nion, stretching as it does across the continent, and embracing an area nearly equal in size to Europe, the period varies with the locality, and is affected by the vicinity of the great lakes or other local influences. Cattle are turned out to graze in April, feeding in part upon the tender shoots of the spring forest growth, until the appearance of the young pasture with the disappearance of the snow. Before the end of July harvest begins; and with the rapidity of growth under the warm Canadian skies, the hay, grain, and root-crops follow in swift succession; the cleared land is brought again under the plough, and the autumn sowing of wheat is carried on till another abrupt change brings the season to a close. In this way the Canadian climate is marked by the striking contrast of two seasons—summer and winter,—bringing with them alternations of fruitful labour and of repose intermingled with profitable industry and pleasure. This characteristic prevails with slight variations throughout the greater part of the Dominion. Manitoba presents in this respect no marked diversity from Quebec or Ontario. Spring opens nearly at the same time from Red River to the Athabasca. Early in April the alders and willows of the Saskatchewan country are in bloom; the prairie anemone covers the southern exposures to the very verge of the retreating snow. May there brings with it more of the true summer heat than in the provinces on the St Lawrence. But the nights are cool, and throughout the period of greatest heats, the cool night breezes beget a welcome and refreshing change, accompanied with heavy dews. This protects the cereals from the effects of drought even in the driest seasons, and produces a rich growth of prairie grass, making the climate peculiarly favourable for the stock farmer. The Rev. Professor Bryce, of Winnipeg College, thus writes: "The juncture of the seasons is not very noticeable. Spring glides insensibly into summer, summer into fine autumn weather, which, during the equinox, breaks up in a series of heavy gales of wind accompanied by rain and snow. These are followed by that divine aftermath, the Indian summer, which attains its true glory only in the north-west. The haziness and dreamy fervour of this mysterious season have often been attributed to the prairie fires, which rage over half a continent in the fall, and evoke an enormous amount of heat and smoke." His own observations incline him to accept this explanation. Winter begins with crisp clear weather, which grows increasingly cold and cloudy. The wind wheels to the north-east, and with it comes the snow, and the long steady winter of the Canadian year.

The character of the Manitoba winter is thus described by the same intelligent observer:—"The winters of the north-west, upon the whole, are agreeable, and singularly steady. The moccasin is dry and comfortable throughout, and no thaw, strictly speaking, takes place till spring, no matter how mild the weather may be. The snow, though shallow, wears well, and differs greatly from eastern snow. Its flake is dry and hard, and its gritty consistence resembles white slippery sand more than anything else. Generally speaking, the farther west the shallower the snow, and the rule obtains even into the heart of the Rocky Mountains. In south-western Ontario the winter is milder, no doubt, than at Red River; but the soil of the north-west beats the soil of Ontario out of comparison; and after all, who would care to exchange the crisp, sparkling, exhilarating winter of Manitoba for the rawness of Essex in south Ontario."

But the frosts of spring and autumn, not those of winter, are what the Canadian farmer learns to regard with any dread; and this is still more true in reference to the Canadian fruitgrower. But in this respect the north-west climate is exceptional in its character. Frosts are common there in the nights of September; but the fact has been noted by many independent observers, that frost which would injure grain in many other countries, appears to be innocuous on the Red River and the Saskatchewan. Various reasons have been assigned—such as the dryness of the atmosphere, the heat-retaining character of the soil, and the sudden change of temperature that enables vigorous plants to bear an atmosphere at 20° better than at 35° when the latent heat of the earth and the plants has been given off. But whatever be the true cause the fact appears to be well attested. The chief lesson which experience has taught the farmer is to sow his wheat early in the spring, so that the ear shall be past the milky stage before the frost comes.

The climate and other conditions to the west of the Rocky Mountains are necessarily marked by much greater local variations owing to the broken character of the country, with its ravines and deep narrow valleys. Stock raising has hitherto largely occupied the attention of the farmers on the Pacific slope, where the farms are called "ranches," after the fashion of the stock farmers of California and New Mexico. The ground produces both cereals and vegetables where irrigation is resorted to, as in the plains and valleys of those states. But the rich natural grass which abounds furnishes nearly all that is needed for the profitable raising of stock; and until a large female immigration restores in some adequate degree the natural proportion of the sexes, the rough life of the "ranch," with its "corral," or cattle-pen, will be preferred to the more settled industry of the agriculturist.

The capacity of the different provinces for profitable industry, and the character of their native productions, will be found set forth in detail in the separate articles on each province. It is vain to attempt any detailed account of the soil and other local specialties of half a continent. The Geological Survey, carried out under the able direction of the late Sir W. E. Logan and his successor Mr A. R. C. Selwyn, has largely contributed to an accurate knowledge of the agricultural capabilities, as well as the mineral resources of the country. Vast areas consist chiefly of loam, with a substratum of gravel, overlaid throughout extensive tracts of forest by a rich vegetable mould, the accumulation of ages. The prairie lands are not less available; and they are now being surveyed and explored, alike for the requirements of the settler and for economic and scientific results.

The Reports of the Geological Survey or Canada embody in this way a readily accessible guide to the resources of the country, and the suitability of its various districts and provinces for settlement. Entire districts of many square miles in extent prove to be composed of alluvial deposits from 30 to 40 feet deep, of soil in places so rich as to bear good crops of wheat for successive years without manure. Others of nearly equal value are found resting on red sandstone, trap, serpentine, limestone, and other strata most favourable for agriculture. There are also, as along some of the rivers, for miles in succession, soils too rich for wheat, others of a good sandy loam, suitable to and requiring the usual English rotations. In many parts, on the other hand, there exist considerable tracts of poor, thin, and stony soils. The Reports of the Geological Survey, in presenting an account of the geological distribution of the various strata, and their agricultural capabilities, will prove of great value to the immigrant, as well as to others interested in the lands of Canada.

The soil and climate of Canada are such that the country produces a much greater variety of grains and fruits than is usually grown in Great Britain or Ireland. Besides wheat, barley, oats, rye, pease, turnips, potatoes, hemp, flax, hops, and the other ordinary agricultural products of

England, which are all raised in abundance, Canada grows tobacco, rice, maize or Indian corn, and fruits of warmer climes than the British Islands. The full and steady heat of the summer matures with surprising rapidity the most valuable productions, while the long period of repose of the Canadian winter is not only amply atoned for by the rapid and luxuriant vegetation of the summer, but, no doubt, contributes to such results.

Fruits and Vegetables.—The fruits of Canada embrace all that are familiar to the English gardener, with others which the summer there is not warm enough to bring to maturity. The finest melons are grown in abundance in the open ground. In favourable seasons peaches are plentiful in the Niagara peninsula, and in the south-western portions of Ontario, along the shores of Lake Erie and the Detroit River. The vine is cultivated largely in open gardens. The Isabella, the Delaware, Clinton, and other varieties of grapes attain to perfect size and excellent flavour in the open air; and the manufacture of native wines is now successfully prosecuted to a considerable extent.

Wild fruits abound in great variety throughout many Canadian districts. The wild vine (*Vitis vulpina*) is abundant everywhere, twining its tendrils around the trunks and over the branches of the forest trees, and yielding clusters of small grapes, inviting to cultivation. Among the other wild fruits may be mentioned plums, cherries, raspberries, brambles or blackberries, strawberries, whortleberries, blueberries, gooseberries, black and red currants, juniper berries, cranberries, hickory and hazel nuts, and walnuts. The raspberries ripen in such abundance that enormous quantities are annually preserved and sold both in the Provinces and the United States. The blueberry is also extensively sold; and the wild strawberry furnishes an agreeable dessert in many parts of the eastern provinces throughout the latter part of July and August.

Apples and pears are now largely cultivated. The island of Montreal has long been famous for its fruits; and the annual produce of the orchards of Ontario is exported to the States and to Europe. Vegetables for the table are also successfully cultivated in greater varieties than in England, and in such quantities that they are largely exported. The tomato flourishes and yields an abundant crop. Cauliflower, vegetable marrow, squash, French beans, pease, lettuce, spinach, celery, asparagus, rhubarb, and all the more common vegetables are grown in abundance in the older provinces. The climate of Manitoba, notwithstanding its exceptionally low temperature from December to March, gives promise of equally satisfactory results. Professor Bryce, after noting such examples of agricultural produce as that of one old settler who obtained 420 bushels of wheat from 11 acres, and another who by garden culture produced the enormous yield of 134 bushels per acre of oats, thus proceeds: "These are given both as proof of the capabilities of the country, and of the advantage of careful culture. The ordinary table vegetables are surprising in their growth, and reach a prodigious size. The writer has seen nothing in his previous experience equalling the vegetable production of the province; and the late lieutenant-governor, Hon. Mr Archibald, after testing the matter in his own garden, gave the same as his experience."

The exports of fruit and vegetables, the growth and produce of the five eastern provinces of Canada, for the year 1874, included fruit to the value of $128,904, and vegetables to the value of $332,068. But while this produce of the finer fruits and vegetables for the table shows exports to the value of $460,972 in a single year, and thus bears evidence to the character of the soil and climate, it conveys a very imperfect idea of the actual produce of Canadian orchards. Apples especially are in constant use at the table. Throughout the southern portion of Ontario thousands of acres are planted with fruit-trees, yielding valuable crops of the finest quality, and forming an ever-increasing source of wealth to the farmer.

Flowers.—The flora of Canada naturally comes in order along with its agriculture and garden produce; but to deal with the subject effectually would require a botanical treatise on the whole flora of North America. There is the rich flora of the forest, which disappears with the clearing of the land for purposes of agriculture, and is even replaced in part by an immigrant flora, brought in with the hay and grass seeds of the European settler. Again, there is the brilliant flora of the prairies, which, in the full season of summer bloom, are resplendent with blue, scarlet, and yellow petals. The Rocky Mountains, and the rugged slopes of the Pacific province, have also their characteristic flora; while the shallows of the lakes and rivers abound with beautiful aquatic plants, foremost among which is the *Nymphæa odorata*, the magnificent sweet-scented white water-lily, which converts many a broad lagoon into a beautiful floating garden.

It will better accord with the practical aim of this article, to note that the honey-bee flourishes in all the provinces of Canada; and, as will be seen by the following table showing the produce of a single year, is cultivated with profitable success in the four older provinces:—

	Hives of Bees.	Pounds of Honey.
Nova Scotia	3,038	21,374
New Brunswick	5,854	90,004
Quebec	41,295	648,310
Ontario	94,604	1,239,612
Total	144,791	1,999,300

Forests.—The forests of Canada abound in fine timber, adapted to almost every variety of useful or ornamental work, and furnishing one main element of wealth to the province. Foremost in point of utility are the white and red pine, annually exported in large quantities to the United States and to Europe. Three-fourths of the square and flatted timber produced in the Ottawa region in 1873 was of white pine. Cedar, red pine, and railway-ties chiefly made of tamarac, were the others which were produced in largest quantities. Pine trees of 100 feet high are not uncommon; and instances are not rare of trees greatly exceeding that height.

The pine prepared for exportation is made into squared timber, measuring from 60 to 70 feet in length; or into waney timber (as it is called when only partially squared or flatted), averaging generally the same lengths though sometimes running to 100, or even 120 feet. For the native market the unsquared log is cut into convenient lengths of from 12 to 15 feet for the saw-mill. The white oak, besides being made into squared timber not greatly inferior in dimensions to the white pine, serves also largely to supply staves both for the English and the West Indian markets. The number of pieces of squared and flatted timber produced in the Ottawa district alone in 1873 was 303,268, and the number of unsquared logs for the same year amounted to 2,024,980. The elm, beech, ash, maple, walnut, cedar, birch, and tamarac are all valuable products of the Canadian forests. The black walnut and the birds'-eye and curled maples are now in special demand in England for cabinet and fancy work. The sugar maple is also of value for the sap which it yields during early spring, from which excellent sugar is made in ever-increasing quantities. The yield of maple sugar produced in the four older provinces in 1871 amounted to 17,276,000 lb. A maple grove, as it is called, is accordingly regarded as a valuable feature on a Canadian farm.

The value of the immense forests of Canada is becoming more apparent every year. The year 1874 was one of reduced exports and imports, as compared with any previous year since the confederation of the provinces. Nevertheless the total produce of the forest exported during that year, apart from what was required for use within the Dominion, amounted in value to $26,817,715. Of this timber to the value of $14,928,403 was exported to Great Britain; the United States received to the value of $9,654,890; South America to the value of $920,309; the British West Indies to the value of $602,487; and the remainder went to the Spanish, French, and Dutch West Indies, to France, Portugal, Belgium, Germany, and Holland, and to regions and colonies beyond the Pacific. Australia took to the value of $60,081; China, $38,024; British and Dutch Guiana, $23,452; and Honolulu, the Azores, South Africa, and other countries, in lesser proportions. In addition to all this, the forest produce required for home consumption during the same period cannot be estimated at a less value than $3,000,000.

Canada is becoming every year more important as an agricultural country. It is exporting not only grain but also cattle to the English market; and when the rich prairie lands of the North West are brought under cultivation its agricultural produce will probably rank foremost in value of that of any nation in the world. But at present the produce of the Canadian forests exceeds in value any other yield of the growth, produce, or manufacture of the Dominion. The total value of the exports of Canada for 1874 amounted to $73,926,748; and of this $26,817,715 was the produce of its forests. The importance of this branch of native industry cannot therefore be overlooked. The Governments of the different provinces grant licences to those engaged in the timber trade to cut timber over vast tracts of land, under the name of "timber limits." These are in most cases remote from the settlements; and much ability and foresight are required to make adequate provision for the large bodies of men, horses, and oxen, to be employed in cutting down and preparing the timber for the market, and transporting it to suitable points for rafting. Much capital is accordingly embarked in the trade. Hay and other requisites have to be accumulated at suitable stations. Large gangs of lumberers follow at the proper season. Lumber shanties are constructed capable of accommodating from 25 to 50 men. The structure is made of logs hewn on the spot, and forms a square or oblong edifice surrounded on three sides with the baulks, or sleeping-berths, of the men, while the fourth side is occupied by the dresser or working-table and other requisites of the cook. The centre is open to the sky, and underneath this only opening for light or air a huge wood fire is kept constantly replenished. Over it stretches the crane on which the cook hangs his pot; and thus the fire answers the double purpose of warming and ventilating the dormitory and cooking the food of its inmates. The shanty-cook is an important member of the little community. Salt pork and beef, pease-soup, wheaten bread and tea, with potatoes, white beans, and onions, are the staple of the lumber-shanty fare. As a rule, intoxicating liquors are absolutely excluded; and thus provisioned the foreman selects the proper trees, and lumbering operations proceed throughout the winter. Many thousands of men are busy through the whole winter felling the trees, cutting them into logs, or hewing them into squared timber, and transporting them over the snow to suitable points for floating them down the rivers to the mills, or directly to the place of export. As the rivers are in many places interrupted by falls of a character unfitted to the safe passage of timber over them, large sums are expended in constructing timber-slides; and on some of the main channels, as on the Ottawa, the construction and maintenance of the chief timber-slides are undertaken by the Government.

It is erroneously supposed by many, who are unfamiliar with the character of the Canadian forest, that the work of the lumberer results in the clearing of the land. Only the finest full-grown trees are selected for the lumberer's axe, and it is calculated that the same district may be gone over by the lumberer every twelve or fifteen years. Hence if the destructive fires which from time to time do such immense injury can be guarded against, and the operations of the lumberer are carried on with due care, under proper oversight, there is no reason why the forests of Canada should not remain a permanent source of national wealth.

In the new clearings in the vicinity of lumbering districts, the farmer finds a ready demand for all his produce, and employment for himself, his horses, and his oxen during the leisure of winter. In this way the lumbering business helps to promote the settlement of new districts, and attracts a population to localities which otherwise might long remain a wilderness. In free-grant districts, as in the Muskoka region on the Georgian Bay, where new settlers are engaged in their first hard struggle to transform the wilderness into fruitful farms, the earliest savings of the farmer are frequently expended on a yoke of oxen; and thus provided, his services are welcomed by the lumberers, and he can find profitable employment throughout the winter. On the breaking up of the frost in spring the produce of the winter's lumbering is floated down the rivers. There, at suitable points on every available rapid or waterfall, large mills are erected for sawing up the logs, chiefly for the English and American markets. The squared timber for the foreign markets is put together in cribs and run down the rivers to suitable points, where they are formed into great rafts, and so floated down the lakes and rivers, as on the River St Lawrence to Quebec. There they are finally broken up, and shipped for their foreign destinations.

Few among the many sights which meet the eye of a voyager on the St Lawrence are more striking than one of those floating villages, consisting often of 150,000 cubic feet of timber, bound together into one great raft, with its shanties, its blazing fires, securely kindled on an earthen hearth, and its banners streaming in gala fashion, as it glides along. Much skill is required in piloting these rafts down the great rivers. The cribs floated from the far inland timber limits are collected into what are called drams; each dram has its own gang or division of the raft's crew, and so many drams form a raft. But at every considerable rapid the raft is again broken up into its component parts, and the cribs taken down separately, to be again put together on reaching smooth water. Thus united, the raft moves onward with the current, aided at times by sail and oar, until it is safely secured within the booms of the great timber merchants in the coves above Quebec.

Animals.—Looking to the native fauna of Canada in an economic point of view, it is abundantly evident that the animal life of its seas and rivers is one of its great and inexhaustible sources of wealth. Alike on the sea-coasts, in the estuaries, and throughout its great inland lakes and rivers, the most valuable fish abound; and on the Labrador coasts and those of Newfoundland the seal fisheries are another annual source of wealth. The sturgeon is caught in Canadian waters, frequently weighing from 80 to 100 lb; the finest salmon abound both in the eastern rivers emptying into the Gulf of St Lawrence, and in those of British Columbia; lake trout is caught in large quantities weighing from 10 to 40 lb; and the smaller rivers and lakes teem with beautiful speckled trout, frequently weighing from 4 to 6 lb. The white fish and maskinonge are esteemed for their delicacy and richness of flavour; and the returns of the fisheries, as given in the separate accounts of the various provinces, show the relative abundance of cod, haddock, mackerel, herring, salmon, halibut white fish and other produce of the Canadian fisheries.

The returns of the last census show that in 1871 Canada produced 82,844 quintals of cod and haddock, and 685,272 barrels of fish of various sorts, besides 678,894 gallons of fish oil; and the total value of the produce of the fisheries exported during the fiscal year 1874 was $5,292,368. The quantities here stated are exclusive of the valuable fisheries of Newfoundland, which employ large fleets, and yield a corresponding return from cod, salmon, herring, mackerel, and other fish, from the oil of the whale and cod, and from seal-skins.

Neither British Columbia nor Manitoba has yet been brought within the provisions of the Fisheries Act; and the total yield of their fisheries can only be approximately estimated. Valuable oyster beds exist on the Pacific coasts of the Dominion. The salmon fishery promises, if rightly protected and regulated, to prove a valuable branch of industry. During the year 1873, 195 tons of salmon were canned for export; and 4000 barrels were salted. In the great lakes and rivers of Manitoba the white fish are no less abundant; and they constitute an important source of supply of food in certain seasons of the year throughout the whole North West. The total value of the yield of the fisheries of the Dominion for the year 1874 was estimated at not less than $11,000,000.

Canada has been esteemed from its earliest discovery for its valuable fur-bearing animals, and was prized chiefly on this account so long as it remained a dependency of France. In 1670 Charles II. granted the charter to the Hudson's Bay Company, whereby they acquired the exclusive right of trading with the Indians in the vast regions vaguely recognized as surrounding the great inlet from which the company took its name. In 1783 a rival company was established under the name of the North-West Company, which claimed that, as the Royal Charter of their rivals had not been confirmed by Parliament, all British subjects were free to engage in the fur trade of the North-West. The results of the jealousies and hostilities of the two companies played an important part in the early history of Canada, and in the first attempts at settlement on the Red River, which paved the way for the rise of the new province of Manitoba. After many bitter contentions, and after impeding each other's operations for years, the rival companies at length effected a junction in 1821; and the fur trade has since been successfully prosecuted under their joint action, till the acquisition by Canada of the north-west territory as a necessary step towards the prosecution of the plans of confederation, and the formation of new provinces throughout British America.

There still remains, however, not only a vast extent of unoccupied territory in which for many years to come the hunter and the trapper will find undisturbed sway, but the regions around the Hudson's Bay, and stretching westward to Alaska and northward to the pole, must ever remain a shelter for fur-bearing animals, and a resort of the hunter. All the furs collected for the great fur company are shipped to London:—in part from their factories of York Fort and Moose River, on the Hudson's Bay, which are visited by a ship from England every year, and in part from Montreal and Columbia River.

In the vicinity of Canadian clearings deer are still found in abundance, and venison is plentiful during winter in all the markets of Canada. But wherever the deer abound wolves are sure to follow; and wherever they occur sheep-farming is impossible, and their depredations on the farmer's stock make them an object of special dislike. In order to encourage their extermination a premium is paid by Government for the head or scalp of each wolf produced to a local magistrate, and it is not uncommon in new districts for the settler to pay his taxes in wolf scalps. By this means they rapidly disappear from the neighbourhood of the settlements. The bear is another mischievous native of the Canadian forests. The winter furs both of the bear and the wolf are prized for robes; and their value furnishes an additional stimulus to the extirpation of both wherever the country is settled. Beyond the settlements, in the remote recesses of the uncleared forest, the beaver still abounds. Foxes of diverse kinds (silver, grey, red, and black), racoons, otters, fitches, martins, and minks are no less abundant. The musk rat is to be met with on all the Canadian rivers; and the red, black and grey squirrels sport everywhere in the forest, and at times even invade the clearings and make free with the farmers' crops. In the more remote regions, now also being invaded by settlers, vast herds of buffalo are met with; and beyond them are the moose, the wapiti, the reindeer, the white Arctic fox and the polar bear, whose haunts are safe from the invasion of the settler, however rapidly the Dominion may extend, and carve out new provinces in the great wilderness of the North-West.

The total value of the furs exported from Canada in 1871 was $1,633,501. This is distinct from hides and other products of the farm. In the abstract of the value of goods, the growth, produce, and manufacture of Canada, exported from the Dominion during the fiscal year 1874, animals and their products are classed under one head, showing a total value of $14,679,169. This includes a classification of farm and dairy produce along with the products of the chase, the chief items of which may be stated as follows, the same being exclusive of all home consumption:—

Animals and their Produce.			Value.
Horses	number	5,399	$570,544
Horned Cattle	„	39,623	951,269
Sheep	„	252,031	702,504
Swine	„	6,983	56,894
Poultry			79,224
Pork, Beef, and other meats	cwt.	300,003	2,172,581
Butter, Cheese, and Eggs			6,731,105
Lard and Tallow	lb	3,232,488	396,860
Hides, Pelts, Hams, and Hoofs	lb	2,764,796	284,069
Wool	lb	2,764,796	983,846
Furs, dressed and undressed			1,633,501

Cultivated Land and Agricultural Products.—Canada is pre-eminently a country of yeoman farmers. The land is held in possession and tilled by the settler on his own account; and with every addition to the numbers of its industrious population fresh acres are recovered from the wilderness, and added to the productive resources and the wealth of the Dominion. The number of persons occupying land within the four provinces of Nova Scotia, New-Brunswick, Quebec, and Ontario according to the census of 1871 was in all 367,862. Of these there were 324,160 owners, 39,583 tenants, and only 2119 farm labourers or servants. Those facts alone suffice to illustrate the striking contrast between the condition of Canada and most of the countries of Europe. By patient industry and frugality it is in the power of every Canadian to become owner of a house, and proprietor of whatever amount of land he can turn to profitable account; while the character of the population resulting from this condition of things checks the accumulation of extensive landed estates in the hands of single proprietors. The majority of the farms are small, tilled by the proprietor with his own hands, with the help of his sons and occasional hired labour in the busy season