

Online submission at: [www.editorialmanager.com/ber](http://www.editorialmanager.com/ber)

**Volume 100**  
**Issue 1**  
**February 2010**

**Bulletin of**  
*Entomological*  
*Research*



**CAMBRIDGE**  
UNIVERSITY PRESS

**ISSN 0007-4853**

# Bulletin of *Entomological Research*

journals.cambridge.org/ber

## Aims and Scope

The aims of *Bulletin of Entomological Research* are to further our global knowledge of entomology through the generalisation of research findings rather than providing more entomological exceptions. *Bulletin* publishes high-quality and original research papers, 'critiques' and review articles 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 scope of papers addresses the biology, ecology, behaviour, physiology and systematics of individuals and populations. This includes the interactions between species (plants, hosts for parasites, natural enemies and whole communities), novel methodological developments, including molecular biology, in an applied context. *Bulletin* does not publish the results of spray trials.

*Bulletin of Entomological Research* is published bimonthly by  
Cambridge University Press

## Editor-in-Chief

Professor Bill Symondson

School of Biosciences, Cardiff University, Cardiff CF10 3TL, UK  
Email: entomology@cambridge.org

## Subject Editors

Dr N. Agusti, *IRTA, Spain*

Dr T. Backeljau, *Royal Belgian Institute of Natural Sciences, Belgium*

Professor J.S. Bale, *University of Birmingham, UK*

Dr P. Billingsley, *University of Aberdeen, UK*

Dr D.A. Bohan, *Rothamsted Research, Hertfordshire, UK*

Dr C. Borgemeister, *International Centre of Insect Physiology and Ecology (ICIPE), Kenya*

Dr Chen Xue-Xin, *Zhejiang University, China*

Dr P.J. De Barro, *CSIRO Entomology, Indooroopilly, Australia*

Dr Ashley P.G. Dowling, *University of California, USA*

Professor D. Giga, *Bulawayo, Zimbabwe*

Dr D. Gillespie, *Agriculture and Agri-Food Canada, Agassiz, B.C., Canada*

Dr M. Greenstone, *Invasive Insect Biocontrol & Behavior Laboratory, Beltsville, USA*

Professor G. Gurr, *Charles Sturt University, NSW, Australia*

Professor D.R. Hall, *University of Greenwich, UK*

Dr J.D. Harwood, *University of Kentucky, USA*

Dr D. Hawthorne, *University of Maryland, USA*

Dr T.H. Jones, *Cardiff University, UK*

Dr J.D. Knight, *Imperial College, Ascot, UK*

Dr J. Krzywinski, *Liverpool School of Tropical Medicine, UK*

Dr O. Kwon, *Kyungpook National University, Daegu, Korea*

Dr Liu Shu-Sheng, *Zhejiang University, China*

Dr G. Port, *University of Newcastle Upon Tyne, UK*

Dr S. Potts, *University of Reading, UK*

Dr G. Purvis, *University College Dublin, Republic of Ireland*

Professor G.H.L. Rothschild, *Offham, Kent, UK*

Dr W.E. Snyder, *Washington State University, USA*

Dr A.J.A. Stewart, *University of Sussex, Brighton, UK*

Dr S. Tanaka, *National Institute of Agrobiological Sciences at Ohwashi, Japan*

Dr S.J. Torr, *University of Greenwich, Kent, UK*

Professor H. Townson, *Liverpool School of Tropical Medicine, UK*

Dr M. Traugott, *University of Innsbruck, Austria*

Dr M. Virant-Doberlet, *National Institute of Biology, Ljubljana, Slovenia*

Dr J. Vontas, *University of Crete, Greece*

Dr W. Weisser, *Friedrich-Schiller University, Jena, Germany*

Dr B.A. Woodcock, *University of Reading, UK*

© Cambridge University Press 2010.

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see [www.fsc.org](http://www.fsc.org) for information.

Cover image: Caterpillar surrounded by parasitoid wasp cocoons in Slovenia.

Photo taken by Professor Bill Symondson, Editor-in-Chief.

Research Papers

- C. Carson, M.A. Birkett, J.G. Logan, K. Mawa, H.V. Pates, J.A. Pickett, R.T. Rwegoshora, P.K. Tungu and M.M. Cameron**  
Novel use of stir bar sorptive extraction (SBSE) as a tool for isolation of oviposition site attractants for gravid *Culex quinquefasciatus* 1
- M.-P. Chapuis, L. Crespin, A. Estoup, A. Augé-Sabatier, A. Foucart, M. Lecoq and Y. Michalakis**  
Parental crowding influences life-history traits in *Locusta migratoria* females 9
- M.L. Lyra, L.M. Hatadani, A.M.L. de Azeredo-Espin and L.B. Klaczko**  
Wing morphometry as a tool for correct identification of primary and secondary New World screwworm fly 19
- A. Nakabachi, S. Koshikawa, T. Miura and S. Miyagishima**  
Genome size of *Pachyphylla venusta* (Hemiptera: Psyllidae) and the ploidy of its bacteriocyte, the symbiotic host cell that harbors intracellular mutualistic bacteria with the smallest cellular genome 27
- M. De Meyer, M.P. Robertson, M.W. Mansell, S. Ekesi, K. Tsuruta, W. Mwaiko, J.-F. Vayssières and A.T. Peterson**  
Ecological niche and potential geographic distribution of the invasive fruit fly *Bactrocera invadens* (Diptera, Tephritidae) 35
- M. Ferreira and J.W.H. Ferguson**  
Do Mediterranean crickets *Gryllus bimaculatus* De Geer (Orthoptera: Gryllidae) come from the Mediterranean? Largescale phylogeography and regional gene flow 49
- A. Frantz, M. Plantegenest and J.-C. Simon**  
Host races of the pea aphid *Acyrtosiphon pisum* differ in male wing phenotypes 59
- S.A. Qureshi, D.J. Midmore, S.S. Syeda and D.J. Reid**  
A comparison of alternative plant mixes for conservation bio-control by native beneficial arthropods in vegetable cropping systems in Queensland Australia 67
- M.H. Chen and S. Dorn**  
Microsatellites reveal genetic differentiation among populations in an insect species with high genetic variability in dispersal, the codling moth, *Cydia pomonella* (L.) (Lepidoptera: Tortricidae) 75
- W.H. Jenner, U. Kuhlmann, P.G. Mason and N. Cappuccino**  
Comparative life tables of leek moth, *Acrolepiopsis assectella* (Zeller) (Lepidoptera: Acrolepiidae), in its native range 87
- F.G. Lacerda, T.M.C. Della Lucia, O.L. Pereira, L.A. Peternelli and M.R. Tótola**  
Mortality of *Atta sexdens rubropilosa* (Hymenoptera: Formicidae) workers in contact with colony waste from different plant sources 99
- J. Arnó, C. Castañé, J. Riudavets and R. Gabarra**  
Risk of damage to tomato crops by the generalist zoophytophagous predator *Nesidiocoris tenuis* (Reuter) (Hemiptera: Miridae) 105
- J.O. Lundström, M.L. Schäfer, E. Petersson, T.Z. Persson Vinnersten, J. Landin and Y. Brodin**  
Production of wetland Chironomidae (Diptera) and the effects of using *Bacillus thuringiensis israelensis* for mosquito control 117

**Subscribing organisations are encouraged to copy and distribute this  
table of contents for non-commercial purposes**

# Bulletin of *Entomological Research*

Volume 100 2010

ISSN: 0007-4853

[journals.cambridge.org/ber](http://journals.cambridge.org/ber)

**Publishing, Production, Marketing, and  
Subscription Sales Office:**  
Cambridge University Press  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 8RU  
UK

**For Customers in North America:**  
Cambridge University Press  
Journals Fulfillment Dept  
100 Brook Hill Drive  
West Nyack  
New York 10994-2133  
USA

**Publisher:** Katy Christomanou

***Bulletin of Entomological Research* is an international journal published bimonthly by Cambridge University Press in February, April, June, August, October and December.**

**Subscription information:**

Subscription rates for Volume 100, 2010 (6 issues):  
Print and electronic access: £806 (UK), (USA, Canada and Mexico US \$1560)  
Electronic-only price: £640 (UK), (USA, Canada and Mexico US \$1245)  
Print only: £755 (UK), (USA, Canada and Mexico US \$1455)  
The online edition is available at [www.journals.cambridge.org/ber](http://www.journals.cambridge.org/ber) with free table of contents alert (upon registration).

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 Cambridge University Press 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.

**US Postmasters:** please send address corrections to  
Bulletin of Entomological Research  
Cambridge University Press  
100 Brook Hill Drive  
West Nyack  
New York 10994-2133  
USA

**Information for Authors**

Manuscripts should be submitted online at <http://www.editorialmanager.com/ber>. New users should register before submitting a manuscript. Further information about submission is available from the publisher at the given address and is printed on the inside back cover.

**Offprints:** The author (or main author) of an accepted paper will receive a free PDF of their paper. Paper offprints are available for a fee and should be ordered at proof stage. No page charges are levied by this journal.

**Copying:** This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organisations in the USA who are registered with the CCC may therefore copy material (beyond the limits permitted by sections 107 and 108 of USA copyright law) subject to payment to the CCC of the per copy fee of \$16.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0007-4853/2010/\$16.00. Organisations authorised by the Copyright Licensing Agency may also copy material subject to the usual conditions. *For all other use, permission must be sought from Cambridge or the American Branch of Cambridge University Press.*

**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.

Cambridge University Press does not accept responsibility for any trade advertisement included in this publication.

Typeset by SR Nova Pvt Ltd., Bangalore, India, and printed by Latimer Trend, Plymouth, UK.