

Volume 88(4) 361–492

August 1998

ISSN 0007–4853

BULLETIN  
— *of* —  
ENTOMOLOGICAL  
RESEARCH



INTERNATIONAL INSTITUTE OF ENTOMOLOGY  
*An Institute of CAB INTERNATIONAL*

Now available on  
the World Wide Web  
<http://pest.cabweb.org/>

**BULLETIN**  
*of*  
**ENTOMOLOGICAL**  
**RESEARCH**

**Aims and Scope**

The *Bulletin of Entomological Research* publishes original research papers, review articles and short communications concerning insects, mites, ticks or other arthropods of economic importance in agriculture, forestry, stored products, biological control, medicine, animal health and natural resource management. The geographical scope of the *Bulletin* is worldwide. Taxonomic papers are accepted if relevant.

The *Bulletin of Entomological Research* is published bimonthly by CAB INTERNATIONAL.

**Editor-in-Chief**

Dr Mark Tatchell

*Entomological Sciences Department, Horticulture Research International, Wellesbourne CV35 9EF, UK*

*Email: BER@cabi.org*

**Executive Editor**

John Badmin

*International Institute of Entomology, 56 Queen's Gate, London SW7 5JR, UK*

*Tel: +44 (0) 171 584 0067/8 Fax: +44 (0) 171 581 1676 Email: BER@cabi.org*

**Editorial Board**

- |  |  |
|--|--|
| Professor T.N. Ananthkrishnan, <i>Entomology Research Institute, Loyola College, Madras, India</i> | Dr A.R. McCaffery, <i>University of Reading, Reading, UK</i>   |
| Dr R. Blackman, <i>The Natural History Museum, London, UK</i>                                      | Dr N.J. Mills, <i>University of California, Berkeley, USA</i>  |
| Professor V.K. Brown, <i>International Institute of Entomology, London, UK</i>                     | Dr O. Mochida, <i>National Agricultural Research Centre, Kan'Nondai, Japan</i>                               |
| Dr A.G. Cook, <i>Natural Resources Institute, Kent, UK</i>   | Dr B. Napompeth, <i>National Biological Control Research Centre, Kasetsart University, Bangkok, Thailand</i> |
| Professor H. Dingle, <i>University of California, Davis, USA</i>                                   | Dr I.D. Oka, <i>Institute for Food Crops, Bogor, Indonesia</i>   |
| Dr R. Gámez, <i>Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica</i>      | Dr G.H.L. Rothschild, <i>International Rice Research Institute, Manila, Philippines</i>                      |
| Dr M.J.R. Hall, <i>The Natural History Museum, London, UK</i>                                      | Professor S. Tanaka, <i>National Institute of Sericultural &amp; Entomological Science, Tsukuba, Japan</i>   |
| Professor R. Karban, <i>University of California, Davis, USA</i>                                   | Professor H. Townson, <i>Liverpool School of Tropical Medicine, Liverpool, UK</i>                            |
| Dr R.P. Lane, <i>The Wellcome Trust, London, UK</i>  | Dr L.E.M. Vet, <i>Wageningen Agricultural University, Wageningen, The Netherlands</i>                        |
| Dr S.R. Leather, <i>Imperial College, Ascot, UK</i>  | Dr I.P. Woiwod, <i>IACR-Rothamsted, Harpenden, UK</i>  |

© CAB INTERNATIONAL 1998. All rights reserved.

Published by CAB INTERNATIONAL, Wallingford, UK: New York, USA

## Bulletin of Entomological Research

<b>Booth, R.G.</b> A review of the species resembling <i>Chilocorus nigrita</i> (Coleoptera: Coccinellidae): potential agents for biological control .....	361
<b>Colvin, J., Fishpool, L.D.C., Fargette, D., Sherington, J. &amp; Fauquet, C.</b> <i>Bemisia tabaci</i> (Hemiptera: Aleyrodidae) trap catches in a cassava field in Côte d'Ivoire in relation to environmental factors and the distribution of African cassava mosaic disease .....	369
<b>Cumming, G.S.</b> Host preference in African ticks (Acari: Ixodida): a quantitative data set .....	379
<b>Edwards, P.B.</b> Seasonal abundance and parasitism of <i>Mesoclanis</i> seed flies (Diptera: Tephritidae) in South Africa, and implications for the biological control of <i>Chrysanthemoides monilifera</i> (Asteraceae) in Australia .....	407
<b>Goldson, S.L., Proffitt, J.R. &amp; Baird, D.B.</b> The bionomics of <i>Listronotus bonariensis</i> (Coleoptera: Curculionidae) in Canterbury, New Zealand .....	415
<b>Hargrove, J.W. &amp; Williams, B.G.</b> Optimized simulation as an aid to modelling, with an application to the study of a population of tsetse flies, <i>Glossina morsitans morsitans</i> (Diptera: Glossinidae).....	425
<b>Horowitz, A.R., Mendelson, Z., Weintraub, P.G. &amp; Ishaaya, I.</b> Comparative toxicity of foliar and systemic applications of acetamiprid and imidacloprid against the cotton whitefly, <i>Bemisia tabaci</i> (Hemiptera: Aleyrodidae) .....	437
<b>Matthiessen, J.N. &amp; Learmonth, S.E.</b> Seasonally contrasting activity of African black beetle, <i>Heteronychus arator</i> (Coleoptera: Scarabaeidae): implications for populations, pest status and management.....	443
<b>Shah, P.A., Godonou, I., Gbongboui, C., Hossou, A. &amp; Lomer, C.J.</b> Survival and mortality of grasshopper egg pods in semi-arid cereal cropping areas of northern Benin .....	451
<b>Ueno, T.</b> Selective host-feeding on parasitized hosts by the parasitoid <i>Itoplectis naranyae</i> (Hymenoptera: Ichneumonidae) and its implication for biological control .....	461
<b>Way, M.J., Islam, Z., Heong, K.L. &amp; Joshi, R.C.</b> Ants in tropical irrigated rice: distribution and abundance, especially of <i>Solenopsis geminata</i> (Hymenoptera: Formicidae).....	467
<b>Wilson, L.J., Bauer, L.R. &amp; Lally, D.A.</b> Effect of early season insecticide use on predators and outbreaks of spider mites (Acari: Tetranychidae) in cotton.....	477
Book Reviews .....	489

© CAB INTERNATIONAL, 1998

The contents page of this journal is available on the internet before publication at  
<http://www.cabi.org/>

All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without prior permission of the copyright owner.

# Bulletin of Entomological Research

Volume 88 1998

ISSN: 0007-4853

## **Publishing, Production, Marketing, and Subscription Sales Office:**

CABI Publishing  
CAB INTERNATIONAL  
Wallingford  
Oxon OX10 8DE  
UK  
Tel: +44(0)1491 832111  
Fax: +44 (0)1491 829292  
Email: publishing@cabi.org  
Telex: 847964 (COMAGG G)

## **For Customers in North America:**

CABI Publishing  
10 E 40th Street  
Suite 3203  
New York  
NY 10016  
USA  
Tel: 212 481 7018  
[Toll-free: 800 528 4841]  
Fax: 212 686 7993  
Email: cabi-nao@cabi.org

**Publishing Director:** Philip Edge

**Publishing Editor:** Jenny Howatson

**Product Manager (Marketing):** Louise Breinholt

The *Bulletin of Entomological Research* is an international journal published bimonthly by CABI Publishing (a division of CAB INTERNATIONAL) in February, April, June, August, October and December.

## **Special sales and supplements:**

This journal accepts advertising and inserts. We also provide bulk reprints of suitable papers to meet teaching or promotional requirements. The journal also publishes abstracts and proceedings on behalf of academic and corporate sponsors. Please contact David Nicholson at the Wallingford address for further details.

## **Subscription information:**

The subscription rates for Volume 88, 1998 (6 issues) are:

Non-member country: £275.00

Member Country\*: £220.00

US Dollars (Americas only): \$485.00

(\* Member Countries include UK, Canada, India, China, Australia, New Zealand. For a full list please apply to CAB INTERNATIONAL.)

Any **supplements** to this journal published in the course of the annual volume are normally supplied to subscribers at no extra charge

**Back volumes** are available. Please contact CABI Publishing for further information.

**Claims** for non-receipt of journal issues will be

considered on their merit and only if the claim is received within six months of publication. Replacement copies supplied after this date will be chargeable.

**Despatch:** deliveries outside the UK are by ASP Printflow Airsaver unless other arrangements are made. Customers requiring airmail delivery should indicate clearly their requirements and add an additional 10% to the relevant subscription price.

**US POSTMASTERS:** please send address corrections to CABI Publishing at the Wallingford address.

## **Information for Authors**

Three copies of the manuscript and artwork should be sent to:

John Badmin  
*Bulletin of Entomological Research*  
CAB INTERNATIONAL  
Canterbury Christ Church College  
The Mount  
Stodmarsh Road  
Canterbury  
Kent CT3 4AQ  
UK

**Notes for Authors** are available from this address if not printed in this issue of the journal.

**Offprints:** The author (or main author) of an accepted paper will receive 50 free offprints and a copy of the journal issue in which their paper is published. Additional offprints are available for a fee and should be ordered at proof stage. No page charges are levied by this journal.

**Copyright:** CAB INTERNATIONAL, 1998. All rights reserved: permission for reproduction of any part of the journal (text, figures, tables or other matter) in any form (on paper, microfiche or electronically) should be sought directly from the Publisher, or a licence permitting restricted copying obtained from the Copyright Licensing Agency, Tottenham Court Road, London W1P 9HE, UK, or in the USA by the Central Clearance Center, 27 Congress Street, Salem MA 01970.

**Disclaimer:** The information contained herein, including any expression of opinion and any projection or forecast, has been obtained from or is based upon sources believed by us to be reliable, but is not guaranteed as to accuracy or completeness. The information is supplied without obligation and on the understanding that any person who acts upon it or otherwise changes his/her position in reliance thereon does so entirely at his/her own risk.

CAB INTERNATIONAL does not accept responsibility for any trade advertisement included in this publication.

This journal is printed on acid-free paper from renewable sources  
Printed at the University Press, Cambridge.