ISSN 0033-5894 Volume 111, January 2023

QR QUATERNARY RESEARCH

EDITORS Derek B. Booth

Nicholas Lancaster Lewis A. Owen

> CAMBRIDGE UNIVERSITY PRESS

Editors

Derek B. Booth, University of Washington Nicholas Lancaster, Desert Research Institute Lewis A. Owen, North Carolina State University

Associate Editors

Lesleigh Anderson, U.S. Geological Survey Pat Bartlein, University of Oregon Robert Booth, Lehigh University Louisa Bradtmiller, Macalester College John Dodson, Institute of Earth Environments, Xi'an, China and University of Wollongong Jason Dortch, University of Kentucky Mary Edwards, University of Southampton and University of Alaska Tyler Faith, Natural History Museum of Utah and University of Utah Jaime Urrutia Fucugauchi, National University of Mexico and Instituto de Investigacion y Estudios Avanzados Chicxulub Kathleen R. Johnson, University of California, Irvine Terri Lacourse, University of Victoria Pete Langdon, University of Southampton Thomas Lowell, University of Cincinnati Curtis W. Marean, Arizona State University Barbara Mauz, University of Liverpool and University of Salzburg Jim O'Connor, U.S. Geological Survey Wyatt Oswald, Emerson College Jeff Pigati, U.S. Geological Survey Yeong Bae Seong, Korea University James (Jamie) Shulmeister, University of Canterbury, Christchurch Ximena Villagran, Museu de Arqueologia e Etnologia, Universidade de São Paulo Xiaoping Yang, Zhejiang University

Editorial Board

Zhisheng An, Institute of Earth Environment, Chinese Academy of Sciences Gail Ashley, Rutgers University Julie Brigham-Grette, University of Massachusetts John Dodson, Institute of Earth Environments, Xi'an, China and University of Wollongong Yehouda Enzel, Hebrew University of Jerusalem David Fink, Australian Nuclear Science and Technology Organisation Sheri Fritz, University of Nebraska - Lincoln Alan R. Gillespie, University of Washington Lisa Graumlich, University of Washington Vance T. Holliday, University of Arizona Richard G. Klein, Stanford University Melanie Leng, British Geological Survey, University of Nottingham Danial R. Muhs, U.S. Geological Survey Colin V. Murray-Wallace, University of Wollongong Jay Quade, Department of Geosciences, University of Arizona Ashok Kumar Singhvi, Physical Research Laboratory, Ahmedabad, India Maria Socorro Lozano-Garcia, Universidad Nacional Autónoma de México Cathy L. Whitlock, Montana State University Yurena Yanes, University of Cincinnati Xiaoping Yang, Zhejiang University Liping Zhou, Peking University

Information about editors and editorial board members correct as of 1st January 2023. For the latest information please see https://www.cambridge.org/core/journals/quaternary-research/editors-and-advisory-board

Aims & Scope

Quaternary Research is an international journal devoted to the advancement of the interdisciplinary understanding of the Quaternary Period. We aim to publish articles of broad interest with relevance to more than one discipline, and that constitute a significant new contribution to Quaternary science. The journal's scope is global, building on its 50-year history in advancing the understanding of Earth and human history through interdisciplinary study of the last 2.6 million years.

Research areas include geoarcheology, geochemistry and geophysics, geochronology, geomorphology, glaciology, neotectonics, paleobotany and paleoecology, paleoclimatology, paleogeography, paleohydrology, paleoceanography, paleopedology, quaternary geology, volcanology and tephrochronology.

Quaternary Research Center

The QRC is a community of scholars collaborating and fostering interdisciplinary environmental research at the University of Washington through strategic investments in seed grants, expeditions, seminars, workshops, and the publication of *Quaternary Research*.

© University of Washington Published by Cambridge University Press.





QUATERNARY RESEARCH

Volume 111, January 2023

RESEARCH ARTICLES

- 1 A multimethod approach to the genesis of Menga, a World Heritage megalith Leonardo García Sanjuán, Alicia Medialdea, Verónica Balsera Nieto, Constantin Athanassas, Alistair Pike, Christopher D. Standish, Maria Isabel Dias, Ana Luisa Rodrigues, José Luis Clavero Toledo, David W. Wheatley and Marta Cintas-Peña
- 21 A terrestrial record of climate variation during MIS 11 through multiproxy palaeotemperature reconstructions from Hoxne, UK David J. Horne, Nick Ashton, Ginny Benardout, Stephen J. Brooks, G. Russell Coope, Jonathan A. Holmes, Simon G. Lewis, Simon A. Parfitt, Tom S. White, Nicki J. Whitehouse and John E. Whittaker
- 53 The importance of effective moisture and landscape controls on diatom assemblages and primary production in Roche Lake, British Columbia, Canada over the past ca. 1800 years *Graham R. Mushet, Eduard G. Reinhardt and Brian F. Cumming*
- 68 Paleogeographical reconstruction of the western French Alps foreland during the last glacial maximum using cosmogenic exposure dating Thibault Roattino, Christian Crouzet, Riccardo Vassallo, Jean-François Buoncristiani, Julien Carcaillet, Natacha Gribenski and Pierre G. Valla
- 84 Microbial degradation of Pleistocene permafrost-sealed fossil mammal remains Gabriela Calábková, Jiří Chlachula, Martin Ivanov, Michaela Hložková, Jolanta Czerniawska, Michaela Vašinová-Galiová, Lubomír Prokeš and Petr Gadas
- 107 Evidence for Pleistocene periglaciation in the lowlands of central Argentina (36–39°S) Théa Vogt
- 121 The age and paleoclimate implications of relict periglacial block deposits on the New England Tablelands, Australia Adrian Slee, Timothy T. Barrows, James Shulmeister, Allen Gontz, Kevin Kiernan, Robert Haworth, Douglas Clark and L. Keith Fifield

CONTRIBUTIONS TO THE QR FORUM

138 A critical assessment of claims that human footprints in the Lake Otero basin, New Mexico date to the Last Glacial Maximum *Charles G. Oviatt, David B. Madsen, David Rhode and Loren G. Davis*

RESEARCH ARTICLES

- 148 Implications for catchment weathering, provenance, and climatic records from a late Pleistocene to present sedimentary sequence in Gujarat, India Kamlesh Kumar, Anupam Sharma, Pradeep Srivastava and Biswajeet Thakur
- 166 Evolution of Ramasetu region as a link between India and Sri Lanka during the late Pleistocene and Holocene *K.M. Dubey, A.K. Chaubey, A.S. Gaur and M.V. Joglekar*
- 177 Assessing reproducibility in sedimentary macroscopic charcoal count data Lysanna Anderson, Liubov Presnetsova, David B. Wahl, Geoffrey Phelps and Alan Gous

CORRIGENDUM

197 Assessing the reliability of raptor pellets in recording local small mammal diversity – CORRIGENDUM *Maria C. Viteri, Mary Allison Stegner and Elizabeth A. Hadly*

Photo Caption: The Menga dolmen seen from the northeast, with the Baetica mountain range covered in clouds in the background. Menga is the earliest and largest of the megaliths of the Antequera Neolithic landscape, included on the UNESCO World Heritage List since 2016. Photo: Leonardo García Sanjuán (see the article by García Sanjuán et al., pages 1–20 this issue).