

Bless the baby! What a wally he has a-made!



Cause and Effect

The 'piddling school' of geology

Sir — As a contribution to the heated controversies that enlivened geology in its golden age in the first half of the nineteenth century, a number of satirical sketches and cartoons were drawn by Henry De la Beche (1796–1855), one of the leading geologists of his day and the founder of the Geological Survey of Great Britain. Several of these have been reproduced by Paul McCartney in his informative short biography¹ of De la Beche, but he believed that the one reproduced here had not survived. Happily, however, it has been preserved in the archives of the University Museum, Oxford, among the papers of William Buckland, the first Professor of Geology at Oxford.

The sketch (entitled “Cause and Effect”) shows a toddler (said to represent Frank Buckland, William’s eldest son) urinating at the head of a huge valley, with the nurse’s comment “Bless the baby! What a wally he have a-made!”. This was intended as an ironic comment on the uniformitarian outlook of Charles Lyell (a former pupil of Buckland, and Darwin’s geological mentor), who championed the idea (now accepted for most valleys) that slow-acting erosion by rivers has formed the valleys they occupy, as opposed to pre-formation by earthquakes, faults, catastrophic floods or marine action. One of the objections to this so-called fluvial theory was provided by ‘mis-fit’ streams — huge valleys occupied by small rivers that it would seem could not have excavated them, even given an

immense period of time. It is this type of stream that De la Beche illustrates.

He evidently drew his picture at the time of the publication of Lyell’s epoch-making *Principles of Geology* (1830–33), and it probably had wide circulation among geologists, although it was never published, perhaps being regarded as too improper for the time; doubtless Buckland made great play with it in his well-attended Oxford lectures. It evidently delighted Roderick Murchison, a stringent critic of Lyell; twenty years later, Murchison complimented De la Beche (whom he was soon to succeed as director-general of the Geological Survey) on the appearance of his massive volume *The Geological Observer*, but he added: “I could only have wished that it did not seem to me that you favoured the ‘piddling’ school more than of old, when you drew Frank Buckland as a baby denuding a valley. We shall hear a good deal more made of the book [*The Geological Observer*] tomorrow night; so I reserve my say except to hope that you have not actually become an inch by inch geologist.” Murchison’s comments of 1851 show that (unlike De la Beche) he had failed to come to terms with the concepts of deep-time (indications that the Earth is millions instead of thousands of years old) permitting the explanation of features of the Earth’s surface by the cumulative effects of slow-acting processes as observed today, rather than by catastrophic events. The tiny stream in the huge U-shaped valley depicted by De la Beche suggests (with hindsight) excavation by a former mountain glacier — and by 1851 this possibility was already being accepted,

following the introduction of the ‘glacial theory’ to Britain by Buckland and Agassiz in 1840. Many geologists, however, found the idea that much of the Northern Hemisphere had been covered by immense ice sheets too fantastic, and Lyell, for one, never came to terms with such a neo-catastrophic event, which had no provable cause.

Why bother with such ancient controversies: are they not now dead and buried, and do we not understand the truth about the arguments? Apart from the interest in studying how our forebears, by painstaking data collection and flashes of inspiration and lateral thinking, laid the foundations of our modern world view, echoes of these (only) 150-year-old disputes are still with us. Although the Quaternary ice ages are accepted facts, there is still no universally accepted explanation of their origin; after a long period of fundamentalist uniformitarianism (the ‘piddling school’ of Murchison), invocation of impacts by comets and meteorites to explain global extinctions are now respectable; and punctuated evolution versus gradualism is still an issue. While we may not regret the decline in polemical quarrels over scientific theories, it seems a pity that we do not see more today of the satire and pictorial humour such as that from De la Beche and his contemporaries.

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1. McCartney, P. J. *Henry De la Beche: Observations on an Observer*. Friends of the National Museum of Wales, 1977.