
Tauchers

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Highlights

Tauchers displays an excellent example of a double end moraine formed by a corrie glacier of the Loch Lomond Readvance in the Southern Uplands. The site demonstrates clearly the importance of topographic factors in influencing glacier location and development.

Introduction

The Loch Doon granitic intrusion forms a large basin in the western Southern Uplands, the surrounding hills being composed of contact-metamorphosed greywackes and shales. In the centre of the basin is a prominent north–south ridge which culminates in the hill of Mullwharchar (692 m OD). The corrie-like embayment on the north-east flank of this hill is known as the Tauchers [NX 462 876]. The Southern Uplands was a major centre of ice dispersal during the Late Devensian ice-sheet glaciation (Sissons, 1967a; Sutherland, 1984a), but during the Loch Lomond Readvance only minor valley and corrie glaciers developed (Sissons, 1979d) in contrast to the much more extensive glaciation of the western Highlands at that time. In the western Southern Uplands, Cornish (1979, 1981) mapped 11 glaciers considered to be part of the Loch Lomond Readvance. Of these, the geomorphological evidence defining the former glaciers is most clear and most complete for the Tauchers glacier and has been described by Cornish (1979, 1981).

Description

Cornish (1979, 1981) has described the evidence that delimits a former glacier that flowed eastwards out of the Tauchers embayment. The terminus of the glacier is defined by a double end moraine complex (Figure 18.2). The outer moraine is up to 200 m wide and its outer edge has been eroded by the Gala Lane, showing it to be composed of an olive-brown, bouldery till with a sandy matrix. At its southern end the moraine has a maximum height of 10–12 m and comprises a series of ridges and depressions with an amplitude of 2–3 m. The inner end moraine is 3–5 m high and composed of olive-brown sandy till. It is somewhat sinuous in detail but broadly forms an arc parallel with the outer moraine.

On its north side, twin lateral moraines extend upslope from the ice-proximal and ice-distal slopes of the outer end moraine, terminating at 290 m and 335 m OD respectively. These lateral moraines are composed of granite boulders up to 5 m in diameter. The northern margin of the inner moraine is also continued upslope to an altitude of 335 m OD by a lateral moraine composed of boulders.

The ground 'outside' the moraines of the former glacier is littered with large granite boulders, yet 'inside' the moraines such boulders are almost absent, those present apparently having rolled down from the slopes above. The implication is that the granite boulders were produced by periglacial activity before or during the period of local glaciation and that the glacier incorporated those within the area of its development into its lateral and end moraines.

Interpretation

It has long been recognized that following ice-sheet decay local glaciers developed in the western Southern Uplands (Geikie, 1863a; Jolly, 1868). Charlesworth (1926a) noted the Tauchers moraine as well as others in the area, placing them in his 'Corrie Moraine' stage of ice-sheet retreat. No direct dating of the glacial event responsible for the formation of the moraines is available, although they have been most recently accepted as part of the Loch Lomond Readvance (Sissons, 1979d; Cornish, 1981; Sutherland, 1984a). Pollen analyses of two cores from within the limits of the former glaciers, at Tauchers (Moar, 1969b) and Loch Dungeon (Birks, 1972a), revealed only Holocene sediments. This is in conformity with their presumed Loch Lomond Stadial age, although it is not conclusive evidence (Cornish, 1981).

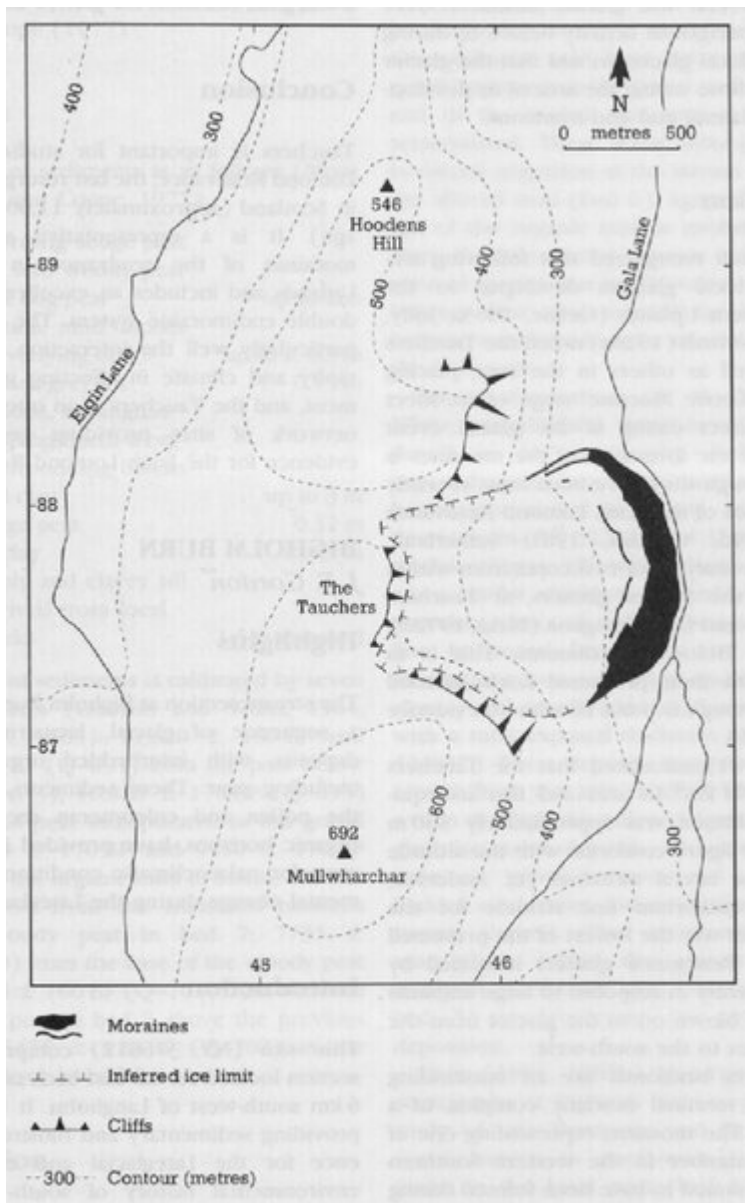
Cornish (1981) calculated that the Tauchers glacier was 0.91 km² in area and that its equilibrium line altitude was approximately 330 m OD. This latter figure conforms with the altitude attained by the lateral moraines (cf. Andersen, 1968). The equilibrium line altitude for the Tauchers glacier was the lowest of the presumed Loch Lomond Readvance glaciers identified by Cornish, apparently in response to large amounts of snow being blown on to the glacier from the extensive slopes to the south-west.

The Tauchers landforms are an outstanding example of a terminal moraine complex of a corrie glacier. The moraine, representing one of only a small number in the western Southern Uplands, is presumed to have been formed during the Loch Lomond Readvance, and is hence an integral part of the glacial history of that region. The evidence for only minor glaciers existing in the region during the Loch Lomond Stadial (see also Loch Skene) is an important part of the national pattern of glaciation at that time, which is fundamental to the understanding of the Loch Lomond Stadial environment and climate (cf. Sissons, 1979d). The Tauchers site illustrates particularly well the relationships between topography (snow-blowing area) and glacier growth in a marginal situation for glacier development.

Conclusion

Tauchers is important for studies of the Loch Lomond Readvance, the last resurgence of glaciers in Scotland (approximately 11,000–10,000 years ago). It is a representative site for corrie moraines of the readvance in the Southern Uplands and includes an excellent example of a double end-moraine system. The site also shows particularly well the interaction of local topography and climate in affecting glacier development, and the Tauchers is an integral part of the network of sites providing geomorphological evidence for the Loch Lomond Readvance.

[References](#)



(Figure 18.2) Loch Lomond Readvance moraines and ice limits at the Tauchers (from Cornish, 1981).