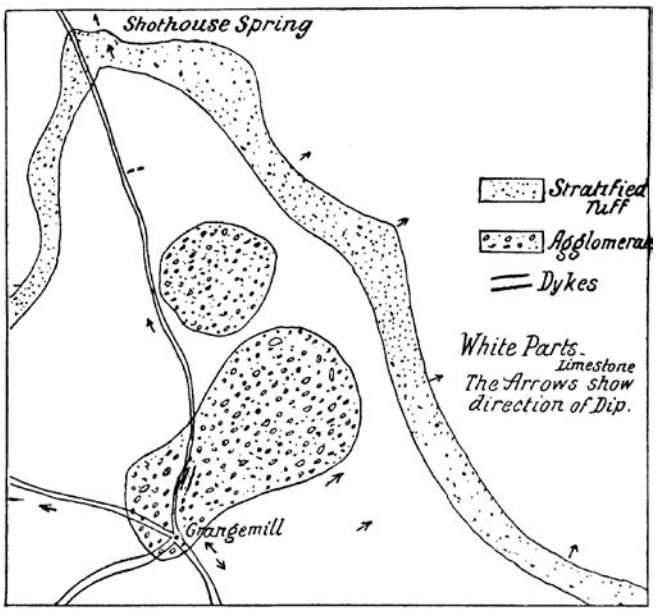
FROM THE ARCHIVES

Ancient volcanoes at Grangemill

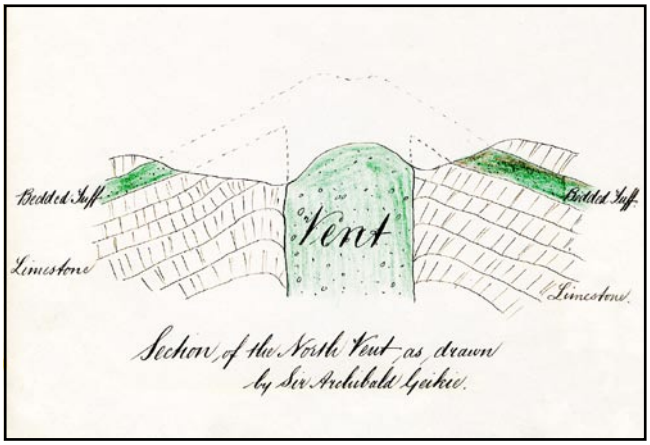
In early 1894, while researching his book The Ancient Volcanoes of Great Britain, Sir Archibald Geikie, then Director-General of the Geological Survey, spent a week examining the Derbyshire 'toadstones' in the company of local geologist, H. H. Arnold-Bemrose. The existence of these basaltic lavas and tuffs in the upper part of the Carboniferous Limestone had long been known, but Geikie was intrigued that no volcanic vents (or necks) had been recognised. He set out to find them, and during the course of his visit discovered 'a group of two, possibly three, vents which rise into two isolated, smooth, grassy dome-shaped hills at Grange Mill, five miles west from Matlock Bath.' He noted that the necks were plugged by a 'dull green agglomerate', while in the limestone scarps that partly encircle Grangemill he recognised the ash deposits (Shothouse Spring Tuff) that had in all probability been erupted from these ancient Carboniferous volcanoes. With Geikie's encouragement, Arnold-Bemrose went on to survey the volcanic succession in greater detail, publishing his now classic account of the Derbyshire toadstones in 1907.

Geikie's Ancient Volcanoes appeared in 1897 and seems have inspired another local amateur geologist, A. T. Metcalfe, to visit and photograph the visible evidence of the 'Ancient volcanoes at Grange Mill.' The resulting small, slim album of ten black and white photographs, dating from 1900, is now in the BGS Library at Keyworth. Metcalfe was born at Retford, Nottinghamshire, in 1855, and spent his entire working life as a solicitor at Southwell, dying there in 1939. Among other things, he published a paper on the gypsum deposits of Nottinghamshire and Derbyshire in



Above: Geikie's plan of the necks, together with the outcrop of the Shothouse Spring Tuff .

Below: Idealised section of the smaller 'north vent', redrawn by Metcalfe from a figure in Geikie's Ancient Volcanoes.



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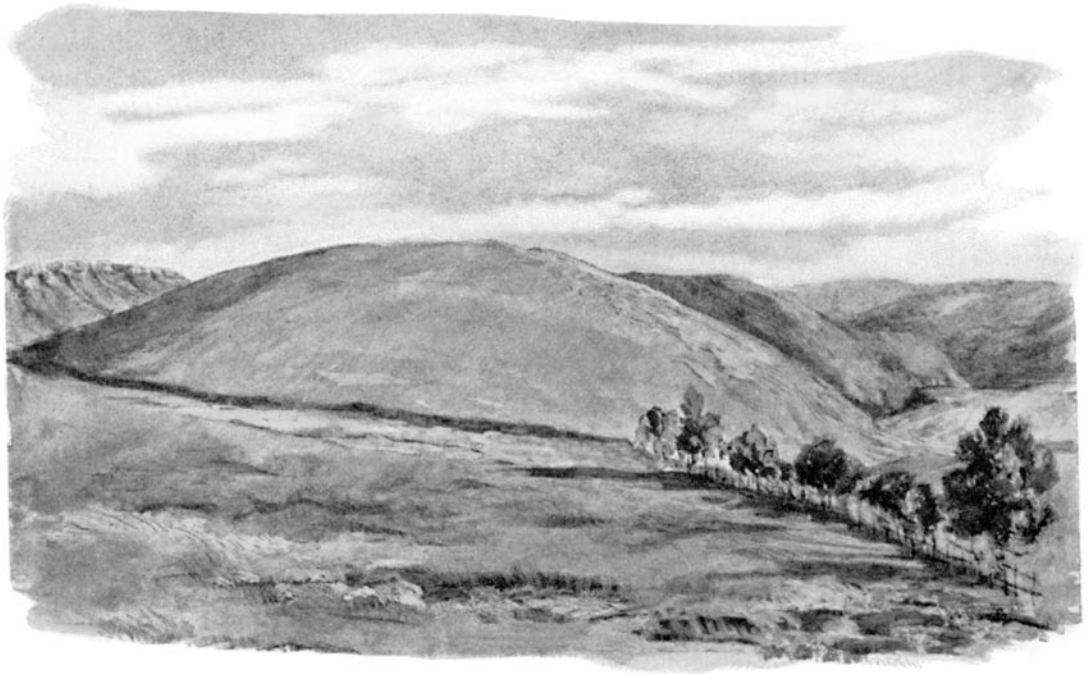
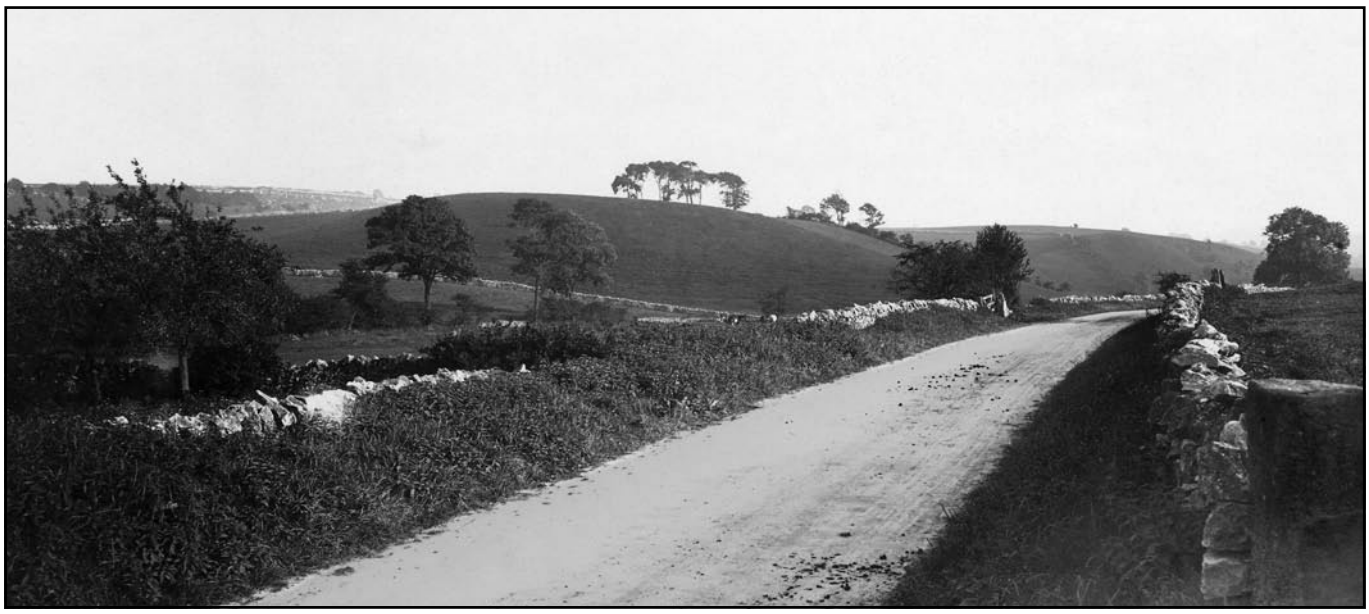


View, from the north, of the two volcanic necks at Grangemill (from Geikie's Ancient Volcanoes*, 1897).*



the Transactions of the Nottingham Naturalists' Society (1894), of which he was for a time the President. He was also eventually a Senior Fellow of the Geological Society. His manuscript geological papers and photographs (including pictures of the Grangemill volcanoes) are held in the Department of Manuscripts and Special Collections at Nottingham University. Digital versions of the images held by BGS (including those depicted here) may be viewed by visiting the newly accessible BGS OpenGeoscience web pages at www.bgs.ac.uk/opengeoscience .

Bibliography

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Above: View of the 'north vent', by Metcalfe in 1900.

Below: View of Grangemill with the 'south vent' behind, photographed by Metcalfe in 1900.

Notes for authors

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