

concentric ridges of gravel and morainic material indicate their lower limits. Within the valleys the hill-slopes are terraced with lateral moraines, and the floors are strewn with mounds and ridges, often of horseshoe shape, marking stages in the farther retreat of the ice. That old wind-gaps between adjoining ridges were used as overflow channels is shown by the occurrence of gravels at these levels where only dry hollows now exist, and by the occurrence of rock notches across comparatively steep slopes. These phenomena, which are of common occurrence in certain districts of the Highlands, point to temporary drainage deflected by the ice, which continued long enough to enable the streams to entrench themselves. Sometimes lakes of considerable extent were impounded by ice-barriers, as in the case of the Parallel Roads of Glen Roy, where each terrace marks the temporary margin of a lake the height of which is determined by the level of the lowest col free from ice. Another characteristic feature of this period of retreat of the glaciers is the deposition of a series of fluvio-glacial gravels due to the escape of melt-water, which led to the reassortment of the morainic material, sometimes round masses of ice isolated from the retreating glaciers.

The last phase of the later glaciation was characterised by the occurrence of small glaciers in the high corries, which sometimes gave rise to small rock-basins, terminal moraines, and groups of mounds. In the North-West Highlands these local glaciers survived to a late period in the geological history of the country, as they rest on the deposits of the 50-ft. beach at the head of Loch Torridon.

#### THE DISTRIBUTION AND PROBABLE ORIGIN OF SCOTTISH LAKES

The numerous lakes in Scotland, ranging in size from small tarns on the high plateaux and pools on the drift plains to large sheets of water in the valleys, may be arranged in the following groups :—

- i. Lochans lying in hollows in, or surrounded by, peat.
- ii. Lakes due to the action of the wind : (1) by the interruption of drainage in the case of sand-dunes, as, for instance, Loch Strathbeg near Fraserburgh, Loch Wester in Caithness, and numerous lakes on the west side of South Uist ; (2) by the removal of disintegrated rock, as, for example, on high granite plateaux.
- iii. Lakes due to river action : (1) those formed on flat cols by cones of debris, of which Loch na Bi, near Tyndrum, is an instance ; (2) crescent-shaped or "oxbow" lakes resulting from the isolation of stream-meanders on flood-plains.
- iv. Lakes due to wave action on the seashore, where sheets of water are enclosed by gravel bars (Loch Sine, on the west side of Loch Eireboll).
- v. Lakes caused by chemical action on limestone plateaux (Loch Borrailidh and Loch Croisaphull near Durness, Loch Maol a' Choire or the Gillaroo Loch near Inchnadamff).