

the internal banded structure of a glacier, in the downward curvature of the transverse fissures (crevasses), and in the arrangement of the lines of rubbish thrown down at the termination, which often present a horseshoe shape, corresponding to that of the end of the ice by which they were discharged.²²⁵

Under the term *Ice-sheet* is included the deep mantle of snow and ice which, in the Polar regions, covers the land and creeps out to sea. In high Arctic, and still more in Antarctic latitudes, land-ice, formed from the drainage of a great snow-field, attains its greatest dimensions. The land in these regions is buried under an ice-cap which ranges up to a thickness (in the South Polar circle) of 10,000 feet (2 miles) or even more. Greenland lies under such a pall of snow that all its inequalities, save only the steep mountain-crests and peaks near the coast, are concealed. The snow, creeping down the slopes, and mounting over the minor hills, passes beneath by pressure into compact ice. From the main valleys great glaciers, like vast tongues of ice, 2000 or 3000 feet thick, and sometimes 50 miles or more in breadth, push out to sea, where they break off in huge fragments that float away as icebergs.²²⁶ As far back

²²⁵ The cause of glacier motion has been a much-vexed question in physics. See, besides the works cited in the foregoing note, J. Thomson, *Proc. Roy. Soc.* 1856-57; Mosely, *op. cit.* 1869; Croll, "Climate and Time," 1875; Hopkins, *Phil. Mag.* 1845; *Phil. Trans.* 1862; Helmholtz, *Heidelberg Verhandl. Nat. Med.* 1865, p. 194; *Phil. Mag.* 1866, p. 22; Pfaff, *Akad. Bayer.* 1876. A valuable history of the controversy regarding glacier motion has been prepared by Sir H. H. Howorth, *Mem. Proc. Manchester Lit. Phil. Soc.* iv. 1891. The conclusion to which the most recent researches point coincides essentially with that enunciated upward of 40 years ago by J. D. Forbes, that the motion of a glacier "is that of a slightly viscous mass, partly sliding upon its bed, partly shearing upon itself under the influence of gravity." Trotter, *Proc. Roy. Soc.* xxxviii. p. 107. The banded structure of glacier-ice may be compared with shear-structure (see p. 538, and Fig. 256).

²²⁶ The Greenland snow-fields and glaciers are well described in the "*Meddelelser om Grönland*"—the detailed report of a Danish commission appointed to investigate that country. The first volume was published in 1879, and ten