • Toronto • Sydney • Paris • Frankfurt

*Current Awareness in Biological Sciences* is a new information service designed to keep biologists fully informed and up-to-date with the ever-increasing literature on the subject. Based on the successful format of *Current Advances in Plant Science* and *Current Advances in Ecological Sciences*, *Current Awareness in Biological Sciences* extends the concept of these highly respected journals to cover the whole field of the biological sciences.

*CABS* provides subject-classified listings of titles allowing research scientists, managers and teachers to select those of greatest interest to them and to obtain the full text as necessary. Full bibliographic citations and reprint addresses are included. Interdisciplinary areas are covered by extensive cross-referencing, each title appearing in every subject area to which it is relevant.

The clear and concise format simplifies the task of literature searching: *Current Awareness in Biological Sciences* contains no cumbersome abstracts, keeping subscription costs down and minimizing the delay in alerting biologists to the literature they need.

#### Subscription Information

**No price increase for 1984**

Published monthly

Annual subscription (1984)

Two-year rate (1984/85)

**US\$1500.00**

**US\$2850.00**

## CURRENT AWARENESS IN BIOLOGICAL SCIENCES

Formerly INTERNATIONAL  
ABSTRACTS OF BIOLOGICAL  
SCIENCES

Chief Editor: H SMITH, *University of  
Leicester, Botany Department, Adrian  
Building, University Road, Leicester LE1  
7RH, UK*

Associate Editor: P N CAMPBELL,  
*Courtauld Institute, Middlesex Hospital,  
London W1P 7PN, UK*

#### The following subjects are covered

- \* Biochemistry
- \* Cell biology
- \* Ecology
- \* Genetics
- \* Immunology
- \* Microbiology
- \* Plant Science
- \* Physiology
- \* Pharmacology
- \* Toxicology

*Current Awareness in Biological Sciences* will also be available on-line during 1983 through Pergamon-InfoLine, London.

#### FREE SPECIMEN COPIES AVAILABLE ON REQUEST

Advertising rate card available on request. Back issues and current subscriptions are also available in microform. Prices are subject to change without notice. Journal prices include postage and insurance. Sterling prices are available to UK and Eire customers on request.



## Pergamon Press

Headington Hill Hall, Oxford OX3 0BW, UK  
Fairview Park, Elmsford, New York 10523, USA

1A 19 12 82

# TOXICON



PERGAMON PRESS

*Toxicon* provides a first-class medium for the publication of the following extensive range of material:

- \* Papers on the chemical, pharmacological, zootoxicological and immunological properties of natural poisons
- \* Clinical observations on poisoning where a new therapeutic principle has been proposed or a decidedly superior clinical result has been obtained
- \* Material on the use of toxins in studying biological processes and on subjects related to venom-antivenin problems
- \* Occasional review articles on problems related to toxinology

## Subscription Information

### No price increase for 1984

Published bi-monthly

Annual subscription (1984)

Two-year rate (1984/85)

US\$200.00

US\$380.00

FREE SPECIMEN COPIES AVAILABLE ON REQUEST

## TOXICON

An International Journal Devoted to the Exchange of Knowledge on the Poisons Derived from Animals, Plants and Microorganisms  
Official Journal of the International Society on Toxinology

Editor: P ROSENBERG, *Section of Pharmacology & Toxicology, University of Connecticut, School of Pharmacy, Storrs, CT 06268, USA*

Assistant Editor: G HABERMEHL, *Department of Chemistry, School of Veterinary Medicine, Bischofsholer Damm 15, 3000 Hanover 1, Federal Republic of Germany*

### A selection of papers

Isolation and characterization of four toxins from the blue-green alga, *Microcystis aeruginosa*, D P BOTES *et al.*

Isolation and characterization of a proteolytic enzyme from the venom of the snake *Bothrops jararaca* (Jararaca), F R MANDELBAUM *et al.*

Purification and partial characterization of hyaluronidase from five pace snake (*Agkistrodon acutus*) venom, X XU *et al.*  
Biochemical and pathological effects of *Clostridium difficile* toxins in mice, M EHRICH.

The antispasmodic action on guinea-pig ileum of a fraction obtained from the toxic skin secretion of the stonefish, *Synanceia trachynis*, A M CAMERON & R L LEWIS.  
Purification of three arginine esterases from the venom of the Western Diamondback rattlesnake (*Crotalus atrox*), T M WHITE & R L CATE.

Effect of bongkreic acid, a product of *Pseudomonas cocovenenans* on thiol proteases, T MURACHI *et al.*

Effects on muscle of a toxin from Indian cobra (*Naja naja naja*) venom, A K CHARLES *et al.*

Configuration assignments of the amino acid residues and the presence of N-methyldehydroalanine in toxins from the blue-green alga, *Microcystis aeruginosa*, D P BOTES *et al.*

Advertising rate card available on request.  
Back issues and current subscriptions are also available in microform.  
Prices are subject to change without notice. Journal prices include postage and insurance. Sterling prices are available to UK and Eire customers on request.



## Pergamon Press

Headington Hill Hall, Oxford OX3 0BW, UK  
Fairview Park, Elmsford, New York 10523, USA

1E/21/1/83

# Acta Zoologica

## ACTA ZOOLOGICA

International Journal for Zoology  
published on behalf of the Royal  
Swedish Academy of Sciences

Chief Editor: R OLSSON, *Acta Zoologica*,  
S-10691, Stockholm, Sweden  
Executive Editor: K HOLMBERG, S-10691,  
Stockholm, Sweden  
Supported by an International Advisory  
Council

*Acta Zoologica* is an international journal for zoology, publishing original research reports on all aspects of animal structure. It includes articles on functional cytology, histology and gross morphology as well as relevant techniques. (Authors of papers with mainly phylogenetic contents are advised to submit their contributions to the cooperating journal *Zoologica Scripta*.)

The chief editor will be pleased to receive contributions from authors for editorial consideration. Manuscripts and enquiries should be sent to Ragnar Olsson at the address given.

### Subscription Information

#### No price increase for 1984

Published quarterly

Annual subscription (1984)

Two-year rate (1984/85)

US\$80.00

US\$152.00

FREE SPECIMEN COPIES AVAILABLE ON REQUEST

### A selection of papers

Hair cell polarization in the inner ear of a caecilian, *Ichthyophis glutinosus* (Amphibia: Gymnophiona), N T WEGNER & J M JORGENSEN.

Antlers — a mineral source in *Rangifer*, M WIKA.

Lymphoid organs and blood cells of the caecilian *Ichthyophis kohtaoensis*, A ZAPATA *et al.*

Transport speed of the mucous feeding filter in *Clavelina lepadiformis*

(Aplousobranchiata, Tunicata), P R FLOOD.

Multizoid budding in *Parasmittina trispinosa* (Johnston) (Bryozoa, Cheilostomata), L SILEN.

Seasonal ultrastructural changes of Leydig cells in *Lacerta muralis*, J LECETA *et al.*

On the structure of the corpuscles of de Quatrefages (*Branchiostoma lanceolatum* (P)), E BAATRUP.

The monoaminergic paraventricular organ in the teleost *Ictalurus nebulosus* LeSueur, with special reference to its vascularization, P EKSTROM & T VAN VEEN.

Effects of ambient salinity, food-deprivation and prolactin on the thyroidal response to TSH, and *in vitro* hepatic T4 and T3 conversion in yearling Coho salmon, *Oncorhynchus kisutch*, J F LEATHERLAND.

Advertising rate card available on request.

Back issues and current subscriptions are also available in microform.

Prices are subject to change without notice. Journal prices include postage and insurance. Sterling prices are available to UK and Eire customers on request.



## Pergamon Press

Headington Hill Hall, Oxford OX3 0BW, UK  
Fairview Park, Elmsford, New York 10523, USA

# Insect Science and its Application

The International Journal of Tropical Insect Science

## Aims and Scope

*Insect Science and its Application* deals comprehensively with all aspects of scientific research targeted on tropical insects (and related arthropods), and the application of new discoveries to such diverse fields as pest and vector management and the use of insects for human welfare.

A distinctive feature of the journal is its multi- and interdisciplinary nature, which transcends the traditional boundaries of entomology.

Its second feature is its concentration on the recording and reviewing of the progress of insect science in the tropical and subtropical regions of the world. Thus, without excluding any area of the wide field encompassed by insect science, the journal will accept manuscripts in environmental physiology, the regulation of development and reproduction, population modelling, chemical ecology, natural products chemistry, plant resistance, host/insect relations, behaviour of tropical pest species, epidemiology of tropical diseases, vector biology, pest and vector management research, entomo-meteorology, insects in relation to farming systems, forest entomology, insect pathology, social insects and arthropods, and the uses of insects. It is the intention of the Editors to have manuscripts published rapidly, consistent with the needs of quality control.

In addition to articles of original research, the journal also publishes book reviews, announcements and reports of meetings and mini-reviews. Each regular issue of the journal contains a short review article on a critical or rapidly developing area of tropical insect science; normally the Editors will have invited an author to contribute such a mini-review.

## Information and Contributors

1. All papers for publication in *Insect Science and Its Application* should be submitted directly to the Editor-in-Chief, Professor Thomas R. Odhiambo, Scientific Editorial Services, P.O. Box 59900, Nairobi, Kenya. Papers should be mailed in a strong, preferably linen, envelope, as they may otherwise arrive in a damaged condition.
2. Papers should be in English or French and be original contributions in the field of tropical insect science. Each paper should have a summary in the form of an abstract in both English and French.
3. Submission of a paper implies that it has not been published previously, that it is not under consideration for publication elsewhere, and that if accepted for *Insect Science and Its Application* the authors will transfer copyright to Pergamon Press as is customary. Articles and illustrations become the property of the journal. There is no page charge for papers accepted for publication.
4. Manuscripts and illustrations must be submitted in triplicate to ensure efficient refereeing, and the author should retain a copy. In the case of multiple authorship the authors should indicate who is to receive correspondence.
5. Manuscripts must be typewritten with double spacing (including the reference list), and with wide margins on one side of the paper only. Authors are requested to keep their communications as concise as possible. Footnotes should be avoided, and italics should not be used for emphasis. A running head of not more than 30 letters should be supplied.
6. Twenty-five free reprints will be supplied to the first named author of each paper published in the journal. Detailed Instructions to Authors for the preparation of manuscripts are available from the Editor-in-Chief or the Publishing Office.

# Insect Science and its Application

The International Journal of Tropical Insect Science

VOLUME 5 NUMBER 1

1984

## CONTENTS

- |   |    |  |
|---|----|--|
| J. G. YARRO                                 | 1  | Survival and development of the African armyworm <i>Spodoptera exempta</i> (Wlk.) (Lepidoptera, Noctuidae) on some grass species (Gramineae)   |
| G. A. ALABI                                 | 7  | Bradford's law and the Nigerian entomological literature   |
| M. AFZAL                                    | 13 | Metabolic rates in different castes and instars of a drywood termite <i>Bifiditermes beesoni</i> (Gardner) (Isoptera)  |
| A. ISLAM and S. ROY                         | 19 | Variation in the haemocyte population during different hours of day and night in an insect, <i>Alphitobius piceus</i> Oliver   |
| I. FAGOONEE and V. TOORY                    | 23 | Contribution to the study of the biology and ecology of the leaf-miner <i>Liriomyza trifolii</i> and its control by neem   |
| A. K. CHAKRAVARTHY and S. LINGAPPA          | 31 | Comparison of germplasm evaluation parameters in <i>Lablab niger</i> Medick to borer attack  |
| C. W. BALIDDAWA                             | 33 | Movement and feeding activity of adult pea leaf weevil, <i>Sitona lineatus</i> L. in an oat-broadbean diculture  |
| J. HUIGNARD, D. ROJAS-ROUSSE and I. ALZOUMA | 41 | L'activité reproductrice et le développement de <i>Bruchidius atrolineatus</i> (Pic) sur les gousses sèches de <i>Vigna unguiculata</i> (Walp) en zone sahélienne, mise en évidence d'une diapause imaginale |
| M. R. TUCKER                                | 51 | Forecasting the severity of armyworm seasons in East Africa from early season rainfall   |
|   |    | <i>Book Reviews</i>  |
| I. FAGOONEE                                 | 57 | <i>Behaviour Patterns of Blood-sucking Flies</i> , by Muirhead-Thomson E. C.   |
| D. L. DENLINGER                             | 58 | <i>Insect Clocks</i> , by Saunders D. S.   |
|   | i  | Instructions to Authors  |

This journal is now listed in  
*Current Awareness in Biological Sciences*.  
Send to your nearest Pergamon office for  
a free specimen copy.

ISSN 0191-9040