PETER ORLANDO HUTCHINSON (1810-1897) AND THE GEOLOGY OF SIDMOUTH

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The coastal sections in the cliffs to the east and west of Sidmouth have attracted natural philosophers and travellers for hundreds of years. One of these was local resident Peter Orlando Hutchinson (1810-1897). Unmarried and with a modest private income he was able to pursue his own interests, one of which was geology. In 1843 he published a short book on the geology of Sidmouth and south eastern Devon. Although his interpretation relies mainly on more distinguished previous authors, the book is full of careful and accurate observations and illustrated by his own woodcuts. His legacy also includes over 750 individual drawings, many of which were painted for their geological interest, which depict coastal features, faults and quarry sections, long since eroded or destroyed. Fossils which he collected are described in papers published by the Devonshire Association and retained by local museums. His work forms a valuable resource still of use to modern professional geologists.

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INTRODUCTION

The recent publication of a new geological map of the Sidmouth area (British Geological Survey, 2005), based on mapping carried out between 1987 and 2000, and its accompanying memoir (Edwards and Gallois, 2004), provides an ideal opportunity to review early research in this area, which has attracted and inspired numerous workers for over 200 years. The 2005 map was the result of the third mapping programme carried out by the Geological Survey in the district. The Old Series Ordnance Geological Survey Map Sheet 22, which includes Sidmouth, was drawn up by Henry Thomas De la Beche in 1834, before his formal appointment to colour geologically the Ordnance Survey maps in 1835. The rocks were described in an accompanying memoir, the first ever produced by the Geological Survey (De la Beche, 1839). The area was resurveyed on the six inch to one mile scale between 1873 and 1876, with a memoir following some 30 years later (Woodward and Ussher, 1906).

However, many years before the Geological Survey became active the Sidmouth district had attracted natural philosophers, agriculturalists, travellers and topographers, many of whom made observations of geological interest. In the modern era the coastal sections around Sidmouth form a key part of the Dorset and East Devon Coast World Heritage Site and are a continuing focus for research and a valuable educational resource.

One individual who contributed to our knowledge of the Sidmouth district was local resident, Peter Orlando Hutchinson, whose small book "*The Geology of Sidmouth*" was published in 1843. Hutchinson was a local notable and benefactor who enjoyed a modest income and, with no need to work for a living, was able to follow his own interests, one of which was geology. He was an accomplished watercolourist and many of his paintings are of geological subjects. It is the aim of the present paper to review early studies on the geology in the environs of Sidmouth, leading up to the work of Hutchinson, and to show why his watercolours and observations are still of significance to modern geologists.

REVIEW OF WORK PRIOR TO 1840

Early surveys of Devon already provide a description of the main geological formations in the south-eastern corner of the county. Tristram Risdon, writing in about 1630, notes that "….in the entrance [to Devon], on the east side of the shire, the mould [the upper soil of cultivated land] standeth most upon white chalk……a little further it consists of red and blue marle, which is no[t] rocky, but an earthy substance…." (Risdon, 1811, p.4). William Chapple partially revised Risdon's account in 1785 writing that "….in the entrance on the east part of it [Devon], near the sea, the mould standeth upon white chalk. In other parts of this neighbourhood it consists either of a red or blue marle, but chiefly the former. The blue is not rocky or gravely….but chiefly of an earthy substance, and of the clay kind. But the red marle is here in great abundance, and in general of a rocky greasy substance" (Chapple, 1785, p.15).

In 1794/1796 the physician, William George Maton, travelled extensively in southwest England, visiting Sidmouth. His geological observations were consolidated on a *Mineralogical Map of the Western Counties of England*, which was in effect one of the first regional geological maps (Maton, 1797). According to this map, Sidmouth was located close to the junction between sand and gravel to the east and argillaceous gritstone and loam to the west.

The first agricultural survey (Fraser, 1794) added little to the account given by Chapple (1785), although it does include a *Map of the soil of Devonshire* on which the known "lime strata" are marked, including chalk to the east of Sidmouth. Polwhele (1797), in his *History of Devonshire*, takes his description of the "strata of soil" from Fraser and, commenting on the distribution of the various rock types, remarks that "…..I do not find that any naturalist has turned his attention to this research in Devonshire." (Polwhele, 1797, p.49). A small scale map, showing the *Soil and Subsoil of the County of Devon*, was drawn up by Charles Vancouver in 1808, to illustrate his report on the *Agriculture of Devon* written for the *Board of Agriculture* (Vancouver, 1808). The rocks to the