

**Text:** Malcolm Dick

**John Whitehurst (1713-1788)** was the oldest member of the Lunar Society. Born in Congleton in Cheshire he moved to Derby and made a name for himself as a clockmaker and engineer in the Midlands and London and shared an interest in geology with other Lunar Society figures such as Matthew Boulton, Erasmus Darwin, Josiah Wedgwood and William Withering. In the mid-18th century the excavation of mines, canal building and the exploration of caves were providing evidence of rock formation and fossils which encouraged investigation into the origins of the earth. Derbyshire was mineralogically rich and provided fertile ground for observation and speculation. Whitehurst's most important work, *An Inquiry into the Original State and Formation of the Earth* (1778), is a contribution to the evolution of geology as a major science.

The book is in two parts. The first section, *An Inquiry..*, takes up most of the publication. Whitehurst tried to connect his Christian beliefs in divine creation and the Flood with geological evidence for the formation of the earth. He also explored how volcanic action and subterranean fire had shaped the earth's features, an interest he shared with his friend, the painter Joseph Wright of Derby.

The second part, the Appendix, *General Observations on the Strata in Derbyshire*, is a much more important section. Whitehurst provides an insight into stratigraphy, the branch of geology which deals with the nature and order in which rocks are laid down. His writing is accompanied by beautifully engraved sectional diagrams to illustrate his theories. He also established a succession for carboniferous rocks in Derbyshire from the youngest: stone, clay and coal, down to other layers such as millstone grit and shale to the oldest: limestone and toadstones. The latter he saw as creation of volcanic action. Whitehurst also explained that coal was originally derived from vegetable matter.

His work influenced other geologists.

- White Watson (1760-1836), a local millstone manufacturer, who created exquisite mineral tablets representing the strata that Whitehurst described. A selection of these is in Derby Museum.
- William Martin (1767-1810), a Derbyshire drawing master and palaeontologist, who published the first scientific accounts of fossils.
- John Farey (1766-1826), a surveyor who provided an extraordinarily detailed and accurate coloured version of the stratigraphy of Derbyshire, including its mines and collieries.

In the history of geology, Whitehurst was important. Theoretically, the subject was controversial as it progressively undermined the biblical accounts of the origins of the earth. Whitehurst was not prepared to follow this route, but the quality and depth of his work ensure that his recorded observations were major contributions to scientific understanding in the 18th century.

Sources and Further Reading

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AN INQUIRY INTO THE ORIGINAL STATE AND FORMATION OF THE EARTH DEDUCED FROM FACTS  
AND THE LAWS OF NATURE TO WHICH IS ADDED AN APPENDIX CONTAINING SOME GENERAL  
OBSERVATIONS ON THE STRATA IN DERBYSHIRE

WITH SECTIONS OF THEM, REPRESENTING THEIR ARRANGEMENT, AFFINITIES, AND THE MUTATIONS  
THEY HAVE SUFFERED AT DIFFERENT PERIODS OF TIME. INTENDED TO ILLUSTRATE THE PRECEDING  
INQUIRIES, AND AS A SPECIMEN OF SUBTERRANEAN GEOGRAPHY.

BY JOHN WHITEHURST

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