turous spirits who may attempt the exploration of the St. Elias alps and glaciers.

The last advices from the whaling-fleet announce the taking of a hundred and seventeen whales, which is an unusually successful catch. The steam-whaler Bowhead was crushed in the ice, but without loss of life. The party who intended to winter at Point Barrow, in the signal-station buildings, are reported to have reached their destination after several mishaps.

Brown bears have been unusually numerous and fierce on the Aliaska peninsula this summer, and several salmon-fishers have been attacked: one is reported killed.

Several new canneries have been established, one on Bristol Bay, where four hundred cases of canned and thirty-two hundred and fifty barrels of salted salmon were put up during the season.

At Kadiak the summer had been calm and fine, and the hay-crop a success. At the end of the season several severe gales had occurred. Twenty-one thousand cases of canned salmon had been put up by the two canneries on Kadiak Island.

Two Moravian missionaries entered the Kuskokwim region, and were expecting to winter there among the Innuit tribes. They found their knowledge of the Innuit tongue, gained in Labrador, of much assistance. Letters from them are being printed in the *Moravian*, and contain details of interest.

The vacancy in the church at Unalashka, caused by the recent death of the Rev. Innocentius Shayeshnikoff, has been filled by the transfer of the Greek clergyman at Kadiak to the more western post. Shayeshnikoff was well known to the traders and explorers who have visited the port of Unalashka during the last fifteen years. He was a native Aleut, trained in the colonial seminary, and, for his opportunities, a remarkably well-informed and intelligent man. A pupil of Veniaminoff, he partook of the scientific tastes of his preceptor, was always ready to lend assistance to the explorer, recorded the weather and temperature for many years, and was never happier than when he recounted to some interested listener his observations of natural phenomena, or of the anthropological features of his native region. He will long be regretted, not only by the passing visitor, but by his parishioners, to whom he most faithfully ministered.

The Dominion government, during the past season, has had an explorer investigating the capabilities of the Queen Charlotte Islands for settlement or other purposes. We extract the following notes from his report: —

There are about eighty islands in the group, three of which are of considerable size, the largest having a length of seventy and an extreme width of fifty miles. It is pierced by several remarkable and widely ramifying inlets. Along the western border of the group runs a range of high mountains, whose chief peaks reach four thousand or forty-five hundred feet above the sea, often within a few miles of the sea. The land gradually falls in a series of wave-like hills and rugged valleys toward the north-east, where the largest area of level land occurs. There are about fifty thousand acres of grazing-land on the islands, and a good deal of timber, the best of which is on the shores of Massett Inlet. Many trees were found which measured from thirty to thirty-five feet in circumference. The wood is chiefly spruce (Abies) and yellow Alaskan cedar (Chamaecyparis). The temperature was very even, in midsummer ranging from 50° and 60° in the early morning, to about 70° F. at noon. The rainfall is estimated at from fifty to seventy inches per annum. The snowfall on the coast is not heavy, and remains only a week or ten days on the ground. There are about eight hundred Indians of the Haida nation on the group, who were friendly, and do a brisk business in fish-oil and fish. A fish locally known as the 'black cod,' but which is more like a sea-bass, is extremely numerous: thirty of them will yield a gallon of oil. There are many halibut-banks. Bituminous coal exists, and there is a local deposit of anthracite well known to geologists. Little is known of other minerals. A submerged forest was found, off the coast of Graham Island, covering over fifty acres. Many of the trees were petrified, or converted into lignite. The coast is but little known. Dr. George M. Dawson added greatly to our knowledge of it, in an exploration made a few years since for the Dominion geological survey. In one bay a series of six or eight cataracts was observed, having a combined fall of nearly fifteen hundred feet. Game and wild fowl were tame and very abundant.

THE FLORA OF THE HIGH ALPS.

A RECENT paper on the nival flora of Switzerland, by the late Professor Oswald Heer, shows that 337 species of flowering plants are found in Switzerland between 8,000 and 13,000 feet above the sea. All these species are found between 8,000 and 8,500 feet, probably one-fourth having their greatest distribution above 8,000 feet; while twelve were obtained above 12,000 feet. One tenth comprises species belonging to the lowlands, and nine tenths are mountain plants, the majority belonging to the Alpine region proper. Monte Rosa contains the richest nival flora, although most of the species are distributed through the whole Alpine region.

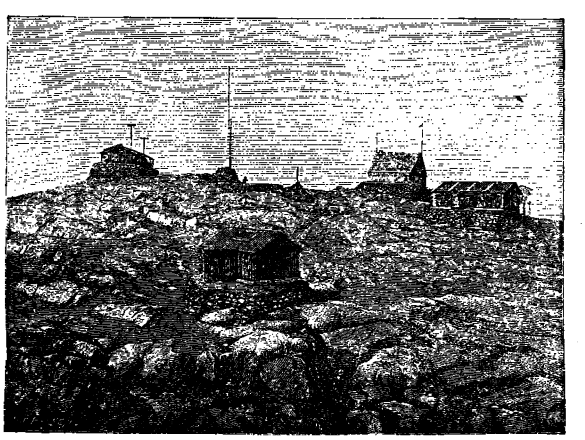
About half of these plants originated in the arctic zone, and apparently came in glacial times from Scandinavia. This arctic flora evidently had its origin on the mountains of the arctic zone, and in miocene times bore the same relation to the flora of the arctic valleys as the present Alpine flora does to the flora of the lowlands of Switzerland. The miocene arctic flora advanced toward Europe as far back as in tertiary times, and in this way the tertiary flora of Europe came into possession of types which now characterize the temperate zone; for instance, the pines and deciduous trees. They gradually gained upon the tropical and subtropical forms, the primitive inhabitants of these regions, and became the parent-plants of a part of the present flora of the lowlands.

In glacial times the mountain plants of the arctic zone descended to the valleys, and were distributed with the glaciers toward the south. That this migration radiated from the north is shown by the fact that not only do arctic species form almost half of the plants in the snowy region of the Alps; but also the mountains of America, as well as of the Altai and Himalayas, possess a large number of arctic forms common also to the Swiss Alps. It is known that in the tertiary and in the upper cretaceous periods a number of species can be traced from Greenland as far as Nebraska in America, and as far as Bohemia and Moravia and southern Europe on the other side. Similarly in the cretaceous period, in the tertiary, and at the present time, Europe and North America have in common a number of species which also existed at that time in the arctic zone, and very evidently had their origin there; and hence the flora of the far north has at all times exerted a great influence on that of Europe.

The endemic flora of the nival region originated in the Alps, especially in the Monte Rosa chain. It possessed its present features at the beginning of the quaternary, and was distributed by means of the glaciers into the valleys and the neighboring mountain regions.

THE DANISH INTERNATIONAL POLAR STATION.

THE Danish polar station was at Godthaab, Greenland, — a little colony situated at the extremity of a peninsula which separates the two large parallel fiords, of Godthaab, and that, farther south, of Ameralik. The station was erected on a little hill of almost pure gneiss, twenty-six metres above the level of the surrounding water. This place was chosen both because it was the highest elevation in the immediate neighborhood and because the gneiss appeared free from iron ores.



There were, in all, five buildings. The one farthest to the south had two apartments, of which that to the east contained the telescope and the astronomical apparatus. In the other room were a Robinson anemometer and a recording anemoscope. North-east of this building were two for the study of magnetic variations. East of this building was a smaller one for the absolute determination of terrestrial magnetism. The building farthest north was the office; and there the barometers and the Hagemann anemometer were placed, as well as a Mascart electrometer. Besides these, there was in the open space a Wild shelter, covering the thermometers to determine the temperature and humidity of the air, a delicate hygrometer, and a Wild evaporimeter. Three thermometers were placed vertically in holes in the rock, at depths of sixteen, thirty-one, and sixty-three centimetres. At the edge of the holes were small iron pipes to prevent infiltration. The thermometers were sheathed in wooden rods having the same diameter as the holes. At the bottom of each hole was a little mercury, which could penetrate to the thermometer-bulbs through perforations made in the lower part of the rods. Behind the shelter of the thermometers were placed two thermometers whose bulbs were buried fifteen and thirty-seven centimetres respectively beneath the surface of the ground. At some distance from the foot of the hill, two Hamberg thermometers were placed at depths of one metre and one and five-tenths metres. Besides the proposed observations, the parallaxes of a large number of auroras were measured, the electricity of the air was studied, and the temperature of the rocks, the soil, and the water of the fiord, noted.

In the early part of the autumn of 1882 the weather was comparatively mild, south winds prevailing. It was not till the last of September that it was cold enough for a slight frost; but the weather again moderated under the influence of the south winds, which lasted until the first days of October. From the 11th of October the cold was maintained, almost without interruption, until the 5th of March, 1883. During all that interval the thermometer remained constantly below 0° C., except for some isolated days, and then only for a short time. From the 23d of January to the 13th of February the cold was the most intense and persistent; so that even the south winds, and the very low barometrical pressure during that period, were powerless to produce a change. The greatest cold was observed on the 9th of February, with 24°.4 upon a slight elevation; but at the same time it was found to be 26°.7 in the low lands. During the first part of March the cold became again very severe; but after the 5th of the month the weather moderated, and became more variable. It was only after the middle of June that the weather grew milder. In July the heat was normal, and the winds from the south; but by the end of August frost appeared again during the night. The greatest heat of 14°.5 was observed on the 22d of June, during a tempest from the south, at the same time that the thermometer on the low lands attained 17° C.