

*History of Norway*, 1753. In the beginning of the nineteenth century, Werner's scholar, Jens Esmarch, conducted mineralogical investigations in Norway. J. L. Hausmann travelled through Scandinavia in 1806 and 1807. His chief aim was to investigate the mining districts of Sweden and Southern Norway, and his account of the journey, which was published several years later, contains a large number of valuable observations on the minerals and ores of these districts. It also embraces detailed descriptions of the Cambrian rocks near Andrarum, the famous section at Kinnekulle, and other features of geological interest. Hausmann was the first scientific observer who noted the position of the granite *above* the "transitional" limestone formation in the neighbourhood of Christiania, and the first who described the zircon syenite of the Langensund (cf. p. 86).

But Leopold von Buch's *Journey to Norway and Lapland* (Berlin, 1810) was the work which first gave European geologists an insight into the general geological structure of Norway. The novelty of many of the districts traversed, and the author's genius for the narration of scientific observations, combined to secure immediate popularity for this work.

On the journey to Scandinavia, Leopold von Buch passed through Mecklenburg, Hamburg, Holstein, and Copenhagen. He gave full notes about the erratic blocks, and the white chalk of Möen and Stevensklint. The journey to Christiania was carried out by land, the route leading across the Swedish seaboard and the coast of the Christiania Fjord. Von Buch confirmed Hausmann's observation that not granite but gneiss was the predominating rock in this district. He was also greatly struck by the relations between the transitional rock-formations and the granite-grained rocks. He described the various kinds of rock, and showed that the porphyry penetrated the "transitional" formations as dykes and veins, and that between Drammen and Christiania a large mass of granite rested upon fossiliferous "transitional limestone." This occurrence was at once admitted by Buch to be incontestable evidence that granite was not, as Werner had taught, in all cases part of the oldest rock-formation, although he still clung to the idea of the aqueous origin of the porphyritic and granitic series. In 1808, Leopold von Buch travelled through the northern territories of Norway and Lapland. He took geological observations at the Dovre Feld Mountain in Drontheim, at Lake Mjösen,