at the south of lake Vetter—42∙4°∙, and Vestervik (43 ft.) on the Baltic—43·2°.

But the local variations thus indicated are brought out more fully by a consideration of seasonal, and especially winter, temperatures. In Sweden July is generally the hottest month, the average tempera­ture ranging from about 51° to 62°. In January, however, it ranges from 4° to 32° (February is generally a little colder). Moreover, there are two well-marked centres of very low winter temperature in the inland parts. The one is in the mountainous region of the south of Jemtland and the north of Dalarne, extending into Norway and thus lying in the middle of the peninsula about 62° N. Here the average temperature in January is 8∙5°, whereas at Östersund it is over 15°. The other and more strongly marked centre is in the far north, extending into Norway and Finland, where the average is 3∙8°.. The effect of the spinal mountain range in modifying oceanic conditions is thus illustrated. the same effect is well shown by the linguiform isotherms. In January, for example, the isotherm of 14°, after skirting the north coast of the Scandinavian peninsula, turns southward along the Keel, crossing the upper part of the district of the great northern lakes. It continues in this direction as far as the northern end of Lake Mjösen in Norway (61° N.), then turns sharply north-north-eastward, runs west of Lake Siljan and bends north-east to strike the Bothnian coast near Skellefteå. In July, on the other hand, the isotherms show an almost constant temperature all over the country, and the linguiform curves arc wanting.

The relative length of the seasons shows contrasts similar to those of temperature. In the north spring begins in May, summer in the middle of June and autumn in the middle of August. In the south and south-west spring begins in March, summer in the middle of May and autumn in October. At Karesuando the last frost of spring occurs on an average on the 15th of June, and the first of autumn on the 27th of August, though night frosts may occur earlier; while at Stockholm 41/2 months are free of frost. Ice forms about October in the north, in November or December, in the midlands and south, and breaks up in May or June and in April respectively. Ice covers the lakes for 100 to 115 days annually in the south, 150 in the midlands and 200 to 220 in the north. A local increase of the ice period naturally takes place in the upper parts of the Småland highlands ; and in the case of the great lakes of Norrland, the western have a rather shorter ice period than the eastern. As to the seas, the formation of ice on the west and south coasts is rare, but in the central and northern parts of the Baltic drift-ice and a fringe of solid ice along the coast arrests navigation from the end of December to the beginning of April. Navigation in the southern part of the Gulf of Bothnia is impeded from the end of November to the beginning of May, and in the north the gulf is covered with ice from November to the last half of May. Snow lies 47 days on an average on the plains of Skåne, while in the north it lies from 140 to 190 days.

The northern summers find compensation for brevity in duration of sunshine and light. At Karesuando in 68° 26' N. and 1093 ft. above sea-level the sun is seen continuously above the horizon from the 26th of May to the 18th of July; at Haρaranda for 23 hours, at Stockholm for 181/2 hours and at Lu nd for 171/2 hours at the summer solstice. Atmospheric refraction causes the sun to be visible for periods varying from south to north for a quarter to half an hour after it has actually sunk below the horizon. With the long twilight, perhaps the most exquisite period of a season which provides a succession of beautiful atmospheric effects, daylight lasts without interruption from the 16th to the 27th of June as far south as Hernö- sand (62°38' N.).

The average annual rainfall for Sweden is 19·72 in., locally in­creasing on the whole from north to south, and reaching a maximum towards the south-west, precipitation on this coast greatly exceeding that on the south-east. Thus the average in the north of Norrland is 16∙53 in., in the south of Norrland 22∙6 in. At Borås, midway between the south end of Lake Vetter and the Cattegat, the average is 35·o8 in., and 45∙82 in. were registered in 1898. At Kalmar, however, on the Baltic opposite Öland, the average is 14∙6 in. This is an extreme instance for the locality, but the minimum for all Sweden is. found at Karesuando, with 12∙32 in. The period of maximum is generally the latter half of summer, and the minimum in February and March; but the maximum occurs in October at coast stations in Skåne and in the island of Gotland. The propor­tion of total precipitation which falls as snow ranges from 36% in the north to 9 % in the south.

*Flora.—*In the preceding physical description indications are given of the. vast extent of forest in Sweden. The alpine treeless region occupies only the upper flanks of the spinal mountain-range above an elevation varying from 1800 ft. in the north to 3000 ft. in the south. It is belted by a zone of birch woods, with occasional mountain-ash and aspen, varying in width from about 20 m. in the north to a fraction of a mile in the south. Below this extends a great region of firwood covering the whole country north-east of Lake Vener and north of the Dal River. The fir *(Pinus sylvestris)* and pine *(Pinus abies)* are the predominating trees Spruce is common, and even predominates in the higher parts (between the great valleys and immediatcly below the. birch-belt) in the north of Norrland. South of the southern limit indicated, in the midland district of the great lakes, the oak *(Quercus pedunculate)* appears as well as pine and fir; and, as much of this area is under cultivation, many other trees have been introduced, as the ash, maple, elm and lime. South of a line running, roughly, from the foot of Lake Vener to Kalmar on the Baltic coast the beech begins to appear, and in Skåne and the southern part of the Cattegat seaboard becomes predominant in the woods which break the wide cultivated places. Of wild flowering plants only a very few are. endemic species (though more arc endemic varieties); the bulk are immigrants after the last glacial epoch. Of these most are common to arctic lands, or occur as alpine plants in lower latitudes. The number of species decreases according to geographical distribution from south to north; thus while upwards of 1000 are found in Skåne, there are only about 700 in the midlands, 500 in the lower parts of southern Norrland and less than 200 in the extreme north.

*Fauna.*—The effects of the great latitudinal range of Sweden on its climate and flora has its parallel to a modified extent in the case of fauna. Only a few animals are common to the entire country, such as the hare *(Lepus timidus)* and the weasel; although certain others may be added if the high mountain region be left out of consideration, such as the squirrel, fox and various shrews. Among large animals, the common bear and the wolf have been greatly reduced in numbers even within later historic times. These and the lynx arc now restricted to the solitary depths of the northern forests. Characteristic of the high mountainous region are the arctic fox, the glutton and the lemming, whose singular intermittent migrations to the lowlands have a considerable temporary influence on the distribution of beasts and birds of prey. There may also be mentioned the wild reindeer, which is rare, though large domesticated herds are kept by the Lapps. The elk, carefully preserved, haunts the lonely forests from the Arctic Circle even to tne Småland high­lands. The roe-deer and red-deer are confined to the southern parts; though the first is found in the south of the midland plains. In these plains the fox is most abundant, and the badger and hedgehog are found. Martens and otters are to some extent hunted for their skins. A white winter fur is characteristic of several of the smaller animals, such as the. hare, fox and weasel. The common and grey seals are met with in the neighbouring seas, and *Phoca foetida* is confined to the Baltic.. Among birds by far the greater proportion is migrant.. Characteristic types common to the whole country are the teal, snipe, golden plover and wagtail. In the northern moun­tains the ptarmigan is common, and like other creatures assumes a white winter dress; ducks and other water-fowl frequent the lakes; the golden, eagle, certain buzzards and owls are found, and among smaller birds the Lappland bunting *(Plectrophanes laponicus)* may be mentioned.. In the coniferous, forests the black grouse, hazel grouse and willow grouse, capercailzie and woodcock are the principal game birds; the crane is found in marshy clearings, birds of prey are numerous, and the Siberian jay in the north and the common jay in the south are often heard. But in the northern forests small birds arc few, and even in summer these wilds give a strong general impression of lifelessness. In the midlands the par­tridge is fairly, common, though not readily enduring the harder winters; and ring-doves and stock-doves occur. The lakes are the homes of a variety of aquatic birds. On the coasts a number of gulls and terns are found, also the eider-duck and the sea-eagle, which, however, is also distributed far over the land. The species of reptiles and amphibians are few and chiefly confined to the southern parts. There are three species of. snake, including the viper; three of lizard; and eleven of batrachians. the rivers and lakes are generally well stocked with fish, such as salmon, trout of various species, gwyniad and vendace (especially in the north), pike, eels, perch of various species, turbot, bream and roach. The few sportsmen who have visited the higher parts of the great northern rivers have found excellent trout-fishing, with pike, perch, char and grayling, the char occurring in the uppermost parts of the rivers, and the grayling below them. The fisheries, both fresh-water and sea, are important, and fall for consideration as an industry. The herring, cod, flatfish, mackerel and sprat are taken in the seas, and also great numbers of a small herring called *strömming.* In the brackish waters of the east coast sea fish arc found, together with pike, perch and other fresh-water forms. The crayfish is common in many places in central and southern Sweden. Pearls are sometimes found in the fresh-water mussel *(Margaritena margaritifera*);thus a tributary of the Lilia Lule River takes its name, Perle River, from the pearls found in it. Among the lower marine animals a few types of arctic origin are found, not only in the Baltic but even in Lakes Vener and Vetter, having remained, and in the case of the lakes survived the change to fresh water, after the disappearance of the connexion with the Arctic seas across the region of the great lakes, the Baltic, and north-east thereof. The molluscan fauna is fairly rich, and insect fauna much more so, even in the north. In summer in the uplands and the north the mosquito is sufficiently common to cause some little annoyance.

*People.—*The population of Sweden in 1900 was 5,136,441. The census is taken in an unusual manner, being drawn up from the registries of the clergy according to parishes every ten years. Approximate returns are made by the clergy annually. The