Cave and Karst Science

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Cover photographs:

Unusually though not uniquely, the Front and Back Cover illustrations relate to the same topic. All are provided by *Phil Wolstenholme* and were photographed in the Krypton Series, part of Peak Cavern, at Castleton in the White Peak of Derbyshire, UK. Peak Cavern, is a resurgence cave, perhaps most-widely known for a showcave section with the largest natural entrance (30m × 10m) of any inland cave in Britain, whence a chamber (The Vestibule) extends c.75m. It is part

of the c.25km-long Peak—Speedwell cave/mine system, with many relict passages, but the active lower levels discharge water from a c.13.5km² catchment.

The Krypton Series, where c.280m of known passage has developed in fossiliferous Visean forereef limestone, is one of several vertical developments in the ceiling of The Vestibule. Steeply sloping relict phreatic passages extend up c.45m, with a horizontal range of 60m, containing many calcite speleothems, most of them relict. Only two sections carry tiny percolation-fed inlet streams, still depositing flowstone, with small gour pools. Some speleothems, notably stalagmites, were "removed", for sale or as "trophies", during historical times. Alongside the calcite speleothems are extensive globular masses of moonmilk aggregates of microcrystalline calcite — as also seen elsewhere in The Vestibule. Historical use of the cave is evidenced by extensive soot-staining from the smoke of cave-fires and lanterns, in some cases coating the stumps of sawn-off stalagmites. There is a smoke connection between the highest point in the Series and a small cave on the side of the Cave Dale dry valley, but morphology suggests passage formation by upward-flowing water. Nevertheless, clastic sediments lying beneath flowstone must have been washed in from the surface. Other areas of upwards development in The Vestibule ceiling include a rift adjacent to the Krypton Series that terminates upwardly in two chokes, one of which formerly connected to the surface in Cave Dale. The captions below provide brief details of some of the features

Front cover: Ann Soulsby and Wayne Sheldon in the moonmilk-festooned lower passage of the Krypton Series, 20m above the showcave floor. Back cover: a collage comprising six images, all showing aspects of the Krypton Series, as described below:

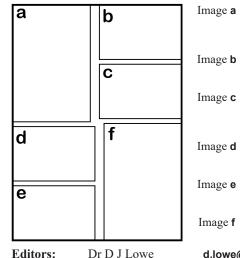
Image b

Image c

Image d

Image e

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Alastair Gott (L) and Luke Brownbridge in the high aven at the top of the Krypton Series, lying roughly beneath the ruins of the 11th-Century Peveril Castle, with a choke of rocks within an open hole at the top, and a river of flowstone formed on top of the steeply-sloping cave sediments, which presumably once poured in through an ancient swallet on a former land surface.

Lisa Wootton in the high-level phreatic passage, with a large cluster of moonmilk formed on the wall. Moonmilk is probably the most common form of mineral deposition in this part of Peak Cavern, because there is now very little percolation water entering these passages.

Alastair Gott in the high-level phreatic passage, with one of several sawn-off stalagmite stumps, completely blackened with soot. Most of the accessible speleothems in the Krypton Series have been removed (probably for sale rather than science), presumably by early cave residents/explorers or even by local lead miners, though no evidence of lead mining is evident hereabouts. Lisa Wootton in a steeply-dipping section of the high-level passage, with moonmilk clusters

adorning the ceiling. A narrow vertical rift system at the camera position connects these largely horizontal passages downwards to the ceiling of The Vestibule in the showcave.

Luke Brownbridge in the high-level phreatic passage at the lip of a downward pitch in the rift, with "robbed" stalactite stumps in the ceiling. The floor is mostly made-up of sediment, covered in places with soot, and then further overgrown with moonmilk deposits. Image f Alastair Gott (L) and Luke Brownbridge in the high aven looking downslope toward the rifts, with

a floor of sediment, soot-blackened walls, and stumps of more "robbed" stalactites on the ceiling.

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EDITORIAL

John Gunn and David Lowe

This Volume is our 32nd as Editors and it must be admitted that this Issue has been a struggle to produce. In December 2024 we were able to offer our readers an 'end of year treat' in the form of a 52-page Issue but, in early 2025, what had been a steady stream of submitted papers decreased markedly in volume and consequently this Issue is somewhat slimmer, though hopefully offering much of interest — including thoughts on topics that extend beyond what might be considered our usual remit.

Regardless of what we hope is merely a temporary dearth of material, the contents of this Issue include an interesting mix of submissions from authors based in North America, Croatia, and the UK, and cover topics that relate to various aspects of archaeology, astronomy, cave survey methodologies, geology, and zoology.

Joyce Lundberg and Donald McFarlane present a fascinating preliminary account of their studies of the nesting sites of cave-dwelling swiftlets, based upon recent observations carried out in various caves in Borneo (Southeast Asia).

Describing trials carried out in show caves within the Dinaric Karst of Croatia, Fran Domazetović, Nina Lončar and Ivan Marić present and discuss aspects of the use and potential value of 3D mapping using mobile LiDAR scanning technology, particularly with respect to karst caves that display varied morphological complexity.

Reporting upon aspects of recent (and ongoing) excavation projects in the Mendip Hills of southwestern England, Vince Simmonds first describes the discovery and attempted dating of a faunal assemblage including brown bear, of probable Mid Devensian (Late Pleistocene) age. In a separate and more recent Report, Vince also provides initial details of the discovery of a woolly rhinoceros skull and other mammalian bones, which — pending confirmation — appear also to date from the Middle Devensian.

Relating partly to the United Kingdom, and particularly to Scotland, the first part of a submission from Trevor Faulkner provides a brief and high-level overview of the enigmatic rocks known as carbonatites — a relatively rare rock-type composed dominantly, as its name suggests, of carbonate minerals — and their potential to host karst features. Having looked at the origin(s), history and known distribution of carbonatites on Earth, in the second section of the Paper Trevor speculates more widely upon the potential importance of these rocks to the development of "life", not only life on Earth but, dramatically, life across the Universe.

Returning to the Earth, much of the remainder of this Issue comprises a *Forum* section. This includes brief details of the membership of the *Cave and Karst Science* Editorial Team (see below), a book review, ongoing illustrated correspondence about deneholes in southeastern England, and a reiteration of useful advice (to authors) about the roles of abstracts and conclusions in scientific publications. Finally, as has become standard in recent Volumes, the Issue closes with a one-page *Photo Feature* introducing some rarely visited cave passages high above a well-known show cave in Derbyshire, UK.

Moving on from the detailed contents of this Issue, we feel that we must return to the question of "the Content", but as an abstract concept. Not for the first time, we encourage BCRA members (whether or not scientists or "academics"), cave and karst scientists everywhere, and — not least — cave explorers and karst enthusiasts in general, with or without scientific backgrounds, to submit drafts of Scientific Papers or shorter Reports. Without a viable stream of such submissions, which form its central feedstock and ultimately its 'raison d'être', the stark reality is that the Journal will inevitably cease to be published. Needless to say, our ongoing pleas for publishable material are aimed also at photographers, whether those who wish to offer potential cover illustrations for consideration, or those submitting a one-page Photo Feature or themed sets of photographs with supporting text that might be suitable, with or without augmentation, as a longer Feature.

For academics, apart from the benefits of Open Access, we can offer and provide generally rapid peer review, constructive feedback, and relatively rapid publication. Equally, and in our view importantly, we continue to work diligently to support those who do not have an academic background, to help them achieve the requirements needed for publication — and hopefully enjoy the feeling of fulfilment that goes with it.

While orchestrating this, we also remain grateful for the ongoing support provided freely by the members of our *Editorial Advisory Board* (EAB), whose names are listed within the revised details of the CaKS Editorial Team included at the start of this Issue's *Forum* section. It is also important that we emphasize the invaluable roles played by various independent *Reviewers*, who are not members of the EAB, but who generously make their time and expertise available to help with the assessment of draft submissions related to a spectrum of highly specialized topics. Without this voluntary support the Journal would be unable to fulfil its intended purpose in supporting the objectives of the British Cave Research Association.

Finally, we are pleased to draw the attention of our readers to two recent publications from the International Union for Nature Conservation (IUCN) World Commission on Protected Areas, both of which can be seen at, and/or downloaded from:

https://iucn.org/our-union/commissions/world-commission-protected-areas/our-work/wcpa-publications/iucn-wcpa-issues

Issue Paper No.5 discusses what is meant by "Nature" and stresses the importance of recognizing its abiotic component, whilst Issue Paper No.6 advocates designation of a new type of International Protected Area (IPA), "Key Geoheritage Areas" (KGA). There are four existing IPA categories, each of which includes a substantial number of cave and karst sites: over 80 World Heritage Properties in 55 countries; more than 100 UNESCO Global Geoparks in 33 countries; over 150 UNESCO Biosphere Reserves in 62 countries, and more than 150 Ramsar sites in 70 countries. Hence, if KGA are adopted as a new category of IPA, we can be confident that many cave and karst sites will be recognized.

