

Cave and Karst Science Explained

Curious about all of the science that goes on underground? In a new regular feature, Charlie Self gives layman's summaries of recent C&KS articles.

Britain has always had a strong caving community and an equally strong cave science community. Some of us have our feet in both camps, but communication between the camps is often poor. The editor of *Speleology* and the editor of *Cave and Karst Science* (BCRA) have asked me to make an experiment — to describe what is in our national cave science journal, but in language that sport cavers can understand. I need feedback on this. Does anyone give a damn? C&KS issue 35(3) has three main papers and three shorter 'reports'.

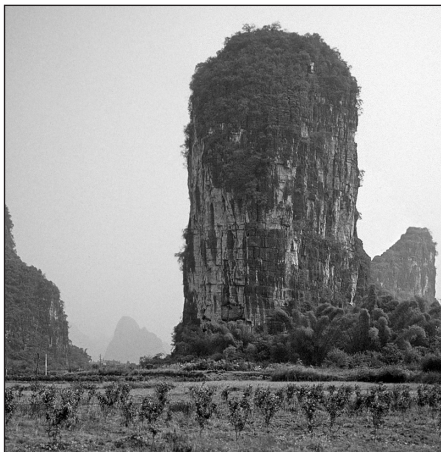
Fengcong, Fenglin, Cone Karst and Tower Karst

Tony Waltham

In this long and detailed paper, the author proposes that Chinese terminology should be used to describe two major types of tropical karst terrain. Fengcong loosely corresponds to the Western term 'cone karst', fenglin to 'tower karst', but the Chinese terms are more useful as they have genetic implications. Cones and towers should now be used as purely descriptive terms.

Does this matter? Well, yes it does. When a senior and highly respected cave scientist introduces new terminology in a major paper, other scientists will use these terms in their own papers. This is one of the ways in which new words enter a language. So don't be surprised if the word fengcong starts to appear in caving journals such as *Speleology*.

This is a beautifully written paper, clearly structured and easy to read, even for non-scientists. I would recommend it just for the photographs, which are stunning. If you are a caver going on expedition to a tropical karst region, read this paper because it will help you appreciate and better understand the scenery.



A splendid tower in the fenglin karst of Yangshuo, China. Photo: Tony Waltham.

Size Matters: Scalar Phenomena and a Proposal for an Ecological Definition of "Cave"

Max Moseley

This paper uses a lot of specialist biological terminology and I confess I had to read it twice before I understood what it was about. Underground habitats range in size from tiny holes within the fabric of the rock (hosting microbes) up to large caves that are accessible for direct scientific study. In subterranean biology there has been a tendency to treat all totally dark voids as essentially similar, regardless of size. However, the creatures that live in small cracks have a three dimensional world: they live in the crack. By contrast, most of the life seen in caves is found on two dimensional surfaces (rock walls, mud banks, etc.).

More importantly, the ecology of any 'macrocavern' more than 0.20m wide has an environmental influence from the surface. This may be air currents, stream flow, or even (in sea caves) tidal movements. Organic nutrients such as bat guano, dead leaves, and flying insects enrich the habitat. As a result, biological communities are found here that do not normally occur in smaller spaces. The author proposes an ecological definition of 'cave' which recognises these size-dependent phenomena.

Karst Drainage Relations with Catchment Land Use Change, Mole Creek, Tasmania, Australia

Deborah Hunter, Trevor Lewis and Joanna Ellison

This is a good example of the kind of research done by university geography departments. A small karst spring has become intermittent following the establishment of forestry plantations in the catchment area. This is part of a growing global problem, where land use changes and human habitation may impact water supplies even in fairly distant areas.

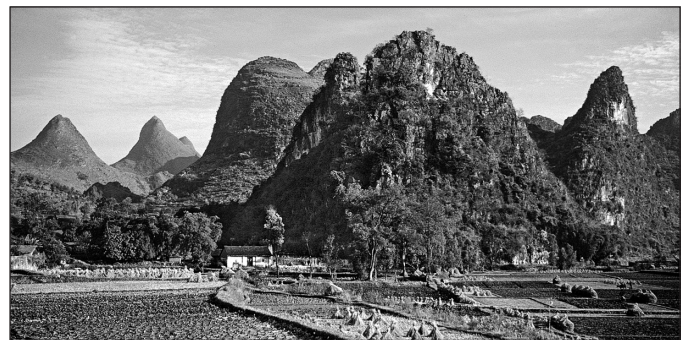
Water samples were taken from several sites during the course of a year, over different flow conditions and also during a flood event. Water chemistry then allowed an interpretation of the spring's discharge and recharge regimes to be made. This will be important for the future management of the water resource as the trees of the plantation grow in size. Notably, the main

author of this paper is an undergraduate student.

A Uranium-Series Date from a Karst Cave on the North York Moors, Yorkshire, UK

Phillip Murphy and David Lowe

The North York Moors, which are well known for their mass movement caves (windypits), also have a number of relict karst caves. Some recent discoveries are noted in this report. I am particularly



Classic fengcong karst at Caoping, near Guilin in China. Photo: Tony Waltham.

pleased that this uranium-series date comes from a minor caving region, away from the well-studied Yorkshire Dales. Such data helps our understanding of landscape development in northern England on a regional scale.

Bhimbetka Caves, Madhya Pradesh, India

Tony Waltham

In central India, there are hills of quartzitic sandstone with many small caves and rock shelters. This is a major site of Palaeolithic and Mesolithic art (Old and Middle 'Stone Age'). The cave paintings are of similar age to those of the famous Lascaux cave in southern France, but are far more numerous. Small rounded hollows, carved or hammered into the rock, are some of the oldest in the world. This short report left me wanting more.

New Uranium-Series Dates from Keld Head, Kinsdale, North Yorkshire, UK

Phil Murphy, John Cordingley and Tony Waltham

Dated flowstone from the underwater passages in Keld Head indicates that the cave was partially air-filled before the main advance of ice during the last Ice Age. A new survey of the cave is presented, colour coded to show these airspaces. The valley subsequently became blocked by a glacial moraine, raising the water level in the cave. ■