

with the initiation of the great Newtondale overflow—and was still the ice margin when the intake of Newtondale had been lowered at least 50 feet, and the Moss Slack was cut across the end of Two Howes Rigg. In north-east Yorkshire therefore, the evidence suggests an abundance of (summer) melt water at the time of “maximum encroachment.”

Professor Hollingworth further remarks that it is “not unreasonable” to consider “a snow-line in the Cleveland area at the time of the Newer Drift glaciation of, say, 1000 to 1200 ft. O.D.”

Regarding this assumption three points may be made:

- (i) Evidence of ground-ice wedges or of permanently frozen ground is not evidence of a low snow line, even during the period of their formation, as descriptions of central Alaskan conditions have long made clear. It is perfectly consistent both with a high snow line (with low precipitation) and with abundant summer movement of thaw water.
- (ii) In any case since Lakes Eskdale and Pickering and the associated channels are below the assumed snow line the assumption does not carry the corollary that the channels would not have functioned each summer. The snow line is surely by definition the level below which summer ablation exceeds winter precipitation.
- (iii) The assumption of a low snow line in the Cleveland Hills does not permit us to assume that the margin of the extraneous ice would mount higher against the hills since the position of that margin depends principally on precipitation conditions in areas of ice dispersal. It thus does not aid our understanding of the erratics mentioned by G. W. Dimbleby.

Finally there is mention of the possibility that the “craggy outcrops” of Charnwood are tors—*i.e.* residuals left underground by deep chemical weathering in a pre-glacial (or inter-glacial) cycle and spared by the ice, since they were exhumed as the result of a falling base-level. The hypothesis deserves consideration but as I have no recent acquaintance with Charnwood I am not able to answer Professor Hollingworth's question. But it would give me much pleasure to join him in seeking an answer on the ground.

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SECOND GLACIOLOGICAL CONFERENCE, NEW YORK, 1951

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The following is a list of the prepared statements and comments:

P. D. BAIRD: “The Baffin Island Expedition, 1950.” DR. RICHARD P. GOLDTHWAIT: “Formation of moraines of Barnes Ice Cap, Baffin Island.” ROBERT F. BLACK: “Comments on glaciological research as related to studies of permafrost.” DR. WALTER G. BUCHER: “Deformation of bay and shelf ice in the Bay of Whales, Antarctica.” DR. ROBERT L. NICHOLS: “A discussion of Arctic ‘Ice Islands.’” COLONEL BERNT BALCHEN: “Ice islands.” DR. RICHARD FOSTER FLINT: “Glacial history and radiocarbon.” P. D. BAIRD: “Recent developments in Canada.” WALTER A. WOOD: “Project Snow Cornice.” MAYNARD M. MILLER: “The Juneau Ice Field Research Project.” DR. JAMES L. DYSON: “Glaciers of the American Rocky Mountains.” WILLIAM O. FIELD, JR.: “Program of the Research Committee on Glaciers.” GEORGE O. GUESMER: “The Snow, Ice and Permafrost Establishment.” DR. PAUL A. SIPPLE: “The Arctic from the military viewpoint.” DR. LOUIS O. QUAM: “The interest of the Office of Naval Research in basic research.”

The previous Conference was reported in the *Journal of Glaciology*, Vol. 1, No. 6, 1949, pages 336–37.