

## Geography Report

Les Knight

North of the Thames, 'foreign' boulders known as erratics are occasionally found. We now know that these were transported hundreds of miles by ice during the various glacial events over the last 2 million years. Historically, they were attributed to the work of giants or the Devil, but by the C18th the favoured explanation involved the Biblical flood. In the 1840s evidence from the Alps suggested that they had been transported by glaciers, either as small-scale valley glaciers, or by more extensive ice sheets. Between the 1840s and the end of the Century the transport mechanism was a hotly debated controversy, but convincing evidence eventually showed that Britain had been covered by a succession of ice sheets with thicknesses in excess of 1km.

While the glacial transport of boulders is now accepted, the full significance of this process is often overlooked by the archaeologists. Here the presence of 'foreign' rocks in an archaeological context is often attributed to long-distance trade. This may be so, but Les provided evidence from the known distribution of flints and materials used to make some types of hand axes that in many cases these materials were available locally.

The most controversial example involves the building materials used in Stonehenge which lies south of the known extent of glaciation. The henge was built in stages using different rock types. The latest phase was the construction of an outer circle of large 'sarsen' stones. Geochemical evidence suggests that these were sourced about 25km to the north. While the transport of these would have required considerable effort, experiments have shown that it is possible. The older, more central 'bluestone' circle is made from a number of rock types, some of which are now known to have been sourced on the north side of the Preseli Mountains, 200km away. A heated argument is ongoing between archaeologists who favour human quarrying and transport and geomorphologists who favour glacial transport, either the whole, or part, of the way to Stonehenge. Evidence for both explanations was put forward.

Next meeting: Thursday 15 May. Richard Witham: " John Wood's 1827 map of Barnard Castle". The Witham at 2.00 pm.

The Cat Stone – A huge boulder of Goat Fell granite, Isle of Arran



Distribution of boulders of Shap Fell granite. Note at various times they have been taken south, east and north from their outcrop north of Tebay. The red line is the extent of the last glaciation, boulders beyond were moved in an earlier event.

