

Online submission at: www.editorialmanager.com/ber

Volume 105
Issue 6
December 2015

Bulletin of
Entomological
Research



CAMBRIDGE
UNIVERSITY PRESS

ISSN 0007-4853

Bulletin of Entomological Research

journals.cambridge.org/ber

Aims and Scope

Established in 1910, the internationally recognised *Bulletin of Entomological Research* aims to further global knowledge of entomology through the generalisation of research findings rather than providing more entomological exceptions. The *Bulletin* publishes high quality and original research papers, 'critiques' and review articles concerning insects 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, with a particular emphasis upon the major current and emerging pests of agriculture, horticulture and forestry, and vectors of human and animal diseases. 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. The *Bulletin* does not publish the results of pesticide testing or traditional taxonomic revisions.

Bulletin of Entomological Research is published bimonthly by
Cambridge University Press

Editor-in-Chief

Dr Paul De Barro

CSIRO Health & Biosecurity, Brisbane,
Queensland 4001, Australia
Email: entomology@cambridge.org

Subject Editors

- | | |
|--|--|
| Dr N. Agusti, <i>IRTA, Spain</i> | Dr N. V. Meyling, <i>University of Copenhagen, Denmark</i> |
| Dr T. Backeljau, <i>Royal Belgian Institute of Natural Sciences, Belgium</i> | Professor B. Nault, <i>Cornell University, USA</i> |
| Dr N. Beebe, <i>University of Queensland, Australia</i> | Dr D. Perez-Staples, <i>INBIOTECA, Universidad Veracruzana, Mexico</i> |
| Dr D.A. Bohan, <i>INRA, Dijon, France</i> | Dr C. Phillips, <i>AGResearch, New Zealand</i> |
| Dr L. Boykin, <i>University of Western Australia, Australia</i> | Dr R. Rader, <i>University of New England, Australia</i> |
| Dr Chen Xue-Xin, <i>Zhejiang University, China</i> | Dr E. Roditakis, <i>National Agricultural Research Foundation, Greece</i> |
| Dr P. Cunningham, <i>Queensland University of Technology, Australia</i> | Dr Zhentao Sheng, <i>University of Chicago, USA</i> |
| Dr S. Downes, <i>CSIRO, Ecosystem Sciences, Australia</i> | Professor P. Stevenson, <i>Royal Botanic Gardens, Kew, UK</i> |
| Dr R. Garrick, <i>University of Mississippi, USA</i> | Dr Denis Thiéry, <i>INRA, Bordeaux, France</i> |
| Dr S. Hayward, <i>University of Birmingham, UK</i> | Dr L. Thomson, <i>University of Melbourne, Australia</i> |
| Dr B. Hoffmann, <i>CSIRO, Ecosystem Sciences, Australia</i> | Professor H. Townsend, <i>Liverpool School of Tropical Medicine, UK</i> |
| Professor M. Isman, <i>University of British Columbia, Canada</i> | Dr M. Traugott, <i>University of Innsbruck, Austria</i> |
| Dr T.H. Jones, <i>Cardiff University, UK</i> | Professor P. Trematerra, <i>University of Molise, Italy</i> |
| Dr A. Kapranas, <i>Maynooth University, Ireland</i> | Dr M. Virant-Doberlet, <i>National Institute of Biology, Ljubljana, Slovenia</i> |
| Dr O. Kwon, <i>Kyungpook National University, Korea</i> | Dr K. Wallin, <i>University of Vermont, USA</i> |
| Dr B. Lavandero, <i>Universidad de Talca, Talca, Chile</i> | Dr S. L. Wee, <i>Universiti Kebangsaan Malaysia, Malaysia</i> |
| Dr C. Lavigne, <i>University of Birmingham, UK</i> | Dr A. Wilby, <i>Lancaster University, UK</i> |
| Dr Shu-Sheng Liu, <i>Zhejiang University, China</i> | Professor L. Winder, <i>UNITEC, Auckland, New Zealand</i> |
| Dr S. Macfayden, <i>CSIRO, Ecosystem Sciences, Australia</i> | Dr M. Yazdani, <i>University of Adelaide, Australia</i> |

© Cambridge University Press 2015.

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 for information.

Cover image: Male *Aedes albopictus* mosquito.

Photograph taken by Francis Schaffner

Review Papers

- J.M. Medlock, K.M. Hansford, V. Versteirt, B. Cull, H. Kampen, D. Fontenille, G. Hendrickx, H. Zeller, W. Van Bortel and F. Schaffner**
An entomological review of invasive mosquitoes in Europe 637
- B. Alten, Y. Ozbel, K. Ergunay, O.E. Kasap, B. Cull, M. Antoniou, E. Velo, J. Prudhomme, R. Molina, A.-L. Bañuls, F. Schaffner, G. Hendrickx, W. Van Bortel and J.M. Medlock**
Sampling strategies for phlebotomine sand flies (Diptera: Psychodidae) in Europe 664

Research Papers

- C. Mangudo, J.P. Aparicio and R.M. Gleiser**
Tree holes as larval habitats for *Aedes aegypti* in urban, suburban and forest habitats in a dengue affected area 679
- L. Goane, A. Casmuz, H. Salas, E. Willink, A. Mangeaud and G. Valladares**
Impact of natural control agents of the citrus leafminer *Phyllocnistis citrella* on lemon trees varies among seasons 685
- A. Gilabert, C.-A. Dedryver, S. Stoeckel, M. Plantegenest and J.-C. Simon**
Longitudinal clines in the frequency distribution of ‘super-clones’ in an aphid crop pest 694
- A. Zurita, R. Callejón, M. De Rojas, M.S. Gómez López and C. Cutillas**
Molecular study of *Stenoponia tripectinata tripectinata* (Siphonaptera: Ctenophthalmidae: Stenoponiinae) from the Canary Islands: taxonomy and phylogeny 704
- E. AlSuhaybani, C.C. Voudouris, R. Al-Atiyat, A. Kotzamumin, J. Vontas and J.T. Margaritopoulos**
Identification of a point mutation in the *ace1* gene of *Therioaphis trifolii* maculata and detection of insecticide resistance by a diagnostic PCR–RFLP assay 712
- G.-J. Brandon-Mong, H.-M. Gan, K.-W. Sing, P.-S. Lee, P.-E. Lim and J.-J. Wilson**
DNA metabarcoding of insects and allies: an evaluation of primers and pipelines 717
- C. Wallinger, D. Sint, F. Baier, C. Schmid, R. Mayer and M. Traugott**
Detection of seed DNA in regurgitates of granivorous carabid beetles 728
- X. Shang, Y. Yao, W. Huai and W. Zhao**
Population genetic differentiation of the black locust gall midge *Obolodiplosis robiniae* (Haldeman) (Diptera: Cecidomyiidae): a North American pest invading Asia 736
- A. Birke, E. Acosta and M. Aluja**
Limits to the host range of the highly polyphagous tephritid fruit fly *Anastrepha ludens* in its natural habitat 743
- E.B. Argüello Caro, A.D. Dumón, M.F. Mattio, V. Alemandri and G. Truol**
A molecular framework for the identification of planthopper vectors (Hemiptera: Delphacidae) of central Argentina 754
- J. A. Martínez-Ibarra, B. Noguera-Torres, M. Á. Cárdenas-De la Cruz, M. E. Villagrán, J. A. de Diego-Cabrera and R. Bustos-Saldaña**
Biological parameters of interbreeding subspecies of *Meccus phyllosomus* (Hemiptera: Reduviidae: Triatominae) in western Mexico 763
- D. Liu, Y. Yuan, M. Li and X. Qiu**
Effects of dietary quercetin on performance and cytochrome P450 expression of the cotton bollworm, *Helicoverpa armigera* 771

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

Bulletin of *Entomological Research*
Volume 105, 2015
ISSN: 0007-4853

journals.cambridge.org/ber

**Publishing, Production, Marketing, and
Subscription Sales Office:**
Cambridge University Press
UPH
Shaftesbury Road
Cambridge CB2 8BS
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:

The subscription rates for Volume 105, 2015 (6 issues):
Print and electronic access: £1389 (UK), (USA, Canada and Mexico US \$2363)
Electronic-only price: £1030 (UK), (USA, Canada and Mexico US \$1753)
The online edition is available at 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 0007-4853/2015/\$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 Techset Composition India Pvt Ltd., Chennai, India, and printed in the UK by Henry Ling Limited, at the Dorset Press, Dorchester, DT1 1HD.