



Contents

Editorial	50
Features[§], Papers[‡] and Reports[†]	
Cave pearls: origin, morphology, growth and mobility [‡] Garry K Smith.	51
The fear of Halley's Comet in 1910 is preserved in a cave in southern Puerto Rico [†] Abel Méndez and Ángel Acosta-Colón.	61
Irish and British cave biology, mid-19th to the early 20th century: forgotten beginnings and historical insights [‡] Max Moseley.	67
Zero and pre-Darcy flow, and a brief update on speleogenesis research [‡] Trevor Faulkner.	81
A bibliography of the Red Hills Road Cave, Jamaica [†] Stephen K Donovan.	85
Forum (37th BCRA Cave Science Symposium; Notes for Authors)	88
Photo Feature: <i>The "Pearls of Wisdom", Warren's Self Respect Cave, Waitomo, New Zealand</i> [§] – by John Gunn.	92

Front Cover photograph: unusual – including some hexagonal – ‘cave pearls’ in the Xe Bang Fai River Cave, Hin Nam No National Park, Laos, with Mr Tua, a local ranger who guides visitors at the cave. The image was taken by **Chris Howes** in 2014, during a trip to photograph and to laser-scan (the latter by Richard ‘Roo’ Walters) what might be the world's biggest active cave river passage. An estimated maximum resurgent flow of c.2,000m³/s would make it the world's largest known karst spring. The ‘pearls’ are high above river level within a series of terraced, steeply descending, gours that were dry when the photograph was taken. During the rainy season the pools fill up, and the ‘pearls’ would be active.

In the above text the word pearl is quoted, because this image illustrates some of the difficulties in deciding what is, or is not, a cave pearl. Expert opinion is divided. Considering the image, one expert's view is that “*The smaller rocks just look like gravel washed into the pool. The larger rounder rocks do have some secondary deposit on them, but I am not convinced that they are cave pearls. They do have some parts of their surface coated with calcite. I suppose it raises the question, ‘how many layers of a secondary deposit does a nucleus need to become a cave pearl?’ Without sectioning one of those large rocks in the pool, one would never know. I do think it is a real stretch to call them cave pearls.*”. Another expert's opinion is: “*These are indeed cave pearls, although VERY MUCH extreme cases. They are coated clasts for sure, but that is OK as ‘rolling’/transport is not a requirement for cave pearls.*”. Whatever the verdict, all agree that this superb photograph is worthy of being on the front cover of the journal. As editors we also felt that it was useful to feature a *challenging* photograph, to complement the images included on the rear cover and inside the journal, of speleothems that can confidently be described as cave pearls.

The **Rear Cover** collage comprises six illustrations of cave pearls, photographed by **Garry Smith**, relating to various aspects discussed in his Paper (pp.51–60) in this Issue. Brief descriptions of the six images are provided below.

a	b	Image a	Cave pearls up to 30mm in diameter in shallow rimstone dams (now dry) at survey station 23-313 in Cave KNI159, part of the Sphinx Cave System, Ningbing Range, far north Western Australia.
		Image b	Cave pearls cover a section of floor in cave BAA34, Judbarra–Gregory Karst Region, Northern Territory, Australia. Deb Hunter examines pearls up to 60mm in diameter in the passage called ‘Under Fifties Only’ (UFO) – July 2013.
c		Image c	Cave pearls on the floor of Hennings Cave (J39), Jenolan, New South Wales, Australia, in an area subject to drips falling 5m, such that water would not immerse the pearls fully during their growth (July 2003).
		Image d	Cave pearls in Nice Cave (KNI050) in the Ningbing Range, far north Western Australia. These cave pearls have a fine coralline appearance and internal crystalline dendritic structure.
d	e	Image e	Cave pearls with a rough coralline appearance that have an internal crystalline dendritic structure (similar to ones shown in figures 3 and 7B of this Issue's Paper; pp.52 and 53). The cave pearls illustrated here, which are up to 80mm in diameter, are in cave KNI184, Ningbing Range, far north Western Australia.
	f	Image f	Cave pearls in cave KNI184, Ningbing Range, far north Western Australia, forming around broken fragments of stalactites and straws that become pearl nuclei. During the wet season the rimstone dam fills with water to a depth of up to 300mm, immersing the pearls fully, while coarsely crystalline dendritic layers of calcite are deposited around each nucleus. Agitation related to compression waves generated by splashing water prevents the pearls from adhering to the bottom of the pool.

Editors: Dr D J Lowe d.lowe@bcra.org.uk
Professor J Gunn j.gunn@bcra.org.uk

23 Cliff Way, Radcliffe on Trent, Nottingham, NG12 1AQ, UK.
GEES (School of Geography, Earth and Environmental Sciences),
University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK.

Cave and Karst Science (ISSN 1356–191X) is published three times a year and issued free to all appropriately paid-up members of the Association. As BCRA's science journal, it has been published continuously since BCRA's foundation in 1973, firstly as the *Transactions of the British Cave Research Association* (ISSN 0305–859X) then, from 1982 to 1993, as *Cave Science* (ISSN 0263–760X).

Annual subscriptions are available to non-members at a rate of £28. For destinations outside the UK, extra postage of £3 (Europe) and £6 (outside Europe) applies. A special discounted subscription rate is available to *bona fide* students. For more information about BCRA publications and publication sales, please refer to the details on the inner back cover of this Issue.

Copyright © BCRA 2026. The BCRA owns the copyright in the typographical layout of this publication. Additional copyright in the text, photographs and drawings may reside with the authors. Subject to statutory exception, no material may be reproduced by any method without permission of the copyright owners. The authors' opinions are not necessarily endorsed by the editor(s), nor by the BCRA. See bcra.org.uk/copyright.

Publisher: The British Cave Research Association, The Old Methodist Chapel, Great Hucklow, Buxton, Derbyshire, SK17 8RG, UK. The BCRA (enquiries@bcra.org.uk) is a UK Registered Charity, Number 267828. It is a constituent body of the British Caving Association.

First edition printed by MTP Media Ltd., Kendal, Cumbria, UK. [Subsequent digital reprints by the BCRA.]