NEGS visit to Reeth 4.8.12

4th. AugustGlacial geomorphology and anthropogenic alteration in Swaledale: moraines mines and mounds. : Leader: Jon Barber, Univ. of Leeds.

A hardy band of enthusiasts followed **Dr Jon Barber** in a study of the evidence for glaciation and anthropogenic landscape evolution in Swaledale.

A brief walk out of town presented a landscape that has been modelled by glacial erosion and deposition with lead mining and agriculture shaping of the slope north of Reeth. We noted repeated evidence of Romano-British habitation on the walk, probably linked to lead working and sheep farming. There was no doubt that the landscape had evolved with a complex of factors over thousands of years, fortunately the lead vein was easily recognised! Chert, associated with the limestones of the area, was used for tool making.

Our leader introduced the economic changes the area has experienced with early success replaced by isolation and decline; this discussion was linked to the landscape we observed. Remains of bell pits reflected lead and coal working; today the area benefits from heavy tourism and some dormitory settlement development with *volunteering* reflecting the age and economic profile of the local inhabitants. A Raspberry Pie computer was circulated as an example of technological changes that are helping the area to widen its economic base.

John recapped the terminology widely used for glacial processes and products clarifying especially the term readvance for glacial moraine. Raistrick did the important pioneer work in the area in the 1920's; he noted the similarity of readvance moraine ridges across the vallies of the Swale, Ure, Nidd and Wharfe. They suggested a periodicity in the processes – a lively discussion considered Milankovitch and Heinrich event processes as possible explanation together with other ideas.

Proceeding along the slopes of Swaledale the extensive stone working waste was examined and discussed together with solifluction head material exposed on the path edges. Moving towards the valley bottom a meltwater complex was discussed with consideration of the relationship to contemporary ice masses. Agricultural shaping of the slopes by terracing added to the mix of landforms. The arcuate slope features, although fragmentary, were carefully studied and linked to glacial and fluvioglacial processes.

Following a most enjoyable lunch break on the banks to the river the group moved down stream noting glacial mounds and rapid changes in the valley floor morphology. It became apparent that a massive readvance moraine mound, now cut through by the river, had crossed the valley in the vicinity of Grinton. The riverbed load was coarse, the channel, in places, was very broad and meandering. John noted a similar mound is seen at Ellerton Abbey.

Discussion of what the evidence implies again supported an enthusiastic discussion of the causal periodicity with a proposal that the cyclic processes could be linked to a 600-year periodicity.

Returning to Reeth the party noted the recent breaching of flood defences.

A well deserved vote of thanks to Jon was followed by an equally enthusiastic thank you to our long serving field secretary, John Waring, who is relinquishing his post this year after fulfilling the role for many years.

Gordon Liddle