FROM THE ARCHIVES

Discovery of the Precambrian Fossils in Charnwood Forest

Down Memory Lane with Trevor Ford

In May 1957, three schoolboys, Roger Mason, Richard Blachford and Richard Allen, were rock-climbing together in an old quarry in Charnwood Forest, when Richard Blachford found a leaf-like impression on an inclined bed of fine-grained sediment; a second impression was close by. Richard pointed them out to Roger, who had taken some geology classes and realized that the impression could be an important fossil find.

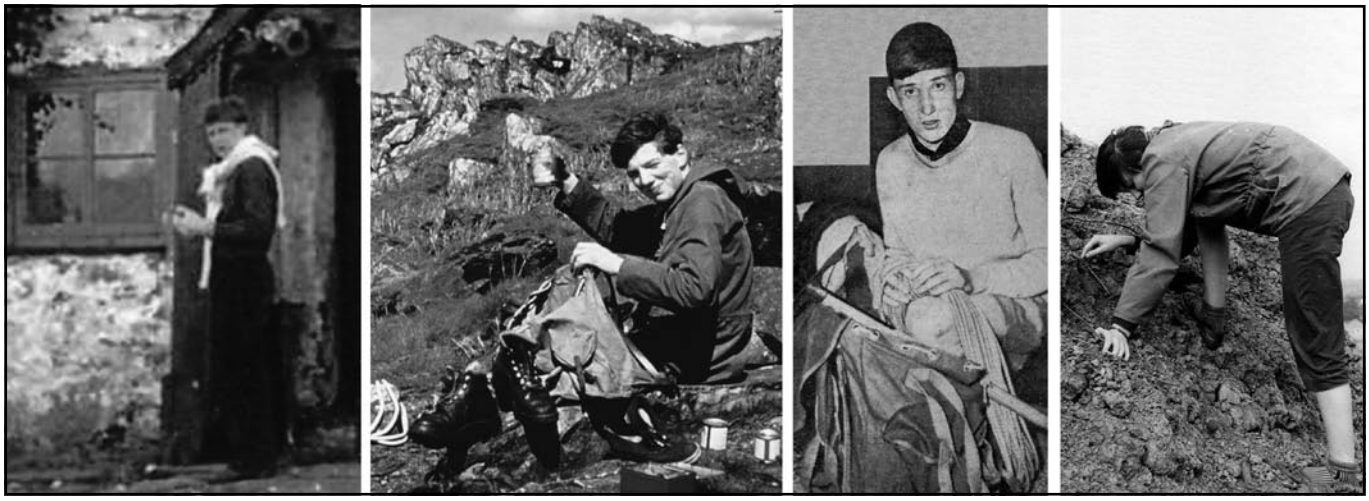
He came in to Leicester to report the find at the recently established Geology Department of the then University College. I happened to be the only member of staff around, and I was rather sceptical. To back up his claim, Roger returned on May 30th with a pencil-rubbing of the rock surface, and with his father whom I knew as a part-time member of the University staff. The three of us piled into the car, and drove straight out to Charnwood, where my scepticism was soon dispelled. It was a genuine trace fossil (with no body parts), an impression of a segmented, leaf-like organism some 20 cm long, unlike any other organism, living or fossil.

I took photographs of the fossil, and a week or so later showed them to my former lecturer Peter Sylvester-Bradley at Sheffield University (he was later the first Professor of Geology at the University of Leicester). He encouraged me to write a note for the Proceedings of the Yorkshire Geological Society, of which he was the editor. Thus the pioneer paper naming the fossil *Charnia masoni* and its companion *Charniodioscus concentricus* was published in a regional journal (Proc. Yorks. Geol. Soc., 1958, v.31, p.211-217); in hindsight such an important discovery ought to have been recorded in *Nature*.

Through the good offices of Colin Sizer (Leicester City Museum Keeper of Geology), his Director, Trevor Walden, and Sir Robert Martin (Lord Lieutenant of the County), arrangements were made to extract the block bearing the two fossil impressions. Two quarrymen from Mountsorrel used chisels, hammers and crowbars to lever out a block about two metres across and 50 cm thick. As it weighed at least 200 kg, we had to borrow a lorry to get it back to Leicester Museum. Unknown to me, Colin Sizer then took the block to a local monumental mason who had a carborundum saw a metre in diameter, with the intent of cutting the large block into more manageable pieces. He brought the saw up a little too sharply, so that it shattered. And the block split, leaving the *Charnia* impression on a slab weighing about 10 kg and *Charniodiscus* on two slabs separated by a joint; they could easily be fitted together. Thus, by good luck, the two specimens became more manageable, and remain the type specimens that are still housed in Leicester City Museum.

Subsequent research has revealed that ring-like markings had been found a century earlier, in 1848, but they had been dismissed as non-fossils by Victorian experts. Also, a schoolgirl from Grantham, Tina Negus, had seen the fossil when out picking bilberries, perhaps a year before Roger and his friends went climbing in the old quarry. On telling her geography teacher about her "fossil" at Charnwood, she was summarily dismissed with "There are no fossils in Precambrian rocks": contemporary science in the raw. Tina returned to the quarry the following year, but was dismayed to find that the fossil had gone. She only entered our story after she saw Roger in a television programme about *Charnia*. In between my first and second visits, in 1957, someone else had hammered the rock around the fossil, but we never found out who was responsible. It makes me wonder how many other people had seen *Charnia* and then said nothing.

When the news broke, the Director of the Geological Survey, Sir Cyril Stubblefield, and the chief palaeontologist, Dr F W Anderson, caught the next train from London, and we took them out to Charnwood, where they were amazed that the fossil had been exposed for about a century and nobody had reported it.



Richard Blachford *Richard Allen* *Roger Mason* *Tina Negus*

In the fifty years since my paper was published in 1958, comparable fossils have been found at several more sites in Charnwood Forest. Within only months of my original paper appearing, Professor Martin Glaessner of Adelaide, Australia, reported the discovery of comparable fossils in the Ediacara Hills, north of Adelaide. Unwittingly, I had beaten him to it by naming *Charnia* and *Charniodiscus*. A recent book was dedicated to me as "a founding father of Precambrian palaeontology".

Fossils comparable to *Charnia* have since been found in many other parts of the world, notably South Australia, Newfoundland, Russia and Namibia. I have been fortunate to visit the first two of these. The abundant late Precambrian fossils are now known from several remote localities in Newfoundland, where a nearby visitor centre attracts several thousand visitors each year. So far about a hundred species of fossil impressions have been named, mostly from rocks of comparable age, though accurate dating is not easy. An Ediacaran Division of geological time has been established to embrace the rocks now generally dated from 635 to 542 million years, i.e. latest Precambrian, also known as Neoproterozoic. This covers the period from the end of a global glaciation known as "Snowball Earth" to the beginning of the Cambrian. The ancient rocks of Charnwood Forest date from this period.

The biological affinities of the organisms which made the impressions are still controversial – are they plants or animals, or some strange in-between forms? Are they evolutionary ancestors of the fossil phyla found in Cambrian and later rocks? Or do they represent a "dead-end" phase of the evolution of life? Current opinion is that they are not ancestors of the Phanerozoic phyla, but the debate continues.

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MERCIAN NEWS

Editorial

With the closing of this volume of *Mercian Geologist*, Andy Howard and Tony Morris have resigned from the Editorial Board. Both served for many years, and Andy took on the larger tasks of Editor from 1996 to 1999. The Editor and Council thank them both for their contributions to the Society. We welcome Keith Ambrose and David Bate as the new Board members.

Also with the end of the volume, the Editor places on record his thanks to Trevor Ford, Richard Shaw, Gus Gunn, Paul Lusty, Mike Rosenbaum, Tom Sharpe, Peter Fookes and Richard Hamblin for kindly reviewing submitted papers within the last four years.

In contrast with tradition, there is no index on the printed pages that close this volume. An index will shortly go on the Society's website, where it is hoped it will be more useful and accessible to the majority of researchers. Ultimately this index will become comprehensive, as new listings will be added at the end of each volume; and indices going back to the start of Volume 13 will also be added. An index for Volumes 1 to 12 was published in Volume 13.

Council has decided that the *Mercian Geologist* will continue to be published in print and distributed to all Society members and subscribers. Papers and reports in back numbers of the journal will go on the Society's website as free downloads after a date two years after their publication. The web pages at www.emgs.org.uk will therefore become the *Mercian Geologist* archive for all except the current and previous issues. We hope this will be welcomed by members and readers, and the Editor continues to invite contributions for the *Mercian Geologist* from both inside and outside the Society.

The quarrymen start work on the old quarry face to extract the block that contained the original frond and discs.