# BULLETIN of ENTOMOLOGICAL RESEARCH



https://doi.org/10.1017/S0007485300025992 Published online by Cambridge University Press

## 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. Ananthakrishnan, Entomology Research Institute, Loyola College, Madras, India
- Dr R. Blackman, The Natural History Museum, London, UK
- Professor V.K. Brown, International Institute of Entomology, London, UK
- Dr A.G. Cook, Natural Resources Institute, Kent, UK Professor H. Dingle, University of California, Davis, USA
- Dr R. Gámez, Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica
- Dr M.J.R. Hall, The Natural History Museum, London, UK
- Professor R. Karban, University of California, Davis, USA
- Dr R.P. Lane, The Wellcome Trust, London, UK Dr S.R. Leather, Imperial College, Ascot, UK

- Dr A.R. McCaffery, University of Reading, Reading, UK
- Dr N.J. Mills, University of California, Berkeley, USA
- Dr O. Mochida, National Agricultural Research Centre, Kan'Nondai, Japan
- Dr B. Napompeth, National Biological Control Research Centre, Kasetsart University, Bangkok, Thailand
- Dr I.D. Oka, Institute for Food Crops, Bogor, Indonesia Dr G.H.L. Rothschild, International Rice Research
  - Institute, Manila, Philippines
- Professor S. Tanaka, National Institute of Sericultural & Entomological Science, Tsukuba, Japan
- Professor H. Townson, Liverpool School of Tropical Medicine, Liverpool, UK
- Dr L.E.M. Vet, Wageningen Agricultural University, Wageningen, The Netherlands
- Dr I.P. Woiwod, IACR-Rothamsted, Harpenden, UK

© CAB INTERNATIONAL 1998. All rights reserved.

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

OCTOBER 1998 Vol. 88(5)

### **Bulletin of Entomological Research**

Review Article	
Verkerk, R.H.J., Leather, S.R. & Wright, D.J. The potential for manipulating crop-pest-natural enemy interactions for improved insect pest management	493
Costantini, C., Sagnon, N.F., Sanogo, E., Merzagora, L. & Coluzzi, M. Relationship to human biting collections and influence of light and bednet in CDC light-trap catches of West African malaria vectors	503
Loxdale, H.D., Brookes, C.P., Wynne, I.R. & Clark, S.J. Genetic variability within and between English populations of the damson-hop aphid, <i>Phorodon humuli</i> (Hemiptera: Aphididae), with special reference to esterases associated with insecticide resistance	513
McNeill, M.R., Baird, D.B. & Goldson, S.L. Evidence of density-dependent oviposition behaviour by Listronotus bonariensis (Coleoptera: Curculionidae) in Canterbury pasture	527
Nicol, D., Armstrong, K.F., Wratten, S.D., Walsh, P.J., Straw, N.A., Cameron, C.M., Lahmann, C. & Frampton, C.M. Genetic diversity of an introduced pest, the green spruce aphid <i>Elatobium abietinum</i> (Hemiptera: Aphididae) in New Zealand and the United Kingdom	537
Scholz, D., Borgemeister, C., Markham, R.H. & Poehling, H.M. Flight initiation and flight activity in <i>Prostephanus truncatus</i> (Coleoptera: Bostrichidae)	545
Stothard, J.R., Yamamoto, Y., Cherchi, A., Garcia, A.L., Valente, S.A.S., Schofield, C.J. & Miles, M.A. A preliminary survey of mitochondrial sequence variation in Triatominae (Hemiptera: Reduviidae) using polymerase chain reaction-based single strand conformational polymorphism (SSCP) analysis and direct sequencing	553
Takken, W., Charlwood, J.D., Billingsley, P.F. & Gort, G. Dispersal and survival of Anopheles         funestus and A. gambiae s.l. (Diptera: Culicidae) during the rainy season in southeast         Tanzania	561
van Es, R.P., Hillerton, J.E. & Gettinby, G. Lipid consumption in <i>Ixodes ricinus</i> (Acari: Ixodidae): temperature and potential longevity	567

#### © CAB INTERNATIONAL, 1998

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: CAB INTERNATIONAL

Wallingford Oxon OX10 8DE

UK

Tel: +44 (0)1491 832111 Fax: +44 (0)1491 826090 Email: cabi@cabi.org Telex: 847964 (COMAGG G)

For Customers in North America:

CAB INTERNATIONAL 198 Madison Avenue New York NY 10016 USA

Tel: 212 726 6490 or 212 726 6491

[Toll-free: 1800 528 4841] Fax: 212 686 7993 Email: cabi-nao@cabi.org

CAB INTERNATIONAL also has regional offices in Malaysia, Trinidad & Tobago, and Kenya.

Publisher: Philip Edge

Publishing Editor: David Nicholson

Product Manager (Marketing): Louise Breinholt

The *Bulletin of Entomological Research* is an international journal published bimonthly by 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 and Japan 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 CAB INTERNATIONAL 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 CAB INTERNATIONAL at the Wallingford address.

#### **Information for Authors**

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

John Badmin

International Institute of Entomology

56 Queen's Gate London SW7 5JR

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.