From the spinal mountain range a series of large rivers run in a south-easterly direction to the Gulf of Bothnia. In their upper parts they drain great lakes which have, resulted from the formation of morainic dams, and in some cases perhaps from the incidence of erratic upheaval of the land. All lie at elevations between 900 and 1300 ft. All are narrow in comparison with their length, which is not infrequently magnified to view when two lakes are connected by a very short stretch pf running water with a navigable fall of a few feet, such as those between Hornafvan, Uddjaur and Storafvan on the Skellefte river. The following are the principal rivers from north to south : The Torne, which with its tributary the Muonio, forms the boundary with Finland, has a length of 227 m., and drains lake Torne (Torne- träsk), the area of which is 126 sq. m. The Kalix is 208 m. in length. The Lule is formed of two branches, Stora and Lilia (Great and Little) Lule; the length of the main stream is 193 m. Thc Stora Lule branch drains the Langas and Stora Lule lakes (Langasjaur, Luleträsk), which have a length together exceeding 50 m., a fall between them of some 16 ft. and a total area of only 87 sq. m., as they are very narrow. Below Stora Lule lake the river forms the Harsprång (hare’s leap; Njuommelsaska of the Lapps), thc largest and one of the finest cataracts in Europe. The sheer fall is about 100 ft., and there is a further fall of 150 ft. in a scries of tremendous rapids extending for 1) m. Farther up, at the head of Langasjaur, is the Stora Sjöfall (great lake fall; Lapp, Ätna Muorki Kartje),a fall of 130 ft. only less grand than the Harsprång. Both are situated in an almost uninhabited country and are rarely visited. Following the Pite river (191 m.), the Skellefte (205 m.) drains Hornafvan and Storafvan, with a fall of 20 ft., and an area together of 275 sq. m. Hornafvan is a straight and sombre trough, flanked by high hills of unbroken slope, but Storafvan and the inter­vening Uddjaur are broad, throwing off deep irregular inlets, and picturesquely studded with numerous islets. The Ume (237 m.) receives a tributary, the Vindel, of almost equal length, on the north bank some 20 m. from its mouth, and among several lakes drains Stor Uman (64 sq. m.). The further principal rivers of this region are the Ångerman (242 m.), Indal (196 m.), draining the large lakes Kallsjö and Storsjö, Ljusnan (230m.), Dal and Klar. Of these the two last rise in the southernmost part of the mountain region described, but do not as a whole belong to the region under considera­tion. The Angerman receives the waters of a wider system of streams and lakes than the rivers north of it, and has thus a drain­age area of 12,591 sq. m., which is exceeded only by that of the Torne (16,690 sq. m.), the average of the remaining rivers named being about 7700 sq. m.

Beyond the Harsprång and the Stora Sjöfall the northern rivers do not generally form great falls, though many of the rapids are grand. The Indal, by changing its course in 1796 near Bispgården on the northern railway, has left bare the remarkable bed of a fall called Döda (dead) Fall, in which many "giant’s caldrons ” are exposed. In the uplands above the chain of lakes called Ströms- vattudal, which are within the drainage area on the Angerman, the Hailing stream forms the magnificent Hällingså Fall. In the southern mountain valleys of the region there are several beautiful falls, such as the Tännfors, not far from Åreskutan, the Storbo, Handöl and Rista.

Eastward from the main mountain range the highland region is divided into two belts: a middle belt of morainic deposits and marshes, and a coastal belt. The middle belt is gently undulating; viewed from rare eminences the landscape over the boundless forests resembles a dark green sea, through which the great rivers flow straight between steep, flat-topped banks, with long quiet reaches broken by occasional rapids. The few lakes they form in this belt are rather mere widenings in their courses; but the tribu­tary streams drain numerous small lakes and peat-mosses. In the extreme north this belt is almost flat, a few low hills standing isolated and conspicuous; and the rivers have serpentine courses, while steep banks are absent. The middle belt merges into the coastal belt, covered by geologically recent marine deposits, reaching an extreme height of 700 to 800 ft., and extending inland some 60 to 80 m. in the north and 40 m. in the south. Small fertile plains are characteristic, and the rivers have cut deep into the soft deposits of sand and clay, leaving lofty and picturesque bluffs *(nipor).*

The oyographical division of the central lowlands bears com­parison in formation with the coastal belt of marine deposits to the north. Here are flat fertile plains of clay, well wooded, with innumerable lakes, including the four great lakes, Vener, Vetter, Malar and Hjelmar. These, except the last, far exceed in area any of the northern lakes, and even Hjelmar (185 sq. m.) is only exceeded by Hornafvan-Storafvan. The areas of the other three lakes are respectively 2149, 733 and 449 sq. m. Vencr, Vetter and Hjelmar are broad and open; Malar is very irregular in form, and of great length. Mälar, Vener and Hjel- mar contain many islands; in Vetter there are comparatively few. None of the lakes is of very great depth, the deepest sounding occurring in Vetter, 390 ft. In Hjelmar, which measures 38 m. from east to west, and is 12 m. in extreme width, the greatest depth is only 59 ft., but as its flat shores were formerly subject to inundation its level was sunk 6 ft. by deepening the navig­able channel through it and clearing out various waterways (the Eskilstuna river, Hjelmar canal, &c.) in 1878-1887. The scenery of these lakes, though never grand, is always quietly beautiful, especi­ally in the case of Mälar, the wooded shores and islands of which form a notable feature in the pleasant environs of the city of Stock­holm. The elevation of the central lowlands seldom exceeds 300 ft., but a few isolated heights of Silurian rock appear, such as Kinnekulle, rising 988 ft. above sea-level on the south-eastern shore of Vener, Billingen (978 ft.) between that lake and Vetter, and Omberg (863 ft.) on the eastern shore of Vetter. Noteworthy local features in the landscape of the central lowlands are the eskers or gravel-ridges *(åsar),* traversing the land in a direction from N.N.W. to S.S.E., from 100 to 200 ft. in height above the surround­ing surface. Typical instances occur in the cities of Stockholm (Brunkebergsåsen) and Upsala (Upsala-åsen).

South of the central lowlands the so-called Småland highlands extend over the old province of Småland in the south-east, and lie roughly south of Lake Vetter and of Gothenburg, where they reach the south-west coast. The general elevation of this region exceeds 300 ft., and in the eastern part 600 ft.; the principal heights are Tomtabacken (1237 ft.) and Ekbacken (1175 ft.), about 25 m. respectively south-east and west of the town of Jon koping at tne southern extremity of Lake Vetter. Gentle forest-clad undulations, many small lakes and peat-mosses, arc characteristic of the region; which, in fact, closely resembles thc middle belt of the northern highland region. The Småland highlands abut southward upon the plains of Skåne, the last of the main orographical divisions, which coincides roughly with the old province of Skane (Scania). Level plains, with rich open meadows and cultivated lands, the monotony of which is in some parts relieved by beech woods, arc separated by slight ridges with a general direction from N.W. to S.E., such as Hallandsåsen in the north-west, with an extreme elevation of 741 ft.

The hydrographical survey may now be completed. The Dal river, which enters the Gulf of Bothnia near Gefle, is formed of the union of eastern and western branches (Oster Dal, Vester Dal) not far from the town of Falun. The eastern branch drains various small lakes on the Norwegian frontier, and in its lower course passes through the beautiful Lake Siljan. The length of the whole river including the eastern as the main branch is 283 m. the Klar river (228 m.) rises as the Faemund river in Faemundsjö, a large lake in Norway close west of the sources of the Dal. The Klar flows south into Lake Vener, which is drained to the Cattegat by the short Göta river, on which, not far below the lake, are the celebrated falls of Trollhättan. Lake Vetter drains eastward by the Motala to the Baltic, Lake Malar drains in the same direction by a short channel at Stockholm, the normal fall of which is so slight that the stream is sometimes reversed. The Småland highlands arc drained to the Baltic and Cattegat by numerous rivers of less importance. Excepting Finland no country is so full of lakes as Sweden. About 14,000 sq. m., nearly one-twelfth of the total area, are under water.

Thc coast of Sweden is not indented with so many or so deep fjords as that of Norway, nor do the shores of the Gulf of Bothnia, the Baltic and the Cattegat share in the peculiar grandeur of the North Sea coast. All, however, have a common feature in the fringe of islands which, throughout nearly thc entire length, shelters the coast of the mainland from the open sea. This “skerry-fence” (in Swedish, *skärgård)* is only interrupted for any considerable distance (in the case of Sweden) round the southern shore off the flat coast of Skåne, between the towns of Varberg on the west and Ahus on the east. Between it and the mainland lies a connected series of navigable sounds of the greatest advantage to coastwise traffic, and also of no little importance as a natural defence. The skärgård of the Cattegat, north of Varberg, is bald and rugged. The two largest islands are Orust and Tjōrn, north of Gothenburg. Off the south-east coast the place of the skärgård is in a measure taken by the long narrow island of Öland, but north of this the skärgård begins to widen, and the most con­siderable fjords are found, such as Bråvik, which penetrates the land for 35 m. nearly up to the town of Norrköping. The island belt is widest (some 45 m.) off the city of Stockholm, the approach to which from the sea is famous for its beauty. Farther north, a narrow sound (Alands Haf) intervening on the Swedish side, the vast Åland archipelago, belonging to Russia, extends across to the Finnish coast. The skärgård of the Gulf of Bothnia is less fully developed than that of either the Baltic or the Cattegat. The islands of the skärgård as a whole are rugged and picturesque, though never lofty like many of those off the Norwegian coast. In the Baltic many are well wooded, but the majority arc bare or heath-clad, as are those of the Gulf of Bothnia. Of the large islands in the Baltic and Cattegat, besides Öland, only Gotland is Swedish.

*Geology.—*The fundamental rocks of Sweden belong to the Azoic or pre-Cambrian formation, and consist of crystalline rocks. Three divisions are distinguished by some authors—the grey gneiss, the red iron gneiss and the granulite.

The grey gneiss predominates in the northern and eastern parts of the country, from Vesternorrland down to the province of Kalmar. The rock has a prevalent grey colour, and contains as characteristic minerals garnet and in some parts graphite.

The red iron gneiss prevails in western Sweden in the provinces