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REVIEWS

PONTNEWYDD CAVE
A Lower Palaeolithic Hominid Site in Wales: The First Report
by H. STEPHEN GREEN

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Pontnewydd is the only British cave to yield both stone tools and human remains of Middle Pleistocene Age. The first excavations (c. 1870) received only imprecise and inconsistent mention from Boyd Dawkins who took part; fortunately however Prof. McKenny Hughes and the Rev. D. R. Thomas described (1874) the stratigraphy and artifact finds, listed the fauna and noted the discovery of a human molar. Even more fortunately and despite wartime use of the cave, the deposits survived without further destruction until Stephen Green began work in 1978. This substantial interim report on the 1978-81 work marks a major advance in palaeolithic cave archaeology in Britain that is immediately apparent from the contents pages, which list, besides the main author, 15 contributors (too many for notice here) who span the whole gamut of applicable scientific approaches.

Pontnewydd Cave consists essentially of a roughly horizontal passage, 30 m long, 3-4 m wide, opening onto the limestone cliffs of the Elwy valley, 50 m above its bottom. Down-cutting by the glacially diverted Elwy probably broke into the cave some 250 ka* or more, ago, allowing the massive debris flows of glacially derived material which still choke its continuation to enter the cave. The earlier debris flows (Lower and Upper Sands and Gravels) testify to a generally bleak landscape without vegetation cover and contain neither artifacts nor bone. Subsequent debris flows were emplaced during an un-named interglacial, thought to correspond to Oxygen Isotope Stage 7, older than the Ipswichian and substantially younger than the Hoxnian interglacial. The earlier flows (Intermediate) suggest open woodland conditions with the cave used as a bear den, the other fauna including man, a leopard, horse, narrow-nosed rhinoceros (*D. Hemitoechus*), roe deer, beaver, voles (*A. cantiana, M. gregalis*) and wood mouse; the later (Lower Breccia) suggest continental cool-temperate conditions with the cave used as a wolf den, the other fauna including spotted hyaena, a leopard, both narrow-nosed and Merck's rhinoceroses, red deer, a bovine, Norway lemming, northern vole (*M. oeconomus*) and a pika. After this a stalagmite floor formed over the deposits and dates of c. 225-160 ka and c. 95-80 ka for stalagmite formations indicate that the cave remained sealed for some 200,000 years until a further debris flow (Upper Breccia) introduced remains of a Late Devensian fauna including reindeer and musk ox, but with no sign of man. Each debris flow partially reworked previous ones, making interpretation difficult, but the authors believe that the human remains and artifacts, which

* ka = thousands of years before the present.

first appear in the Intermediate beds, derive from a single occupation in or close to the then cave mouth, at some time before 225 ka. Stringer discerns possible Neanderthal affinities in the human remains, which include molars and a mandibular fragment and represent at least two children. The artifact series, made by direct percussion from locally available drift pebbles of silicic rocks (90%), the debitage from which may be unrecognisable, and from imported flint and chert (10%), includes a series of handaxes, scrapers and naturally backed knives of Acheulian facies as well as Levallois cores and flake tools, a flake cleaver and chopping tools. The tool kit implies hunting, butchering, and hide preparations as well as knapping, and can be described as Upper Acheulian, by comparison with finds from northern France. Comparable British industries are hard to find, although that from Brundon, perhaps somewhat later, may have been similar.

Among the contributions, Collcut's use of coded sediment characteristics to establish linkages between discrete stratigraphic sequences is worth note, as is his discussion of debris flows in caves, which casts light on many problems, including that for example of the 'rolled' Early Acheulian handaxes from Kent's Cavern. Newcomer's flaking experiments on Pontnewydd raw materials are most instructive, while the chronological control would have been impossible without the application of Uranium dating methods to stalagmitic calcite and of Thermoluminescence dating to burnt flint.

The present report is beautifully illustrated (note the artifact drawings by Pat O'Leary) and exemplary in its presentation. A final report will surely include a detailed description of the cave and its geomorphic history, while the inclusion of major contributors as joint authors could reduce the repetitions resulting from the format used here. It would be helpful if section drawings could be reproduced at exact scales, with the layer numbers used in sediment descriptions marked in, while in a work of this complexity, a subject index, as well as one of persons and places, is surely a necessity. These minor cavils apart, we must be most grateful to the National Museum of Wales for enabling this work to be undertaken, with such outstanding results, and to Stephen Green and his collaborators for making available those results so speedily and elegantly.

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