

William Smith

A man of unique vision

by Elaine Johnston & Graham McKenna, *Keyworth*

The year 2001 was one of renaissance for William Smith. The publication of two books, *The Map That Changed the World* by Simon Winchester and *Strata* by John L Morton, and the huge publicity which surrounded the former has ensured that the name and many achievements of William Smith have reached an audience to whom previously he had been unknown. The books tackle the story of Smith's life and work in different ways. Winchester himself has never shied away from tackling 'difficult' subjects in print; in this book on William Smith he has effortlessly brought to life the man and his work. His book is the more readily accessible of the two, certainly to those readers who have only a passing acquaintance with geology. Here, Smith's life story is well recounted; Winchester explains in detail the unique events behind the publication of the first geolog-

ical map, and the science and original thought which went into it. The uniqueness of Smith's vision, his determination, and the lifelong restrictions and rebuttals he encountered as a result of the rigid class structure of his day are conveyed in an accessible and erudite manner, and a real sense of the man and the story of the birth of a branch of a modern science emerges.

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Strata has the tone and structure of a more conventional scientific biography. Morton places a much heavier emphasis

on Smith's geological investigations and discoveries, and detailed descriptions of Smith's findings over his years of work are given. This book provides an insight into the breadth and depth of Smith's skills as a surveyor, civil engineer, and geologist, and also a sense of how great his innate and acquired understanding of Britain's geology was. Morton's book contains less life (and, it has to be said, less lively) information on the man, but is the book from which the keen amateur would learn the fine detail of how Smith's increasing knowledge of index fossils changed his interpretations of the country's geology.

Between them, these books construct the picture of a man who helped to shape a science, and to influence the economic and scientific development of Britain, just as the country was experiencing the Industrial Revolution and taking a major part in international events on the world stage.

Smith was truly a fascinating man. As a boy, he had developed an interest in the exposures of rock and the fossils which were to be found locally. As an adult and self-taught surveyor, his surveys of land for canals, and for the sources of building stone and coal in other parts of England, led to a great increase in his knowledge and awareness of various geological features. As he travelled, he found the strata he was familiar with in the south of England were repeated in other areas,



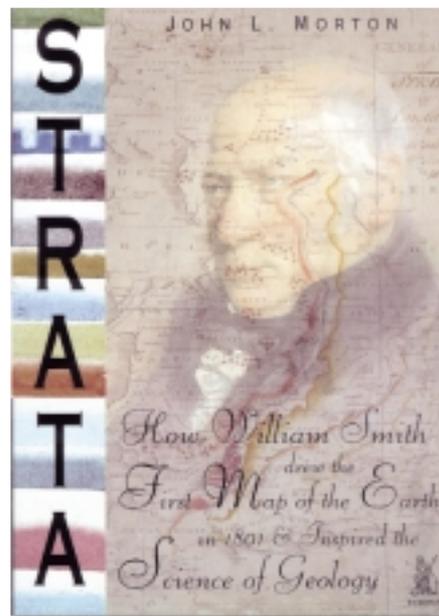
Detail from Smith's 'New Geological map of England and Wales with the inland navigations: exhibiting the districts of coal and other sites of mineral tonnage,' published in 1820.

with some characteristic horizons stretching right across the country. He realised that, if undisturbed by tectonic events, rock strata form in regular order, with younger rocks overlying older. As many of the rock types contain fossils which are often uniquely identifiable, this is a reliable method of identification and a method of correlating geographically distant rock types, even though they may be at varying depths beneath the surface. Smith's discovery that lithologically similar beds can be distinguished by the assemblage of fossils in them was a concept virtually unrecognised by geologists of that period. It seems obvious to us today, but Smith made a unique mental leap with this realisation. Using his grasp of the subsurface structure, Smith was able to draw up a table of successive strata which could be applied in any locality — an early version of the geological column — and begin to prepare his first geological map.

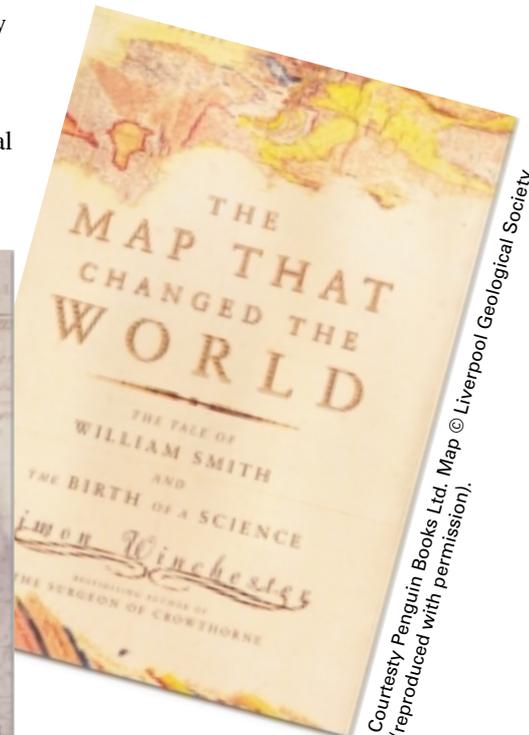
It was a quiet revolution; the production of geological maps and the reinterpretation of geological data continue to this day, although with the advent of digital data-capture methods and digital delivery, the process of map construction and publication has radically altered. The BGS has made another major advance in geological mapping for the UK with the first release in digital format of all the 1:50 000 scale geological map data that are available for Great Britain — over

95% of the landmass. As more attributes are added by the BGS to this data, William Smith's belief in the importance of geological mapping to the nation is proving to be as justified now as it was then. His conviction that geological mapping was of vital importance at many levels, and in many areas, of a nation's society, science, and industry is as true today as it was two hundred years ago, when he conceived his original geological map. The fundamental importance of

providing accurate geological map data to today's industries remains as vital as it was in Smith's time.



Courtesy Tempus Publishing



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(Left) *Strata* by John L. Morton and (Above) *The Map That Changed the World* by Simon Winchester — examples of the renewed interest in William Smith.



A full size digitally enhanced reproduction of this map is available for £10 + £1.95p p&p. For further details about this and other William Smith maps and books for sale, contact the BGS Sales Desk (see inside back cover).