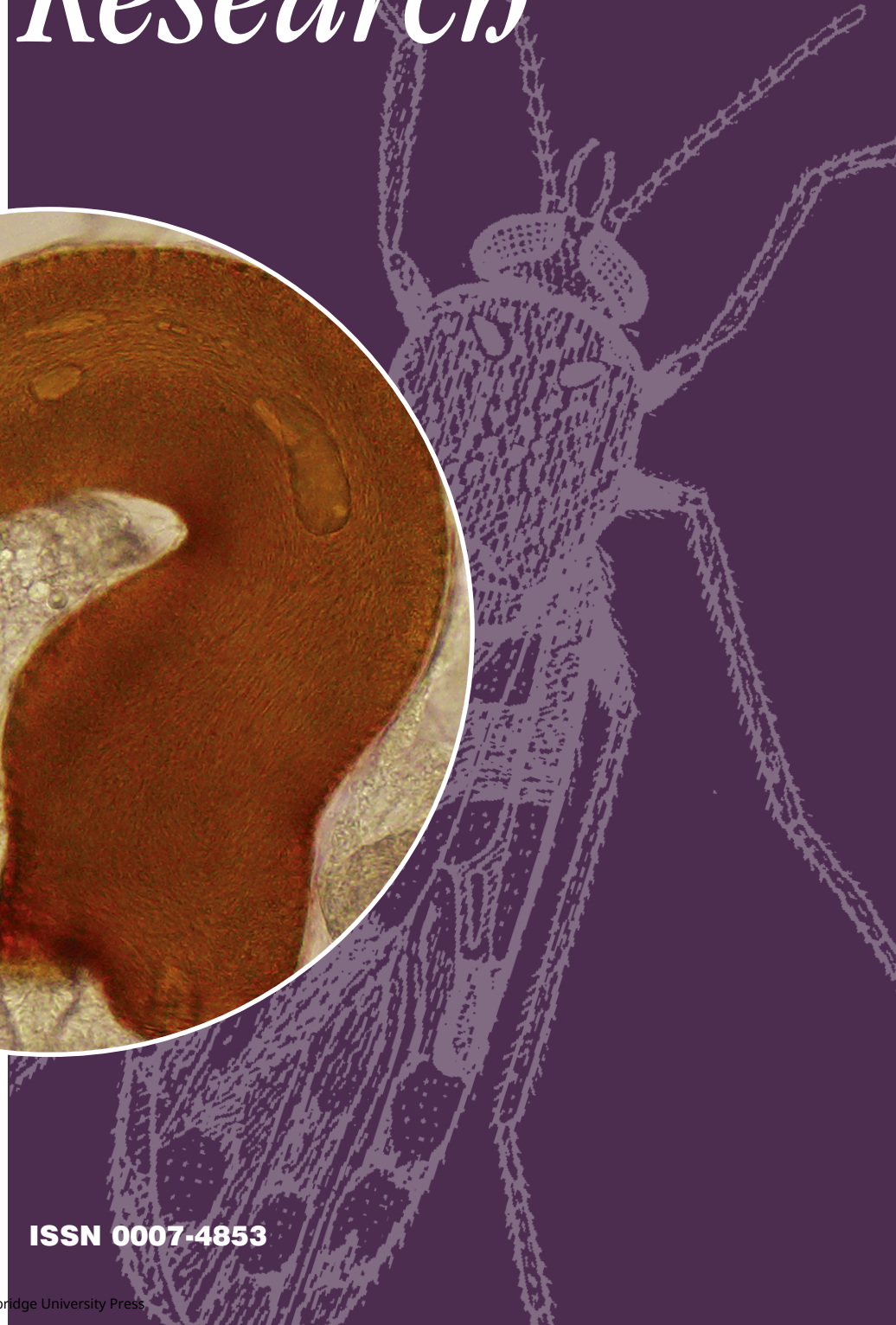
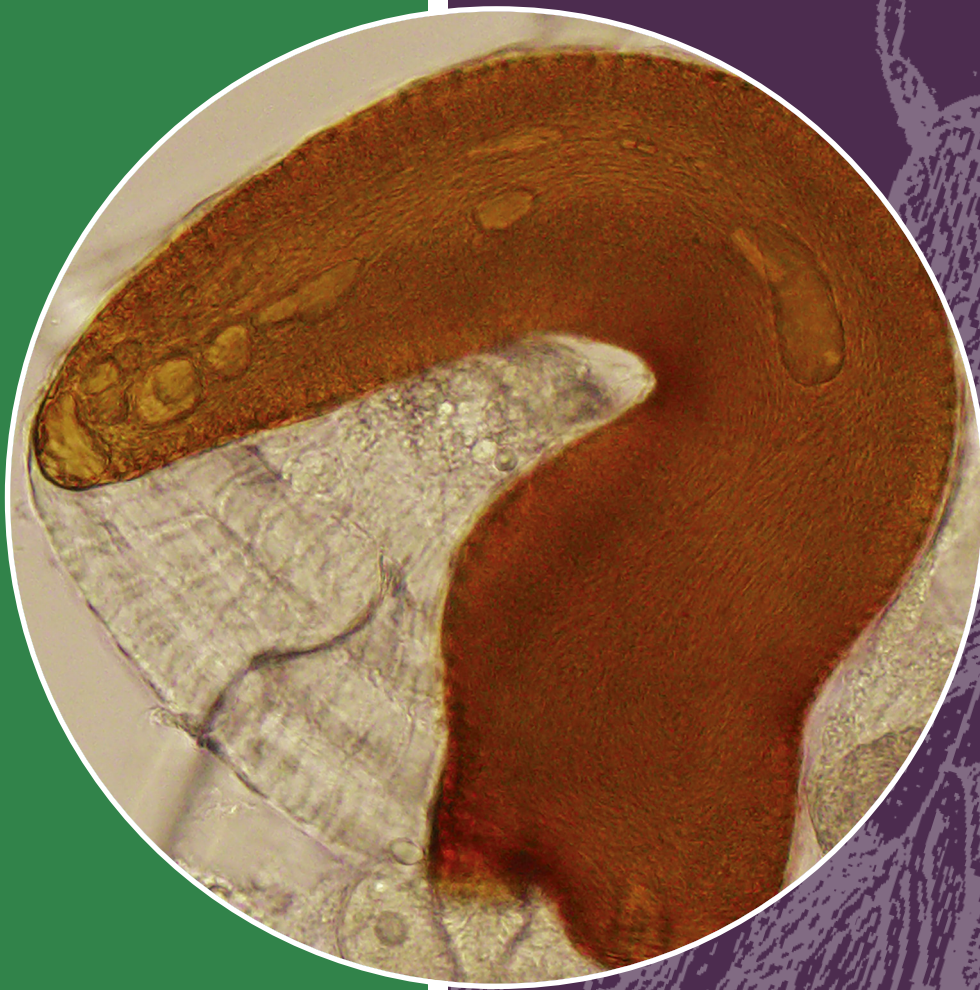


Online submission at: www.editorialmanager.com/ber

Volume 112
Issue 5
October 2022

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 Jonas Arnemann, *Universidade Federal de Santa Maria, Brazil*

Dr Emma Aspin, *University of Adelaide, Australia*

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

Dr D. Bray, *University of Greenwich, UK*

Professor M. Chen, *Northwest A&F University, China*

Professor X-X. Chen, *Zhejiang University, China*

Dr Jordan Cuff, *Newcastle University, UK*

Dr Eleanor Dearlove, *Centre for Ecology & Hydrology, UK*

Dr S. Downes, *CSIRO, Ecosystem Sciences, Australia*

Dr A. K-W. Hee, *Universiti Putra Malaysia, Malaysia*

Dr H. Hesketh, *Centre for Ecology and Hydrology, UK*

Dr B. Hoffmann, *CSIRO, Australia*

Professor X-Y Hong, *Nanjing Agricultural University, China*

Dr Brian Johnson, *QIMR Berghofer Medical Research Institute, Australia*

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

Dr A. Kapranas, *Benaki Phytopathological Institute, Greece*

Dr E. Kistner-Thomas, *USDA Midwest Climate Hub, USA*

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

Professor C-Y. Lee, *Universiti Sains Malaysia, Malaysia*

Professor Fei Li, *Zhejiang University, China*

Dr Zhi Xing Lu, *Chinese Academy of Forestry, China*

Dr S. Macfadyen, *CSIRO, Ecosystem Sciences, Australia*

Professor B. Nault, *Cornell University, USA*

Dr Michael Otim, *National Crops Resources Research Institute, Uganda*

Dr M. Pappas, *Democritus University of Thrace, Greece*

Dr D. Perez-Staples, *INBIOTECA, Universidad Veracruzana, Mexico*

Dr C. Phillips, *AGResearch, New Zealand*

Dr E. Roditakis, *National Agricultural Research Foundation, Greece*

Dr Alejandra Scannapieco, *INTA, Argentina*

Dr Carmen Scieuzo, *University of Basilicata, Italy*

Dr D. Segura, *National Institute of Agricultural Technology (INTA), Argentina*

Dr Z. Sheng, *University of Chicago, USA*

Professor J-H. Sun, *Institute of Zoology, Chinese Academy of Sciences, China*

Dr Qiang Sun, *Michigan State University, USA*

Dr W.T. Tay, *CSIRO Black Mountain Labs, Australia*

Professor A. Tena, *Valencian Institute for Agricultural Research, IVIA, Spain*

Dr L. Thomson, *University of Melbourne, Australia*

Professor P. Trematerra, *University of Molise, Italy*

Dr B. Trewin, *CSIRO, Australia*

Dr M. Virgilio, *Royal Museum for Central Africa, Belgium*

Dr S. L. Wee, *Universiti Kebangsaan Malaysia, Malaysia*

Dr C. Weldon, *University of Pretoria, South Africa*

Dr S. Yang, *Research Institute for Sustainable Humanosphere (RISH), Kyoto University, Japan*

Dr M. Yazdani, *University of Adelaide, Australia*

Professor W. Zhang, *Sun Yat-sen University, China*

Dr Fang Zhu, *Penn State University, USA*

© Cambridge University Press & Assessment 2022.

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: Microscope image of an Argentine Stem Weevil (*Listronotus bonariensis*) sperm storage organ "spermatheca" with an attach spermathecal gland and spermathecal duct. You can see sperm coming out of the spermatheca via a small tear in the spermatheca.

Photo taken by: Patrice Rosengrave 26-3-20