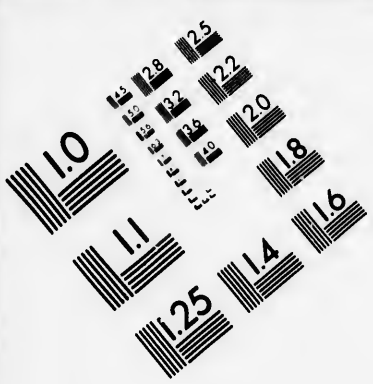

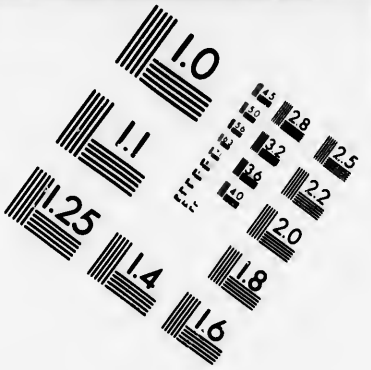

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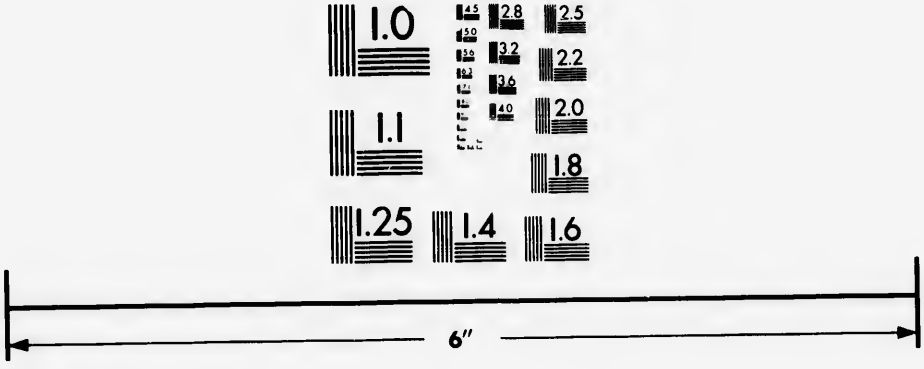

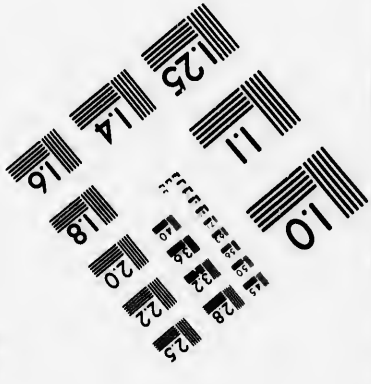

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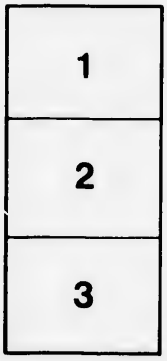

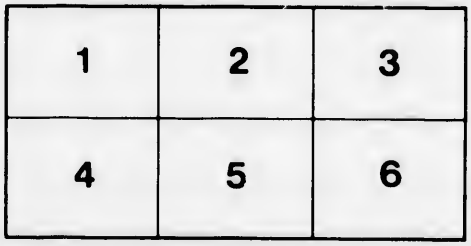

H.M.S. "INTREPID" IN THE MIDDLE ICE OF BAFFIN'S BAY.

(From an Original Sketch by Commander May, R.N.)

H.M.S. "INTREPID" IN THE MIDDLE ICE OF BAFFIN'S BAY.
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THE

COUNTRIES OF THE WORLD:

BEING

A POPULAR DESCRIPTION OF THE VARIOUS CONTINENTS, ISLANDS, RIVERS, SEAS, AND PEOPLES OF THE GLOBE.

BY

ROBERT BROWN, M.A.,

F.R.H.S., F.L.S., F.R.G.S.,

Author of "The Races of Mankind," etc. etc.

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CASSELL PETTER & GALPIN:

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CONTENTS.

THE COUNTRIES OF THE WORLD.

CHAPTER I.

WE are about to start on a long and distant journey over land and sea. We are to make a grand tour, during which we shall visit in company many foreign countries. It may be well, therefore, before we start, to do what all wise travellers do, try to gain a few ideas regarding the general appearance of the great world over which we are to travel together for so long. But first of all let us endeavour to learn something of the names of those who have gone before us, and very briefly to recapitulate, if nothing more, the terms that we shall be so frequently using in our descriptions.

The World of a Thousand Years Ago.

A thousand years ago, and for long after, the world was not all the geologised, botanised, zoologised, and mapped out earthy ball it is now. There it lay, according to the imagination of the men and women of those days—or rather, according to the ideas of the monks; for the men, and far less the women, of those distant times troubled themselves very little about matters of this kind, but left it to the churchmen to meddle with such dangerous book-learning—a flat plain, full of things mysterious and unknown; and out of the four corners, through the gaps of four mountain ranges, which were placed there to keep it steady, blew the four winds of heaven! Of course, the centre of it all was the little town, and county, parish, manor, barony, or kingdom where they dwelt; but outside of that was no man's land. It was looked upon by our remote forefathers in much the same light as it is by the Chinese, who, while making maps of the Flowery Land on a scale so large as to show the ground plan

of every town and village, mark all the countries outside of that magic boundary of theirs as "inhabited by barbarians." "It was the land of the infidel," the people said, as they piously crossed themselves at the thought.

All was mysterious to the travellers of that age. The unknown lands were full of dragons and giants, roes, orcs, witch-whales, gridlins, chimeras, enchanters, Paynims, Saracens, Emirs, and Sultans, Kaisers of Constantinople, of Ind, and Cathay, and Cipango. What a choice was there then for a young traveller, a good knight, and a proper man withal! If he had a mind, he could steer his way to Lapland, where (as all the world knew) dwarfs forged chain-armour of magic links, and where witch-whales and ice-mountains roamed about the chilly sea; or, to go south, and join the Varangers guard in Constantinople, or beard the Turk in Palestine; or, into Egypt, and win the King's daughter by killing a great dragon, as did St. George; or, down to Cordova, where there were dire magicians; or, into the forests of Brittany, where beauteous fairies sported—kindly immortals, who loved to be wedded to mortality—who emptied his water-jars at night and filled them with good Rhine wine ere dawn of day. He might even marry one, as did Sir Lancelot, and pass a few years in Fairyland!

Even in our own dull old prosaic land, the geographers of a thousand years ago reported wonders to be seen for the travelling. Dragons were in the land, and giants stalked all over Cornwall; so that, like Hereward, you could go into the Land of Tin, kill an ogre and save a king's daughter. In those days there were lands to discover and take possession of, and wonders and strange things to be seen wherever you turned. The fairies have now bidden farewell to all accessible places, and if you wish to win them you must go very far afield to places where there are no books and no schools—for these elf-maidens like not letters, and flee before them like ghosts before the cock-crow; if you wish wine now, you may gather the grapes—aye, and tread them out too.

Then think how easy it was to travel in those barbarous times; no philosophical instruments were in demand, only a big ox-horn to engrave your map on, and if you were a very learned traveller, an ink-horn and a parchment to write your notes on; though, generally speaking, travellers in those days did not trouble themselves much with writing, but drew freely on their imaginations.

There was no need of circular notes or letters of credit, and no loss by exchange then. If you were a churchman, and had your head shaved and a rope round your middle, houses of friars, black, white, and grey, were open to you all over the civilised world and a good portion of the uncivilised. If you were a learned clerk — and, better still, a "cunning leech" to boot—all you had to do was to go to a university and dispute with the doctors on questions of philosophy, such as, how many devils could dance on the end of a needle, or regarding the transmutation of metals, the elixir of life, the philosopher's stone, or the all-powerful phlogiston, each in its age—and you were entitled to a supper and a bed, and in the morning a parting blessing, and a few stivers from the college chest to send you on your way.

It was just possible, too, in those halcyon times for poor travellers, if your fame went before you, that princes and kings—and they were very plentiful then—would invite you, as they did Duns Scotus, to take up your residence in their courts, and send you away laden

with gifts and letters to other princes afar off. If you were a soldier with a good sword, made in Toledo, on your thigh, and a shirt of mail, forged in Milan (not to say by dwarfs in Lapland or Bohmerland), and a *menu* of stout "horse earles" at your back, armed with hackbut, and bill, and axe, and helm, or cross-bow and quarrell, or half-hag and culverin, or whatever was the lethal weapon most in favour at the time, it would be hard if, in a day when men were quick to seize and slow to give back again, you could not secure a living for yourself somehow or other.

If the times be changed, so I need not say are the travellers thereof. I fancy, if anybody, soldier or civilian, churchman or layman, were to attempt such pranks nowadays, in a country blessed (or otherwise) with a municipal form of government, he would experience the hospitalities of something else than a monastery and a long-suffering peasantry. It even comes within the bounds of fancy that the mob—ever profane and vulgar, ever prosaic!—would "shy" the usual unkindly "half-brick" at his head, and direct him to the casual ward of the workhouse, where doubtless the beadle would—after the mediæval traveller had wrought out his breakfast in the stoneyard—hustle him on to the next parish; if, indeed, he were not so unfortunate as to be haled before Mr. Justice Shallow, and there and then get three weeks in the county gaol as a confirmed vagrant!

Lastly, some modern travellers cannot but be sensible of how great an advantage it must have been to travel in those days; for if few books were written, and those only in rolls of parchment, stowed away in the libraries of monasteries, there were still fewer critics, and no cynical reviewer to point out with jeer and jest the holes in the traveller's coat. The writer of the "Travels and Adventures" of those days had thus unlimited licence to "shoot with the long-bow" for the term of his natural life, and, as I daresay the world was no better then than it is now, their lies live after them. The temptation was strong, I confess, and men, being only men—even in those "good old times"—yielded to it, though it was many a century before an ungrateful world found them out, and gibbeted them to scoffing modern gaze: that is, unless they were as conscientious as was that grand old traveller, physician, and soldier, Sir John de Mandeville, who so many hundred years ago made a "Iournie unto Ierusalem," and brought back with him something better than a scallop-shell in his cap, the sword-cuts of a Saracen warrior, and the love of a Paynim maiden; for, though in his thirty-five years' wanderings from home he experienced all these, and more, yet amid great credulity he brought back much truth, and strange tales, and wonderful arts from the learned men of the distant East. Now, when Sir John came to any country he did not know much about—and his example is not unworthy of imitation in times not so remote—he merely crossed himself, and inscribed on his map these ominous words—"This lande is alle fulle of devills!" and passed on.

These were the Dark Ages of Literature, Art, and Science—in which a brutal soldiery rode rough-shod over a weary, blood-stained land; and a rapacious priesthood, corrupt and fallen from the high estate of the successors of the Apostles, held in their cruel, greedy grip the purses of men, and strangled, with the withe of superstition and untruth, the soul which liveth after. Yet these are sometimes called by people, to whose fertile

imagination "cows afar off have always long horns," the "good old times," though I have always failed to understand that they were good for anybody but the rough, cut-throat scoundrels who rode marauding over the land, and sailed marauding on the seas—for them and for their myrmidons. They were certainly not good for the simple peasant, who was dragged, an unwilling man-at-arms, to follow his liege lord to plunder another baron and his peasants, who had displeased the great man, whose white castle lorded it over all the lands around; they were certainly not good for the widow and the orphan; for the son who was left to die on a distant battle-field, with wounds unstaunched and thirst unslaked; for the father, pining in the dungeon of some feudal lord; and the merchant, whose vessels were stopped on the high seas by the gentlemen of those "good old times," certainly

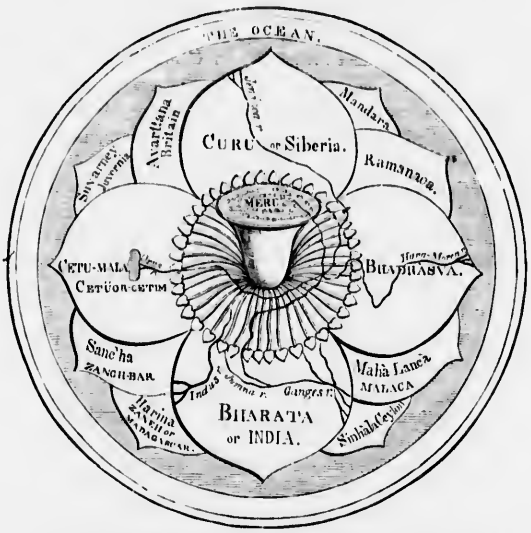
THE EARTH, AS KNOWN TO THE GREEKS IN THE TIME OF HOMER.

entertained but an indifferent opinion regarding the felicities of the age in which he was doomed to live; while the homeless owners of smoking villages and deserted fields, designated, if they dared to speak at all, the mail-clad knights—who look so picturesque on paper and in paintings—and the times which tolerated them, as something quite the antipodes of good.

How the World has been Discovered.

It has been well remarked that every nation, when it begins to speculate upon geographical matters, and to form surmises as to the nature of the earth, regards the world as a vast plain, the centre of which is the country to which the speculators themselves belong. The regions which lie beyond appear to "the prismatic hues of imagination" an area which fancy fills with the mythical beings and Utopias. The Greeks of Homer's time knew, from actual observation, no more of the world than the shores of Egypt and Asia Minor; but they filled all the outlying regions with "'hydras, gorgons, and chimæras dire;' with happy isles beyond the western sea; with a race of

supremely wise, happy, and long-lived mortals in the hyperborean regions; with isles of the sirens; with Olympus itself, the abode of the gods; and with Elysian fields, a terrestrial paradise of departed heroes. Encircling this world-plain flowed the ocean, from which the sun rose, and into which it set. And with some nations, as the Scandinavians and Hindoos, while their own country formed the centre, with the abode of the gods (Medgard or Meru) forming the highest point, other worlds separated by seas were supposed to lie round in concentric circles—ideal regions, which embodied the dreams



SYMBOLICAL REPRESENTATION OF THE EARTH, ACCORDING TO THE HINDOOS.

and superstitions of the natural mind. It was an age of dreams, when poets could make of the earth what they pleased; peopling its surface with their fancies, girdling it with ocean rivers or *flammantia mœnia*, and resting it on the shoulders of a giant, or the back of an elephant." The conquering expeditions of the Romans into the distant interior of continents supplemented the discoveries made by the voyages of the Egyptians, Phœnicians, and their colonist offspring, the Carthaginians.

But after all, the world as known to the ancients—the *Orbus Veteribus Notus* of the classical atlases—was very little more than the basin of the Mediterranean, and a portion of the countries bordering it. Not one half of Europe was even known. Its dark forests still were haunted by savage tribes, with whom the legions had never measured their strength; and Asia was only penetrated in the south-western quarter, lying south of a line drawn from the Black Sea to the Indus. The Greeks and Romans could people with

mythological personages the lands lying north of the Tay, in those Britannic Isles which formed the northern limits to the conquests of Rome. Hardly a twelfth of the known world was even imperfectly known to those whom we sometimes assume to be the first of conquerors, and the most polished and intellectual of the sons of men. The Phœnicians, however, bent on commerce, soon extended the boundaries of the then explored world. In Britain they were known as tin traders, and in Africa as purchasers of apes, gold, spices, and fine woods. As early as 600 B.C., there is little doubt but that they circumnavigated the latter continent; and it is probable even that they had bartered in Indian perfumes, gold, peacocks, and other wonderful things, for the shekels of the rich Israelitish merchants. Then the Arabians, extending their expeditions into the Eastern seas, were known in the ports of India and Siam, and even in far-off China. The news of their discoveries, however, spread but slowly throughout Europe. Newspapers there were none; books few, and in manuscript; and atlases were not even dreamt of. Accordingly, though Arabia was at that time more closely connected with Europe than now, and ranked much higher in the world, it was not until long after that they were credited with these remarkable voyages, or that the rest of the world benefited much thereby. Meanwhile, the Scandinavians —half merchants, half soldiers, the whole coloured with a deep dash of the pirate—had discovered Iceland, Greenland, and had even, if the Sagas are to be credited, sailed as far as America, and made settlements where now the Yankee town of Taunton stands.

On land, the Mongols from Central Asia, in their mad career of conquest and pillage, had spread terror from the gates of Pekin to the frontier of Germany. Russia, China, Bagdad, and Delhi are landmarks of the wide-spread deluge of these bold horsemen, whose conquests, however, left nothing behind them but bloodshed and destruction. The followers of Gengis-Khan and his successors were rude barbarians, who cared nothing for the spread of knowledge and civilisation, and beyond an insane desire for slaughter, and a fanatical zeal for the spread of the religion of the Prophet, they seem to have had no aspirations. Their conquests were not, however, altogether without benefit to geographical knowledge; for one famous European adventurer, the Venetian, Marco Polo, entering the service of China, was enabled to follow the Mongols in their track from the northern corner of the Black Sea, across the Caspian, and over the vast plains and mountain ranges of Central Asia on to Pekin, and recorded his observations in a work, the value of which time, instead of diminishing, has increased. This was towards the close of the thirteenth century.

Portugal was next to have the honour of great discoveries—discoveries that far eclipsed anything which had gone before, and, we may confidently say, anything which came after them. These voyages of seamen of the little Iberian kingdom were the commencement of what we may safely designate as a systematic scheme of maritime discovery and exploration —undertaken, no doubt, in the interest of commerce; but commerce is ever the aid and sister of geographical discovery, and the Portuguese navigators were, in most instances, men whose minds could soar above the mere thirst for gold. In 1486, Bartholomew Diaz sailed along the Western African coast, as far as the Cape of Good Hope; but, instead of doubling this promontory, and discovering the route to "the Indies" he was in search of he returned home, and left to his countryman, Vasco di Gama, the honour of reaching India, and of making the discoveries which soon led to both the African and Southern

Indian coasts being dotted with the commercial establishments of Portugal, some of which exist to this day.

The greatest of all the great discoveries of the Middle Ages was yet to come. In 1492—not merely by chance, but impelled in his belief in the soundness of his reasoning from geographical data—the great Columbus, a native of Genoa, but just then in the service of Spain, set sail from the port of Palos, and steering straight across the Atlantic, struck land on one of the West Indian Islands (Watling's Island, in the Bahamas), and discovered the continent of America, though in reality he died ignorant of the fact, always believing that it was only a part of India that he had come across. The discoveries which followed were unparalleled. In less than forty years Africa was circumnavigated; the New World partially explored, and its coast sailed along from the mouth of the St. Lawrence to Cape Horn, and on its western shores as far north as Lower California; two new routes were opened up to India; and, finally, the whole world circumnavigated. Among the brilliant galaxy of names we can only mention those of Cabot, Pinzon, Amerigo Vespucci (who, through an error, and probably a lie, had the honour of having America named after him), Cabral, Solis, and Magellan, a native of Portugal, though sailing in a Spanish ship, who was the first to reach the Pacific—

> "——— the first that ever burst
> Into that silent sea."

His ship was the first to circumnavigate the world.

This was a brilliant era in the history of discovery, which the enlightened enthusiasm of Prince Henry of Portugal had fanned into life. But it was a period of maritime adventure alone. The interior of the great continents which these bold sailors visited was, for the most part, unexplored, except in a few places along the banks of great rivers, up which some of the fearless adventurers had sailed in search of gold and pearls. Africa, for instance, was only looked upon as a disagreeable triangle of land, bordered by feverish marshes, past which it was the interest of the navigator to proceed as quickly and safely as might be. Soon the hardy seamen of the other European nations followed the Spaniards and Portuguese along the route which they had discovered, eager to share in the good things which exaggerated rumour affirmed to lie heaped in such abundance in these far-off lands of the East—in the Indies, in Cathay, and Cipangu—China and Japan. Africa still remained as it is at our own day—the waste place in the earth, through the wilds of which only a few tracks have been made here and there. But far different was it with America. Into the heart of that continent the daring adventurers were even more eager to penetrate than they had been to skirt its wooded shores. Even Columbus was seized with the prevailing enthusiasm for inland exploration. It was believed to be a part of India—a name then synonymous with all that was wealthy and marvellous; it was even believed that in the interior—in the high uplands—might be found the Garden of Eden—the site of the long-lost Paradise. El Dorados were in every man's mind; universal enthusiasm prevailed, wild excitement permeated all classes of European society; and if the eagerness to be rich were not sufficient to tempt the adventurous seamen that hung about all the seaports of Europe, the stimulus of religious zeal was called in to aid. The days of the Crusaders were past, but the crusading spirit still remained. If there were no Holy Sepulchre to

rescue from the infidel, there were at least swarming millions of swarthy Indians to be proselytised into the bosom of Mother Church. Once let them be sprinkled with water, and a tin cross hung round their necks, and the good men might be at ease regarding the souls of the "salvages;" and expect their reward for the good works done in the flesh, if not in this world in the shape of gold, silver, and pearls, plundered by the warriors in whose train they followed, at least in a world where there was no more fighting—no more marching and counter-marching. In all the annals of the most ruthless of victors, there is nothing to compare with the atrocity of the Spanish conquerors of the new world, some facts in regard to which we have had occasion to touch upon in another work, with which the readers of these pages may perhaps have made acquaintance.* "The Spaniards put out the eyes of the New World," are the words of the lively writer,† on whose facts we have greatly drawn in the foregoing pages. "The empires of Peru and Mexico fell—their civilisation disappeared and was forgotten—the very races of the continent have almost died out beneath the cruelty and maladministration of their conquerors. We remember reading an account of the discovery of an ancient Etrurian sepulchre, wherein a figure was seen sitting, attired in the strange regality of a remote past; everything was perfect as life; but no sooner did the discoverers too rashly enter, than the figure and the throne, and stately adjuncts, suddenly crumbled into dust, leaving absolutely nothing behind by which a conception of the strange vision could be preserved. Even so it fared with the old royalties and civilisations of America."

Then followed the voyages of Juan de Fuca as far north as California—mythical though some have been inclined to look upon the old Greek pilot; Behring, the Dane, still further north to the straits which bear his name; Deschneff, the Don Cossack, and others who explored the Arctic shores of Siberia; Barentz and Villoughby, who, in their search for a north-east passage to India, reached Novai Zemlai; Baffin and Hudson, who explored the icy seas or straits which bear their names; and many more of whose voyages we may have an opportunity in the due place and time of speaking. Tasman, La Perouse, Cook, and Vancouver, discovered and named a thousand isles lying . the "watery solitudes of the Pacific;" Humboldt and Bonpland were making more brilliant scientific discoveries in South America, which are so inseparably connected with their names; while in a different direction on land, Park, Clapperton, Bruce, and other brave men were exploring the pestilent rivers of Africa.

Modern Discovery.

In modern times, if we have not such an unknown world to conquer as had our fathers, what yet remains has been, and is being, vanquished with a courage, skill, and enterprise worthy of theirs.

In the long list of explorers of the frozen seas and lands of the North, we have no names which can be pronounced with more respect than those of Franklin, Ross, Parry; not to mention many others of our own time, whose deeds are scarcely overshadowed by those of their predecessors in the same field. In African enterprise we have, within so short a

* "The Races of Mankind." Vol. I., p. 267. † "Blackwood's Magazine," 1863.

THE FOUR GREAT MODERN EXPLORERS.

space as the last twenty years, shot far ahead of all the preceding centuries. Need I mention the brilliant discoveries of Livingstone, Speke, and Grant, Burton, Baker, Nachtigall, Rolf, Schweinfurth, Cameron, and others, in support of this assertion? In Central Asia our explorers have been equally busy, though, owing to a conjunction of circumstances, scarcely so successful as in the exploration of Africa. But how much have we known of Asia since the readers of these pages, still in the prime of life, were boys at school? Vambéry, in the disguise of a dervish, Colonel Montgomery's many "Pundits," and other native scientific spies, as well as the explorations of the Russian military and scientific commissions, have added, and are daily adding, to our knowledge of what was once one of the least-known parts of the world.

Australia and New Zealand, hardly known to our forefathers, except as the "Botany Bay" country to which we deputed the off-scourings unfit for Britain, where whalers and sealers touched, or as lands of which they had vague recollections of reading in the narratives of Cook or Flinders, are now great colonies, the settlement and exploration of which form a long chapter in the history of geography, and of the British Empire. In America, the Pacific railway now runs over the once solitary prairies, and cities are built, or are building, on spots where, not very many years since, the writer of these lines lived for many weeks, encamped in a cotton tent, unvisited by any human being save a solitary wandering Indian hunter or trapper.

The sea is being explored as eagerly, and even more scientifically, than the land; and the voyages of the *Porcupine*, *Tuscarora*, or *Challenger*, will in future rank with the greatest of the expeditions which have mapped the burning wastes of Africa, or the chilly steppes of high Asia. Where, scarcely a generation ago, we had only the first rude sketch of the explorer—who could often spare but ill his hands from the rifle to the sextant—the minute accuracy of the trigonometrical survey is in progress. In a few years, for example, the great jungles, rich plains, and even the mountain ranges of India, to their very confines of Thibet, will be laid down on our maps by this unerring method of chartography. Atlases are multiplying, but their number is only equalled by their accuracy. For sixpence may be had a series of maps such as Mercator could not have drawn, and embodying more information than Ptolemy and all his successors for hundreds of years were in possession of.

War, which to almost every well-constituted being is an unmitigated misery, and incapable of advancing scarcely any branch of knowledge worthy of the cultivation, is to the geographer's science a gain. The *avant-courier* of every army is a map; and though a conqueror may level cities and efface the monuments which time has spared, the next atlas will be assuredly more correct than the one which preceded the march of his battalions. A new map is almost as essential to the close of a war as a congress of plenipotentiaries, for the issue of it is sure to be a re-arrangement of the pieces on the chess-board—a "rectification" of the boundaries of countries—an interchange of nationalities, cities, and provinces. We all know how the war which lasted from 1791 to 1815 altered the colours on the map of Europe, which express the boundaries of the different countries. Indeed, during the continuance of the Napoleonic wars, almost every new year called for a new map. "The boundaries of states flickered to and fro; new kingdoms or republics appeared or disappeared; old states were disrupted and transformed; statesmen became chartographers; and finally a diplomatic conclave at Vienna,

after much wrangling, issued a new and would-be stereotyped edition of the map of Europe, which lasted quite as long as could have been expected. Map-making was not very quick-handed in these days; but still it laboured away, and toiled after the 'Grand Armies' in their ever-shifting field of operations. Battles have no respect for existing copyrights; humble villages or streamlets, unheard of before, will sometimes connect their names with events decisive of the fortunes of a continent, and thereafter must appear in every atlas that would keep its place in the market. What endless issues of maps there were during the short war in the Crimea, until every hamlet and foot-road in that half-deserted and very unimportant corner of the world became as well known to us as if it had been an English county." The same was true of the Abyssinian war, when maps of a region little known even to geographers, poured from the lithographic presses with astonishing rapidity and profusion. No sooner was the little war in Ashantee announced as imminent, than maps of the Gold Coast, superior in detail and accuracy to anything which had gone before, appeared in every shop-window, and in almost every illustrated paper; and no matter to what part of the world notice is likely to be attracted, a map of that region is about as certain to follow as are the descriptive letters of "our special correspondent."

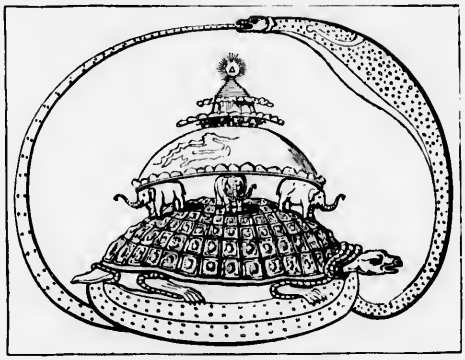
Man in his migrations over the world alters its physical geography, and transfers the products of one land to another. In America and in many of our colonies he has caused the sugar-cane and maize—the wheat of the Indian—to grow in room of pines and primeval forests. Sheep and oxen have taken the place of the bear, the beaver, or the buffalo; while in more tropical regions the lion, the tiger, and the elephant have been compelled to give place to animals more useful, or more subject to the control of the new lords, who have asserted their reign over what were once the haunts of these kings of the forest.

The Unknown of the Nineteenth Century.

Not a year but is adding to our knowledge of the world. The great regions may now be known in all their broad details, though none are known with that accuracy which is essential for the purposes of the geographer. Still, the explorer need not sit down and weep because there are no more worlds to conquer. There are two and a half millions of square miles around the Pole, of which we know nothing; while there are few parts of the Arctic regions as a whole, Greenland excepted, with which our acquaintance is anything like accurate. Of even the interior of Greenland, a country known and partially settled by Europeans for more than 900 years, we are yet entirely ignorant of anything very tangible. The Antarctic regions are as yet almost a *terra incognita*, and are likely long to so remain. The interior of Australia yet remains to be fully explored; while in regard to much of Thibet we are wholly ignorant. Even Central America, circumscribed as is the region for exploration, cannot be said to have yet yielded up its secrets to the many adventurers who have penetrated its forests and savannahs. Yet, with all the advances of modern exploration and research, in spite of the atlases, maps, works of travel, and geographical text-books, the name of which is legion, there is no science of which otherwise educated Englishmen—and I might have said all Europeans—are so ignorant.

We may laugh at the English ambassador at the Court of Rome in 1343—when

Pope Clement VI. had presented the Canaries, or Fortunate Isles, to the Count de Clermont—leaving the Papal Court in alarm, and hastening home to acquaint his king that the Pope had given away his dominions, fancying that there could be no other "fortunate isles" except those of Britain. But there remains the modern counterpart to it, of the English Colonial Minister who, on receiving a petition to establish mail communication between Australia and Van Diemen's Land, suggested, in crass ignorance of the breadth of Bass's Strait, which looked so narrow on his office-wall map, the desirability of throwing a bridge over it! Colonial Ministers, learned in all the learning of Greece and Rome, not unfrequently display to a "listening Senate" that they do not know how many colonies there are in Australia, that there are no tigers in Vancouver Island, or that they are not aware



MOUNT MERU, THE EARTH, AND THE INFERNAL REGIONS, CARRIED BY THE TORTOISE.
(*After an original Design by a Brahmin.**)

that the zoology of a country does not exactly mean the description of its rocks and coal mines. M. de Plenis, in the preface to "New Geography," printed at Amsterdam in the year 1700, makes also exceedingly merry at the expense of some of his own countrymen who, when they heard of the war about the *Pont Euxine*, wondered that one or other of the contending parties had not broken it down—fancying that it was a bridge.

Again, when some Frenchmen—a nation, if possible, more generally ignorant of geography than the English—heard of the Morea, they took it to be the country of the Moors, and imagined that Genoa and Lucca were rich Italian ladies. He mentions some others who wrote of ships sailing from the Caspian to the Euxine Sea, all the time in unblissful ignorance that these seas had no communication with each other, or that indeed there is a chain of mountains between them. When 'Gulliver's Travels" was published most people

* According to the Hindoo belief, the tortoise is the symbol of force and creative power. It here rests on the great serpent, the emblem of eternity. The three worlds are:—1st. The upper region, the residence of the gods. 2nd. The intermediate region, the earth. 3rd. The lower, or infernal region. At the summit of Mount Meru, which is supposed to cover and unite the three worlds, the triangle, the symbol of creation, may be seen gleaming.

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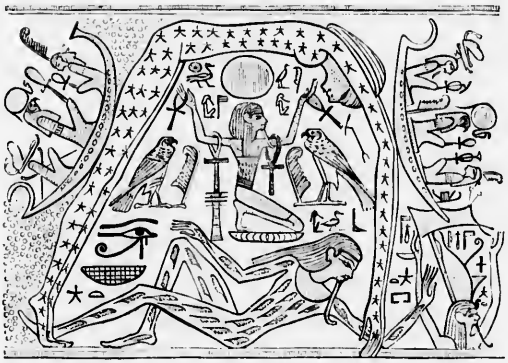
2 VIEW OF THE "DEVIL'S CASTLE," A GROUP OF ROCKS IN FRANZ-JOSEPH FJORD, EAST GREENLAND.

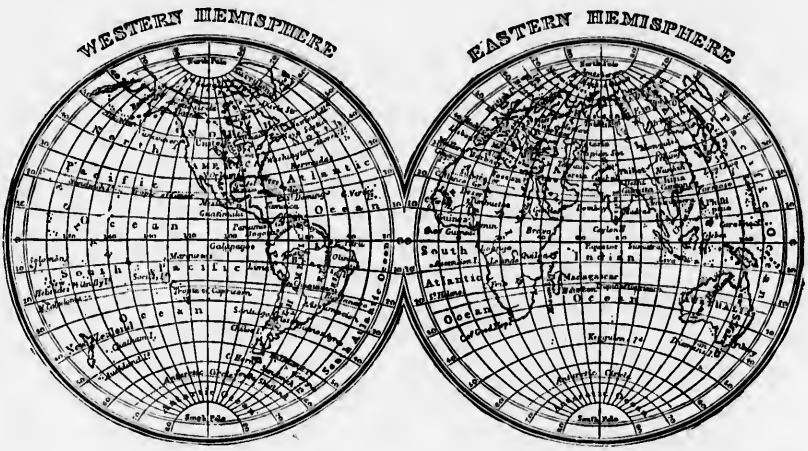
supposed Laputa and Lilliput were real countries; and when the war broke out between the Northern and Southern States, many people for a time believed that North and South America had become hostile to each other. Why the greatest commercial nation in the world—the one that has an ever-increasing chain of great colonies circling the globe, and which has done more for geographical exploration than any other—should as a rule be, in the persons of the majority of its individual components, so ignorant of the first elements of the science, it is difficult to comprehend. That such is the case there can, however, be little doubt. Possibly the way geography is taught in some schools, or the total absence of its teaching in others, may be the cause of this deficiency in the education of otherwise intelligent and well-informed people—added to the condensed encyclopædian character of the text-



SYMBOLICAL REPRESENTATION OF THE EARTH, ACCORDING TO THE EGYPTIANS.

books generally in use. These books, in most cases, by endeavouring to cram the greatest possible amount of hard, uninteresting, and frequently unimportant detail in the smallest dimensions, when most of these particulars can be far better presented to the eye in a graphic form by a glance at a map, have succeeded most dismally in rendering a science which could be as entertaining as a well-written work of travel—and indeed is nothing else than a *resumé* of travel—about as interesting as a treatise "On the use of the Globes," and as valuable as the catalogue of a stamp collector's album. There is no reason why the science of geography should not be made interesting. It would be presumptuous to claim that in the volumes to which these lines form at once the preface and introduction this will be done. But at least we will endeavour—with the aid of friends and fellow-travellers in many parts of the world—to give the essence and main facts which modern exploration has brought to light regarding the globe we live in, without wearying the reader with a multiplicity of uselessly minute detail; and before we have gone "around the world," to show, in the words of Burke, that "Geography is an earthly subject, but a heavenly science."

VIEW OF THE "DEVILS CASTLE," A GROUP OF ROCKS IN FRANZJOSEPH FJORD, EAST GREENLAND.



The Language of Geography.

A map is, as every one knows, a portraiture of the figure of a country on a flat surface, on which the rivers, mountains, lakes, cities, and other geographical peculiarities of the region are laid down, according to certain well-understood, though more or less arbitrary, signs; while the term *chart*, though exactly the same thing, is in English generally reserved for a map of the coasts of a country and of the sea-bottom—on a scale minute enough to be useful for the purposes of the navigator. The earth is, however, in shape more or less globular, though not exactly round. The familiar simile that it is like an orange, rather flattened at either end, or Pole, is near enough for our purpose. The surface of this globe, being depressed in some places by deep valleys and river-courses, and in other places heightened by lofty mountain-ranges, cannot have the same diameter throughout. It is, however, rather broader than it is long. In other words, a line drawn from the southern end, or Pole, to the northern end, or Pole, would have an average length, taking one place with another, of 7,899·1 miles; while the mean Equatorial diameter, or its breadth, ascertained in the same manner, at the point exactly between the Northern and Southern Poles, in the line of the Equator, would be more, viz., 7,925·6 miles; the mean or average diameter being thus about 7,912 miles.

The earth contains a mass of 259,801 millions of cubic miles. It is generally believed that the centre of this great mass is in a fluid condition, and that what geologists call the crust of the earth is only a solid rind on the outside, a very few miles in thickness. By those persons who follow the theory founded on the well-known fact that the earth increases gradually in warmth the deeper we penetrate into it, the lava vomited out of

volcanoes is pointed out as one of the many proofs of the justice of the view. On the other hand, the correctness of the theory is doubted by some, whose opinion is entitled to considerable weight, who argue that there are only cavities containing liquid matter, here and there, throughout the outer limits of the whole solid mass. Be this as it may, it is a point into which, in a book of this nature, it is hardly worth inquiring too closely, since the ground for holding either belief is about equally imperfect: the rotundity of the globe is universally acknowledged; it follows, therefore, that any map on the usual flat surface can only imperfectly express the shape and relative size of the countries; and that it is only maps drawn on a globe that can at all represent the mountains truly.

Circling a globe, or drawn across a map, are certain parallel lines, called the lines of *latitude*—these lines being north and south of the Equator, and being calculated in degrees, minutes, and seconds. Again, running from north to south, and converging at both Poles, are the lines of *longitude*. Hence, in talking of any place, we say that it is, for instance, latitude 48° 15' 5" north—that is, forty-eight degrees, fifteen minutes, five seconds north of the Equator. If the place lay south of the Equator, we should in like manner describe the place as in south latitude. In describing the longitude of the place, we say that it is east or west, though we have no settled point from which we calculate east or west, every nation selecting their own *first meridian*, or point from which they calculate. In English maps and globes the first meridian is a line supposed to pass from Pole to Pole through the Royal Observatory at Greenwich; hence we talk of any place having a longitude east or west of Greenwich. Greenwich is now being adopted by many other countries as a "first meridian;" and will, no doubt, be in time universally adopted as such.

At the Poles there is, of course, no longitude, and the more we approach to the south or north, the nearer are the lines of longitude to each other. The figures expressing the degrees of longitude are printed on the top of the map, while those of latitude are at the sides. When the figures increase from left to right, the longitude is east; but when they increase from right to left, the longitude is west. In addition to the lines of latitude and longitude, there are others engraved on a map, or globe. These are the Equator or Equinoctial Line, the Ecliptic, and four smaller ones—the Arctic and Antarctic Circles, and the Tropics of Cancer and Capricorn. The Equator we have already spoken about as a circle equally distant from the Poles, and which accordingly divides the earth in the northern and southern hemispheres. The *Ecliptic* is a circle which cuts the Equator obliquely at two opposite points, and represents the sun's path in the heavens. The two Tropics are situated parallel to the Equator, at about 23½ degrees from it. The northern one is the *Tropic of Cancer*, the southern the *Tropic of Capricorn*, because they touch the Ecliptic at the beginning of these astronomical signs. In the same way the Polar Circles are situated 23½ degrees from the Poles, and are denominated the *Arctic* and *Antarctic Circles*, in respectively the northern and southern hemispheres.

Land and water are not equally distributed over the world. The eastern hemisphere —*i.e.*, all the world lying east of the meridian of Greenwich—contains the continents of Europe, Asia, Africa, and Australia, in addition to many large islands; while the western hemisphere has only Greenland, America, and a few small islands. About seven-tenths of the surface of the earth are composed of water, and about three-tenths of land; in other

words, about 51,250,000 square miles are land, and 145,600,000 are water, giving to the globe 196,850,000 square miles of area. About seven-twelfths of the water are in the southern hemisphere, and five-twelfths in the northern. The same eminent mathematician and physical geographer—Dr. James Bryce—from whose calculations these figures have been derived, also points out that in the Old World the land extends in an unbroken mass over almost the entire breadth of the eastern hemisphere, but that the vast proportion of the mass is on the north of the Equator.

In the New World, on the other hand, the land is developed along an axis running nearly north and south, more than two-thirds of the circumference. This length is determined by a vast chain, the most continuously elevated in the globe, extending from 56° S. to 71° N., close to one side of the continent; while the great breadth of the continent in Brazil, the United States, Canada, and Labrador, is dependent upon great but much less elevated ranges, having a general parallelism to the sea-coast on that side. In the Old World, the development depends upon the direction of a great axis of elevation, which stretches, with little interruption, but with considerable undulations, from the west of Spain to the Sea of Okhotsk, and to Behring Strait, on opposite sides of which the chains of the two continents are brought into close connection. Together these form a vast girdle, encircling the Pacific and Indian Oceans, surrounding the Mediterranean—for the Atlas is part of the system—and ending abruptly towards the oceans. The declining slopes are directed towards the interior of the continents. Africa and Australia have a structure different from that of the other continents; they have elevated borders and an interior comparatively low and level, except in some disconnected tracts. Of the Antarctic continent we only know that it has an ice-bound coast, with lofty volcanic peaks in the interior. In due time we shall have occasion to travel with Wilkes and Ross in the direction of that mysterious frozen land surrounding the South Pole.

The mean or average elevations of the different great regions of the world have been calculated as follows:—Europe, 671 feet; North America, 784 feet; South America, 1,132 feet; Asia, 1,157 feet, above the sea-level—*i.e.*, if all parts of each region were smoothed down to an equal level.

There are other terms which we shall have occasion to use, but which are so familiarly known that we need only refer to them. These are—a *continent*, or large tract of land; an *island*, or land surrounded by water; a *promontory* or *cape*, a more or less elongated portion of land running into the sea; a *peninsula*, or land almost surrounded by water; and an *isthmus*, or narrow neck of land joining two portions of land together. The words *ocean*, *sea*, *lake*, *bay*, *gulf*, and *strait* require no explanation. These are parts of the common stock of language, and, though originally used by geographers only, cannot now be classed among technical expressions. Others more local and less known will be explained as we proceed on our travels. These are dry details, which we shall no doubt be told are "familiar to every schoolboy." But that omniscient youth is credited with so many and varied departments of knowledge which are but faintly present in the memories of those much older, that it may perhaps be well to preface the more interesting parts of our volumes with what, if it cannot claim the merit of being readable, cannot be denied that of utility.

AN ARCTIC SCENE.

CHAPTER II.

The Arctic Regions in General.

We must commence our journey somewhere; and though the inhospitable regions of the North are generally the part of the world last reached by a traveller the most cosmopolitan and adventurous—if he extends his wanderings so far a-field—yet for that very reason we find it most convenient to make these remote outskirts of creation the starting-point of our voyagings. We shall see many lands richer, fairer, and even more interesting; but we shall be in a better position to compare the exuberance of tropical life with that more familiar to us, if we do not plunge all at once into the equatorial forests, or weary the reader with a twice-told tale of what is already daily before his eyes in the temperate parts of the world.

The geographer styles all parts of the world north of latitude 66° 30′ the Arctic or Frozen Regions, and the imaginary line drawn on the map of the world at this distance from the North Pole, the Arctic Circle. Take North America, for example: this line in its circuit touches on the Behring Strait side, Hotham Inlet and the northern portion of the Great Bear Lake, in the middle portion of its circuit across the continent; while it sweeps across the Fox Channel, and the middle of Davis Strait, dividing Greenland, as at present known, into

about equal halves, and barely infringing, as it reaches the European seas, the northern portion of that mis-named island of Iceland, so called on the principle of *lucus a non lucendo*—light from not shining—the land of ice, because there is no ice on its shore, except that which now and then drifts from Greenland. In Europe it leaves a large part of Norway and most of Lapland to the north of it, while nearly all the great Russian rivers which have a northern outlet are, from a considerable distance of their lower reaches, also within the charmed circle. Siberia, in popular opinion, is throughout sufficiently Arctic; yet we must remember that it is only a part of Siberia which is within the Arctic regions of geographers, whatever it may be in ordinary parlance; and the whole peninsula of Kamschatka, dreary as it may be, lies without the line which is supposed to divide the Frozen from the Temperate Zone. It thus appears that no little portion of the possessions of Russia, Great Britain, the United States, Denmark, Norway and Sweden, belong to that region which few can mention without an involuntary shudder—the dreaded yet mysteriously attractive Arctic region.

Popular impressions are often far from the truth, and in regard to the Arctic regions they are undoubtedly so. A treeless land would be, in the opinion of most people, the idea which would suggest itself in regard to the regions in question. Yet this, though true, is not all the truth. Within the Arctic Circle are found trees, often forming considerable though stunted forests. In Eastern Siberia pines and other trees come down almost to the water's edge; while over all Western Siberia, Arctic Russia, and Lapland, the tree-limit runs within the Arctic Circle; trees extend even to the North Cape. In Greenland we find, even in the most southerly parts of it, no herbage more worthy of the name of tree than the stunted birch, which in the more sheltered valleys of that country—equally inappropriately named with Iceland—attain the proportion of little shrubs; and it is not until we come to the milder latitudes of the Pacific that the tree-line, which had described a southerly curve in the cold regions of Central North America, again rises to the north, and until we reach the shores of Behring Strait we find nothing which we can dignify by the name of trees.

Nor must we suppose that even for a considerable distance outside of the Arctic Circle is the country less worthy of the name of the Frozen Lands than inside of it. The southern point of Greenland is in about the same latitude as Cape Wrath in Scotland, yet it is sufficiently frozen to compare with lands lying far within the Arctic Circle. The same may be said of Hudson Straits, on the shores of which Eskimo live, and of many other parts which, geographically, lie within the limits of Polar lands. Latitude or the distance north has little to do with cold. The extreme of cold, it is generally believed, will not be found at the North any more than at the South Pole; but in about latitude 70° 5′ 17″ N., longitude 96° 46′ 45″ west. In this spot will be found in all probability not only the extreme of cold, but it is also remarkable in so far as it constitutes the "magnetic pole," or point to which the compass points; for, as the reader doubtless knows, the needle does not point due north. This interesting spot was discovered by Sir James (then Commander) Ross, a famous Arctic and Antarctic navigator, whose name we may yet have occasion to mention in connection with the exploration of these frozen confines of the earth. When he suspended horizontal needles in the most delicate manner possible, they showed not the slightest tendency to move in this locality. Though Nature had here placed the home of one of her secrets, the locality was indicated by nothing remarkable. There was merely a low flat coast, rising about a mile, inland with ridges fifty

or sixty feet high. Beyond this, no monument denotes the spot which Nature "has chosen as the centre of one of her great and dark powers."

Neither does the greatest amount of snow fall within the Arctic Circle. Taking Greenland for example: though the amount of snow is in the winter considerable, and is longer in clearing away near the coast than further south, yet north of 70° the quantity which falls is less than it is outside of the Arctic Circle. The Arctic regions are also by no means the regions of greatest cold. It is even believed—we confess not without some grounds worthy of attention—by some geographers that around the Pole we shall find a comparatively open sea, or at least one not so nearly choked by ice as might be expected from the high north latitude. The waters are frozen, because, so far as we yet know, the greater portion of the northern parts of the globe is occupied by the "Arctic Ocean;" but the cold is so intense in the heart of Asia and of America, that doubtless, if sea existed in such places, it would be also frozen. The truth is, the Arctic Circle, though unfortunately adopted by some physical geographers as the southern limit of the Arctic region, is in reality in no way a physical boundary of the regions of ice and snow from the regions where the climate is more temperate. It is one of the lines which the astronomers have found it necessary to draw on the globe for their own convenience, and merely expresses, to use their language, a circle drawn round the northern end of the earth, at a distance from the Pole equal to the obliquity of the Ecliptic—or the sun's apparent yearly path among the stars from west to east. For the purposes of the physical, as distinguished from the astronomical, geographer, perhaps the tree-limit would have been the best Arctic Circle; but it is really impossible to confine vague climate and climatic influences within any hard and fast line; and, accordingly, the Arctic Circle of non-astronomical people must be like a "movable feast"—not very settled. Fortunately, it is an easier task to give a general idea of the appearance of Arctic lands. They may be conveniently divided into three great divisions—the wooded country, the mountainous country or highlands, and the low mossy lowlands.

The Arctic Woodlands.

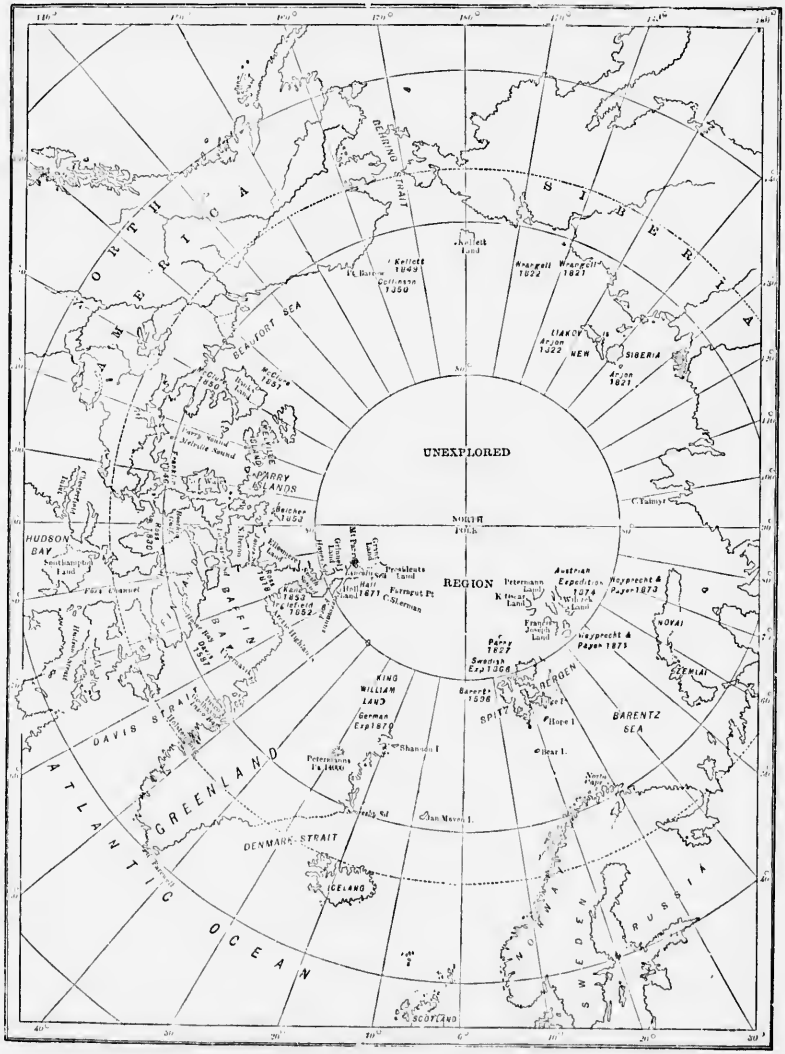
The wooded country we have already spoken of is confined entirely to some portions of Siberia, Russia, and Lapland, and to North-Eastern America, down the shore of Behring Strait. The wooded banks of the Yuken touch the Arctic Circle, and forests of white spruce are found on the Noatak, a river which falls into Eschscholtz Bay, which infringes on the Arctic Circle. In Lapland the spruce ceases at about the 68th parallel, and the Scotch fir at the 69th; but in Norway, owing probably to the presence of the warm Gulf Stream which sweeps along the coast and into the Arctic Sea—at least as far east as Novai Zemlai—we find forests of Scotch firs sixty feet in height as far north as Altenfjord, and birches about forty-five feet high in an equally northern latitude. In latitude 70° 2′ the hardy Scotch fir still maintains its ground, though the spruce fails a degree or so further south. In the vicinity of Hammerfest, a well-known Lapland town, in latitude 70½° N., there are dwarf alders and aspens, bird cherries, rasps, and currants. In the Scandinavian Peninsula, probably also owing to the warmth which a sea unencumbered, and in addition laved by a current of a higher temperature, affords, barley is cultivated as far north as

the 70th parallel, the latitude of Disco Island, on the Greenland coast, and oats up to the 65th, "in sheltered valleys, where rocks and cliffs reflect the sun's rays with much power" (Richardson). Compare this with the *Meta Incognita* of stout old Martin Frobisher, now known as Cumberland Gulf, but until comparatively recently unknown as they were in the time of Great Queen Bess's knight. In this locality, which lies far south of the Arctic Circle, inland glaciers and bleak mossy islands, at best covered during the short summer with dwarf creeping birch and cranberry, and during the long winter with

VIEW OF SOURSOAK, DISCO ISLAND, NORTH GREENLAND. (*From an Original Sketch.*)

a blanket of snow, the sea being frozen all around, form the bleak scene of desolation which meets the eye, all pointing out that latitude, apart from other circumstances, has but little to do with climate.

In the valley of the Mackenzie, Sir John Richardson tells us that the spruce fir is the most northern tree that forms a forest, reaching to a much higher latitude than the pines—contrary to what occurs in Norway, where the pines are the most northern. "In latitude 68° 55′ N. the trees, which up to this parallel cover the immediate banks of the river and the islands of the delta, terminate suddenly in an even line, probably cut off by the sea-blasts. Beyond this line a few stunted sprnces and scrubby canoe-birches straggle up the acclivities, struggling for existence, and clinging to the earth. The forest is formed by the sprnces, but among these there are many canoe-birches, of much slenderer growth,



MAP OF THE NORTH POLAR REGIONS.

their stems not exceeding five inches in diameter." The balsam poplar—or as it is sometimes, though erroneously, called, the cotton-wood—(*Populus balsamifera*), and a species of alder (*Alnus viridis*), grow to the height of twenty feet, and a willow (*Salix speciosa*) to that of twelve feet near the termination of the woods. Most of the hills skirting the river in these latitudes are bare, a few scattered trees being the only trace of the forests which, further to the west, are found in an equal northern position. Pines are here more chary of the cold than in North-eastern Europe, the Banksian pine (*Pinus Banksii*) not reaching within the Arctic Circle, and *Pinus resinosa* finding its northern limit in latitude 57°—a lower latitude than that of Aberdeen, in Scotland—here again demonstrating the effect of great land masses, independent of northerly locality, on the temperature of a country. In America no wheat has ever been raised within six degrees of the Arctic Circle, while at Hammerfest, in Lapland, a few ears of rye have been raised now and then as a curiosity, though they have rarely if ever fully ripened. Radishes, turnips, lettuces, and parsley plants have been reared; and we shall see by-and-by that radishes grow tolerably well in the same latitude in Greenland.

At Fort Good Hope, on the Mackenzie (in latitude 66½°), a few turnips and radishes, and other culinary vegetables, can be grown in a sheltered corner which receives the reflection of the sun's rays from the walls of the house; and on Peel's River, rather more than a degree further north, all attempts to raise esculent vegetables have failed. A few cresses made an attempt to attain something like perfection in a climate even too uncongenial for this humble plant. Turnips and cabbages came up about an inch above the ground, but, we are told by Sir John Richardson, withered in the sun, and were blighted by the early August frosts. Dreary enough, at best, are these stunted forests, even when in all their summer gaiety—the sepulchral mossy hangings of lichen and moss giving them a weird, depressing aspect; but doubly so are they during the winter, when the swampy soil in which the trees grow is frozen hard, and covered with congealed snow, which clings to the feathery branches, or depends from them in jagged icicles, when the retiring sun begins to alternately melt and freeze the fleecy covering which has for so long shrouded the landscape in white. The trees freeze "to their very centres," and are not thawed till the end of March or the beginning of April. But it matters little; for it is not until rather late in the summer that the sap can ascend, there being no moisture in the soil which is not frozen. In many places the ground is frozen to a great depth. In one locality in Siberia, in latitude 68° 42', Wrangell found that the summer thaw did not penetrate to a greater depth than six or eight inches. At Jakutsk, in Siberia, more than six degrees further south, frozen soil was penetrated through to a depth of 382 feet, until water flowed from beneath it. In Greenland, on the Mackenzie, in Hudson's Bay, and in other Arctic localities, the soil will often freeze during the winter to a depth of from ten to twenty feet. During the winter to attempt to dig a grave, where there is sufficient soil, is hopeless. The dead are either kept until summer—a matter of no difficulty in this cold climate—or are interred under heaps of stones above ground. Even at York Factory, in Hudson's Bay, in a latitude about the same as that of Perth, in Scotland, the surface soil at the close of summer will sometimes not be thawed more than three feet. Often in northern latitudes, bodies, if covered over with a layer of earth or stones, will remain uncorrupted for several years.

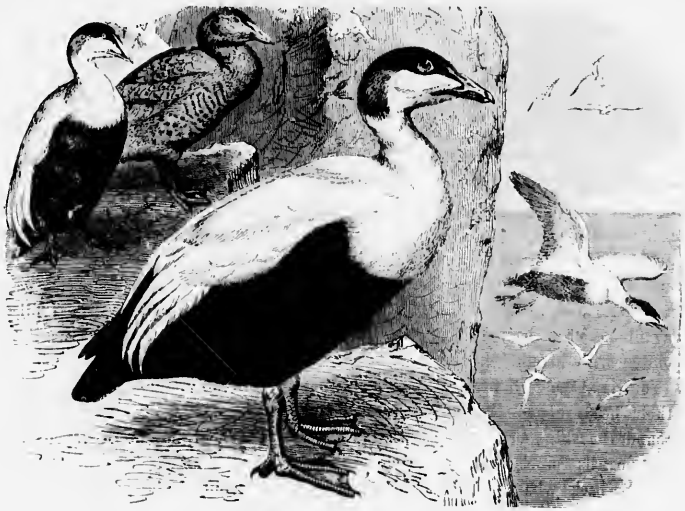
The Arctic Highlands.

We have thus shown that the popular idea, which associated treeless wastes with the Arctic regions, is not altogether a correct one. Still, though the axiom that what everybody says or thinks must be true, is not altogether a rule without an exception, there is generally, as in the case under question, some good ground for an impression very widely entertained.

The greater portion of the Arctic region is bleak and treeless in the extreme; the only woody plants found being the dwarf willow, blackberries, cranberries, or birches, which form a cover to the boggy ground. Though there is little extremely elevated land in the Arctic regions—Petermann's Peak (about 11,000 feet), and Payer's Peak (about 7,000 feet), on the east coast of Greenland being about the highest points—and mythical or "hymnal" though "the icy mountains" are, yet much of it is of considerable elevation. The impression of one's first approach to an Arctic land lingers long in the memory. For weeks you may have been tossing about in mid-ocean; gradually the ship gets into quieter waters; the fogs, which for days past have obscured any view beyond a few yards from the ship, clear away; the land haze is seen; the sun comes out of the leaden snowy sky; a bit of ice grates against the ship's side; and your attention is called to a white object tossing in the sea, a mile away. It is the first iceberg; and with the voyager's mind filled with extravagant notions, derived from the pictures he has seen in books, he is apt to be disappointed with his first iceberg. The great mountains of ice "grow on one" after a time. You approach still nearer: icebergs become disagreeably numerous; numerous seals raise their heads above the cold water; a white whale, or a little herd of narwhals, puff around the ship; or it is just possible that, far off, the thin line of vapour projected from its nostrils proclaims that a whale is "blowing." If you are near a cod-bank, the great fin-back whale—of little value either for its blubber or whalebone, though of much greater size than the "right" whalebone whale—will be sure to be seen in great numbers.

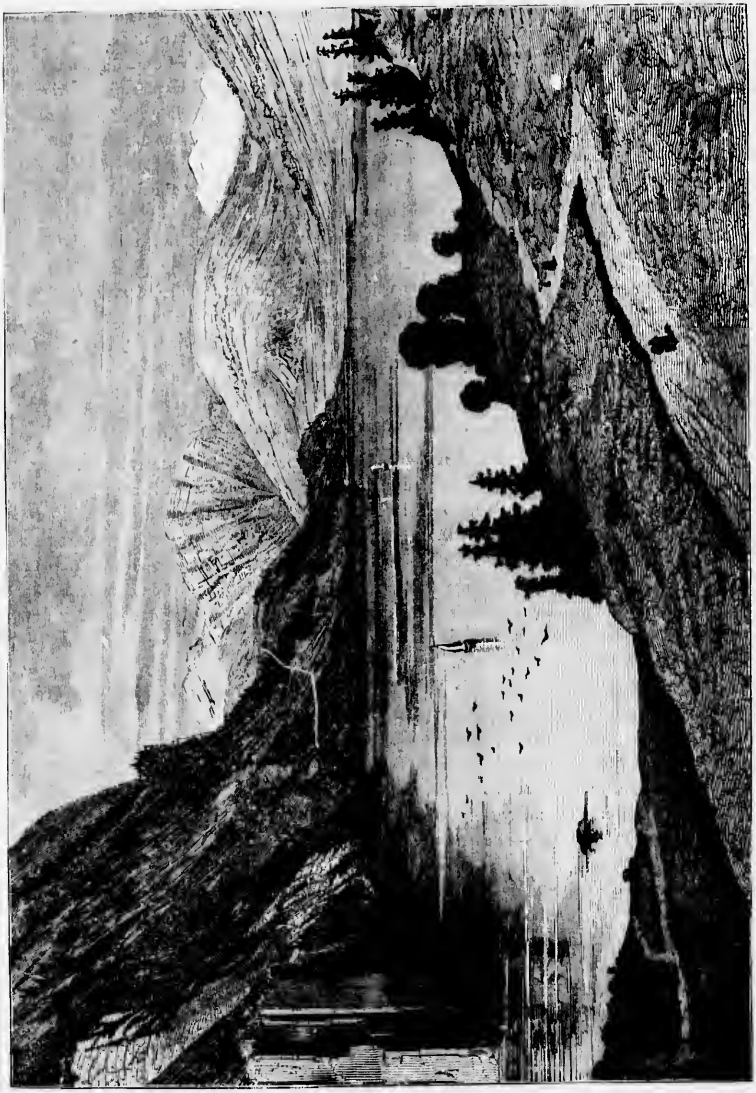
The land is now close at hand. The narrow band of ice known as the ice-foot—the remnant of that great field which, during the past winter, had stretched many miles from the shores—still hangs to the cliff, and will remain so until the warmth of the air, or the laving of the waves, heated above the freezing point by the long summer sunshine—a continuous day of four or five months (see engraving, p. 25), to be succeeded by an equally long night—breaks it off, and sends the fragments to mingle with the floating pieces of the winter's floes, which are ever and again scraping up against the ship's side, or bumping against it in a manner apt to alarm the voyager who, for the first time, experiences such a sensation. He soon becomes accustomed to these and still stranger concomitants of the land he is to live in for the next few months, or it may be years. Before him lies the line of coast. A snowy eminence of a greater height may be seen in the background, or here and there in the distance; but the general elevation of the cliffs is rather low. If gneiss be the rock of which they are composed, it is rounded and worn into bosses and knolls, as if ice had passed over it here and there; and even the more jagged scrap of whinstone is flat-topped,

as if the same silent but all-powerful agent had passed over like a huge plane, smoothing down the surface of the country. The snow has melted off the ground near the shore, but the more elevated plains are still covered with their winter's coat. The black of the cliffs is relieved, not only by the patches of unmelted snow, but by the glaciers, which creep down from the interior, or from the higher elevations, to the sea, and break off into the form of the icebergs which we see floating about us. A few islets lie off the coast, separated from the mainland by narrow channels, probably still choked up by ice in the open spots



EIDER DUCKS. (*Somateria mollissima*.)

in which eider ducks and loons are swimming about. You land on the ice-foot, and for the first time stand within the Arctic Circle. The ground off which the snow has melted is boggy and moss-covered, but the rocks are smoothed and shaved by the ice which it is now apparent must, at some former period of the history of the country, have ground over it. Wherever we can get a view of the rock we see signs of this. In addition to being rounded and worn, everywhere there are deep grooves, just like those we see in the rocks in an Alpine valley over which a glacier has once moved, or in a Scandinavian or Scottish glen, where the researches of geologists tell us the same thing has happened. Rocks, in many cases of a different geological formation from those in the vicinity, lie scattered everywhere over the country, or are perched in positions which leave no doubt to the practised eye of an educated naturalist that they were dropped in those places from the icebergs which, in remote ages, floated over the submerged surface of the country.



MIDNIGHT IN THE NORTH OF NORWAY.

The Arctic regions, like every other portion of the world, have undergone many changes—some of them much stranger than those we have mentioned. Climb any elevation, and the scene which meets our eye is cheerless in the extreme. A few ptarmigans rise up at our feet, a half-frozen lake lies in the hollow, an Arctic fox is barking its "Akak ah!' on a rock. If we see a solitary reindeer our walk rises to a sensational point, but the chances are that we are driven by a snowstorm to our boat, and for a time the few sea-fowls, which were beginning to make lively the open "leads" among the ice-fields, are as silent as their surroundings. The whole scene is cheerlessly chilly; but yet it has a charm of its own, which it is impossible to explain to those who have not sailed in these high latitudes.

Such are the Arctic Highlands—a name which the reader must not, however, confound with the country north of Melville Bay, in Greenland, to which that enthusiastic Scot, Sir John Ross, under the idea that the region in question was better, and the people bolder, than those of the more southern country, applied the same name!

The Arctic Lowlands, or Tûndras.

In various portions of the Arctic regions there are tracts of comparatively level land, such as the most northern portion of Labrador, bordering Hudson's Strait, a great portion of the western side of Baffin's Bay, Melville Island, &c. Sir John Richardson will even include Greenland, but this is erroneous. Greenland is certainly one of the great regions of the Arctic Highlands. In America and in Siberia the level lands, spread out from the eastern slopes of the mountains, change as they lose in altitude, and become more abrupt on their western slopes as they approach the Polar Sea. In the New World these tracts are called "barren ground," and in Siberia and North Russia "tûndren," or "tûndras," as the word has been Anglicised. They are also found in Lapland, where they are known to geographers under the much more classical name of *terræ damnatæ*—accursed lands—which Linnæus, the famous Swedish naturalist, applied to them.

The barren ground district of America is seen in its most marked form near Hudson's Bay, where it reaches as far south as the 61st parallel of latitude. It receives its name from the entire absence of trees in such tracts; but it abounds in lakes, and is traversed by the Great Fish River, and many minor streams. It is not altogether flat, for there are rocky hills of moderate altitude—such as the Stony Mountains of Samuel Hearne, one of its earliest explorers, a chain which has an elevation of about 1,500 feet. The barren grounds become narrower to the north of the Great Bear Lake, and, according to the celebrated explorer whom we have quoted, terminate at the delta of the Mackenzie. Under this name the Hudson's Bay fur-traders term all the treeless parts of North America; but, of course, in what we have called the Arctic Highlands there are also many tûndra-like tracts, though still not of the extent which we see in the barren grounds, and similar low-lying regions in Europe, Asia, and America.

During the winter the barren grounds in America are swept by the icy winds to such an extent as to render them uninhabitable by the hardy Indians; and even the reindeer keep by the edge, until able to retreat to the shelter of the woods in storms. The drier spots are

densely clothed with lichens of various species, mixed up, in the moister places, with the reindeer moss, the *Kalmia*, the blackberry, the dwarf Lapland rhododendron, the cranberry, the *Ledum*, or Labrador tea (from its leaves being used by the trappers as a substitute for the true China herb), the bearberry, the *Andromeda*, the cloudberry, the Arctic bramble (*Rubus arcticus*), and the various species of dwarf creeping willows found so commonly in the Arctic regions. In favourable and sheltered meadows, Sir John Richardson—who, when surgeon of Franklin's early expedition, shared many hardships in these dreary tracts, and was therefore well able to speak of them—describes grasses and bents flourishing in considerable variety, and on the banks of streams sometimes a growth of *Salix speciosa*, a kind of willow three feet in height, or even more, may now and then be seen. There are in addition many flowering plants of less note, but "which serve to cheer the traveller who traverses these wastes in the fleeting summer." The Siberian tûndras are less known; but, from the description which Wrangell and other travellers give of them, they seem to be almost identical, except in the species of plants which are found on them, with the American barren grounds. "In travelling across the wide tûndra in dark night," wrote the Russian explorer just named, "or when the vast plain is vested in impenetrable mist, or when in storms or snow-tempests the traveller is in danger of missing the sheltering hut, he will frequently owe his safety to a good dog, who will be sure to bring the sledge to the place where the hut lies deeply buried in the snow, and will suddenly stop and indicate where his master must dig." After coming from these naked, frozen, moss-covered tûndras into the valleys of the Arcini, which are sheltered by the mountains from the prevailing cold winds, and where birches, poplars, willows, and low creeping junipers (*Juniperus prostratus*) grow, Wrangell remarks that the traveller imagines "himself transported to Italy." The same feeling is experienced by those who have been long in the Arctic regions. Three different times has the writer of these lines approached England, after a stay of a shorter or longer extent amid the ice and snow of the Arctic regions. Under such circumstances, even the bare tûndra-like Shetland and Orkney Isles look home-like and cheerful, while the rich woods along the shores of the Danish Oresund excite an enthusiasm in their autumnal poverty which they never aroused in their summer splendour in former days, when comparisons had not made the treeless land we had left behind "odious." Old Willem Barentz, and other of the time-honoured searchers after an Arctic passage to India and China, repeatedly speak of the pleasant change it was to see the trees and grass of civilised Europe, after their eyes had been dazzled and dulled so long by the monotonous whiteness of ice and snow—snow and ice.

In the north of Russia, about the Kanin Peninsula and the neighbouring country, the tûndras can also be seen in great perfection. To this northern peninsula, guarding the eastern entrance to the White Sea, the wandering Samoyedes—the Old World representatives of the American Eskimo*—crowd during the summer months, in order to seek in its chilly atmosphere an asylum from the plague of mosquitoes, which infest northern and tropical countries with equal vigour. The sufferings of the reindeer from these insects are described by Mr. Rae as incredible. Sometimes their faces and heads stream with blood from their

* For a description of these people see "Races of Mankind," Vol. I., pp. 5—20; Vol. IV. pp. 296—300.

bites, and the poor animals are driven almost crazy from their irritating stings. If the Samoyedes did not migrate northward during the summer, they would probably lose whole herds of their reindeer—animals which are so essential to their existence. It is also noticed in America that the deer seek the mountains during the summer to escape the mosquitoes; and, accordingly, the hunter seeks his prey during the warm months near the limits of the eternal snow which covers some of these heights, or in situations from which the cool breezes have driven these buzzing enemies of bipeds and quadrupeds alike. Yet, even in

WALRUS ON THE ICE-FIELDS.

these cold northern wastes, near the Kanin Noss, the reindeer do not enjoy an undisturbed existence. Dotted over the tundras are objects "that remind us of home, and we sadly reflect on our loneliness—wooden erections, in form like a cockroach, and of about the size of a wolf. They are snares for the wolves, who lie in wait—and very cold waiting sometimes—for the reindeer. The Samoyede dogs are very intelligent—in form like Pomeranian or Eskimo dogs—often white, and as often wolf-colour. They come nosing into the tents during cooking or meal times, and have to be thrust out. They keep the reindeer as well together as a Scotch sheep-dog keeps his flock; indeed, one reindeer attached to my sledge behind, when he found a dog trotting reflectively behind him, strained so fearfully round with his eyes, that I thought he would dislocate them. In his anxiety he would press forward, thrusting his antlers into my ears or the back of my neck, or his nose under my arm, and he was never at ease until the dog moved on to the front."

Mr. Edward Rae, the lively writer from whose work* we quote these lines, gives a vivid description of sledging over these Russian tûndras in long single file, the spare reindeer cantering in open order over the tûndras, but kept from straying too far away from the cavalcade—or rather *cervi*cade, if the manufacture of a word be allowable—by two or three "businesslike dogs." The travellers, Samoyede or English, sat on the flat sledge, raised a little above the ground on two runners, and thus in long procession they filed over the tûndras—"not

A SAMOYEDE ENCAMPMENT.

level mossy plains, but swamps, and hillocks, and brushwood, and streams, and pools; the reindeer trotting with their swift but ungainly step; the sledges bounding from one great lump of peat to another, hissing through shallow pools, leaping fissures in the turf which they could barely span; tumbling on shifting mosses which, like yellow sponges, floated and sank, bubbling and swaying under the slight runners; tearing through tracks of sage brush, with water gurgling at the roots; rocking from side to side; climbing hillocks, or dyke-like barriers; diving into streams and out again; then the delicious, exhilarating, gliding over soft, wet, level moss. We have travelled on horseback, on camels, in canoes, in karyols, in tchélegas, in caïques, on locomotives, but we know nothing equal to summer sledging

* "The Land of the North Wind" (1875), p. 259.

on the tûndras of the Samoyedes. It is a glorious sensation! The sledges are wonderful in their aptitude for such travelling; one runner is a foot under water at one second, is two feet in the air at the next; the curved fronts buried in water, while the after ends are in brushwood. At one time the sledge is bridging as quickly as thought a stream or dank pool, and in the next instant is balancing on the top of a bank. So excellent are its proportions that rarely less than three points are supported at one moment, and the balance is preserved under almost incredible conditions. Imagine a boat leaping, rolling, and pitching in a rough broken sea, and then a sledge lurching over a broken lumpy sea of turf and swamp, drawn by the fleet reindeer. Lastly, imagine two brown-skinned Englishmen in boisterous enjoyment holding on tightly, to prevent their baggage and themselves from plunging into some bottomless floating morass. How wonderfully the reindeer speed over these swaying bogs, where a man would sink in a second to his waist, and in ten seconds to his neck! How their broad elastic hoofs expand, like camel's feet! They are splendid creatures! Their motion is awkward, and their rounded bodies, slender legs, bulgy hoofs, heavy mossy horns, and down-hanging heads are not pretty to look at. Their bellow is exactly like the grunt of a pig; but their eyes and dark mouths and nostrils are beautiful. They are surprisingly intelligent and sagacious when trained, and as enduring as the 'ship of the desert.' Now and then we stopped to adjust some rein, or things that had become detached, or to send a dog after some dilatory reindeer. Sometimes the trace, passing between the deer's legs, would become displaced, and a Samoyede would run up with a shout and leap from his sledge. I believe there is no summer sledging elsewhere, unless it be among the neighbouring nomads, the Ostiaks,* beyond the Oural Mountains. The Laplanders do not sledge in the summer; indeed, their little punt-like sledges would be quite impracticable for it; and the heat in their sheltered land, where wind rarely blows at midsummer, would be too much for the reindeer. Away, on all sides of us, lay the tûndras—softer in outline, but not unlike the fjeld of Norwegian Lapland"—gay in summer, with staghorn and reindeer mosses, club-moss, white and red lichens, cranberries, and the Arctic flowers. These tracts are not unenjoyable even on foot during the end of summer, when the surplus moisture from the spring rains and the melting of the snow has disappeared, even though the traveller be driven to the verge of insanity by the myriads of mosquitoes which, during hot days, swarm in the air.

It was the condition of these bogs when they were almost impassable from the causes mentioned that young Carl Linnæus, in the course of the journeys on which he was sent by the Swedish Academy in 1708, so quaintly described in his "Lachesis Lapponica:"—"We had next to pass a marshy tract, where at every step we were knee-deep in water; and if we thought to find a sure footing on some grassy tuft it proved treacherous, and only sunk us lower. Our half-boots were filled with the coldest water, as the frost in some places still remained on the ground. I wondered how I escaped with life, though certainly not without excessive fatigue and loss of strength." A guide who accompanied the young naturalist was dispatched to seek assistance, and on his return was "accompanied by a person, whose appearance was such that I did not know whether I beheld

* "Races of Mankind," Vol. IV., p. 258.

a man or a woman. Her stature was very diminutive; her face of the darkest brown, from the effects of smoke; her eyes dark and sparkling; her eyebrows black. Her pitchy-coloured hair hung loose about her head, and on it she wore a flat red cap. She had a grey petticoat; and from her neck, which resembled the skin of a frog, were suspended a pair of large loose breasts of the same brown complexion, but encompassed, by way of ornament, with brass rings. She addressed me, with mingled pity and reserve, in the following words: 'O thou poor man! what hard destiny can have brought thee hither, to a place never visited by any one before? This is the first time I ever beheld a stranger. Thou miserable creature! how didst thou come, and whither wilt thou go?'" In a word, the student from Upsal thought, as did another famous Lapland traveller, who came into the same region long after him: "So at last we ended our toilsome journey into Lapland—the most curious that ever was—one that I would not have failed to make for a great deal of money, and that I would not re-commence for much more." So writes M. Reguard—that *rara avis in terra*—a Frenchman in a northern latitude.

Climate.

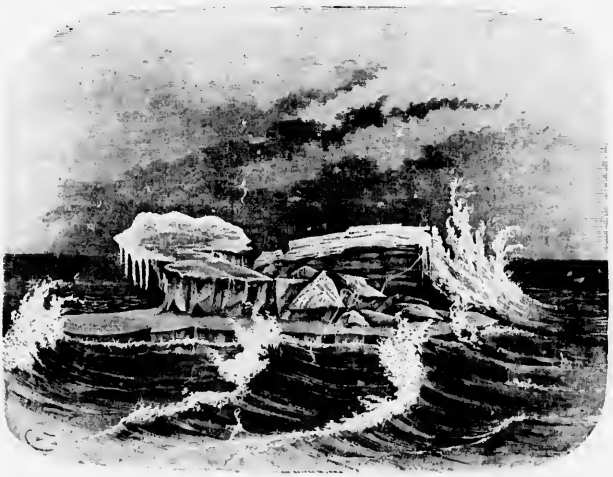
When Benjamin Franklin, in "Poor Richard's Almanac," makes the jocular prophecy that in the month of February "there may be expectations of much ice and snow in Greenland," he expresses a very safe opinion regarding the popular belief in the climate of the Arctic regions. There is probably no zone of the world extending over such a wide region of which the climate is so unvarying, either in its heat or cold. Spitzbergen in summer is very much the same as the mouth of the Mackenzie, and the amenities of a Greenland winter are not strikingly superior to those of Novai Zemlai. A greater expanse of sea in the vicinity may make the cold less severe in the winter, or the heat less intense in the summer; but the Arctic climate is, to a great extent, the same over the whole extent of the frozen regions during the same months in the year. Spring, summer, autumn, and winter there are, as in lower latitudes, but these terms express something different from what we understand by them in more favoured regions. Four months of daylight, four months of darkness, and four months of day and night, might more clearly express the nature of the seasons in the far, far North. The summers are short but bright, and their glory is all the greater after the long dreary winter night of several months. Snow is late in disappearing, and in the highlands and in shady places, except in very warm seasons, remains all the year round. By June, however, summer is upon us in the farthest North. The snow disappears, leaving the bare mossy soil or smooth ice-shaven rocks to make their appearance, in black ever-extending patches, out of the white background. The ice has broken up in the fjords; though it remains until late in the summer as a covering to the shallow, dreary little lakes, which the traveller may look down upon in every lonely valley. In the course of a few weeks, the "ice foot" attached to the shore alone remains as the attestation of the wide-spread field of ice which, during the winter months, covers the sea far and wide. The sun by this time has ceased to disappear beneath the horizon at night. Under the continuous daylight every day shows the rapid progress which vegetation is making. By July, every sunny plain is

light with the scant but gay Arctic *flora*. *Saxifrages* bloom in profusion; the gay *Epilobium* covers the sunny flats among the morasses, and buttercups ornament the

A LAPP FAMILY.

marshy sides of the pools. *Stellaria Oxyria*, and the cotton grass, with its fleecy head of snowy down, show themselves frequently; while in the mossy places here and there *Stellaria Edwardsii* is seen. The yellow poppy, most hardy of Arctic plants, is

one of the most common flowers, and is soon looked upon by the botanist as one of the most characteristic. The sweet-scented *Hierochloe*, which in Iceland is used to scent rooms, and in Greenland to stuff boots with, grows in tufts in every valley, while the springy turf is composed of the spreading crowberry, the dwarf birch, and the bleberry. These plants, as well as the more pleasing scenery, are not the least characteristic feature which liken the region we are describing to the less favoured portions of Orkney, Shetland, or even the highlands of the Scottish mainland. The icebergs, confined during the winter in the frozen fjords, now begin to "shoot out" in long majestic lines, looking like so many silver castles floating in a sun-lit summer sea.



AN ICE-RAFT.

As the season advances, every cliff gets noisy with birds—solemn rotjes, lively dovekies, and the garrulous myriads of mollemoke gulls, which swarm in the sea. The air is alive with the flights of eider (p. 24) and spectacled ducks, and on the rocky islets their nests swarm to such an extent as to allow scarcely foot-room for the traveller who may chance to land on these unfrequented spots. Seals are arriving on the coast in great abundance. Whales are "spouting" far out, or leisurely slumbering on the surface of the quiet bays. White whales and narwhals are making the sea merry with their gambols, and the Eskimo—happy at the thought of endless blubber and a sufficiency of food for the present—considers that the future may look to itself. Even the hungry dogs participate in the abundant feast; though, for the most part, being useless during the period when the ice is off the sea and the snow off the ground, these ravenous beasts of burden are confined on solitary islets to look out for themselves as best they may. On land, the

ravens and hawks, which, with the ptarmigan, form the chief feathered winter residents, are joined by numbers of travellers from more southern lands—birds of passage, which come here to rear their callow young, and disappear again at the approach of winter. During May and June they may be seen flying across the Atlantic, and any ship making for Spitzbergen or Davis' Strait at that season of the year will be sure to be favoured with the visits of snow-buntings and other birds, which alight on the rigging to rest themselves during their long flight. Butterflies and other insects flit about in considerable abundance, and almost every pool is full of specimens of the little *Dytiscus*, or water-beetle, which darts about from side to side among the water-weed stems. The white fox, now in its brown summer coat, is barking its "Aka-ha-ha" from the rock; the quiet glens are full of herds of reindeer; while the Polar bear, lord of all the land, has come out of his winter hibernation, and is ranging sea and land alike in search of his prey. It is the heyday of the short but brilliant Arctic summer. The heat of the sun is intense—beyond what one could suppose from the popular idea of an Arctic climate. So warm is it that mosquitoes, those pests of the Tropics and the North alike, swarm to such an extent, that the tortured wayfarer wearies for a dull day or a cold wintry blast, either of which generally makes them disappear for a time. On one of his summer visits to the Arctic region, so hot was it on land—the sun's rays being broken by no shade of tree or other shelter—that the author preferred to take his excursions by night, and sleep during the heat of a July sun. He would start off about nine or ten at night, and retire at six or seven the next morning. During the whole of that time it was bright daylight. The sun was touching, but had not descended below, the horizon at midnight. But though to all appearance it was day, a "Sabbath silence" in the air told that it was night. Everything was still and quiet; the Eskimo dogs of the little Greenland settlement, which was for the time my temporary home, had ceased from howling. Their masters were at peace among their reindeer skins in the little turf huts I passed; and the very birds seemed to be conscious that this was the fitting season of repose. The mollemokes had flown to the cliffs, or sat on floating pieces of ice, while the rotjes, or little auks, sat in long black lines on the edges of the floes. When, in 1861, in Baffin's Bay, I noticed the same thing; it was only when a whale was killed that they revived, and contended with the sharks for their share of plunder. Such is summer in the far North. It is summer; but the rude wintry blasts that often interchange with the sunshiny days are apt to remind us that the season of darkness, storm, and snow is not far off. In June I have seen a snow-storm, which in a few hours covered the ground to the depth of a foot or more with a white blanket; and often the cold fogs of the evening will render agreeable the furs which the midday heat had compelled the traveller to dispense with in favour of shirt-sleeves and a straw hat. On sea it is generally much more chilly, the absence of radiation, from the black rocks and the presence of ice-floes and icebergs, lowering the temperature. Even then it is not uncommon to see the tar on the side of the ship exposed to the sun's rays melting, and the water freezing on the other side in the shade.

The summer, if brilliant, is short; the autumn comes quickly. By August vegetation is on the wane, and before September it has entirely disappeared. A few weeks of

this continuous daylight serve to flower and seed most plants. In the latter month most of the birds of passage have also taken their flight, and the thin "bay ice" is beginning to form in quiet places almost every night. Frequently the ice requires to be broken before the morning ablutions can be performed. Stars appear at night, and with them the Hyperborean summer is at an end. Day and night resume their accustomed alternations of light and dark; sunshine is replaced by mists; and chilly blasts, on which icy snow is borne, warn the navigator either to seek a harbour for the winter, or to sail for more hospitable climates. Navigation, never very safe among the ice-fields of the North, now begins to be absolutely dangerous. During the summer the bergs may be avoided by a skilful steersman, and the floating ice by navigating as far from it as possible. But in the dark autumn nights this is not so easy.

Frequent accidents occur at this time, and the whalers do not attempt, in Davis' Strait and Baffin's Bay, to risk the dangers of floating icebergs at this season. They generally go into some quiet haven, and there (as will be more fully described in a future chapter) patiently await the time when they can take their departure for Dundee or Peterhead. Their boats are sent out in the morning to the mouth of the inlet to watch for whales, and at such seasons storms are not uncommon. Such an occurrence is very graphically described by Mr. Lamont, of Knockdow; and as his words convey more appropriately than I could do the severities of such an autumn storm, I may be allowed to quote the passage from his volume, even though the experience described was observed during the summer and not in autumn:—"The summer gales of Novai Zemlai may be classified as with or without snow. The former are productive of the most abject state of despair. Only the crew actually engaged on the deck, and the Norseman, who, with his feet in a bag of hay and his beard encrusted with snow, sits like a hoary patriarch at the wheel, need face the snow and sleet which eddy in the wind, and are driven into every corner of the ship. With scarcely a rag of canvas set, we beat uneasily up and down the edge of the ice, or, apprehensive of the drift by leeway and unknown currents, start out through the lugubrious mist to secure an offing. Sometimes the lifting cloud allows us to gaze wearily on the black cliffs, where they run out from the mainland to end in treacherous reefs—on the eternal snows which cover the dreary uplands and ledges of the cliffs—on the dark waters laden with moving masses of ice, or on the fog which hardly allows us to steer clear of them. The damp fog and driving sleet, passing over the deck and rigging, freeze, and leave a glassy, slippery covering on every exposed part—sails, ropes, and spars looking as if wrought in glass. Two inches of ice on the deck, in a continuous slide from the cook's galley to the cabin, sometimes reduces the number of courses at dinner, for the steward is no skilful skater, and the spilled soup freezes with the rest. We make frequent tacks to avoid rocks on the one side, and the grinding stream of eddying icebergs on the other; and at every tack a crisp shower of icicles, printed with the pattern of sails and ropes clattering to the deck, gives the appearance of a recently-demolished glass shop. The noise of floating and crashing against the bows sometimes culminates in a terrific shock, which makes the ship quiver from stem to stern. The angle at which the ship heels over to leeward renders ordinary occupations impossible,

and, rather than encounter the hazard of tumbling and rolling against each other in the narrow cabin, we sit in well-jammed positions, and spend the time in desultory reading."*

These summer gales, of the kind just described, are most prevalent in the Novai Zemlaian Sea early in May and June, and generally last from sixty to eighty hours. The direction of the wind is commonly from some point between east and west. From the former, it veers through north; and finally, when the gale breaks up, with south-westerly wind, and cirrus and stratus clouds or actual sunshine. During their continuance

SIBERIANS.

the excessive cold, and the difficulties of obtaining the ship's position by observation, are the most serious inconveniences. Mr. Lamont considers that the cause of these gales is to be sought in the difference in pressure between two large atmospheric districts, separated by the mountainous boundary of Novai Zemlai, nowhere more than sixty miles wide, which difference is modified from time to time by the shifting conditions of ice in the two seas. The temperature of the sea varies according to the amount of ice floating in it, or the fresh water which may be poured into it from the neighbouring rivers. It is rarely much above freezing, though in the localities where the Gulf Stream reaches—viz., to the shores of Spitzbergen, and even to the Kara Sea—the temperature has frequently a considerable elevation. In more favourable years, as Professor Nordenskjöld has discovered, the shores of Arctic Europe will be free from ice even as far as the Jeneissi River. In April there are sometimes such violent storms that it is impossible for those overtaken by them to keep their feet. Pakhtusof, the Russian explorer, and his companions were, on one occasion, compelled to lie down together with their heads to the wind to avoid being buried, and in this position remained for three

* "Yachting in the Arctic Seas" (1876), p. 43.

days without food. On the east coast wind brings dry weather; but when the Kara gate is open, the same wind brings damp, though this does not reach the west coast. On the latter coast west winds bring damp; and land—*i.e.*, east—winds, always fair weather. When Pakhtusof and Ziwolka were engaged in surveying Novai Zemlai in 1835, the one would sometimes experience gloomy weather, while the other, on the

A SIBERIAN DOG-SLEDGE.

opposite side of the island, had fair. The very day the one could see farthest the other could make no observations.

The effect of floating ice in lowering the temperature, not only of the sea but of the land, is well shown in Iceland. "Iceland" is really a misnomer; for on the isle which the Norse pirate discovered, and which has for ten centuries been the home of the most polished of the Scandinavian race, there is, with the exception of the glaciers in the interior, in reality, little, if any, ice. The harbours are generally open all the year round, and the climate is milder even than the mainland of Norway. The term "Iceland" is only applicable to it in so far that the northern and eastern shores are now and then blocked up with drift ice, which the winds have blown from Greenland. This takes

place, on an average, about once in ten years. In 1876 this was the case, but, fortunately, the ice soon disappeared. It is disastrous to the flocks, in so far that white foxes and Polar bears arrive hungry on the coast; and to the crops, by reason of the fog and chill which fill the air, blighting all vegetation, and reducing the island, for the time being, to the level of Greenland. Though the temperature of different portions of the Arctic regions varies according to locality, and, of course, according to seasons, it may be said to reach sometimes to 70° in the sun, and to average about 45° in the shade. Sometimes, at the height of 3,000 feet in Spitzbergen, the heat derived from the rays of the midnight sun has caused streams of water to issue from the snow, and the temperature, as observed by Scoresby, was 37° Fahrenheit on the 23rd of July. Take, for example, Greenland. In the southern portion of the country the sea is not frozen over in the winter, though encumbered with floating ice derived from the Spitzbergen ice-stream—a current which passes from the vicinity of Spitzbergen down the east coast of Greenland, and upon the west coast to about Holstensborg, where it exhausts itself. In Smith's Sound the climate is sometimes 60° below zero, and in exceptional years even more severe. Jakobshavn, at the bottom of Disco Bay, may be considered as the mean between these two extremes. Here the mean winter is 3·4° Fahrenheit; the spring, 19·9°; the summer, 43·1°; and the autumn, 24·1°. The temperature of the whole year gives the mean of 22·5°—altogether a low temperature, but by no means an extraordinarily severe climate. Certainly that of the winter is not lower than the averages of Upper Canadian winters. The summer, however, is not nearly so warm.

The *Aurora Borealis*—the Northern Lights of the English mariner, the *Nord Lys* of the Danes, and the merry dancers which the Shetland fishermen so well know, as they shoot across the Northern skies—is one of the most familiar sights of the Arctic night. It is seen all the winter through, but it is particularly brilliant in the autumn. It lights the whaler on his joyous voyage home, and gladdens the heart of the explorer in spite of the prospect of the gloomy winter he must face, as he puts his ships in their icy winter quarters. It is a peculiar luminous appearance in the Northern sky—at once one of the most mysterious and most brilliant of spectacles. Its ever-changing and almost fantastic form may be resolved into a dark segment, an arch of light, luminous streamers, and a corona or crown. Probably the darkness of the dark segment is only the contrast with the luminous arch, though this is a question, notwithstanding the numerous observations on the subject which have been published, which is as yet unsettled. The appearance of an aurora, as commonly seen, is shown in our engraving (page 40). The height of the aurora has been variously estimated, but there is good ground for believing that at times it is very near the earth, and even within the region of the clouds; and may even occur during the daylight, though rendered invisible by the sun's brightness. During the prevalence of the aurora, the compass-needle is often much disturbed, showing that magnetism has something to do with it. Very frequently a display of the Aurora Borealis is accompanied by a noise, like the rustling of silk, or the whizzing of a multitude of bullets through the air; though this is not invariable. For instance, Sir John Franklin registered 313 displays at Bear Lake without having once heard any sound attend its motions; yet, in the course of five displays

observed within a week in October, 1861, the present writer noted the rustling noise twice very markedly. At the time he was not aware that the same observation had been made by others, and on afterwards reading the remarks of Lieutenant Hood, of Franklin's first expedition, he immediately recognised their accuracy. Though to the lover of nature and the student of science the Northern Light is one of the most interesting of phenomena, yet to the wild Eskimo, and the superstitious walrus-hunters who winter in the North, it is an object of awe. The dogs crouch down behind the rocks, uttering weird low howls, while their masters whisper under their breath that the spirits are fighting in the air. What is the cause of the aurora has not been satisfactorily determined. Probably the explanation of Faraday may be as correct as any other. That eminent physicist demonstrated that the electrical currents which circulate in the globe necessarily tend from the equator to the poles, and has suggested that the aurora may possibly arise from an upward current in the atmosphere flowing back from the poles to the equator. The fact that Sir Leopold McClintock discovered that the aurora appeared to come, not from the fields of ice, but from the surface of open water, favours the idea that it is caused by electrical discharges between the earth and the air, and that these are interrupted by the fields of non-conducting ice. However, no explanation, as yet offered, presents a complete explanation of the varied phenomena of the aurora.

The *mirage*, so familiar a feature of the Eastern deserts, is even seen in the far North. The traveller may see ahead of him an enchanting prospect of reindeer feeding in a valley, and could be certain that his sight was correct, did not they gradually turn into the appearance of "white ponies standing on fine telegraph poles." On approaching, they fade into thin air; but no sooner does the traveller leave the spot, than through the hazy atmosphere they again appear once more feeding in the old place. Mr. Lamont declares that he has noticed the mirage in Novai Zemlai more marked even than he ever saw it on the hot plains of Africa. On hot sunny days it is remarkable; "vessels (p. 41) or land, which are known to be far out of sight, and, properly speaking, below the horizon, are seen hove up in the air by refraction. The irregular masses of floating ice become dazzling cities, with domes, minarets, and steeples, of a more composite style of architecture than is to be seen in any modern capital; while the floe edge is made to represent magnates of fairy palaces and enchanted castles."

The *winter climate* of the Arctic regions is severe, though generally not more so than that of Upper Canada and some of the Western States of America. The temperature may be low, but if the air be dry and still, the severity of the climate is less felt than even at a higher temperature; but with moisture in the air, an Arctic wind is almost intolerable if it blows over ice-fields, as during the winter it almost invariably does. A "raw" cold, foggy night in England is, by all accounts, more disagreeable than a clear frosty one, 20° below zero, in Upernivik, the most northern Danish settlement in Greenland, and the most northern fixed abode of civilised man in the world. The darkness adds to the gloominess of an Arctic winter. No doubt, the aurora almost every day gilds the snow, and the moon rears clear through the skies, and constellations, unknown to us in these latitudes, sparkle in the Northern sky; but still it is a long night, which only ends after three or four months of darkness. The

Danes in Greenland look upon the winter season as being not the least enjoyable months of their life in that country. During the summer the sea is often clogged with ice, and the bays are full of icebergs, rendering travelling by boat tedious and even dangerous. During the winter, on the contrary, the sea is frozen over, and they move about from settlement to settlement on the swift dog-sledge which swims over the icy surfaces of the fjords and bays in which their little posts are built. It is a season of gossip and

THE AURORA IN THE POLAR BASIN.

pleasantry. The ships have all sailed for Europe; there is little business to do until the ice breaks up in the spring, and amusement is, therefore, the order of the dark winter day. Sometimes the cold is so severe that hoar-frost will be seen on the pillow in the morning, and the rocks will be heard splitting asunder, with loud reports, owing to the expansion of the frozen water in their jinks and cracks. Often, even in the North, the ice only forms partially over the sea, and will break up by the storms which, especially in early spring, sweep over the Northern latitudes. Even in the winter, when the sea from one side of Davis' Strait to the other, or from Spitzbergen to Novai Zemlai and far south of Jan Meyen Island, is one continuous sheet of ice, there are some open places left here and there. At these *ström* holes, or *polynia*, as the Russians

call them—though the latter word has been erroneously applied to the open Polar sea, so called—the white whales and narwhals will often collect in hundreds, struggling to get their heads to the surface to breathe. In April, 1860, a Greenlander was travelling along the ice in the vicinity of Christianshaab, and discovered one of these open spaces in the ice. In this hole hundreds of narwhals and white whales were protruding their heads to breathe, no other place presenting itself for miles around. It was described to

THE EFFECT OF THE MIRAGE.

me as akin to an "Arctic Black Hole of Calcutta," in the eagerness of the animals to keep at the place. Numbers of Eskimo and Danes resorted thither with their dogs and sledges, and while one shot the animal, another harpooned it to prevent its being pushed aside by the anxious crowd of breakers. Many of the Cetaceans were killed, but many more were lost before they were got home, the ice breaking up soon after (p. 49). In the ensuing summer, the natives found them washed up in the bays and inlets around. Fabricius, the historian of the Greenland fauna, describes a similar scene. In the winter nearly all the Arctic birds have fled, the screech of the hawks and the owl-like croak of the raven being about the only signs of life in the ghastly white flats and fields. Every valley is, however, full of ptarmigan, which can be easily killed;

and sometimes, in severe winters, the reindeer will come down almost to the water's edge. One winter in Omenak the natives shot them out of their hut-doors. The white fox occasionally puts in an appearance; and though the bear hibernates, yet sometimes the male may be seen roaming about seeking what he may devour, even in the depth of winter. The fox and the hare alike put on their snowy coats, so as to be almost undistinguishable from the white surface of the ground. The ptarmigan also alters its plumage to white in the winter, as do some other birds to a greater or less extent. The raven, least hypocritical of the feathered inhabitants of the "true and tender North," alone refuses to alter one feather of its black coat to suit the altered circumstances of the season.

The explorers in these latitudes seek winter quarters about October; and as soon as they are secured, dismantle their vessel, and house the deck over with wood-work like the roof of a house, or with canvas, rig up the heating apparatus, *caché* a certain amount of the provisions ashore, in case of an accident happening to the vessel, and if they be of a scientific character, erect an observatory for magnetical or astronomical observations. Want of exercise is the bane of the Arctic winterer. There is no stimulus to move about, and accordingly there is frequently little inclination to do so merely for health's sake. Scurvy soon seizes them, and its ravages have ever contributed to the mortality of Arctic exploration. Salt meat is usually pointed out as the great cause of this disease; this is, no doubt, true, but salt provision does not alone cause it. In South Greenland it is not unfrequent among the Danes. In that section of the "land of desolation" the sea rarely freezes over during the winter. Storms of snow and sleet are, however, very common. Out-door exercise is all but impossible; and the healthy winter seal-hunting of North Greenland, owing to the absence of sea-ice, can be but little practised. Seal-meat and reindeer are the common articles of food, so that salt cannot be the predisposing cause of the disease, which I am, therefore, inclined to attribute to the want of exercise, combined with the depressing influence of the weather. In North Greenland, during the dark winter, suicide is rather common amongst the Danes. Whatever may be the pleasure of an Arctic winter, the sojourners in Hyperborea hail the return of sun with delight. The Danes in Greenland will climb through the snow to the highest eminence in the vicinity of their houses, in the chance of getting an early peep of it just reddening the horizon, and for a moment gilding the snow. The Siberian Samoyedes and Ostiaks are said to glorify the return of the sun, after the long night of winter, by rejoicing and sacrifices. Eagerly they watch for its appearance, as Dryden has so well described in the oft-quoted lines:—

"In those cold regions, which no summers cheer,
Where brooding darkness covers half the year,
To hollow caves the shivering natives go,
Bears range abroad and hunt in tracks of snow.
But when the tedious twilight wears away,
And stars grow paler at the approach of day,
The longing crowds to frozen mountains run,
Happy who first can see the glimmering sun."

Four months of darkness may be a new negative sensation, but four months of daylight

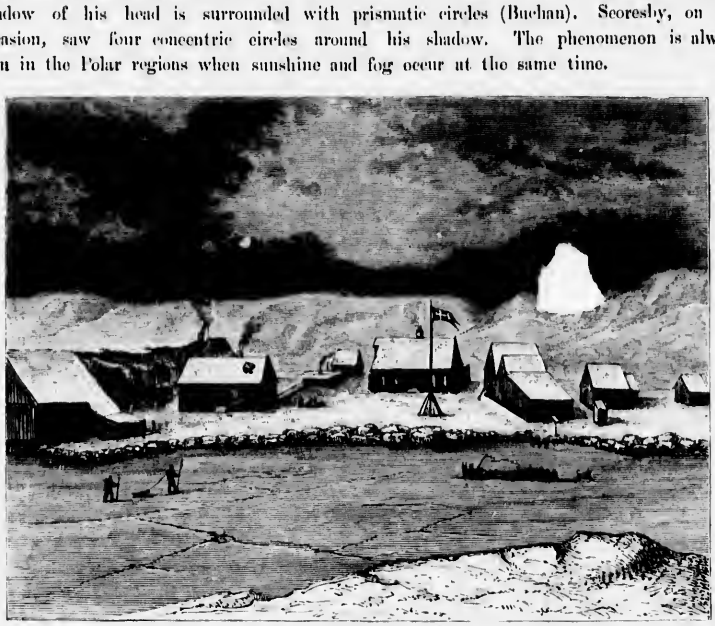
is decidedly a positive one, and more agreeable. The midnight sun is even a more pleasing object than the Northern Lights. But even after the sun appears summer is afar off. Indeed, some of the most disagreeable weather of the Arctic regions is in early spring. The south-west winds bring snow, of which comparatively little falls during the extreme cold period of winter. In spring, my friend the priest of Egedesminde (page 41) is often blocked into his house between sunrise and sunset, but he is not so badly off as the pastor of a more southern settlement, who is frequently entirely smothered in snow until a gang of men come and shovel him out of his "prästegaard," or parsonage. Rain, or more frequently sleet, is also the concomitant of spring, with wild winds, which carry all before them.

Often the very coldest period of the year is the spring. Sometimes, when the ice-pack splits, dense vapours are seen to issue from the fissure, and fall in the form of sharp prickly snow. This frost-smoke is due to the air, not completely saturated, taking up moisture from the water. "The process absorbs and renders latent much heat, and this heat, suddenly taken from the surrounding air, lowers its temperature and causes precipitation." Of much the same nature is the *barber*, as it is called by the whaling sailors. This is the moisture, or fogs in the air, deposited in a fine gossamer netting of sharp specular icicles, that pierce and excoriate the skin. Often the whole surface of the sea steams like a limekiln with the frost-smoke. The snow which descends is in the form of the most exquisitely shaped crystals, which, owing to the warmer stratum of air into which they descend, can never in our latitude be seen in such perfection.

During the coldest season the sound of voices can be heard much further off than during the warmer weather. The same phenomenon is observable during the winter in our own climate. But in the Arctic regions it is infinitely more marked. "The sound of voices," wrote Parry, "which during cold weather could be heard at a much greater distance than usual, served now and then to break the silence which reigned around us—a silence far different from that peaceable composure which characterises the landscape of a cultivated country; it was the death-like stillness of the most dreary desolation, and the total absence of animal existence." During the winter at Melville Island, people could be heard conversing a mile off—no doubt owing to the density of the cold atmosphere, but also to the absence of all obstruction in the calm air. It may be also remarked that horizontal refraction is increased, owing to the highly-condensed atmosphere, so that the sun becomes visible several days sooner than it ought, by astronomical calculations, to be expected, in the latitude in which the explorers are wintering. The Dutch noticed this when they first wintered in Spitzbergen in 1596. The "*mock*" or "*dog*" *suns* and *moons* are also another common Arctic sight in early spring. By the meteorologist they are better known as *parhelia* and *paraselenæ*, according as it is the sun or moon which is the subject of the optical delusion. They are connected with the halos or circles of prismatic colours around the sun or moon. They are formed from the refraction and "reflection of the rays of light by the minute snow crystals of the cirrus cloud, while coronas arise from the interference of the rays passing on each side of the globules of vapour." The parhelia and paraselenæ are the images of the sun or moon, which generally appear at the points of intersection

of the circles of the halo, owing to the light concentrated at these points. These images also exhibit the prismatic colours of the halo.

Glories of Light, or *anthelia*, are also seen in the Arctic regions in great perfection. They are sometimes seen when the shadow of an observer is lost in fog, and the shadow of his head is surrounded with prismatic circles (Buchan). Scoresby, on one occasion, saw four concentric circles around his shadow. The phenomenon is always seen in the Polar regions when sunshine and fog occur at the same time.



A WINTER VIEW OF EGEDESMINDE (EGEDE'S MEMORY), NORTH GREENLAND. (*From an Original Sketch by Hr. A. P. Tegner.*)

When the darkness disappears the snow and ice begin to melt rapidly. But through the whole summer, pieces both of sea and glacial ice are floating in the sea. The latter is, of course, continually being discharged from the land, and the summer has no effect on its production. On the contrary, the icebergs shoot out with renewed vigour during the summer months. The soil is always frozen to a considerable depth until late in the summer; in some places it never thaws beyond a few feet in depth. At Jakutsk, in Siberia, frozen soil was found, on digging a well, at the depth of 382 feet below the surface. In January, 1853, Sir Edward Belcher experienced at his winter quarters in Wellington Channel a temperature as low as 66° below zero of Fahrenheit.*

* In a popular work of this kind it would be mere weariness to the reader to go elaborately into the question of recorded temperatures. Those, however, who are interested in it will find much information on the subject in the Admiralty's "Manual and Instructions for the Arctic Expedition of 1875," and in the works there quoted.

"The Open Polar Sea."

It may be reasonably believed that the further one goes northward, the more severe will be the climate. This is the almost universal opinion of those who have explored the North. I am not at present aware of a single whaler who has any other opinion; and I may mention that one of the most experienced and far-sighted of the amateur explorers of the Arctic Sea—Mr. Lamont—is of the same belief. However, a

IN WINTER QUARTERS IN SMITH'S SOUND.

contrary view has been long held by theorists, and by a few explorers like Kane and Hayes. Though analogy militates against the likelihood of this idea, yet again and again the captivating tale is told that, in the far, far North, the waters around the Pole are comparatively free from ice, and that yet a ship may sail in that "open Polar sea" refulgent in Northern sunshine. In this favoured Eden of the Polar sea, kindly dreamers have persuaded themselves that no longer will the explorer's path be barred by those

> "Mountains of ice that stop the imagined way
> Beyond Petsora easterly, to the rich
> Cathaian coast."

Again and again have these open places been reported; but repeatedly have they proved to be only local and of limited extent. However, as the doctrine, until it has been absolutely disproved, will be again and again broached, we may briefly summarise the arguments which have been adduced in support of this view. At the same time, they illustrate the arguments brought against it with more soundness. It is pointed out, for instance, that the enormous majority of the bergs drift south, while, if there were a warm current running north, the contrary would be the case. It is deemed by those not in favour of the theory of an open Polar sea, that the fact of birds seen flying northward is a proof of a milder climate around the Pole. Ptarmigan are continually killed during the winter in high Northern latitudes; dovekies (*Uria grylle*), and other water-fowl, stay all the winter in the open leads among the ice. The knot (*Tringa canutus*) goes to the Arctic regions to breed, but hitherto its nest has never been found. These and other birds seen flying northwards at this season of the year—the spring—are migratory birds, which leave warmer countries to rear their young in the Arctic regions, and therefore cannot properly be said to be flying north to seek a milder climate. Morton, Dr. Kane's steward, reported having seen "seals sporting and water-fowl breeding in the 'open sea' he saw from Cape Jefferson;" but the same might be seen in any part of the Arctic Sea where there was open water. Dr. Rink has, moreover, conclusively proved that the famous "open Polar sea" of Morton was merely a channel cut by the strong current during the warm days of midsummer, and the subsequent explorations of Hall have proved that it was only a "bight" in the sound stretching still further towards the Pole. The great number of seals and sea-fowl seen by Morton, so far from being conclusive proof of an open Polar sea, is viewed by the eminent authority quoted as merely a sign of a single opening in the sea, the rest of which was covered by ice—sea-birds and other animals always flocking together in such places. Dr. Hayes' open sea comes under exactly the same category. Hayes was, however, able to support his party on reindeer in the very district where Kane, even the assistance of experienced hunters, all but starved. Indeed, had it not been for the Etah Eskimo, he must have inevitably succumbed, with all his party. It is, therefore, untrue that, as Maury asserts, he was able to subsist his party "on the shores of an ice-bound sea." Even the natives—iron men though they be—had in the month of March been compelled to eat twenty-six out of thirty of their dogs; and poor Hans Heindrick, who, all for the love of Shanghu's pretty daughter, had deserted Kane, and preferred to remain behind, had been forced to eat the sealskin which covered the frame of his *kayak*. It is also a curious fact that the coldest mean temperature for the summer months were those of Kane and Belcher (p. 44), the two nearest winter quarters to the supposed open sea.

Wrangell, speaking of the supposed open sea north of Siberia, mentions that the north-west winds brought with them a thick, moist fog, so that clothes and tents were wet through. The contrary was true as regarded Smith's Sound. The winds from the supposed open sea were always the coldest, while the south-east winds were moist. The seasons at which the open sea described by Penny and Morton was seen, only shows that local causes produced an earlier disruption of the ice than elsewhere; and finally, the opponents of the "open Polar sea" theory argue that the drifts of the *Advance*,

Resolute, and *Fox*, were owing to causes unconcerned with any movements of ice in the Polar basin. Last of all, it is not very charitably concluded by certain navigators, whose opinion may be taken for what it is worth, that the "open Polar sea" of Kane and Hayes in Smith's Sound was "discovered" there merely as something "to work expeditions to," and to cover the feature of the main objects of the expedition—just as the English had formerly put a "polynia" up Wellington Channel, in order to work an expedition there!

The idea of open water around the Pole is, however, a sufficiently ancient one, and was talked of as a scientific problem long before the expeditions mentioned were first proposed. Thus the illustrious Sir David Brewster pointed out, as far back as 1821, that distance from the Equator was not to be taken as an accurate measure of heat and cold, and that, in all probability, the thermometer would be found to range ten degrees higher at the Pole than in some other parts of the Arctic regions. Scoresby also showed that, owing to the long-continued sunlight of six months, which must prevail at the Pole, theoretically, at the summer solstice, the influence of the sun on the surface of the earth is greater at the Pole than at the Equator, by nearly one-half. That in reality, however, this is erroneous, is shown by the fact that in latitude 78° N., on the same basis of calculation, the influence of the sun is only $\frac{1}{15}$th less than at the Pole, and also much greater than at the Equator. Now in latitude 78° N. the mean temperature of the year is 17° Fahrenheit, and ice is formed during nine months in the Spitzbergen seas, neither calm weather nor proximity to land being essential to its formation.*

Scoresby, however, though theoretically holding the opinions he did, was, like most other whalers, one of the strongest opponents of the idea of an "open Polar sea." A later advocacy of the "open Polar sea" has been founded on the supposed fact that no icebergs or ice, encumbered with earth or stones, have been seen floating south from the supposed site of that region into the early explored parallels. But this idea has been at once exploded by the fact that the Swedish Expedition, which in 1868 attempted this northward route, met with stones and earth on the ice which was drifting south, showing that they had been attached to some land between Spitzbergen and the Pole, and that this area was frozen. Parry also found sand on the ice in latitude 82° N. We may therefore justly conclude, in the words of Professor Nordenskjöld, that the idea of an open Polar sea "is evidently a mere hypothesis, destitute of all foundation in the experience which has already, by a considerable sacrifice, been gained; and the only way to approach the Pole which can be attempted, with any probability of succeeding, is that proposed by the most celebrated Arctic authorities of England, viz., that of—after having passed the winter at the Seven Islands, or at Smith's Sound—continuing the journey towards the North on sledges in the spring."†

* Markham: "Proceedings of the Royal Geographical Society," vol. ix., p. 138 (1865); also Hickson, *ibid.*, p. 137; and Hamilton, *ibid.*, vol. xiii., p. 234 (1869).

† "Journal of the Royal Geographical Society," vol. xxxix., p. 146 (1869).

CHAPTER III.

Sea Ice, Glaciers, and Icebergs.

The ice we see floating about in the Arctic Sea during the summer is of two kinds —the product of the freezing of the sea, and that derived from the glaciers, and, therefore, fresh water and of the land. The first is generally in the form of cakes of all sizes, from pieces a few inches in diameter to many miles in area. These *fields* of ice—a name applied to a continued sheet of ice, so large that its boundaries cannot be seen from the mast-head—are the remains of the broken-up *floes* of the winter. This leads us to speak of the various terms applied to Arctic ice, as these phrases continually occur on a voyage, often with but a vague meaning attached to them.* Some of the large ice-fields are frequently more than a hundred miles in length, and more than half of that in breadth, each consisting of a single sheet of ice, having its surface raised generally about four or six feet above the level of the water, and its base depressed to the depth of nearly twenty feet beneath. Yet the thickest and strongest of these ice-fields cannot resist the power of a heavy swell. Indeed, the thickest fields are more apt to be broken up by the force of the pressure and the currents than the thinner and more pliable ice. When such a field is driven to the southward, and becomes exposed to the effects of a *grown* or *ground* swell, it presently breaks into a great many pieces, few of them exceeding forty or fifty yards in diameter. When these pieces get together, navigators speak of them as the packed ice, or the *pack*. This pack is the ice into which ships are frequently embedded, and is often so large that it extends on every side so far that the eye can only detect the water, in the form of *lanes* or *leads*, intersecting it. To navigate these *leads* is the duty of the captain, who sits in the cask or crow's-nest at the mast-head. All around is the white snow-covered pack, relieved only by the black water. It seems as if we were threading roads running through a snow-covered plain (p. 52). When the pack is so circumscribed that it can be seen across, it is known as a *patch*; and is called a stream when its shape is more of an oblong, no matter how narrow it may be, "provided the continuity of the pieces is preserved." A *floe* is usually the term applied to pieces smaller than fields; and *brush ice* to the pieces which break off, and are separated from the longer masses by the effect of attrition. These pieces are often collected into streams and patches. *Drift ice*, or *loose* or *open ice*, is ice so open that ships can sail through it. Frequently, even in the depth of winter, the fields of ice, after being squeezed on one another, are set on edge, and in that position cemented by the frost. Such eminences in the midst of an ice-field are called *hummocks*; and ice in which they are of frequent occurrence hummock ice.

Hummocks are also caused by pieces of ice mutually crushing each other, the wreck being

* Scoresby, on the "Greenland or Polar Ice" in "Memoirs of the Wernerian Society," 1815, p. 261; also "Arctic Regions," &c.

BREAKING-UP OF AN ICE-FIELD

tumbled about in such a manner as to give that variety of fanciful shape and picturesque appearance which any view of Arctic ice (p. 49) will immediately convey an idea of to the reader. Hummocks often exceed the height of thirty feet. A *calf* is a portion of ice which has been depressed by the same means as a hummock is elevated. It is kept down by some larger mass, from beneath which it shows itself on one side. Dr. Scoresby mentions that in his voyages as a whaling captain he has seen a calf so deep and broad that the ship sailed over it without touching, when it might be observed on both sides of the vessel at the same time. This, however, is attended with considerable danger, and necessity alone warrants the experiment, as *calves* have not unfrequently (by a ship touching them, or disturbing the sea near them) been called from their submarine situation to the surface, with such accelerated velocity as to stave the planks and timbers of the ship, and in some instances to reduce the vessel to a wreck. "A calf" is the name sometimes also applied to the pieces which break off from icebergs. Any part of the upper surface of a piece of ice which projects from the parent mass midst the water is called a *tongue*. A *bight*, or *bay*, is a sinuosity in the ice-field, in which sailing vessels, by a sudden change of wind, have been frequently wrecked.

The temperature at which sea water freezes depends not a little on the amount of fresh water, derived from rain, snow, or melting ice, which is mixed with it. It is usually given at 28·5°; but it varies, according to the conditions mentioned, from that figure up to 31°. We must also remember that salt water, *per se*, does not even freeze at these temperatures. When the sea freezes the greatest part of the salt which it contains is deposited, and the frozen spongy mass probably contains no salt but what is natural to the sea water filling its pores. The first, or *bay ice*, is almost fresh, though in some cases, independently of the power of cold in precipitating salt, it is really composed of the surface fresh water. Salt water and sea ice is porous, white, and for the most part opaque. Yet the rays of light pass through it with a greenish shade. It swims lighter than fresh-water ice. In its pores will frequently be found highly concentrated salt water, or salt in the solid form, "either as a single crystalline substance, or as a mixture of ice and salt crystals."* When salt-water ice floats in the sea at a freezing temperature, the proportion above to that below is as nearly one to four. In fresh water at the freezing-point it is nearly one to seven. Iceberg ice forms the bulk of the fresh-water ice which floats in the Arctic Seas. It is mostly derived from the land glaciers, though some of it is poured out of the great rivers which debouch into the Arctic Ocean, at the North of Europe, Asia, and America. It is fragile and hard, and the most homogeneous and transparent pieces are capable of concentrating the rays of the sun, so as to produce a considerable intensity of heat. "With a lump of ice, of by no means regular convexity, I have frequently burnt wood, fired gunpowder, melted lead, or lit the sailors' pipes, to their great astonishment; all of whom who could procure the needful articles eagerly flocked around me for the satisfaction of smoking a pipe ignited by such extraordinary means. Their astonishment was increased on observing that the ice remained firm and pellucid, whilst the solar rays emerging therefrom were so hot that the hand could not

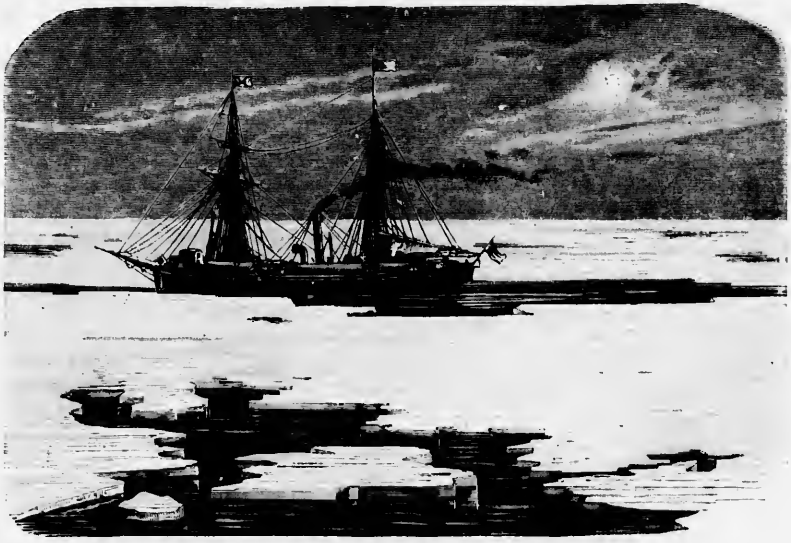
* Buchanan, "Proceedings of the Royal Society," vol. xxii., p. 341.

be kept longer in the focus than for the space of a few seconds. In the formation of these lenses I roughed them with a small axe, which cut the ice tolerably smooth. I then scraped them with a knife, and polished them merely by the warmth of the hand, supporting them during the operation in a wooden glove. I once procured a piece of the purest ice, so large that a lens of sixteen inches diameter was obtained out of it. Unfortunately, however, the sun became obscured before it was completed, and never made its appearance again for a fortnight, during which time, the air being mild, the lens was spoiled."

Land supplies no aid to the freezing of the sea, nor is the vicinity of any land necessary. A rough sea will even freeze if the cold be sufficient. The crystals are then in the form of what the sailors call *sludge*, and look as if a shower of snow had fallen on the surface. The effect of these crystals forming, as if oil had been cast on the sea, is that they still its breaking surface. Soon a continuous sheet is formed, but by the action of the waves this sheet is broken into smaller pieces, about three inches in diameter. By attrition the corners are worn off, and look not unlike what they are called—*pancakes*. Several of these unite and continue to increase, until they become a foot or so in thickness, and many yards in circumference. This is known as pancake ice. It is the ice most usually seen when reaching the Arctic Sea south of Jan Mayen in March and April. It was the first form of Polar ice which the writer saw in the spring of 1861, when cruising in that vicinity. In smooth water freezing is accomplished even more early. It commences in the same way; and in the course of a couple of days a sheet is formed capable of supporting a man. This is known as *bay ice*, from usually forming in the quiet bays. The old ice of last year's growth is known as light and heavy ice, and accordingly as it forms, a foot to three feet in thickness, and upwards. This kind of ice not only forms in quiet harbours, but in every opening in the ice even at a great distance from land. In these localities the surface is usually as smooth as that of a harbour. Bay ice is the familiar night warning which the Arctic navigator receives in the autumn that the winter is coming on. As it forms around his ship, if he is prudent, he will steer for a more open sea and a milder climate, or seek a more secure shelter than the "high seas." The falling snow freezes along with the ice, and assists in giving it thickness. Indeed, there is no field of ice of which the upper portion is not composed of snow, and in most cases is hardly distinguishable from it.

The formation of fields of ice, by the breaking up of these continuous sheets in the spring, I have already spoken of. Ice-fields are powerful physical agents. It is to them that most of the accidents to Arctic-going ships are due. Many of these fields cannot be less than ten thousand million tons in weight; and in addition to the force exercised by both bodies of this magnitude coming against a vessel, these ice-fields often acquire a great velocity. A field thus in motion coming in contact with another produces a dreadful shock. If a ship intervenes, then nothing can save the stoutest vessel that ever was built. When we speak of a whaling voyage (Chapter V.), we may have occasion to describe these accidents more fully. In the meantime, the reader can imagine how powerful for evil these ice-fields are. At the same time, though they destroy the ship, they save the sailors, who, by leaping on the floating ice, save themselves from the death which they would otherwise

inevitably meet. Even a ship "beset" is momentarily subject to the risk of being destroyed. The stoutest ship's ribs can no more withstand the shock of two of these ice-fields, even a couple of feet in thickness, than a sheet of paper could withstand the blow of a pistol-ball. The cause of the motion of the ice may be due to currents, the wind, or the pressure of other ice against them.



IN A "LEAD" IN AN ARCTIC ICE-FIELD.

Glaciers.*

In our latitudes, and at low elevations, all the snow which falls during the winter melts off during the heat of the ensuing summer. As we ascend higher and higher, this winter's snow takes a longer period to disappear, until, at a certain elevation, a portion always remains over to be carried to the account of next winter's fall. The line above which the winter's snow is not melted off by the summer's heat is known as the "snow-line." The height of this snow-line varies according to the season, the side of the mountain, and the distance of the mountain from the poles. For instance, if the mountain be not far from the equator, the snow-line will be at a great elevation; if it be near the north or south

* In the following account the description of Arctic glaciers is, to some extent, abridged from a paper drawn up by me, at the request of the Royal Geographical Society, for the use of the Arctic Expedition of 1875: "Arctic Papers of the Royal Geographical Society," pp. 1—74.

Poles, it will be almost at the sea-level. In the Himalayas it is at a height of 14,000 or 15,000 feet; in Spitzbergen and Greenland, as we shall presently see, there are perpetual snow and ice at a very few feet above the shore. If this accumulation of snow continued to gather and gather above the snow-line, the result would be that the top of the mountain would get like a white umbrella, or like a monster snow-covered mushroom. Of course this would be

THE GLACIER OF HÜNERBERG.

impossible—the laws of physics forbid it. The mountain-top, therefore, relieves itself of part of its load by allowing it to glide down into the valley below. This constitutes the "awful avalanche" which is so familiar to Alpine dwellers. The great mass of snow slowly slides down at first, quickly gathering speed, until it assumes an immense velocity, carrying along with it in its course trees, stones, and even large rocks, which may happen to lie in its path, until it comes into the region of habitable country. Here the buried traveller and the ruined shepherd's *chalet* give only too vivid evidence of the force of the avalanche.

There is, however, another and more important method in which the mountain relieves itself of the load of perpetual unmelting snow. This is by means of the *glacier*, a French

word, which means literally the ice-maker, though it is now thoroughly naturalised in English. The glacier commences just at that point where the snow is alternately melting during the day and freezing during the night. This is at the termination of the line of perpetual snow—at the snow-line in fact. All above this point is known as the *névé*, a Swiss provincial word, which has also got incorporated into our vocabulary. By this alternative melting and freezing, and by the pressure of the snow-masses on each, the snow gets converted into a dull white, semi-porous ice. This ice begins to move downward—to seek the lowest elevation. It is the commencement of the glacier. The glacier is now continually on the move, impelled by what force is not yet clearly made out. Numerous theories have been suggested, though in many cases the cause which impels the glacier to move, and the method by which an icy river-like mass moves, have been mixed up together. Saussure, Charpentier, Agassiz, Forbes, Mosley, and Tyndall may be cited as among the authors of the theories of glacier motion. Amid their war of words it will be sufficiently safe for us to take refuge in the old theory advanced by the first climber of Mont Blanc—De Saussure—that a glacier moves down the mountain-side simply because it cannot do anything else, owing to the pressure of the ice and snow in its rear. Certain it is that it moves slowly but surely, until it fills the valley, be it broad or narrow; and, still moving onward, unites with other tributary glaciers, just as a river unites with tributary streams, to swell into one broad current of ice. The rate at which it moves varies according to the season of the year, the part of the world, and the position of the glacier, which is taken into consideration. In the Alps the average rate is from 6½ to 19½ inches daily. The sides move more slowly than the centre, where the maximum rate is 23½ to 33½ inches per diem. Again, the bottom of the glacier, being retarded by the ground over which it passes, moves more slowly than the top. The motion of the glacier is, in reality, to all intents and purposes, subject to the same laws as the motion of a river. The Arctic glaciers, of which we shall presently speak, move much more slowly. From four and a half to eight inches per day is the rate at which the Greenland glaciers have been observed to move.

The appearance of a glacier after it has travelled several miles and acquired its normal force is that of a ridged expanse of snow-covered surface. The whole is broken up by deep cracks or *crevasses*, great rents down which the streams formed by the melting of the snow tumble with a hollow sound; *glacier tables*, formed by the melting of the glacier all around the ice, protected by flat stones which have fallen on it, until they are supported by icy pillars; ice cones, formed in much the same way where sand has fallen; *moulins*, or hollow funnel-like places worn by the streams which leap into them with a noise like thunder; and *moraines*. Of these the moraines are most remarkable. They are simply the stones, earth, and other *débris* dislodged from the sides of glaciers, and which accordingly lie on them in long lines on each side. These are the *lateral moraines*. If the glacier unite with a second, the contiguous lateral moraines will form a single *medial* one down the middle of the common glacier, while the lateral ones remain as before, and so on. In this way the ever-moving glacier will carry rocks from the high Alps far down into the plains below—miles and miles, it may be, from their original home. From under the glacier is water ever flowing—sometimes a tiny stream, at other times a considerable river. The Rhône and other rivers take their rise in these sub-glacier streams. These streams are formed by the melting

of the under surface of the glacier, which is at a higher temperature than the upper surface, and by the surface rivulets, which pour down the crevasses and moulins (or "mills"). The glacier in moving along imbeds in its under-surface stones, earth, and other *débris* which it passes over. It thus acts like a huge movable file on the rocks with which it comes in contact. The result is that the sub-glacier river is laden with a white impalpable mud, and that the rocks over which a glacier has gone are rounded and grooved, and the whole country shaven as if by a rough plane and file combined. The Swiss shepherds know this well, and style such rounded rocks *roches moutonnes*, from their likeness to the backs of black sheep lying in the long grass. The glacier is all the time moving from the frosty summit of the lofty peak down into the lowland valley. If the season be a favourable one among the vineyards and corn-fields, it stops there; and the heat of the sun being more powerful than the propelling motion of the glacier, causes the end to melt away, and the progress of the great ice-river is thus terminated. Standing in front of one of these glacier ends, a sloping mass of ice faces the observer. Water is streaming over the edge, and the white muddy glacier river is pouring out from beneath. Over the edge of the glacier something is always tumbling—at one time a thimbleful of sand, at another a cartload of rock and earth. If the glacier has retreated, as sometimes it will during hot summer, this rubbish will extend across the glen parallel with the end of the glacier, like a confused rampart, under the name of the *terminal* moraine. These moraines, along with the rock-scratchings and *roches moutonnes*, are the certain signs of glaciers having passed over any part of the country, and, as we shall see presently, are adduced as proof that the Scottish glens were once the beds of glaciers, like those of the Alps, or of Greenland, in an earlier stage of the world's history.

Sometimes a glacier will move much farther than was expected, and advance far into the region of cultivated land, killing the crops and carrying away cottages and other obstacles in its way as easily and much more certainly than the carpenter's plane carries the shavings of the plank before it. This is, however, rarely met with. Long after it has retreated it leaves behind it the marks of its visits—such as angular blocks of stone which it has carried on its surface, often belonging to rock not found in that vicinity, moraines, scratched and polished stones, *roches moutonnes*, and boulders rounded by being rolled under the glacier into the under surface, where they have got embedded. These "foundlings," as they are called in Switzerland (page 56), are found plentifully scattered over every Alpine valley, in places where no glaciers have ever been since the memory of man.

Such is a brief sketch of some of the more common phenomena of glaciers. They are the same whether in the Alps of Norway or of New Zealand, in Switzerland, or in the Himalayas. Hitherto we have avoided the disputed question of the cause of glacier motion. To explain this many theories have been advanced, some of which are almost entirely abandoned; others are still *sub judice*. Among these must be taken the theory of Forbes, who looks upon a glacier as an "imperfect fluid or viscous body which is urged down slopes of a certain inclination by the mutual pressure of its parts." According to this eminent Alpine observer, a glacier is not a crystalline solid, like ice, frozen in

a mould, but possessed of "a peculiar fissured and laminated structure, through which water entered into its intrinsic composition, giving it a viscid consistence similar to that possessed by treacle, honey, or tar, but differing in degree." Tyndall's theory is in reality very little different from that of Forbes, only he denies that glacier ice is viscid, but that its motion is due to the alternate fracture and re-freezing (or re-gelation, as he calls it) of the broken fragments. A hot war has been the result of this glacier discussion, in which the rival combatants have used terms and thrown out insinuations against each

ICE-BORNE BLOCK OF STONE, KNOWN AS "A FOUNDLING," IN SWITZERLAND.

other of a nature, no doubt, characteristic enough of scientific controversy, but which are decidedly unworthy of the dispute and the disputants.

Arctic Glaciation.

In the Polar regions there are also glaciers identical with those of Alpine countries, but on a grander scale, and in some respects different from those of inland countries, owing to their proximity to the sea. In the Arctic regions the snow-line is close to the water's edge—at most only a few hundred feet above it. The glaciers thus, sooner or later, reach the sea, which they can never do in the Alps, though in Norway some of them do. When they reach the sea they break off in the form of icebergs, so familiar to the voyager in the Arctic Ocean. In Spitzbergen and in Greenland they are seen in perfection; but it

is only in the latter country that Arctic glaciation can be seen on a great scale. Hence we may take Greenland as typical of the rest of the Arctic regions.

Greenland is in all likelihood a large wedge-shaped island, or series of islands, surrounded by the icy Polar basin on its northern shores, and with Smith's Sound, Baffin's Bay, Davis' Strait, and the Spitzbergen or Greenland Sea of the Dutch—the old "Greenland Sea" of the English whalers—completing its insularity on its western and eastern sides. The whole of the real *de facto* land of this great island consists, then, of a circlet of islets, of greater or less extent, circling round the coast, and acting as the shores of a great interior *mer*

THE RHÔNE GLACIER.

de glace—a huge inland sea of fresh-water ice, or glacier, which covers the whole extent of the country to an unknown depth. Beneath this icy covering must lie the original bare ice-covered country, at a much lower elevation than the surrounding circlet of islands. These islands are bare, bleak, and more or less mountainous, reaching to about 2,000 feet; the snow clears off, leaving room for vegetation to burst out during the short Arctic summer. The breadth of this outskirting land varies, as do the spaces between the different islands. These inlets between the islands constitute the fjords of Greenland, and are the channels through which the overflow of the interior ice discharges itself. It is on these islands, or outskirting land, that the population of Greenland lives and the Danish trading-posts are built—all the rest of the country, with the exception of this island circlet, being an icy, landless, sea-like waste of glacier, which can be seen here and there peeping out in the distance. On some of the large and more mountainous islands, as might be expected

in such a climate, there are small independent glaciers, in many cases coming down to the sea, and there discharging icebergs; but these glaciers are of little importance, and have no connection with the great internal ice-covering of the country. I have called the land circling this interior ice-desert "a series of islands," because though numbers of them are joined together by glaciers, and only a few are wholly insulated by water, many of them (indeed, the majority) are bounded on their eastern side by this internal inland ice; yet, whether bounded by water or by ice, the boundary is perpetual, and whatever be the insulating medium, they are to all intents and purposes *islands*. This is well known to the Danes in Greenland by the name of the "inlandsiis," and though a familiar subject of talk amongst them from the earliest times, it is only a very few of the "colonists" who have ever reached it. The natives everywhere have a great horror of penetrating into the interior, not only on account of the dangers of ice-travel, but from a superstitious notion that the interior is inhabited by evil spirits in the shape of all sorts of monsters.

Crossing over the comparatively narrow strip of land, the traveller comes to this great inland ice. If the termination of it be at the sea, its face looks like a great ice-wall: indeed, the Eskimo called it the *Sermik soak*, which means this exactly. The height of this icy face varies according to the depth of the valley or fjord which it fills. If the valley be shallow, the height is low; if, on the contrary, it be a deep glen, then the sea-face of the glacier in the fjord is lofty. From 1,000 to 3,000 feet is not uncommon. In such situations the face is always steep, because bergs are continually breaking off from it; and then it is not only extremely dangerous to approach it, on account of the ice falling, or the wave caused by the displacement of the water, but from the great steepness of the face it is rarely possible to get on to it at all. In such places Dr. Rink has generally found that it rises by a gradual slope to the general level plateau beyond. However, where it does not reach the sea, it is often possible to climb on it from the land by a gentle slope, or even in some cases to step up on it as it shelves up. Once fairly on the inland ice, a dreary scene meets the view. As far as the eye can reach, to the north and to the south, is this same great ice-field, the only thing to relieve the eye being the winding black circuit of the coast-line land or islands before described, here infringing in little peninsulas on the ice, there the ice dovetailing in the form of a glacier on the land, and now and then the waters of a deep fjord penetrating into the ice-field, its circuit marked by the black line of coast surrounding it on either side, the eastern generally being the ice-wall of the glacier, the western being the sea. Travelling a short distance on this interior ice, it seems as if we were travelling on the sea. The land begins to fade away behind us like the shore receding as we sail out to sea; while far away to the eastward nought can be seen but a dim, clear outline like the horizon bounding our view. The ice rises by a gentle slope, the gradient being steeper at first, but gradually getting almost imperceptible, though real. In the winter and spring this ice-field must be covered with a deep blanket of snow, and the surface must then be smooth as a snow-covered frozen lake; but in the summer, by the melting of the snow, it is covered with pools and coursing streams of icy-cold water, which either find their way over the edge, or tumble with a hollow sound through the deep crevasses in the ice. How deep these crevasses are it is impossible to say, as we could not see to the bottom of them, nor did the sounding-cord reach down except a short way. The depth of the ice-covering will,

of course, vary; when it lies over a valley it will be deeper, over a mountain-top less. All we know is, that just now it is almost level throughout, hill and dale making no difference. However, with such a huge superincumbent mass of ice, the average height of the coast-lying islands is greater than that of the inland ice, and it is only after climbing considerable heights that it can be seen.* Therefore, supposing this covering to be removed, I think the country would look like a huge shallow oblong vessel with high walls around it. The surface of the ice is ridged and furrowed after the manner of glaciers generally; and this furrowing does not decrease as we go further inland, but, as far as our limited means of observation go, it seems to increase; so that were it possible to cross this vast icy desert on dog-sledges when the snow is on the ground, I do not think it would be possible to return, and its exploration would require the aid of a ship on the other side. On its surface there appears not a trace of any living thing except a minute alga (a simple, almost microscopic plant); and after leaving the little outpouring offshoot of a glacier from it, the dreariness of the scene is not relieved by even the sight of a patch of earth, a stone, or aught belonging to the world we seem to have left behind. Once, and only once, during our attempt to explore this waste did I see a faint red streak, which showed the existence of the red snow-plant; but even this was before the land had been fairly left. A few traces of other algæ were seen by Professor Nordenskjöld and Dr. Berggren, who afterwards made a similar but more successful attempt. Animal life seems to have left the vicinity; and the chilliness of the afternoon breeze, which regularly blew with piercing bitterness over the ice-wastes, even caused the Eskimo dogs to crouch under the lee of the sledge, and made us, their masters, draw the fur hoods of our coats higher about our ears.† Whether this ice-field be continuous from north to south it is not possible in the present state of our knowledge to decide, but most likely it is so. Whether its longitudinal range be continuous is more difficult to decide, though the explorers who have attempted to penetrate it, saw nothing to the eastward to break their view; so that, as I shall immediately discuss, there seems every probability that in Greenland there is one continuous unbroken level field of ice, swaddling up in its snowy winding-sheet hill and valley, without a single break for upwards of 1,200 miles‡ of latitude, and an average of 400 miles of longitude, or from Cape Farewell to the upper extremity of Smith's Sound, and from the west coast of Greenland to the east coast of the same country, a stretch of ice-covered country infinitely greater than ever was demanded hypothetically by Agassiz in support of his glacier-theory.

Are there any ranges of mountains from the slopes of which this great interior ice descends? As I have said, we are not in a position to absolutely decide; but the probabilities are in favour of the negative. There are no iceberg "streams" on the east coast of Greenland, and bergs are rare off that coast. If there were many icebergs, the field of floe

* In Rink's "Grönland," ii., p. 2, are two characteristic views of the appearance of the interior ice seen from such elevations.

† For description of the effects of the ice in limiting animal and vegetable life, *vide* the author's "Mammalian Fauna of Greenland," "Proc. Zool. Soc. Lond., 1868," p. 337; Admiralty's "Manual of the Natural History of Greenland," 1875, p. 7; and "Florula Discoana," "Trans. Bot. Soc. Edin.," vol. ix., p. 440.

‡ Rink says 800 miles; but throughout his valuable works he only speaks of the Danish portion of Greenland, of which it professes solely to be a description. Jamieson and other writers seem to think that it is only North Greenland that is covered. All the country, north and south, is equally swathed in ice.

and pack-ice which skirts that coast, and which has prevented exploration except in very open seasons, would soon be broken up by the force with which the bergs, breaking off from the land, would smash through the ice-field, and, acting as sails, help, by the aid of the winds, as elsewhere, to sweep it away. I am therefore of opinion that the great ice-field slopes from the east to the west coast of Greenland, and that any bergs which may be seen on that coast are from local glaciers, or from some unimportant effluent of the great interior ice. Nor do I think a range of mountains at all necessary for the formation of this huge *mer de glace;* for this is an idea wholly derived from the Alpine and other mountain ranges, where the glacier system is a petty affair compared with that of Greenland. I look upon Greenland and its interior ice-field in the light of a broad-lipped, shallow vessel, but with chinks in the lips here and there, and the glacier like the viscous matter in it. As more is poured in the viscous matter will run over the edges, naturally taking the line of the chinks as its line of outflow. The broad lips of the vessel, in my homely simile, are the outlying islands, or "outskirts;" the viscous matter in the vessel the inland ice, the additional matter continually being poured in in the form of the enormous snow covering which, winter after winter, for seven or eight months in the year, falls almost continuously on it; the chinks are the fjords or valleys down which the glaciers, representing the outflowing viscous matter, empty the surplus of the vessel. In other words, the ice flows out in glaciers, overflows the land, in fact, down the valleys and fjords of Greenland, by force of the superincumbent weight of the snow, just as does the grain on the floor of a barn (as admirably described by Jamieson) when another sackful is emptied on the top of the mound already on the floor. "The floor is flat, and therefore does not conduct the grain in any direction; the outward motion is due to the pressure of the particles of grain on one another; and, given a floor of infinite extension, and a pile of sufficient amount, the mass would move outward to any distance, and with a very slight pitch or slope it would slide forward along the incline." To this let me add that if the floor or the margin of the heap of grain was undulating, the stream of grain would take the course of such undulations. The want, therefore, of much slope in a country, and the absence of any great mountain-range, are of very little moment "to the movement of land-ice, *provided we have snow enough.*"

As the ice reaches the coast it naturally takes the lowest level. Accordingly, it there forks out into glaciers or ice-rivers, by which means the overflow of this great ice-lake is sent off to the sea. The length and breadth of these glaciers vary according to the breadth or length of the interspace between the islands down which it flows.* If the land project a considerable way into the great ice-lake, then the glacier is a long one; if the contrary be the case, then it is hardly distinguished from the great interior ice-field, and, as in the case of the great glacier of Humboldt in Smith's Sound, the interior ice may be said to discharge itself almost without a glacier. The face of Humboldt's glacier is in breadth about sixty miles. This, therefore, I take to be the interspace between the nearest elevated skirting land on either side. It thus appears that, between the inland ice and the glacier, the difference is one solely of degree, not of kind, though, for the sake of clearness of description, a nominal distinction has been drawn.

* Properly speaking, according to the ordinary nomenclature, the whole of the ice, from the *névé* downwards, should be called *glacier;* but as we have not yet penetrated sufficiently far into the interior to observe where the *névé* ends and the *glacier* begins, I have, for the sake of distinctness, adopted the above arbitrary nomenclature.

VIEW OF FRANZ-JOSEPH FJORD AND OF PETERMANN'S PEAK, EAST GREENLAND.

The glacier, as I have said, will usually flow to the lowest elevation. Accordingly it may take a valley, and gradually advance until it reaches the sea. In the course of ages this valley will be grooved down until it deepens to the sea-level. The sea will then enter it, and the glacier-bed of former times will become one of those fjords which indent the coast of Greenland and other northern countries, often for many miles; or these may be much more speedily produced by depression of the land, such as I shall show is at present going on. By force of the sea the glacier proper will then be limited to the land, and its old bed become a deep inlet of the sea, hollowed out and grooved by the icebergs which pass outwards, until, in the course of time, by the action of a force which I shall presently describe, the fjords get filled up and choked again with icebergs, in all probability again to become the bed of some future glacier stream. In alpine regions, far away from the coast, the glacier, as it pushes its way down into warmer regions, either advances or retreats, according to the heat of the summer; but in either case it gives off no great masses of ice from its inferior extremity. The same is true of the Aretic glacier when it protrudes into some mossy valley without reaching the sea; but when it reaches the sea another force comes into operation. We have seen (1) the inland ice-field emptied by (2) the glacier; we now see the glacier relieving itself by means of (3) the iceberg, or "ice mountain," as the word means.

When the glacier reaches the sea it grooves its way along the bottom under the water for a considerable distance; indeed, it might do so for a long way did not the buoyant action of the sea stop it. For instance, in one locality in South Greenland, in about 62° 32′ N. lat., between Fredrikshaab and Fiskernæss, or a little north of the Eskimo fishing station of Avigait, and south of another village called Tekkisok, is a remarkable instance of this. Here the "iisblink," or the "ice-glance" of the Danes (*i.e.*, the projecting glacier, though English seamen use the word "iceblink" in a totally different sense, meaning thereby the "loom" of ice at a distance), projects bodily out to sea for more than a mile. The bottom appears to be so shallow that the sea has no effect in raising it up; and the breadth of the glacier itself is so considerable as to form a stout breakwater to the force of the waves. It was long supposed that the iceberg broke off from the glacier by the mere force of gravity: this is not so. It is forced off from the parent glacier by the buoyant action of the sea from beneath. The ice groans and creaks; then there is a crashing, then a roar like the discharge of a park of artillery, and with a monstrous regurgitation of waves, felt far from the scene of disturbance, the iceberg is launched into life. The breeze which blows out from the land, generally for several hours every day, seems, according to my observation, to have the effect of blowing the bergs out to sea; and then they may be seen sailing majestically along in long lines out of the ice-fjords. Often, however, isolated bergs, or groups of bergs, will float away south or north. Occasionally a vessel will be driven on to a grounded berg. Such an accident happened to the steam-tender *Intrepid*, one of Sir H. Austin's squadron, in the Franklin Search Expedition of 1850-51. She, however, escaped uninjured, though enclosed in a cradle on the side of a berg formed by the broken floe, &c., as shown in the sketch made at the time by Commander May, R.N. (See Plate I.)

Bergs from the ice-streams of Baffin's Bay will be found in the southern reaches of Davis' Strait; while others, bearing *débris* which could only have been accumulated in South Greenland, will be found frozen in the floes of Melville Bay or Lancaster Sound. It is a

common mistake, but one which a moment's reflection would surely dissipate, that bergs found in the south must all have come from the north, and that those farther north must have come from the regions still farther northward. The winds and the currents waft them hither and thither, until, by the force of the waves, they break into fragments and become undistinguishable from the oozy fragments of floes around them. Often, however, they will ground either in the fjord or outside of it, and in this position remain for months, and even years, only to be removed by pieces calving or breaking off from them, and thus lightening them, or forced off the bank where they have touched the bottom by the force of the displaced wave caused by the breaking off of a fresh berg. Ice much exposed to the sea breaks off in small ice-calves, but not in bergs. This calving will sometimes set the sea in motion as much as sixteen miles off. The colour of the berg is, of course, that of the glacier; but by the continuous beating of the waves on it the surface gets glistening. The colour of the mass is a dead white, like hard-pressed snow, which in reality it is, while scattered through it are lines of blue. These lines are also seen in the glacier on looking down into the crevasses, or at the glacier-face, and are, in all probability, caused by the annual melting and freezing of the surface-water of the glacier. Then another fall of snow comes in the winter; then the suns of summer melt the surface to some slight extent; this freezes, forming an ice different in colour from the compressed snow-ice of the glacier, and so on. I am aware, however, that this is a subject of controversy; and this view of mine is only brought forward as a probable explanation, suggested to me as far back as 1861, when I first saw glaciers in the upper reaches of Baffin's Bay and on the western shores of Davis' Strait, and long before I was aware that this streaked or veined character of glacier-ice had been a subject of dispute.*

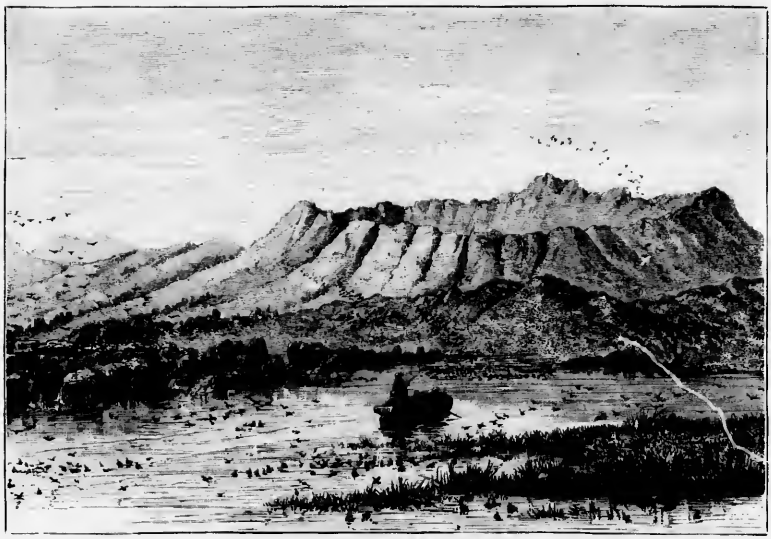
Tyndall considers that the veined or ribboned structure of alpine glacier is owing to the presence of spaces from which the air-bubbles in the ice have been wholly expelled, translucency being thus converted into transparency. These blue veins are apparently caused by pressure. The pressure is excited in three directions, producing veins which are complementary to the three kinds of crevasse—transverse, longitudinal, and marginal.

The greater portion of the bergs form long streams opposite their "ice-fjords," these streams being constantly reinforced by fresh additions poured out from the fjord. Hence certain localities in Greenland are distinguished by their "ice-streams;" these localities being invariably opposite the mouths of ice-fjords, or fjords with great glaciers at their landward end pouring out icebergs. Wherever these glaciers terminate the glacier stream will be found.

What is under the ice no man can say. No doubt the country is undulating, but it must now be well worn down by the immense mass of ice which has been for ages moving over it. The amount of mud pouring out into the fjords is very great. In some cases it is shoaling up the fjords, and in a few cases has effectually blocked them. The mud is fine, and soon gets laminated. The Arctic shellfish burrow into it, and when the

* These blue stripes are several feet in dimension, and in them are generally found the "dirt-bands" of foreign matter (stones, gravel, clay, &c.), the remains of the moraine. Dr. Rink thinks that the blue stripes are formed by a filling up of the fissures in the *inland* ice with water—"perhaps mixed with snow, gravel, and stones; and such a refrigeration of the water in the fissures may be supposed to be an important agency in setting in motion these great mountains of ice."

petty tides of the far North are at ebb, they are exposed in long dreary flats, over which the icy winds from the interior blow with bitter force. When the glacier reaches the sea, the stream flows out under the water, and, owing to the smaller specific gravity of the fresh water, rises to the surface, as Dr. Rink describes, "like springs"—though he does not consider (as some have supposed him to do) that that water was in reality spring-water, or of the nature of springs. Here are generally swarms of Entomostraca



AN ARCTIC LAKE IN THE HEIGHT OF SUMMER.

(or water-fleas) and other marine animals. These attract flights of gulls, which are ever noisily fighting for their food in the vicinity of such places.

We lived for the greater portion of a whole summer at Jakobshavn, a little Danish post, in latitude 69° 13′ N., close to which is the great Jakobshavn ice-fjord, which annually pours an immense quantity of icebergs into Disco Bay. In early times this inlet was quite open for boats; and Nunatak (a word meaning a "land surrounded by ice") was once an Eskimo settlement. There was in 1867 an old man (Manjus) living at Jakobshavn whose grandfather was born there. The Tessiusak, an inlet of Jakobshavn ice-fjord, could at that time be entered by boats. Now-a-days, Jakobshavn ice-fjord is so choked up by bergs that it is impossible to go up in boats, and such a mode of entering it is never thought of. The Tessiusak must be reached by a laborious journey over land; and Nunatak is now only a distant island surrounded by the inland ice—a place where no man lives, or

has, in the memory of any one now living, reached.* Both along its shore and that of the main fjord are numerous remains of dwellings long uninhabitable, owing to it being impossible to gain access to them by sea. The inland ice is now encroaching on the land, though at one time it appears to have covered many portions of the country at present bare. This advance and retreat of the inland ice may be due to change of climate, to the rapid advance† of the ice from the interior, or to the rise and fall of the land (p. 67).

There are traditions that a great inlet once stretched across Greenland not far

VIEW OF JAKOBSHAVN, NORTH GREENLAND. (*From an Original Sketch.*)

from this place, as represented on some of the old maps, but that it has also now got choked up with consolidated bergs. In former times the natives used to speak of pieces of timber drifting out of this inlet, and even tell of people coming across; and stories yet linger among them of the former occurrence of such proofs of the openness of the inlet. All that we know is, that such a trans-continental passage, if ever it did exist, is now shut up. The glacier and the ice-stream have not changed their course, though, if

* All rocks or islets surrounded by the "inland ice" are called "Nunataks" by the Greenlanders.

† From observations made in the summer of 1875, at Jakobshavn Fjord, Hellund, a Norwegian geologist, estimated this at 47 feet *per diem* in summer. Unless there is some great error in these observations, this extraordinary rate of motion is from twenty to thirty times greater than glaciers have been observed to move in temperate zones.

the shoaling of the inlet goes on (and should the glacier continue at its head, nothing is more certain), then it is just possible that the friction of the bottom of the inlet may overcome the force of the glacier, and that the ice may seek another course. As the neighbourhood is high and rocky, this is hardly possible with the present contour of the land. At the present day, the whole neighbourhood of the mouth of the glacier is full of bergs; and often we should be astonished on some quiet sunshiny day, without a breath of wind in the bay, to see the "ice shooting out" (as the local phrase is) from the ice-fjord, and the little bay in front of our door in Jakobshavn Kirke covered with huge icebergs, so that we should find it necessary to put off our excursion to the other side of the inlet; and the natives would stand hungry on the shore, as nobody would dare put off in his *kayak* to kill seals, being afraid of the falling of the bergs. In a few hours the bay would be clear, until another crop sprang out from the fjord. At any time to venture near these bergs would be attended with great danger; and the poor Greenlander often loses his life in the attempt, as the bergs, even when aground, have always a slight motion, which has the effect of stirring up the food on which the seals subsist.

Accordingly, the neighbourhood of these bergs is favourable for seals, in the attempt to capture which the hapless "kayaker" not unfrequently loses his life by falling ice. When we would row between two to avoid a few hundred yards' circuit, the rower would pull with muffled oars and bated breath. Orders would be given in whispers; and even were Sabine's gull or the great auk to swim past, I scarcely think that even the chance of gaining such a prize would tempt us to run the risk of firing, and thereby endangering our lives by the reverberations bringing down pieces of crumbling ice hanging overhead. A few strokes, and we are out of danger; and then the pent-up feelings of our stolid fur-clad oarsmen find vent in lusty huzzahs! Yet, when viewed out of danger, this noble assemblage of ice palaces—hundreds in number being seen at such times from the end of Jakobshavn Kirke—was a magnificent sight; and the voyager might well indulge in some poetic frenzy at the view. The noonday heat had melted their sides; and the rays of the red evening sun glancing askance among them would conjure up fairy visions of castles of silver and cathedrals of gold floating in a sea of summer sunlight. Here was the Walhalla of the sturdy Vikings; here the city of the sun-god Freyr; Alfheim, with its elfin caves; and Glitner, with its walls of gold and roofs of silver; Gimle, more brilliant than the sun; Gladsheim, the home of the happy; and there, piercing the clouds, was Himmelberg, the celestial mount, where the bridge of the gods touches heaven.* Suddenly there is a swaying, a moving of the water, and our fairy palace falls in pieces; or, with an echo like a prolonged thunder-peal, it capsizes, sending the waves in breakers up to our very feet. The whole scene was worthy of Coleridge's graphic, though now hackneyed, lines in "The Ancient Mariner," in which he says:—

> "The ice, mast high, came floating by,
> As green as emerald."

Some of these icebergs are of enormous size. Hayes calculated that one stranded in Baffin's Bay, in water nearly half a mile in depth, contained about 27,000,000,000 cubic

* Hayes' "Open Polar Sea," p. 29.

feet of ice, and the entire mass must have weighed not less than 2,000,000,000 tons. Rink has calculated that about one-seventh of the bulk of an iceberg is above the water, and six-sevenths below it.

The force of the water displaced by the shooting out is great. Actually the cable of a brig of 200 tons was broken by the wave caused by the shooting out of the icebergs in Jakobshavn Fjord. If in the little harbour of Jakobshavn the water rose and fell with a force sufficient to accomplish this, on other parts of the coast it must have been even greater.

Professor Nordenskjöld considers that he saw no true moraines in Greenland. It is perfectly correct that the glaciers, which are the outlets for the ice pouring seaward from the interior, are, in some cases, so short that before they reach the sea they are unable to accumulate much moraine; but that they do in many cases, the loads carried on the surface of the icebergs—to go no further for an illustration—abundantly testify. Whether or not there are mountains in the interior, we do not as yet know. The absence of moraine on the ice, so far as observed, goes, however, far to render this very doubtful.

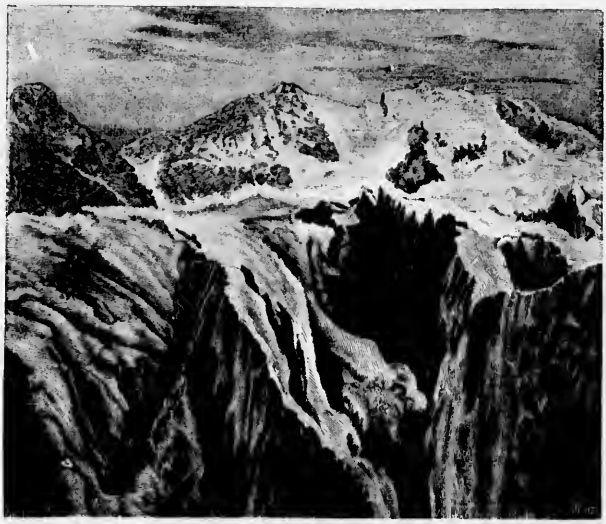
Sometimes fragments break off the berg; this is called "calving." These fragments will occasionally fall on boats, or on the decks of passing ships, and are one of the great dangers encountered in Arctic navigation. The bergs themselves are not often the cause of accidents, though I have seen one, carried swiftly before the wind, *clean* the side of a ship of its boats before the helmsman could steer out of its way. The whalers frequently anchor to them when they are aground, and owing to the accumulation of fresh water in their hollows, they are in the habit of watering the ship by means of a hose let into the water-tanks in the ship's hold.

Rise and Fall of the Arctic Lands.

If the reader be a geologist—and geology is only a part of geography—he need not be told that the earth has undergone many changes. It will be among the most familiar of truths to him, that though the poets have rhymed of the stable land and the unstable sea, exactly the converse is true. It is the sea which is stable, and the land which is ever oscillating—slowly and imperceptibly in most cases, but rising and falling nevertheless. Scandinavia is one example. On the coast of Sweden, a few years ago, was found buried beneath beds of sea-sand or gravel, while digging a canal, a fisherman's hut, of a very pre-historic type indeed. Now, the rude savage whose home this hut had been might not have been of a very brilliant intellect; but at least he was sane and human, and, therefore, would not have built his hovel at the bottom of the sea. He built it on land, but as it was discovered under a layer of sea-sand, the sea must have gradually covered it; and as it was, when found, high above the sea-level, it must also have been elevated above the waves. This is only one of many such instances. Sometimes the coast at one place may be falling, and at another, a few miles north, simultaneously rising.

There is reason to believe that in the time of the Romans the Scandinavian peninsula was an island. Indeed, Ptolemy speaks of the Scandinavian Islands. This state of rise and fall, and more especially rise, is true of the whole circumpolar regions east and west of Greenland, wherever observations have been made. I may recapitulate some facts which I ascertained

during my visits to Greenland and other portions of the Arctic regions. "Raised beaches" are found all around the Greenland coasts, in which shells, &c., of the same species as those now to be seen in the neighbouring seas, are found, and on the surrounding ice-shaven hills are found angular "perched blocks" of rock, which could only have been dropped there by icebergs which had floated over the submerged country. These raised beaches the American explorers of Smith's Sound found also there, and deduced the conclusion that the whole coast north of the Danish possessions was rising, because within the Danish possessions facts had been observed



VIEW OF AN ARCTIC GLACIER.

showing that there it was falling. In reality, though I am not prepared to say that the coast is not rising in Smith's Sound as in many other parts of the circumpolar regions, yet as the same raised beaches or terraces are also found in South Greenland, the probabilities are that Smith's Sound does not differ from the rest of Greenland. In other words, the coast *has* risen, it is now again falling. On the coast of South Greenland houses are not only seen beneath the water, showing that it had fallen, but also further above the sea-level, where no Greenlander would now build them. The facts, proving that the coast has been long sinking, are well known to geographers. Between 1770 and 1779 Aretander noticed that, in Igalliko Fjord, a small rocky island, "about a gunshot from the shore," was entirely submerged at spring-tides; yet on it were the walls of a house (dating from the period of the old Icelandic colonists) fifty-two feet in length, thirty in breadth, five in thickness, and six in height. Fifty years later the whole of it was so submerged that only the ruins rose above the water.

WAVE-WORN ICEBERGS.

The settlement of Juliandhaab was founded in 1776 in the same fjord; but the foundations of the old store-house, built on an island called "The Castle," are now dry only at very low water. Again, the remains of native houses are seen under water near the colony of Frederikshaab. Near the great glacier which projects into the sea between Frederikshaab and Fiskernæs, there is a group of islands called Fullnarlalik, on the shores of which are the ruins of dwellings over which the tide now flows. In 1758, the Moravian *Unitas Fratrum* founded the mission establishment of Lichtenfels, about two miles from Fiskernæs, but in thirty or forty years they were obliged once, "perhaps twice," to remove the frames or posts on which they rested their large *umiaks*, or "women's" (sealskin) "boats." The posts may yet be seen beneath the water.

To the north-east of Godthaab, on a point called Vildmandsnes (Savage Point) by Hans Egede, several Greenland families lived in 1721–36. These dwellings are now desolate, being covered with water at high tide. At Nappersoak, forty-five miles north of Sukkertoppen, the ruins of old Greenland houses are also to be seen at low water.

In Disco Bay I had another curious instance brought under my notice. The blubber-boiling house of that post was originally built on a little rocky islet, about one-eighth of a mile from the shore, called by the Danes "Spek-Huse-Oe," and by the Eskimo "Krowe-lenwak," which means just the same thing—viz., "Blubber-house Island." For many years the island has been slowly sinking, until in 1867, the year of our visit, the superintendent of the settlement had been under the necessity of removing the house from it, as the island had been gradually subsiding until the floor of the dwelling was flooded at high tide, though, it is needless to say, it was sufficiently far above high-water mark when originally built. On another island in its vicinity the whole of the Claushavn natives used to encamp in the summer, for the treble purpose of drying seals' flesh for winter use, of being free from disturbance by the dogs, and of getting somewhat relieved from the plague of mosquitoes; but now the island is so circumscribed that the natives do not encamp there, the space above water not allowing of room for more than three or four skin tents. Exactly similar facts have been observed at Frederikshaab and other localities in South Greenland.

I have made an attempt to estimate the rate of fall; and though we have no certain data, I believe that it does not exceed five feet in a century, if so much; so that none of us will live to see Greenland overspread by the sea. Such at least are the views I have arrived at from a careful study of this question, and little doubt remains in my mind as to their general correctness. The only serious reason for hesitating to ask the reader to accept this elucidation of the subject is, that it would appear that for some indefinite period there has been a gradual elevation of most of the circumpolar region going on. The facts in regard to this have been carefully collated by Mr. H. Howorth, though it must be acknowledged with apparently a foregone conclusion, or at least a strong bias to the doctrine he has espoused. One fact I may here mention, as it has not been noticed by Mr. Howorth. A few years ago the Norwegian walrus hunters discovered a group of small islets north of Novai Zemlai. They were merely sandy patches scattered with boulders dropped from icebergs which had at one time floated over them, and raised but a few feet above the sea—

"—— *islands* salt and bare,
The haunt of seals and orcs and sea-mews' clang."

On some of the islets — notably on Hellwald's and Brown's — were found West Indian fruits washed up by the Gulf Stream: hence they were named "The Gulf Stream Islands." Yet only about two centuries ago the Dutch took soundings on the very spot where these islands have since been gradually raised above the sea. It is also said that the whale (*Balæna mysticetus*) has left the Spitzbergen Sea, owing to the waters having got too shallow for it, on account of the gradual rise of the bottom. Mr. Lamont found bones in hollows in Spitzbergen, which he was inclined to believe were the remains of whales killed by man, that had been towed into these localities when they were shallow bays, though now dry land, in order to be "fleased." On Franz Joseph's Land there are also raised beaches.

The "fjords," or inlets which are found in the northern and southern hemispheres, have in all likelihood been the beds of ancient glaciers when the coast was higher than now; and the "lochs" of the West of Scotland are of the same nature. While speaking on this subject, it may be mentioned in passing, that geologists are now almost at one in believing that Scotland and a great portion of the north of Europe, America, and probably also Asia, were, during what is called the "Glacial Period," swathed in ice much the same as Greenland now is. In every quiet Scottish glen we find traces that at one time these were the beds of ancient glaciers. There are the rounded boulders which the peasant will tell us were brought hither by witches, though in reality a more wonderful agent than any "wise woman" was the carrier that conveyed them, the scratched rocks, the *roches moutonnées*, and the rough "boulder clay," such as most likely underlies modern glaciers, and the finely laminated clay, such as is now washed out from under the glaciers, and deposited in the Greenland fjords. To enter, however, upon these facts would take up too much space, besides being rather beside our subject. They are found recorded, with more or less accuracy, in various works, the authors of which, no matter how widely they may differ, agree in the main facts upon which we have touched.

CHAPTER IV.

Life in Polar Lands.

More than two hundred years ago Edward Pellham, first of English mariners who had the courage to winter in Spitzbergen—or Greenland, as he called it—and the good fortune to come back and tell the tale, wrote these words:—"Greenland is a country very farre northward . . . the land wonderfull mountainous, the mountaines all the year long full of yce and snow, the plaines in part bare in summer time . . . where growes neither tree nor hearbe . . . except scurvygrass and sorrell . . . the sea . . . as barren as the land, affording no fish but whales, sea-horses, seals, and another small fish . . . and hither is a yearely fleet of English sent." The devout old seaman's dictum was, no doubt, a fair *résumé* of the popular knowledge of his period, and is at the present day not an inapt reflection of the common ideas regarding the barrenness of life in the Arctic regions.

In reality, the Polar lands are not devoid of life, except in the extreme north. The species of plants and animals may not be many, but the individuals of those which live in these extremities of the earth are far from few. (See also pp. 19, 23, 27, 32, &c.)

Plants, &c.

Flowering plants, in all likelihood, extend to the Pole itself. In Franz-Josef's Land—that dreary region, discovered in 1873 by the Austrian Expedition, under Lieutenants Payer

THE QUAN. (*Archangelica officinalis.*)

and Weyprecht—Arctic barrenness seems to have reached its acme. It equals Spitzbergen in extent, and consists of several large masses of land—Wilczek Land in the east, Zichy Land in the west—which are intersected by numerous fjords, and skirted by a large number of islands. A wide sound (Austria Sound) separates these masses of land. It extends north from Cape Hansa to about latitude 82° north, where Rawlinson Sound forks off to the north-east. Trap, or whinstone, of the variety called dolerite, is the prevailing kind of rock, and small beds of brown coal were discovered. The mountains reach a height of from 2,000 to 3,000 feet, and on the south-west even attain, in Richthofen Peak, an altitude of 5,000 feet. There are also gigantic glaciers, and the *névé* is much more elevated above the sea than in Greenland or Spitzbergen. All the low islands in Austria Sound are covered with an ice-cap. The vegetation is, however, far poorer than that of Greenland, Spitzbergen, or Novai Zemlai;

and, excepting in the Antarctic regions, we have the assurance of Lieut. Payer that no country exists on the face of the earth which is poorer in that respect. The general physiognomy of the flora, but not the species, resembles that met with in the Alps at an elevation of 9,000 to 10,000 feet. The season during which the discoverers of the country visited it was certainly that in which vegetable life first puts forth its appearance, and most of the slopes were still

A GROUP OF ESKIMO.

covered with snow; but even the most favoured spots near the sea-level, which were no longer covered with snow, were unable to induce them to arrive at a different conclusion. "On level spots we scarcely met with anything but poor and solitary bunches of grass, a few species of saxifrage and *Silene acaulis*. Dense carpets of mosses and lichens were more abundant, but most plenteous of all was a lichen—the wintry *Umbilicaria arctica*. Driftwood, mostly of an old date, was met with on many occasions, but only in small quantities. We once saw lying, only a trifle higher than the water-line, the trunk of a larch, above a foot thick, and some feet in length. The driftwood, like our vessel, had probably been drifted to these latitudes by the winds —in all likelihood from Siberia—and not by currents. The country, as might have been supposed,

has no human inhabitants; and in its southern portions scarcely any animals, except bears, are met with. Many portions of this newly-discovered country are exceedingly beautiful, though it bears throughout the impress of Arctic rigidity."*

It may be added that the bears in Franz Joseph's Land were much less fierce than in East Greenland, where they not only sometimes attacked the German explorers in the vicinity of Franz-Joseph Fjord (p. 61), but even carried off one of the crew out of the ship. Bears were frequently met during the winter, but always males, so that this almost settles the disputed question of the hibernation of the females. On Rudolph Land an increase of temperature was noticed. The explorers had previously noticed the flight of birds from the north; here they found the rocks covered with thousands of auks and divers. They rose up in immense swarms, and filled the air with the noise of their vehement whirring, for breeding-time had arrived. Traces of bears, hares, and foxes were met with everywhere, and seals capered sluggishly upon the ice. When Auk Cape was rounded it resembled a gigantic aviary. Walrus were seen only twice. In Spitzbergen there is, probably, a richer flora than in Novai Zemlai, though this latter island contains the lemming and the ermine among its mammals, which are not found in the former. Spitzbergen possesses over 110 species of flowering plants, but among its insects beetles are not numbered, though above twenty species have been found in West Greenland; yet Spitzbergen has thirteen of the bee order (*Hymenoptera*), while only three have been noticed in West Greenland. In Greenland, again, butterflies and moths are common—twenty-six different kinds have been captured; but as yet only one specimen has been noticed in Spitzbergen. Two-winged insects are almost twice as plentiful in Spitzbergen as in Greenland (forty-nine to twenty-six). The vegetation of East Greenland, as explored by the Germans, agrees in all important points with that of West Greenland, though the species are fewer. Nine species of plants have, however, been found in East Greenland which are unknown in the West. The general character of the flora of West Greenland I have already noted. It comprises over 320 species of flowering plants and ferns, while but eighty-nine have yet been recorded from East Greenland. Plants have been found as far north as man has yet gone in Smith's Sound. In this region life teems. The sea abounds in walrus, seal, narwhal, and white whale; the land in foxes, reindeer, eider-ducks, wild geese, snipe, and various gulls and other sea-birds. Whales, seals, walrus, and bears find their principal haunts in the sea. In Thank-God Bay, Hall's party found the plain free from snow, a creeping herbage covering the ground, on which many musk-oxen were pasturing, while hares and lemmings abounded. The wild flowers were bright in colour, and flocks of birds of passage came north; indeed, so abundant is life nearly everywhere within the Arctic Circle, that there are few localities where well-arranged parties of skilful hunters could not live by the produce of their guns or traps. There has as yet been discovered no limit to the northward range of animal life. The Eskimo is not a vegetable feeder, for the simple reason that he has no vegetables to feed on; yet when he can he uses a few food-plants. In Kamskatka the natives are only to a very limited extent vegetable feeders, but even the wildest denizens of the far North try and obtain some plants to vary their flesh diet.

Among the scanty vegetable products which the Arctic regions yield must be classed

* Payer: "Proc. Roy. Geog. Soc.," Vol. XIX., pp. 17, &c.

the various edible berries. The cranberry, the whortleberry, the cowberry, and the crowberry are the chief. The crowberry (*Empetrum nigrum*) and the whortleberry are the only ones which the Greenlanders use, and even now they use them much less than they did formerly. At one time enormous quantities were gathered, and, after being mixed with train oil, were eagerly devoured as a prime Eskimo luxury. In some places the plants bear so plentifully that they look like bunches of grapes, and almost blacken the turf composed of the dwarf birch, and the gay alpine rose (*Rhododendron Lapponicum*). The *Archangelica officinalis*, or "quan" (p. 72), is another of the favourite Greenland edible herbs. It has been long used in Norway (the reader may remember that King Olaff, in the Saga of Heimskringla, gave angelica-stalks as a present to the haughty Queen Thyra), and it is probable that the Greenlanders first ate it in imitation of the Scandinavians. It is only to be seen on the island of Disco, and in one spot, up a fjord, in 61° north latitude. Hence the Greenlanders say that Disco was towed from the latter locality to its present position, in 70° north latitude. A species of houseleek (*Sedum Rhodiola*), *Pedicularis hirsuta*, *Epilobium latifolium*, two varieties of sorrel, and the scurvygrass (*Cochlearia*) may be also mentioned among the other edible plants of the Arctic regions. Seaweeds are also eaten, and, indeed, have on many occasions in times of scarcity saved people from starvation. In Greenland attempts have been made to raise some of the common plants of European gardens. At the Danish station of Godthaab (latitude 64°), close to the open sea, turnips, radishes, lettuces, and parsley are almost the only plants that can be cultivated with any success. The turnip, indeed, requires a favourable summer to produce anything like tolerable specimens. The cabbages are scarcely worthy of the name; but at two inland stations up the fjord, about thirty miles north of Godthaab, the climate is strikingly different. Here, Dr. Rink informs us, turnips always come to perfection; carrots prosper well, and attain a fair size; and cabbages, though unable to develop thick stalks, yet produce tolerably large leaves, which the provident Danes stow away for winter use. Attempts have been made to cultivate potatoes, but the tubers never attain a size larger than marbles, and are only grown and eaten as curiosities. Under the most favourable circumstances, green peas only produce shells, in which the peas are barely recognisable. This is within the Arctic Circle, or at least on its immediate borders. In South Greenland—the site of the old Norsemen's settlements—horticulture is practised under more favourable circumstances. At some of the posts, in about the same latitude as Christiania, good carrots have been produced, and in a forcing-frame strawberries have grown well, and yielded fruit for several years, but they afterwards died, owing probably to the severity of the climate. At Julianehaab turnips often attain a weight of more than half a pound, and are fit for table in the middle of July. Radishes are fit to be eaten in the middle of June. Rhubarb grows pretty vigorously, and can be raised from seeds. Green cabbage attains a good size, but never the normal taste and pungency of the vegetable. At Jakobshavn, in 69° 13', our good friend Dr. Pfaff used to raise a few radishes, and the locality being sheltered, the tiny patch of earth on the rocks, which in that remote place passed for a garden, produced "crops" almost as luxuriant as Godthaab in the south. While out-door cultivation is next to a forlorn hope in horticulture, Greenland is exceedingly well adapted—probably owing to the continual summer daylight—for the in-door cultivation of European plants. Geraniums, fuchsias, and

other of our common flowers flourish abundantly in the house of every tasteful Greenland "Colonibestyrer," or superintendent of a settlement, and wherever the Danish ladies go, they carry with them the well-beloved flowers of their native land, as mementoes of home, to console them in their voluntary exile.

Dr. Hooker has so thoroughly investigated the nature of the Arctic flora and its distribution, that it would be a waste of space to attempt to give a popular recapitulation of his views within the limits we have assigned to this portion of the subject. His memoir is accessible to those interested in this rather technical question.* It is enough for us to say that he divides it into the plants of Arctic Europe, Arctic Asia, Arctic West America, Arctic East Amer[illegible] and Greenland. The flora of Greenland is peculiar in this respect:

SEALS. (*Phoca Vitulina.*)

that though Greenland is close to America, and far distant from Europe, the plants are essentially those of Norway, and not of the nearer American s[illegible] The cause of this is not difficult to seek. It points to the probability of Baffin's Bay and Davis' Strait having been long gulfs intervening between Greenland and the opposite mainland of America, preventing the two floras intermixing. On the other hand, the similarity—we might say identity—of the Northern European and Greenland floras renders it highly probable that at one time Europe and Greenland were united; indeed, both the flora and fauna—plants and animals—of East Greenland and Scandinavia are more alike than those of West Greenland. In the not very remote past, either a continuous continent—such as geologists believe to have at one time joined Europe and America—or a chain of islands covered over what is now a sea. Iceland, even Spitzbergen, Jan Mayen, and possibly the Faroe Islands, Shetland, and Orkney, are only the remnants of this land over which the European

* "Transactions of the Linnean Society," Vol. XXIII. (1801), pp. 251–348; and the Admiralty's "Manual of the Natural History of Greenland" (p. 19), which is also an encyclopædia of all other branches of Arctic Natural History.

plants travelled to Greenland. Birds of passage from Europe may convey seeds on their feathers, &c., but these must be very few; and, moreover, there are birds of passage also arriving every summer in Greenland from America; so that this favourite method of accounting for the transport of plants operates both ways.

Animals.

The Arctic seas swarm with life. The dredge brings up hosts of shell-fish, crustacea (the crab and shrimp order), sea-urchins, and starfishes; and often the calm surface of the

ESKIMO WATCHING FOR A SEAL.

ocean is swarming with the varied forms of jelly-fishes—some great, others sufficiently large to aid in giving that splendid phosphorescent appearance to the Arctic Ocean which is so marked, especially during the dark autumn nights which succeed the long summer day. Sponges, and even corals of a tiny description, are found in some portions of the Arctic Ocean, while the minute, almost microscopic, *foraminifera* are numerous.

The land fauna is neither so varied nor so exuberant. It is the sea animals which pre-eminently supply the chief attractions for man—savage and civilised—in these far northern regions; and among all these the seals and whales are the principal animals hunted.

Seal-hunting is one of the great arts of the Arctic region—I might almost say the greatest of all the occupations which attract Europeans to those inhospitable zones—and the most important occupation of the natives themselves. It is pursued in two ways: first, on a large scale, during a few weeks in the year, by the European ships which leave Scotland and the northern ports of the Continent for that purpose; and throughout the year

by the natives themselves. The Greenlander may be taken as the type of the Arctic seal-hunter. To him the seal is all in all. It affords him food, light, and clothing, and even its bones and intestines supply material for hunting implements and articles of domestic economy. There are, exclusive of the walrus, five species of seals on the Greenland coast. None of these are stationary all the year round, but some of each kind are always to be found in greater or less abundance. A Greenlander is trained from early youth in all the art and mystery of paddling a kayak, or skin canoe, and of hunting the different species of seals. Without having learnt, and being thoroughly acquainted with this art, he could not live in the frozen North. The general principle adopted is that employed by the Europeans in killing whales viz., striking the seal with the harpoon, the line of which is attached to the inflated "drogue," or bladder, and then, after it has tired itself out diving and rising to the surface to breathe, to kill it with the lance. When the seal is only a small one the bladder-arrow is used. This so-called bladder-arrow is a small harpoon without a line, and with only a small bladder to buoy up the weapon should it miss its mark. This weapon is also employed in the "halloo hunt," which consists in a number of Greenlanders driving a flock of seals into a narrow inlet or bay, and slaughtering them in this confined place. Firearms have been introduced by Europeans, and have now, to a great extent, replaced the native weapons. In seal-hunting, however, the rifle can, owing to the seal sinking so rapidly, be only used when the hunter is stalking the sleeping seal on the ice-fields during the winter and early spring. Sometimes a dog is employed to point the seals, being covered over with snow, and only to be detected in daylight by the steam which rises into the frosty air. The wild Eskimo of the western side of Davis' Strait use this method of hunting much during the winter season. When the seal is found the hunter plants his spear in its body, and holds on by the line until it rises again, if he does not succeed in killing it immediately (p. 77). A little white screen raised on a tiny sled is also employed to stalk the sleeping seal. The barrel of the musket is rested on the cross-bars between the supports of the screen, the barrel merely protruding through a hole in it. This the hunter pushes gently before him. To the quick-eared seal it looks simply like a piece of ice, and is disregarded after the first alarm. The stalker approaches until he is within shot, and may think himself fortunate if the seal, in the first agonies of the wound, do not roll over, and disappear down the breathing-hole in the ice, near which it always lies ready to disappear at the first sign of danger. I have seen the wild Eskimo of the western shores of Davis' Strait adopt much the same method of stalking the seal, only in this case they dispensed with the screen, and depended on getting within shooting distance by rolling over and over, tossing a little snow in the air, and frisking, after the manner of their prey, which their dress of sealskin gave them every advantage in doing. To protect their arms and hands from abrasion by the ice they used to wear gauntlets of bear-skin, a pair of which the writer still possesses. A white shirt was also eagerly coveted by them, in order that, by putting this over their ordinary dress, they might be better enabled to simulate the colour of the ice and snow among which they were sliding along. Seals are also captured with nets, either singly or in droves; indeed, the different methods of capturing seals by the Eskimo form one of the most interesting of the chapters which Dr. Rink, the quondam Governor of Greenland, has written

upon the northern land which he so long ruled. The inhabitants of the Arctic regions also kill the different species of whale, though their *modus operandi* does not greatly differ, in its general principles, from that adopted by the Europeans, to be presently described.

In all there are five seals within the Arctic regions: the saddle-back, or harp seal, so called from the shape of the dark mark on the back of the male (*Phoca Groenlandica*); the floe-rat (*Phoca fœtida*); the bladder-nose—deriving its name from the inflated hood, or "caul," as the old navigators call it, on its forehead (*Cystophora cristata*); the fresh-water seal (*Phoca vitulina*, p. 76), which, though the most common seal on our shores, is the rarest in Polar lands, and the ground or grown seal (*Phoca barbata*). The first two, with a few of the ground seals, are those chiefly killed by the European sealers. All of them are "hair" seals, their hides being only used for leather, or by the Eskimo for clothing and the other varied uses to which they put every part of this animal.* The different species of fur seal are confined to the North and South Pacific, and in the former locality penetrate within the Arctic Circle; but the "fishery" of the fur seal can be best described when we are engaged, farther on, in considering the fur countries proper, their products and their industries. Though the Greenlanders and other Eskimo tribes kill many thousands every year, yet the vast majority of the seals brought to this country, to the Continent, and to America, are obtained by the slaughter of the flocks of them which congregate in the spring on the floe-ice off the coast of Newfoundland, Labrador, and in the vicinity of the island of Jan Mayen, between Iceland and Spitzbergen.

The ships engaged in the Newfoundland and Labrador sealing are very often "country vessels"—*i.e.*, belonging to the port of St. John's; but those which frequent the Jan Mayen, or "Greenland sealing," as it is erroneously called, are chiefly from Scotland, Holland, Germany, and Norway, and generally those which afterwards go to the whaling (Chapter V.). They leave home about the last days of February or the 1st of March, and after calling in at Lewick, in Shetland, for "extra hands," arrive at the edge of the Arctic ice in ten days or a fortnight at the outside after leaving *Ultima Thule*. They coast along its "bight," or edge, looking for the flocks of young seals, or penetrate the leads or openings in the ice-field (p. 52) in search of their prey. The old seals are not so easily killed as the young ones; accordingly, the sealers wait until the seals whelp, or "pup," in order that they may slaughter the white-coated young. It is not for a week that the pups can take to the water; accordingly, during that time they fall an easy prey to the sealers, who land in groups, armed with spiked clubs, and provided with "rueruddies," or ropes attached by broad belts over their shoulders. A blow over the nose by the club or heavy boot is generally sufficient to kill, or at least to stun, the young seals. As these flocks will sometimes number many thousands, stretching far and near, the slaughter is immense. No sooner are they killed than another man whips out his knife and, by a few adroit cuts, turns the carcase out of the jacket—*i.e.*, the hide and blubber combined. The hides are then collected in piles, and dragged by the "rueruddies" to a convenient place for being taken off by the boats, which are continually plying between the ship and the ice; or, if the ship be frozen in, they are dragged to its side; then

* For which I may be allowed to refer the reader to my notes on the Seals of Spitzbergen and Greenland in "Proceedings of the Zoological Society" (1868); or the Admiralty's "Manual of the Natural History of Greenland," &c. (1875).

they are dropped into the hold, and after, at a "slack time," are taken up again, the blubber sliced off, and the skins salted, for better preservation, until the vessel arrives home. The number killed is sometimes enormous: vessels have arrived in Dundee with as many as 22,000 seals, the product of only a few weeks' slaughter. Of late years an attempt has been made to get the different European governments engaged in the business to agree to a "close time." As yet this has been unsuccessful, and it is more than doubtful, looking at the question purely from a commercial view, whether this would be possible. The greater number of the seals killed are young ones, and the immense slaughter solely depends on the fact that the pups, or "white-coats," are unable to take to the water, and so fall an easy prey to their murderers. The old ones will remain as long as possible guarding their young, and even after they have left the ice will sometimes raise themselves up, and severely bite the unwary "hunter."

Sometimes the sealers penetrate as far north as between 70° and 73° N. latitude, and there continue sailing about until they find the seals, which they generally do about the first week in April. If they do not get access to them, they remain until early in May, when, if they intend pursuing the whaling in the Spitzbergen sea that summer, they go north to about 74° N. latitude, to the "old sealing," or further still—even to 81° N.—to the whaling. Most of them, however, if not successful by the middle or third week of April, leave for home, to complete their supplies, in order to be off by the 1st of May to the Davis Strait whale fishery. During the month of March and the early part of April the sealers are subject to all vicissitudes of weather, calm and storm suddenly alternating, while the thermometer will stand for weeks at zero, or even many degrees below it. Many risks are run by men being turned adrift on pieces of ice, owing to storms arising, and accidents from this and other causes are frequent.

In Newfoundland the seal-fishery is an important element in the prosperity of that ancient, if frigid, colony. It is carried on by sailing vessels and steamers, the crews of which number from 20 to 250 men. The sailing vessels begin work not earlier than the 5th of March, and the latter not earlier than the 10th of the same month, a "close time" to this extent having been enforced by the colonial Legislature. The "take" of the Labrador sealers is even more enormous than that of the Greenland ones. For instance, in the spring of 1872 the steamer *Commodore* brought into port 31,311 seals, weighing 655 tons, and valued at £23,731 16s. 9d. Yet this vessel was only 290 tons, and as she sailed into the port was so deep that one side of the deck was actually under water. Her crew numbered 200, and as the crews of sealers and whalers work partially on the co-operative principle—that is, they are paid according to the value of the cargo—each of the ordinary seamen received upwards of £39. The Dundee seamen receive £2 10s. per month, with 2s. 6d. per ton "oil money," so that, supposing the vessel gets enough to make 100 tons, each man would receive for his trip the sum of £16. The European sealers do not generally carry such large crews, and the return per man is usually less. In the previous year (1871) the Newfoundland sealers took about 231,000 seals, making an average of 21,000 each, the largest for many seasons. Most of them made two trips. In 1865 the four Dundee vessels captured 63,000 seals. In 1866 seven vessels took 58,000. In 1867 eleven vessels took 56,000. In 1868 twelve vessels took 16,760. In 1869 eleven vessels had 75,600. In 1870 the number of vessels engaged was nine,

EXPLORERS DISTURBED BY WALRUS.

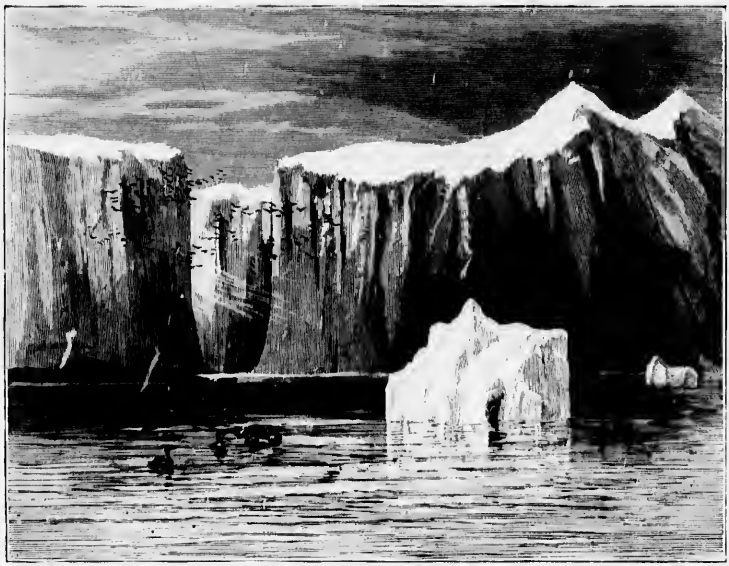
but they brought to the port 90,150 seals; and so these figures give a fair average. In 1871, on the 11th of April, one Dundee vessel, the *Arctic*, had 15,000 on board, and the *Esquimaux* 14,330, though the season had not then finished. On the other hand, cases are by no means unfrequent in which vessels will cruise around—penetrating this "lead" and that "bight," coasting here and there, suffering all the hardships of an Arctic spring—and yet not capture a single seal. The sealing, like the whaling, does not now occupy the same number of men it formerly did. This is greatly owing to steamers being more employed than before. Fifteen years ago, 15,000 men were employed in sailing vessels; now little more than half that number are so occupied. On the other hand, the "hands" on board the steamers in the Newfoundland seal trade—it is of these we speak—number about 8,000. It is calculated that on the extinction of the sailing fleet, only about 5,000 men will get berths. The value of seals varies with their species, size, and general condition. The young saddle-back will weigh from forty-five to sixty pounds, while the old female of the same species will weigh from seventy to ninety pounds, and the male from ninety to 150 pounds. The ground seal, or "square flipper," as the Newfoundland sealers call it, will sometimes weigh as much as 650 pounds. This includes skin and fat alone, for the carcase is of no use, and is always allowed to lie on the ice, to be the prey of the bears or white foxes, and finally to go to the bottom. The bed of the "sealing grounds" must be perfectly paved with phocine skeletons. The price the seals bring varies also according to the demand for oil and skins: 35s. per cwt. is a good sum for young saddlebacks, while the others rank at about 2s. per cwt. less. When the seals have arrived at the maximum fatness, eighty generally yield a ton of oil; otherwise the general average is about 100 to the ton—(*i.e.*, 252 gallons wine measure; weighing, at a temperature of 60° Fahr., 1,933 lbs. 12 oz. 14 dr. avoirdupois). A few years ago good oil was selling at £33 per ton; add to this the value of 100 skins at 5s. each, and the whole value of 100 seals would then amount to £58 sterling. That is the calculation received from Dundee, the first mentioned being the one made in Newfoundland. The average catch of seals in Newfoundland for the last twenty years has been about 350,000 annually. In 1873, 463,531 seal-skins were exported. The number obtained by the vessels in the European fishery is usually much less; perhaps among them all an average of 200,000 per annum would be thought rather over than under the mark. This does not, of course, include the number killed by the wild Eskimo—which cannot be ascertained—or by the civilised Greenlanders—the latter killing, according to Dr. Rink, about 89,000 seals, and 700 white whales and narwhals every year. Seal-hunting is of great antiquity. It is said that some of the old Icelandic sagas, or romantic histories, were written on seal parchment. The German warriors who confronted the Roman legionaries were clothed in seal-skins, and the Roman military tents were at one time also constructed of the same material. It was believed to be so sure a talisman against lightning that Augustus always wore a piece upon his person to act as a safeguard against what he so dreaded. In the North, cables were made of seals' and walrus' hides, and the Finns and Lapps paid their tribute in them. The old Icelandic colonists in Greenland paid their Peter's pence in the same material; and a receipt is still in existence showing that their contributions to the Crusades were paid at Bergen in 1327 in sea-horse tusks. The flesh of some of the species is excellent. The Eskimo live almost entirely upon it, as do also

the Danes in Greenland. The writer, during his residence in that country, also ate it repeatedly, and, like most other people, learned to like it.

The hunting of the morse, walrus, or sea-horse (*Trichechus rosmarus*, p. 81), if not so important commercially, is even a more exciting pursuit than that of the seal. The walrus is widely distributed over the entire Arctic regions, round the whole circuit of the Polar basin, and extends at least to the southern extremity of Behring Strait. It is essentially a coast animal, and one found in shallow waters. It is never to be seen out on the high seas or more than a short distance from land. Little is known of its habits during the winter, but it is the belief of Mr. Lamont—who, of all Englishmen, is probably best acquainted with the habits of this great seal, for such it is, and to whose observation the following pages owe almost everything of value—that they congregate in vast numbers at that season about the south-west edges of the great ice-packs of Novai Zemlai and Spitzbergen. A walrus is now and then found floating in the open sea, on a fragment of an ice-field; and it is to this accidental migration from its usual haunts that we owe its occasional presence in the north of Norway, and even in Shetland, Orkney, and the west of Scotland, to which the few killed in these localities have apparently swam, as the nearest land, after their ice-rafts had broken up. It is even believed that as late as the fifteenth century it was a regular visitant to our shores, and that the ivory ornaments of the ancient Britons' horse-trappings and weapons were carved from the sea-horses' tusks. As the ice breaks up in the spring the walrus move with it, and congregate together in troops, and finally go ashore in some rocky bay, where they may be sometimes found in thousands. Here, towards the end of August, they remain in a semi-torpid condition, neither moving nor feeding.

When found away from the coast it is necessary for the walrus to frequent shoals in order to obtain the shell-fish which constitute the principal part of its food. Its general appearance may be learned from our figures (pp. 28, 81). The most salient features in its portraiture are its gnarled hide, its whiskers the thickness of crow-quills, and its two great ivory tusks, or canine teeth, in the upper jaw. Its broad grinders enable it to crush the shells of the mollusks on which it feeds, and it is difficult to say what use it makes of its tusks, unless to stir up the mud in which its food is found, or to enable it to raise itself upon the ice. It is, however, these tusks and its coarse hide which render it valuable in commerce. Its flesh is eaten by the Norwegian and Siberian hunters, and by the Eskimo, but in the eyes of traders is of no value, and is not brought to Europe. On the floes over soundings and shoals the walrus often accumulate in immense numbers, and lie huddled upon the ice. More frequently in Davis' Strait and Baffin's Bay they are found floating about on pieces of drift ice, in small family parties of six or seven; and in my voyages in those parts I have not unfrequently met a solitary hermit lying asleep on the ice all by himself. Whether in large or small parties, one is always on the watch, as was noticed long ago by the sagacious Cook. The watch on the approach of danger will rouse those next to it, and, the alarm being spread, presently the whole herd will be on the alert. When attacked, unlike other seals—unless it be the bladder-nose—it will not retreat, but boldly meet its enemies. I was one of a party in a boat which harpooned a solitary walrus asleep on a piece of ice. It immediately dived, but presently arose, and, notwithstanding all our exertions with lance, axe, and rifle, stove in the bows of

the boat by tearing the planks asunder with its powerful tusks. Indeed, we were only too glad to cut the line adrift, and save ourselves, by taking to the ice which the walrus had left, until assistance could reach us. Luckily for us, the enraged morse was magnanimous enough not to attack its chop-fallen enemies, but made off, grunting indignantly, with a gun harpoon and a new whale-line dangling from its bleeding flanks. Its *atluk*, or breathing-hole, is cleanly finished, and not unlike that of the seals, but in much thicker ice. It will devour,



VIEW OF SANDERSON'S HOPE, NEAR UPERNIVIK, BAFFIN'S BAY, 3,500 FEET HIGH. (*From an Original Sketch.*)

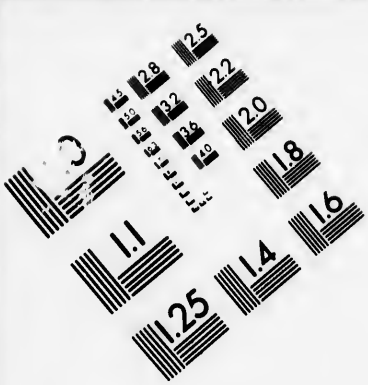
also, the carcases of floating whales, for the stomach of one killed by us close to where a whale had been "flensed" was found crammed with the "krang" of the departed cetacean. In its stomach and around its *atluk* are generally found stones—a fact which is also true of the digestive apparatus of the ground seal and the white whale. Next to man its chief enemy is the Polar bear. It is easily domesticated, but has only been once or twice brought to England. One which I saw on board a whaler would follow its favourites about like a dog. It was, however, easily incensed. Its food was chiefly pea soup, and anything else which it could get. It survived for nearly three months, but not long enough to allow its "Awook! awook!" cry to be heard in the London Zoological Gardens. It is to this cry of "awook!" that the Eskimo name for it (*awook*) is due.

From the earliest period it has been determinedly hunted. Old Othere, the first sailer

beyond the North Cape, "hunted the walrus and the seal" in the White Sea. From that date, and probably long anteriorly, the war of extermination has been going on in Spitzbergen and Novai Zemlai, until now the Norwegian walrus hunters have to direct their vessels far into the Kara Sea in search of their prey. Few, if any of them, now winter either in Novai Zemlai or Spitzbergen with a view to more easily hunt their prey: they depend upon the success of their summer work. Year by year their fierce quarry is escaping

RECREATION NEAR THE NORTH POLE.

to more and more inaccessible localities; and most probably this ruthless persecution which the walrus have undergone has altered its habits greatly. It is rare now-a-days, even with the aid of steamers, to hear of such a windfall as the slaughter of a whole herd. If they be killed in great numbers in one place, it is almost certain that they will not be found there in the following season. They will have made a prudent retreat to less easily reached haunts, where possibly, in future times, the species will be preserved, when it is no longer possible to derive either sport or profit from its slaughter. In the sixteenth and seventeenth centuries—though it had then been hunted by Dutch,



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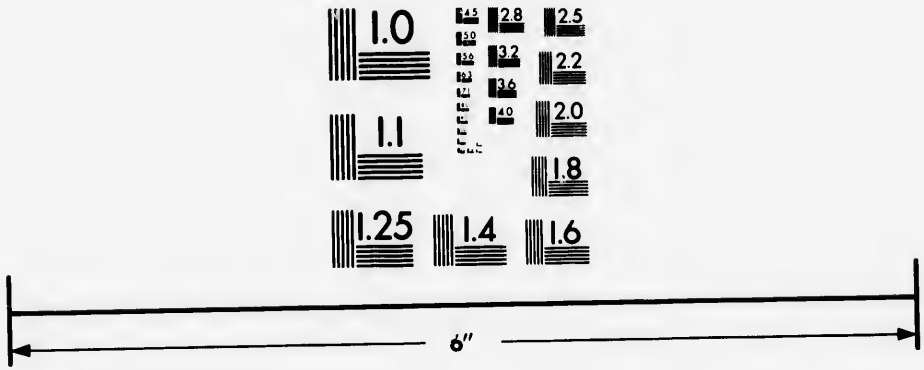

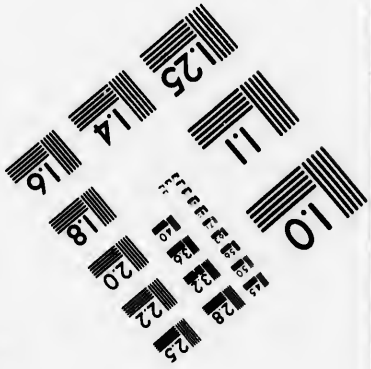

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English, Norwegians, and Russians—they were described as "lying like hogges upon heaps" on Bear Island, south of Spitzbergen. Captain Thomas Edge, in 1616, killed in East Spitzbergen no less than a thousand. In other parts of the world they were equally numerous. For instance, in Lord Shuldham's day they assembled on the Magdalen Islands, in the Gulf of St. Lawrence, to the number of 7,000 or 8,000, and sometimes as many as 1,600 were killed at one onset by the hunters who pursued them. When Marten visited Spitzbergen, it was possible for a ship's crew to kill 900 in seven hours on Cherry Island.

The walrus is generally harpooned like the whale, and then killed by lances while swimming. Sometimes they are enticed within shot by having a *junger*—or young one—on board, or by using an instrument which, like the deer-call, simulates the cries of the young in distress, and so attracts the mother until she is near enough to be attacked. "Many men I have conversed with," writes Mr. Lamont, "have averred that there is no more successful trick in the trade than to secure a 'fleetle-boy walrus,' and, by prodding him up with the butt-end of a lance, elicit the plaintive barks which cannot fail to appeal to the clannish instincts of any walrus within hearing. I remember on one occasion, some years ago, falling in with a herd of walruses in the water. The mode of attack was to endeavour to harpoon them, by dint of hard rowing after the herd, as they alternately dived and swam on the surface to gain breath. If there are calves in the herd, they cannot go much faster than the boat, if so fast; and the calves having to come up to breathe much more frequently than the old ones, the whole herd generally accommodate their pace to that of the old cows with young ones. In all my sporting experience, I never saw anything to equal the wild excitement of such a hunt. Five pairs of oars pulled with utmost strength make the boat seem to fly through the water, while, perhaps, a hundred walruses, roaring, bellowing, blowing, snorting, and splashing, make an acre of the sea all in a foam before and around her. The harpooner stands with one foot on the thwart, and the other on the front locker, with the line coiled in his right hand, and the long weapon in both hands ready balanced for a dart, while he shouts to the crew which direction to take (as he, from standing upright in the boat, has a better opportunity of seeing the walruses under water). The herd generally keep close together, and the way in which they dive and reappear again simultaneously is remarkable; one moment you see a hundred grisly heads and long gleaming white tusks above the waves: they give one spout from their blow-holes [nostrils], take one breath of fresh air, and the next moment you see a hundred brown hemispherical backs, the next a hundred pairs of flippers [paws] flourishing, and then they are all down. On goes the boat, as hard as ever we can pull the oars, up come the sea-horses again, pretty close this time, and before they can draw breath the boat rushes into the midst of them; whish! goes the harpoon; birr! goes the line over the gunwale, and a luckless junger, on whom the harpooner has fixed his eye, is fast; his bereaved mother, snorting with rage, charges the boat with flashing eyes; she quickly receives a harpoon in the back and a bullet in the brain, and hangs lifeless on the line; now the junger begins to utter his plaintive grunting bark, and fifty furious walruses close round the boat in a few seconds, rearing up breast high in the water, and snorting and blowing as if they would tear us all to pieces. Two of these auxiliaries are speedily harpooned in their turn, and the rest hang back a little, when, as bad luck would have it, the junger gives up the ghost, owing to the severity of his harpooning, and the others, no longer attracted by

his cries, retire to a more prudent distance. But for this untoward and premature decease of the junger, the men told me we should have had more walruses on our hands than we could manage. This curious clannish practice of coming to assist a calf in distress arises from their being in the habit of combining to resist the Polar bear, which is said often to succeed in killing the walrus; if, however, Bruin, pressed by hunger and a tempting opportunity, is so ill-advised as to snatch a calf, the whole herd come upon him, drag him under the water, and tear him to pieces with their long sharp tusks." A hunter told Mr. Lamont of such a case. The bear was pulled under the water, and "nothing of him came up again, but small scraps of skin with white hair on them."

A still more remarkable case was related to him—namely, of the skipper of a ship, who had been seized by a bereaved cow walrus, and by her dragged twice to the bottom of the sea, without sustaining any other injury beyond being nearly drowned, and receiving two deep scars on his temple from her tusks. He thought the walrus did not wish to hurt him, but mistook him for her calf, as he floundered in the water—an excuse highly creditable to the captain's confidence in the kindliness of the walrus, but not altogether complimentary either to his own appearance or to the animal's intelligence!

No animal displays more maternal affection than the walrus. Cases are not uncommon in which a cow-walrus will hold her young one under one of her flippers, and interpose her own body between the harpooner and her offspring. They are also combative, and will use their tusks against one another, in the same way that game-cocks use their beaks. Contrary to what might be expected, from their unwieldiness, the walrus can not only strike downwards, but turn their necks with great facility and quickness, and strike either upward, downward, or sideways, with equal dexterity. Mr. Lamont has frequently seen them fighting with great ferocity on the ice; and the skins of the old bulls, which are light-coloured and nearly devoid of hair, are often covered with scars and wounds received in these encounters. Their tusks are firmly embedded for six or seven inches in the skull, which is itself so thick that an ordinary musket-bullet will flatten on it. A good pair of bull's tusks may be estimated at two feet in length, and four pounds apiece in weight. Sometimes, though rarely, they will measure thirty-one inches in length, and weigh as much as eight pounds each. Cows' tusks will average fully as much as bulls', but, from their liability to be broken, they are seldom more than twenty inches long, and three pounds each in weight. It is a common belief among the hunters that those walrus which have wide-set tusks are the most savage and dangerous, and more particularly if the tusks diverge from one another in *curves*, as is occasionally the case. The ivory of these tusks is extremely hard, dense, and white. Their small size, however, renders them inapplicable for many of the ivory-turner's purposes, and accordingly they do not command so high a price as elephant's ivory; but they are in good repute for the manufacture of false teeth, and for making chess-men, umbrella handles, whistles, and other small articles. The hides are used to make machine bands, and are employed in various other arts, for which a strong quality of leather is required. The walrus yields an enormous quantity of fat—sometimes between seven hundred and eight hundred pounds. The flesh is very welcome to hungry men, and the tongue particularly so; indeed, among some of the Baffin's Bay and Behring Straits whalers,

salt walrus tongue is a favourite dish. The Eskimo hunt the walrus by harpooning, but the South Greenlanders hesitate to attack it in their kayaks. *Arook* is their lion, and they always speak of him with the most profound respect. The wild denizens of Smith's Sound, however, though—owing to the want of kayaks, or boats—unable to attack the walrus in the water, boldly harpoon him as he lies on the ice-floes, and so supply to their families the food, warmth, and light which make tolerable the long Arctic night. The walrus is, indeed, the most formidable-looking animal in the Polar lands. From nine feet to sixteen feet in length, weighing about twenty hundredweight, encased in a coat of mail, in the shape of a skin two or three inches in thickness, his head crowned with

NARWHALS.

ugly large eyes, and formidable tusks, surrounded at the base by coarse bristles, he is sufficiently demoniacal in appearance to suggest in the superstitious mind of the dweller in high latitudes a wholesome dread of him. According to them, he is under the protection of a walrus-deity, whose roars, far from beyond the lands which come under their ken, they affect to hear in terror, sounding through the aurora-lit winter night. The whales of the Arctic regions are many, and though all of them are more or less hunted by the Eskimo, there is only one—viz., the right whale, or mysticete (*Balæna mysticetus*)—which is of great economic value. The narwhal, or sea-unicorn (*Monodon monoceros*), about sixteen feet long, and armed with a long, straight horn-like spiral ivory tooth, sometimes ten feet in length, is one of the most remarkable of the Arctic cetaceans, as well as one of the most beautiful. This "horn" is, in reality, one of the canine, or eye-teeth, of the whale developed straight out, just as those of the walrus are bent downwards. However, while the teeth of the walrus are invariably developed in pairs, the horn of the narwhal is usually single, though in some cases both are protruded. These horns are greatly

valued for the purposes of the ivory-turner. At one time they were used in medicine, and cups made of them were believed to possess the power of detecting and neutralising any poison contained in them. To this day the Chinese esteem these horns for their [illegible]ginal properties. In old times it was supposed to be the horn of the fabled unicorn, and sold at enormous prices. In the Palace of Rosenborg, in Copenhagen, is a throne of the kings of Denmark, manufactured out of the ivory; and the father of Dr. Scoresby had a bedstead made out of them. In 1861 the price of narwhal's ivory

FALLS OF THE BRUARÁ, ICELAND.

was 1s. 6d. per pound, but of late years it has risen prodigiously in value, owing to its being in request for the repair of the Chinese palaces, but it is again falling. The oil is highly esteemed, and the flesh is very palatable, though, indeed, the learned Wormius warns us that it is a deadly poison. The skin of the narwhal, boiled to a jelly, is looked upon, and justly so, as one of the prime dainties of a Greenlander. The hospitable Danish ladies resident in Greenland always make a point of presenting a dish of *mattak* to their foreign visitors, who are, however, sufficiently rare not to make great demands on their culinary skill, and in most cases, of tastes cosmopolitan enough to appreciate the outlandish luxuries set before them.

The whité whale (*Beluga albicans*) is probably of even more importance to the Eskimo than the narwhal. It is equally common, and its habits and migration are much the same

as those of the latter, which again follows the right whale in its migrations. It goes as far north as 78° at least. It wanders, however, further south than the narwhal, being found as a regular denizen in the St. Lawrence River. The Greenlanders, during the summer, kill great numbers of them, preserve their oil, and dry their flesh for winter use. Of this animal and the narwhal about 500 are yearly caught in Greenland by means of strong nets, or are harpooned, but the majority of them are white whales. It is about sixteen feet in length, and derives its common name from its creamy-white colour. It is a rare occurrence for the whalers to kill one, its swiftness and activity giving them more trouble than the oil is worth. They are sometimes called "sea-pigs," from their bearing some resemblance to that animal when tumbling about in great droves on the water.

The porpoise, dolphins of various species, and several species of fin whale, make up the other Arctic cetacea. The fin whales—so called from having a fin on their backs—are the largest known cetacea, often exceeding 100 feet in length, while the right whale rarely exceeds sixty; they are killed by the Eskimo, but not by the whalers. Their swiftness and fierceness render their pursuit difficult, while their thin, hard cartilaginous blubber—not unlike soft glue—yields little oil, and the whalebone in their mouths is short and all but worthless. They mostly belong to the genus *Balænoptera*, and are known to the whalers as "finners" or "rorquals." They are almost equally common on our coasts during the herring-fishing season. They also frequent the cod banks, their large throats, unlike the right whale, permitting them to swallow great gulps of fishes at one mouthful.

The right whale (*Balæna mysticetus*) has been long pursued for the sake of its blubber and whalebone. The whales killed in the Middle Ages by the Basque whalers in the Bay of Biscay are, however, believed to have been a different species. As the range and migration of the present species will be more fully narrated in the succeeding chapter, we may be brief in our description of this, the most important of the Arctic "sea monsters." Its throat is so narrow that it cannot live on fishes, but on *Clio borealis*, a small mollusk found in abundance throughout the Polar regions, and on the little shrimp-like *Cetochilus arcticus*, and its relatives. These animals again live on the minute microscopic plant called the diatom, which discolours, of a green hue, great portions of the frozen seas. The clios and entomostraca, therefore, are chiefly found in these places. The whale frequents the localities where its food is most abundant, and the whaler sails with all haste from one feeding-ground to another in search of it. It is, therefore, no exaggeration to affirm, as I did some years ago, in another place, "that in all the annals of biology I know nothing stranger than the curious tale I have unfolded: the diatom, staining the broad frozen sea, supporting myriads of living beings which crowd there to feed on it, and these, again, supporting the huge whale; so completing the wonderful cycle of life. Thus it is no stretch of the imagination to say that one of the greatest animals in creation*—whose pursuit gives employment to many thousand tons of shipping and thousands of seamen, and the importance of which is commercially so

* Nilsson, in his "Skandinavisk Fauna," vol. i., p. 643, estimates the full-grown *B. mysticetus* at 100 tons or 220,000 lbs., or equal to eighty-eight elephants or 440 white bears.

great that its failure for one season was estimated, for one Scottish port alone (Dundee, in 1867), at a loss of £100,000 sterling—depends for its existence on a being so minute that it takes thousands to be massed together before they are visible to the naked eye, and, though thousands of ships for hundreds of years sailed the Arctic, unknown to the men who were most interested in its existence; illustrating, in a remarkable degree, how Nature is, in all her kingdoms, dependent on, and how great are, little things!"

The gun harpoon (a harpoon fired out of a huge horse-pistol-like weapon, mounted on swivels in the bow of the boat) has now almost entirely superseded the old hand harpoon. It is, however, still believed that the latter, if more difficult to use, is a more efficient weapon. After the whale is "struck," it generally dives or makes for the nearest ice, among the frozen fields of which it is sometimes lost. The boat which is "fast" hoists a flag, when the other boats come to its assistance. If the whaler is "paying out" much line, they unite their lines to the first one. When it comes up to breathe, the other boats either harpoon it afresh, or, if it is weakened, lance it; for the harpoon acts merely as a hook, the whale being killed by the long steel lances. When killed, the boats tow it alongside the vessel, where, by a contrivance of cords and pulleys, it is secured, and turned gradually round to permit the blubber being taken off it, and the whalebone strips cut out of its upper jaw. The blubber is then put into iron tanks with screw tops, or if these fail, into casks, which are taken out in staves, or "shakes," and put up by the cooper as occasion requires. The oil is fried out after the ship comes home. The ways of life of a whaler we may have occasion to describe when, in a future chapter, man in the far North is sketched. The whales are being gradually driven further and further to the northward; but the varying fortune of the whaling trade is as much owing to the ill luck of the whalers in coming across their haunts as to the want of whales. I am not at all sure that they are decreasing so greatly in numbers as is the general belief. Every now and again cargoes equal to anything that was obtained in the best days of the trade are procured. In 1861 I came home to England, "shipmate" (as the phrase goes) with no less than thirty right whales, in addition to a miscellaneous menagerie of Arctic animals, dead and alive, and a motley human crew—a company so *outré*, that I question if ever naturalist, or even whaler, sailed with the like before. No doubt, many of the whales were only half grown, or even younger; but still, the cargo was a monster one. The whales of the Sea of Okotsk and Behring's Strait are said to be different in species from those of the North Atlantic. They are, however, as yet very imperfectly described, and it is known that whales harpooned in Baffin's Bay have been afterwards killed in the North Pacific, having accomplished the "North-west Passage." The common porpoise is also common to both seas.

The white bear (*Ursus maritimus*) is one of the best known of the Arctic land animals. It ranges both sea and land in search of its prey, but its favourite food is seals, for which it ingeniously lies in wait and attempts to circumvent. It is still common in most parts of the Arctic regions, but of late years has been almost exterminated in Middle Greenland. It will often be found far from land; and during the sealing season it is a constant attendant on the sealer, for the sake of the carcases, in pursuit of which it is more free than welcome. It is a powerful animal, often weighing from ten

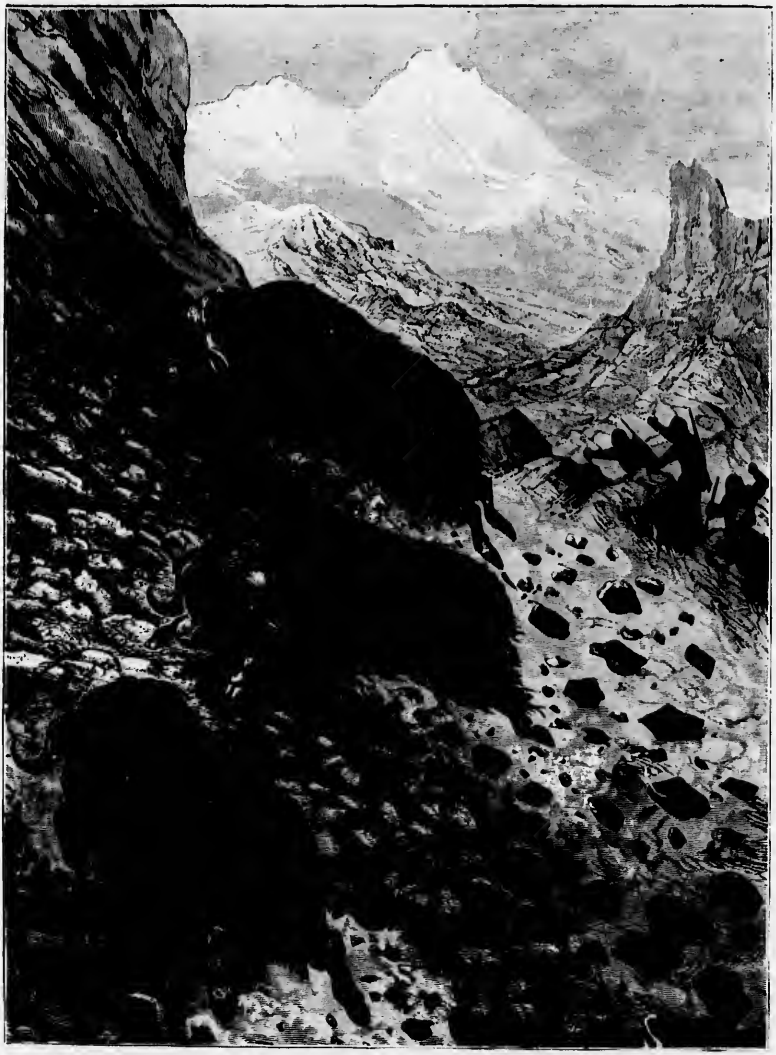
to twelve hundred pounds. It will also in the summer vary its diet by a feast of eggs. It will even eat seaweeds in the last extremity of that hunger to which it is often driven. The smell of burnt fat will attract it for miles, and though, as a rule, it will run before man, yet it is by no means an enemy to be despised.

The Arctic fox (*Vulpes lagopus*) is another widely-spread Arctic animal. Like the bear, it also leaves the land to search for its food, though it confines itself to the ice-field, and does not take to the water. It will often be seen hundreds of miles from land during the sealing season. When in pursuit of the wandering lemming it sometimes loses its way home, and has been taken in places far from its natural haunts. There are two varieties, the blue and the white. The former is much more valued for its fur than the latter, a single skin often fetching £3 in the European markets. Both cast their coats during the summer, and become brown. At that period it is rarely killed, its fur being of little value. It is then found in the mountains, preying on the young ptarmigan; in winter it comes down to prey on shell-fish and other marine produce, at the open places near the shore when the tide breaks the ice. About this time it can often be seen barking its "ak! hak-a!" most impudently at the solitary hunter. It is not a retiring animal by any means. When the hunter returns from his day's labour it is one of the first unannounced visitors which come either to share the produce of the chase or to plunder his provision bag. It accompanies him—at a respectful distance—on his sledging or other expeditions, and rewards itself for this unasked attention by purloining whatever it can obtain. If fired at, it will simply, if unhurt, bark at its assailant, and retreat reluctantly.

The snowy-white hare (*Lepus glacialis*) is one of the most beautiful of Arctic animals, and though it differs from the European blue hare in very few characters, is in habits widely different. The "timid hare" is with us a proverb; but in the Polar regions, its cousin is, on the contrary, fearless of man; it will sit "as if nailed in its rocky refuge," however near the hunter may pass it. The German Expedition to East Greenland described certain places in that country—on mountain slopes—as being dotted with white spots, which, on examination, proved to be hares. Often after missing a hare, the hunter has been enabled—so careless is it—to take out his note-book and sketch it in various attitudes, while it was quietly nibbling the moss, and then at his leisure shoot it. Its hair is sometimes used by the Eskimo to weave thread, out of which they make children's caps. Its flesh is very insipid.

The wolf—not the "grey beast of Pyrenean snow," but a species peculiar to high latitudes (*Canis Lupus*, var. *albus*)—is unknown in Arctic Europe or in East Greenland. It has, however, once been killed in West Greenland, having crossed over the ice from the opposite shore, where it is common. It is very like the Eskimo dog, which is, in all likelihood, only a long-tamed wolf. This dog and its use in dragging the sledge we have already spoken of.* It is now rapidly being decimated by disease both in Greenland and

* "Races of Mankind," Vol. I., p. 11. In that work I inadvertently described a team of Eskimo dogs as being capable of dragging a sledge 160 miles a day. I ought to have said that they will frequently travel ten hours a day, and on smooth ice go at a speed of sixteen miles an hour. This, however, they cannot keep up, though in many cases a team has been known to travel eighty miles *per diem* for several days together. If the ice be rough, or the sledge delayed by obstacles, an average of four or five miles is nearer the mark.



HUNTING THE MUSK OX

in Kamskatka. This disease is akin to hydrophobia, but differs from that complaint in many particulars. "Stamping out" is the only cure (*sic*) yet suggested for it.

The Arctic lemming is a variety of the Lapland and Norwegian species. In East Greenland it is common in the vicinity of Scoresby's Sound and the winter quarters of the German Expedition (75° North lat.). Southward it seems unknown, and does not appear again in West Greenland, until we reach the upper part of Smith's Sound. This curious distribution shows that most likely there is a route by which animals can travel around the northern end of Greenland to the east coast, or that, far to the north, the great interior inland ice is interrupted. We will see presently that the musk-ox has a similar distribution as well as the ermine, which, unknown in South Greenland, either on the east or west, is found on the far northern part of either coast. It is unknown in Spitzbergen, but exists in Novai Zemlai, and, like the lemming, is abundant in Hudson's Bay and almost every other part of the Arctic region. The Hudson's Bay lemming (*Myodes torquatus*, var. *Hudsonius*) is, however, a different variety.

The musk-ox, or properly, the musk-sheep (*Ovibos moschatus*), is another of the Arctic animals, but is altogether confined to Arctic America and to a very local range in Greenland. It is rather smaller than the average European ox (Fig., p. 93). Its threatening appearance quite belies its harmless character. It is black in colour, with long hair falling in rough manes, though on its back is fine wool. As its name implies, its flesh and fat are musky in odour; but on the whole they greatly resemble those of the domesticated ox, and when young its meat does not differ greatly from the best beef. Like the reindeer, it is usually met with in herds—rarely exceeding from 100 to 200 in number. When first the musk-ox sights the stranger it remains as if rooted to the spot, "staring at the strange unknown enemy, and arrives very slowly at a resolution." Its head is its invulnerable part: a bullet will flatten on it. "If a family, or herd with young ones," writes the historian of the German Expedition, "are surprised, they either form a square (the young being in the centre and the old outside, with their heads down), or else the bull, placed as a sentinel, takes to flight, and the others follow closely, the placing of their outposts being astonishing. They are also excellent climbers. A retreating herd climbed a snow path, at an incline of not less than 45°, on a high mountain near our winter harbour, and, to our great astonishment, we saw one looking down on us from between the craggy walls of Cape Hamburg." On the top of Cape Franklin, at a height of 4,875 feet above the sea-level, and on the back of the Hasenberg, at 1,959, traces of this strange sheep-ox were observed. At one time it was believed to be entirely unknown in Greenland. It was, however, found in abundance near the German winter quarters, in about 75° north latitude, and by Hall at a few degrees further to the north in Smith's Sound. South of these limits it is unknown in Greenland, though, curiously, the Eskimo in that country still call the domesticated ox by the name of the musk-ox, viz., *Umimigmak*.

The reindeer (*Rangifer tarandus*) is one of the most characteristic of Northern animals. (Figs., p. 96.) It is found over the whole range of the Arctic regions, stretching further to the south than most other Polar animals; and though there are varieties, yet the distinctions between these varieties in America, Greenland, Lapland, and Spitzbergen are so trifling, that we may look upon them as all one species. In no portion of Greenland or America is it

tamed as in Lapland, the north of Russia, and Siberia. In Iceland, though not a native of that island, it is found in abundance, having been imported into the country from Norway by Governor Thodal, in 1770. It is not, however, tamed, but runs wild in the interior in great herds. In Lapland it is a domestic animal. The Lapps breed it, and pasture it in great flocks; it is their sole wealth—their dreary, mossy wilds or lichen-clothed forests yielding little food. To them it is, at once, the cow which yields milk, butter, and cheese, and the beast of burden which drags their sledges—"their ox, their ass, their everything." Its skin supplies the Lapps with clothing, and when old or infirm its flesh is valued as food. Moreover, it is to the dusky traveller in the north of Europe not only a faithful servant, but even an uncomplaining companion. It feeds on lichens, mosses, willows, buckbean, and other dwarf Arctic vegetation, and in the winter will dig under the snow for the scanty herbage: this, during the winter in Norway, consists almost entirely of the reindeer-moss (*Cladonia rangiferina*). These animals are found in immense numbers in Spitzbergen, and Mr. Lamont considers that at some time they must have passed over the ice and intermediate frozen lands to Spitzbergen from a point of the continent of Asia almost exactly opposite. Some of them were killed, with ear-marks, such as the reindeer herdsmen sometimes put on them. Often in Eastern Siberia herds of tame reindeer stray away, and are said to go over the ice and be never seen again.

In Greenland they are also found in vast numbers, and are very recklessly slaughtered by the Eskimo. Their skins are worth in Copenhagen from 6s. 9d. to 15s. 9d. each, according to the quality, though the natives only get 1s. 6d. for them. The yearly number killed used to be, in the summer, from 10,000 to 20,000, but it is now on the decrease. During the early summer the reindeer in Norway descend from the sub-Alpine pastures for the purpose of feeding on the sweet young grass springing up; but in the hot weather, like deer generally, they return to the higher regions, to avoid persecution by a species of breeze-fly (*Œstrus tarandi*), which lays its eggs, covered with an adhesive substance, on the back of the deer's neck. The larvæ, when hatched, burrow their way beneath the skin, and form a considerable swelling. The American "caribou," or reindeer, frequents densely-wooded districts, as well as extensive "pine barrens" and open places, while the Scandinavian reindeer more affects mountain regions. Formerly, great numbers of wild reindeer were captured in Norway by means of pitfalls—usually constructed in some narrow rocky place through which the deer were compelled to pass. These pits were called *Rengrave* (reindeer graves), but by the Norwegian game laws they are now compelled to be filled up. They were covered with sticks, over which a thick layer of moss was spread; of course, as soon as the deer trod on the treacherous ground it was engulfed, and from the narrowness and depth of the pit, found it useless to struggle to escape.* Sir John Richardson describes an ingenious plan of capturing the American caribou, as practised in Chesterfield Inlet. The sides of the trap are composed of blocks of snow; an inclined plain of snow leads to the entrance of the pit, which is about five feet deep, and of sufficient dimensions to contain three full-grown deer. "The pit is covered with a large

* Austen, in Lartet and Christy's "Reliquiæ Aquitanicæ," p. 217.

thin slab of snow, which the animal is enticed to tread upon by a quantity of the lichens on which it feeds being placed conspicuously on an eminence beyond the opening. The exterior of the trap is backed up with snow, so as to resemble a natural hillock, and care is taken to render it so steep, on all sides but one, that the deer must pass over the mouth of the trap before it can reach the bait. The slab is sufficiently strong to bear the weight of a deer until it has passed the middle, when it revolves on two stout axles of wood, precipitates the deer into the trap, and returns to its place again, in

REINDEER (*Rangifer tarandus*)

consequence of the lower end being heavier than the other." The Eskimo likewise kill them by spearing them from their kayaks as the deer are crossing lakes or inlets on their annual migration southward. Mr. Austen also describes another ingenious device adopted in Russian Finland and some parts of Lapland to capture the reindeer. It is called the "Vild Ren Hage." A kind of fence, about two miles long, is constructed of small trees, matted and interlaced with brushwood; openings are left at intervals, about three feet in width, and stout posts are driven into the ground at each side. "To one of these is attached a strong noose, made of thick rope, which is retained in a circular form by means of very slender twigs, which give way at the slightest touch; and to prevent the fawns from leaping through without entangling themselves, two threads are placed diagonally across it. It is said that when the deer meet with these hedges (which are usually made at the time of their partial migrations to the lower grounds, in

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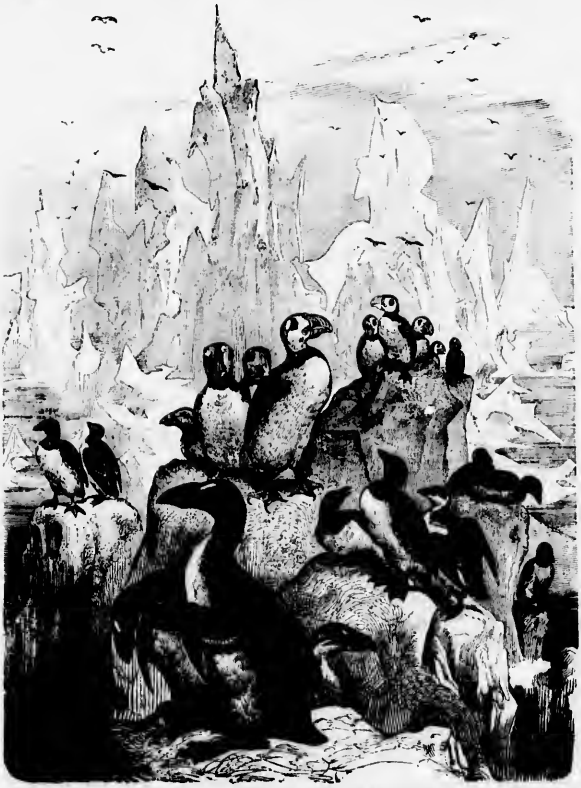
HUNTING THE PRONG-HORNED ANTELOPE WITH GREYHOUNDS ON THE EASTERN SLOPE OF THE ROCKY MOUNTAINS.

spring) they proceed along them until they come to one of these openings, in forcing their way through which one of the number is usually entangled in the snare."

We have said so much about the larger Arctic animals, that if we are to keep this



AN ASSEMBLAGE OF PUFFINS, AUKS, AND OTHER ARCTIC BIRDS.*

part of our subject within due bounds, we must say but little of the Arctic birds and fishes. Some of the former we have already spoken of; and as most of them, if not all, are also feathered friends of lower latitudes, we may have occasion to meet them elsewhere.

* The Great Auk (*Alca impennis*), once a common bird in Northern Europe and America, is now believed to be entirely extinct. At one time it was plentiful in Newfoundland, Iceland, Greenland, &c., but being unable to escape by flight, it seems to have been exterminated by man.

Taking Greenland as the type of the Arctic world as regards birds, we have, according to Newton, among the regular feathered inhabitants five species belonging to the Old World, eleven to the New World, and forty-five species common both to the Old and New Worlds. Among the stragglers, nineteen are Old World denizens, thirty-four New World, and eight common to both Old and New Worlds. In each category—inhabitants and stragglers—there are, respectively, one and two doubtful members. The fishes are not numerous: in Greenland alone, only seventy-eight being at present known in the fresh waters and the surrounding sea, and it is not very likely that the number will be much increased. The only ones of economic importance are the little *Cottus scorpius*, or "kaniok," which the old Greenlanders fish from rocks, the Norwegian Sea perch (*Sebastes norvegicus*), the lump fish (*Cyclopterus lumpus*), the halibut (*Hippoglossus vulgaris*), the different species of cod (*Gadus agilis* and *ogak*), the salmon (*Salmo carpio*), the capeling, on which the dogs are sometimes fed (*Mallotus villosus*), and the Greenland shark (*Somniosus microcephalus*), the eye of which is usually infested by a parasite, which renders the fish blind. It is a constant attendant on the flensing of whales, but is very harmless. It is captured for the sake of the oil in its liver, out of which, it is said, a great deal of the "cod-liver oil" of commerce is made.

The Ancient Forests of Polar Lands.

As there were "strong men before Agamemnon," so there were plants and animals in the world before the present ones which are on its surface and in its waters. The extinct ones are found embedded in its rocks. In the Arctic regions, as elsewhere, we find these in abundance. Most of the geological formations are found within the Polar regions. Thus in Smith's Sound we have Silurian rocks, and in Greenland, Spitzbergen, and Mackenzie's River miocene and cretaceous rocks also. In Bear Island and Melville Island—wide apart as they are—there are carboniferous plants, identical with those found in the same formation in Britain. Meteorites are found scattered over the country with masses of iron, which there is every belief is of meteoric origin, though the fact has been doubted. Liassic rocks, with ammonites, and the bones of that great lizard, the *Ichthyosaurus*, are found about the Parry Islands and elsewhere. The bones of the mammoth, or woolly elephant, are scattered abundantly along the northern shores of Siberia. Mines are rare. Coal is generally found along with the miocene and cretaceous rocks, and though of poor quality, is combustible. Plumbago is common; traces of tin, silver, and copper have been found in Greenland, and the meteoric iron was at one time used by the Eskimo. But the most valuable mineral in the Arctic regions is the cryolite, found at Arksut Fjord, in South Greenland. It is a white mineral, out of which soda and aluminium are extracted. The refuse is extensively employed in making the fine Danish porcelain, and in manufacturing excellent plate glass. The examination of the Arctic flora and fauna show that the now frozen regions were once covered with luxuriant vegetation; and that while dwarf bushes and creeping willows now cover the frozen soil, tropical and semi-tropical vegetation formerly flourished. The miocene beds of Disco, Spitzbergen, and, indeed, the whole circuit of the Polar basin, show this in a remarkable manner; and though much of the material from which Professor Heer, of Zurich, described the remarkable plants—from the study of which he drew his

conclusions—was also collected by the writer and his companions, yet, as no more fitting words than those in which the famous Swiss palæontologist summed up the result of his researches can be found, this too brief and yet too long chapter may be concluded with them.

Speaking generally of the later deposits of the Arctic, he remarks that:—"At the period when the sandstones which compose the smiling hills of Zurich were deposited, a considerable extent of *terra firma* must have existed in the extreme north. To this period the name of miocene has been given, or more generally that of the Tertiary Period. Our countries had then almost a tropical character. Among the forests of laurels and the tufts of palm trees lived numerous animals, belonging to types which nowadays occur only in the warm and even torrid zones. Towards the north, indeed, the ground was clothed in a different vesture. Nevertheless, Greenland, even at 70° N. latitude, presents a flora which, by its climatic characters, may be compared with that of Northern Italy. This flora teaches us that in the neighbourhood of the Island of Disco and the Noursoak Peninsula there was once a lake of fresh water, upon the marshy edges of which great beds of peat were formed. These subsequently gave origin to the deposits of coal which appear along the coast. In our marshes it is not rare to see ferruginous water, which covers the soil with a reddish-brown crust. The same took place in the ancient marshes of Greenland: the iron deposited itself upon the plants which fell into the water, and these in their turn contributed to the precipitation and fixation of the iron. By this means has been gradually formed that ferruginous rock, in the bosom of which numerous plants are imprisoned. These fossils show that the marshes were covered with sedges and reeds; but the marsh cypress, the water pines, the birch, the alder, and the poplar flourished there: for numerous fragments of these plants are covered by a ferruginous deposit. The water trefoil (*Menyanthes arctica*, Hr.) no doubt grew in the marshes, in the same way that the existing species (*M. trifoliata*) adorns our moist meadows with its charming flowers; and the burr reed (*Sparganum Stygium*, Hr.), the fruit of which has been obtained from the rocks, also formerly raised its bristling head above the waves. The rivulets also brought in leaves from other localities; they conveyed them from the primitive forests; and it is thus that we find their traces in the ferruginous rocks. If we enter into these forests, we shall see a marvellous profusion of trees and shrubs, among which we can distinguish forty-five different species. A tree with acicular leaves (*Sequoia Langsdorfii*, Brogn.) strikes us at once by its enormous proportions. It has left leafy branches in such numbers that there is scarcely a fragment of stone which does not contain its remains; and the remains which the hammer has extracted from the rock enable us to reconstruct the entire tree. It is accompanied by two allied species (*S. Couttsiæ*, Hr., and *S. longifolia*, Hr.), one of which (*S. Couttsiæ*), by the configuration of its branches and leaves, vividly reminds us of the *Sequoia gigantea* (*Wellingtonia*) of California. A *Thuja* had a different aspect, as also the gingko (*Salisburea adiantoides*, Ung.), of which the leaves resemble the fronds of ferns, and differ so widely from those of other Coniferæ. The leafy trees are especially well represented: while our existing forests only present two species of oak, North Greenland possesses nine, four of which are evergreen, like the Italian oak. Two beeches (*Fagus Deucalionis*, Ung., and *F.* sp. ——), a chestnut (*Castanea Ungeri*, Hr.), two planes (*Platanus aceroides*, Gœp.,

and *P. Guillelmæ*, Gœp.), and a walnut (*Juglans acuminata*), from this forest, resemble the types of the same name known to everybody. Besides these, American species, such as the magnolias, sassafrasses, and liquidambars were represented there; and the characters of the ebony tree (*Diospyros*) are to be distinguished in two of the species. The hazel, the sumach (*Rhus*), the buckthorn, and the holly, the guelder rose and the white hawthorn (*Cratægus*), probably formed the thickets at the borders of the woods; while the vine, the ivy, and the sarsaparilla climbed over the trees of the virgin forest, and adorned them with garlands. In the shadow of the wood grew a profusion of ferns, which covered the soil with their elegant fronds. The insects which gave animation to these solitudes are not all lost. The impressions of these which have reached us show that little *Chrysomelæ* and *Cistilidæ* enjoyed themselves in the sun, and large *Trogsitæ* pierced the bark of the trees, while charming *Cicadellæ* leaped about among the herbage. This picture is not a dream of the imagination. Plants and animals have all passed under my eyes."

CHAPTER V.

Whaling and Whalers of the North.

"In a pour of sleet and snow," we read in the newspapers, that the whalers *Camperdown*, *Narwhal*, or *Ann Elizabeth*, "sailed for the Greenland whale fishery." Such notices as this begin to appear about March, and disappear after the first days of May, all of the whalers having then left for their summer haunts. Now if many, indeed most people, were asked where they go, they would readily reply, "Oh! somewhere up in Greenland," a vague, and, as we shall have occasion to show, not altogether a very correct answer. When anything is said about whales and whaling, Scoresby and his "Arctic Regions" are abundantly quoted, for who is there who has not, in some form or another, seen the frontispiece affixed to that really valuable book of the whale tossing the boat, with its crew, high into the air, the boat being, however, rather larger than the whale, and the feat being one which it would be hardly possible for any created being—living or extinct—to accomplish! The artist has not, however, hesitated at trifles, and editors of boys' books are not likely to willingly let the celebrated illustration die for want of reproduction. It is now, however, many a long year since the "Arctic Regions" was published. Since then Captain Scoresby, the whaler—subsequently the reverend doctor—has slept with his fathers, and his book has almost disappeared from the catalogues. Whaling has also undergone many changes. No longer do any South Sea whalers sail from England, and the North Sea "fishery" is now reduced from the once large fleet to only a few vessels, starting entirely from Scottish ports. The vessels have changed too. No longer are they great, jolly, bluff-bowed "snuff-boxes," in which it was hard for the uninitiated to distinguish the stem from the stern. Smart vessels—novelties undreamt of in Scoresby's day—fitted up with all the appliances of modern science, have taken their place. The character of the crews, the captains, and of the very boats used has all changed. Even the *locale* of the fishery

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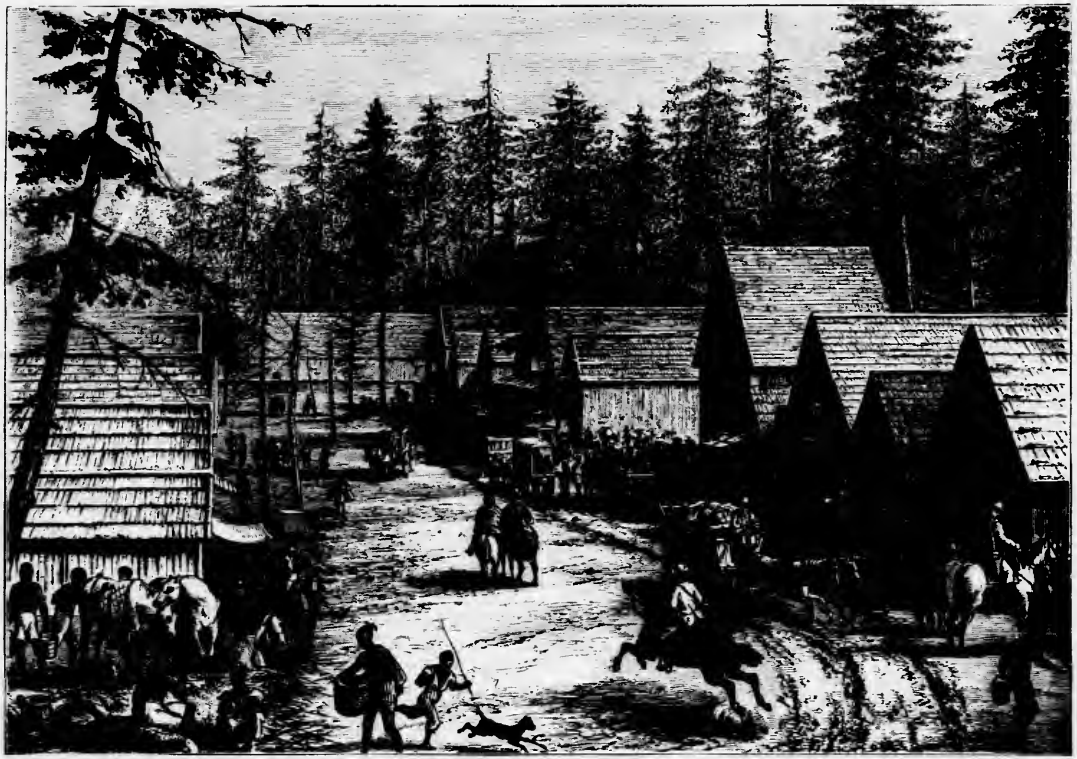
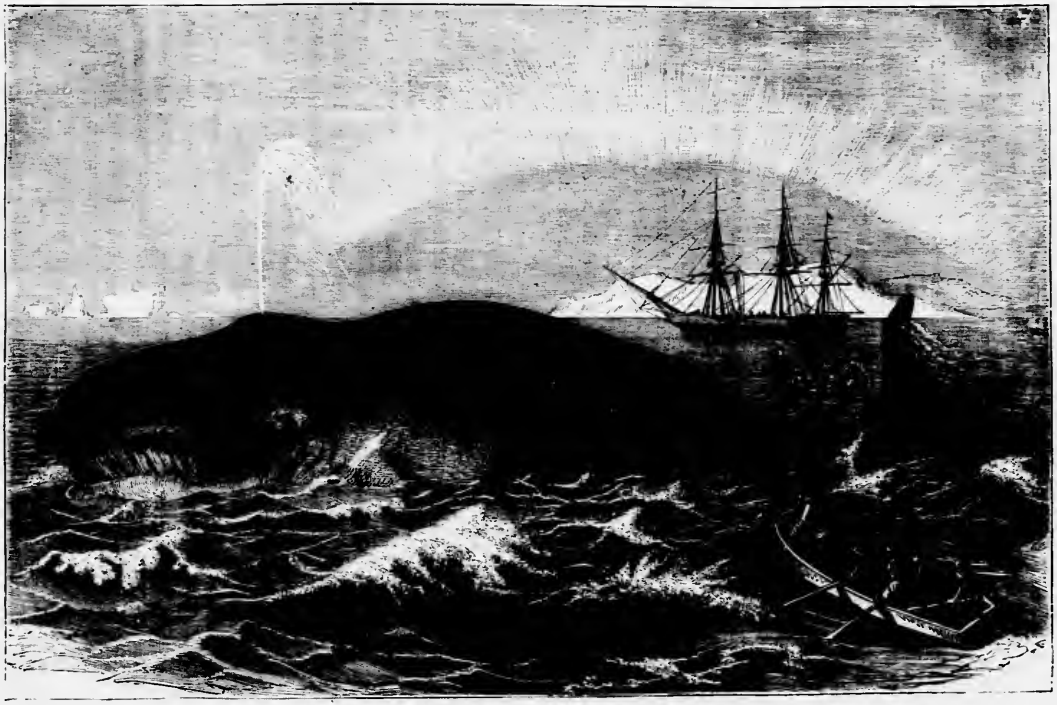


4 VIEW OF A NEW SETTLEMENT IN THE NORTH-WEST.



ATTACKING A WHALE WITH THE HAND HARPOON.

has shifted. Instead of, as formerly, "Old Greenland" or the Spitzbergen Sea being the scene of the whaleman's triumph and hardships, Baffin's Bay, the western shore of Davis' Strait, and the "Meta Incognita" of old Martin Frobisher, are his haunts—familiar enough to many now, though all unknown land in these old pre-Rossian days.

Dundee, Peterhead, and Aberdeen have now the monopoly of the British whaling business, though year by year it is concentrating more and more in Dundee, and it is even doubtful whether the two latter ports will in future send out vessels. With one or two exceptions, the whalers are now screw steamers, built especially for this trade, and the few remaining sailing-vessels are every year decreasing in number, being either sold or cut down in order to put engines into them, the advantages of steam being so apparent. Nearly all of them leave port about the end of February, and proceed north to the seal fishery, off the island of Jan Mayen, in the Spitzbergen Sea, described in the preceding chapter, calling at Lerwick, in Shetland, for extra men, and returning home again about the end of April if they propose proceeding to the Davis' Strait fishery. The one or two who remain in the old Greenland whaling cruise about the Greenland Sea until about August, when they return, the ice forming sooner in the high northern latitudes which they frequent than in the region of Davis' Strait. Most of the whalers, however, which visit "Old Greenland" are from Norway, Holland, or Germany, though there are still a few Scotch vessels, almost entirely from Peterhead, which, either from old custom or for the sake of making a shorter voyage, prefer this dreary hunting-field to the more popular one indicated.

For "the Straits."

The Davis' Strait ships accordingly discharge what cargo of seals they may have on board, refill with coals and provisions, and by the beginning of May, at the latest, are on their way again for the Arctic seas. A voyage across the Atlantic, from Cape Wrath to Cape Farewell, though a couple of thousand miles, is at that season a mere holiday trip, as, indeed, an expedition to Greenland may always be, the amusing popular notion as to its hardships to the contrary notwithstanding. High seas are then rare, and calms are the chief annoyance of the whaler, for on the way out he uses his sails whenever possible, the necessary stowage space of his vessel only permitting of a small quantity of coal, for ice navigation, being carried. In a fortnight or three weeks from Cape Wrath he may be in the latitude of Cape Farewell, the most southerly point of Greenland, but I have met few Arctic navigators who have ever seen that promontory. Though I have doubled it four times, I never yet saw it, the reason being that there is generally a great ice-drift brought by the east coast current round the cape, so that, in order to avoid this, experienced mariners keep off to the westward, and rarely sight the Greenland coast much below Holsteinsborg. Here the east coast ice is jammed in upon the coast by the westerly current, which impinges on the coast at this point. Accordingly, until you get into high latitudes, the coast is clearer of ice north of this point than south of it. It is, in fact, always difficult to get into the South Greenland ports early in the year, and even at a later period. Vessels have been known to have been unable to get in there, and forced to sail again for Denmark without landing the stores or taking away the produce of the trading

posts. On the other hand, it not unfrequently happens that the annual ship is shut in by the ice, and is unable to effect her escape before the winter sets in. Such an untoward mishap befell the ships no later than 1875. An ignorance of these facts about the southern portion of Greenland being more ice-jammed at certain seasons than others has been a source of inconvenience to the only yachtsman who has yet ventured so far a-field, viz., Prince Napoleon. He hesitated to proceed further north than one of the most southerly settlements, while, at that season, he would have found the sea, as far as the limits of the Danish possessions at least, almost free from ice.

We are, however, proceeding a little too fast. It is not with imperial yachtsmen that this chapter is concerned, but with a hardier and humbler race of seafaring folks. Generally speaking—I dare say with exceptions—fully one-half of a whaler's crew is under the influence of strong waters just as the vessel is hauled out of dock. Knowing this—in Dundee at least—it is customary merely to drop down the Tay that night, and anchor until daylight and sobriety come in company. If the vessel be a steamer the services of the crew are not required, the "engineer's squad" being quite sufficient to get her beyond the boundaries of the port. The home-pilot is scarce well off the deck before we are in the Pentland Frith, where, as in Martin Frobisher's day, "two lusty fellows taketh us through," only that nowadays generally one sufficeth. The land fades away behind us; we may possibly, if driven a little out of our course, sight Rockall—that "solitary rock amid the main"—but more commonly the last of British land we see are the Flannan Isles, or "Seven Hunters," and the islands of Barra and Rona, inhabited by a few families of fishermen, who are so isolated from the world that—honest folks—they prayed for George III. three months after his death, and are not yet remarkably sure under whose benign government they live.

"Making Free of Greenland."

We have scarcely done so, however, before the May-day saturnalia commence. I do not remember ever to have seen them described, so that I may spare a little space to these peculiar rites—the Arctic substitute for others more familiar in milder zones. For some days previously, a huge unwieldy-looking instrument, made out of rusty iron hoop into the shape of a razor, has been suspended in a prominent place. It is well notched here and there; and beside it is hung another piece of hoop, bent into the form of a rather rough pair of tweezers. A piece of chain, symbolical of after proceedings, bear the tonsorial instruments company. If not already initiated into the mysteries of it, the inscription chalked in very legible, if not elegant, letters, by the "scholars" of the "'tween decks," will give the neophyte a rather close suspicion of the uses and usages thereof:—

"ON MAY I AT 12 O'CLOCK PRESESLY BARBAR SNIP & NEPTUNE AND RETINU WILL COME ON BOARD FROM LIFLY."*

The three utensils are supposed to be the razor, strop, and nose-holder, with which the neophyte—including, perhaps, the reader—is to be initiated into the art and mystery, and

* Lievely or Godhavn, the familiar El Dorado of the Greenland whaler, afterwards mentioned.

received into the worshipful brotherhood of Arctic Navigators. True enough at twelve o'clock "presesly" (remember we are in a Scotch whaler), a most hideous noise commences. The bell commences "striking" furiously, Neptune is hailed from the ship and sea, and finally, amid much noise and trampling of feet, a procession comes down the companion-way, and an unearthly voice bawls through the speaking-trumpet into the cabin, "Captain, hae ye ony objections tae a sang frae Neptun' and his retinu?" With

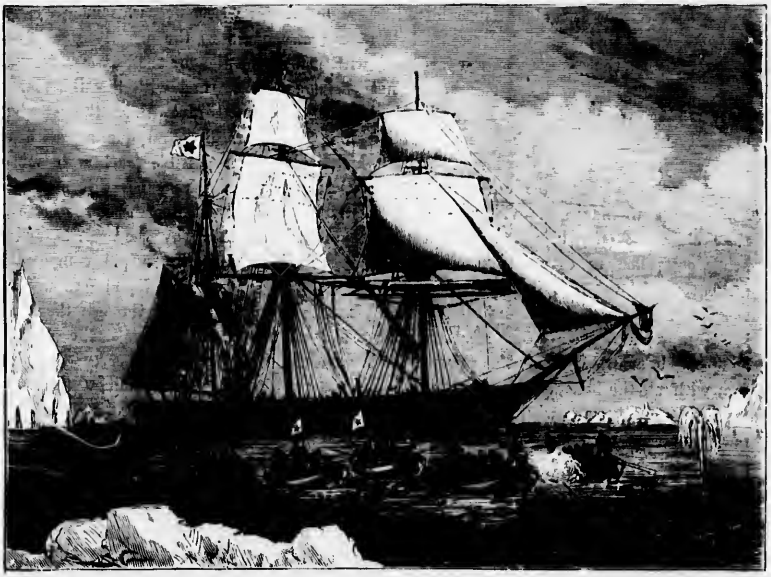
VIEW OF GODHAVN, DISCO ISLAND, NORTH GREENLAND.

the licence allowed by long usage on such occasions, "Neptune and his retinue" make their appearance in the main cabin. It consists of the following not strictly classical personages :—Neptune (with a trident of tin, and a red herring stuck on the end of it), Madame Neptune (very loving, and, under the influence of a glass of rum—unbecomingly so), Neptune's doctor and mate (in pilot jackets, white collars, and ties of paper), Neptune's barber and mate, closed by the constable (in a real policeman's coat). The songs then commence, the choruses being vastly increased by the steward serving out the long-looked-for grog. Indeed, we can overhear Neptune, in a voice savouring of most ungodly words, wondering huskily to his spouse when the rum is likely to be forthcoming. The last of the ditties is one entitled, "Sister Mary," the air and words of which are, I dare

say—and not improperly—unknown to the Italian Opera, but of which the chorus contains the ominous refrain—

"For the time is drawing nigh."

He is a very foolish man who would attempt to resist on these occasions, and accordingly all the "green-hands" connected with the cabin (almost invariably the surgeon, the steward, and possibly a stray naturalist who unthinkingly has taken passage northward) are marched off



A WHALER WITH BOATS FAST TO A "FISH" (WITH THE GUN HARPOON).

by the constable and his assistants armed with broomsticks. He is received by all the idlers in the 'tween decks, brilliantly lighted up, and draws lots for the order of precedence. Generally the "officer and gentleman" passenger, if anything of a favourite, is let off very lightly, the probabilities having been that already he has secured an almost entire immunity by sundry gifts of grog and tobacco in an early portion of the evening. The others are marched in successively—all blindfolded—amid blowing of trumpets and every conceivable noise and hubbub possible to conjure up on board a ship with a crew of seventy men, each more intent than the other on fun and frolic, the roughness of which is the chief element in it. We, of course, like unfeeling wretches as we are, sit round quite unconcerned, enjoying the trepidation of our comrades, proving to a demonstration the truth of Rochefoucauld's bitter maxim, that every-

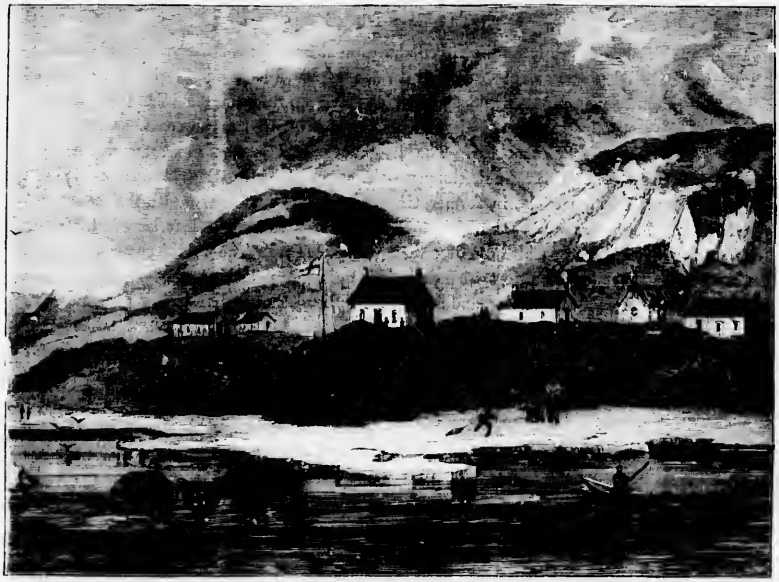
body rejoices in the misfortunes of his neighbour. The victim, seated in a roughly-improvised chair, and bound to the mizen-mast, is asked by his Majesty various questions, such as his name, was he ever here before, and so on. The barber's mate then proceeds to lather him well with tar and grease, the abominable mixture being well rubbed if it be seen that (as is usually the case among "knowing hands") the beard has been well greased beforehand to prevent the tar sticking. The barber then, with many time-honoured witticisms on the smooth beard of the gentle youth, proceeds to perform his function with the uncouth razor already described, courteously consulting him in a tone of ironical politeness regarding the particular style of whisker preferred. Ignorance is no bliss here, so the victim wisely keeps his mouth rigidly shut, knowing well that were it opened to answer any question, the penalty paid would undoubtedly be the entrance of the tar-brush, with many apologies for the barber's awkwardness. The "towel" is a wet ship's mop, not particularly clean, and with this the barber's mate is most assiduous in wiping the freshly-shaved chin. Meanwhile, the "doctor" expresses great anxiety for his health, feeling his pulse learnedly, and quoting with the most amusing absurdity the longest words which it has been possible for him to muster out of the patent medicine advertisements in the newspapers. Every effort is meanwhile being made to induce the victim to open his mouth, and here the nose-holders come in, their chief use (*sic*) being to prevent the poor wretch breathing by the nostrils, and so being compelled to open his mouth. Woe betide him! Instantly a pill composed of unmentionable materials is pushed into it, followed by a dash of some liquid (sea water or worse). He must finally, before being released, hail the ship three times through the speaking-trumpet, a rush of cold water being thrown down the speaking-trumpet the last time he opens his mouth to hail. The prisoner is then released, and declared free of the Greenland Sea, with all the honours, pleasures, profits, and immunities thereto pertaining. The same scene is gone through with the rest, the musician in the meantime playing doleful tunes on that not very hilarious musical instrument, the bagpipes. Considerable amusement is generally got out of some obstreperous individual who may be foolish enough to resist. Naturally, he fares all the worse, no one enjoying his misery more than those who five minutes previously were undergoing the same ordeal, displaying that savage zest which it is said the slave used to exercise over his fellow-negroes when elevated to the office of driver. Generally, however, all is given and taken in good part, the evening ending with a dance and other rougher fun sailor fashion. The stimulus of the grog being exhausted, those who are not "on the watch" "turn in," and the quiet routine of a passage-making merchantman is resumed. Next morning the May garland, gaily ornamented with ribbons, is hoisted on the maintop-mast, the whole being surmounted by a miniature ship. This remains during the whole passage, considerable pride being displayed by the different ships' crews in this ornament, the making of which is the province of the most lately-married man on board. What can be the origin of all these saturnalia? Is it a sea-going celebration of the Maypole festivities once so common in England, and which, while almost forgotten on land, with that conservatism in everything pertaining to the sea, still sticks among the honest seamen? or is it merely a revival in another hemisphere of the well-known custom of shaving the uninitiated in crossing the equator? Perhaps it is a mixture of both, flavoured with a dash of that meaningless nonsense infused into by the seaman, only

too anxious for any "lark" to break the dull monotony of his life. Curious, however, is it not? this persistency of seafaring customs, for little do these rough sailors know that when they are shaving the little middy who has made his first voyage "over the line" they are only repeating certain heathen rites which their predecessors, the Tyrian mariners, performed to Neptune after passing the pillars of Hercules.

"The East Land."

Bleak and dreary enough looks the Greenland coast at any time of the year—and distance, contrary to the wont, lends no enchantment to the view. Black cliffs, with a cascade of melting snow falling over them, a white glacier creeping down from the inland ice, a crash as of a berg breaking off from the glacier, an iceberg floating down the coast, are the chief objects which strike the eye and ear. The height of land is not great; and, with the exception of a peak or two like Sukkertoppen—the sugar-loaf hill—the cliffs are all shaved and rounded by the action of ice in former times, when this land lay beneath the sea, or was covered by the huge *mer de glace* which now overspreads the whole interior of Greenland in one vast winding-sheet, as already described (Chap. III.). The first iceberg is always something to be remembered. Most frequently it is quite disappointing. They are generally seen long before the land is in view, and are then only fragments of the more gigantic ones nearer land, but which have before reaching the mouth of Davis' Strait got broken and washed into comparatively small dimensions. Sometimes a black speck may be seen afar off, and then every eye is directed on, and the rigging is run to. It is an Eskimo, or "Yak," as the whalers universally call them, out fishing, or perhaps venturing out with that all-prescient scent of his after rum, pea-soup, pocket-handkerchiefs, and other good things usually found on board "Tulnit," or English vessels. If we are on board a steamer we shall have little chance to see him, as he knows that we are not like the sailing vessels, dependent on wind and tide, and may move away at any time. It is not until off the Whalefish or Kronprinds Islands, near the mouth of Disco Bay, that we see much of the natives of the country. Most frequently whalers, if the ice does not look very open ahead, make a call at Godhavn, (p. 104) or, as they call it, Lievely, a little Danish trading-post and residence of the Royal Inspector of North Greenland, situated on an islet off the south-westerly point of Disco Island. It consists of the residence of the inspector, the colonibestyrer, or governor, one or two workmen's houses, all built of wood pitched, the store-house, and perhaps a couple of dozen rude Eskimo huts. It is one of the smallest of the Danish posts, but acquires an importance as being so directly on the route of the whaler and exploring vessels, and accordingly touched at by them, and as the "seat of government." The trade of Greenland is a strict monopoly of the Danish Government, and accordingly the government puts a check upon any trading or fishing within a certain distance of the coast. It does not, however, prohibit the sale of small articles not used in their trade; and accordingly, in addition to obtaining news of the ice, and such other information, here commences a curious traffic with the natives, well known to Scotch whalers, at least, under the name of "troaking," or bartering. The articles most in demand by the seamen are models of the native kayaks, sealskin tobacco-pouches, slippers, bags, gloves, caps, trousers, and waistcoats, and various nick-nacks carved

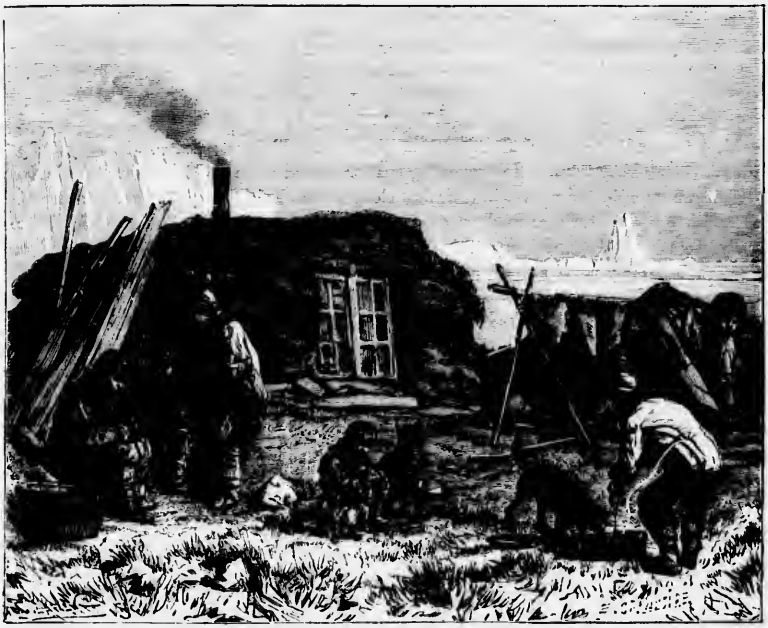
out of walrus or narwhal ivory, which the Greenlanders execute with great neatness and patience, occupying most of the dark winter months, when confined in-doors, in such labour. In payment they prefer biscuits, cotton handkerchiefs, black silk ones, for the women to put round their heads at the place where the hair, being pulled up to form the "top-knot" is getting thin, shirts, or still better—if it is to be had—*rum*, which physiologists tell us is, in



VIEW OF UPERNIVIK, NORTH GREENLAND.

some form or another, a necessity to a people living on an animal diet, and that the craving for spirits found universally among all races so situated is only Nature demanding the exemplification of Liebig's law about the mixture of azotised and non-azotised food. The poor people look forward from one year's end to the other to the chance of these stray visits, and will often come far out to sea to have an opportunity of selling their things. Here there is more competition, and accordingly they meet us everywhere, with a from-ear-to-ear grin, dodging us behind the house to offer some pouch or specimen of their workmanship, redolent of an ancient and a fish-like smell. The English sailor, with his proverbial generosity, gives them comparatively high prices for their commodities, and much largesse beside in pea-soup and rum. After they return home, they lie abundantly about their luck on board such and such a like ship, neglect work, and for some time afterwards are dis-

satisfied with the Danish traders' tariff. They likewise learn English with a very improper vocabulary; and, forsooth, in distant Lievely you hear rather a sprinkling of the oath of British commerce. This "whaler English" is a peculiar jargon, though each party concerned looks upon it as the language of the other—such as "troakem," a corruption perhaps of the Lowland Scotch "troak" (or trade); "andre man" (other man), doubtless the Danish "andre;" "keesee" (ice—the Eskimo being "seko," though they affirm that the former word is English);



A GREENLAND ESKIMO HOUSE.

"meekie" (dog); "keese meekie" (ice-dog, or bear); "shmalley," (small); "nuphstaw" (understand); and so with some others, the origin of which admits of no sort of doubt, and are, therefore, unnecessary to be entered in this very proper narrative of facts. Many of the words are corrupted attempts of the seamen to pronounce words taken from the language of the Eskimo on the other side of Davis' Strait, which language differs very considerably from the Greenland dialect preserved to us in the dictionaries and grammars of Fabricius, Kleinschmidt, and others, and in the various works translated into that language for the use of the natives. The whaler cannot long afford to accept the hospitality of Lievely, for he must make all speed for the north. Few whales are now caught on the Greenland coast

after April or May, and though Disco Bay and vicinity were at one time the favourite localities of the whalers, it is rarely that even a *Balæna mysticetus* is killed in that region. So little is this looked upon as a contingency that the whalers do not allow it to enter into their calculations as to the success of their voyage.* Sometimes when the ice lies far out to seaward, joining the middle ice of Davis' Strait, the whaler will endeavour to go through the Waigat Strait, between the Island of Disco and the Noursoak Peninsula, and then he calculates (or, at least, used to do in the old times) on finding "fish." Here you will hear quoted a rough old distich commemorative of this :—

"Disco dippin',
Waigat open,
There you'll find
The whales nappin'."

Most frequently, however, at this season (June) he will be stopped off the end of the Noursoak peninsula by the land-ice projecting out for several miles, and he will not fail to be visited, as we were, by the natives in their dog sledges from Noursoak (p. 20) and Niakornak, two Danish outposts, each presided over by a cooper or carpenter, called an "udligger," or literally, "outliver," the amenities of whose life are none of the liveliest. The udligger is a gentleman generally possessed of an Eskimo wife, and a numerous brass-complexioned progeny. He is very hospitable withal, and slightly addicted to rum and other ardent beverages — weaknesses which the "governor," as he is jocularly called, has numerous opportunities of indulging while "Herr Englanderen" is ice-bound off his little post.

The whaler has his own names for places along his route, consecrated by long usage and not always in strict accordance with Admiralty charts. His nomenclature is, however, equally to the purpose. Every 'prentice boy knows the dark trap-cliffs of the Disco Island where the snow lies for only a short period as "the black land o' Lievely," and "Bunkè land" lies north of it, and north of this again is "Black Hook," which is only, however, a translation of the Danish Svarte Huk. The little commercial establishment of Pröven is soon passed, and we may drop a boat ashore at Upernivik (p. 108), in latitude 72° 48′ N., for letters for England. At Tessuisak, a little further north, is the last Danish outpost, which has the distinction of being the most northerly abode of civilised man (p. 112). Here lives Jensen, whose name is familiar enough in more southern latitudes, as Dr. Hayes' dog-driver and interpreter; and at Upernivik used to live Carl Petersen—now the quiet keeper of a lighthouse on the Zealand coast—so well known as the companion of Penney, M'Clintock, and Kane, and as the reputed author of a narrative of some of these expeditions.† Those who have only learnt the Greenland dialect of Eskimo, and especially that, too, the rather corrupted version known as "coloni Grönlandske," can but imperfectly understand the natives of Smith's Sound, and still less the Western Eskimo, whose language Petersen could but imperfectly translate. I mention this to show that allowances ought to be made for

* For an elaborate review of the capture of whales off Danish Greenland, see Reinhardt and Eschricht's Ray Society's *Memoirs on the Cetacea*, 1867; Rink's *Grönland Geographisk og Statistisk*; and Lindeman's *Arkansche Fischerei der Deutschen Seestädte*, 1620—1868 (Gotha, 1869).

† *Den Sidste Franklin—Expedition med Fox* (Copenhagen, 1860). *Erindringer fra Polarlandene optegnede af* 1850-55. *Udgivne af Lieut. L. B. Deichman* (Copenhagen, 1855).

Greenland interpreters, and that future explorers should not unjustly accuse their interpreter of deficiency in the language if he cannot readily translate the dialect of the Western Eskimo, even though their country lies but a few days' sail from his home. We are amid a little group of islands, on one of which (Kingatorsoak) was found in 1824, by an Eskimo named Pedluit, a Runic column showing that long before Ross and Parry were dreamt of, old Norse fishermen—it may have been pirates—on one of these restless, roving expeditions of theirs, during which they discovered America, and settled near where Taunton now stands, visited this high northern latitude. The stone has been long in the Museum of Northern Antiquities at Copenhagen; and though the inscription on it has been variously translated, the following, by the late Dr. Rafn, himself an Icelander, may be received as tolerably correct:—"Erling Sigvatson and Bjarne Thordarson, and Endride Oddson erected these memorial-stones and cleared this place on Saturday before Gangdag" (25th April, or according to our calculations, 1st May), "in the year 1135." Little recks the whaler for such musty old memories, or that he is now among the Frue Islands of the Danes—the "Women's Islands" of stout John Davis, of *Sunshine* and *Moonshine* memory, so called because the men all fled in trepidation when they sighted his ships, and only left the women to face the explorers. They are not so bashful nowadays. Just as little do our friends care for the islets of plumbago which dot this archipelego—for it is not worth its freight, and there is better game ahead; so he pushes north with all the speed he may until he reaches the Duck Islands. Then again he is stopped by a barrier of ice, for we are now opposite the entrance of Melville Bay—that most dreaded spot in all the whalers' route—to pass which is literally "running a-muck" with the Arctic ice-fields.

"Taking the Bay."

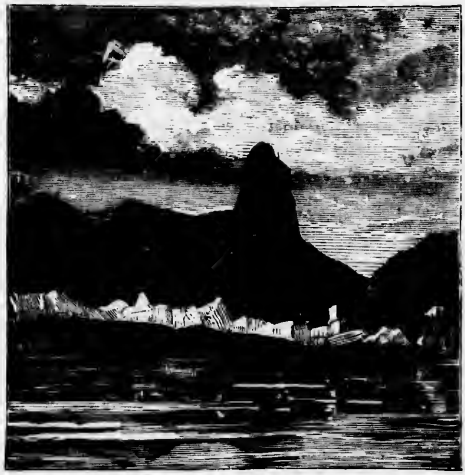
For weeks past we have been hearing enough about "*the* bay," and are somewhat familiar with it in theory at least. "Taking the bay" is a serious consideration, a proceeding not to be gone about in a reckless manner. Accordingly, "the fleet" "hooks on," with their S-shaped ice-anchors to the floe, which now begins to stretch tolerably—or rather, intolerably—continuously among the islands until the captains have reconnoitred the ice, and talk among themselves about the best method of "making the passage." One after another you may see the ships hook on to the thick ice, and boat after boat drop from their sides with crews of volunteers, only too glad for a little "run ashore," even if it should be knee-deep in snow, to the higher islands, to have a look ahead. We join one, and land at an "ice foot," or the remains of the winter ice which clings to the land long after the main floes are broken up, and floundering over the snow-banks which lie deep in the hollows of the island, we climb to the top. What a dreary look-out! To the northward there seems nought but one continuous white ice-field, here and there lined by a few dark-coloured "leads" of water (p. 52), or varied by hummocks of ice and snow, which the pressure of the currents or winter gales have forced up; while landward rise a dreary coast with high cliffs, glaciers, and snow-banks. One remarkable object meets our eye here. It is a curious peak familiarly known to every one who has ever gone so far north by the name of the "Devil's Thumb" (p. 113). It is generally looked upon as the entrance of Melville Bay, and is, I am informed by those who have landed there, an island.

The shore-line of Melville Bay has, however, never been properly, if at all, surveyed, the ships which have passed through it being only too anxious to get to the northward, even had the ice allowed a boat to get in shore. The "Devil's Thumb" I can compare to nothing better than a huge edition of the odontoid process of the axis vertebra, a simile which will be familiar enough to many of my readers. Everywhere the island we stand upon bears mark of the wintry cold of the region we are now in. Rocks are scattered about, rent by the frost, and the disintegrated trap is strewn with rough garnets which you may pick up by handfuls. A little green leaf is

THE MOST NORTHERLY ABODE OF CIVILISED MAN

peeping out here and there, even above the snow, and the wet banks are spongy with mosses and lichens. A snow bunting (*Plectophanes nivalis*) is looking about for a nesting-place, and a flock of eider and king ducks (*Somateria mollissima* and *S. spectabilis*) fly quacking by. Just as we slide shouting down a snow-bank, we hear a rush, and a creamy-white object turns the corner. Instantly our rifle is unslung, but we are too late, for before we can get within range our ursine co-occupant of the island is off across the ice-field at a rate which defies pursuit, even did our valour outstrip our prudence so far. Seals are lying lazily basking here and there at their *attaks* or breathing-holes in the ice, affording abundant food for the Polar bear, though he does not seem always to be so well fed. On these islands are remains of the whalers' prolonged visits, for in addition to the unfailing sardine-box and broken bottle which all the world over remain the monument of the travelling Briton, we find sadder memorials in the shape of graves of officers and seamen of different ships. On one we find the graves of two Eskimo, who were brought to Scotland by one of the Kirkcaldy whalers, but died

of phthisis—a common disease among those brought to milder climates—on his way home again. All of these graves are mere mounds of stones heaped over boxes containing the bodies, with a piece of board telling, in rudely-cut and not remarkably well-spelled words, the name and designation of the dead man beneath. Some of these boards were gnawed down by the bears to the very stump, showing that occasionally they had been driven to considerable straits by famine. They had even attempted to get at the dead bodies by pulling down the stones. One of these attempts gave us an opportunity of witnessing the remarkable



THE "DEVIL'S THUMB," MELVILLE BAY, NORTH GREENLAND.

antiseptic powers of cold in this northern latitude. The half-wrenched-off lid of one of the boxes showed the body quite fresh, as if it had been dead but yesterday, though the date on the board proved that it had laid there for nearly twenty years. In the winter, of course, decay is out of the question, and in the short heat of summer the frost imbibed is sufficient to preserve all animal substances, without decay commences before the winter again freezes it. However, in the Danish burying-grounds in Greenland the bodies are decayed, as one has an abundant opportunity of witnessing, for the bones are scattered around, apparently unheeded. In some instances these boards seem to have been taken away by the natives, who come up in the summer to gather eider-down among the islands. We see none yet, but a broken paddle is seen to be frozen in the ice-floe, telling of former visits. In a week or two these islets are literally covered with millions of eider ducks, who come north here to breed. It is then almost impossible to step ashore without setting one's foot on a nest with eggs, and the whole islet is circled with swarms of birds. In addition to endless roast ducks, the whaler then luxuriates,

from cabin to gulley, in eider-duck eggs *ad nauseam*. The ships bring boat-loads off, and it is amusing to see the men in the heat of the summer sun and the ardour of the pursuit running about in their drawers, having drawn off their trousers to convert into extemporised bags by tying a bit of spun yarn round the bottom of each leg. Many of the ships will collect in a day or two as many as from fifty to two hundred dozen of eggs, preserving them perfectly easily by exposure to the open air. From morning to night, and all night through (for we have now continuous daylight), the report of guns is heard from "ducking parties," "looming parties," or whatever name it may be necessary to apply to boats' crews in search of looms or guillemots (*Alca arra*), rotjes (*Mergulus*), and other Arctic birds which now swarm in the open places among the ice-fields, and make the air merry with their noise. In such amusement day after day passes, until suddenly the smoke of the steamers begins to rise in the clear frosty Arctic air, and there is hurrying and scurrying each one on board his own ship, for the floes are opening. Usually some energetic captain takes the lead, for this is something to talk about all summer through, and during the next winter, as the skippers hang about the wharves. Sitting in the "crow's nest," or cask, at the masthead (p. 105), he directs the steersman. Into the opening made by the parting of the ice-fields (by winds or currents) the leading ship enters, followed by several others, either tempted by the same reason or with a view to the additional safety which numbers afford. If the lead continue open all the way through to the "North water," the ship may go through in a few hours, as in the case of the *Alert* and *Discovery* in 1875, but this rarely happens. Suddenly the floes are seen to be slowly closing again; then with all speed the ice-saws are got out, and "a dock" is cut in the ice—that is, a piece the size of the ship is sawn out of the side of one of the opposing floes, and into this space the ship is placed, so that when the two ice fields come together they may not injure the vessels, as they would if she remained in her old position. Sometimes, however, they are too late—the floes are seen to move together; first is a creaking sound, then a cracking of beams, then the stout vessel goes like a chip box of matches. Nothing can oppose the enormous force of these ice-fields. "If the ice does not go through her it will go over her," was the sage remark of an old ice-master. In the meantime the floes which destroy the ship save the crew, who throw over upon the ice bags of clothes, provisions, and other necessaries, which they have in readiness for such a contingency, and another vessel more fortunate picks them up. Sometimes the vessel is only "nipped," and for the rest of the voyage its effects are seen in the cabin-doors not being able to be shut, and so on. At other times the vessel may be buoyed up by the ice for several days; but, again, she may go down so suddenly that the men have barely time to jump ashore. I know of a case in which the vessel went down so suddenly that the cooper, who happened to be in the hold at the time, went down before he could escape; and of another where a man, after being confined for nearly a whole day, was cut out by the side of the vessel by his comrades. The man's horror of mind during the interval may be imagined! The ice-fields move away again, and down goes the vessel. The bottom of Melville Bay must be perfectly strewn with wrecks. Sometimes the vessel may be able to get through into open water before the floes can close, and here the value of a steamer is apparent. Sailing vessels used to put out their boats and tow the vessel through, or the men tracked her laboriously along the floe sides. The few sailing

vessels now generally make arrangements to get a tow from the steamers under these circumstances. When once they are in the North water the men shout heartfelt shouts of joy. Now the great danger—the almost only danger of an Arctic summer voyage to the head of Baffin's Bay—is over, and their chances of a cargo are augmented. Sometimes, however, they will be unable to make a passage in time for a fishery in Pond's Bay, and even, as in some years, unable altogether to get across by Melville Bay, and must go round the southern end of the great middle field of ice lying down Davis' Strait, and work up the opposite coast in the pursuit of the whale in its migration. The reason Melville Bay is so full of ice is that the floes from the north are jammed in that depression by the north winds, so that, unlike the other portions of Baffin's Bay, it is never entirely free from great fields of ice. As the ice is turned up by the iron-shod prow of the steamer a dark, slimy mass is seen, which wags in long strings through the water, like the fronds of the brown tangle* now and then seen floating. This is known as rotten ice by the whalers, and the writer was fortunate enough to discover it to be great masses of diatomaceæ, and that as described in a former chapter (p. 90). To these diatomaceæ the discolouration of the Greenland Sea alluded to by various mariners, from Hudson and Davis to Scoresby, was also due.†

In the "North Water."

The whalemen are now opposite Cape York, and if close enough the "crimson cliffs of Beverley," dyed pink with the red snow plant, can be seen; and, perhaps, some of Drs. Kane and Hayes' friends performing wonderful antics on the ice to tempt the whalers ashore, for the Eskimo here have no kayaks, or boats, these being almost unavailable, owing to the short time the sea is free from ice, and to the fact that the land-floe is continuously attached to the coast-line. Soon the opening of Smith's Sound will be in sight, but it is rarely that the whalers can go up there. It is often encumbered with ice, and whales do not seem to travel in that direction, but cross Baffin's Bay to the western shore of that sea.

All this time we have left the whaling fleet, either frozen fast in Melville Bay, or, what is better, sailing in the North water in sight of Smith's Sound. Let us take the more hopeful view of the matter, and suppose that they are *en route* for the "West Land," following up the migration of their gigantic game. They rarely cross north of the Carey Islands, going most frequently southward of that group. Very few whalers have ever landed on them, but I am informed by those who have, that there are numbers of the former habitations of Eskimo there. They now reach the opening of Lancaster Sound, and occasionally sail up that inlet. It has been discovered by Messrs. Philpots and Browne that Cape Horsburgh is in reality the extremity of a large island.‡ In like manner, it will be found that there are many unexplored inlets between Jones and Lancaster Sounds, and between Lancaster, Eclipse, and other sounds lying south of it. Whales are sometimes killed in this vicinity, but most of the whalers make with all haste south to Pond's Bay, where they remain generally for three or four

* *Laminaria longicruris*, De la Pyl.

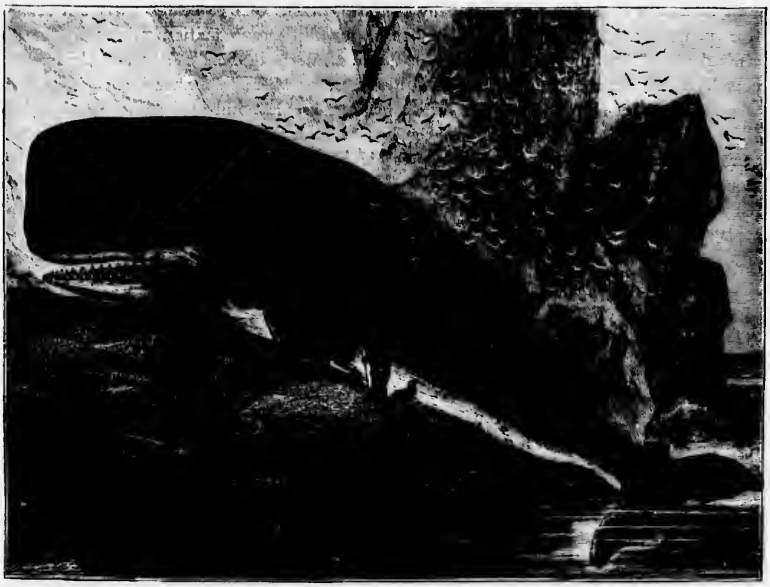
† "Trans. Botanical Society, Edinburgh," Vol. ix.; "Das Ausland," 1868; and Petermann's "Mitheilungen," 1869.

‡ Now known as "Philpot Island," see "An account of the land in the vicinity of Cape Horsburgh, lat. 71° 41′ 21″ N., long. 79° W., and of the island discovered there" by Ed. P. Philpots, M.B. ("Proceedings of the Royal Geographical Society," Vol. xiii., p. 372).

weeks. It is a common calculation among them that if they can reach Pond's Bay by the first week in August, they are tolerably sure of a good cargo. This inlet was named in honour of the Astronomer Royal of that name, but it is not a bay, as was originally supposed, but an extensive inlet of the sea, the innermost portion of which is called Eclipse Sound, after the whaler *Eclipse*, which first sailed up it. Its shores are inhabited by numerous Eskimo, most of whom remove in the summer to the outlet of the sound, to be near the whalers. The land ice generally lies at this period for several miles off the shore, so that it is difficult to land. However, we are soon visited by the natives. A darkish speck is seen in the distance, then another, and another, until they approach near enough to show them to be parties of Eskimo with their dog-sledges. Afar off they hail us with cries of "Timoo! Timoo,"* which ring clear through the Arctic air, and as they approach nearer, "Pilletey! Pilletey!"—"Give us something! give us something!" They are a wild-looking set of fellows, very different in appearance from the mild Lutherans on the other side of the strait, but, withal, they cannot be denied to be a manly-looking race of pagans, vastly superior to their civilised Greenland brethren in every physical characteristic. Their object is to trade narwhal "horns," walrus teeth, skins, ornaments, whalebone, and, indeed, everything for anything they can get. Muskets are, however, chiefly in demand, and most of them having obtained these, they are very anxious for gunpowder and percussion-caps. At one time they would accept almost any kind of gun, but they are now remarkably good judges both of the workmanship and shooting powers of the weapon. Anything they will sell, and I have seen natives strip themselves almost stark naked when offered a price for their clothing, nor will they even hesitate to offer to trade off their chubby-looking babies, if they think any one is willing to purchase them. They, however, always show a preference for useful articles over mere toys, though a story is told of one who was so captivated by the charms of a fiddle in the possession of one of the seamen, that he offered whalebone for it, until finally the owner received enough for his instrument to bring £100 in Dundee. They are very fickle, however; for before the ships left the fiddle was bought back again, in exchange for a pair of scissors! Barter with these natives is a perfect passion, and during the whole time the whalers remain at Pond's Bay their time is passed in one continuous round of excitement, dashing backward and forward between the shore and vessel, often sleeping all night coiled up on deck or below, and sometimes on their sledges out on the ice, or inside their upturned skin kayaks. Their women and children are brought along with them, the object being to pick up "uneonsidered trifles," for nothing is safe from these hyperborean savages, though their brethren in Greenland are now so moralised by the missionaries as to be perfect strangers to dishonesty. Some of the women are occasionally not very well behaved, and during our stay a melancholy tragedy occurred. One of the chief men, suspecting his wife of infidelity, took her out on the ice and plunged his large knife into her heart, killing her on the spot. Generally, however, all goes well, and our wild friends enjoy to the utmost their annual holiday, to which they look forward through all the long winter and short summer. If you meet them when walking along the ice-floes, they will immediately make room for you on their sledges, though it is not practicable to stop the dogs in their wild career. Accordingly, you watch your chance, and tumble down upon the motley occupants of the open sledge amid shouts of laughter. The natives sit on their sledges back to back, like the people on an Irish car.

* A mere salutation, equivalent, perhaps, to "Good cheer!"

There is no covering of any sort in the summer, but behind are an upright pair of reindeer horns, on which hang extra lines, whips, traces, hunting utensils, &c. Every article is of a ruder make than those of the Greenlanders. Wood is scarce, and a piece of iron hoop has its price among these denizens of the snow. Their kayaks and umiaks (open flat-skin boats) are built on exactly the same plan as the Greenlanders', but larger, and of a ruder construction. Most of the women are slightly tattooed, but all are taller and healthier-looking than the Green-



A STRANDED SPERMACETI WHALE. (*Catodon macrocephalus.**)

landers. Going ashore, you are received kindly by them, but they are not always to be trusted. One of our crew, having wandered off from his companions, was enticed into a hut by some of them, and there stripped to his shirt (and that he with difficulty saved), in which woful plight he returned to the vessel. Their habits are those of the rudest pagans, though in a slight sketch such as this, in which they are only incidentally met with, it is impossible to say more.

* The Spermaceti whale is chiefly a denizen of the warmer regions of the Pacific. It is, however, not uncommon off the north-west coast of America, and even ascends within the Arctic regions north of Behring's Strait. Though Fabricius mentions it as frequenting the southern portion of Davis' Strait, and as known to the Eskimo under the name of *Kegutilik* or *Kigutelirksoak*, it is certainly a very rare Cetacean in the North Atlantic, and is at present only known to the Greenlanders from tradition. I have never heard of more than one being killed in Baffin's Bay in modern times.

Dr. Kane's account of the Smith's Sound Eskimo, with some variations, gives a fair account of these rude children of the snow and ice-fields. When the whalers move away the Pond's Bay natives settle down again to the ordinary routine of their hard struggle for existence, but it is said that the dissipation they indulge in during the few weeks the whalers are in their vicinity operates badly upon them, though it ought to be noted that they do not care for spirits, and that rum is seldom offered them.

They are very migratory, and move up and down the coast at different times of the year. Like the nation generally, they are rapidly decreasing, their number being now much smaller than in former times. They collect in one or two little communities, principally for the convenience of meeting with the whale ships, and mostly in Pond's Bay and Cumberland Sound. Some years ago a whaler landed at a locality where in former years natives used to come off to the ship, and was horrified to find the first hut full of dead bodies, black and stiff. The second visited was the same, and so on with the half-dozen of which the settlement consisted. Small-pox does not appear to have troubled the western natives much, though in earlier times several thousands of the Greenlanders died in a few years of this fell disease, and many thousands more with what the old writers call the "black death," a plague which in the Middle Ages desolated Europe.

On the "West Side."

September is now approaching, one of the pleasantest of autumn months in more favoured regions, but in these dreary latitudes it is the season in which the nights are beginning to be cold and dark, and sleet, snow, howling blasts and crashing icebergs, warn the navigator that the winter with its icy terrors is approaching, and that all who know what is good for them ought to be preparing to leave for another country. Hitherto the days have been sunshiny and warm—almost too warm—though out at sea the gentle breeze blowing over the ice-fields keeps it always cool. However, a ramble on land is not so pleasant. Without shelter of any sort, the sun's rays, reflected from the glittering snow-banks and bare lichen-covered rocks, are overpoweringly warm, and the perspiring traveller, floundering it may be through snow-wreaths, soon sits down exhausted, most likely tempted to quench his thirst by eating snow, a practice which, as every mountain tourist knows, only aggravates his craving for water. Out on the ice-floe, which is our usual place of promenade, the heat is still more oppressive, even if our "constitutional" be not disturbed by somewhat unpleasant companions. It is about this period that the ice-floes are breaking up. Of this the writer retains a rather unpleasant recollection. Walking one morning, fowling-piece in hand, along the edge of the floe, I noticed a crack in the ice which could be easily stepped over. Having forgotten my snow goggles, on returning, half-blinded with the glare of the snow, I was suddenly brought to a standstill by plumping into the now broadening crack between the separating fields. Luckily I came up at the edge, and while endeavouring to scramble out, was in no way reassured by observing a Polar bear—thwarted in its endeavours to procure a seal for breakfast—watching me attentively from an ice hummock close at hand. There was just a possibility that the bear might have mistaken me for a seal, and as my lethal weapon was now so damped by the souse it had undergone,

my situation was not the pleasantest. Luckily it was observed from the ship, and a few rifle-bullets, landing in disagreeable proximity to the bear's head, soon frightened it away. Night is the pleasantest time to go a-field. That is, we call it night by courtesy; but for three or four months it is just as light at midnight as at midday. However, the sun gradually sinks lower and lower, until it appears merely as a great shining ball on the edge of the horizon, and then slowly disappears below it. It is at first rather confusing, this mixing up of the old conventional night and day, and sometimes ridiculous mistakes occur. Yet there is always something about night in the Arctic regions which indescribably stamps it as night. There is out at sea the same unwonted calmness and stillness in the air, and in all the surroundings, which I have noted as characteristic of a Greenland settlement at the "midnight time." The sun gleams with a subdued glare over the golden-tinted snow-fields and ice-floes, and the bergs float along, with the mild light reflecting from their glistening sides, like silver castles in that quiet summer sunlight. The snowy ivory-gull* flits now and then about the hummocks, or sits dreamily floating along on the broken pieces of ice. The noisy swarms of mollemokes†—the spirits of old Greenland skippers the sailors affirm—gorged with blubber, have now returned to the ice-floes; and the only noise heard is the angry cackle of an obese *Procellaria*, crowded out of its sleeping-place by its fellow. The rotjes, looms, and dovekies, which all day long blacken every pool in the ice-floe, are now sitting in long pensive lines on the edge of some floating piece of ice. A seal, resting to stare round just at our stern, or a small family party of walruses floating along on the ice, are the only living things about. A temporary excitement may be raised at the sight of a huge bear which has approached, having scented out the smell of supper from afar off; or the stillness of the midnight air in Hyperboria is broken by the shouts of the crew, who tumble up half-dressed from below, the twirling of pulleys, and the "flop" of ropes as the boats are hastily lowered, for a whale has just blown in *dolce far niente* case not a hundred yards from the ship.

Autumn and Home.

All is over now. The twilight has given way to the alternate night and day. The nights are cold, and in the morning a "raw fog," which goes to your very bones, meets you as you come on deck. Storms of wind are not uncommon, and the noise of the bergs crashing together, though beautiful to people abounding in more sentiment than is usually harboured aboard a whaler, is rather disquieting to the captain's mind. He accordingly moves "suth'ard," in advance of the weather, and in pursuit of the whale, which now begins travelling along the westward shores to its winter quarters somewhere out of the limits of fixed ice, but where, is not known. Short halts are made at Home Bay, Clyde River, and other localities, the names of which hardly express the real geographical nature of these places. Most of them are inlets of the sea of great but unknown extent, never penetrated by man; and, unless the Admiralty choose to spare one of their idle ships, and a few of the many officers wearing out their lives ashore on the cheerless joys of half-pay and prospects, most likely never will be. By the beginning of

* *Pagophila eburnea.* † *Procellaria glacialis.*

October they are opposite what is marked on the chart as Cape Hooper. South of this lies an extensive sound, not indicated on the usual charts, known to the whalers as "Yukiefjord," or literally, Eskimo-fjord, from the number of natives who were found there when it was discovered, though few, if any, are there now. If the whaler has not a cargo yet, he either goes south to Cumberland Sound (Kemisonk), or to a little harbour known as "Hangman's Cove" (from the circumstance of a native being found suspended by a line over a cliff when it was first entered), or the majority retreat into this "Yukiefjord"—or rather into a little *cul de sac* just off it. Here the ships lie secure while the autumn storm rages outside; and every morning the boats go out waiting for the sight of whales. This is called "rock-nosing." It is not very successful, but still there is a chance of their obtaining "a fish." If one be captured the vessel comes out and assists in towing it into the harbour, there to be "made off," or stripped of its blubber and whalebone. While in Yukiefjord, the idlers on board, such as the engineer, captain, surgeon, &c., amuse themselves reindeer-hunting, and occasionally have a pot-shot at a wolf, numbers of which abound in this locality. It was for this reason that the Eskimo abandoned the locality—they could not keep their dogs from the wolves. According to his industry, or the state of his cargo, the whaler will now move home. It is not often that he stays later than the 20th of October, though it sometimes happens that those who go into Cumberland Sound will even prolong their stay until the beginning of November. This later locality is the Meta Incognita of Sir Martin Frobisher. Of late years it has become a favourite haunt of the whaler, many of the ships, particularly the American, wintering there to capture whales in early spring. They are assisted in this by the natives, who are now amazingly Americanised, speaking broken English after the transatlantic fashion, and accomplished in many vices not altogether peculiar to our American cousins, but which, nevertheless, they have the responsibility of having introduced into this locality.

Though British territory, by right of discovery and proximity to Hudson's Bay and the Dominion of Canada, I should not be surprised were the Americans (in case the locality becomes valuable) to claim it by right of occupation, and on account of their nation having produced a citizen who first surveyed it in a rough way. Formerly all the localities hereabout had some flavour of that quaint piety of the old navigators who thought, that when they went so far afield, they were taking their lives in their hands. The "Cape of God's Mercy" is on our lee, named in all sanctity by John Davis, of Bristol; but immediately to the south of this is (let us say) Cape Silas Y. Dollup of Dollupville, Arkansas, who presented a jack-knife and a keg of dried apples to the "expedition" of his enthusiastic countrymen, to whom we owe the somewhat peculiar nomenclature which has now overlaid the ancient one affixed to the Meta Incognita by the gallant captains of Queen Bess's reign. By the first week of October there are few of the whalers which have not left for home. For the next few weeks stormy weather may be expected. Gales are sure to be experienced off Cape Farewell, and across the Atlantic a calm is a rarity indeed in the month of October. It is seldom that more than a fortnight is occupied at this season in running between land and land. The old whalers were rough navigators. Some of them knew no more of scientific navigation than was comprised in taking "a latitude" by the quadrant. Having obtained latitude got in a rough way, they "put her into it," and "ran down the coast." Sometimes

VIEW IN KING WILLIAM'S LAND, EAST GREENLAND.

the land-fall, thanks to good seamanship and better luck, was tolerably fair. At other times it was not so good, and probably the west of Ireland would be the first land-fall. However, so long as they did not miss the British Isles the whaler of the *ancien régime* was content. He was a rough, but a courageous, hardy sea-dog. In war-time he frequently took out letters of marque as a privateer, and, generally speaking, not only defended himself, but is even rumoured to have, in some cases, made up for a bad voyage by a profitable raid on "Bonny's" merchantmen. Traditions are indeed still extant of the stout fights the last-century whalemen made for liberty and cargo with the French cruisers who hovered around them. One is said to have fired off all his ammunition until he took to loading with cheese, and, finally, as a last resource, fired, with his last pound of powder, the poker and tongs. The "Parthian shot" was successful. The Frenchman sheered off, under the belief that his once-despised enemy was only beginning to fire chain-shot. Still many were captured; but fourteen or fifteen years ago, when the writer of these lines was more intimately acquainted with the *personnel* of the whaling fleet than he has been since, he was acquainted with old men who, as very young ones had lain in the French prisons, captives in the first Napoleon's wars. Another terror, almost as much dreaded, was the press-gang. Knowing when the whalers were likely to return, cruisers lay off Shetland and the Pentland Frith, ready to fill up their complement of men with the excellent seamen whom they could always find in abundance on board the whaling-vessels. To avoid this pestilent necessity of war-times, the men were in the habit of taking the boats as soon as they arrived on the Scottish coast, and then cautiously working their way to port along the coast, keeping in shore, avoiding towns, and keeping a sharp look-out seaward. The apprentices and officers, who were not pressible, then took the ship home. The whaling captains of modern times, though rather inclined to be rough in their manners, and, from much association with each other, and little with the rest of the world, to err on the side of "over-bumptiousness," are yet skilful seamen, well acquainted with the mystery of modern navigation and the best nautical instruments. They make a sure land-fall, and by the middle or end of October are signalling for a pilot for the Pentland Frith, if necessary; and as they generally reserve coal enough to be able to steam down the coast, are usually in Dundee within a few days of sighting Cape Wrath. It is pleasant to see again the familiar merchantmen, the sleepy towns, the bays, the trees, the cows, the horses, and other signs of a world fitted for civilised man. By long habit and tradition certain courtesies are expected to be paid to a whaler by the old-fashioned coasters. One of them is to "broom" a whaler. A passing vessel will send a man into the rigging to wave a broom. This is equivalent to asking "What's the cargo?" The whaler's boatswain replies by a downward sweep of the broom for every whale on board, and at the conclusion he is always treated to a friendly cheer from the coaster. It is needless to say that, apart from the "crow's nest," which has probably not yet been removed from the rigging, all seafaring men know a whaler by her build and general rig. For days past the vessel has been thoroughly cleansed, and by the time she drops into harbour, and the wives come on board to welcome their errant husbands, everything is "ship-shape Bristol fashion." The oil is discharged in a few weeks, the men paid off, and for some time the vessel lies "laid up in ordinary," with nobody but the ship's keeper on board. By February, however, she must be again fitted out, and in March the good ship takes her departure to the

frozen North. The seamen in the whaling trade rarely know of any other branch of seafaring life. Many of them have never seen corn grow since they were boys, and all of them are greatly wedded to their life. They think there is no life like a whaler's life. They appreciate their stirring adventures, and are inspirited by the gambling element which enters into it. Poetry they have little of, yet in talking with these rough, honest men one is frequently led to believe that they can appreciate the spirit of the lines in their honour if they fail to understand their metre:—

"Calm through the heavenly sea on high
Comes out each white and quiet star:
So calm up ocean floating sky,
Come one by one upon
White quiet sails from the grim icy coasts
That hear the battles of the whaling hosts;
Where homeward crews with feet and flute in tune,
And spirits roughly blythe make music to the moon."

CHAPTER VI.

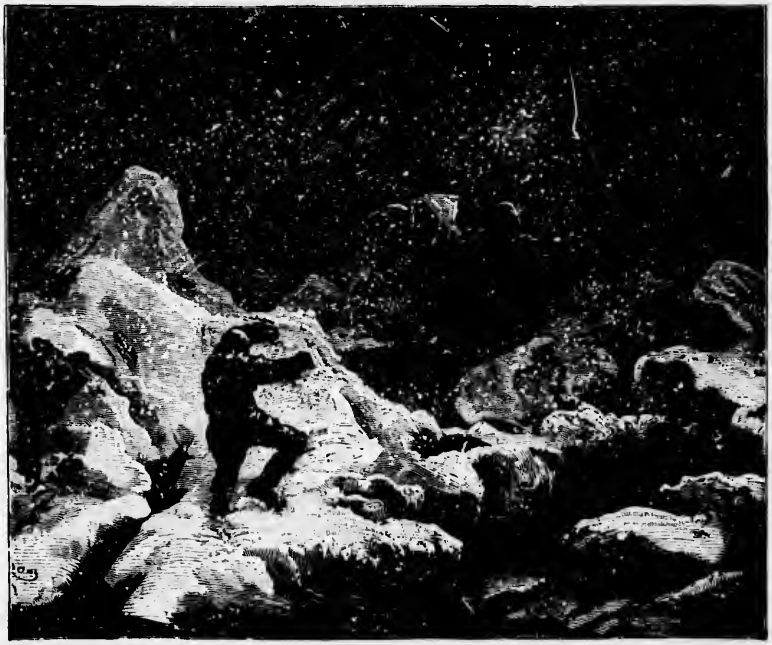
Man in the Far North.

We might linger long in the Arctic regions, fascinating as are these seemingly inhospitable lands; we might speak of Iceland, its sagas and its songs, its warriors and its scalds, even though little of that island lies within the Arctic Circle. We might describe Novai Zemlai, and recall William Barentz and his adventures, and the romantic story of the discovery of his wintering-house and relics a few years ago; or we might sketch Greenland more fully, and run in imagination round the circumpolar lands discovered by Ross, Franklin, Parry, and others. Of these, however, the map will give the outlines, and their general features and character we have already described in sufficient detail in the preceding chapter. Our space is limited, while the Arctic regions are almost unlimited; for we do not yet know their extent. We must, therefore, devote our last chapter to man and society as they exist in the lands chilled by the "north wind's breath."

Danish Life in Greenland.

The popular idea of a residence in Greenland may be summed up in a very few words—cold, train-oil, and blubber, with general misery thrown in to fill the interstices of the dismal picture. In reality it is no such thing. The European resident may drink train-oil if he can afford it, and eat blubber if he prefers this article of diet, and his digestion can bear it. As for misery, he can get that anywhere without going to Greenland for it. From Cape Farewell up to a little north of Upernivik, in 72° 48′ (p. 108) north latitude, the west coast of Greenland is dotted with little Danish trading posts.

The east coast, and all outside of these limits, are left to Polar bears and the handful of Eskimo who dispute possession of the ice-bound coast. As for the interior, it is no man's land. These little Danish outposts of civilisation are very primitive settlements. We have figured some of them on pp. 20, 44, 104, 108, 112. A few dogs, generally never more than four or five, with their families, and a little collection of Eskimo, constitute the *personnel*



AN ARCTIC SNOW-STORM.

of the settlements. The trade of Greenland is a strict monopoly of the Crown, whose officials are placed there to superintend it. The Government conducts the commerce solely on principles of philanthropy, the interest of the natives being the chief object in view. The result is that the Eskimo are, within the Danish limits at least, prosperous, educated, and Christianised little fur-clad folks, and if they be sometimes in want that is due to no fault of the Danish Government, but mainly to their own improvidence, or to the many slips "between the cup and the lip" which fall to the lot of the hunters of seals and whales, and the fowler of eider ducks and geese. It would be difficult, within moderate limits, to impress upon a reader who has been taught to associate Greenland

and whale oil, Iceland and ice, the wholesome fact that neither idea is exactly correct. Ice there is enough in Greenland, but there is also a pleasant life, such as the kindly Danes, who have made that country their home, chose to make. Perhaps I can best transfer to the reader my own impressions if I sketch here a Danish settlement as it first came under my notice some years ago. The settlement is in about 69° N.

VIEW OF QUEEN AUGUSTA'S VALLEY, KING WILLIAM'S LAND, EAST GREENLAND.

latitude, and the sketch may do service for almost any of them. First, however, it must be premised that the Danes have had modern settlements in Greenland since 1721, the Icelanders, who discovered it in the tenth century, having previously lived in the southern fjords until about the year 1500. Let us, then, suppose ourselves landed from the good ship which has borne us from Copenhagen. The Danish ships are lumbering, bluff-bowed old vessels, never in a hurry, and rarely making more than one voyage during the summer months, which is, of course, the only season when Davis' Strait and Baffin's Bay are open to navigation. Their arrival, it is needless to say, is the great event of the year. They form the sole connecting-link between Europe and Greenland,

between the Greenland Dane's land of adoption and what he yet fondly talks of as "home." Let us suppose, therefore, that the Eskimo pilot has guided us through among the icebergs into one of the little harbours of his country. The rusty battery on the cliff has been fired, the white cross of Daneborg has been run up, the scarlet and yellow-hooded ladies, in their skin jackets and b——s, on the cliffs have raised a treble cheer, which the bass lungs of the boys and men have caught up, the anchor rattles through the hawse-holes, the "Governor" and the priest have boarded us, and in a few moments we land in the flat-bottomed skin boat, or umiak. We jump ashore on the ice-shaven rocks, and are in John Davis's "Land of Desolation." It is [illegible], but the snow is not yet off the ground. There is a snowy-looking sky overhead, though the air is clear, and the calving of the icebergs far off can be heard with a distinctness unknown in southern latitudes through the clear, rarified air. We arrive just as the birds of passage arrive, and all nature has got thawed out of the winter bonds of frost and snow. We live in the "kirk loft," the attic above the church, and a queer little wooden structure, black pitch on the outside, it is. It is built of drift logs, and beyond the fact that it serves for the legitimate purposes of a church now and then, its walls are chiefly utilised by the Eskimo as the place for hanging their muskets, spears, and harpoons. These lethal weapons festoon it like votive offerings in a hyperborean temple of Neptune.

We have been engaged all the morning in getting in our household gods, and now we are sitting talking of our future life in this distant portion of the world, as we look out of the window, taking a bird's-eye view of the settlement. The snow-storm which, soon after our arrival, welcomed us, has now abated for a while, and the sun being now high in the sky the bare ice-polished rocks appear black, above the surrounding whiteness. Here, tumbling over a cliff, is a mimic cascade, formed by the melting of last winter's snow, or a hollow where the water has accumulated until it forms a little lake, bordered by a thicket of sedge and other Arctic plants, now beginning to sprout above the snow. Not a tree nor a shrub is to be seen. We are in North Greenland, and these sylvan luxuries are not to be found here. Our apologetic guide, jealous of the honour of his country, however, assures us that in South Greenland there are birches high enough to conceal the reindeer, and rumours even that one sixteen feet high has been seen in some of the sheltered fjords of Frederickshaab district.

In this part of the northern world, however, we are content to gaze with wonder on an inch-and-a-half stem, which is exhibited in front of the Governor's house, as the limit to which an Arctic forest tree in the "seventies" can attain. All else is snow and bare rounded rock, alternated with many swampy valleys; and far beyond is the inland ice; while seaward shows itself in fleets of icebergs, and to the ear is patent by the dull, sullen sound which every now and again strikes the ear, as one is detatched from the glacier, or is dashed against its neighbour, when the displaced water rolls in like breakers on the tideless beach. A few Eskimo huts—humble turf mansions—are scattered over the rocks, and the inmates are boiling coffee over a fire made of Arctic dwarf birch, in front of the trap-like door. In winter they burn oil as fuel in their soap-stone lamp, but just now they are economical. Coffee is, however, the Greenlander's great luxury. A stimulant he yearns for; and as spirits are denied to him by a paternal government, he supplies

the want with black coffee, burnt on a stone, and roughly bruised with stones as the beans are enclosed in an old leather mitten. A woman, who has been trying to clean some eider-down on the rocks, has been lately driven within doors by the snow, and is now hurrying down to the shore to dress a seal, which her husband—a chubby Eskimo—has just landed out of his kayak. He is now—his share of the labour over—putting his little skin and lath canoe on the frame, where repose the rest of the canoes belonging to the "coloni." All of the smaller fry—the hoods of their skin jackets over their ears—are running down to see if Johannes' seal is fat, and in good condition, and the dogs are scenting the plunder from afar. Already a fierce-looking wolfish brute has seized hold of a fathom or two of intestines and is off (pursued by half a dozen little boys and girls), howling, as ever and anon the well-aimed crack of the long whip tells that the *bit has come out*. Over on a little island, just off the shore, other women, more careful, have removed to dress their seals. Here they get rid of the dog nuisance, and the rocks are spotted brown with seals' flesh drying for winter's use. On frames are suspended long festoons of the intestines plaited like the "gimp" on ladies' dresses. Bones and refuse lie everywhere about, giving forth that odour—an arrant and a sealy smell—characteristic of a Greenland settlement. The men are "loafing" about, sitting on the flat roofs of the huts, or leaning against the turf embankment of the church end, which seems to answer the place of the street corner in more southern climes. Lines of boots made of dressed seal-skin, with their dogskin socks, are hung out to dry, and women are busily engaged rubbing them with a piece of wood. This is called the *kamek* or boot-stick, and well-to-do folks always require at least half-a-dozen pairs of boots, because they must be frequently changed if wet by perspiration, or otherwise, and rubbed soft with the "*kamek-stick*." This kamek-stick is often familiarly called the "reiser kone," or travelling wife—it being the wife's special province to rub the boots until they are in a condition to be worn again.

In Greenland, if you don't wish to be "cut," you must make the first calls at the houses of the residents. Indeed, the custom is a Danish one, and, moreover, a rather awkward one, but still it is absolutely necessary to obey it, if you wish to keep from offence. We have already peeped in at the Governor's or Colonibestyrer's—literally the "best man in the colony"—to deliver our official letters, and as we are invited to his house later in the evening, we shall drop over to the Lutheran priest's. We reach his sitting-room under the pilotage of a strange-looking Eskimo servant girl, with a high topknot and gaudy boots of dyed leather, through the kitchen, for Greenland houses are built more with a view to warmth than elegance. Most of the Greenland officials speak English, and as "Herr Partor" is a "Kandidat" of Copenhagen University, he is no exception to the rule. We accordingly sip the inevitable coffee, and hear the ways of our Arctic parson's life. He has been upwards of forty years in the country, and expects to die there. Ten years is, however, the rule. On the expiring of that period of expatriation the zeal of the young missionary has usually evaporated to that extent that he accepts with avidity the smallest parish in Jutland or Zealand. In reality, however, there is little of the missionary in his calling, his duties partaking more of those of a parish priest than anything else. They have only "Danish church" every third Sunday—that being about as much as the European residents are supposed capable of standing of Herr Partor's ministrations, though the natives are

favoured with a little discourse every Sunday. As our residence is in and over the church we are fully sensible of the fact. The men sit at one side, and the women at the other, after the fashion among the Danish peasants. An Eskimo plays the organ, the voices of the congregation joining rather sweetly in singing the Eskimo version of Luther's hymns. If the day be warm we are deeply conscious of the fact that divine service is proceeding in 70° N. latitude, for through the keyhole and the cracks in the door there proceeds an odour of stale seals—a fact not at all surprising, considering that the whole

THE BLUE ARCTIC FOX. (*Vulpes Lagopus.*)

audience is engaged, more or less, in the capture and preparation of the flesh and skins of these animals, and that all of them are dressed in their hides. Even under the Lutheran gown of the priest there peep hairy trousers and Eskimo boots, and the dogskin collar of his skin jacket appears mingled in the most familiar manner with his ruff—or "millstone," as the Danish boys irreverently style that distinguishing clerical ornament of the Scandinavian cleric.

The Arctic vicar's parish is one hundred and forty miles long, though sparsely peopled enough. He only visits it in the winter. While other parsons keep their cob, our northern friend has his dogs, his sledge, and his ancient dog-driver. With these he skims over the frozen sea in winter, though the support of his ravenous team in these times when seals are scarce, is a source of great anxiety to the reverend gentleman's mind. In

Greenland, as among the Danish peasants, no matter what time you call, coffee is offered to you, and while we drink we examine his books. The *Illustrated London News* is, we find, "taken in" here, in addition to its Danish imitation. The Tauchnitz editions of Thackeray, Dickens, and Trollope are invariable occupants of a Greenland officer's library shelves, in addition to Danish theological writers of less note but more unction; we also find some volumes not less familiar, and recognise in them that superlative reputation which consists in an author's work reaching the window-sill of a Greenland

VIEW OF OMENAK, NORTH GREENLAND. (*From an Original Sketch.*)

priest. The parson lives far from "home," one would think, but yet the father of his colleague paid him a visit only a few years ago, and, on the whole, our host is not inclined to look upon his lot with the same degree of commiseration as we are apt to do. We leave the prosy old gentleman in a dogskin, and look in upon the doctor—a more cheerful sort of gentleman—if we could only strike upon a language which we mutually understood. However, we cheerily "break bread," the bread, however, bearing about the same proportion to the liquid consumed as the halfpenny worth of bread did to the "intolerable deal" of sack in Falstaff's bill of fare. The doctor has passed sixteen or seventeen years in Greenland as one of the two district surgeons, and is as happy as need be. He is an enthusiastic naturalist, and in the Royal Museum at Copenhagen ranks as somebody. He has just returned from a long tour of inspection

in his boat—which is his brougham—and is now busy compounding a cathartic for a greasy-looking Eskimo who has over-eaten himself at the last debauch of seal's flesh and coffee. We have now got pretty well over the upper crust of the "coloni"—the Danish residents, though more numerous here than in the neighbouring settlements, being less than a dozen—and so we go back again to the church to dress, in order to meet the "society" of the place. "Dressing" in Greenland consists in washing our hands and faces, and re-tying our neckerchiefs. The short spell of sunshine has brought out clouds of mosquitoes, which annoy us dreadfully. Indeed, the natives are not exempt; and later in the year we see some of them covering their faces with the most doleful of black muslin "mosquito bars." Flowers are beginning to peer out in the sunny chinks of the rocks—saxifrages, waxy pyrolas, the Polar rhododendron, and the blæberry. We ramble over the rocks, in after-days familiar enough to us, with crowds of natives staring open-mouthed at us, and a troop of snarling dogs yelping at our heels, until we come to the "Governor's," or Colonibestyrer's, house, a wooden building of one storey, such as is figured on p. 112, with doors and window-sashes, and pleasant muslin curtains at the windows. It is company day at Herr Colonibestyrer's—the regular state Sunday-night's party after *the* ship arrives. A knot of Eskimo are here also, watching the arrival of the company, and gaping with awe and wonder at the last Copenhagen bit of finery on the Arctic dandy, who even here finds his unwelcome way. After a circuitous route through the kitchen, we are ushered into *the* room of the gubernational mansion, the type of all such apartments in the Greenland "colonies." The furniture consists of a sofa, which has done duty for a long line of Governors; a still older bureau, a long stove surmounted by a statuette of the Great Napoleon, a portrait of Byron, another of good King Frederick the Seventh of Denmark, with some photographs, and the usual etceteras of a room. The floor is white scoured, and the windows full of Indian cresses, geraniums, roses, and fuchsias. There is a piano—the last thing we should expect to meet with in Greenland. There is also a sleepy cat, and, above all, an antique eight-day clock in the passage, which strikes six as we enter, and is, to my mind at least, the most Christian-looking piece of furniture we have yet seen in the country. Strangers are rarities in Greenland, and our arrival all the way from England is quite a sensation to this quiet outpost of civilisation. Accordingly we find a little party waiting to receive us. Through clouds of tobacco-smoke we return their greetings, as room is made for us on the sofa. It is not a fashionable party, but we all enjoy ourselves nevertheless. All the men wear sealskin trousers, and most of them sealskin "aneraks," or blouses, covered with checked cotton. All the men, women, and children wear the inevitable sealskin boots, beside which our clumsy English boots look so odd that we are fain to push them out of sight. Everybody is there: the captain of *the* ship and his mates, the wife of the Colonibestyrer from over the fjord, Herr Pastor, and Fru Pastorinde, whom the lady from "over the fjord" kisses in quite a home-like fashion: it is so hypocritically British. Then there is a broad-backed gentleman, who is the "assistant" trader; the doctor, and his wife and children, besides the Governor's family, including a young lady in pink muslin, an unwonted garment, which, like the piano, is an agreeable surprise to eyes long unfamiliar with it.

There is much talk, and, it is feared, not a little scandalous gossip, for tittle-tattle and evil speaking are bits of civilisation not frozen out of Greenland. We have a little music, and the lady in pink muslin grinds out, for our special benefit, the "Ratcatcher's Daughter" on an accordion, just brought out from Denmark, being apparently under the belief that the ditty in question is the British National Anthem. This young lady, and her brothers and sisters, have all been born in Greenland, as were also their father and mother, and none of them have as yet been out of the country. Except in that indescribable "something" peculiar to people who live long in isolated parts of the world, neither would seem to have suffered much from their voluntary expatriation.

The room in which we are seated is pleasantly decorated with bouquets of Greenland wild flowers, and the windows are bright and fragrant with the plants of a softer clime. All the men smoke long pipes, to which they help themselves from a rack on the wall; and the ladies gossip, until an Eskimo girl, in a topknot and seal-skin jacket and trousers, announces dinner—"supper" they call it—in another room. The Governor then says "Ve's'ko"—if you please—and, after the customary fashion, we pass through the kitchen to reach the dining-room. The meal consists of Greenland and Danish fare: rye and wheat bread—of which everybody takes two pieces at a time—reindeer, mattak (whale's skin boiled to a jelly, and very good); smoked salmon, sliced very thin, and eaten raw; raw ham, stoupes of *Kaleralik*, another Greenland dish, composed of a fish allied to the halibut,* smoked, but very oily and tasteless; ptarmigan, hermetically sealed in tins since last winter; "schnapps," or Danish corn-brandy; Greenland and Bavarian beer ("baierske" they lovingly call it); claret, or "rodvin," besides Danish butter and cheese. After these solids and liquids succeeds a cup of a very weak liquid, which is expressively enough called *The-vand*, literally "tea water." Tea is, however, very little drank, coffee supplying its place. The ladies of the house, after the Danish fashion, wait on the guests, scarcely sitting down at the table. At first there is a little awkwardness, but it is a custom among the very best class of people, the children sometimes acting in the same capacity, and is considered not to derogate from their dignity in the slightest degree. It is only a piece of high-bred Scandinavian courtesy. The meal finished, the host says, "Velbekome!" and we all shake hands, and say "Velbekome!"—may it agree with you—and adjourn to the next room, where a veteran, in very wide sealskin trousers, confidentially imparts to me the information that in the good old times the fashion was to kiss when the guests separated, but that it had long been discontinued on account of strict impartiality in the osculation not being observed. Then many more pipes, and more "tabak," and very much more rum and water. There is also introduced on the table an abundance of Danish punch, a liquid compounded of a bottle of claret, one of rum, one of water, with sugar to suit, and a slight amount of "Swedish banco," a fiery beverage, tasting like sweetened East Indian arrack. Just as we are beginning to lose sight of each other in the smoke, a sailor makes his appearance to report to the captain that two icebergs are sailing into the little harbour, down below the window, and are likely to injure the cable. The alarm proving groundless, the man—no ways loath—is pressed to

* This fish is *Hippoglossus pinguis* of naturalists, and is in reality a small species of halibut.

stay, for, like the mariner in Dibdin's song, he bears the reputation of "playing the fiddle like an angel," and the room being cleared, those who have not got over their dancing days waltz and dance reels until the old log-house shakes. The snow still continues, but it does not interfere with the general hilarity, for the seamen are in the midst of a ball which they have given to the native *belles* in the empty storehouse just outside. The sound of their merriment reaching us here, we have the curiosity to see the fun.

Dripping with snow, we peep in at the door of the ball-room, a low-roofed apartment, damp and dirty. It is crammed to overflowing, and the floor is crowded with spectators, principally the uglier of the girls, and the males who are considered sufficiently of the *haut ton* to mingle in the dance with the "Kablunaks."* The native Paliuurus sits in the window and scrapes the fiddle most lustily while the Scandinavian mariners twirl their swarthy partners—hot, perspiring, and odorous of seal-oil—through the "maze" of dances, Danish and Greenlandic. One of these dances, called *Akhampengerseoul*, the "dance of eight," seemed to our uncritical eyes to consist chiefly of dancing round in a circle, hand in hand, and then breaking off into a kind of reel, and now and then twisting your partner round. The girls danced wonderfully well, and seemed certainly to enjoy themselves amazingly. After the dance each of them adjourned to a little ante-room, where there was a modicum of mild watered schnapps, under the custody of a trusty boatswain, who dispensed it in thimblefuls to the fair (*sic*) ladies, amid remonstrative cries of "Ah! ameloo!" (More!). We watched them for a little time and then left, amid indignant murmurs, each "wallflower" expecting to have had the honour of dancing with the *Tuluit*,† and of sharing in the grog which followed. Some of the girls were far from ill-looking; one of them, indeed, we were told, was noted as the beauty of North Greenland, though that tells an indefinite tale, beauty being in Greenland nothing very positive, but a great deal comparative. We now return to the "Governor's," where, after imbibing more rum and water—plebeian but comforting beverage in the cold June night, for the sudden warmth which had tempted forth the mosquito has now given way towards midnight to a dismal chill, which the wind, blowing from the ice-covered interior (see p. 58), has intensified—we adjourn to our cheerless home in the little church. Just as we are preparing to sleep the slumbers of an Arctic diner-out, a rush to the rocks of a few idlers —in these settlements somebody seems never to go to bed—tells us that something unusual is in sight. It is past midnight, but the sun is above the horizon, as it has been for some weeks past, and will be for many weeks yet to come. A boat, with the white cross of Danebrog flying, proclaims that it contains as passenger some officer of the Royal Board of Trade, which controls the Crown monopoly of the trade and government of Greenland. It turns out to be no less a personage than the Royal Inspector of North Greenland, a great—a prodigiously great—personage—in Greenland. He is on his tour of inspection, and everybody, from the poor Colonibestyrer down to the humblest seal-hunter, will experience a commercial keel-hauling to-morrow from the great man in skin trousers and uniform coat—fit emblem of the union of the hunter and bureaucratic life which Greenland consists of.

"Going to bed" with us means lying down rolled in a blanket on some dogskins on the floor

* Danes. † Englishmen.

The sun streams in through our little windows, though it is now past midnight, and little fur-clad folks, who are yet prowling about the settlement, peep in to inspect our domestic arrangements. As I write, a vision of brown greasy faces, with a shock of black wiry hair in their eyes, rises up before me. Troops of wolfish dogs make night horrible with their "long cry," and we are awoke at intervals with their dismal chorus, until at six o'clock the ringing of the workmen's bell is the signal for the renewal of this hyperborean music, and for sleep being banished from the eyes of the drowsy strangers in the "kirk-loft" of this little settlement.

VIEW OF CHRISTIANSHAAB, NORTH GREENLAND. (*From an Original Sketch.*)

So ends a typical day in Greenland. One end is very much the same as another—some are duller, few are more lively. From this it appears that Greenland is pretty much like the rest of the world—rather given to scandal and tittle-tattle, and with a little, just a very little, double-facedness. The "colonists" have quite a mania for writing letters to each other on all possible occasions, and though they are publicly on terms of the utmost cordiality, yet it is impossible, in the interest of truth, to deny that these good people have a disagreeable habit of abusing each other privately—a knowledge which materially detracts from your belief in the *couleur de rose* aspect of things. Summer moves along; the snow has all disappeared off the low grounds, except in shady hollows, and the sun shines day and night with unwonted brilliancy. The *heat* gets sometimes oppressive, though occasionally the cold gets more intense than becomes a July day. One's impression of Northern life, from its very

isolation from all disturbing influences, remains long in the memory, but our note-books of these days convey an even more vivid idea than the mere recollections left after several years have passed away. For months and months we have heard nothing from the outer world, and we are quite content to do at Rome as the Romans do. We are very little interested in what may be going on in Europe. We care nothing for the *Times*, and politics disturb not the quiet equanimity of the sojourners in high latitudes. Intensely concerned are we, however, in the little affairs of the settlement, where, in the service of science, we have fixed our home. It is a matter of paramount importance to learn that Matthias has killed a bladder-nosed seal; that the ice is pouring out of the "ice-fjord," shutting off communication by sea; how Kumagdlat's dog-team all died last week; or how the cooper's half-breed daughter is to be married next week to Jans Jansen, the famous seal-catcher of Christianshaab (p. 133). Our life is a materialistic one—"sweetness and light" being entities which a Greenland settlement tends to sparingly impart to existence. In sunshine and in storm we perform our appointed work, enter records, and make observations, and enter records again, which will be afterwards embalmed in "Memoirs" and "Transactions" unheard of in Greenland, and little dreamt of by the simple-minded people who watch us as we make them, with a strong suspicion as to our sanity.

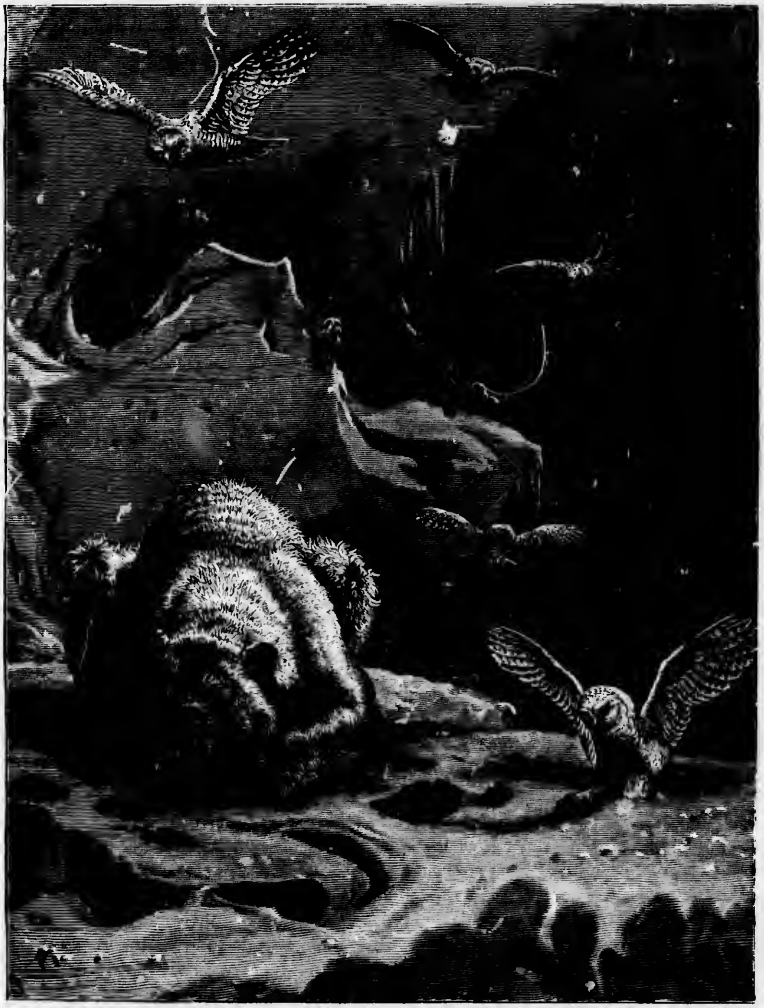
Sometimes the monotony of our lives is varied by an excursion to a distant settlement, when the rusty old cannon in front of the Colonibestyrer's house are fired, and the Danish flag is run up; or we leave on some lonely voyage, in a flat *umiak*, or skin-boat, up some of the deep fjords, until the icy wind, blowing from the great interior *mer de glace*, meets us, and the water-fowl, which breed in countless numbers on the cliffs, scream at us in derision as we turn homeward in baffled sadness at our failure to penetrate to the mysterious eastward. Our life is varied by such incidents from home, and in our quiet settlement a white stone, or the contrary, marks a day of dog's-meat trading in behalf of our ravenous team, or the sensation of Johannes bringing conviviality in the shape of a new cask of beer, a guileless but most acceptable beverage, which he has brewed out of hops and malt brought from Denmark. At other times there is a funeral winding over the rocks, followed by the doctor's old dog-driver in the tail-end of the procession. To vary matters, our light-hearted factotum, Carl, who scents out any festivity from afar, strikes envy into our hearts at breakfast by the relation of the gaieties of the ball at which he had assisted in the storehouse the night before, and with an account of the mighty seal-catchers and white whale-fishers who were there. Everybody is known by sight or by name, and certainly every one is acquainted with us. Of course there are the little local jokes, but as a very little wit goes a long way in Greenland, and a poor jest, like ill news, travels apace, it is doubtful if any of them would bear repetition. I am afraid our talk smacked terribly of seals, icebergs, and train-oil generally. Sunday makes a break in our quiet life. I return from a long ramble up some mossy valleys, at two o'clock in the morning, and sleep rather late. Nobody thinks of locking their doors, and people walk in and out of our establishment with the most innocent familiarity. Accordingly, about nine o'clock, I am awoke by a preternaturally long and wontedly mild Eskimo catechist shaking me in bed, and presenting a written paper as long as an unpaid tailor's bill. It is nothing more alarming than a rambling intimation from the priest "To the Danish residents who, by the grace of God,

are in ——" to the effect that there would be Danish church to-day, and winding up with the announcement that, "as usual, the time would be regulated by the Colonibestyrer's watch," from which it appears that the "bull's-eye" in question is the only one in the "colonie." It is, however, so highly thought of that the priest ventures to dispute the accuracy of our chronometers, because they disagree with *the* watch. After service, the people enjoy themselves as best they can, and the day generally winds up with a supper at the "Governor's," and a ball in the storehouse. I often wondered what could be the ideas regarding things non-Greenlandic of the Danish children born in Greenland. While working at my table I am visited by troops of chubby, healthy-looking little ones—Knud and Helga, and little Sopheus, and all the little skin-dressed Janses, Hanses, and Peders of the settlement; while a wondering group of Eskimo children (p. 140) peep in timidly at the low window. They chatter away to me in Danish, not supposing that it is possible for any white man not to perfectly understand that language. To all of it I reply at intervals "ja" and "nae," and they seem perfectly satisfied. Little Sopheus, in his well-rubbed sealskin trousers and jumper, p[illegible]s himself on the highest chair, and is very assiduous in handing me my paper and [illegible]requisites. He is, I dare say, telling me a wonderful story, but I cannot appreciate [illegible]ney bring me handfuls of flowers, and wonder if I eat them. All things have their *raison d'être* in Greenland. They are a strange assemblage, these children of the far North. All the rude sports of childhood are unknown to them, and they look up stupidly enough in your face when pictures of a horse, a carriage, a tree, or any other thing out of their limited knowledge, is shown them. Their talk is of seal, and whale, of tatterak, the kittywake gull, or of apalearsonk, the little auk, or of Peder's big neitersonk or bladder-nose seal, or of Paulus Rosbeck's *umiak*, which has come in from Omenak (p. 129). All these things they seem to know well enough about, for strive as their parents will, they manage to associate too much with the native children, and learn a trifle too rapidly their language and manner of talking, as well as their ways of thinking about everything. Their parents will tell you that if they are sent to Europe they get peevish and discontented with their lot, and weary to get back to Greenland, and their old associates and scenes. Almost every autumn I meet in Copenhagen ladies, associating in the best society of the polished Danish metropolis, and accomplished even beyond the wont of their fair countrywomen, who were born of Danish parents in Greenland, and who passed the early years of their life there. They never conceal their belief that though Denmark is no doubt an admirable country for those who know no better, yet that they weary for the free life and the wild scenes of the far North. Some years ago two young ladies went to Greenland on a visit to their relatives. Both returned a second season, and one of them married and settled down among the icebergs, to the astonishment of the fashionable folks of Copenhagen, and the supreme disgust of many of the young gentlemen thereof! In Greenland the white letter days are not many. The King's Birthday (8th April), and Bede's Day, or St. Bede's Day (8th May), when everybody, by sea and land, makes it a point of having something better for dinner, and drinks more rum and water than usual—albeit there is never any great dereliction in that item—are the chief days of merry-making. But the greatest event in the year in each little settlement is the arrival of the annual ship or ships, which bring out the stores and take home the oil, ivory, and furs for the year. It is a

general holiday as long as the ship stays. The children go to no school, and the whole population is too busy gaping at the wonders of the ship from the cliff over the little harbour to go seal-hunting or fishing. With *the* ship come out the toys of the children, the finery of the women, and the books, letters, and newspapers of everybody, from the home they leave behind them on the other side of the Atlantic. It is also a season of enjoyment for the natives, though, indeed, the male portion do not always appreciate the attention paid to the native beauties by the interloping foreigners. However, self-respect and jealousy, when this could be a virtue, is not a marked feature in the Greenlander's character. While the ships are at the settlement, the Danes seem to spend most of their time in going round picking up news and gossiping with the captains. Unless there be some extraordinary attraction, the file of newspapers is neglected. Meantime they gain the tale of how the world has been moving, during the past year, from the captains; but no sooner does the last ship sail than the parcel of the *Dagsblad, Telegraf,* or *Berlingske Tidende* is taken down from the shelf, and, with wondrous self-denial, some of the philosophical residents limit themselves to two papers *per diem*. In the winter there is the seal hunt, and even sometimes a wandering Polar bear (p. 137), which has put the naturalists to shame by wandering about in the winter, in spite of their assertions to the contrary, may be surprised and swooped on by the owls, which, with the hawks, ravens, and ptarmigan, are the only feathered winter residents of Greenland. Books and letters fill up the leisure time during the winter, and visits paid on the dog-sledges to the neighbouring settlements relieve the monotony of the months of darkness. Indeed, in some of the journals, written early in the century by the old missionaries, the demand on their hospitality by the numerous visitors is complained of as making terrible inroads on the winter provisions, which in those days there was little opportunity of renewing when exhausted. At such settlements as Julianehaab (p. 141), and others in South Greenland, though the country is pleasanter in the summer, and excursions up the fjords are really charming,* yet, owing to the inclement weather and the want of sledging ice, they are shut out from the rest of the world for seven months in the year. The Danes are at home rather a slow-moving race. In Greenland they are conservative to the last degree, and a Greenland "fogy" is a fogy indeed. In 70° North latitude there are plenty of them. For instance, there lives—or used to live, for I speak of years gone by—an old gentleman at Omenak, who had been sixty years in the country, and always loudly declared that in his youth the summer days were clearer, and the winter ones colder, the icebergs bigger, and everything different than in these latter degenerate ones.† In the summer, half of the Danish families, and most of the Eskimo ones, often run short of fresh food—even of seal flesh in bad weather—and have to resort to salt pork, young sea-gulls, and a few fish, while during the winter there is a superabundance. Yet they never think of an ice-house, though the shores are strewn with fragments of bergs, and the bays are

* See "Sketches of Life in Greenland," by S. N. R. (*Geographical Magazine*, 1876.) We do not perhaps reveal any secret when we state our belief that it is to the accomplished wife of the former Governor of South Greenland, and President of the Royal Greenland Board of Trade, that we are indebted for these pleasant sketches.

† Did not old Nestor, in the boyhood of the world, lament after the same strain?—"I never saw, nor shall I see, such men as Perithous and Dryas, shepherds of the people; and Cœneus and Exadius, and the godlike Polyphemus, and Theseus, son of Ægeus—men like the immortals themselves."



DEATH OF THE POLAR BEAR: A WINTER SCENE IN NORTH GREENLAND.

full of gigantic ones. In most cases the Eskimo are even too improvident to lay by a store of any kind for an evil day. If you suggest it, you will be told that "it is impossible; it has never been *before!*" This is the *finale* of any proposal of this description—it has never been done before, and, of course, cannot be done now.

The officials of the Danish Government in the far North are men of the highest respectability, and are not unfrequently retired officers of the army or navy. The country is divided, for the purpose of trade and government, into two royal inspectorates, styled respectively North and South Greenland. These inspectorates are divided into several colonies or districts, each presided over by a Colonibestyrer, who resides at the chief settlement, besides various "udliggers," generally a cooper or carpenter, who can be trusted with a moderate quantity of rum. The average value of the articles exported is under £50,000—oil being the item of greatest value, though hair seals bring more than £5,000, and blue foxes (p. 128) are nearly an equal sum. After paying the cost of Government, and the nine vessels which are employed in the trade, there will remain a profit of more than £6,000, not including the interest of £64,426, at 5 per cent., which represents the capital which the Government has sunk in Greenland, and the royalty paid by the private company which work the cryolite mine. The net revenues from the trade for the last century have been estimated at £166,000. From the gross revenue a proportion is set aside to be expended by the Parish Councils, called *Missuisat* or *Parssisut*, elected by universal suffrage, for the support of the aged and infirm, the widows and orphans, and for such necessary public works as, on a very small scale, Greenland requires. By the last census there were 236 Europeans in Greenland, and 9,607 natives, though many of these were of mixed blood. In 1874 there were 368 births and 263 deaths, and the women outnumbered the men by nearly 600. Altogether there are in Greenland 176 inhabited places.

From what we have said it will be apparent that summer life in Greenland is existence in no "Land of Desolation," as John Davis designated the country. Our space will neither permit us to describe further the amusements of the long day in the far North, nor even to touch upon winter life, which we have now and then mentioned. Suffice it to say that to those who have made up their minds to make snowy Greenland their home, there is nothing very forbidding in the country. Many of the residents, who have only looked forward to passing a few years of comparative exile in that country, have returned to end their life there; and few who have ever passed no matter how short a time in the Danish Arctic provinces, but have looked back with satisfaction and even gladness to the life among the icebergs, the glaciers, and the Eskimo. An anecdote is often told in Greenland *àpropos* of this, and with it I may conclude these brief sketches of Danish Greenland life. A Moravian missionary, after a long residence in Greenland, returned to Saxony. Naturally his friends congratulated him on again fixing his residence in his native land, and supposed that he would find Germany an agreeable change to Greenland. On the contrary, he replied, he did not—life "at home" was too dull for him. In answer to his astonished friends, he explained the seeming paradox. "In Greenland there was always something to amuse or interest one. Now it was seal-catching which was the subject of interest—now reindeer hunting—now the bladder-nose arrived on the coast—now the saddle-back seal.

Anon the whale was blowing in the offing—at another time the narwhal appear in droves off the coast. The long winter had scarcely become wearisome before the long, bright summer was come. Then there were the ships arriving from Europe—other ships leaving. The absence of all news from Europe was compensated by the pleasure of receiving so much every year all at once. In fact, in Greenland there was always something new. In Saxony, on the contrary, one day was like another—wearisomely monotonous!"

The Voyager's Life in the Far North.

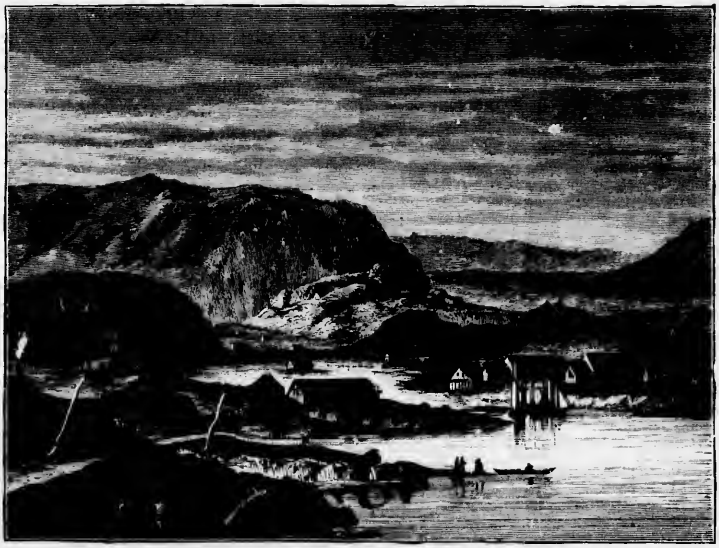
The whaler's route, and the whaler's general routine of existence, we have already briefly sketched. His life is by no means monotonous, and would have been a state of delirious excitement for the old Saxon priest who rejected the dulness of German village life. The whaler's voyage across the Atlantic is generally calm, and no sooner does he reach the Greenland coast than his mind is kept continually on the stretch. Navigation during the long daylight, without being absolutely dangerous, is yet not unattended with that potentiality of risk which gives zest to a voyage in the smooth waters of Baffin's Bay. There is scarcely an hour of the day or night during which ice does not grate against the vessel's side; any one who will take the trouble of examining a whaler arrived from the North will have no difficulty in seeing in her scarred timbers the witnesses of her encounters with the "thick-ribbed ice" of the regions she has been navigating for so long past. Passing "the bay" (see p. 111) is an exciting time, and "the bay" is no sooner gained—supposing the vessel is not destroyed—than the whaler is on his battle-ground. Once there, there is an unpleasant uncertainty as to how long the seamen are to be allowed to be in bed. The "watch" may have just turned in, when a cry of "A fall! a fall!" will turn every one out of bed, his clothes in his arms, and while the boats are being lowered, and even pulled off, the men will be hastily dressing piecemeal. Every man is interested in the success of the voyage, and the certainty that his exertions will help his purse renders laggards rare phenomena on board a whaler. The "making off" is a stimulating labour, slightly unpleasant at first, but in time ceases to be so, for fresh blubber has really no smell; while the excitement of "pulling on to" the unsuspecting whale, harpooning it, and finally, often after many hours of toil killing the gigantic animal, is an experience before which every other in the annals of the chase pales. Visits from or to the Eskimo, or a sail in search of whales about comparatively unknown inlets, and along shores romantic in their misty obscurity, vary the monotony of the "off-time," when "fish" are scarce, and the captain more and more desponding every time he comes down from the "crow's-nest," and more and more inclined to pay greater attention to that hot rum and water which is not unfrequently—though more rarely now than once—the weak point of the whaler. There are snowy days and many dull hours, in which the old books are read over and over again, and the last Dundee newspaper, which was just put on board before sailing, spelled through and through from the first advertisement to the last. Venerable tales—which were tolerably fresh six months ago, though stale enough now—are told once more, the listeners keeping up a faint show of pretending that they are new, though nobody is deceived as to the patriarchal age of the jest. A very small joke goes a long

way in Baffin's Bay—as it does in Greenland—nor is the quality of the wit particularly strained. The stories are all excessively local, as might be expected among men of one profession, all from one port, and few of whom have ever followed any other branch of a seafaring life. Many of the whalers have never seen corn grow, and have forgotten what a flowery land little Britain is. Snow and ice, "fish" and "Yaks" (Eskimo), "unies" (narwhals) and "sea-horse" (walrus), are the favourite subjects of conversation when a party of whaling captains meet together over their grog, or to consult about their

GROUP OF GREENLAND ESKIMO CHILDREN. (*From Original Photographs.*)

affairs. On a smaller—and probably a rougher—scale, the same conversation goes on in the "galley," though, contrary to what might be expected, "society" in the "'tween-decks" is by no means very democratic. The "harpooners" (or "harpooneers") as they are invariably called, have a mess to themselves, a boy to wait on them, to bring their rations from the galley, and their grog from the steward's pantry; and altogether are very great men. They are, in fact, warrant officers, who may look to be captains at no distant period, provided that they are "scholars," and can "pass the Board" in Dundee. Then there is the "spectioneer"—or blubber king, who superintends the stowage of the cargo—the sail-maker, carpenter, and cooper, who, being in a manner civilians, are only tolerated by the great men alongside of whom they have a relative rank, and by whom they are esteemed very respectable men—in their way—though not bred to the sea and to "the trade" from their

youth upwards. The "loose harpooneer" is also a great man is his own esteem and that of the boat-steerers. In due time he will become a full harpooner, and then a boat-steerer will take his place, and a line manager—or seaman who looks to the running out of the line after the whale is struck—will succeed to his dignity and pay. There is then the democracy of the seamen, the ship's apprentices, and lowest of all, the "green hands"—generally Shetlandmen, or "shoremen," who have been induced by necessity, or more frequently by curiosity, to try a seafaring life for a few months. But as they can neither "reef, hand,



VIEW OF JULIANEHAAB, SOUTH GREENLAND. (*From an Original Sketch.*)

nor steer," and can do little better than pull boats after a rude fashion, stow blubber, and clean decks, their pay is small, and their dignity less, while their capacity for bearing jibes and jeers must be necessarily great if they wish to lead a moderately peaceful life, and are emulous of smoking many pipes by the cook's fire.

The food on board a whaler is plentiful but rough. No class of seamen are better provisioned or more sumptuously grogged. The number of meals taken in the day is generally three; but if whales be killed, they are simply indefinite. At no matter what hour of the day or night a whale is killed, a meal is the invariable preliminary to "making off," and rum is served out to the men with a liberality unknown, and which would be dangerous in lower latitudes. In addition to the ordinary articles of seamen's dietary, the whaling sailors have frequently fresh messes. Ducks, and, above all, sea-fowls—such as

guillemots, looms (the Danish *lomvia*), dovekies, and rotjes—are among the most familiar articles which festoon a whaler's rigging. After they have hung sufficiently long to get tender, they are made into "scouse," "sea-pie," and other similar mysterious dishes, in which the stout stomach of the seafaring man delights. The cabin table is well supplied with preserved meats, hams, and fresh meat, which preserves very well in the rigging throughout the voyage. It is tender, and possibly even somewhat high-flavoured towards October. But that is a trifle to hardy appetites. Altogether, a whaler's life in the far North is not the least desirable phase of a sea life. He is fed better, he lives in a healthier climate, has more food, and generally better and more money and less monotony than sailors in almost any other employment. He is at once a seaman on the Atlantic and a "fisherman" in Baffin's Bay, and the conjunction of employments is apparently pleasant, for few who ever enter upon the employment desert it, and many follow it from father to son.

The yachtsman's life in the Arctic seas we have already more than once touched on, and need not revert to. Most of the amateur sailors within the Arctic circle visit the North for hunting or for amusement. Occasionally they vary it with an attempt at amateur exploration, but few of those who have attempted it have, either from want of training in themselves or their crew, been so successful as to call for particular remark.

The explorer pure and simple has a graver work before him. Most frequently he is a stranger to the North, and in this case everything is new to him, and what would be novelty to any one becomes doubly so to the enthusiast, whose mind has for years been dreaming of what is now a reality. His mind is daily tortured with anxiety, or the disappointment which makes the heart of man bitter, for in the ice-choked seas of the North, more than in probably any other part of the world, is the truth of Pliny's maxim demonstrated—"That on earth there is nothing certain, unless that nothing is certain;" or he is exulted by hope of accomplishing what no man has yet accomplished, as his vessel gets free from the icy barriers which a few hours before rendered all progress impossible, and once more sails in an open sea and free. Again he is stopped—again he is free; hope and despair alternately excite or depress him, until the inevitable winter arrives and imprisons him for five or six months. His life is a gambler's life. He is throwing for a great stake, and yet his success or his failure is in many respects independent of skill. The Arctic explorer's success or failure is to a great extent dependent on what, for want of a better name, is called luck. He may be the best and boldest seaman who ever trod a deck—a Nares, a Markham, or a Stephenson—and the ice may—as the voyage of the *Alert* and *Discovery* only too completely demonstrated three hours after sighting it—render his efforts futile. On the other hand, the most indifferent of seamen may meet with open water, and sail to a latitude, and attain a reputation, denied to his predecessor, who really deserved the applause of the world a great deal more. In a word, failure in the Arctic regions does not necessarily mean want of skill or perseverance, any more than success demonstrates the possession of these qualities. It was this alternate hope and fear that actuated the old navigators—men of whom it might be truly said, that they "feared it not, the spirit which dwelleth in the land of ice and snow." Whether they sought for a North-east or a North-west passage to Cathay and Cipango; whether, in other words, they dreamt of reaching India, China, and Japan by doubling the northern

end of Europe and Asia, or of America, they were buoyed up by the same alternate hope of success and fear of failure. They thought that the continents might terminate northerly in a narrow part, as they knew America did in the south, and that after doubling this cape they might reach an open sea and a free. Thence they would sail into the Pacific of Balboa, down by the lordly Spanish Main. There would they take little of the good things there to be found—they would freight their ships with gold dust in the land of Cathay, or with diamonds and rubies in the mysterious Indies of the mighty Genoese—ballast them with piles of Spanish doubloons, with sacks of Portuguese milreis, with bushels of pieces of eight! Seekers after shadows they were, no doubt, all of them—dreamers of dreams. But they sought after shadows which in their eyes were very substantial, and dreamed dreams which even now we acknowledge were grand old dreams. Their enthusiasm consoled them for all misfortunes, and buoyant hope carried them forward under repeated failure. When the thick ice grated against their vessels in the cheerless North, and the chilly wind caused them to shiver in their furs, they whispered unto their souls to take courage; for before the flowers bloomed again in merry England they should be in fair land, where coral reefs fringed the palm-shaded shore, where the soft tropic winds were wafted seaward laden with the odours of spices, of myrrh, and of frankincense; where the dark-eyed maidens wrapped themselves in jewelled robes; where the bondsmen were clad in goodly garments!

Wintering in the Arctic regions for exploring ships has now been almost reduced to a science, from the hour the ships get frozen in, housed over, or banked up with snow. Health and amusement are carefully attended to by warming and ventilating apparatus on board the ships; exercise, theatres, schools, newspapers, scientific observations, and abundance of other methods of entertainment, which must be familiar to many of my readers who remember the varied articles of outfit put on board the *Alert* and *Discovery*, and the still later descriptions and sketches which were published after their return. Yet still the winter is dreary enough—the long darkness, combined with the uncertainty of the future, and a frequent attack of home sickness, making winter life on board an exploring ship, even under the best of auspices, not very desirable (p. 45).

Whalers are occasionally frozen in if they delay their stay too long in the Arctic regions, and though they are generally provisioned for twelve months, yet, in any case, they suffer greatly. The hardships of the beleaguered *Diana*, of Hull, in the winter of 1866-7, must be still fresh in public recollection, and how she gradually floated southward, out of darkness into light, arriving on the coast of Shetland in early spring with half her crew dead or scurvy riddled. Others, chiefly American vessels, winter in Cumberland Sound and that vicinity, near the mouth of Davis' Strait, in order to catch the whales on their spring migration. In that latitude, though the winters are gloomy and cheerless to the last degree, yet there is no continual darkness for several months as there is further north. At one time walrus hunters used to winter on Spitzbergen, and even Novai Zemlai. These men were chiefly Russians or Norwegians, but though of iron constitution, they suffered terrible hardships. Some seamen have also wintered on Jan Mayen, on which was a volcano, but were unable to survive the winter.*

* Pinkerton's "Collection of Voyages and Travels," Vol. ii.; Laharpe, "Historie Générale des Voyages," Vol. xvi.; Harris' Collection, Vol. ii.; Dufferin's "Letters from High Latitudes," &c.

The Natives of the Arctic Regions.

Hitherto we have only spoken of the Arctic regions as a dreary land into which explorers penetrate, and a few Danes live for longer or shorter periods. But forbidding as the country is, it is the home and the native land of thousands of people, civilised and savage, who prefer its solitudes to the more inviting countries which lie to the south of it. Among these we may be expected to include the Icelanders. Iceland is, however, an essentially European island, and will be sketched at a later period when the North Sea isles are the subject of a chapter. Indeed, only a small portion of the country is within the Arctic regions of the geography, and the very title of the country is a misnomer, as we have already pointed out. It is a dreary enough lava field, however, only a few dales and flat districts near the coast being inhabitable—the 60,000 or 70,000 inhabitants dividing their time between tilling a little land, rearing dwarfish sheep, cattle, and ponies, and capturing, salting, and drying the fish which are found in such abundance off their shores. Of late years the scenery of Iceland, its geysers and volcanoes, as well as its easy proximity to Europe, have made it a favourite haunt of the ubiquitous summer tourist, so that the inhabitants have, in addition to their natural resources, the additional one of preying on the birds of passage who come to see them and their island. The island was discovered and settled in the ninth century by emigrants from Norway, no aboriginal inhabitants having ever existed here. From the earliest period these *emigrés* were distinguished for the turbulent character of their disposition, their love of freedom, and their love of letters. While the rest of Europe was steeped in ignorance, the Icelanders cultivated letters, and their sagamen and skalds composed the popular histories which have since received so much attention from modern scholars. The same love of learning distinguishes the inhabitants at the present day. They still speak the purest dialect of the Danish, and have numerous works either written in or translated into their mother tongue. They are hospitable and kind, though primitive in many respects, and dress in a picturesque and rich costume, of which they are immensely proud (p. 145). They are said to inherit the character of their forefathers, and give an endless amount of trouble to Denmark, which now owns the island. It is, in fact, the Ireland of the little Scandinavian kingdom—the inhabitants bearing, in more senses than one, a remarkable likeness to the people of the Emerald Isle. It ought to be added that they are honest and moral even beyond the high standard of the Danes; and that though poor, it is rare to find one of them who cannot both read and write. They are very patriotic, and are fond of studying the history of their country, in the ancient sagas and poems. At one time they numbered 100,000, but in 1870 the census only showed 69,763, and since that date they have been decreasing, numbers now emigrating to the United States and Canada, the people being discontented with their lot, notwithstanding the liberal constitution granted to them by the Danish King on the 1,000th anniversary of the settlement of the island in 1874. If these colonists be successful, many more will follow, so that in time we may expect to see the ancient glory of the "island grand" fade and disappear. Regarding its scenery, and the quaint customs of the inhabitants, much information is now made accessible to the English reader by the works of Symington, Forbes, Burton, and numerous

other writers of greater or less note. Of the Hudson's Bay officers in the far Northern beleaguered forts of the fur countries we shall speak in succeeding chapters, and of the life of the Siberian residents—free or bond—we may have occasion to touch on in a future volume.

The aboriginal inhabitants of Polar lands we have more or less fully spoken of in another and companion work. The hardy men who have chosen the Arctic regions for their home are the Eskimo (pp. 73, 77, 109, 140, &c.), the Samoyedes (Plate V.), the Lapps (p. 32), the Ostiaks, and similar allied tribes, who roam—as in the case of the Eskimo—over

ICELANDIC FEMALE COSTUMES.

the whole stretch of Arctic America, and even part of Asia; and in the case of the others, over the northern parts of Europe and Asia. In many respects they are similar in appearance and habits, and all of them fight a stout battle for life with the iron skies they live under. Indeed, it is a little difficult at first sight to distinguish a Samoyede from a Siberian (pp. 36, 37), and either from an Eskimo. The habits of men are moulded by the physical agents by which they are surrounded. Hence the Northern men, though they may differ in religion and in minor customs, will have a general similarity of life, whether they are known as Eskimo or Kamtskadal, Ostiak or Koriak, Lapp or Vogul—whether they live in the cold continent of Europe, in Northern Asia, or in those cheerless regions

"—— where the moving isles of winter shook
By night with noises of the Northern sea."

CHAPTER VII.

The Fur Countries of North America.

In the winter of 1865, some time about Christmas, there was a commercial transaction enacted at Ottawa, the capital of the then newly-created Dominion of Canada. A clerk handed over a few Treasury Bills, and a factor received them. Three hundred thousand pounds was their amount; but with the payment of that sum a famous old company of merchantmen sank into mere hucksters—buyers and sellers of furs—and the last of the great monopolies ceased to be. The sum was paid by Canada as the price of the cession of the political rights and privileges of the "Honourable Company of Merchant Adventurers trading unto Hudson's Bay." From that day forth they ceased to have any power over the huge tract of North America, usually styled Rupert's Land, or the Hudson's Bay Territories, and became, in the eye of the law, as the rest of the traders who did their business in the wild forests, prairies, and Arctic-like wastes that stretched on to the Frozen Sea under the rule of the land that Jacques Carter explored. The Hudson's Bay Company was as nothing compared with the East India Company; but yet, in their own small way, they were a close imitation of that lordly corporation. It was a mere commercial association which, with a few clerks, ruled more than half of North America—a territory larger than all Europe—after a fashion despotic and irresponsible enough, and yet, on the whole, just, wise, and to the honour of the English name, a mere joint-stock company of traders, who yet, at their own sweet will, under their own banner of *Pro pelle et cute*—for peltry and hide—declared war and made peace, and without a single soldier held in awe and loyal subjection fierce tribes of Indian warriors, all across the broad continent of America. The last of the old proprietary governments—they saw the gorgeous career of the East India Company, and its decline and fall. They witnessed Louisiana ceded by his most Catholic Majesty of Spain, and the Seigneurs of New France become subjects of Great Britain and again of the new-born Dominion of Canada. They witnessed the ruin of the Darien enterprise. They saw the South Sea Bubble burst, and a dozen rivals come to nought. They remembered when all North America consisted of the "plantations of his Majesty," they remaining loyal and attached when the colonies broke from the mother country. They survived eleven sovereigns, and died in the reign of the twelfth. In a word, the history of the Hudson's Bay Company is the history of the fur countries and fur-trade of North America. Wherever the furs were best there they reigned; wherever the trade was most profitable their forts, and their all-embracing monopoly, extended. The American Fur Company had posts on their border lands, and a score of private traders lived on the offpourings of their hunting ground. But at the fulness of their power the Hudson's Bay territory consisted essentially of the fur countries of North America. No description, however brief, of the interesting border country between the Arctic regions and the land of corn, of cotton, and of wine, can be written without a sketch of the rise and fall of the great Fur Company. In its day it was the fur-trade, and it ruled and explored the fur countries.

We—and by *we* I speak of those who remember the Company before it ceased to be a political power—who knew the Company in its palmy days; who drank its good wine and ate of its salt; who hobnobbed in its picketed forts with the sturdy factors at great and oaken tables laden with beaver-tails, buffalo-tongues, and huge roasts of moose and of elk and of caribou; dishes of tender antelope, and luscious salmon from the rivers of its empire of territory; ptarmigan from Hudson's Bay, oulachan,* most delicious of fishes from Vancouver Island, and snowy hares from the Eskimo, along the shores of the Arctic Sea; we who shared its stirring enterprises, and floated down far western rivers in its birch-back canoes; who have been honoured by seeing our names carved on tamarac "lobsticks" on the Albany River, and on cedar ones on the Columbia or Fraser, in return for *régales* of rum, tea, and tobacco, largessed unto its voyageurs; we who were, in a word, *of it*, have pleasant memories in relation to the great corporation, and may be excused if we linger fondly over its history, even at a time when the world—when the world has not forgotten it—is disposed to hold its achievements cheaply, and to dwell with undue severity upon its misdeeds and shortcomings.

The Hudson's Bay Company and their Lands.

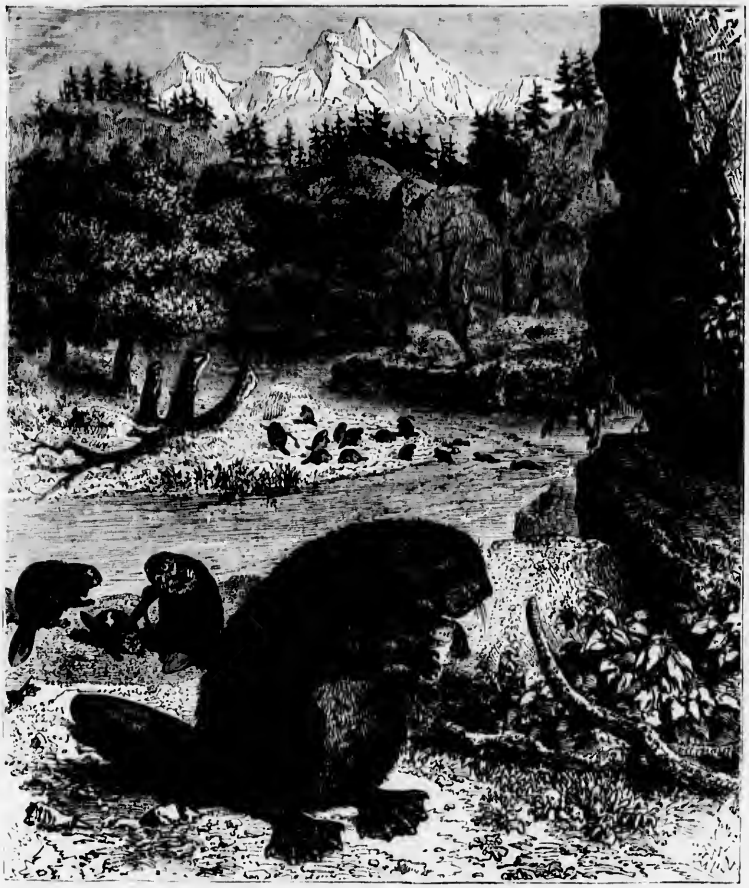
About the year 1667 there was living in a dull set of chambers in the Temple a retired soldier, who, after having done knightly service for his Royal uncle of the "sacred memory," was busy with endless chemical experiments, never productive of much good to the world, and rather injurious to the slender purse of "Fiery Rupert of the Rhine"—the gentleman in question. He had always been on the eve of some great discovery, but had never made it, for "Rupert's drops" is but a slender peg on which to hang a chemist's reputation; and now his Serene Highness the Prince Palatine of the Rhine was fast settling down to being a sort of Mæcenas to every needy adventurer who found his way with a plausible scheme to the further side of Temple Bar. Rummaging through the dusty tomes of the Temple Library, he read how in 1252 Marco Polo, the great Venetian traveller, saw in the tent of the Grand Khan of Tartary furs and sables "brought from the North, from the land of darkness." The idea struck him, that could these furs be got now, what a splendid scheme it would be. Just then he was waited on by a man who had travelled much in North America, and was well acquainted with the wild Indian tribes not far from the shores of Hudson's Bay. This was M. de Groiseliez, a Frenchman, almost as full of ideas as the prince himself, but, on this particular occasion, occupied with one more than ordinarily feasible. He fired the imagination of the Palatine by his pictures of the exceeding abundance of fur-animals on the shores of Hudson's Bay, and the great profit which could be made from them. The result was, that after an experimental trip had proved successful, the influence of Prince Rupert succeeded in forming a joint-stock company of noblemen and gentlemen for the purpose of pursuing this fur-trade. Furthermore, his cousin, the king—for what back-handed *douceur* history does not inform us—granted to this company of "Merchant Adventurers trading unto Hudson's Bay" a charter investing them with a monopoly of the furs and lands of the borders of all the streams flowing into Hudson's Bay not occupied by the subjects of any Christian prince; and, furthermore,

* The Pacific Smelt (*Osmerus pacificus*).

the privilege to make "war and peace with the people not subjects of any Christian prince." This was dated the 2nd of May, 1669. The adventurers gradually extended their enterprise, until, 190 years later, they possessed 155 establishments, in charge of 25 chief factors, 28 chief traders, 152 clerks, and 1,200 other servants, besides having a large number of natives under their control. These trading districts (thirty-eight in number) were divided into five departments, and extended over a country nearly as big as Europe, though thinly peopled by some 160,000 natives—Eskimo, Indians, and half-breeds.

VIEW OF YALE, ON THE FRASER RIVER, BRITISH COLUMBIA.

Of course, such a successful Company as this was not long in being opposed, and the story of the rival traders is not the least interesting or smallest item in its chronicles. Previous to the year 1783 the adventurers had many petty rivals to withstand, but these they chiefly got the better of by fomenting divisions and animosities among the Indians of the interior, so as to terrify any one from engaging in trade in that quarter. This has been an old trick of theirs when any Indian tribe was likely to combine with another against them, and now they turned the same time-dishonoured weapon against their commercial enemies. Nor were they at all scrupulous as to the means by which they ousted their rivals from their domains. There stand on record two cases in which ships had attempted to enter Hudson's Bay for the purpose of trade by sea. These the Company seized and drove ashore, pleading—so, at least, runs the tale—that they were lost by stress of weather.



FUR ANIMALS: BEAVERS (*Castor Canadensis*).

The Coureurs de Bois.

The French fur-traders from Canada also not a little annoyed them. The St. Lawrence ran through the heart of a country which, in the times we speak of, was rich in fur animals, the settlers being few and cultivation still rarer. The fur-trade was

agreeable to the light, volatile disposition of the French *habitant*, who thus in time monopolised the trade outside the British territories proper, and became, as he is in the person of his descendants to this day, active—though then he was a somewhat more important personage than he is now—in the collection of peltries. The French had not only great companies which, in importance in those days, rivalled the Hudson's Bay traders, but numerous private individuals were engaged in the same lucrative traffic. Indeed, "La Compagnie de la Nouvelle France" was very much the same in constitution as that of their subsequent British rivals. They had the disposal of all settlements formed or to be formed in Canada, or New France, as it was then called, with the power of fortifying them, or of making war or peace just as they thought most conducive to their interests. So anxious, indeed, was the French King to back up this association, constituted in 1628, that he made it a present of two large ships, and raised twelve of the principal members of it to the rank of the nobility. It was, however, a failure. Great enterprises of colonisation and exploration in distant countries have never been the strong point of our French neighbours. But the freedom which the fur-trade received from the dissolution of the monopoly of one great Company gave a mighty impetus to the efforts of individual adventurers. The licence of a savage life, and the profits derived from the trade, attached to it the "jetsam" and "flotsam" of France, Canada, and other countries, and all the waifs and strays which invariably turn up when anything which entails much labour and great danger, but promises a chance of profit and a certainty of adventure, is to the front. Furs, however, soon grew scarce in the vicinity of the settlements, and accordingly the Indians, accompanied by the *coureurs de bois*, or rangers of the woods, went with them on their expedition. Thus in time arose a class who became as well acquainted as the savage trappers themselves with the best hunting-grounds, and who were able, by their friendship with distant tribes, to persuade them to bring their peltries in to the trading posts. Right and left—east, west, and north—the *coureurs de bois* extended their operations, until they travelled through a country peopled only by treacherous savages, more than 2,000 miles from the settled portions of Canada, their only means of subsistence what their traps or rifles could supply; their sole means of travel, the birch-bark canoes in which they navigated the lakes and rivers which formed their highway into the interior. Washington Irving, who in his youth had associated with old men who remember the later—though it may be the waning—glories of the Canadian fur-trade, gives a lively picture of the palmy days of these Gallic adventurers in search of peltry:—

"Every now and then a large body of Ottawas, Hurons, and other tribes who hunted the countries bordering on the great lakes, would come down in a squadron of light canoes, laden with beaver-skins and other spoils of their year's hunting. The canoes would be unladen, taken on shore, and their contents disposed in order. A camp of birch-bark would be pitched outside of the town, and a kind of primitive fair opened, with that grave ceremonial so dear to the Indians. An audience would be demanded of the Governor-General, who would hold the conference with becoming state, seated in an elbow-chair, with the Indians ranged in semicircles before him, seated on the ground, and silently smoking their pipes. Speeches would be made, presents exchanged, and the audience would break up in universal good humour.

Now would ensue a brisk traffic with the merchants, and all Montreal would be alive with naked Indians running from shop to shop, bargaining for arms, kettles, knives, axes, blankets, bright-coloured cloths, and other articles of use or fancy; upon all of which, says an old French writer, the merchants were sure to clear at least 200 per cent. There was no money used in this traffic, and after a time all payment in spirituous liquors was prohibited, in consequence of the frantic and frightful excesses and bloody brawls which they were apt to occasion.

Their wants and caprices being supplied, they would take leave of the Governor, strike their tents, launch their canoes, and ply their way up the Ottawa to the lakes. . . . . The French merchant at his trading-post, in these primitive days of Canada, was a kind of commercial patriarch. With the lax habits and easy familiarity of his race, he had a little world of self-indulgence and misrule around him. He had his clerks, canoe-men, and retainers of all kinds, who lived with him on terms of perfect sociability, always calling him by his Christian name. He had his harem of Indian beauties, and his troop of half-breed children; nor was there ever wanting a louting train of Indians hanging about the establishment, eating and drinking at his expense in the intervals of their hunting expeditions."

In fact, by slow degrees, and sometimes rapidly too, the *coureurs de bois* descended, as did their successors, the Western trappers, into white savages. They lost in time a relish for white men's ways and white men's civilisation. But just in proportion to their love of a savage life did their use to the fur-merchants of Montreal increase. These merchants supplied them with an outfit, and dispatched them on their perilous errand. Fearlessly they would find their way up the great rivers and their tributaries, launch their frail skiffs on unknown lakes, and land wherever they saw the smoke of wigwams or the hope of beaver, careless or fearless whether their scalps might not have to pay forfeit for their temerity. "Sometimes they sojourned for months among their savage allies, assimilating to their tastes and habits with the happy facility of Frenchmen, adopting in some degree the Indian dress, and not unfrequently taking to themselves Indian wives. Their voyages would extend often to twelve or fifteen months, when they returned in full glee down the Ottawa, their canoes laden with rich cargoes of furs, and followed by great numbers of the natives. Now would come a period of revelry and dissipation—a continued round of drinking, gaming, feasting, and extravagant prodigality, which sufficed in a few weeks to dissipate all their gains, when they would start upon a fresh adventure, to be followed by fresh scenes of riot and extravagance."

Their conduct, both in camp and in town, became so disgraceful, that, to prevent their pernicious example corrupting the already indifferent morals of the Indians, the Government was induced, by friendly influence, to so far control the trade as to grant licences to pursue it. These licences for a time acted as a check on the lawless adventurers, as they were only bestowed on persons of good character, and in time as a reward to officers and their widows, who, not being of the material out of which *coureurs de bois* were made, sold their privileges to merchants and others, who soon brought about the old system again. In fact, though the generalisation may admit of exceptions, the rule was in those days that courage and morals did not go together. The "great army"

of fur-traders "swore dreadfully" in the fur countries, and committed all manner of other wickednesses, which are popularly supposed to appertain to the morals of those of loose tongues. The military posts, however, which were established in the interior, did a great deal to restrain the lawless trapper and trader, though the fur-trade appeared at this time to be quite an epidemic. Even the military officers were seized with it, and eagerly

NORTH AMERICAN PINE FOREST.

begged licences to engage in this lucrative branch of trade. They, however, conducted the business in a more orderly manner, and to distinguish themselves from the fur-traders *pur et simple*, designated themselves "commanders." Many of the scenes of the most stirring tales of romantic adventure, and the hairbreadth escapes from—and sometimes attacks by—the treacherous Indians connected with the early history of Canada are laid round these military fur-trading posts. Doubtless, many of these New World "commanders" were gentlemen of but indifferent reputation; but they were no worse, if no better, than the "gentlemen" who fought under Marlborough or De Villars in the Old one.

AN AMERICAN TRAPPER OF THE *ANCIEN REGIME*.

The North-Westers.

Just about that time rose the great rival to the Hudson's Bay Company, which had hitherto led rather a sleepy if lucrative existence along the Arctic shores of Hudson's Bay. The Company had, moreover, as we have seen, been carrying things with a rather high hand, and not being very moral, or strikingly [illegible] themselves, they could

scarcely have expected their rivals to be much more conscientious. Competition by the rival Canadian Fur-trading Companies—under the new British rule of that country—was carried to such a ruinous extent, and the natives were so demoralised with spirits, that the whole trade became disorganised, and the traders ruined alike in purse and morals. This could not last long; and now commenced the work of the great opponents of the Hudson's Bay Company, viz., the North-west Fur Company of Montreal, which was made up of a combination of the chief merchants engaged in the fur-trade of Canada. From small beginnings it spread until it became the most powerful organisation of the kind in North America. Hitherto the Hudson's Bay Company had only paid their *employés* by salaries; but now the North-westers introduced another system, that of advancing the chief officers by their merit into the condition of partners, in fact, the method now in vogue in the Hudson's Bay Company, which was roused from their fat lethargy by the activity of their opponents. In the year 1788, the gross capital of the new adventure did not exceed £40,000; but by exertion and energy it was brought in eleven years to triple that amount. The sleepy "Hudson Bays" were astounded at the magnificence of the new comers, and old traders yet talk, with something like awe, of the lordly North-westers. It was in those days that young Washington Irving was their guest, when he made his memorable journey to Montreal as the New England attorney's clerk. The agents who presided over the Company's affairs at head-quarters were, as might be expected, very important personages indeed. They were veterans, who had grown grey in the wilds, and were full of the traditions of the fur-trade. Round their grizzled heads were bound the laurels of the North. They were, in fact, a sort of commercial aristocracy in Quebec and Montreal, in days when nearly everybody was more or less directly interested in the fur-trade. To behold the North-west Company in all its state and grandeur, it was necessary to witness an annual gathering at Fort William, near what is now called the *Grand Portage* on Lake Superior. Here two or three of the leading partners from Montreal proceeded once a year to meet the partners from the various trading places in the wilderness, to discuss the affairs of the Company during the preceding year, and to arrange plans for the future. On these occasions might be seen the change since the unceremonious times of the old French traders, with their roystering *coureurs de bois*. Now the aristocratic character of the Briton—or rather the feudal spirit of the North Briton, for the "Macs" predominated—shone out gloriously. Every partner who had charge of an interior post, and had a score of retainers at his command, felt like the chieftain of a Highland clan, and was almost as important in the eyes of his dependants as in his own. "To him," writes the author of "Astoria," "a visit to the grand conference at Fort William was a most important event, and he repaired there as to a meeting of Parliament. The partners from Montreal, however, were the lords in the ascendant. Coming from the midst of luxurious and ostentatious life, they quite eclipsed their compeers from the woods, whose forms and faces had been battered and hardened by hard living and hard service, and whose garments and equipments were all the worse for wear. Indeed, the partners from below considered the whole dignity of the Company as represented in their own persons, and conducted themselves in suitable style. They ascended the

rivers in great state like sovereigns making a progress, or rather like Highland chiefs navigating their subject lakes. They were wrapped in rich furs, their huge canoes freighted with every convenience and luxury, and managed by Canadian voyageurs, as obedient as Highland clansmen. They carried up with them cooks and bakers, together with delicacies of every kind, and abundance of choice wines for the banquet which attended their great convocation. Happy were they, too, if they could meet with any distinguished stranger—above all, some titled member of the British nobility—to accompany them on this stately occasion, and grace their high solemnities. Fort William, the scene of this important annual meeting, was a considerable village on the banks of Lake Superior. Here, in an immense wooden building, was the great council-hall, as also the banqueting-chamber, decorated with Indian arms and accoutrements, and the trophies of the fur-trade. The house swarmed at this time with traders and voyageurs from Montreal bound to the interior posts, and some from the interior posts bound to Montreal. The councils were held in great state; for every member felt as if sitting in Parliament, and every retainer and dependant looked up to the assemblage with awe as to the House of Lords. There was a vast deal of solemn deliberation and hard Scottish reasoning, with an occasional swell of pompous declamation. These grave and weighty councils were alternated by huge feasts and revels, like some of the old feasts described in Highland castles. The tables in the great banqueting-room groaned under the weight of game of all kinds—of venison from the woods and fish from the lakes, with hunter's delicacies, such as buffaloes' tongues and beavers' tails, and various luxuries from Montreal, all served up by experienced cooks brought for the purpose. There was no stint of generous wine, for it was a hard-drinking period—a time of loyal toasts and Bacchanalian song and brimming bumpers.

While the chiefs thus revelled in the hall, and made the rafters resound with bursts of loyalty and old Scottish songs, chanted in voices cracked and sharpened by the Northern blasts, their merriment was echoed and prolonged by a mongrel legion of retainers—Canadian voyageurs, half-breed Indian hunters, and vagabond hangers-on—who feasted sumptuously without, on the crumbs from their table, and made the welkin ring with old French ditties, mingled with Indian yelps and yellings."

"One or two partners," it is added, "recently from the interior posts, would occasionally make their appearance in New York in the course of a tour of pleasure or curiosity. On these occasions there was always a degree of magnificence of the purse about them, and a peculiar propensity to expenditure at the goldsmiths' and jewellers' for rings, chains, brooches, necklaces, jewelled watches, and other rich trinkets, partly for their own wear, partly for presents to their female acquaintances—a gorgeous prodigality, such as was often noticed in former times in West Indian planters and Eastern nabobs flush with the spoils of Oriental conquest."

The Hudson's Bay Company had only confined their operations within the limit of this original grant, and now prosecuted their trade with very great vigour. But the "Nor'-westers" pushed away north and west until they had reached the Rocky Mountains, and even beyond, on to the waters of Peace River. No doubt the Hudson's Bay Company took alarm at these new rivals, but it is more than probable that they

would have been unopposed had not an accident just then occurred which changed the aspect of affairs. Lord Selkirk, an energetic Scottish nobleman, having attempted to establish a colony on Red River (afterwards the nucleus of the Canadian Province of Manitoba, was violently opposed by the North-west Fur Company, who found the plains on which he proposed to settle his colonists useful for buffalo-hunting and preparing the great supplies of "pemmican" (ground dried meat and tallow), which formed the travelling food of their fur parties. This strongly incensed the Earl against the New Company, and to enable him the better to punish them he went home and bought so large a number of Hudson's Bay shares as to obtain a controlling voice in the direction of that corporation. This influence he now exerted against the flourishing and obnoxious North-west Company. Rousing up the "Hudson Bays" from their indolence, a vigorous competition commenced, and continued for some years. Wherever the North-westers established a fort their opponents built another in close proximity. Every method which artifice and fraud could suggest, or even open violence compass, was adopted by them to outwit each other, or to obtain the furs of the Indians. At first friendly, when trade did not intervene, they had no mercy when the interests of their rival Companies were concerned. Forts were taken and burnt, the officers in charge and the servants imprisoned and half starved, and sometimes even obliged by famine to surrender; the furs on the way to the rendezvous were intercepted and appropriated, and the whole trade turned into a furious conflict. The Governor-General of Canada sent out warrants and proclamations in vain; these were equally treated with the most sovereign contempt in a land where "the kings's writ runneth not," nor had he any power to control the refractory fur-traders. Things went on in this fashion until they culminated, in 1816, in a battle, in which seventeen men and three officers of the Hudson's Bay Company, including Governor Semple, were killed. This was perhaps the most serious casualty which the rivalry occasioned, but still it did not abate the fighting. Now all parley was at an end, and the password was "war to the knife." Officers and men were absolutely engaged by either Company for little other purpose than fighting; and though ostensibly occupied in the fur-trade, their chief recommendation for the posts they held was their pugnacity. These stories form part of the stock-in-trade of a Hudson's Bay host's repertoire to this day. This could not go on very long; and accordingly, in 1821, both Companies began to see the folly of their proceedings. The trade was ruined. The Indians were demoralised by "fire-water." The prices given for the furs were out of all proportion to their value, and nobody was benefited unless it were a bellicose clerk, or other *employé*, who had distinguished himself in this guerilla kind of commerce. The result was that the two Companies coalesced under certain stipulations, Parliament granting them some additional privileges which it would be out of the province of these chapters to describe.

The Culmination, Decline, and Fall of the Great Fur Traders.

The new organisation retained the name of the Hudson's Bay Company, and under this title it continued to prosper until its trading posts extended right across British America, and even within the limits of the United States, to the very shores of

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the Pacific, where, indeed, now its chief establishments are situated. By-and-by, as the Company spread its wings, and crossed the Rocky Mountains into Oregon, where its traders had no real right, they were annoyed by less powerful but more irritating opposition. Every Western backwoodsman "went into" fur-trading on a small scale, and "calculated to do a right smart chance of a trade." But he reckoned without his host, or, rather, his next door neighbour occupying the picketed fort on the prairie. No sooner did Angus M'Tavish or Dugald M'Donald, the Hudson's Bay traders, hear that Ephraim E. Goliath was about to go up the Columbia or Willamette River on a trading expedition, than he would start off ahead with a plenteous supply of goods. Intimately acquainted with the country and the people, the legitimate trader would soon make rapid progress. From their mat or board lodges on the banks the sleepy Indians would crawl down to the water's edge and buy powder, shot, and vermilion to paint their squaws and their own dusky cheeks, and blankets to cover their nakedness, offering the Hudson's Bay trader the usual furs in exchange. Now began the trader's policy. Either he refused any pay at all, or gave them the goods at a ridiculous loss to himself—all the time drumming in their ears that "we are your good friends, not like those miserable Boston men;"* and left amid the plaudits of the Indians to repeat the same game elsewhere. Well he knew that the Indian, having once obtained what he wanted, would not take the trouble to come down to the water's edge when Ephraim E. Goliath's canoe load of "notions" made its appearance; or they would want them at a price which it was out of the power of the small capitalist to agree to. The Hudson's Bay Company could afford to lose on one trip, knowing that they recoup themselves on the next. The petty trader was, however, ruined, and ceased in future to be an opponent in the field.

In regions where they had the exclusive right of trade, they could invoke the strong arm of the law—in the shape of force; but that, in other regions, was a rather dangerous card to play. In British Columbia, for instance, their exclusive right, licence, or lease to trade expired in 1859, when that country was constituted a British colony. In the settled parts the Company had to stand much competition. But in the Northern districts they had, and have to this day, notwithstanding that it is a province of Canada, virtually the monopoly of the fur-trade, no one, as yet, finding it to their profit to oppose them. They have their forts—such as they are—their organisation, their established routine, and intimate knowledge of the Indians, and can, therefore, beat in open competition any interlopers.

Here they would either attempt the old Oregon trick of underselling the trader, or, what is much easier, and nearly as cheap, show the Indians that it is to their profit to deal with no outside trader. They know every Indian in their "district" by head-mark, and soon hear who has been tempted by the big price of the "fur-traders" to sell a fur last summer, and a black mark is put against his name in their "trading lists." For long, it may be, the offender hears nothing about it. Regularly he pays his visit to the Hudson's Bay fort, laden with furs. Then he is a welcome visitor, and departs

* On the North Pacific coast the Indians call all Americans "Boston men," most of the earlier traders being from Boston. On the other hand, the English are called "King George men," most of the discoveries of Cook and Vancouver being in George III.'s reign.

with the customary present. But one unfortunate winter ill-luck befalls the hapless hunter, and, half starved and shivering, he creeps up to the Hudson's Bay fort to beg credit for a few pounds of powder and shot, a couple of beaver-traps, and a blanket. *Then* he hears of his old offence, and is not over-politely told "to go to the man he traded that black fox's skin to three years before—*he* will be sure to give him credit." On the whole, the Indian becomes convinced that, after all, it is better to trade with the Old Hudson's Bay Company. Their forts are always to be found. When he is "hard up," he can get credit; and when too old to hunt, he will not be allowed to starve, if he be known as a former good hunter and faithful customer of the Company.

At other times the Company adopted a course which was not so pleasing to its *employés*, namely, buying up a powerful rival. I know of an instance where, many years ago, this plan had to be adopted. A smart young skipper from Boston came out to the North-west coast in a spanking new brig, laden with every kind of Yankee "notion," and pursued his trade with such spirit that he was ruining the Company completely. With a sorry heart, they bought his ship from him at a high figure, and had no sooner done so than they recollected that they would have to buy him too, otherwise he would have gone back, provided another brig, and adopted the same course again. So, with a very wry face, they bought up the New Englander, and made him a chief trader in the Company at once; and there he is still, for all I know to the contrary, one of the highest dignitaries of the Company, and, what is curious, one of the most intense Britons in its service. I believe he stands *alone* as an American converted to an Englishman—we have not a few instances of the reverse!

For long there were evident signs of decay in the Old Company, and its best friends often wondered how it could have stood so long, with its originally rather crazy constitution continually battling with Parliamentary commissions and inquiries. Again and again it was "sat on" in St. Stephen's, but its friends pulled it through. Then it got into a lawsuit with the United States, about recompense for infringements on the rights secured to them by that treaty; but the Scotch factors were too much even for the Philadelphia lawyers, and the Treasury at Washington had to contribute to the one in Gracechurch Street, London. The old shareholders, with the intuitive shrewdness of old times, saw the troubles ahead, and, in 1863, to the horror of the commercial world, which was shocked—albeit that is not a weakness of Capel Court—at their impropriety, so widely different from the traditions of the Company, were persuaded to sell out for a high figure to a New Company of Proprietors. I was "in the country" at the time, and well remember the consternation excited by this unseemly feat of the venerable Corporation. The Company's shares were quoted on the Stock Exchange, and, worst of all, for the first time for two hundred years, at a discount! The New Company began, like the proverbial broom, to sweep clean. They proposed many improvements, and discussed the question of making a railroad through their territories. They talked of introducing colonists, and of many other things which wiser heads had long before proved to be incompatible with the fur-trade. But with experience came reflection, and then began the Dominion of Canada, which, with that earth-hunger which is peculiar to new and growing countries, cast envious eyes on the Hudson's Bay lands. They even threatened to contest the charter, and have Canada from Maine to the Arctic Ocean. They would have them without paying for them either. They would go to law and win likewise.

Meantime sager men than the "Canadian ministry" intervened, and persuaded the Dominion to pay the Company for their rights, real or supposed, and the Company to part with them. To this they agreed, and sold their birthright for the very substantial mess of pottage represented by £300,000. And so, in the words of the Lord President as he closed the last Scottish Parliament, came "the end of an old, old song." The "Honourable Company

VIEW OF THE "RATTLESNAKE GRADE," PAVILION MOUNTAIN, BRITISH COLUMBIA; ALTITUDE NEARLY 4,000 FEET.

of Merchant Adventurers trading unto Hudson's Bay," and elsewhere, from that day ceased to have any of their old privileges, and with the exception of a mile around each of their forts, they ceased to be lords of the soil. As a merchant Company they still exist, but as a proprietary government they will no longer be known: the world is too advanced for monopolies. Nevertheless, the Hudson's Bay Adventurers did good service in their day and generation. They preserved peace among the Indian tribes, when in the rest of America there was continual war between the white man and the red. They no doubt impoverished the Indian in some small degree by tempting him to kill off the fur animals

more rapidly than Nature increased them. But, on the other hand, the furs were of little use to the Indian after he had clothed himself, and the traders supplied him with articles of infinitely more value to the hunter, which he could by no possibility have obtained for

THE SPRUCE FIR OF NORTH-WEST AMERICA. (*Abies Menziesii.*)

himself. Moreover, deer, moose, and elk (wapiti) skins were not traded—being too heavy to transport—and therefore the main source of the Indian's food was not affected by the fur-trade. The best proof of this is, that in a district where the Company had long had a trading fort, I bought from the Indians a deer, caught in a pitfall, for one ball and a charge of powder, and another one for a few leaves of tobacco. Again, in districts where deer were

not abundant, salmon were so plentiful that, as at Fort Rupert, the traders manured the fort gardens with them. The Company, owing to their monopoly, had an interest in not clearing a country altogether of fur animals, and, as a matter of fact, they periodically "laid over" certain districts, for so many years, from being hunted. Now, no private traders would have done this. Besides, a private trader, wherever he dares in the face of the law, uses spirits as an article of trade, which the Company voluntarily, after the North-West competition ceased, abandoned as an article of traffic, though they could get twice the amount of furs at half the price by giving rum for them. Moreover, the Company used to give a proportionately higher price for inferior furs, such as musk-rats, merely in order to prevent the Indians from being tempted to exterminate the more valuable animals.

When the veteran hunter grew aged—be he "Digger" (p. 173) or "Chippeway," the lowest or the highest of his race—his old patrons took care of him; and the best answer which can be given to those who have painted the Company's rule in the worst colours is the fact that to this day the Indians, to a man, prefer rather to trade with the Company than any other traders, and that even among the worst tribes an officer in their employ is almost as safe as within the pickets of his fort. Rarely have the Company been at war with the Indians, though one or two of their forts have been taken; but this was invariably in the country of the hostile Indians; and if any of the officers have been killed, it was not owing to a feud with the Company, but merely to some private quarrel or accident; whereas the American Fur Company, immediately outside their borders, are perpetually at feud with the neighbouring Indians. They were, moreover, if the keenest of merchants, the most hospitable of hosts, and the many scientific expeditions which passed through their territories could never have done their work save for the much-abused "Company's" aid. Therefore, we are justified, from these and other facts—which might be quoted, were not "the countries of the world" wider than the Hudson's Bay territories—in asserting that the rule of the great Fur Company was, on the whole, beneficial to North America, as well as to the Indian tribes, and that it did honour to the British name.

Those who remember the old times cannot but feel some regret at the decease of the great corporation; and as the writer of these lines passes their warehouses in Gracechurch Street, he cannot help repeating to-day what he wrote years ago of the Company in a sketch, the chief passages of which are reproduced here, the words of Charles Lamb's lament over the South Sea Company:—"This was once a house of trade, a centre of busy interest. The throng of merchants was here, the quick pulse of gain; and here the forms of business are still kept up, though the soul be long since fled."

CHAPTER VIII.

The Fur Countries: The Fur Trade and the Fur Traders.

In the year 1870 he who writes these lines wrote a brief narrative of the rise, decline, and fall of the great Fur Company. As the account is quite forgotten, appearing as it did as an ephemeral magazine, he intended to reproduce some of its passages in this work, but believed that much of it must be long ago obsolete. In Europe there have been wars and revolutions—kings have been put up and kings have been pulled down. In America events move even still more rapidly. He found, however, that of all things the fur-traders, far out of the limits of cultivated lands, stood still. Consulting a famous factor of the dead monopoly, he was assured that the affairs of the fur-traders are, like the laws of the Medes and Persians, unchangeable. One goeth and another cometh, but their business is the same. A fur may be worth more one year, and less the other, but in the end it is the same; it is only a matter of a few shillings. It is trapped in the same way, it is traded after the same fashion, it is sent out of the country and sold in London with the same formalities. When the fur animals cease to exist then will also the fur-traders. Meantime, therefore, what was true some years ago may be true yet, and so without fearing that I mislead my readers, I may perhaps draw upon my notes of 1870 for a description of those main features of the fur-traders, fur-trade, and fur-trappers of the present day.

Fur Trading.

A typical "fort" of the Hudson's Bay Company was not at best a very lively sort of affair, though sometimes, built on a commanding situation at the bend of some beautiful river, and backed by wave after wave of dark pine forest, it was not unpicturesque in appearance. Fancy a parallelogram of greater or less extent enclosed by a picket twenty-five or thirty feet in height, composed of upright trunks of trees, placed in a trench and fastened along the top by a rail, and you have the enclosure. At each corner was a strong bastion built of squared logs, and pierced for guns which could sweep every side of the fort. Inside this picket was a gallery running right round the enclosure, just high enough for a man's head to be level with the top of the fence. At intervals all along the side of the picket were loopholes for musketry, and over the gateway was another bastion, from which shot could be poured on any party attempting to carry the gate. Altogether, though perfectly incapable of resisting a ten-pounder for a couple of hours, it was strong enough to resist almost any force that the Indians could bring against it. Inside this enclosure were the storehouses, houses of the *employés*, wells, and sometimes a good garden.* All night long a watchman would pass round this gallery crying out at intervals, with a quid of tobacco in his cheek, the hours and state of the weather.

* See the engravings in Milton and Cheadle's "North-West Passage by Land," and in "The Races of Mankind," Vol. I., p. 216.

This was a precaution in case of fire, and the "calling" was to prevent him from falling asleep for any length of time. Some of the less important and more distant outposts were only rough little log cabins in winter—cabins among the snow—without picket or other enclosure, where a "postmaster" resided to superintend the affairs of the Company. The winter hut figured on the opposite page might well stand for the portrait of such a humble "post." The mode of trading was peculiar. It was an entire system of barter, a "made" or "typical" beaver skin being the standard of trad This was, in fact, the currency of the country. Thus an Indian arriving at one of the Company's posts, with a bundle of furs which he intends to sell, proceeds, in the first instance, to the trading-room; there the trader separates the furs into lots, and after adding them up delivers to the Indian a number of little pieces of wood, indicating the number of "made beavers" to which his hunt amounts. He is next taken to the store-room, where he finds himself surrounded by bales of blankets, slop coats, guns, scalping-knives, tomahawks (all made in Birmingham), powder-horns, flints, axes, &c. Each article has a recognised value in "made beavers." A slop coat, for instance, may be worth four beavers, for which the Indian delivers up twelve pieces of wood; for a gun he gives twenty; for a knife two, and so on, until his stock of wooden cash is expended, more especially to the west of the Rocky Mountains. In others, the following is the system in vogue, which I describe in my late friend Mr. J. Keast Lord's words:—"The standard of value throughout the territories of the Company is the skin of the beaver, by which the price of all other furs is regulated. Any service rendered or labour executed by Indians is paid for in skins, the beaver skin being the unit of computation. To explain this system, let us assume that four beavers are equivalent in value to a silver fox skin, two martens to a beaver, twenty musk-rats to a marten, and so on. For example's sake, let us suppose an Indian wishes to purchase a blanket or a gun from the Hudson's Bay Company. He would have to give, say three silver foxs' or twenty beaver skins, or two hundred musk-rats, or other furs, in accordance with the proper relative positions of worth in the tariff. The Company generally issue to the Indians such goods as they need up to a certain amount, when the summer supplies arrive at the posts, these advances to be paid for at the conclusion of the hunting season. In hiring Indians east of the Cascade Mountains, whilst occupied in marking the boundary line, our agreement was always to pay them in beaver skins, say two or three per day, in accordance with the duty required; but this agreement did not mean an actual payment in real skins—a matter that to us would have been impossible—but that we were to give the Indians an order on the nearest trading post of the Hudson's Bay Company to supply him with any goods he might select, up to the value of the beaver skins specified.* This was written some years ago, Fort Colville being the particular fort which the writer had in his mind's eye, and the spread of civilisation, and consequently of dollars, has slightly altered the system of trading on the Pacific slopes. But essentially the ideas are the same as then. At every post, or at least at every district, there is a tariff established which varies little year by year. The Indian cannot understand the varying price of furs, and, accordingly, the Company takes

* "At Home in the Wilderness," p. 57. This work abounds in interesting particulars regarding life in the fur countries

A WINTER HUT IN THE SASKATCHEWAN COUNTRY.

the worth of this change, and, unless the fall be of long continuance, gives the same price for the furs as formerly, when it was high, or *vice versâ*. Therefore, as Dr. Rae pointed out to the Select Committee of the House of Commons, the Company loses on some furs, but it compensates itself on others.* The Indian need not, however, attempt to beat down the price. The tariff is unchangeable. If he be not pleased, he is at perfect liberty to go to the next shop; and this, combined with the fact that the Company sells nothing to the Indians which is not of the best quality of its kind, has gone far to gain the confidence of the natives in them over the American traders. At some of the forts the Indian is introduced, while bartering, into a narrow passage, the end of which faces a window, like the window of a railway or theatre ticket-office. Here the "noble savage" conducts his negotiations with the trader. After finishing he is presented with some trifle in addition to the payment for his furs, and makes room for some one else. The passage is crooked, for the simple reason that experience tells the merchant that the Indian is apt, in a heated bargain, to shoot him from behind!

The Fur Traders.

The officers of the Company have been classed as follows:—First, the labourer, who is ready to turn his hand to anything: to become a trapper, fisherman, or rough carpenter, at the shortest notice. He is generally employed in cutting firewood for the consumption of the establishment at which he is stationed, shovelling snow from before the doors, repairing all sorts of damages to all sorts of things; and, during the summer, in transporting furs and goods between his post and the nearest depôt. He is often called a *voyageur*. Next in rank is the interpreter. He is, for the most part, an intelligent labourer of pretty long standing in the service, who, having picked up a smattering of some Indian language, in addition to his native Gaelic or Canadian-French, is useful in trading with the natives. After the interpreter comes the postmaster, usually a promoted labourer, who, for good behaviour or valuable services, has been put on a footing with the gentlemen of the service, in the same manner that a private soldier in the army is sometimes raised to the rank of a commissioned officer. Next are the apprentice-clerks—raw lads, who come out fresh from school, with their mouths agape at the wonders they behold in Hudson's Bay. They grow more sensible and sedate as they pass through the first five years of their apprenticeship, when they attain the rank of clerks. The clerk, after a number of years of service, becomes a chief trader (or half shareholder), and in a few years more he attains to the highest rank in the service—that of chief factor. All other officers of the Company, such as surgeons and ship-captains, equally pass through these grades, and take relative rank, though, of course, they are not apprentice-clerks at any time. Frequently nowadays this initiatory training is also dispensed with in the case of the ordinary mercantile officers. The average salaries of the clerks vary from £20 to £100, with board, and clothing at a little over cost price; while the emoluments of the higher officers vary according to the dividend. They are almost invariably Scotchmen, while the labourers are Orkney men, French-Canadians, and Norwegians. Indeed, for a long time, no young man in Orkney had much chance of his matrimonial proposals being favourably

* Report of Select Committee on the Hudson's Bay Company (1867), p. 36.

received until he had shown his manhood by having made a voyage to the "Nor'-wast." Not so many young men of good family now enter the service as formerly, the prospects of promotion not being so great, and when promotion does come the profits are less than they used to be. The labourers are paid miserably—only about £1 or 30s. per month—but still the Company have no great difficulty in obtaining their complement of men.

Winter is dull enough in these snow-choked forts. The furs have to be sorted, looked to continually, and packed. Then the officer occupies his leisure time in reading what books he has, telling interminable stories, sleeping, hunting, or in preparing specimens of natural history, in the study of which not a few have attained eminence. I have heard of a fort where the inmates were so hard pressed by *ennui* that, as my informant told me, "they absolutely began to write commentaries on the Gospel of Ezekiel!" As the spring advances the officer repairs the fort, and gets the furs out to a rendezvous, where the functionary in charge of the "brigade" meets him and others, and delivers over his stores. The rivers are the chief highways in these roadless lands. Often there is immense trouble before the furs can be brought to the coast. The rivers may be so shallow that they have in places to be deepened for the passage of the canoes, and sometimes the winter snow overtakes the convoy and his bales before he can reach the rendezvous. Cases have been known, not only in which the horses had to be killed, but in which even the hair had to be singed off the furs, to broil the skin for food. The furs are now taken down to Victoria or Montreal, sprinkled with rum, packed in old rum casks, or in moth-tight rooms, and despatched by quick-sailing double-manned ships to England. To the annual sales come the fur-dealers from every part—Russians, Bulgarians, Poles, Greeks, Jews, and Gentiles of all nations. Gracechurch Street, London, is then a study for the ethnologist. The dividend is declared by the "Governor, Deputy-Governor, and Committee," who preside over the shareholders in London; and the programme for the following year settled on. And so the routine of the great Fur Company proceeds.

Living far in the outer world, these exiles derive their notions of the ways of the rest of mankind, either from books—often of rather an ancient date—from a raw, newly-arrived clerk, to whom Kirkwall or Inverness were cities, from a rare visit to a frontier town, or from some semi-civilised traveller, naturalist, or sportsman, who may find his way, after long journeyings, to the traders' bepicketed fort. Sometimes a hoary old factor would go to Montreal, or even to London and Paris, and come back with a wondrous display of nicknacks, peculiar photographs, and the undisputed privilege to talk like Sir Oracle, and to shoot with the long-bow for the remainder of his natural life. They conduct—or did conduct—their business much as business was carried on in Charles II.'s reign; and they talked of the world as it was when they left it raw lads, perhaps forty or more years before. Duelling was still supposed to be the "correct thing among gentlemen," and it was thought quite indispensable to a "gentleman's honour to call out another gentleman," with whom the challenger had lived on terms of friendship for many years, and must, perforce, should the bullet not do its wicked work, therefore live in enmity a good many more yet. Many of the Company's officers are, however, polite and even polished gentlemen. One I knew who was a good classical scholar, and more familiar with Tasso,

Dante, and Alfieri than any one whom I have met since that date. With their wild surroundings these people soon became half courtier, half savage; the polite side of their existence only to be uncovered when—rare event—a stranger came amongst them. Some of the officers were men of "good family," and proud of their gentle blood and long descent; and all the more so that they were Scotchmen, and had a forty-linked cousinship among Highland lairds and caterans. Not less proud were they of their connection with *the* Company. They never looked upon themselves in the light of mere clerks of a

FUR ANIMALS: THE WOLVERINE, OR GLUTTON. (*Gulo luscus.*)

commercial corporation, but talked most contemptuously of "quill-drivers" and "counter-jumpers" generally. No Government clerk was prouder of his appointment, no young East Indian "writer" in the palmy days of John Company more exultant over his, than were the young clerks in the great Fur Company's employ. And with reason too; for many of them, within a year or two of their entrance on duty, were governing a district as large as Scotland, thinly peopled, no doubt, but with unchecked and almost irresponsible power, over the destiny of the few hundred savages who trapped furs for his masters. Then from being merely in receipt of a salary, they rose to be "traders" and "factors." When they were "partners" in the Company, they shared in its profits, and had in their turn the making and unmaking of factors and chief factors; the headship of a department was hardly beyond their reach, and they might even attain the summit of all human greatness, and become "Governor-General of Rupert's Land."

MAP OF BRITISH NORTH AMERICA

When the young clerk went out to "the country," a wife as a *compagnon de voyage* was out of the question; and most frequently, when he was able to marry, like the other pioneers of our dependencies, he was far distant from the women of his own race, or from civilisation of any sort. Accordingly, it was common among the servants of the great Fur Companies to take a daughter of the land to wife, not only because few white women cared to take up their lot with the rovers of the wide fur countries, but that it was also a matter of policy to ingratiate themselves with the powerful Indian tribes among whom they were thrown. So sons and daughters were born to the Macs and Pierres, and the blood of Indian warriors mingled with that of "Heiland lairds" and French bourgeois, the traders, the trappers, and the *voyageurs* of the great Fur Company. Between the husbands and wives there could, of course, be little sympathy. The uncivilised wife clung to her customs and her people, while the husband treated her not as an equal but an inferior. However, in course of time, as a fort grew older, there arose up around it a number of half-breed girls tolerably well educated, not unintelligent, and no way deficient in beauty. Add to this a handsome figure, and that peculiar sweetness and *naïveté* peculiar to the half-breed, and it is not to be wondered at that she should soon charm the young officer out of the recollection of the fair-haired Scottish lasses he had left in the Glen of Tramowhusky. Moreover, when it is considered (and you may be sure Donald M'Donald, the "pushing" young clerk, was not at all deficient in reflection that way) that these young ladies were often the daughters of the great factors and other officers of the Company, the wedding of them can scarcely be called an act of great self-denial. The old factor would not be apt to forget his son-in-law when the next batch of chief traders was to be made, and, moreover, dying often possessed of an abundance of filthy lucre, would render his daughter's husband independent of the Company. It used to be a tradition that to marry a "white" woman and be an Englishman meant ruin to a youthful *employé* of the great fur-traders.

Most of these savage-mated men educated their children tolerably well, and though the Indian clings to them keenly, yet very often they turn out very well. Those who have taken unto them "some savage woman" do not often return with their aboriginal spouse and her dusky brood to Britain, but remain in the country. In British Columbia, Manitoba (Red River Territory), the Valley of the Willamette, in Oregon, and other localities, many of the Company's officers and servants have settled down as farmers. Indeed, there are certain localities in these provinces and states where the population is all of that type. Whether their descendants will be for good or evil to the West is a problem, though many will not hesitate to decide that it will be for evil. I cannot bring myself to so sweeping a conclusion, for as yet the experiment has not got a fair trial. Education and association with a superior race will do much for the next generation. Vacillation and want of strength of mind seem the weak points in the half-breeds' characters. The girls are sometimes no better than they should be, and the boys often drunken and disreputable, frequently combining in their person the bad qualities of both races. However, some have been in the local legislatures, and others have held commissions in the army, although, perhaps, neither office will afford a striking proof of their morality. Among my acquaintances are embraced one or two tolerably honest lawyers and several doctors—not more deadly than ordinary, but whose dusky countenances

tell that if they traced their ancestry back to their grandfathers it would assuredly land them in a wigwam!

The discipline maintained in the forts and travelling-parties of the Company, though free and easy, was yet within certain limits severe, and was rarely rebelled against. It was often a wonder to me how a party of grey-haired *voyageurs* would obey a mere boy, against whom they could have rebelled with impunity. The reason of this was probably owing to the docile character of the French-Canadian and Orkney men, and to the traditional *esprit de corps* of the Company. I only know of one instance of downright rebellion, and that was in a very remote fort on the Stekin River, in Alaska. Incensed beyond all endurance at the drunken madness of the officer in charge—a half-breed—one of the men, a French-Canadian, shot the latter. Few offences of a serious nature are, however, ever committed in the fur countries—at all events, we hear little about them. They were either condoned, or summarily punished by the Company, without coming before any court. If an Indian murdered one of the Company's servants, he was pursued, captured, and hanged; if not at the moment, at another time, though it might be years afterwards. The French-Canadian, puzzled by the endless "Macs," usually designated his officers by nicknames. Thus, he knew Ms'ieur Mackenzie *le rouge*, M. Mackenzie *le blanc*, M. Mackenzie *le borgne*, M. Mackenzie *le picoté*, M. M'Donald *le grande*, M. M'Donald *le prêtre*, M. M'Donald *le bras-croche*, and so on, according to some distinguishing mark or personal peculiarity. He was hard worked, and poorly paid, but yet thoroughly believed in *la Compagnie*, and looked upon it in the light of little better than treason if you ventured to doubt whether "the Company" was an independent power, of which Great Britain was only a powerful ally, and America the natural enemy! A marked distinction was kept up between "men" and "gentlemen" in all records of the Company. All above and including the rank of clerk were *gentlemen*, all beneath were only *men*.

The Food of the Fur Countries.

The gentlemen in the forts all dined together; if it were a large fort, in the "hall," but from this meal their wives were excluded. The fare on these occasions was, in the interior forts, often poor enough, and had a tendency to run upon one particular article. At one season it was all wapiti, at another all beaver, and at a third buffalo. If beaver were in—it was beaver boiled, beaver smoked, beaver roasted, and beaver-tail. If salmon were running in the river, the fort table had salmon until we wished for a salt herring. At some of the forts on the borders of the great prairies east of the Rocky Mountains the delicate prong-horned antelope (Plate VI.) appeared occasionally in the bill of fare. Sometimes there were mighty hunters in the fort. Then it was that the grizzly was slain, or in the dull winter days the roaming brown bear would be rooted out of its hybernation, valiantly slain, and borne back to the fort in triumph, the resinous pine torch lighting the hunters and the porters through the gloomy forest at the waning of the day. Such a scene is portrayed in our cut on p. 181. At some of the far Northern interior forts, where the furs were only taken once in every two years, and the "outfit" once in the same interval, the officers' supply had to be limited enough. At Fort ———— there prevailed a tradition that the "outfit" for the personal needs of the unfortunate wight in

charge used to be ten pounds of powder, fifty pounds of lead, and a pound of fishing-tackle. But New Caledonia (or what is now the northern portion of British Columbia) was the *bête noir* of unfortunate clerks, and to that region were banished all who had offended the powers that were at Fort Victoria or Vancouver. At the great depôts on the coast the chief officers dined in sumptuous style, with no lack of old Hudson's Bay port, kept many years in the Company's cellars in London before it made the sea voyage to the North Pacific, while in others the dietic necessities were so incapable of being varied that to keep up table discipline the officers fed on red salmon and the men on white—the one, in other words, on good fish, the other on bad; though both were equally cheap to the Company. In fact, it was a favourite remark with the old factors at Victoria—when descanting on the vices and extravagances of the new comers, whom the gold mines had attracted to "the country," compared with their model men, the "old settlers," and the Hudson's Bay *voyageurs*—to remark, with a countenance expressing a fear of the decay of the constitution, "that common working-men absolutely eat *red* salmon!"

When travelling, "pemmican," or tallow mixed with pounded dry buffalo meat, and run into skin sacks—and now so familiar to any readers of Arctic voyages—was the favourite food, bread was often never tasted for years; and though, in times of scarcity, they were often hard pressed, yet, when provisions were abundant, the men were well fed, and indeed were merry considering their hard work. In addition to a suit of clothes, generally consisting of a blue cloth "capot" (or one made out of a blanket), leather trousers, made after the Indian fashion by his wife, a striped cotton shirt, and a fur cap, with a game belt of variegated worsted, or even netted silk, and often a gorgeous "fire bag" for holding pipe, tobacco, &c., and a carrot of tobacco *per annum*, the Company used to allow each man *per diem* eight pounds of solid meat of buffalo, venison, horse, &c., and ten pounds if there was bone in it. In the autumn months, in lieu of meat, each man would receive two large geese, a few ducks, and fish was supplied in like proportion. Sometimes in wet weather, or in making long "portage," there would be served out a glass of rum; but though both officers and men were rather addicted to a carouse when they could compass it, yet generally they had perforce to be very temperate. I have before me a note of the daily consumption of dried buffalo meat at Fort Edmonton, in the buffalo country on the Saskatchewan Plain. At the date of the statement (February 2, 1858), there were living at that post twenty-seven men, nineteen women, and forty-eight children, in all ninety-four persons; and to this family the officer in charge daily distributed no less than 406 lbs. of meat! However, to prevent astonishment at this enormous butcher's bill, it ought to be mentioned that this was their exclusive food—no bread, potatoes, or other vegetables being, in general, eaten with it. At New Year each family received a little rum, a few pounds of flour and "grease," and a beaver, or piece of elk, &c., which was called the "régale." On New Year's morning they called upon the officer in charge of the fort to wish him the compliments of the season, when they were treated to sweet cakes and a glass of rum. The day wound up with a ball, and I have particularly observed, in the journal which is kept in each fort, that on January 2nd there is this suggestive entry: "*No prayers this morning.*" If you listened to the men, there was no evil which *la Campagnie* was not guilty of conniving at, and their wrongs were endless. They would tell you, for instance, how, when a man's

DIGGER INDIANS OF THE SIERRA NEVADA MOUNTAINS.

engagement was up, he could never get out of the Company; he was either in debt, or his accounts were scattered all over the country. Generally, however, when you began to inquire into these wrongs, it would be found that most of them were groundless or exaggerated. Still, the Company after their own fashion exacted a very fair return for their money.

The Profits of the Fur Trade.

About the *profits* of the Company there has been grave misapprehension. Certainly at first these were enormous. In the hostilities between the French and English from 1682 and 1688 they lost £118,014, yet in 1684 a dividend of fifty per cent. was declared, and in 1689 one of twenty-five per cent. The capture of fortresses by the French at intervals between 1682 and 1697 cost them £97,500. Yet, shortly after the peace of Utrecht, they had trebled their capital with a call of only ten per cent. on the shareholders. No wonder that in those days, and for long after, a Hudson Bay share was never in the market. An old gentleman (one of the most celebrated, historically, of all the heroes of fur-trade, now deceased) told me that, when he established Fort Dunvegan, on Peace River, near the Rocky Mountains, the regular price of a trade musket was Rocky Mountain sables piled up on each side of it until they were level with the muzzle. The sables were worth in England at least £3 apiece, and the musket cost in all not over £1. The price of a six-shilling blanket was, in like manner, thirteen beavers of the best qualities and twenty of a less excellent description. At that time beaver was worth 32s. per lb., and a good beaver would weigh from 1 lb. to 1¼ lb. Gradually the Indians began to know better the price of a musket and of their furs, and to object most decidedly to the one being piled along the sides of the other, which report saveth was lengthened every year by two inches, until the barrel reached colossal dimensions. Finally, a pestilent fellow discovered silk as a substitute for the napping of beaver hats, and from that dates the decline of the Hudson's Bay Company. The Company held by their beaver skins until they saw it was hopeless. This fur has never since rallied in price. So rapid was the fall that, while in 1839 beaver was 27s. 6d. per lb., in 1846 it had fallen to 3s. 5d. As beaver was the staple of the fur-trade the profits rapidly decreased. At the present moment beaver is obtained from the Indians at Victoria, Vancouver Island (where there are numbers of fur-traders besides the Hudson's Bay Company), for 5s. per lb., and is worth in London about 8s. or 9s. Just now the dividends of the Company are very moderate. But, of course, there is the value of their forts and "plant," the land round these forts, which may eventually (as did that on which the town of Victoria is now built) rise immensely in value, and their sailing vessels and steamers, besides the various sums which they have received as indemnity from the United States and the Canadian Governments, and as the price of the town site of Victoria and other places built upon their land.

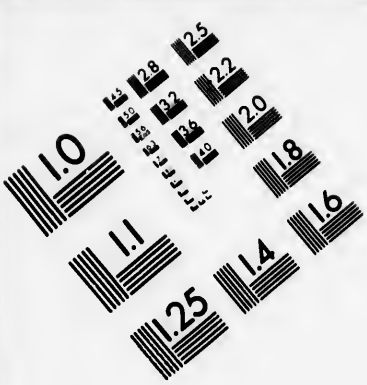
I may add that I lately read in a publication which, if not authoritative, ought, from its enormous circulation to be so, that £20,000,000 have been extracted from the profits on the furs bought from the Indians, and that notwithstanding the Company have done nothing for the amelioration of the aborigines, and have in their territories neither church nor school. The first statement may be perfectly correct; the second can only be characterised as untrue.

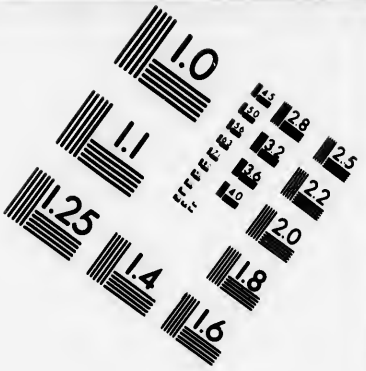
CHAPTER IX.

The Fur Countries: The Hunters and the Hunting Grounds.

When the writer of these pages first landed in North-West America—few as are the years that have elapsed since then—it was a very different country from what it is now. The old romance of the far West had not died out of it, prosaic civilisation had as yet little affected the greater portion of it, and even the new life had, what is now fast disappearing, a picturesque aspect of its own, due to the sudden overturning of the dreamy past. It was then, as it is still, a region of dense forests, snowy peaks, and rapid rivers—a land interesting both to the geographer and naturalist, as well as to the mere lover of wild adventure and the hairbreadth escapes common to the stirring life of the fur-trader.

Was it not in this region where that most redoubtable of travellers—Captain Lemuel Gulliver, of London, whilom of Lilliput and Laputa—located the wondrous land of Brobdingnag, and where the old Greek pilot, Juan de Fuca, was sent to fortify the strait which now bears his name, in case the English should pass through it from the Atlantic to the Pacific? It was the land where Cook won some of his laurels, and where George Vancouver grew famous. It was the scene of Lewis and Clarke's famous adventures; and is better known to the general reader as the country which Washington Irving encircled with a romantic interest by his "Astoria" and "The Adventures of Captain Bonneville." To botanists it had a wider and even more enduring interest, for here lay the scene of the researches of Archibald Menzies, David Douglas, Jeffrey, Burke, Geyer, and many others, the fruit of whose labours blooms in our gardens and pineta; while the wild tale of their wanderings forms a fit subject for the story that circles round a western camp-fire when the days grow short and the nights grow dark and dreary. It is a wide region of gloomy pine forests and green sunny prairies; of dismal sage brush plains and of rugged mountain ranges; of rivers up which the salmon ascend in countless numbers; and of quiet placid lakes, from the banks of which the deer look down on the passing *voyageur*, startled by the unaccustomed sight of a human being. It is here where the gold-miner sifts the glittering sands, where the peltry trader holds sway, and where the Indian roams in all his pristine freedom. Or, go down into the warm Californian valleys, or on to the green prairies of the Willamette and the Sacramento, and you may see the oak trees and the sunny terraces darkening with luscious grapes, fruits, and flowers, or league after league yellow with a harvest which helps to feed Europe. It is a land of many climates, of many Indian tribes and races, and the home of a generous manly race, who are fast filling up all the solitary places of the great region they have invaded. Such, at a glance, is North-West America. To me the North-West has even a deeper and a more human interest, for I visited it at a time the like of which can never come back again. For years I wandered over many of the wildest and least known parts of the country, and was fortunate enough to be the companion of many of those who have helped to make its history—shaping their "old course in a country new"—and to mingle in many of its wildest and most stirring





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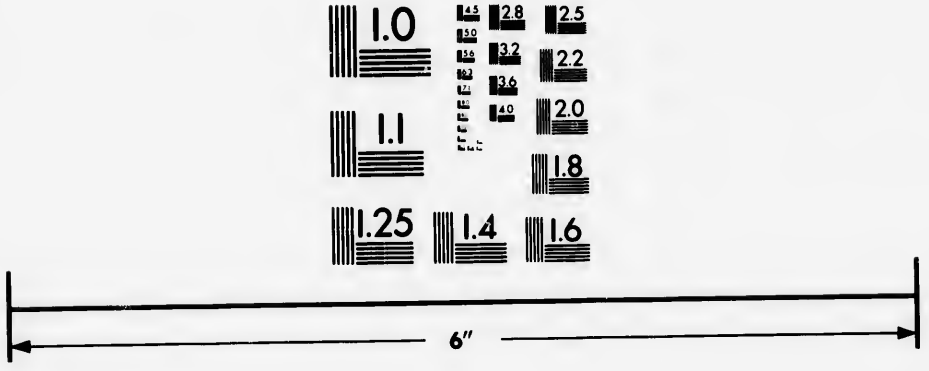

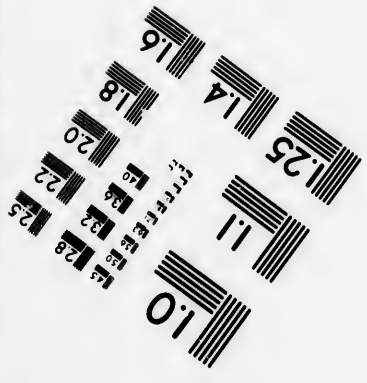

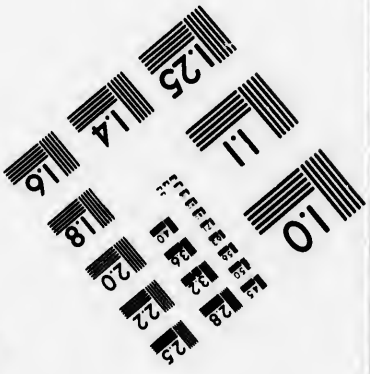

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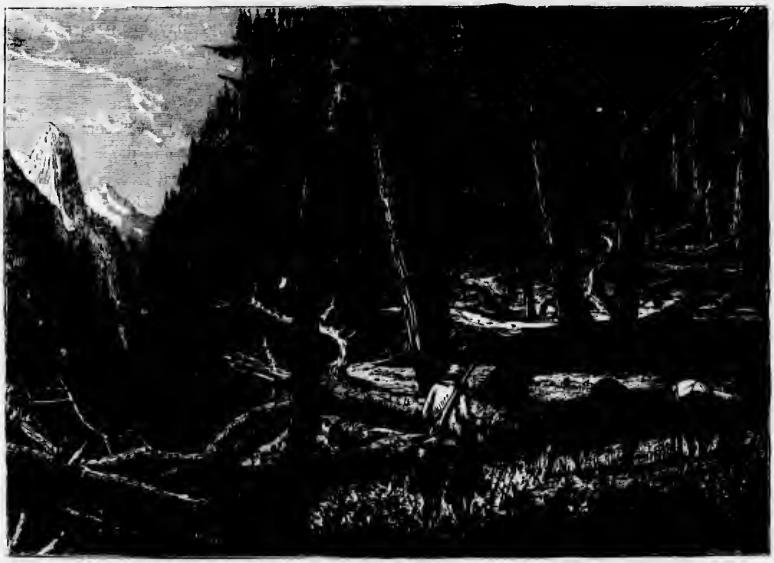
enterprises. "All of this I saw, and part of it I was." During the years I spent in the region sketched out I was every now and again coming upon some links which connected us with the past, just as in the depths of some quiet forest we come upon the remnants of a long past and forgotten race. In Resolution Cove, in Nootka Sound, where Cook records that he laid his vessel up for repair, I disinterred the bricks of the armourer's forge, vitrified and fresh as if it had been built but yesterday. The lordly Spanish Dons who once held Nootka had left their traces in cannon balls and Mexican dollars, which are still occasionally dug up on the site of the old fort. The Indians still remembered, by tradition, the story of their surrendering Nootka to Vancouver; and no historian could have told it in quainter words:—"The men began to cultivate the ground, and erect a fort and stockade, when one day a ship came with papers for the head man, who was observed to cry, and all the white men became sad. The next day they began moving their goods to the vessel."* The Spanish features were not uncommon; and Indians lived there who could count ten in Spanish, and repeat many traditional words of that language. The grandson of old Moquilla, whose name occupies so prominent a place in the records of those stirring times, still ruled Nootka Sound, when, with a solitary companion, I paid it a visit for the first time after he had murdered the crew of a trader six months before. The visit I am likely to remember for some years to come; for then was it that I had the dismal satisfaction of hearing a lively discussion on the (to me) rather interesting question of whether it would not be better, for state policy, to cut off our heads, on the principle that headless men tell no tales. That the "ayes" were in the minority in Moquilla's council this record is the proof. Vancouver's name they pronounced quite distinctly; and I still found in Puget Sound a last connecting link between his day and ours in the person of old Seattle, chief of the tribe which occupied the site of the modern town of that name. What thoughts must have been running through the mind of that old man as he glanced over the wonderful story of the seventy years which had come and gone since George Vancouver's stately ships sailed up Puget Sound I know not, for the leathern countenances of these Indians, like dead men's faces, tell no tales. At all events, all that he seemed to remember of the great sailor (and that he related with extreme gusto) was how the pig-tailed boatswain's mates used to give three dozen to the men of a morning; and the reminiscence was quite in keeping with the martinet character of the man! The medals that Lewis and Clarke distributed among the Indians at the mouth of the Columbia could still be sometimes seen in the Chinook lodges, though that tribe had long disappeared, with nearly all the Columbia and Willamette tribes, from their old homes. Old "Astoria" *voyageurs* I sometimes still come across, though on the site of the old fort a smart Yankee village had sprung up, and it was looked upon as quite an antiquarian feat to point out the site of old Fort George which the irate British officer—who had pressed all sail after the last war broke out with America, expecting to surprise a rich arsenal—declared most irreverently he could blow to pieces in a quarter of an hour with a 10-pounder. The son of Pierre Dorion, whose escape with his heroic mother, after the murder of his father, is so graphically portrayed by Irving, was my companion for weeks together before I

* See "Sproat: Scenes and Studies of Savage Life," p. 26.

knew how historically interesting was my *compagnon de voyage;* and the grandson of the one-eyed Concomoly, chief of the Chinooks, the marriage of whose daughter to the factor of Astor is so amusingly related, trudged side by side with me for many a summer's day. Captain Bonneville was not to me, as he is to many, merely an abstraction, invented by the novelist on which to hang many a quaint old tale of love and war, but a hearty, genial old veteran, who fought his battles anew, when he got so ready a listener as



IN THE ROCKY MOUNTAINS.

was the writer of these recollections.* Of all the old botanical explorers I saw or heard more or less. I gathered cones from the very trees which Douglas himself did, and his initials, rudely cut, could yet be deciphered on the bark of a pine-tree. Tolmie, to whose researches Hooker was so indebted when publishing his "Flora Boreali-Americana," was yet living in the country, a hale chief factor in the great Fur Company; but, if the truth must be told, rather more interested in a pelt than in a plant. A lonely grave, however, marked the last resting-place of Gairdner; and the *Dalles de mort* of the Columbia was the death-place of more than one scientific explorer.

* See the author's Sketches of Men and Manners on the Pacific Slopes of the Rocky Mountains, in Dickens's *All the Year Round*, 1868 *et seq.*

I saw Nature in her wildest condition, and yet saw also enough to show that she will not long remain thus. Already the Pacific railroad is changing the whole aspect of the region through which it runs. The forests will be no longer wide unbroken seas of trees; the lumberman and the railway contractor will soon humble their majesty. When the prairies become "real estate," and the river cascades only "water privileges," then the noble forests of North-West America will be only so much lumber—"middlin' good" for "sluice boxes" and "clapboard shanties," but no great things at that either. A race innocent of sentiment as of science, and ignorant of the grand old past, are filling the places that a few years ago knew them not; and though they may bring many of the advantages of civilisation, yet with them will depart much that was fair and of good report in the pleasant past.

We propose, therefore, while it is possible, to present in these chapters some brief sketches of the countries on the western slopes of the Rocky Mountains, mingling with them and diversifying the more scientific matters by some glimpses of the wild life and denizens of these regions. We may also be pardoned if, while passing through these great forests and prairies, we speak of the men who pursue their callings in that great lowland—the simple-minded, lightsome-hearted *voyageur*, strong in his belief in *la compagnie* as an independent power; the "honest miner," who shouts to us as we pass his claim on the creek down in the valley; the stalwart backwoodsman, whose axe rings on the hill-side, and who hails us as a brother—only of a more theoretical sort—as we pass his logging camp; the sinewy, leather-shirted "mountain boy," whose trust is not in princes or in presidents, but in his beaver and marten traps, whose geography is limited to the circuit of his own travel, and whom you can incense in no worse way than by venturing to cast a reflection on the "plugging" power of the "five foot o' holler iron" he carries over his shoulder; or the swarthy Indian who steers our canoe down some unexplored river, and whose race is disappearing before the flood of civilisation "like ghosts before the cock-crow." While we can, therefore, let us snatch from oblivion some little fragments of what North-West America was when we knew it in the gladsome years of the decade coming to a close. "The earth hath bubbles as the water hath;" surely these are not "of them."

The Free Trapper.

The fur-trade bred up a class of men the like of which the world never saw before and will never see again. The progress of the settlements and the failure of the peculiar calling by which they made their profit have led to their decay, and will soon lead to their entire extermination. In future years they may be included among the creatures of romance, unless those who know them more intimately than in books narrate their experiences of them and rescue some of their characteristics from oblivion. They were a product of the fur countries of North America quite as much as the bear, the beaver, or the marten, and infinitely more interesting. The countries which only thirty or forty years ago, or even less, were the scene of their adventures are now thickly populated. Where they pitched their camps are busy towns, and on the scenes of their bloody fights with the savage Indians, children play unconscious of the mouldering remains of the "great, victory" which their father's plough ever and anon brings to the surface.

It was in the palmy days of the fur-trade, when beaver was thirty shillings or two pounds per pelt, or when Rocky Mountain martens worth three or four guineas apiece piled on either side of it were the price of a trade musket worth twenty shillings (p. 174), that the free trapper flourished. He trapped for no particular company, but was courted by the *bourgeois*, as the head men of the traders were called, of all, and he sold to whom he pleased. In the summer these men would start out in bands, and, as convenient places for their business presented themselves, would drop off in twos and threes, with their squaws and horses, until they came to some great valley, when they would set their traps in the streams, and, if sport presented itself, camp there for the whole summer. Their camp usually consisted merely of an Indian leather lodge, or some brush rudely thrown together. If the neighbourhood was infested by Indians they would have to keep concealed during the day, as it was rarely that some high-handed act, or the jealousies of business, did not render a meeting between the trappers and redskins a matter of life and death. For the same reason the trapper would generally visit his beaver traps at night, and, fearful of the echo of his rifle alarming the prowling savage, would subsist on beaver flesh, even though buffalo, elk, deer, or antelope (Plate VI.) were abundant in the neighbourhood, and the Rocky Mountain goat and sheep skipped on the cliffs around his haunt.

Beavers, either smoked or fresh, formed the staple article of food of these mountain men; and to this day a beaver's tail is looked upon as a prime luxury. "He is a devil of a fellow," you will hear old grizzled hunters remark of some acquaintance of theirs, "he can eat two beaver tails!" And I quite agree in the estimate put upon a man who could devour so much of what is about as easily masticated, and not half so digestible, as a mess of whipcord seasoned with train-oil and castoreum! If the trapper were ordinarily successful, he would load his horses with the "packs" of beaver skins, and make for the "rendezvous"—generally some trading post, or sometimes some quiet valley where game and grass abounded. Here the traders would meet the trappers, business would commence, and the winter would be spent in riotous living and debauchery. Duels were common, the general bone of contention being the relative merits and reputation for virtue of the respective squaws. Every trapper had his wife selected from one of the Indian tribes with whom he was on ordinarily decent terms, and to whom he was united in Indian fashion. To be a trapper's bride was looked upon by an Indian or half-breed damsel as the height of all good fortune, and a pretty life she led her husband! Nothing in the trader's stores was too fine or too expensive for her; and next to being decked out herself in all sorts of finery, her horse was the object of her solicitude. She was always pettish, and running away to her tribe, with her infatuated husband in hot pursuit; or sometimes she would, to the scandal and delight of the gossips in the rendezvous, elope with some Indian buck, or more favoured trapper.

Often these men, even despite the exorbitant charges of the traders and their winter debauches, made large sums; but they never saved. Indeed, they thought themselves lucky if they were able to "pull through the winter," and enough remained to them to start out for another summer's campaign. Even that did not cause them much anxiety; for a good trapper of acknowledged reputation had never any trouble—to such an extent had competition gone, and so large were the traders' profits—in getting credit for all he wanted. Trappers were

not in the habit of insuring their lives, otherwise learned actuaries would, no doubt, have been able to tell us exactly what were the risks of their business; but some Western statistician—probably a trader in the habit of giving "trust"—estimated the life of the Rocky Mountain trapper at an average, after he had fairly entered the business, of only three years and a half! His life was continually in danger from Indians, from hunger and thirst, from exposure, and his mode of life. While floating down some turbulent river in his "dug-out,"

NORTH AMERICAN INDIAN (CROW).

or travelling through a Rocky Mountain pass in the depth of winter in an endeavour to reach the rendezvous, he carried his life in his hands. He was missed some winter, and little was thought of it. He might have gone to some other trading post. By-and-by the news would ooze round among the squaws; others told their husbands how such and such a tribe of Indians had killed him; and then his horse would be seen, and anon his rifle; and, perhaps, years after, his bones, surrounded by his greasy beaded leather hunting dress, would be found, as trappers were looking for beavers by the banks of some nameless stream. Then some of his companions would vow to avenge his death, and the first Indian of that tribe would suffer for

it if met alone in the woods or other solitary place. The Indian would be "avenged" in like manner by his friends; and so the endless vendettas of the West originated and still go on.

FUR ANIMALS: BRINGING HOME THE BEAR (p. 171).

It may be asked, What could tempt men to follow such a business? There was a charm in the thorough freedom and independence of the life, which attracted free spirits to it. Few of the adventurers, I believe, ever seriously intended to follow the profession for life when they first wandered "'way West." They probably purposed making a little money,

resorted as a last expedient to force. Waiting until the trader was asleep, he hopped to the stable-door, applied his loaded rifle to the key-hole, and in a crack blew the lock off. In another minute the trader, aroused by the noise, was on the ground; but only just in time to see his debtor careering joyously on the back of the white horse over the prairie, waving his cap, and galloping at such a rate as to put pursuit out of the question.

A remarkable man, but one much less known, was Albert Pfeiffer. Like Carson, he was in the irregular Mexican cavalry; indeed, he was lieutenant-colonel of the same regiment. He was a man of a very singular appearance. His red beard grew in patches, the intervening space appearing burnt and discoloured. This was owing to his having been poisoned by some of the Indians' arrow-poisons years before. He wore blue goggles to shield his weak eyes; yet, though they were weak, they were bright, clear, and quick. His face was almost ghastly in its signs of suffering, and he walked stiffly with a cane, being scarred with nearly twenty wounds, carrying in his body some Indian souvenirs of bullets, and bearing two frightful marks where an arrow had pierced directly through his body, just below the heart. A native of Friesland, he came to the United States some thirty years ago, and during all that time served as an Indian pacificator, fighter, and trapper, or as a guide to passes in the mountains known only to himself and the Indians. An acquaintance of mine used to relate an anecdote of Pfeiffer. They had started on a tour together, and as they rode along, "the colonel" gave him various directions how to behave in case they were attacked by Indians; finishing by saying, in his slightly broken English, "And now don't *forget*, if me be wounded, you kill me *at once*, for I will not fall alive into dere infern*al* hands: dey tor*ture* one horr*ibly*. And if you be wounded, *I kill you, you see*. Don't fail!"

Another specimen of the mountain man was an old fellow whom I may call Seth Baillie. (That was not his name, but it will do as well as any other.) Seth was rather an intelligent man; and during our rambles I used to be greatly entertained by listening to his opinions on men and things, on all of which he pronounced with the utmost confidence, though his education (as far as book learning was concerned) was limited, and his range of observation equally so. Still, like all Western folk, he looked upon himself as "particular smart," and a "right smart chance" of an "argifier."

In one of the rougher settlements of the Willamette, in Oregon, I had been asked to stand umpire in the following case:—One day an old settler's boy had come home from the backwoods district school, and told his parents that the sun was many millions of miles away from the earth. The father was a school guardian, and was horror-struck at what he styled, "sich infidel talk;" so the poor schoolmaster was discharged. "Who was ever thar' to measure it, I'd like to know!" the old farmer remarked to me when telling of the atrocious "infidel talk" of the quondam schoolmaster. Thinking the story would amuse Baillie, I told it to him, without, however, venturing an opinion on the merits of the case. Mr. Baillie remarked, "He raythor thought the old 'coon's head was level on that yer question." He proceeded to give his reasons for the faith that was in him. "I once heern talk like that afore, down to the settle*ments*. One fall I was down thar' to do tradin', and when settin' in the store thar' I heern a kind uv half schoolmaster talkin' like that. Sez I to him, 'Mister, do you say the 'arth is round?' 'Wal,' sez he, kind o' laughin' like, 'men uv science say so.' 'Men uv science,' sez I,

'be darned.' I know a sight better. Did you ever come across the plains?'* 'No,' sez the schoolmaster. 'Then,' sez I, 'you don't know nothin' about it; for I com'd across the plains and see'd so far furnenst me, you couldn't see no further. Neow, ef the 'arth war round, heow would that have bin? Neow, once afore I heern a darned fool like

THE WHITE-HEADED EAGLE OF NORTH AMERICA. (*Haliætus leucocephalus.*)

you' (sez I to the schoolmaster, and the boys in the store larfed like mad) 'talk like that, and I didn't say much, but went to hum, and put a tatur on a stump outside my lodge. Neow, in the mornin,' that tatur was just whar' I put it. Neow, ef the 'arth had turned round, whar' ud that tatur hev' bin—eh?' But he didn't say nothin', but giv' a

* Prairies on the eastern side of the Rocky Mountains.

kind of laugh. 'No,' sez I, 'ef the 'arth turned reound thar' would be the tallest scutterin' uv the nations you ever did see. No, mister,' sez I, 'the 'arth's as flat as a pancake, and I know it.' And with that he vamoozed."

Baillie had been a good deal employed as guide to emigrants (or, as he called them, 'emigranters"), for whom he had a supreme contempt. The only job of that sort he ever looked back upon with pleasure was the piloting of a troop of United States cavalry for service in the Indian war of 1855. He greatly admired the "smartness" of the major in command, and the way he settled a troublesome account. They had lost a wagon here, and sold a horse there. A soldier had sold or bartered his carbine now and then; and, in fact, their accounts were in such a state that to present a report and to account for everything to the quartermaster-general was impossible. At last they came to the Columbia River, and to a place where there was a good deal of dry timber. "Are there any falls about here, Baillie?" the major asked. Oh, yes; there were falls not over a mile ahead. "Well, then," the major thought, "we'll build a raft; the road's pretty bad." On the raft was placed a broken wagon, a three-legged mule, five or six broken carbines, an empty cask, and a few other such valuables. The major wished to guide it along with ropes, and, though Baillie assured him that the current was so strong that this was impracticable, he insisted. At last the men shouted that they could hold on no longer. "Well, then, let go!" was the answer; and over the falls in a few minutes went the raft and its contents. "The major cussed a small chance for show's sake," Baillie remarked, "but arter a while he winked, and sed to me, 'I guess that's an A. Q. G.* way o' squarin' accounts!' Everything—and something more, too—that was missing, got scored opposite to it in his book: 'Lost on a raft in the Columbia River!'"

But of all the men Baillie knew, those for whom he had the greatest contempt were the "shootin' gentlemen." Sometimes, when he went down into the settlements, he was asked to act as guide to parties of town sportsmen, his character as a hunter being deservedly high. "They come," Baillie remarked, "in their store clothes, biled rags, and satin waistcoats, with lots of pro-vision and whisky (which ain't to be laughed at, though), though a hunter takin' pro-vision into the mountings with him is the greatest notion I ever heern tell on. Afore they camp at night, they load their rifles, in case of bars; next mornin' they fire 'em off, in case they're damp; and that, Cap'n, as you know, don't bring the deer within a mile or so of the camp. Going out, they see nothin', and swear there ain't no game areound. They then take a few drinks of old rye, which makes them talky, and then they begin somethin' about the darn 'lection ticket, or to shootin' at marks. 'Bout this time they get hungry, and so back to camp, and afore their supper is over it's dark. They then load their shootin' irons again—and so the same old game goes on. Darn me ef it don't, Cap'n! When it's about time fur them to go to hum, I tell 'em to hold on and not to fire, and so I go out and shoot 'em a varment of some sort apiece to show when they go back to the settlements as their shootin', they meanwhile pickin' berries and talkin' 'lection. I guess they like that about as well. Then they don't wash their

* Assistant quartermaster-general.

faces for a day, tear their store clothes a bit, and go back to the settlements as big as a dog with a tin tail, and jest about as nat'ral—skulp 'em!"

Baillie in his day had endured many hardships. He had made meals on many anomalous things from the animal and vegetable worlds, including a pair of old mocassins, sage-brush leaves, grasshoppers, and beaver-skins; and had more than once eaten his horse from under him; but he declared that an old carrion crow was the most unpalatable article he ever dined on.* In reference to this (and the phrase he also applied metaphorically to many things in life, which, though not unbearable, are yet scarcely to be wished for) he used to say, "I kin eat crow, Cap'n, but I don't hanker arter it!"

These "free trappers" were chiefly found in the Far West, and in the regions where there was no monopoly of the fur-trade. The Hudson's Bay Company depended on the Indians, and only employed these former expensive and unruly *aides* when the exigencies of competition demanded. The American companies bought chiefly from them, but they had also covenanted servants. These free trappers trapped, as we have said, for no one in particular, but sold to whomsoever they thought to make the best bargain with. Being therefore nearly confined in their operations to United States territory, they were mostly Americans. But as late as 1847 at least there was an old officer of the English army, who had been at Waterloo, who followed this business in his declining years. He was then about sixty, vigorous and athletic, and his manners, intelligence, and general address were quite out of keeping with the rude buckskin costume of the wilderness in which, like the rest of his fellow-trappers, he was clothed (p. 153). At that date Mr. Bryant estimated the free trappers and traders of the Rocky Mountain region at from 500 to 1,000. "Adventure, romance, misanthropy, and sometimes social outlawry have had their influence in enticing or drawing these persons into the savage wilderness." Volumes could be filled with the traditional history of their ways and life, which yet linger in the West. They were simple as children, yet, like all men who live much alone, and, above all, who know some things not familiar to the rest of the whites with whom they now and then come into contact, had an immense opinion of their own importance and acuteness. Some idea of the dangers of their calling may be gained from the fact that it was estimated—probably by some trader who had given them credit—that after they had once entered upon the business the average duration of their life was not more than three and a half years. Some lived to be old men, and many others were killed off before they had well set their first traps. Yet they loved their perilous trade. The passionate excitement was akin to a mania, and from what I have heard I see no reason to doubt the justice of the summing up of their character which was made by one who knew them well. "No toil, no danger, no privation, can turn the trapper from his pursuit. In vain may the most vigilant and cruel savage beset his path; in vain may rocks, and precipices, and wintry torrents oppose his progress: let but a single track of a beaver meet his eye, and he forgets all dangers and defies all difficulties. At times he may

* In this he agreed with the late Prince Lucien Bonaparte, who remarked on one occasion that in all his ornithological expeditions in America, he had been always able to make a "comfortable meal" on anything he came across, "except a Turkey buzzard and an alligator.

be seen with his traps on his shoulder, buffeting his way across rapid streams amidst floating blocks of ice; at other times he is to be found with his traps on his back, climbing the most rugged mountains, scaling or descending the most frightful precipices, searching, by routes inaccessible to the horse, and never before trodden by white men, for springs and lakes unknown to his comrades, and where he may meet with his favourite game. Such is the mountaineer, the hardy trapper of the West; and such as we have slightly sketched it is the wild Robin Hood kind of life, with its strange populace now existing in full vigour among the Rocky Mountains."

It is forty years since these words were written, and the West is the West no longer as described in these lines. A railway spans the continent; towns and villages spring up like mushrooms. The fur animals retreat from their old haunts, and even become extinct. New trades, quite as profitable and less dangerous, supply an outlet for the energy of the population, and the changes of fashion and the discovery of science have even made the furs, which once gave employment to these hardy men and profit to the fur-traders, no longer of the same value. The fall of the price of beaver in particular rang their death-knell. The few who still pursue the business of trapping do it more owing to former association than from any great profit to be derived from it. Indians and half-breeds have now monopolised this pursuit, and even they, owing to the expense of transportation and the enhanced prices of labour, do not find it sufficiently profitable to follow, except when no other work offers itself. The world is fast filling in; it has left no place for romance; and the hunter and trapper are among the "provisional races," which must disappear before the plough and the reaping-machine. And perhaps it is better after all!

The Hunting Grounds.

It is difficult for an untravelled Englishman to grasp a sufficient idea of the extent of the fur countries of North America. They really compromise more or less all British North America and the colder portions of the United States. In familiar parlance the Hudson's Bay Territories—that were—were the part of America included under the designation of the "fur countries." Now, the Hudson's Bay lands, over which they exercised the exclusive right of trade and rule, were British North America, the Pacific end of that large tract, and the Canadian colonies—including Nova Scotia, Newfoundland, New Brunswick, and Prince Edward Island—on the East Coast excepted. From the British boundary line on to the Arctic Sea all was theirs; throughout all this dreary land "the Company" was king, and few kings on the earth had ever such an extensive realm. Rivers and lakes intersected it everywhere. Prairies were in the centre of it; stunted woods to the North, and still further to the shores of the Frozen Sea—on to the very Pole if they chose—stretched the Arctic wastes. From Pembina, on the Red River of the North (p. 189), to Fort Anderson, on the Mackenzie River, is as great a distance as from London to Mecca. From St. Mary's Post to the Pelley Banks is further than from Paris to Samarcand. Still, throughout all this large territory the Company is practically the ruler, and more than the ruler, for it clothes, feeds, and maintains nine-tenths of its subjects. The country is thinly peopled by Indians of many tribes. Indeed, a thickly-populated country would be unfavourable

BIRCH-BARK CANOES ON THE RED RIVER OF THE NORTH.

to the breeding and increase of fur animals, and as there is almost no cultivation in any part of it, hunting, and trapping, and trading furs, and conveying them to the fur posts, and from the fur posts to the *rendezvous*, are almost the only occupations the country affords. Roughly speaking, the fur countries outside of Canada proper and British Columbia—though all British North America, Newfoundland alone excepted, is included in the Dominion of Canada—may be classed as follows:—There is the wooded region, occupying the country northward from the settlements of Canada along the shores of the Hudson's Bay, and extending down the valley of the Mackenzie and Peace Rivers, nearly to the Arctic Ocean. In this region are several lakes: one of the chief of them is Lake Athabasca, hemmed in on the north and east sides by granite rocks, about 500 or 600 feet in height. It is studded with numerous islets, bristling with pine-trees, which, according to a simile of the Abbé Petitot, gives it the appearance of being studded with masts. The climate is milder than most of the Mackenzie Valley, the Valley of the Peace River being more especially known for its great fertility, and the excellence and abundance of its timber, and its mineral wealth of coal, asphalte, sulphur, gypsum, iron, and gold, especially in that portion of it on the western side of the Rocky Mountains. The Athabasca and Slave Rivers bring down annually a quantity of silt and other *detritus*, which is gradually converting the estuary of the Mackenzie into a huge swamp. The waters of the Great Slave Lake are charged with lime and vegetable matter, and bring down enormous quantities of drift wood and uprooted trees. Lake Aylmer, which runs into the Great Slave Lake, is so close to Lake Sussex, the source of the Back or Great Fish River,* which flows in the opposite direction into the Arctic Ocean, that on many maps the two are joined, and the Great Slave Lake is thus represented as forming the anomaly of a double outlet. Fort Rae is one of the most important stations in this region. The sandy soil in this vicinity is wholly destitute of vegetation, and wood itself is very scarce. The Great Fish River is rich in salmon, trout, carp, perch, and other fish; the banks are frequented by the trumpeter swan, and a variety of ducks, geese, and other birds, while the caribou, or reindeer, and the musk-ox are plentiful. The Mackenzie itself is—

"A full-fed river, winding slow
By herds upon an endless plain."

The Abbé Petitot estimates its total length at 2,500 geographical miles, and its basin as embracing an area of 2,500 geographical miles. There are only five or six rapids, occasioned by spurs jutting out from the main chain of the Rocky Mountains. There are eleven trading stations in the Mackenzie district, eight residences of French and one of English missionaries; the Athabasca district having eight trading and four missionary stations. The vegetation along its banks is poor. The white fir, birch, alder, aspen, and willow are the chief trees. The Banksian fir is also seen, but gets more and more stunted, until at the sixty-third parallel it ceases. At the outlet of Great Bear Lake, where sometimes the temperature falls as low as 76° below zero, the poplar, according to the observations of Dr. Rae, ceases. The birch and the fir, even the "steppe-fir," cease at 68½°, but willows fringe

* Or rather the Great *Whale* River, that being the "great fish," the presence of which in the estuary lent its name to the river.

the delta of the Mackenzie and the banks of the Peel River. The higher grounds are bare of vegetation except lichens, the *Ledum*, or Labrador tea, which is sometimes employed as a substitute for the Chinese herb, and the *Andromeda tetragona*, which is greatly used for fuel. The Abbé Petitot, a late writer on this region, holds out no encouragement to colonists in this section. The culturable ground is only to be found alongside the Liard River, and in a few uplands, such as that on which Fort Simpson is situated, where potatoes, vegetables, and cereals grow, and even wheat ripens in favourable seasons (pp. 20, 22). The Great Bear Lake is larger than the Great Slave Lake. From October to the middle of July it is covered with ice, varying from seven to ten feet in thickness. The more exposed situations are swept by the most violent snow-storms, called "kamatsan," which often wholly bury its sole trading station, Fort Franklin. Dreary though the region is it is frequented by large herds of reindeer, while the rivers yield excellent salmon and enormous quantities of white fish. The trade done in the region of the Athabasca and Mackenzie Rivers is wholly confined to furs, such as those of the bear —cinnamon, Polar, and grizzly—the fox, lynx, marten, wolf, glutton, ermine, musk-ox seal, and musk-rat, and the plumage of the trumpeter swan and eider duck. The Athabasca and Great Slave Lakes are rich in martens, lynxes, sables, and foxes. Fort Good Hope yields gluttons (p. 168), beavers (p. 149), wolves, and a few black foxes, whose skins bring £30 in England, and even £40 in America. "Great Bear Lake is noted for its otters and beavers, which animals are also found along the course of the Mackenzie River, while from the shores of the Arctic Ocean are brought skins of musk-oxen, bears, and white foxes, and swans' plumage." Desolate this region may be to civilised man, yet 60,000 pounds' weight of furs and skins must be annually, on an average, sent out of it. Here money is unknown—beaver being the unit of exchange. A beaver's skin, or *pelu*, as a rule, represents 2s. Thus the skin of a bear, musk-ox, or silver fox is worth four pelus, or 8s.; ermine and musk-rat skins average six for a shilling, and the black fox skin, the most costly of all, one pound apiece.

The North-West Territory is divided into two districts, of which Athabasca and Mackenzie are the most northern. Each district is, of course, presided over by its chief trader or chief factor. The chief forts, such as Garry, Nelson, and others, are built of stone, but they are thinly scattered over an immense territory. The author from whom we quote gives a good idea of the distances between these stations by comparing one of the districts to France, and imagining a post at the mouth of the Seine, another at Paris, a third at Bordeaux, a fourth at Brest, a fifth at Marseilles, and so on for eight or ten forts. Once a year, in the early part of June, he tells us all the tributary forts in the Mackenzie districts send their furs to the chief station, in canoes and *batteaux*, whence the Mackenzie flotilla convey them as far as the *portage*, La Loche, a journey which takes at least two months. Here the furs are exchanged for European goods, brought by boats, which have come up from Fort Garry or Norway House, and the boats, having exchanged their respective cargoes, retrace their steps. The furs are taken to York Factory, in Hudson's Bay, and from thence are transported to London. The European goods are taken to Fort Simpson, where they are distributed to the officers of the different forts, who are thus enabled to pay their debts to the Indians, and make

advances of ammunition, tobacco, hatchets, knives, blankets, and provisions. The method of paying the Company's officers has somewhat changed since the new *régime* came into power. Still, however, the chief officers have no fixed salary, being allowed a share of the profits. This has never for the chief factors been less than £600, or for the chief traders less than £300. The clerks get from £75 to £100 per annum; the postmasters from £40 to £75; the half-breeds, who take charge of the boats on their annual journeys, from £28 to £45, and the ordinary labourers, or *voyageurs*, £24. All these salaries are exclusive of board and lodging. The white and half-breed population of the Mackenzie district numbers about 1,000, and includes natives of England, Scotland, Ireland (very few), the Hebrides, and Canada. The half-breeds are chiefly Franco-Canadians. The pure French element is centred in the missionaries. There are about 10,000 Indians and Eskimo trading along in the Athabasca and Mackenzie districts, but some of them also frequent the northern parts of British Columbia—especially since the Omineca and Peace River diggings have been discovered—and the United States territory of Alaska.

The "limestone district" in this *régime*, as Sir John Richardson tells us, are especially well wooded, but the woods are, of course, extremely stunted by the northern blasts. Travel is not easy, and the difficulty of transporting supplies, &c., to this far-away section of the fur countries is extremely great; hence the prices which they bring. This question I have already discussed briefly, but as it is little understood I may quote a passage from Major Butler, which is thoroughly *à propos* of the point which I wish to impress upon the reader. "The earth," writes the hero of "Akim-Foo," "knows not a wilder spot than the barren grounds of Fort Providence. Around lie the desolate shores of the Great Slave Lake. Twice in the year news comes from the outside world—news many, many months old—news borne by men and dogs through 2,000 miles of snow; and yet even there the gun that brings down the moose and the musk-ox has been forged in a London smithy; the blanket that covers the wild Indian in his cold camp has been woven in a Witney loom; that knife is from Sheffield; that string of beads is from Birmingham. Let us follow one of the ships that sail annually from the Thames bound for the supply of this vast region. It is early in June when she gets clear of the Nore; it is mid-June when the Orkneys and Stornaways are left behind; it is August when the frozen straits of Hudson are pierced; and the end of the month has been reached before the ship comes to anchor off the sand-barred mouth of the Nelson River. For one year the stores that she has brought lie in the warehouses of York Factory; twelve months later they reach Red River; twelve months later again they reach Fort Simpson, on the Mackenzie. That rough flint gun, which might have done duty in the days of the Stuarts, is worth many a rich sable in the country of the Dogrels and the Louchaux, and is bartered for skins, whose value can be rated at four times their weight in gold; but the gun on the banks of the Thames and the gun in the pine woods of the Mackenzie are two widely different articles. The rough old flint, whose bent barrel the Indian will often straighten between the cleft of a tree, or the crevice of a rock, has been made precious by the long labours of many men; the trackless wastes through which it has been carried; by winter famine of those who have to vend it; by the years which elapse between its departure from the workshop and the return of that skin of sable or silver fox for which it has been bartered. They are

BACKWOODSMEN AND INDIANS.

short-sighted men who hold that because the flint gun and the sable possess such different values in London, these articles should also possess their relative values in North America, and argue from this that the Hudson's Bay Company treat the Indians unfairly. They are short-sighted men, I say, and know not of what they speak. That rough old flint has often cost more to put it in the hands of that Dogrib hunter than best finished central-fire of Boss or Purdy. But that is not all that has to be said about the trade of this Company.

ON THE PACIFIC RAILWAY.

Free-trade may be an admirable institution. Unfortunately for the universality of British institutions, free-trade has invariably been found to improve the red man from the face of the earth. Free-trade in furs means dear beaver, dear martens, dear minks, and dear otters; and all these "dears" mean whiskey, alcohol, high wine, and poison, which in their turn mean, to the Indian, murder, disease, small-pox, and death. . . . Now, the Hudson's Bay Company are in the position of men who have taken a valuable shooting for a very long term of years, or for a perpetuity, and who, thereupon, are desirous of preserving for a future time the game which they hunt, and also of preserving the hunters and trappers,

who are their servants. The free-trader is a man who takes his shooting for the term of a year or two, and wishes to destroy all he can."*

The names given to the forts express the minds of the men who named them—"Resolution," "Providence," "Good Hope," "Enterprise," "Reliance," "Confidence." The life of the "wintering partners" was hard. "God knows their lives were hard. They came generally from the remote isles or Highlands of Scotland. They left home young, and the mind tires when it thinks upon the remoteness of many of these fur-stations. Dreary and monotonous beyond words was their home life, and hardship was its rule. To travel on foot 1,000 miles in winter's darkest time, to live upon the coarsest food, to see nought of bread or sugar for long months, to lie down at night under the freezing branches, to feel cold, such as an Englishman in England cannot comprehend, often to starve, always to dwell in exile from the great world—such was the routine of their lives. Who can tell what memories of early days in the far-away Scottish isles or Highland glens must have come to these men as the tempest swept the stunted pine-forest, and the wreck and drift hurled across the frozen lake, where the dawn and the dark, separated by only a few hours' daylight, closed into the long, dark night. Perchance the savage scene was lost in a dreamy vision of some lonely Scottish loch, some Druid mound in far-away Lewis, some vista of a fireside, when the storm howled and waves ran high upon the beach of Stornaway."† And dreary little "forts" they are, in many cases only a few huts roofed with pine bark, without pickets, bastion, guns, or aught else that we associate with a fort. Sometimes the anomaly of the name is too much, and they are called "houses," or simply "posts." The white fish (*Coregonus albus*) is the staple of this dreary region in the winter. It is an inhabitant of all the lakes, and is celebrated for the delicacy of its flavour. Dr. King describes several Indian tribes as subsisting upon it; and at many of the fur-trading posts it forms the principal food for eight or nine months in the year. It is a rich fish, but so pleasant is it to the palate that instead of causing in time satiety it becomes day by day more agreeable; so much so, indeed, that those who live upon it, though deprived of bread and potatoes, never tire of it. When in season it is loaded with fat, particularly between the shoulders, where it forms a considerable lump. The thick-walled stomach is considered a particular delicacy by the *voyageurs*. In October the "attehawmeg," as the Crees call it, the *poisson blanc* of the French-Canadians, quits the lakes and enters the rivers to spawn. It somewhat resembles a herring, and like that fish speedily dies when taken out of the water. It generally weighs two or three pounds, but has been known to attain to seven or eight. The fish are taken in winter with gill nets. Holes are made in the ice with a chisel, at a distance of ten or twelve feet from each other, according to the length of the net, when a line is passed beneath them by means of a long pole, and readily conveyed from one hole to another, with the assistance of a forked stick, until it arrives at the last. The net is then strung upon the line, to the en of which a large stone is fixed, to keep it from expanding and rising from the bottom with every waft of the current, as it otherwise would do. In overhauling or searching a net, the two extreme holes only are opened, when the net is veered away by one person, while the net is hauled from under

* "The Great Lone Land," p. 213. † Butler: "The Wild North Land," p. 94.

the ice by another. In angling for fish in winter no other process is required than that of cutting a round hole in the ice, from one to two feet in diameter, and letting down a baited hook, which should be kept in motion, not only for the purpose of preventing the water from freezing round about it, but more readily to attract the attention of the fish."*

The "barren grounds," or the strip of sterile treeless country along the north shores of the Hudson's Bay and the coast of the Polar Sea we have already described (p. 26). It is almost entirely destitute of wood, the peaty soil only supporting a few dwarf birches, stunted willows, larches, and black spruces; or when composed of quartz and sand, covered with lichens. The lakes of this Arctic portion of the fur-countries, even when completely land-locked, are stocked with fish, though, as a rule, one lake discharges itself into another, so that the lacustrine features of the barren lands are chains of narrow-linked lakes. The caribou, or reindeer, and the musk-ox, roam in great numbers over this tract, but the fur animals proper are rare, and the trade to be derived from buying skins from the forlorn caribou-eating Chippeways, who wander in a few scattered families over this region, is scarcely profitable enough to keep permanent posts in it.

The Prairie region is Manitoba, long known as the Red River Territory. It is the richest and most inviting of all the old Hudson's Bay lands, consisting as it does of rich prairies, waiting for the plough to be run through them. They were never really fur-countries—being kept for growing supplies for the fur-traders, for killing buffalo to make pemmican, and as a haven where the wearied fur-trader and fur-trapper might retire in peace to end his days in pursuits more or less agricultural. The population consists chiefly of half-breeds, but, as we shall presently describe, is now getting settled up by Canadians and other whites. British Columbia, and the rest of British America, will form the subject of an early chapter. Meantime we may conclude this account of the fur-countries proper by the very fitting remarks which Major Butler makes on the aspect of the prairie region.

The old chartographers represented the centre of America as filled with a great ocean. They erred only, as Major Butler points out, in the description of the ocean which they placed there. It is of grass, and the shores are the crests of mountain ranges, and the dark pine forests of the Sub-Arctic regions. "The great ocean itself does not present more infinite variety than does the prairie-ocean of which we speak. In winter, a dazzling surface of purest snow; in early summer, a vast expanse of grass and pale pink roses; in autumn, too often a wild sea of raging fire. No ocean of water in the world can vie with its gorgeous sunsets; no solitude can equal the loneliness of a night-shadowed prairie. One feels the stillness, and hears the silence; the wail of the prowling wolf makes the voice of solitude audible; the stars look down through infinite silence upon a silence almost as intense. . . . Some French writer, speaking of these prairies, has said that the sense of this utter negative of life, this complete absence of history, has struck him with a loneliness oppressive, and sometimes terrible in its intensity. Perhaps so; but for my part the prairies had nothing terrible in their loneliness. One saw here the world as it had taken shape and form from the hands of the Creator. Nor did the scene look less beautiful because nature alone tilled the earth, and the unaided sun brought forth the flowers" (p. 201).

* "Narrative of a Journey to the Shores of the Arctic Ocean," Vol. i., p. 147.

CHAPTER X.

The Fur Countries: The Fur Animals.

To enumerate the chief animals the skins of which have been employed either as articles of dress or as materials to decorate the garments of civilised races, is not a very difficult task. Now one is in fashion, now another. In one year some particular animal is prized for its hide, and unless the fashion declines, the unfortunate idol of female vanity will get almost hunted to death. In a short time, however, caprice will reject it for another, and then the discarded favourite will have space to increase and multiply in the wilds which are invariably its home. Nearly all the mammals of the fur countries yield "peltries." Even the birds' skins find a market in Europe and civilised America. The swans, geese, and ducks are of many species, and are found in enormous abundance. In the winter they collect in millions at the mouths of the rivers, and wherever any open water is found. The air is alive with their cries, and at any alarm they arise in clouds from their swampy feeding-grounds. Another most characteristic bird of the fur countries is the white-headed or sea-eagle (p. 185). It is equally familiar perched on a rock on the shores of Hudson's Bay or Vancouver Island, or on the branch of a blasted pine in the heart of the Continent, watching an opportunity to dart on the fish which its keen sight may have detected in the waters beneath. It is, however, applied to no useful purpose, as are most of the other numerous birds found through the wide stretch of North America, and which have been described in many volumes.* Neither space nor the general interest of the subject will admit of any but the more important fur animals being described in this chapter. Chief among these are the sables or martens. The true Russian sable (*Mustela zibellina*) is not found in America. The darker skins are much valued, these bringing three times as much as many of the poorer ones. In Henry VIII.'s reign the wearing of sable was prohibited to all below the rank of viscount. In America are, however, to be found several species of marten. Among these animals the principal place is due to the Hudson's Bay sable (*M. Americana*), of which about 12,000 are annually bartered at the Company's posts. It is lighter in colour than the Russian sable, but nearly all of those which are sold in the shops are artificially darkened in colour. It is in the highest order—like most furs—in the winter-time, when the lustre of the surface is great. At the commencement of summer the dark tips of the hair drop off. This alters its colour to a pale orange-brown, little lustrous, and on account of its light colour, of little value. When bought, the trader tests its value by suspending the skin by the tail, and seeing how the long hair falls back, revealing the fine downy fur beneath. In 1836, at Cumberland House, three martens were bought for a coarse knife worth about sixpence, though the same skins could be sold in London for at least five guineas. In Vancouver Island,

* Richardson: "Fauna Boreali-Americana;" Baird's "Birds of North America," &c.

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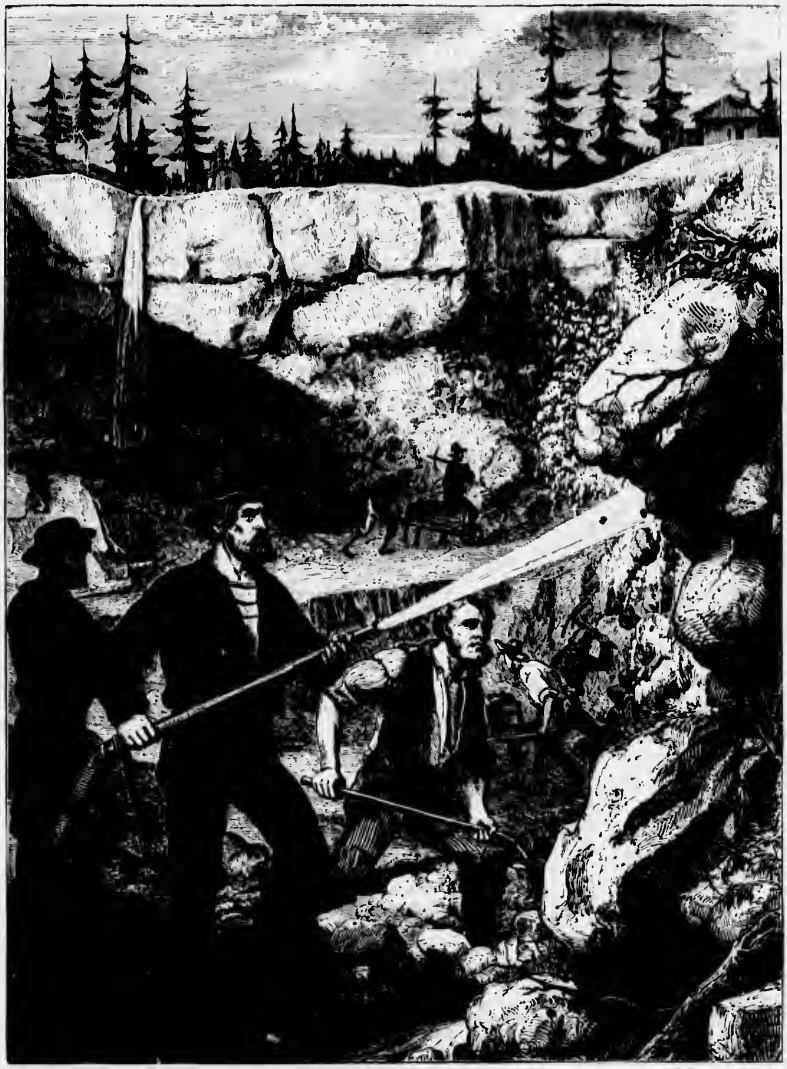
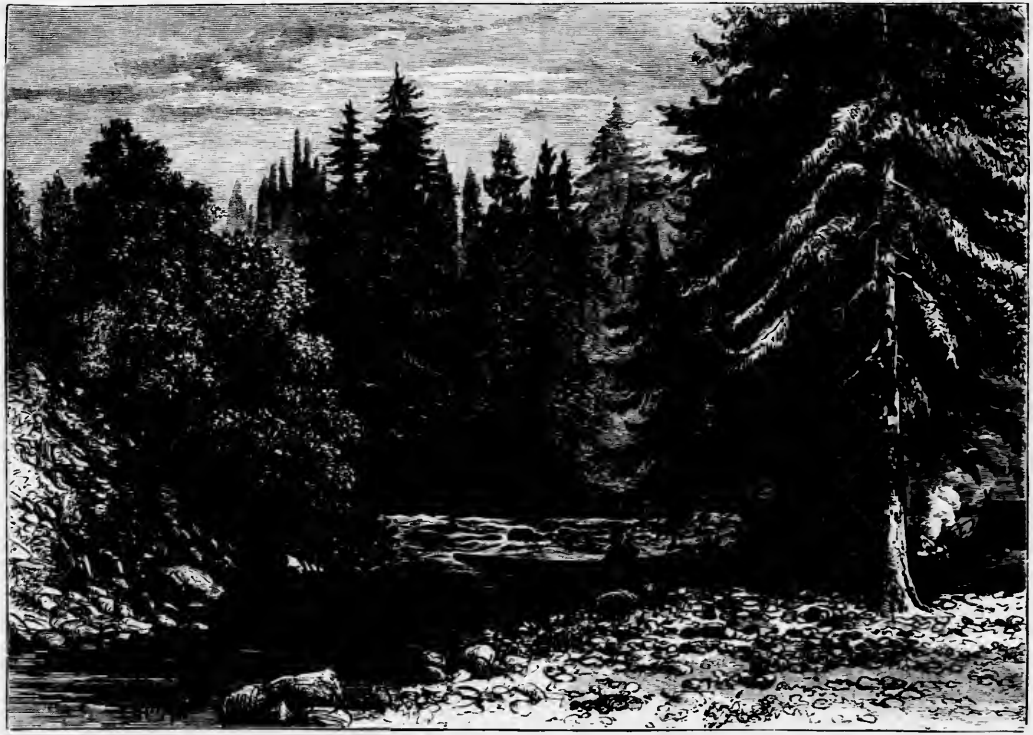




JUNCTION OF BROWN'S RIVER WITH THE PUNTLEDGE, VANCOUVER ISLAND.

(From an Original Sketch by Mr Frederick Whymper, Artist of the First V.I. Exploring Expedition, under the command of Dr. R. Brown.)

owing to the comparative warmth of the climate not permitting of a heavy growth of fur, the marten is worth little or nothing. I saw many in the vicinity of Brown's River, near the centre of the island (p. 197), but neither the Indians nor the hunters attached to our party cared much about killing them. On the other hand, those from the Northern Rocky Mountains are worth from fifteen to twenty dollars. Even in Canada there is a great variety. Skins taken north of the St. Lawrence in the Labrador direction are worth from 20s. to 25s., while those of New Brunswick are not valued at more than 5s. or 6s. These animals appear periodically in vast numbers, which the hunters regard as presaging heavy falls of snow, and accordingly a good trapping season. They feed on mice, hares, small birds' eggs, and partridges. They are found everywhere except on the barren grounds, to which, being arboreal animals, they do not resort. Their periodical disappearances are very remarkable, in so far that, wherever they go, it must be to some region where there are no fur-trading posts; yet no track has been found of their retreat. This takes place about once in ten years—with great regularity—and the scarcity occurs simultaneously throughout the whole fur countries. They are caught, according to Mr. Bernard Ross's description, in wooden traps baited with white-fish heads, pieces of dried meat, or, still better, with the heads of wild fowls, which the natives gather for the purpose in the autumn. When they are at their lowest ebb they will scarcely bite at all, hence it seemed as if "providence had implanted some instinct in them by which the total destruction of their race is prevented." They are not difficult to tame, and when enraged they arch their back and hiss in a manner somewhat like the domestic cat.

The fisher, black cat, or pecan (*M. Pennantii*) is another species of marten. It is the Chippeweyan Thâ chô, or great marten, and in appearance bears a strong family likeness to both the wolverine and its other congeners. Its habit and food are much the same as its relatives, and to a marten-hunter it is almost as great a pest as a wolverine. Being very powerful for its size, it will tear down the wooden traps with ease. "Its regularity in visiting them is exemplary. In one quality it is, however, superior to the wolverine, which is, that it leaves the sticks of the traps lying where they were planted; while the other beast, if it can discover nothing better to hide, will *cache* them some distance off." It is easily caught in the steel trap, in much the same way as foxes. About 11,000 is the average number imported from North America. At one time its tail was worth from 6s. to 9s., and formed a common ornament of the cap of the Polish Jew. It is now only worth about from 6d. to 9d. The fur, though coarse, is valued from its black colour, and bring about £1 each. The skins of tame black cats, with the tail and ears cut off, have been imposed on people ignorant of furs as those of the "fisher"—why so called it is difficult to say, as it does not go near the water.

The baum marten (*M. abietinum*) and the stone marten (*M. saxorum*) are both European species. Their fur, when dyed, forms a near imitation to the best sable. The latter is often called the French sable, because the French excel in dying it of a natural hue and gloss. By some naturalists—and not without reason—the American pine marten is looked upon as only a variety of the Siberian or Russian sable, and indeed some of the so-called species are considered to be only climatic varieties of the others.

The mink (*Putorius vison*) is another well-known fur animal. The American species

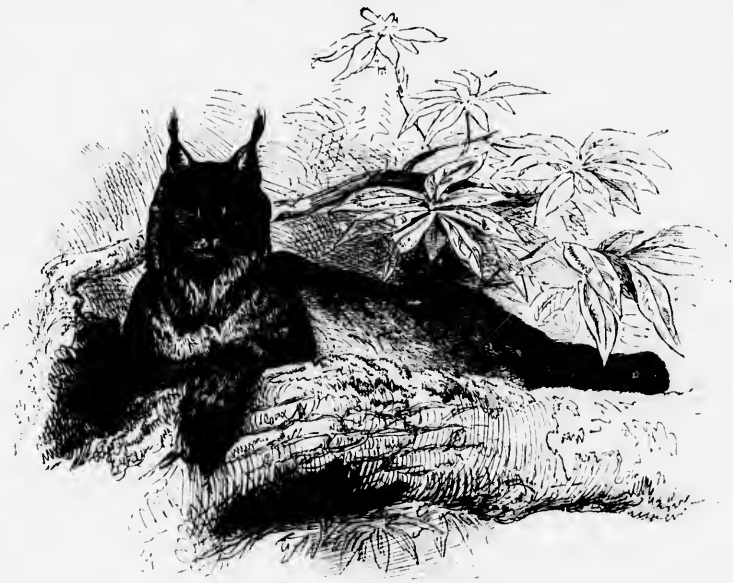
is said to be different from that of Europe, but by many the *Mustela lutreola* of Norway is believed to be identical. It is aquatic, and an expert fisher, yet lives much upon birds, mice, and other small animals. It is easily captured by any kind of trap, and more generally by what are called "dead falls," such as are commonly used to catch various fur animals, by making them pull a log or other weight down on themselves when they are tugging at the bait. It is also caught in traps like those employed in the capture of the martens. In length it is twenty inches on an average from the tip of the nose to the root of the tail, and the tail itself is about ten inches in length. It is found all over the North American Continent, and though another species (*P. nigrescentes*) has been described in Audubon and Bachman's work on "American Quadrupeds," it is probable that this is merely the common mink under three years of age.* *P. longicauda* and *P. Noveboracensis* are more doubtful.

In 1850, 245,000 were traded in North America. Of late years it has risen in price, and several years ago it rose from 1s. to 12s. or 14s. This was very fatal to the mink—so fatal, indeed, that there was an attempt to breed it in domestication. The "minkeries," however, Mr. Rowan tells us, did not pay, the fur of the tame mink being much inferior to that of the wild animal.

The wolverine, or glutton (*Gulo luscus*, p. 168), has been the subject of endless misrepresentations and fables by the earlier writers, and its history is to this day surrounded with a good deal of mystification. The account in Goldsmith is probably the best and most innocent summary of all the errors which had been written on it up to his time. Its habits are similar to those of the marten, but though, as a rule, it lives on birds, hares, and mice, it will occasionally kill sickly or disabled deer. The chief thing remarkable about it is that it follows the footsteps of the trapper to prey on the hare, marten, beaver, or other animal that may be caught in his trap, or to feed upon the bait; or perhaps it is directed by scent to the trapped animals, as it is almost impossible to fully believe in the intelligence of an animal which understands the mission of a hunter. The very strongest *cáches* or concealed stores it will break into, and after satisfying its hunger it will carry off all the pieces of meat to some distance, and then bury them in the snow. Mr. Ross tells us that their hidden stores can be recovered by following the animal's footprints, but in general they are quite uncatable, as the wolverine, to protect its secret hoards from the attacks of other beasts of prey, besprinkles all its larder plentifully with its urine, which has a strong and most disagreeable odour, and proves a good preservative in most cases. "But the desire for accumulating property," writes the eminent fur-trader and accomplished naturalist, whom we have already quoted, "seems so deeply implanted by nature in this animal, that, like tame ravens, it does not appear much to care what it steals, so that it can exercise its favourite propensity to commit mischief. An instance occurred within my own knowledge in which a hunter and his family, having left their lodge unguarded during their absence, found it on their return completely gutted; the walls were there, but nothing else. Blankets, guns, kettles, axes, cans, knives, and all other paraphernalia of a trapper's tent,

* Ross: "Canadian Naturalist," Vol. vi. (1861), p. 30.

had vanished, and the tracks left by the beast showed who had been the thief. The family set to work, and by carefully following up all its paths, recovered, with some trifling exceptions, the whole of the lost property. The damage which it does to a trapping-road is very great; indeed, if the animal cannot be killed it is as well to abandon it, as it will not only break the traps and eat the bait or animals caught, but also, out of sheer malice, will carry away the sticks and hide them at some distance. To kill or catch it is very difficult. An old stager is a regular bugbear to the Indians. 'Master,' said one



FUR ANIMALS: THE LYNX. (*Lynx Canadensis.*)

to me, in his own language, 'I can't hunt furs; the wolverine eats the martens and baits, and smashes my traps. I put a steel trap for him; he got in, but released himself by screwing off the nuts confining the spring with his teeth. I set a gun; he cut the cord attached to the trigger, ate my bait, and broke the stock; what shall I do?' As the infallible strychnine had not then made its appearance in those parts, I could offer him neither advice nor assistance, and but little consolation." Its centre of range is in the coldest portions of the North; it has even been known to visit Melville Island, in lat. 75°. The fur of the wolverine is of a dark nut-brown, and is chiefly used in Germany for trimming cloaks.

The American wolf is found in several varieties—or species, as they are called by

some. They are shot, trapped, caught by pitfalls, and poisoned, especially by strychnine. The type of them all is the grey or strongwood wolf (*Canis occidentalis*, var. *griseus*). There are at least five species of fox in North America, the black, silver-grey (or kit fox), and cross fox being varieties of *Vulpes fulvus*. The black and silver-grey are highly valued as furs, the skins often bringing from £10 to £25, and sometimes even £60 each. He therefore is a fortunate trapper who can bring to a trading-post a few of these skins.

A BULLOCK TEAM ON "THE PLAINS"

It is seldom seen in this country, only the luxurious Russian nobles, and others of like wealth and taste, buying it.

Foxes are captured by wooden traps, by gin or steel traps, by set guns, by snaring, by hook and line, by hunting, by unearthing, and by ice traps. Hook and line is an out-of-the-way method adopted for capturing a land animal. It consists simply in baiting a hook with a fish or other substance, watching the bait, and when the fox bites hauling it in and killing it before the fox has time to cut the line. It is more a curiosity in "trapping," than anything else. Ice traps are more successful than wooden ones. A block of ice of some weight is tilted on end at an angle of about 45°. A piece of stick supports it, the lower end resting on the bait. The fox enters the trap, and in tugging at the bait brings the block of ice down upon him, when it either kills or imprisons him until the hunter arrives and gives the unwary Northern Reynard the

coup de grâce, if indeed he does not already find him frozen. The Yellow Knife Indians and the Eskimo also adopt this method of capturing the white foxes of the shores of the Arctic Ocean.

The Canadian otter (*Lutra Canadensis*)—"a magnified mink"—is also a valuable fur animal, which is extensively trapped for its skin; its flesh being rank and unpalatable. Unlike the beaver, when caught it does not leave its foot in the trap, and escape. A good skin is worth from 20s. to 25s., but there is nothing which varies more in price than furs, fashion being the main agent which regulates the fluctuation of the prices.

The *Lutra Californica* is probably a distinct species found on the Pacific coast. The Chinese and Russians use the fur, but it is inferior to that of the British otter, about 500 of which are annually collected. The sea-otter (*Enhydra marina*) is quite a different and infinitely more valuable fur. It is found in the North Pacific, and will be noticed in due course.

The raccoon (*Procyon lotor*, p. 209), and the lynx, or loup-cervier (*Lynx Canadensis*) (p. 200), we can only mention as well-known animals of North America—a variety (*P. Hernandrii*) of the 'coon being also found on the North Pacific shores. Its skin is now little valued. The skunk (*Mephitis Americana, occidentalis* and *bicolor*) may also be passed here as hastily as the reader, if he were wise, would pass this *enfant du diable*—as the *voyageurs* call it—in its native haunts; while the herds of buffalo which roam the great central plains of America are too well known to need more than a mention in this place. The musk-rat, or musquash (*Fiber Zibeticus* and *F. Osoyoosensis*), is more interesting. It forms "houses" something like those of the beaver. The Indians kill them by spearing them through the walls of these houses, making the approach cautiously. Their flesh is eaten by the trappers, but it is not to be commended. There are at least four varieties of it—the black musquash, the pied musquash, the white musquash, and the ordinary brown one. About one million skins are annually traded over America, but since it has ceased to be used as a napping for hats it is not so highly valued. It is also used as a "lady's fur," but the skins, though very pretty, are not worth more than 10d. or 1s. in Canada.

The stoat, or ermine (*Mustela erminea*), is probably as well known in Europe as in America, and its fur is also extensively used for the less expensive description of trimming. In the time of Edward III. it was, however, restricted to the Royal Family, and it is still the fur with which the robes of judges are trimmed. The black spots are supplied by the animals' black-tipped tails. "Miniver" is ermine studded with black spots made of the skin of the black Astracan lamb, and worn by people of certain rank on State occasions in England. In summer the skin is brown, and of no value. It is only in the winter or white coat that it is called ermine by the fur-traders, and known in commerce. In the time of Charlevoix it was exported from Canada, with other small furs, under the title of *menues pelleteries*. It is everywhere numerous, but very few are now imported into England, the value being so trifling as scarcely to repay the cost of collection. In Siberia and Norway, however, they are a considerable article of trade, being taken in the former country in traps baited with flesh, while in the latter they are, according to Dr. King, either shot with blunt arrows, or taken as garden-mice are in England—by a flat stone propped up by a baited stick, which falls down on the least touch and crushes them. In winters of unusual severity it is said

to migrate, but generally it prefers, if within reach of a fur-post, to domesticate itself in the trader's house, where it may be heard the livelong night pursuing the *Mus leucopus*, or white-footed mouse, on which it feeds. On the northern shores of Smith's sound the officers of the *Alert* and *Discovery* found great numbers preying on the lemming, and in their turn were devoured by the snowy owl (p. 137).

Lynx, we may add, is used for cloak-linings and facings. The demand is considerable, and the animal is only referred to for the sake of describing the medicated cabin in which it is caught, in describing which we shall borrow the notes of Mr. Bernard Ross, on the fur animals of the Mackenzie River district. It is the most efficacious method of capturing the animal. "A round inclosure of some three feet in diameter is made of small willows or branches of trees, loosely planted in the snow, and about four feet high. Two entrances are left at the opposite sides, each fitted with a snare. In the centre of the inclosure the medicated skin is placed, inserted in a cleft stick about eight inches distant from the snare. The snare is more commonly tied to the middle of a loose stick, about thirty inches long by three in diameter, and which is supported on two pronged branches set on each side of the entrance. When circumstances are favourable, the 'tossing-pole' is sometimes used, and it is the most certain fashion. The animal, on scenting the castoreum, inserts its head, or sometimes its fore-foot, into the noose, which, owing to the long tips on the lynx's ears, remains securely on the neck when once passed there. After enjoying and rolling itself in the perfume, it moves off, but on finding the stick thumping after its heels it becomes alarmed, and makes for the nearest woods. The stick soon catches in the bushes, and in a short time the animal, instead of cutting the line, strangles itself, or, if caught by the paw, remains fixed until the hunter arrives to give it a *coup de grâce*. On some occasions it will gain the top of a lofty tree, and on springing off, to rid itself, as it fancies, of the stick, it hangs itself in a superior manner, and puts the trapper to the trouble of cutting down the tree, which is generally a large one." The lynx is also valued as an article of food, both by the Indians and the "winterers." The beaver is also attracted by its castoreum quite as surely as the lynx; hence the trapper's affirmation of anything being very certain is that it is "sure—sure as beaver medicine."

The beaver (*Castor Canadensis*, p. 149) was at one time the most important of all the fur animals. Owing to its low price, it now ranks among the least important, and as the habits of the animal have been often described, among others by the author,* it is unnecessary to dwell upon its natural history, about which much nonsense has been written. When the price fell, the animal was getting extinct. It has now multiplied again; but of late years, owing chiefly to the growing scarcity of other furs, beaver has again been rising in price. The country is also getting opened up, so that we may soon expect this as well as other furs to have an enhanced value.

The habits of the western (Pacific) beaver are, I believe, different from those of the beaver as found in Canada and the country east of the Rocky Mountains, though the species seem the same. I have never heard of the nicely-plastered, dome-shaped house in the former region, though all writers agree that they are found in the latter

* "Journal of the Linnean Society" (Zoology), Vol. x.

part. On the western slope of the Rocky Mountains their "houses," when they have any—for they sometimes live in holes in the banks—look like a large bundle of sticks thrown on the surface of a pond or still river-reach. They, however, always, when necessary, erect dams across streams. This is done for many reasons—to deepen the water round their camp, enabling them to dive and so escape, and also to float down trees they may have cut on the banks, as a protection against severe winters which would freeze shallow water to the bottom, to prevent their beds being flooded, and therefore to equalise the height of water throughout the year, and, according to Mr. Rowan, "for the amusement it affords them." If there is likely to be a freshet, they will cut an opening in their dams, and so let the water off.

When forced by the *res angustæ castrensis* to live on beaver while exploring the interior of Vancouver Island, we used to break down their dams—and that, even with the aid of the axe, was no easy matter—and shoot the beavers out of ambush when they came down stream in a hurry to see what was the matter. It was cruel sport, but the hunter's life is not, at best, a very humane one, and hunger generates a loose code of morals.

For the trapping of beavers I must refer the reader to Mr. Rowan's work on Canada, the special treatise by Mr. Morgan, and to my own paper and the references there given, only cautioning him that he must not believe all he hears about the beaver. It is an intelligent—very intelligent—animal, but it is not superhuman in its wisdom. It weighs, when full grown, over 40 lbs., and its flesh, when smoked, is by no means contemptible. In the Hudson's Bay Territory—that was—we have seen that beaver is the standard of trade. In former times it was also the currency of the backwoods settlements of the United States and Canada, and to this day it forms the crest of the young Dominion. The beaver has also influenced the physical features of the countries it is found in. Some of the smaller lakes and many of the meadows in the beaver country are due to them. "First of all, the small brook is dammed; by and by the dam becomes solid, and forest trees take root and grow on it; as other outlets of the water occur they are closed by these indefatigable workers, till at length the pond assumes the proportions of a lake, and remains for all time to attest to their powers. The meadows are formed by the draining of the lakes. The beaver has left more permanent and enduring monuments of its existence on the surface of the country than the aboriginal inhabitants of Canada have left, or are likely to leave." *

The black bear (*Ursus Americanus*), and its variety the cinnamon bear, ranges over all North America, as does also the grizzly (*U. horribilis*). The Polar bear is limited to the shores of the Arctic Ocean (Plate III. and p. 137). The first is chiefly a vegetable feeder, and unless when the female is guarding her young, is very harmless. The grizzly, on the contrary, is about the most ferocious animal on the American continent, and is avoided rather than sought after by the hunter. Brown bears are numerous in the wilder sections of Canada, in some parts of which a reward of three dollars is given by the Government for every one killed, on the ground that their extermination is desirable, owing to the damage they do to flocks.

* "The Emigrant and Sportsman in Canada," by J. J. Rowan (1876), p. 376.

AN OLD SQUAW POUNDING WILD CHERRIES: A SCENE IN THE RED RIVER COUNTRY.

By some the "barren ground" bear (*U. arctos*) is believed to be different from the grizzly. It is certainly identical with the brown bear of Europe. The skins of the bears are used for making rugs and hammer-cloths, and in America for sledge-rugs.

The deer are not fur animals proper, but they are nevertheless characteristic members of the North America fauna.

The moose (*Alces Americana*), the largest of the family to which it belongs, is found over most of the wild portions of British North America, though rarer on the western side of the Rocky Mountains than in the eastern wooded regions. It is by no means an elegant-looking animal, and has the appearance of an "immense Roman-nosed horse," with a long flexible upper lip, which forms a movable snout, like a short proboscis. It is hunted in March and September. It would be useless to follow it when the snow is soft, as it can then wade through it without difficulty, but when there is a thin crust on the surface this greatly impedes the progress of the animal, as it has to lift its feet perpendicularly out of the snow, or cut the skin around the shanks. Their sense of smell is so acute that to get near their "yard" it is necessary to approach them like most other deer, against the wind. The slightest creak of a twig will startle and alarm them, when they instantly start off on a long trot, which they never abate until fatigue compels them to give in. If a large dog be used to hunt them it will be soon trampled to death. Accordingly, several small curs are usually employed. They do not attack the moose, but annoy it by snapping at its heels. If pressed, the male usually fights, thus giving the hunter time to come up and dispatch it while it is occupied with the dogs. "Sometimes," writes Mr. Kendall, "they are killed after a run of an hour; at other times you may run all day, and have to camp at night without a morsel of provisions or a cloak, as everything is let go the moment the moose starts, and you are too much fatigued to retrace your steps to procure them. Your only resource is to make a good fire, and comfort yourself upon the prospect of plenty of moose meat next day. As soon as the animal finds he is no longer pursued, he lies down, and the next morning he will be too stiff to travel far." Generally a male, female, and two fawns are found in a yard. In September it is also killed by two persons selecting a moonlight night to go out along the borders of a lake in a canoe. They then imitate the cry of the male, which, jealous of intruders, rushes down into the water. When it comes near they fire, and if it be not killed outright they follow it in the woods to which it has taken itself next day by means of the dripping blood. Its flesh is good, though coarse, and is tougher than any other kind of venison. The nose and tongue are the tit-bits.

The barren ground reindeer (*Tarandus arcticus*) is another typical animal of the fur countries.

The woodland caribou (*Rangifer Caribou*), another species of reindeer, is found in Labrador, Northern Canada, and over the continent to British Columbia. Its name has been applied to the celebrated gold-diggings of that name in British Columbia, on account of the discoverer finding reindeer near William's Creek. It is different from the European species, though, like it, it travels in herds of from eight or ten to two or three hundred. The Indians kill them with bow and arrow, or gun, take them in snares, or spear them in crossing rivers or lakes. The Eskimo also trap them in ingenious traps made of ice or

snow. They are so easily approached and slaughtered that an Indian family will, it is said, sometimes kill two or three hundred in a few weeks, for their tongues alone.

The wapiti, or Canadian stag (*Elaphus Canadensis*), is known as the "elk" on the Pacific coast, where it is found abundantly, and highly valued for its venison. Its magnificent antlers average thirty-five to forty-five pounds in weight, but will often attain to a much greater size. They sometimes measure six feet from tip to tip, and eleven inches in circumference above the burr.

Of the deer we need only mention the common species (*Cervus Virginianus*), the white-tailed deer (*C. leucurus*), the mule deer (*C. macrotis*), and the black-tailed, of the Pacific slope (*C. Columbianus*).

There are various species of fur seal used, the hunting and nature of which we shall have occasion to speak of by-and-by. The hair seals are chiefly used for making leather, and have no value in the eyes of the fur merchant. Hares, especially the white Arctic and Alpine species, are used as linings for cloaks, but though beautiful when dyed, are not durable. At one time they were much used as a substitute for fur, but this employment of them is now nearly discontinued. Rabbit skins are also dyed to imitate other furs. They are also used by hatters, and by the Poles to line their coats and cloaks. Squirrels of various species are classed among the fur animals, but are chiefly in demand for Russia. About 15,000,000 are sold. Several of the better class are dyed to imitate sable. They are made into boas and muffs, and the hair to a small extent is employed in the manufacture of artists' pencils. The fur is light, and tolerably durable. The badger, both the European and the American species (*Taxidea vulgaris*, *T. Americana*, and *T. Labradorica*), are classed amongst the coarser furs. The hair of the European species is, or was, however, chiefly used in this country to make shaving-brushes.

These are the principal fur animals of America; but though the bulk of our furs comes from that country and Siberia, yet we are not dependent solely on them for the supply. The fitchet, or polecat of Europe, the kolinski of Northern Asia, the nutria, or coypou, of Buenos Ayres and Chili, the hamster of Central Europe, the perwitzky of the South-eastern territories of Asiatic Russia, the chinchilla of South America and Africa, the ordinary domestic cat (bred in Holland for that purpose), the opossum, the dasyure, or Australian cat, the goat, sheep, the marmot, the colobus of Africa, the Diana monkey, and even others, are known in commerce. But it would be foreign to our plan to describe them now, more especially as we may have occasion in due time to touch upon the animals which supply them, as they come before us in the countries in which they are respectively found. It may, however, be convenient to present in this place a brief synoptical summary of the whole fur-trade, more especially as an opportunity to do so will not occur again. It need scarcely be remarked, after what we have said, that *all* of the furs enumerated are not found in the *fur countries* of America. It is difficult to present tables showing the prices paid for furs in different parts of the fur countries. These vary slightly at different times, but still more so in different localities. Above all, the prices which the furs bring in England differ very widely year by year. I have been unable to obtain any very recent tables. However, the following, which was compiled nearly forty years ago, is valuable, in so far that it exhibits the price of five principal furs in a "palmy" epoch of the fur-trade, and is useful as showing the relative value of the furs

"in the country" and in London, and also the proportionate value of one fur to another. It was obtained from official materials, and relates solely to the region east of the Rocky Mountains embraced in the "Royal Licence" of the Hudson's Bay Company. At that time the "Western District" was almost a *terra incognita*:—

Prime Cost.		Articles supplied to the Indians.	Beaver.				Marten.				Silver Fox.				Lynx.				Otter.			
			No.	Market Value.			No.	Market Value.			No.	Market Value.			No.	Market Value.			No.	Market Value.		
s.	*d.*			£	*s.*	*d.*		£	*s.*	*d.*		£	*s.*	*d.*		£	*s.*	*d.*		£	*s.*	*d.*
22	0	1 Gun	20	32	10	0	60	46	10	0	5	50	0	0	20	20	0	0	20	23	10	0
0	1¼	1 Gill (about 2 wine-glasses of Powder	1	1	12	6	3	2	6	6	¼	2	10	0	1	1	0	0	1	1	3	6
0	1¼	18 Leaden Bullets	1	1	12	6	3	2	0	6		2	10	0	1	1	0	0	1	1	3	6
0	1	8 Charges of Shot	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	1	10 Gun Flints	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
1	6	1 Axe	3	4	17	6	9	6	19	6		7	10	0	3	3	0	0	3	3	10	6
12	0	1 Copper Kettle (6 gallons)	16	26	0	0	48	37	4	0		40	0	0	16	16	0	0	16	18	16	0
0	2	1 Fire-steel	1	1	12	6	3	2	6	0		2	10	0	1	1	0	0	1	1	3	6
0	4	1 Scalping-knife	1	1	12	6	3	2	6	0		2	10	0	1	1	0	0	1	1	3	6
0	6	1 File (8-inch)	2	3	5	0	6	4	13	0		5	0	0	2	2	0	0	2	2	7	0
0	9	Tobacco-box and Burning-glass	2	3	5	0	6	4	13	0		5	0	0	2	2	0	0	2	2	7	0
0	2	1 Common Horn Comb	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	2½	8 Awls	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	3½	1 Dozen Brass Buttons	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	3	12 Brass Finger-rings	2	3	5	0	6	4	13	0		5	0	0	2	2	0	0	2	2	7	0
0	1	6 Clay Tobacco-pipes	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	4	1 Paper-mounted Mirror	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	10	1 Pound of Beads	6	9	15	0	18	13	19	0		15	0	0	6	6	0	0	6	7	1	0
0	3½	6 Ounces of Tobacco	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
5	9½	1 Blanket (3-point) plain	10	16	5	0	30	23	5	0		25	0	0	10	10	0	0	10	11	15	0
7	0	,, ,, striped	12	19	10	0	36	27	18	0		30	0	0	12	12	0	0	12	11	2	0
12	0	Man's Slop-coat (large)	12	19	10	0	36	27	18	0		30	0	0	12	12	0	0	12	11	2	0
5	3	Boy's ,, (largest)	5	8	2	6	15	11	12	6		12	10	0	5	5	0	0	5	5	17	6
0	2½	6 Yards of Gartering	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
6	6	1 Pair of Trousers	9	14	12	6	27	20	18	6		22	10	0	9	9	0	0	9	10	11	6
1	9	1 Shirt (Cotton)	3	4	17	6	9	6	19	6		7	10	0	3	3	0	0	3	3	10	6
0	1¾	1 Handkerchief (Cotton)	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	3	1 Ounce of Vermilion	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6
0	1	1 Pint of Rum (watered)*	1	1	12	6	3	2	6	6		2	10	0	1	1	0	0	1	1	3	6

1 Silver Fox Skin is equivalent to 4 Beaver Skins.

* Rum is not now supplied as an article of trade.

The following list of the numbers of the chief furs imported into England is only approximate, as is drawn up from materials obtained at various dates within the last twenty-five years:—Raccoon, 525,000; beaver, 60,000; chinchilla, 85,000; bear, 9,500; fisher, 11,000; red fox, 50,000; cross fox, 4,500; silver fox, 1,000; white fox, 1,500; grey fox, 20,000; lynx, 55,000; martens, 130,000; mink, 245,000; musk-rat, 1,000,000; otter, 17,500; fur seal, 15,000; wolf, 15,000; stone and baum marten, 12,000; squirrel, 3,000,000; fitchet (polecat), 65,091; kolinski, 53,410; ermine, 187,104; rabbit, 120,000; wolverine, 11,200; skunk, 1,200; sea-otter, 100. Of course, a large proportion of each of these furs is exported For instance, in a list published in 1851, it was reported that no wolverine, skunk, or sea-otter were used in this country. Up to the time of the Great Exhibition in 1851, monkey was also an unknown fur. But at that time, according to Dr. Lankester, some black monkey skins, belonging to the genus *Colobus*, attracted the attention of a London fur-dealer, much to the misfortune of the ape family. Since that date they have had little peace, and have

been killed by tens of thousands in the African forests. But the negroes, being thus induced to make war with monkeys, ceased to some extent to do war among themselves, and being

FUR ANIMALS: THE RACCOON (*Procyon lotor*).

able to sell the black skins to England, had not the same temptation to sell their black brothers to America. Furs are all brought to this country unprepared, but in the trade are divided into felted furs and dressed furs. The former are used for hat-making, and are confined

to a few animals which possess hair fit for felting. Hare, rabbit, neutria, beaver, &c., are the chief ones employed; but the demand is not nearly so extensive as it once was, as silk is found to be a much more economical material for hat-making than "beaver." The particular furs in demand in the chief fur-consuming countries of the world are shown in the following table, to which the same remarks apply as the others:—

Countries to which imported.	Fox.	Marten.	Otter.	Raccoon.	Musk Rat.	Beaver.	Hare and Rabbit.	Goat.	Sheep and Lamb.	All other Furs according to value.
United States	—	3,949	—	—	22,123	—	18,460	195,068	1,103,111	£12,110
B. N. America	—	2,219	—	—	—	—	—	—	—	11,105
Russia . . .	—	—	—	31,731	—	—	—	—	—	4,213
Hamburg . .	118,271	15,736	16,074	602,996	1,372,429	65,322	690,138	635,899	369,455	106,814
Bremen . .	—	—	—	—	23,681	—	—	—	—	—
Hanover . .	2,412	—	—	30,608	79,328	4,438	—	—	40,091	—
Belgium . .	—	—	—	—	—	—	162,710	11,258	210,358	4,310
France . . .	3,303	5,479	—	—	72,384	—	329,099	180,247	53,918	28,752
China { Hong Kong }	—	—	—	—	—	—	—	—	—	5,422
Brazil . . .	—	—	—	—	—	—	—	—	19,964	10,830
Other Countries	2,043	1,061	1,311	1,973	14,441	369	48,018	22,078	38,409	5,816
Holland . .	—	—	—	—	—	—	1,103,930	154,283	197,203	—
	126,029	28,444	17,385	667,298	1,584,389	70,129	2,361,405	1,198,833	2,032,501	£214,402

The tricks of trappers in America, and of fur-dealers in England, would lead us far beside our subject. Suffice it to say that both are not unknown. When beaver is valuable, the former were in the habit of rubbing blood and sand into the flesh side of the skin to weighten it. To blacken fox-skin is a lucrative bit of knavery, and if skilfully done, has been known, even in modern times, to impose on men by no means in their noviciate in fur-trading. To sew the head and tail of a valuable fur on to the body of a similar, but much less valuable one, is likewise an ancient fraud on very young traders. The fur "manufacturers" are also in their own way not ignorant of the tricks of trade; but space will not admit of touching on this branch of our subject. The fair wearers of furs may, however, rest assured that they are not always wearing the skin of the animal which the label professes it to be. Beaver is often passed off for seal-skin, and the sable, of the *pelissier*, is not invariably that of the zoologist.

The Hudson's Bay Company have, or had, sales of their furs three times in the year. In January the she-bears and musquash from Canada, Labrador, and Hudson's Bay are disposed of. In March, bears, foxes, otters, wolves, fishers, martens, and minor furs from the same regions, are in the market; while in September the peltry from North-West America is sold. The other fur companies follow suit. The prices vary much from year to year. For instance, raccoons have been as low as 6d., and on one occasion, when fashion made a demand for them, they ran up to 58s. each.

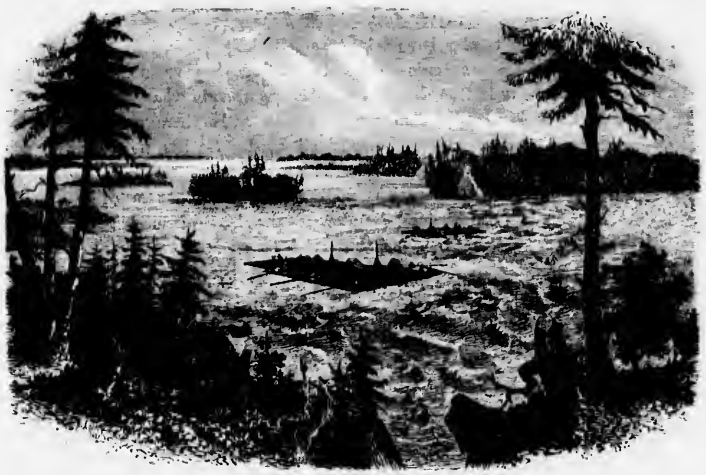
I have written so much about the trapper, that the reader might be spared anything more. However, in concluding what I have to say about the wide and interesting fur countries, and the varied and valuable fur animals, I may be allowed to end this chapter with a passage

from Mr. Rowan's work relating to trapping life in Canada. It expresses so well what I had intended saying, that it is only just to give it in the words of the writer who has anticipated me in the publication of it:—"I suppose there is no man who has more pity wasted upon him than the solitary trapper. In the opinion of those who are uninitiated in the mystery of woodcraft, he is the most wretched of mortals. For months and months, often for a whole year, he lives quite alone in the forest, or else with one comrade only. He does without the comforts of civilised life, and the pleasures of society. He has no church to go to on Sunday; no doctors to prescribe to him if he is ill. In fact, in the opinion of the gregarious city man, his condition of life is little, if at all, better than that of a prisoner in a dungeon. But there are two ways of looking at most subjects, and the trapper's life is no exception to the rule. The forest is the trapper's home; there are all his friends, not human only, but not less dear on that account. He thinks, and I who have tried the life fully enter into his feelings, that there is no mode of existence so enjoyable as that of the trapper in the Canadian forest. He has no church near, it is true, but it by no means follows that he has no religion. On the contrary, there is a religion in the pine forest. Nowhere else does he feel so utterly and entirely dependent on the Giver of all good. He has no doctor to consult, but, except in cases of accident, he never wants one; there is no bad drainage in the wood, no bad smell, no bad ventilation, no epidemics; he has a daily and nightly tonic in the bracing air; and the pure water is the best of medicine. He has no time for dyspepsia and its companion the 'blues;' his fare is simple, but his appetite is good; and on his fragrant bed of boughs, after his hard day's labour is over, he sleeps the sleep that the city man could not buy for millions. To him there is no loneliness so unbearable, no solitude so wearisome, as the solitude of a great city. True, in the latter case he sees thousands of his fellow-creatures every day, but of what use are they to him, or he to them? If, while gaping in amazement at the human hive, he happens to get run over by a cab, one or two passers-by may turn round to look at him, or even say, 'Poor fellow!' but that is all. Truly, in the trapper's opinion, the loneliness of the city is infinitely more oppressive than that of the forest." Mr. Rowan says, and after some little experience of the same life I can confirm his remarks, that when the fur season was ended, he was quite sorry to say good-bye to the old smoke-stained camp that had been his home for nearly ten months, and on his return to civilisation he felt "as shy as a beaver," and often caught himself involuntarily looking on the streets for "tracks." One word more—and this last word to the fur countries applies to most of the wild countries we shall have yet to traverse—it is a mistaken idea that men lose sight of each other in the "wilds of America." I was never so much impressed with the smallness of the world as when I was a vagabond there. I was always coming across men in British Columbia or Oregon, whom I believed to be in Hudson's Bay and Manitoba. Years after I used to almost daily meet in the Strand, or in Regent Street, the friends whom I had bidden good-bye to at Fort Rupert or at Rogue River. The truth is, in an unpeopled country the men to be kept in view are few. In a great city, or in a thickly-peopled land, your next door neighbour is a stranger to you. Hence the seeming paradox.

CHAPTER XI.

The Dominion of Canada: Ontario; Quebec.

Up to the year 1867, Canada was at once a vague and a circumscribed term. It was vague in so far that the jurisdiction of the undefined territories of the Hudson's Bay Company were supposed to belong to it, while in reality the colony had little, if any, power in the fur countries. The State was strictly applied to the provinces of Ontario and Quebec, or in



JUNCTION OF THE RIVERS ST. LAWRENCE AND OTTAWA.

other words to Upper and Lower Canada. In 1840, they were united into one colony, though afterwards they separated, only, however, to become members of the confederation brought about in 1867. Gradually the Hudson Bay Territories came under the control of Canada, then British Columbia was added, then all the maritime colonies, with the exception of Newfoundland, until at the present time the whole of British North America—Newfoundland excepted—is classed under the name which heads this chapter. It was first explored—one might almost say discovered—by Jacques Carter, in 1535. From 1608 to 1759 the country was ruled by the French. In that year, however, General Wolfe struck the first blow at Gallic dominion, and in 1763 Canada came under British rule. At that time it comprised part of what is now the United States, but in 1783 the sites of the after states of Minnesota, Wisconsin, Michigan, Ohio, Indiana, and Illinois, were surrendered to the young American

Republic. When, in 1867, the eastern portion of the country confederated under the title of the Dominion of Canada, while owing allegiance to the English crown, and receiving a Governor-General from the mother country, it became to all intents and purposes independent, and now governs itself by institutions mainly modelled on those of England. In a short time it has absorbed the other British colonies, and in the course of a few years we cannot doubt but that this young and vigorous offspring of Britain will rule all America north of the boundaries of the United States. The present provinces are Ontario,

ISLANDS AT THE MOUTH OF THE RIVER ST. LAWRENCE.

Quebec, Nova Scotia, New Brunswick, Prince Edward Island, Manitoba, British Columbia, and the great undefined hunting-grounds of the Hudson's Bay Company, which we have already described. These are known for convenience' sake as the North-West Territory. Each of the provinces has its own Lieutenant-Governor, and Chamber of Legislature, and each sends representatives to the Dominion Parliament, which meets in Ottawa — the capital. It has—comprising all the male British inhabitants between eighteen and sixty —more than 43,000 militia, and the nucleus of a navy. Its area is about 3,500,000 square miles—or only 600,000 miles less than that of the whole of Europe, and excluding Alaska, which should rightly belong to Canada, over 400,000 miles larger than the United States. The census of 1871 shows a population of 3,576,656, so that if we now estimate the population at four millions, it will not be too great a number to fix it at. Ontario,

for instance, increased in ten years at the rate of 16·10 per cent., Quebec at the rate of 7·20, New Brunswick at 13·38, Nova Scotia at 17·21—or take the country as a whole, at the rate of 12·80 per cent., though it is believed that it is now even greater. The area of the provinces and territory, as given in official documents, is as follows:—Nova Scotia, 21,731; New Brunswick, 27,372; Quebec, 193,355; Ontario, 107,780; Manitoba, 17,340; British Columbia (including Vancouver Island), 220,000; Prince Edward Island, 12,173; and the North-West Territory—much of which is useless for settlements—about 2,750,000 square miles. The population of the various provinces may be taken as follows:—Nova Scotia, 387,800; New Brunswick, 285,777; Quebec, 1,191,576; Ontario, 1,620,850; Manitoba (in 1870), 11,853; British Columbia (estimated), 50,000, which, however, includes Indians, who are in the majority; North-West Territory, 28,700, an estimate which comprises the aborigines, who far outnumber the whites, and Prince Edward Island, 94,021. Forty-five religious and irreligious denominations are given in the census of 1871 as dividing amongst them the population of Canada. Though some 5,000 people claimed to be "without creed," yet only twenty classed themselves avowedly as Atheists. Of these, nineteen were in Ontario, and one in Quebec. As the French population of Quebec is almost invariably Roman Catholic, it naturally follows that this religious body has the most numerous adherents in Canada. Next in point of numbers come the Methodists; then closely following on them the Presbyterians and Episcopalians. There are only about 1,200 Jews—a fact which, as in the corresponding case of Scotland, speaks either strongly for the acuteness of the other inhabitants, or the poverty of the country—and but 70,800 Quakers. The Swedenborgians number more than 3,000, the Universalists about a like number, while thirteen of the inhabitants of Ontario were, in 1871, Mohammedans. The origin of the population of the colonial offshoots of England is always curious to study. Accordingly, when we look at Canada from this point of view, we find that the Africans in Ontario were 13,435; in Quebec, 148; in New Brunswick, 1,701; and in Nova Scotia, 6,212. The Dutch in Ontario were 19,992; in Quebec, 798; in New Brunswick, 6,004; and in Nova Scotia, 2,868. The English numbered in Ontario, 139,429; in Quebec, 69,822; in New Brunswick, 83,598; and in Nova Scotia, 113,520. The French were in Ontario, 75,383; in Quebec, 929,817; in New Brunswick, 44,907; and in Nova Scotia, 32,883. There were 158,608 Germans in Ontario, 7,963 in Quebec, 4,478 in New Brunswick, and 31,942 in Nova Scotia. Of Greeks there were 7 in Ontario, 7 in Quebec, 1 in New Brunswick, and 27 in Nova Scotia. There were 2 half-breeds in Ontario, but none are recorded from the other three provinces brought into this computation. These are, we presume, half-breed Indians. If so, the statistics are erroneous, for throughout Canada there are many such, though, we presume, they did not choose in the census so to describe themselves. In Manitoba the majority of the population are of this class, and in British Columbia and the North-West Territory, they are also numerous. The native Indians number in Ontario, 14,184; in Quebec, 10,843; in New Brunswick, 1,386; in Nova Scotia, 1,765; in Prince Edward Island, 323; in Manitoba and the North-West Territory, 28,300; and in British Columbia, 28,500. There were 8 Hindoos in Ontario, and 3 in Nova Scotia. The Irish were as usual numerous, though the greater portion of them are Ulster men, or Scotch-Irish, as they are usually called,

the bulk of the Irish emigration finding its way to the United States. From the Emerald Isle there were accordingly in Ontario, 559,442; in Quebec, 123,478; in New Brunswick, 100,643; and in Nova Scotia, 62,851. Italians usually love balmier breezes than those of Canada, but still they muster even in our North American territories, where they form a useful industrious class. They were, in 1871, in Ontario, 304; in Quebec, 539; in New Brunswick, 40; in Nova Scotia, 152. Russian and Poles numbered in the four provinces respectively, 392, 186, 1, and 28; the Scandinavians, 686, 454, 200, and 283, though of later years a small Icelandic immigration has to be added to these figures; the Scotch, 328,889, 49,458, 40,858, and 130,741. The Spanish and Portuguese were 213, 142, 223, and 251 respectively in Ontario, Quebec, New Brunswick, and Nova Scotia. The Swiss were 950, 173, 64, and 1,775. The Welsh were 5, 282, 283, 1,096, and 1,112 respectively. There were other nationalities represented, but the above may be expected as fair specimens of the origin of the Canadian people—a people which is being continually recruited from Europe, but has hitherto shown none of that tendency to die out when left to itself, which ethnologists declare is evident in the United States, where the native families are small in proportion to those of the foreigners.

The trade of Canada is rapidly on the increase. In 1867 the exports and imports, including those of Newfoundland, amounted to 139,202,615 dols.; and in 1873 they had reached the potent figure of 235,301,203 dols., or almost doubled in six years. The revenue for 1872-3 was 20,118,572 dols., while in 1867-8 it was only 13,687,928 dols. 49 cents. The expenditure in 1867-8 was 13,486,092 dols. 96 cents. In 1872-3 it was 20,751,120 dols., 20 cents. It ought, however, to be remarked that in the years 1872-3, there was a deficiency of 637,543 dols. 24 cents. The net debt of the Dominion in 1872, deducting assets, was 82,187,072 dols. The net debt thus amounts to 21·72 dols. per head, and the net interest to be paid 1·20 dols. per head. It ought to be remarked that of this debt of Canada not one cent was incurred by war or other worse than useless expenditure. It was all incurred for the construction of public works, of the greatest service to the country, which add to the revenue, and as the population increases, will still more be of value and profit to the young country. Among the most magnificent of these public works are the inter-colonial railway, the system of canals, and "the construction of other works for communication across the Continent," such as the Canadian Pacific Railway, which has, however, not yet (1877) been fairly begun, and will take more than one generation—in the present aspect of affairs—to complete. As a further contribution to an estimate of the material prosperity of Canada, we may add that while in 1868 the paid-up capital of all the chartered banks of Canada compelled to make a return was 28,529,048 dols., and the deposits 30,168,536 dols., in 1874 they stood at respectively 60,443,445 and 78,790,367 dols. In 1874, there were in the Post Office Savings Banks, 3,587,365 dols.; in other Government Savings Banks, 2,958,170 dols. 39 cents; and in the Montreal City and District Savings Bank, 4,739,721 dols. 59 cents—in all, 11,342,243 dols. 45 cents. The combined Government and Bank circulation amounted, at the end of the fiscal year named, to 40,833,301 dols.

Having thus briefly sketched the general aspects of Canada, so far as figures admit of this being done, we may now, before describing the country in its general relations to the geographer and settler, make a few remarks on each province separately. Some of them we

have already referred to in our account of the fur countries, where it was necessary to describe the aspects of the old Hudson Bay Dominions, now included under the rule of the Dominion.

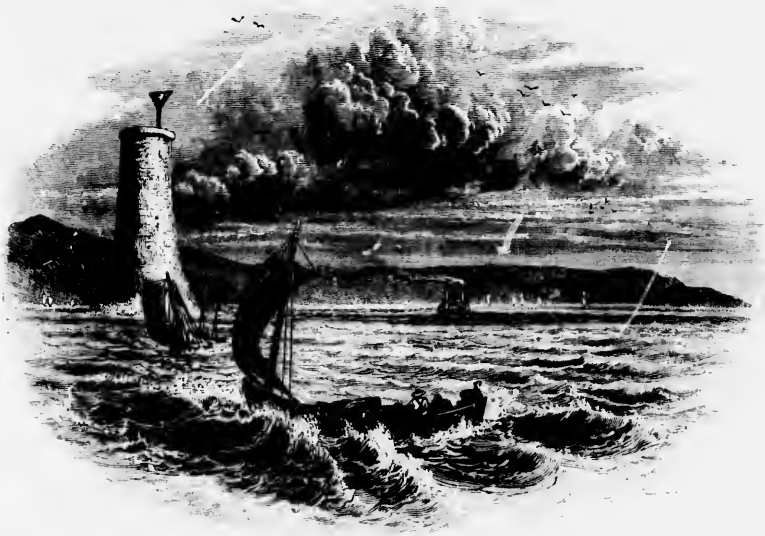
Ontario.

In many respects Ontario is the best, as it is the wealthiest, and most thickly-populated of all the Canadian provinces. Its climate is mild enough to favour wheat and fruit-growing, and the great lakes in the vicinity, as well as the St. Lawrence, with its system of canals, enable its products to be carried far westward into the United States, and southward and eastward into the other provinces, as well as to sea, without being ever unshipped. The great expanse of water modifies the summer heats and the winter colds. Accordingly, Ontario is essentially a country of agriculturists. Of its area of more than 100,000 square miles—or about the same as that of Great Britain and Ireland—three-fourths are suitable for agriculture, though at present only about one-quarter is under tillage. Mr. Rowan, to whose account we owe most of our information, considers Ontario the best position of Canada for a farmer. As yet land is so plentiful that only the best portions of the country are seized upon for settlement. As it gets more "peopled up," sections now despised will be occupied. At present there is no trouble in any of the provinces for a person of some capital to obtain a partially cleared and fenced farm, without being compelled to resort to the backwoods, and win a home from Nature for himself. The original settlers in Ontario were not, take them one with another, good farmers. They found the soil virgin, and when cleared of bush, capable of producing excellent crops of wheat. Wheat accordingly they grew, and grew season after season, until the soil was exhausted. They had no idea of rotation of crops, or if they had, they found it easier, and at that time cheaper, to exhaust the soil than to relieve it by less lucrative harvests, or were unable, when it was "worn out," to put back again into it, by means of manure, the elements of which it had been robbed. Accordingly, they moved elsewhere to renew the same wasteful system. Thus their farms may be often had cheaply. These are no doubt for the time exhausted for wheat, but with the expenditure of a little money on manure, and care in growing other crops, they may be always brought back again into a high state of fertility.

In addition to the crops with which we are familiar in England, Ontario produces others which we usually associate with a semi-tropical climate. For instance, among her products the Lake province can boast wheat, oats, rye, barley, potatoes, turnips, peas, beans, clover, and grass, which grow side by side with maize, grapes, peaches, and pumpkins. Even tobacco also could be profitably cultivated.

The country is well adapted for stock raising, and accordingly Ontario sends large quantities of butchers' meat into New England, and to the Eastern provinces of the Dominion, where lumbering, ship-building, fishing, and such-like maritime pursuits so engross the attention of the inhabitants as to leave them little time for farming. Cheese is exported from Ontario to the extent of some two millions of dollars per annum, and fruit is grown very plentifully. Peaches, apricots, and nectarines ripen in the extreme south and west, and orchard crops and strawberries are grown on a large scale, as in all the large towns there seems an almost inexhaustible demand for this fruit.

Sweet and water melons ripen in every portion of Canada—not in the fur countries proper—and in Lower Canada every garden possesses quantities of citron and musk melons of a size to which the forced fruit of that name could scarcely attain in England. The gooseberry does not, however, prosper in the provinces under description. Though agriculture is the chief occupation of Ontario, yet boating on the lakes and rivers, and lumbering in the forest, are engaged in by some of its inhabitants. Iron, silver, and copper mining also gives some employment, but the absence and consequent cost of coal will always be a great



VIEW ON LAKE ONTARIO.

drawback to this industry. Game abounds in the forests, and fish in the lakes. Toronto, the chief town, and the seat of the Provincial Government, has a population of nearly 56,000, and is a well-built exceedingly pleasant "city," with good public buildings, and an excellent university, which, under good management, and the control of even a moderately intelligent minister of education, might become a seat of learning which would not only attract Canadians, but even the youth of the neighbouring United States. At present, however, it requires a thorough remodelling both in its external and internal arrangements. Ottawa, the capital of the whole Dominion, is another of the Ontario towns. It has an increasing population of about 22,000. Before it was selected as the capital, on account of its central position, and its distance from the frontier, it was called Bytown. But since its elevation in the social

scale it has wonderfully progressed. The Government buildings are handsome, and finely situated on the summit of a rocky bank overlooking the river, affording a fine view on the one hand of the Ottawa River foaming through countless little wooded islands, dashing itself over the falls; on the other of a fine reach of the river which presents itself. All around, as far as the eye can reach—and this is a long way in the clear climate—is the great forest in its glory of colour and form. It is as yet a city in progress, but already there are signs that when it assumes form it will be a solid, substantial, and even handsome town. "Ottawa ne resemblance," writes Mr. Rowan, "to the country seat of a rich English noblem whose house is hospitably filled with pleasant people, while his park stretches far around him in the midst of a quiet rural landscape. But there is one great difference between the two. In an old country, side by side with immense wealth and excess of luxury, squalid poverty and extreme want are always to be seen. It is a significant fact that in Ottawa all the public buildings found in English cities exist, all but one—and that is the poor-house.

Man seized upon that beautiful work of nature—the Chaudière Falls—and turned it into a ten million horse-power saw-mill. The beauty of the fall is much impaired, but it is a wonderful sight to see the logs drawn out of the water by the water into twenty different saw-mills. Each log is first squared by one saw, then cut into boards by another. The rough edges are not wasted. Circulars whisking round with inconceivable rapidity rip them up into thinner boards. Even the edges are utilised, and made into laths by a very ingenious process; nothing is wasted but the sawdust." The town is very cleanly, every house being provided with a hose, with which the door-steps, pavements, and windows are watered and washed in dirty weather. The public conveyances are excellent, and even gaudy—"skeleton Lord Mayor's coaches" they have been called—which are greatly affected by the lumbermen when they come into town out of the backwoods for their periodical "spree." The petroleum wells of Lambton yield 100 barrels of crude oil per day, and the wells of Upper Canada altogether over 10,000 barrels per week. The capital now employed in the trade is upwards of £2,000,000, and the oil region of Ontario is believed to be very extensive. Money is, however, dear—with good security bringing eight to ten per cent.—so that this acts as an obstacle to the development of the resources of the country.

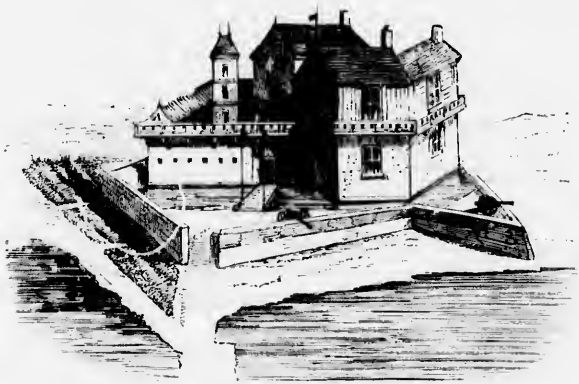
Land varies in price from 2s. to 40s. per acre, according to situation and soil, but Government lands — generally very far in the outer world — can be bought in Canada at an average of 4s. per acre, though even this is an unnecessary expenditure on the hardy immigrant's part, as the Government has certain regulations by which lands can be "pre-empted" without cost to the cultivator. But as a score of yellow-covered pamphlets describe the method in which this can be done, it is unnecessary to occupy space with it. In Ontario every head of a family is entitled to 200 acres of land, and every adult arriving in the province at or over eighteen years of age, is entitled, without distinction of sex, to 100 acres of Government land free of payment. When we have to speak of emigration to Canada, we shall describe more fully the conditions demanded of the occupiers of these free grants, as well as "the Settlers' Homestead Fund," by which settlers on Government lands are aided by being advanced the cost of a habitable house by the Government, at a cost of not more than £11 1s. 11d. sterling. There are still in the hands of the Government

large tracts of uncleared lands to the extent of 77,606,400 acres, of which 25,297,480 are surveyed. The price varies from tenpence, in the Algoma district, to fifteen shillings in more accessible regions.

Quebec.

This old home of the French *habitants*—the polite old Seigneurs, who live under their old laws under a strange sovereign, and while different in manners, thoughts, and religion from the rest of their fellow-subjects are yet loyal British subjects—is a province scarcely so valuable to the agriculturist as Ontario. It has an area of 200,000,000 acres of land, much of which is fertile and capable of cultivation. The climate is, however, even better than that of Ontario. All the ordinary cereals and grasses grow to perfection, while Indian corn is one of the most common crops. Tomatoes also grow to perfection, and it may be mentioned, for the sake of comparison, that in no part of the United Kingdom will either of the two latter crops ripen in the open air. Its great forests also supply much of the "lumber" of Canada, and though it has no coal, yet the great supplies of peat aid in supplying the place of the former. The fisheries are of immense extent, and very valuable. They supply a great material of export, and breed up a hardy race of seamen. The cod-fishery of the Lower St. Lawrence employs a number of small schooners, and a good deal of fishing is also done in open boats. A fishing village on the shore of the St. Lawrence has a peculiar appearance from the cod-drying platforms or stages, which look like great ladders, "lying side by side in a horizontal position, some three feet from the ground. These platforms are covered with layers of green boughs, on the top of which the fish, when split and salted, are spread to dry in the sun. In the front of each cottage, where one expects to see a garden, there is instead one of these stages, redolent of cod-fish." Each boat, manned by two men, will take in the course of a year about 10,000 cod. Yet the fishermen are generally poor, the "tally system" being here as elsewhere the ruin of the labourer, while the employer grows rich on it. The Jersey merchants are the chief buyers, and there being scarcely any competition, the buyer puts his own price on the fish, and finds it to his interest to keep the improvident fishermen in his debt. The result is that the men are little better than bondsmen of the buyers, being in debt to them for their boats, fishing-tackle, and even their clothes and provisions, and sometimes even for their houses and potato gardens. The great River Lawrence runs through this province from the head of ocean navigation to the gulf of the same name, thus giving the country a most commanding commercial position. The scenery on the banks is always pleasing, and sometimes even magnificently grand, especially among the thousand islands. The climate is very healthy, the winter being cold and the summer of about the same average warmth as that of France. The dryness of the winter air renders the frequent extreme cold of that season not nearly so unpleasant as it would otherwise be, while the snowfall is even welcomed by the farmer as forming a warm covering for the ground, and enabling him to drag his firewood and other "produce" to market with ease on sleds. On the other hand, while the climate is in winter not more severe than that of some of the Western Prairie States in America, the summers are freer from ague, which is the scourge of most parts of the American Continent below a certain latitude. Quebec and Montreal, both old French towns, and still maintaining a good deal of that Old World appearance which is so rare in America, are the chief cities of

the province. The first, which has a population of 75,000, is the capital of the province, while the latter, with a population of 160,000, is the commercial metropolis, and, indeed, the chief port in British North America. To travellers from Europe, Quebec will always have the greatest interest. It has historic associations which few of the other Canadian towns possess, and the man must be deficient in sentiment who can visit the heights of Abraham, or walk under the shadow of its battlements, without memories that take him far back to the days when the Briton and the Frenchman fought here for the mastery of the New World. Quebec is essentially a French city of two hundred years ago. The further one travels west in America, as Mr. Rowan remarks, the more American do the cities become. The new mushroom towns are



THE FIRST HOUSE ERECTED IN QUEBEC.

redolent of the soil; they were founded, named, and peopled by the new nation which has taken root in the land. On the other hand, the old ones are the work of men who carried to them the thoughts and the skill of the old old world beyond the sea. St. John's, Newfoundland, the most easterly of them, looks like some Irish town, the dirty irregular streets and neglected *trottoirs* having an only too distinctly Milesian aspect. Here is the British policeman, and his prey, the Old World beggar, while the stray pig, which wanders about seemingly quite at home, brings into the mind of the newly-arrived visitor a flood of recollections of the Green Isle. "From the flagstaff of the city," writes one of the most observing of its visitors, "a spot to which every newly-arrived immigrant or tourist naturally turns his steps, a magnificent panorama presents itself to the eyes. The old city nestles close under the guns of the citadel, as if for protection. A dozen steamers lie at the wharf close under the ramparts, and the sightseer can look down upon the decks of forty or fifty large sailing ships lying at anchor in the stream. Opposite is Point Levi, with its acres and acres of floating lumber, and its high lands, which, in the old wars, were out of range of the guns of the citadel, but which in these days of improved ordnance could command them. But up the river and down the river, what

VIEW OF QUEBEC.

glorious views! what an expanse of blue water and glorious sky! what masses of rock and forests, with the rugged and sharply-defined Laurentide mountains in the background, rising apparently sheer out of the water! There are not many cities in the world so favoured. But every one to his taste. Yankees look on 'Quebec,' as they call it, as a miserable place, a 'finished city,' a place that does not go ahead. It is, in fact, an Old World city, and as such inexpressibly refreshing to the Old World tourist, whose eye is wearied of the level uniformity and terribly regular rectangular cities of the West. It is devoutly to be wished that no improving Lord Mayor or energetic municipal council will ever try to adapt Quebec to the scaled pattern of American cities. But even if they did their worst, I fancy that Nature would thwart them. The old war-worn ramparts of the citadel are crumbling away; peace bears harder upon them than war. One cannot help thinking that the richest country in the world might well afford to keep such a fortress in repair. . . . There is no city in the New World that has a more interesting history of its own than Quebec. A monument to the memory of Wolfe and Montcalm reminds the visitor of a passage in their history. On one side is inscribed 'Wolfe,' on the other 'Montcalm.' Nothing more; but what a glorious junction of names, equal honour alike to victor and vanquished!"

Montreal is also an extremely interesting city. But there the tide of life moves more rapidly, and the signs of the old French times are fast disappearing under the influence of modern progress. Here and there a quaint old building; a street which reminds one of pre-Haussmanic Paris; and the endless French names are now the chief features which reminds the visitor that here he is treading a city of *La Nouvelle France*. The island of Montreal is really a garden, and between Montreal and Quebec there are fertile districts richly cultivated, and containing many prosperous settlements. Below Quebec the soil is poorer, the people and the seasons shorter. The wooded lands—especially if covered with hard wood timber—make good farms when cleared; but then, though easily cleared, they are not so desirable as those which comprise timbered upland and "intervale," or meadows which yearly yield excellent crops of hay, without any further labour—a matter of great importance in a country like Canada, where the winters are long. In Quebec district the backwood settler may be probably seen to better advantage than in most other parts of Canada. His "clearing," and first attempt to found a home for himself, must to the thoughtful traveller be objects of exceeding interest. "If approached," writes Mr. Rowan—and I quote this on the whole most authoritative writer on Canada, as expressing what strikes me as a most graphic picture of the difficulties of a pioneer of civilisation, in the words of one who gained his knowledge first hand, which the author cannot pretend in this case to do—"from the side of a forest, the first sign of civilisation is the sound of the cow-bells, which are strapped to the necks of the cattle to enable their owners to find them. A good-toned bell, on a still day, can be heard two or three miles off. The roads leading out of these back settlements are of the very roughest description in the summer, but in winter, thanks to the snow, are level and excellent. Of course, as the settlement improves, the roads improve, and in a very few years the back-settler's home of to-day is in the centre of the settlement, accessible by good roads, and possessing every advantage. For the first seven or eight years the back-settler leads a hard life. Having chosen his land, and purchased it (one-fifth of the purchase-money being paid

down, and the remainder in four annual instalments), he proceeds to build himself a log house, about 18 feet by 20 feet, which he roofs with split pine or cedar ('shingles'). Externally, these log huts are of the roughest description, no tool being laid upon them but the axe. Internally, however, when the good woman is tidy, they are comfortable enough. The back-settler, though content with a log hut himself, puts up a more pretentious building for his hay and his cattle. His barn is generally built of boards hauled from the nearest saw-mill, and roofed either with shingles made by his own hands, or with spruce bark. These buildings are situated in the centre of an open space in the forest, from which it is fenced off by the half-burnt poles, arranged in what is commonly called a 'ripgut' fence. The crops—potatoes, oats, and buckwheat—grow in patches amongst the black charred stumps, and grow so well, too, as almost to hide the latter, though they are two feet in height. Outside the fence the back-settler's stock remain about the neighbouring forest, where I am afraid most of his leisure time is taken up in hunting for them. But, indeed, his leisure moments must be few, for a back-settler has to turn his hand to everything. He must be his own carpenter, his own blacksmith, &c. &c. There is no division of labour in the backwoods. The man and woman of the house do everything. The knowing old settler never breaks his back in tearing a green stump out by the roots. His *modus operandi* is somewhat as follows:—In winter, when he has the time to spare, he chops a few acres of forest, hauling off the soft wood for logs, fence rails, &c., and the hard wood for firing. The waste wood and branches he makes into piles, and burns, when dry, in the spring. In the space thus cleared and burnt, he plants potatoes with the hoe, here and there, in little hills among the stumps. In the following year he sows grain-seed, and lays it down as pasture. After seven years the hard wood stumps are rotten, and come out easily. The pine, owing to its resinous nature, does not rot so quickly, and gives a little more trouble. The land is now ready for the plough, and in the eighth year he takes a crop of wheat off it, and brings it into regular rotation. Say four acres of forest are chopped every year, he will thus have (after the seventh year) ten acres of new land coming in each season, viz., five of burnt land for potatoes, and five to stump and plough for wheat. The virgin soil needs no manure, and yields magnificent crops. When the settler has new land coming in each year, he, from time to time, lays down portions of his longest cleared land in permanent pasture." His life is not all roses; and, indeed, the roses are something he lives to enjoy in the future. The venomous flies, and the mosquitoes, next to the "woful lack of cash," are his greatest trouble. But even then he has his consolation, for the greater his clearing becomes, the less do these pests annoy him; they disappear with the forest. In the high lands they are not so bad, but in swampy ground they are all but intolerable. In the valley of the Metapedia, the writer whom I have just quoted mentions that he has known families absolutely routed out of the country by the black flies. The cattle are also not exempt. The caribou fly, "whose bite is only a shade less severe than that of a dog," greatly annoys them, until, to obtain relief, they imitate the moose by plunging into the lakes and rivers, and there remaining during the hot portion of the June and July days. But the backwoods have their compensating advantage. In the winter the settler is sheltered from the blasts, and he has always fuel at his hand to warm himself to his heart's content. His life is

one of toil, but it is one of hope also. Every day he devotes to labour brings him a day nearer to his goal of independence. "Every hour's work he spends on his clearing makes him a richer man, every acre he ploughs, every stump even he takes out, makes his farm more valuable. All his work bears fruit, and at the end of ten or fifteen years it is wonderful to see what a transformation the industrious back-settler has made in the hole

THE MONUMENT TO WOLFE AT QUEBEC.

he has hewn out of the primeval forest." The rude log hut in time gives place to a more elegant and commodious mansion. Nothing is more common than to see on the farm of a successful settler a handsome house, and a little way off the rude little log cabin which, in "old times," gave him and his family shelter. And I may add, nothing is more common than to hear the substantial farmer in Canada or the United States talking almost regretfully of the happy days he spent in the old cabin, when he was poor in gold, but rich in hopes, and in all that makes life tolerable.

Land in Quebec—or Lower Canada, or Canada East, as the people still familiarly call it—can be bought at prices varying from 15s. to 2s. 5½d. per acre, payable by five instalments, one of which is due on the day of purchase. Indeed, this price is equivalent to giving away the wild lands, for the sum exacted in the form of payment will really hardly pay the cost of surveying and making roads. In the valley of the Saguenay is much good land. The valleys of the Mutawan, Matepediac, and Ottawa may also be specified as districts in which the intending agriculturist can secure a settlement. Most of the places are tolerably remote from

VIEW OF MONTREAL, FROM THE ST. LAWRENCE.

the old settlements, for it is almost unnecessary to say that the best land is not the kind which remains longest unoccupied. However, remoteness becomes soon a comparative term. Roads and railways are rapidly made, and the settler, who a few years ago was in the woods, finds himself near to a rising town, and on the line of a railway which skirts his farm. In Quebec province there is what is called the "homestead law," which first originated in the United States, and is now found in most parts of the country. This is under the protection of a law by which a certain portion of the settler's property is exempted from seizure for debt for ten years after he settles on his land. The law is an excellent one when so framed—as I believe it generally is—to grant necessary protection to the enterprising settler without at the same time destroying his credit. It has, however, this disadvantage, that it often is only a cloak for

a swindling settler snapping his fingers at his first creditors, and in this respect is the antipodes of the English law of distraint, and the corresponding Scotch one of "hypothec."

In Quebec, though the greater number of the people are French, yet both the English and French languages are spoken. Canada, indeed, presents the spectacle of more than one million Frenchmen—or people of Gallic descent—living quietly and contentedly under British rule. But it must be remembered that these are not Frenchmen of to-day or even of the last generation. To them all Republics—first, second, and third—are equally unknown. The second Empire they know as little of as the first. In a word, they are Frenchmen of the *ancien régime*—of the old monarchy—and to-day they speak a dialect which their fathers spoke in the time of Louis Quatorze. They have, therefore, only a sentimental feeling for France. Few of them ever saw the fair land, and, above all, they know when they are well off. They are protected in their religion by the Government. They have their own schools, and their own priests, and live under a primitive sacerdotal rule, which appears strangely out of place in the New World, but which is mightily convenient for a lazy politician who wishes a seat without the nuisance of having to canvass in person the vote his constituency. It must, however, be acknowledged, that on the whole the p ·ote for their flocks in the best possible manner, and possibly even better than the latter could do through their individual units. To the French-Canadian Canada is all in all. He may emigrate to the United States in search of high wages, but he rarely settles there; just as the Frenchman of old France always longs, when he has made a few thousand francs, to return again to his own sunny native land. But it is the same with all the people of the Dominion.

In 1873, 9,000 Canadians returned from "the States," to again settle in the provinces they had left.

In 1759, when they passed under British rule, the French numbered 65,000. At present their descendants, by the census of 1871, are 1,082,940, and as the changes in France have held out inducements to the inhabitants of Alsace and Lorraine to emigrate, it is possible that the population of Quebec will be reinforced by a considerable contingent from the annexed provinces. As the darker side of the bright picture of the Frenchman under British rule, it must be acknowledged that they are excessively ignorant, and that the priests exercise an iron rule in controlling education, and in levying the tithes and other Church dues from its adherents. Quebec accordingly preserves the last remnant of a State Church in America, and some of its sees and conventual institutions are extremely wealthy. The French in Canada also live under their old laws, except in those cases in which they have preferred to substitute the English criminal law and trial by jury for the old arbitrary rule of "intendants," and such like representations of the despotic French monarchy which existed prior to the Revolution of 1792. In Quebec, it may be added, are found the greatest number of owners and occupiers of land under ten acres, and under the influence of old custom, and the French law of inheritance, a continual subdivision of new heritages is going on among the members of a family. The effect of this is pointed out in the remarks of a correspondent regarding Lower Canada. He observes, that for some distance below the city of Quebec, and between that place and Montreal, on

either side of the St. Lawrence, but more especially on the south, a stranger cannot fail to be struck with the number of small homesteads scattered all along, giving almost the appearance of a village street. This arises from the old French law and custom of dividing the property, on the death of the father, equally amongst all the children; the consequence being that, in the course of a few generations, a large farm becomes cut up into a number of homesteads, each scarcely capable of supporting the family residing upon it, and too small to admit of further severance. The *habitant*, or French-Canadian farmer, knows no love stronger than that for his home. The place where he was born, though affording a slender livelihood, is dearer to him than all the world. In vain for him has the magnificent West been opened up—his dreams hover round his own fireside and his church; he asks no better lot than to live where his father lived, and to die where his father died. Happy in his simplicity, he copies no man's improvements, and imitates no person's mode of living. His life, his food, his enjoyments are all regulated by the opportunities of the day. Politeness is a trait, moreover, native to his character. You may enter a *habitant's* house—always clean, with flowers in the window, and walls well whitewashed—and though the man may be the poorest in the parish, you will be received with so much ease and frankness that you can with difficulty believe such people have always lived in such a place. You may speak execrable French—many English people unfortunately do—and make mistakes that would excite the risibility of a saint, yet you never see a smile on the face of the *habitant*, nor even on the faces of his children. Of course, after you go away, they enjoy the fun amazingly. Your religion, your politics, or your country may, from accidental circumstances, be distasteful to him, yet as long as you are under his roof, you never hear a word that could hurt your feelings. In enterprise, in boldness of thought and action, the *habitant* is far behind the rest of America; in opposing the introduction of new improvements and inventions, he is behind the age; but in politeness and good breeding he is immeasurably above any similar class on this continent. Up to 1854 the seignorial tenures of old France prevailed, and their influence is still so far felt that in Quebec holders of more than 200 acres are also more common than in the other provinces.

CHAPTER XII.

The Dominion of Canada: New Brunswick; Nova Scotia; Prince Edward Island; Newfoundland; Manitoba; British Columbia.

The province of New Brunswick has a population of 286,000, and an area of 20,000,000 acres, or deducting St. John, the capital, about one person to every hundred acres. It is 210 miles long and 180 broad. It has a coast-line of about 500 miles, indented with numerous bays and inlets, and is intersected in every direction by large navigable rivers. It is thus larger than Belgium and Holland united, and about two-thirds as large as England. Generally it

is a flat and undulating country; on its north-east coast, from the Bay Chaleur to the Nova Scotia boundary—200 miles—scarcely a hill 300 feet high existing. Skirting the Bay of Fundy and the St. John River there are some elevated lands, but the only mountains worthy of the name are those bordering the province of Quebec, where oval-topped hills range, according to a Government report before us, from 500 to 800 feet in height, clothed with lofty forest trees almost to the summit, and surrounded by fertile valley and table land. The country is healthy in the extreme—the ranges of climate being in the interior from 92° above zero to 18° below it—but the days during which the thermometer falls below zero are rarely more than thirty. In April snow disappears, and in June the apple trees are in full blossom. In August early potatoes are brought to market, but it is not until September that cereals are ready to be cut. The autumn is, however, a long and pleasant season in New Brunswick. In November there is usually very wet weather. By the end of the month the rivers are closed, and by the middle of December a Canadian winter has fairly set in. It would, however, be a mistake to say that it is a farming country; little or no emigration goes in the direction of this province. Nine-tenths of it are still forest; hence "lumbering" is one of the chief industries of the country. Probably this fact, much more than the unfavourable character of the country itself, is the reason why farming is not more pursued. It is not their policy to follow a laborious calling at which money is made slowly when occupations involving no doubt greater risks, but at the same time quicker returns, offer attraction to the hardy colonists. Accordingly, lumbering and ship-building—though the introduction of iron ships has unfavourably affected this occupation—command the attention of the greater part of the population. As railways are now spreading over the province other industries are springing up, and in time farming—even though its operations have to be compressed into six or seven months—will also be more extensively followed than it is at present. Its navigable rivers are an important feature in the nature of New Brunswick. The St. John, which is 450 miles in length, is the chief one (p. 232). It is navigable for large steamers to Fredericton, eighty-four miles from the sea, and in high water 120 miles further, while the Miramichi is navigable for vessels of 1,000 tons for twenty-five miles from its mouth, and for schooners twenty miles further up. The Restigouche is also a fine river, three miles wide at the point where it falls into the Bay Chaleur, and navigable for large vessels eighteen miles from its mouth. The beauty of the New Brunswick forests is celebrated even in America, though the trees are inferior in size to those on the Pacific coast; but the variety of trees found in the former adds charms to them which the sombre woods of British Columbia so greatly want. Brilliant scarlet and violet, and every shade of blue, brown, crimson, and yellow may be seen in these forests, as the foliage changes with the advancing season. Wherever the sunlight can penetrate, or the country is divested of wood, the beautiful flora of Canada is seen—*Lilium Canadense*, which stretches to the Pacific, and is now naturalised in our gardens, the *Ledum*, the *Pyrola*, the *Potentilla*, and other familiar flowers (p. 229).

The fisheries are valuable, while there are also minerals, bituminous coal and excellent freestone included, in some quantities, though we fear hardly yet of sufficient value to

FLOWERS OF CANADA.

make mining a profitable business. Manufactories of woollen and cotton goods, boots and shoes, furniture, doors, sashes, staves, &c. &c., are also in progress, though the shipping interest of New Brunswick, which, with that of Nova Scotia, has made Canada the fourth maritime

power in the world, exceeds all others in importance. St. John is the most important town commercially, but Fredericton is the pleasantest. It is the residence of the Lieutenant-Governor, and the place of meeting of the Legislature, and is charmingly situated on the banks of the St. John. Driving, riding, canoeing, skating, sleighing, and "traboging" form some of the common amusements of the inhabitants. The people are what is called in America "sociable," as might be expected in a robust, athletic, active, intelligent population. They have even less than the interior Canadians any exclusiveness or suspicion of the stranger. Emigrants do not come to them in great numbers. They have not been often deceived in new friends, but being very familiar with new faces, owing to their proximity to the seaboard, they form rather a pleasant set of people, among whom the visitors from the "old country" or the intending settler can sojourn with much satisfaction. As canoe-men and boatsmen the New Brunswickers are famous; as anglers they are scarcely less noted. The rivers all abound in fish. Salmon are plentiful, while the "lake shiner" (*Salmo gloveri*) is a trout perhaps peculiar to the country. The striped bass (*Roecus lineatus*) is another well-known fish of the New Brunswick rivers. It may be freely caught with bait, but spearing is the favourite mode of capture. The sturgeon (*Accipenser Oxyrhynchus*) measures from six to twelve feet in length, but is not caught by the settlers, though, whether for profit or sport, its capture by spearing should have charms for the Brunswicker enamoured of either motive to exertion. Eels are also plentiful in all the rivers, but, like the Scotch, the people of the province have a strange prejudice against them, founded on their supposed resemblance to snakes. Cod, mackerel, herring, and shad may be mentioned among the sea fisheries prosecuted off the shores of New Brunswick; for as a branch of trade the fresh-water fisheries are almost entirely neglected.

To the sportsman the country affords many attractions. To those who know where to go, and how to go about, good sporting may be easily got; while the stranger may always find good guides among the Melicete Indians who live on the St. John River. Moose are now very scarce, owing to their being recklessly slaughtered for their hides; but caribou are plentiful in the spruce woods, interspersed with "barrens," old burnt woods, and patches of hard woods, such as the centre of the province from the Bay of Chaleur to the Grand Lake. Other deer and bears are plentiful in the more inaccessible places. Beaver are met with, but fur animals, except otters, musk-rat, and lynx, are rare.

Snipe and cock shooting can be had in the latter end of September and October, while partridges are abundant. But the Canadian bird, unlike the English one, instead of being flushed in the stubble, takes to trees. The "pattridge gunner," as he is called, may be seen in the autumn leisurely driving his wagon along an unfrequented road, while his dog ranges the neighbouring bush, and when it flushes a bird, "sets" at the bottom of the tree to which it has taken until its master arrives, to first knock its head off with his rifle, and next to fight for its remains with his setter. The partridge of Canada is, however, in reality, a grouse. There are two kinds, the "birch pattridge" (*Tetrao umbellatus*), and a scarcer and hardly so delicate a species, from a culinary point of view, the "spruce pattridge" (*T. Canadensis*). Woodcocks, and wild geese of many species, are also abundant during the winter, while fair sport may be had along all the North Coast on the Nova Scotian side; but is not all this, and more, written in the book of Leith Adams?

Nova Scotia.

This is perhaps the best known of all the Canadian provinces, from the fact of its having been long a British military and naval station. The province contains about 11,000,000 acres, of which one-fifth consists of lakes and small rivers, and of this area less than half is fit for tillage. The scenery is very diversified with hills, dales, quiet lakes, and little land-locked inlets of the sea (p. 236). Yet both the country and its resources are little known, simply owing to the fact that most visitors only see the vicinity of Halifax, which is by no means a favourable specimen of the province. The climate, owing to the tempering influence of the sea breezes, is the mildest of any portion of Eastern Canada—the mean for the year being about 43°—and is correspondingly healthy, a fact which may account for the province having fewer medical men in proportion to its population than any other portion of Canada. It is not a good agricultural province, but nevertheless the farmers are numerous, prosperous, and enterprising, and the fisheries are also profitable. So valuable are the latter that the encroachment of the American on them is an oft-recurring subject of dispute between the Government of the United States and of this country. They consist of herring, mackerel, cod, haddock, halibut, hake, pollock, shad, smelt, perch, eels, and lobsters, which latter are usually sold in the Halifax market at about one shilling per dozen. Numbers are, however, being sent in a "tinned" state to Europe, so that these halcyon days for Halifax lobster eaters cannot long continue. Spearing lobsters by torchlight is one of the "sports" of the country, while salmon and trout are abundant in the rivers and lakes. Timber—pine, spruce, hemlock, and hardwood—is exported to an immense extent, while the sap, which may be obtained by tapping the tree in spring, collecting the juice and boiling it down, is extensively made into sugar and syrup for home consumption—the traditional "short sweetening" and "long sweetening" of many a familiar tale. Game is also abundant, but the mines of coal, gold, and iron are much more important. Gold also is mined in about sixty different places, where the quartz is crushed and the precious metal extracted in sufficient quantity to make the business a paying concern, though in California the rock would hardly pay the cost of working. The exports of the province amounted in 1871 to £1,357,693, while the imports were £2,224,696 in value. Its census then showed 387,800 people, of which 20,313 were employed in the fisheries, which yielded, in 1871, 5,101,030 dols. Social life in Halifax is very pleasant, the people very refined and respectable in the extreme, as the many naval and military officers who have been stationed there and married daughters of the land can abundantly testify (p. 233).

Cape Breton, which the Duke of Newcastle—George the Third's minister—was so astonished to find was an island, constitutes the highlands of Nova Scotia, and curiously enough was originally settled by Scottish highlanders. Its scenery is fine. "The hills fall somewhat short of mountains, but they rise boldly from the water's edge, and are clothed to the summit with beach, maple, and birch, the bright green of the deciduous trees being relieved by the dark green—almost black—of the fir tribe, which grow in sombre masses in the ravines and 'gulches,' forming an effective setting to the hills." The island is settled by two classes—the Acadian-French, who are fishermen, and the Scotch, who are chiefly cattle graziers. The latter, even to the third generation, still speak Gaelic;

and though a fine, hardy, good-looking race, are but inefficient farmers, who have not got thoroughly assimilated to the changed condition of life here compared with that which they left behind in Scotland. The French have still all the characteristics of their ancestors, the "Acadians," who originally settled it.* Sable Island is another of the outlying dependencies of Nova Scotia. It is twenty-five miles in length, by about one and a quarter in width, and is formed of grass-covered sand-hills, on which herds of wild horses, known as Sable Island

FALLS OF THE ST. JOHN RIVER, NEW BRUNSWICK.

ponies, pasture. Nova Scotia took its present name in 1621, prior to which date it was known as Acadie, Frenchmen having first colonised the island in 1604.

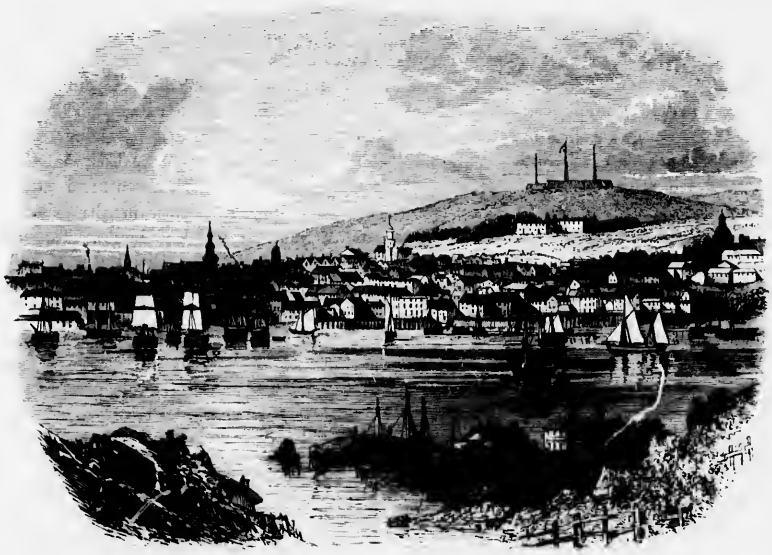
Prince Edward Island.

This is one of the smallest, but most beautiful and fertile portions of the Canadian Dominion, yet it is at the same time one of the most backward. The Isle of St. John—its first name—which was dignified with its present title in honour of the Duke of Kent, her Majesty's father, was ceded by the French to George III. in 1763.

The country was then distributed among the hangers-on of the Court, on the simple

* Brown's "History of the Island of Cape Breton" (1869).

conditions of the grantees paying a quit rent to the Crown, and of the proprietors sending out German Protestants to these lands in the proportion of at least two hundred to each of the original sixty-seven townships. With the exception of Lord Selkirk none of the grantees ever attempted to fulfil the conditions on which they had obtained their land. Even this energetic Scottish nobleman, whose name, and that of his descendant, are so linked with the history of British North America, did not fulfil either the spirit or the letter, for he introduced, not German, but Scottish immigrants. The rest of the proprietors



VIEW OF HALIFAX, NOVA SCOTIA.

were, with few exceptions, absentees, who neither lived on their lands, attempted to people them, nor spent money in improving them. Meantime the original Acadian-French, who had been in the country prior to its cession to England, remained on the land, much to the annoyance of the new proprietors, who found no small difficulty in either removing the squatters or getting them to pay rent. In every respect this feudal system of land tenure, so opposed to the ideas of the New World, worked badly. The resident agents of the proprietors allowed the rents to fall into arrears to an endless extent, while litigious squatters were ever and anon defying the rights of the descendants of those to whom the island had been granted by young King George. No doubt many of the farms were let on merely nominal terms—such as at rents, or rather what are called in Scotland "feus"—varying from about 6d. to 1s. per acre, on leases of 999 years. But the grievance,

though a sentimental one, was, nevertheless, in a country where every man aspires to be his own landlord, in the eyes of the Acadians so substantial, that rather than endure it any longer the settlers in many cases emigrated to where they could obtain lands on their terms elsewhere prevalent in America. The Colonial Government tried as far as possible to mitigate the mischief by buying up the lands from the proprietors, and then reselling them to the settlers. But this only partially met the demerits of the case, for the grantees' descendants cherished as warmly the privileges of being landlords as the colonists spurned the idea of being tenants. Finally, the Dominion of Canada induced Prince Edward Island to enter the Union by buying up, at a valuation, and by a Compulsory Act, the rights of the proprietors. For this purpose 800,000 dols. were voted, and the arbitrators appointed for the purpose adjudged to the proprietors sums varying from 4s. to £1 per acre in payment of their claims. The remedy was an heroic one, and was not administered without inflicting injury on the island proprietors. But it was the only available one; and at one sweep feudalism was banished from the New World. This drag has, however, had its effect on Prince Edward Isle, in so far that its progress has been more backward than that of the other Canadian provinces. Another cause is its isolation. Situated at the mouth of the Gulf of St. Lawrence, it is communicable only by steamer in the summer, and during the winter is often more or less shut off from the mainland by ice. This ice, however, owing to the strong current, does not form a solid bridge, but is "continually moving and shaping itself into walls and barriers, which greatly obstruct navigation. Mails cross these straits with a certain amount of regularity during winter, but passengers only do so when compelled by necessity. The vehicles used for this service are very light boats, sheathed with tin and fitted with sledge-runners. They are dragged along the uneven surface of the ice by straps, which are fastened to the gunwale of the boat. Each man passes one of these straps round the shoulders for safety. Occasionally patches of open waters of great or less extent occur, when men jump in and row. Now other barriers of broken ice as high as housetops have to be surmounted; but worst of all 'lolly' has to be crossed. 'Lolly' is a description of soft ice, which is too soft to walk over, and too substantial to work a boat through. I can only compare it to that soft, green, and oozy place in a bog or swamp, with which most snipe-shooters are familiar, in which the novice flounders up to his armpits, and which requires a cat-like and rapid step to cross. Carrying the mails across these straits is, therefore, an arduous and perilous service! It is rarely done, though the distance is only eight miles, under four hours of hard toil, and often takes ten or twelve hours. The boatmen are such admirable judges of ice and of weather, that fatal accidents rarely occur, and when it is considered that the mercury is sometimes 10° or 20° below zero during these crossings, it cannot be wondered at that Jack Frost sometimes seizes hold of a toe, an ear, or a nose. To drive him away the part has to be rubbed with snow, or if the toe be affected, a little brandy poured into the boot." Railways are now being made in the provinces, but Mr. Rowan, from whose account of the island we derive most of our information about it, was not, at least in the earlier days of them, enamoured of the Prince Edward "roads." The railway was a bribe to Prince Edward Island to cast in her lot with the Dominion. In a word, to use a familiar Canadian term—and its familiarity shows its frequent occurrence—the island

was "railwayed" into confederation, by a process which is now being applied to Newfoundland, and the hitch in the working of which, in regard to British Columbia, has been the cause of no little trouble to that far province, now lying so uneasily in the bosom of the Dominion. "The process of 'railwaying' a province into confederation is briefly this:—Send agents into the coveted province to raise an agitation for a railroad; 'square' the Press, and foster the agitation by every possible means. Get a Railway Bill passed in the Local Legislature, keeping the cost quietly in the background. This can be accomplished by liberal promises, a few substantial gifts, and an order or two of St. Michael and St. George. Money seems plentiful at first, and the railway progresses. Everything goes smoothly, until one morning the province finds it has plunged itself deeply into debt. This debt is made the most of, popular alarm is fanned, and the frightened province, to avoid supposed bankruptcy, throws itself into the arms of its absorbing neighbour. And the worst of it is that in these railways, got up for political ends, there is no small amount of 'axe-grinding' and 'log-rolling.' Contracts are given in such a way as to put money into the pockets of political partisans, and not with regard to the best interests of the country. The Prince Edward Island Railway meanders through the island like a stream through the meadows. It was probably contracted for by the mile, so the more miles the merrier the contractor. Not only did he escape the hills, but by following rivers up to their sources, he escaped bridging. The fences are neither ornamental nor useful, and cattle treat them with contempt. It is possible that I took a prejudiced view of this railway. I only travelled it once, and then I was two hours and a half late in a journey of forty miles. The delay was accounted for to the satisfaction of my fellow passengers, who were merely having 'a ride on the car' for amusement. In the first place a herd of cattle belonging to a personal friend of the engine-driver, notwithstanding the frantic screams of the whistle, persisted in remaining on the track until the functionary before named, assisted by the conductor and some passengers, got off and drove them home. Then at a wayside station a picnic party, consisting of almost twenty young people, got in, and were altogether too much for one locomotive, as my friend the driver (who spent a good deal of his time in cruising up and down the line) remarked, 'She was kind of balky at the hills.'"

The island is about 130 miles in length, and at its widest point thirty-five miles, but the deep indentations of its coast line in some places approximate the two opposite shores to within three or four miles of each other; so that there is no part of the island where the farmers are beyond convenient reach of a harbour. Farming prospers, and though isolation has its disadvantages, it has its advantages also. The island escapes commercial panics, and as yet the potato, the grasshopper, the Colorado or potato beetle, the army worm, and the rest of the exceeding great host of agricultural pests in America are altogether or nearly unknown. The soil is good and easily cultivated, and the climate healthy and invigorating. The air seems to infuse new life into visitors, and to be a prophylactic against all ills to the robust, ruddy-faced islanders. The winters are not so cold as those of the mainland, nor the summers so warm, yet the Atlantic fogs do not reach its happy shores. The soil being an alluvial deposit of St. Lawrence, stones are unknown in it. The roads in summer and winter

are admirable, but in spring and autumn necessarily detestable. During the latter season, they are composed of a bed of soft sticky mud, and they are mended by being simply ploughed and harrowed! To macadamise them stones must be brought over from the mainland, or else they might be paved with baked bricks or clinkers, like the roads of Holland, which is made up of Rhine mud Charlotte Town is the capital, and the market house, the island club, where not only are bargains made, but gossip exchanged. The Local Government keep up a stock farm near the capital for the purpose of im-

VIEW IN NOVA SCOTIA.

proving the breed of cattle, for which purpose good blood is imported from England and other raising countries. The province is famed for its trotting-horses, with wondrous wind and iron constitutions. Winter is the great time for practising the nags. Some of the jockeys sit behind their trotters in light sleighs, others in ordinary ones, while some venture to bestride their coursers. There is a hideous amount of yelling, but little other noise except the jingling of the hundreds of bells from a hundred sleighs running swiftly and smoothly along on the ice, within the track marked out by spruce bushes. "Men on foot and boys on skates crowd toward the winning-post in indescribable confusion. An ice-boat shoots past at the rate of thirty miles an hour, and half a dozen runaways is the immediate and inevitable consequence. But nobody is hurt. Each com-

petitor claims the 'heat,' swearing lustily that all the rest 'broke.' Each man is upheld by a circle of his own backers; the judge is bonneted, and the crowd, pending the next heat, is supplied with alcoholic refreshment by a speculative individual who has driven a puncheon of rum on a sled to the racecourse. How the winner is ultimately decided upon is a mystery, nor does it matter much, for the stakes are small, and, as for the honour and glory, they are equally divided." The population of this island is about 95,000, principally of English, Irish, Scotch, and Acadian-French descent. The first are

CANADIAN PRIMEVAL FOREST, BIRCH BARK CANOE, AND INDIAN LODGES.

said to belie the general reputation of their countrymen for doing well everywhere, while the French are, if possible, more clannish and even less apt to assimilate. Many of the Scotch speak no language but Gaelic, and the French almost invariably speak the mother tongue, "live on potatoes and fish, marry in their teens, and seem to have no ambition to improve their condition in life." They are, however, in the minority, the rest of the colonists being a much more thrifty set, but preserving even more completely than the Canadians elsewhere the marks of the land from whence they came. There are only half a dozen policemen in the island, and even these could be dispensed with but for the occasional visits of the crews of English and American ships. The people are divided between the Protestant and Roman Catholic religion, and ecclesiastical feeling

runs high. Next to farming, ship-building is the chief industry of Prince Edward Island, and there are also a few tanneries, breweries, and cloth mills on the island. The fisheries are also valuable, especially those of lobsters and oysters. In a word, this island is entitled in some degree to be called the garden of the St. Lawrence. Its size offers room for only a few immigrants, but farmers with a small capital and agricultural labourers could do well here. The animals are much the same as those of the mainland; and among other game, hares, or as they are called, rabbits (*Lepus Americanus*), are plentiful.

The island of Anticosti, in the Gulf of St. Lawrence, is not colonised. Attempts have been made to settle in it, but with little success hitherto. During six months of the year it is shut off from the outer world, and though a small farm might pay, yet, so long as there are other places to settle on, it is not likely that this outlier of Canada will have much attraction, except for fishermen. There is a good deal of game on it, but take it at its best, all in all, it is even to the lighthouse-keepers, who are accustomed to limited society, a very forlorn sort of home.

Newfoundland.

The oldest colony of England has not yet entered into the newest confederation of its dependencies, and, therefore, is not as yet a part of the Dominion of Canada. We may, however, say a very few words about it. It is 370 miles in length, 290 in breadth, about 1,000 miles in circumference, has an area of 42,200 square miles, and had in 1869 a population of 146,000. The island presents a barren, rugged appearance, the cliffs being sometimes 1,000 feet in height, and the interior hills, such as those in the Avalon Peninsula, 1,400 feet in height. Numerous lakes, or "ponds," as they are called, indiscriminately cover the coast; indeed, it is calculated that one-third of the island is covered with water, while the coast is deeply indented with bays and inlets, which supply abundance of harbours. None of the rivers are navigable for any distance, and the interior is entirely uninhabited, even by Indians. The soil is too sterile to admit of agriculture to any great extent, though some cultivation is done in the settled districts, particularly in the vicinity of St. John's, the capital. About 600,000 bushels of potatoes, as well as oats, barley, carrots, and other crops, are produced annually; but the fisheries form the chief industry of the population. These are of two kinds—the "shore fishery" and the "bank fishery"—the one being followed in the immediate vicinity of the island, the other (Plate VIII.) on the banks of Newfoundland, cod being the chief fish caught, though herrings, salmon, and others are also abundant in the vicinity of the island. The seal fishery in the spring also affords lucrative employment for numbers of men (p. 80), while the lead, silver, and copper mines, now begun to be worked, are destined to add to the riches of the colony. There are as yet no railways on the island, and roads are confined almost altogether to the southern seaboard. Telegraphs have, however, been constructed, and the westward terminus of the Atlantic cable is in Newfoundland. Labrador—which in its general features may be likened to Newfoundland, and has been already referred to in the description of Arctic and sub-Arctic lands—and the island of Anticosti are also included within the jurisdiction of the island. Fogs often envelop the colony for weeks, while the climate is by no means of a character inviting to settlers. Even trees, such as the fir, birch, willow, and mountain

ush, only attain to their maximum development in protected places. The Newfoundland dog is believed to be indigenous to the island. At present these are employed as beasts of burden in the colony during the winter, being left to shift for themselves during the fishing season.*

Manitoba.

The "prairie province" of Canada has more than once been spoken of. It is that part of the old Hudson's Bay Territories or Rupert's Land known as the Red River Country. It is, perhaps, the most valuable agricultural portion of Canada, but from its present isolation its value is not so thoroughly appreciated as it will be in time, when a railway joins it with the other portions of Canada. From the province of Ontario on to this central plain the country is densely wooded. Compared with the country on the Pacific Coast, Mr. Sandford Fleming does not think that it can be called mountainous—the highest point not being over 2,000 feet above the level of the sea—though a band of rocky hills runs along Lake Superior, ranging in width from forty to seventy miles. Between Lake Superior and Manitoba the drainage of the country is mainly westward, passing into Lake Winnepeg, and the country for the whole distance is remarkable for the innumerable streams and lakes by which it is intersected, so "that the Indian can travel in his canoe almost any required direction by making an occasional portage." These waterways consist of long winding sheets of water, separated by rocky ridges. Among the larger lakes may be mentioned Lake Nepigon, which discharges into Lake Superior by the Nepigon River, and is the most northerly reservoir of the St. Lawrence Basin. The general aspect of the country east of Lake Nepigon, as seen from Lakes Superior and Huron, is precipitous and rugged, but to the rear of this wild and frosty frontier the surveys made for the Canadian Pacific Railroad show that the surface descends northerly in easy slopes. "The drainage of the flat country referred to, as existing between the Nepigon Basin and the Ottawa Valley, flows northerly by the Rivers Albany and Moose to James's Bay, while the drainage of the rugged elevated belt along Lakes Superior and Huron passes into the basin of the St. Lawrence." The agricultural resources of this tract, familiar for many years as the route of the Hudson's Bay traders from the Red River to Canada, before they struck off through a similar country to Hudson's Bay, are not promising. Mineral wealth may, however, be discovered in it, and the timber which covers its surface will in time become valuable.

Of the general character of the great central plain of America we have for long had a more or less general acquaintance. But the explorations of Captain Palliser, Major Blakiston, and Dr. Hector, and more particularly the surveys of Mr. Sandford Fleming, for the purpose of a route for the proposed Canadian Pacific Railway, have given us so clear an account of it, that in the following remarks I shall avail myself of the latter distinguished engineer's official reports, which, by the courtesy of the Canadian Government, have been put before me. This vast continental plain stretches between the Rocky Mountain Zone on the Pacific

* Howley's "Geography of Newfoundland" (1876); McCara's "Lost in the Fogs"; Jukes' "Excursions in and about Newfoundland"; Brown's "History of the Discovery of Newfoundland" (1863), &c.; Hind's "Explorations in the Interior of Labrador" (1863).

side and the Appalachian Zone on the Atlantic side of North America. Northward it is limited by Hudson's Bay and the Arctic Ocean, while southward it spreads almost without interruption to the Gulf of Mexico. This vast area, therefore, occupies the whole of North America between the eastern and western mountain systems. Its river systems divide it into two great drainage basins—the one, as in the case of the Missouri, flowing southerly to a tropical sea, the other, as in the instance of the Saskatchewan and Athabasca, discharging into an Arctic or sub-Arctic Ocean. A line drawn from the extreme westerly end of Lake Superior, "to a point where the forty-ninth parallel crosses the main Rocky Mountain range," would tolerably closely approximate the dividing line between the southern and northern drainage basins. This great plain of Northern America, to which we shall have occasion yet to refer, when speaking of the parts of it politically under the United States, is divided through the centre artificially into "two adjacent countries under distinct Governments, and naturally into two vast drainage basins, which discharge their waters in opposite directions." If a line be drawn from the Lake of the Woods to the east of this Northern prairie district, and on the forty-ninth parallel, it will strike, if drawn in a nearly straight north-westerly course, the general line of the Mackenzie River (p. 190), between latitudes 64° and 65°, and will pass through Lakes Winnepeg, Manitoba, and Winnepegosis, Deer Lake, Lake Wollaston, Lake Athabasca, Great Slave Lake, and Great Bear Lake, a remarkable series of sheets of water, rivalling in size Lakes Erie and Ontario. "These great excavations or depressions in the surface appear to occur on the separating line, between a broad band of laurentian and metamorphic rocks, and more recent and softer formations. If we take this line as the base of a triangle, with one side extending from the base of the Rocky Mountains, and the other extending from the latter place northerly along the flank of the mountains to the Mackenzie River, a description of the leading physical features of the central country will be rendered extremely simple. The triangle will be nearly isosoceles, with sides of from 900 to 1,000 miles each, and its base will measure in length about 1,500 miles. This vast triangle, containing about 300,000,000 acres, may be described generally as a great plain, sloping gently downwards from its apex to its base. Its apex is at the foot of the Rocky Mountain chain, between the sources of the Missouri and the South Saskatchewan, and is estimated to be about 4,000 feet above the sea level, while its base, lying along the series of lake expansions from Lake of the Woods to Great Slave Lake, will not, it is believed, average a higher elevation than 900 to 1,000 feet above the sea. The river systems, which carry off the waterflow of the long sloping plains, are the Assiniboine, the Saskatchewan, the Athabasca, and the Peace. The first two unite their waters in Lake Winnipeg before finally passing out through the Nelson River to Hudson's Bay. The last two are tributaries of the Mackenzie, and through the channel of that river ultimately reaches the Arctic Ocean. Between the Saskatchewan and the Athabasca the River Churchill takes its rise, and flows independently in a generally north-eastern course, falling ultimately into Hudson's Bay. All the rivers of this division of the country flow for a great part of their length in deeply-wooded channels, frequently of considerable width, and, as the materials underlying the plains are, for the most part, drift or soft rock formation, the channels which has been furrowed out are not much obstructed by falls or dangerous

VIEW ON THE FRONTIERS OF CANADA.

rapids, but generally present, from the base of the mountains, throughout the greater part of their course, a uniform descent. Although the triangular-shaped territory referred to may be viewed in a general description as a great plain, sloping from its apex downward in a north-easterly direction to its base, its inclination is not perfectly uniform and quite unbroken. Several terraces and well-defined escarpments stretch across the country at wide intervals. Much of the surface is gently rolling, and distinct hills and eminences, some of them 500 to 800 feet above the surrounding level, are occasionally met with. The central division of the country may be described as prairie, although the whole triangular area referred to is not strictly so. The prairie land passes into woodland in various localities to the north of the Saskatchewan, to reappear in higher latitudes. On Peace River there are extensive prairies with extremely rich soil. In other localities there is an agreeable mixture of woodland and prairie, and this character of country appears to prevail as far as Hay River, 400 miles north of the River Saskatchewan. Although the prairie region is of vast extent, it is not at all fertile. A very large area adjoining the boundary of the United States, midway between Manitoba and the Rocky Mountain Zone, is arid and unfavourable for agriculture. In other quarters a great breadth of rich pasture and cultivable land exists."* The province of Manitoba is in reality a mere speck of the vast North-Western Territories, or Rupert's Land, out of which it is formed. It contains, nevertheless, about 9,000,000 acres, mostly prairie, consisting of rich alluvial soil, so clear that a "buggy" can be driven for a thousand miles over fertile lands capable of growing wheat and other vegetable products, in perhaps as great perfection as any other portion of the temperate North American Continent. Along the banks of the streams wood abounds, and the natural prairie is covered with rich nutritious grasses. The summers are hot, and the winters colder even than in other portions of Canada, but both seasons are very healthy. Snow disappears and ploughing commences in April, while the crops are harvested in August. The regular frosts seldom set in later than November, while Red River is rarely open for navigation earlier than the end of April. There are thus in Manitoba, as in the rest of the colder portions of Canada, two seasons—the summer, which is the period of activity, and the winter, a time when the settler rests from his labours. Professor Daniel Wilson remarks, that early in April the alders and willows of the Saskatchewan country are in bloom; and the prairie anemone then covers the southern exposures to the very verge of the retreating snow. May is hotter than in the provinces along the banks of the St. Lawrence, but the nights are cold, and even during the period of the greatest heats the cold night breeze brings heavy dews, and begets a pleasant change after the sultry hours of daylight. To use the language of the Rev. Professor Bryce, a resident of the province, "The juncture of the seasons is not very noticeable. Spring glides superbly 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 dreary fervour of this mysterious season have often been attributed to the prairie fires,

* Report of Progress of the Exploration and Surveys for the Canadian Pacific Railway (1874), p. 8.

which range over half a continent in the fall, and evoke an enormous amount of heat and smoke." The North-West winters are, however, agreeable, and singularly steady. The snow is dry, and rain being unknown, the mocassin is the universal foot-gear, no other kind of shoe being so warm and light. The snow is shallow, but so gritty that it resembles white sand more than anything else. Even in the heart of the Rocky Mountains the snow is rarely so deep as in Eastern Canada. The dryness of the air of the Canadian winters render them pleasant. It is the spring and autumn frosts that the farmer, and especially the fruit-grower, fears; but it is said that the Red River country is less visited by these evils than the rest of the Dominion. In winter the thermometer will, in Manitoba, sink to thirty or forty degrees below zero, without the inhabitants—well wrapped up and using ordinary precautions—experiencing any unpleasant effect. The buffalo pastures during all the winter by scraping off the shallow snow to get at the grass, as do also horses and cattle for part of the winter. This portion of the country was originally, as we have already mentioned, settled by retired servants of the fur companies; and their descendants —usually of mixed Indian and white extraction—still form the largest portion of the population. The Scotch half-breed is decidedly the best. He is more civilised, is fonder of education, and of the ways of the white. The French half-breed, on the contrary, is rarely a good farmer, and is more of a hunter, is usually married to an Indian woman, and is ruled by his *belle mère*, or mother-in-law, of whom, moreover, he is usually rather prouder than the Scotchman similarly situated. The Scotch settlers generally herd together, and do not care much for their French neighbours. Settlers, are, however, pouring in from Canada, and when the means of transport are easier and cheaper, the valley of the Saskatchewan will doubtless receive a large immigration. Many Icelanders are now settling in the country, particularly near the Eastern line of Manitoba, on Lake Winnipeg, a section in which it is proposed to establish a new province to be called Keewatin. Coal is found in the province, and most of the streams have gold in their sands, though hitherto the precious metal has not been found in that abundance which has acted as an attraction to the gold-digger. The drawbacks of the country are insufficient markets, periodical invasions of grasshoppers, which eat up every green thing, and occasional unseasonable frosts. The second of these plagues is, however, common to nearly all the western country to the south, while the third is inseparable from so severe a climate as that of Canada.*

British Columbia.

After leaving Manitoba the country westward changes. We now enter into a mountainous region, the eastern boundary of which is the Rocky Mountains, that great range which stretches, with few interruptions, under one name or another, through the length of North America. In Mexico they are known as the Cordilleras. Just before reaching the Arctic Ocean the range branches into the Alaskan and Yukon Mountains towards Behring's Strait. It is an exceedingly complex region, the main range sending off lower spurs westward, while parallel to it runs the Cascade range—

* "The Prairie Province," by J. C. Hamilton (1876).

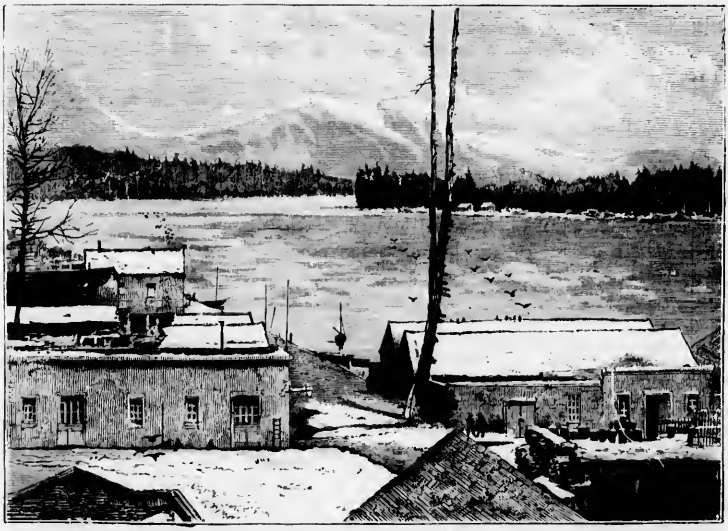
perhaps from a geographical point of view even more important—and the coast range which constitute the barriers of the Northern portion of Continent facing the Pacific.* The physical geography, however, of the Pacific slope of the Rocky Mountains, will be best described in a future chapter, when sketching the United States possessions comprised within it. Meantime, a few words on British Columbia, the latest, and perhaps the most important adherent of the Dominion, which lies sandwiched between Alaska on the north, and Washington Territory on the south, may suffice. Up to 1867 the colony was divided into two separate

ON THE ROAD TO THE CARIBOO MINES, BRITISH COLUMBIA. (*From an Original Sketch.*)

governments—those of Vancouver Island and British Columbia respectively—but in that year they combined, and in 1871 joined the Canadian Confederation. Vancouver Island is 280 miles in length, while the Queen Charlotte Islands, 130 miles to the north and west, are composed of three islands separated by narrow channels, and extended along the shore for nearly 200 miles. Vancouver Island, and the other groups lying off the British Columbian coast, may be looked upon as simply dissevered portions of the neighbouring mainland, their physical features entirely corresponding to that region. They are for the most part densely wooded with Douglas fir (*Abies Douglasii*), hemlock (*Abies Menziesii*), cedar

* Grant's "Ocean to Ocean" (1873) and Milton and Cheadle's "North-West Passage by Land" will give a good idea of the country in its more picturesque aspects.

(*Thuja gigantea*), and other coniferous trees of gigantic size, interspersed with an undergrowth of various berry-bearing shrubs, which render travel very laborious. The interior is scarcely so impeded with this matted growth, but any open land there may be is confined to the coast, and nearly all in the vicinity of Comox, or the southern end of the island, within a few miles of the capital, Victoria, a town of about 4,000 inhabitants. The country is flattish towards the northern end, but the middle portion is especially well wooded and mountainous, the valleys filled with numerous deep lakes, fed and emptied



VIEW OF NEW WESTMINSTER, BRITISH COLUMBIA (LOOKING UP FRASER RIVER). (*From an Original Photograph.*)

by rapid streams, few of which are navigable even by canoes for more than a mile or two, any further progress having to be accomplished by laboriously propelling the skiffs by means of poles, varied by the canoe-men ever and anon jumping into the stream in order to either ease the canoe over shallow places, or to carry it round falls or rapids (p. 232). Some of the higher hills or mountains attain, as in the case of Victoria Peak, Mount Albert Edward, and Alexandra Peak, the height of 7,484, 6,936, and 6,394 feet above the sea.

The whole country, more especially that fronting the Pacific, is intersected by deep fjords, or inlets, with high perpendicular walls, to which here and there the hardy fir clings, its roots laved by the tide. On the shores of nearly all these inlets, where the ground is flat enough to build a village, are found the broken remnants of the numerous Indian tribes

who once so densely peopled the shores, but who are now reduced to less than 10,000 souls. There are no inhabitants in the interior, the Indians being chiefly fishermen, who rarely go far out of sight of their village, while at present, so far as we know, the interior of Vancouver Island affords few attractions for the scanty number of white settlers who cling to the country in hope of better days than those they are now blessed with. The same words may fitly describe British Columbia to the west of the Cascade range, but to the east of that continuation of the California Sierra Nevadas the country is more open, consisting on the north of a hilly plateau, broken up by low hills, and dotted with numerous large lakes and channelled by many rivers, while the usual fir is replaced by pines (chiefly *P. ponderosa*), so thinly scattered over the country that in many places it is possible to ride through among them, a feat quite impossible in Vancouver Island, and in most parts of the coast region of British Columbia (p. 244).

The southern portion of the country is still more open, in some places even partaking of the character of park-like plains, well fitted for cattle grazing; but in no case are these open sections worthy of the name of prairies, often applied to them, at least when compared with the great seas of grass to the east of the Rocky Mountains. The chief rivers are—from north to south—the Stiken (partly in Alaska), the Nasse, the Skena, and the Fraser, the greatest of them all, which falls into the Gulf of Georgia, a lovely island-dotted archipelego, in which the strait separates Vancouver Island from the mainland, and the Strait of Juan De Fuca, which divides the former from Washington Territory, ends. Easterly, the rivers are all navigable by steamers of small size, to where they pierce the Cascade Mountains. Here all navigation is stopped, owing to the formation of rapids, or the swift rush of the rivers through "canons;" though in reality the name is only applicable to the deep cuts, with high walls, through which rivers like the Colorado flow in Arizona and elsewhere, as in due time we shall notice.

The climate in the country west of the Cascade is in summer lovely, and is even worthy of the term Italian sometimes applied to it. The hottest day is tempered by a cool breeze blowing from the snow peaks of Mount Baker in the Cascades, or from the Olympian range in Washington Territory, while the bright skies and the wild surroundings make summer life in that country perhaps as enjoyable as in any part of the world. The winters are, however, English in their intense moistness, rain falling with unintermitting disagreeableness. The spring, on the other hand, is frequently as early as March. Then the frogs are heard croaking in every pool, and by April the country, when open enough for the growth of flowers, as in the vicinity of Victoria, are yellow with the myriad *Galiums*, or blue with the *Camass* lily (*Camassia esculentea*) one of the most characteristic of the plants of the North-West, and which is still abundant, notwithstanding the fact that for unnumbered generations the Indians have dug up its bulbs in the autumn, and after roasting them, stored them away in bags for winter use. East of the Cascades the climate is different. The summers are dry and hot, the winters cold; but the cold is never that of Eastern Canada. The cattle will often graze out during the winter, and the harbours are never closed even in the northern portions of the province. Indeed, it is not every winter that sailing ships cannot reach New Westminster, sixteen miles from the mouth of Fraser River (p. 245). The country is very thinly peopled. Originally a hunting-ground of the Hudson's Bay

Company, it burst into reputation by the discovery of gold in Fraser River in 1858, and, subsequently, by the "rush" made to the newly-explored Cariboo Gold Mines near the upper reaches of that river (p. 249). The gold in Fraser is now all but exhausted—only a few Chinese working the "placers"*—but large quantities of it are still taken out of the latter mines. Through the surface metal having been exhausted it can now only be obtained by sinking shafts and other expedients, which require the expenditure of large capital, and therefore allow of but little chance of private individuals gaining much by lucky "strikes," as in early days. Of late shallow diggings have been discovered in the northern portion of the province, and also in the south. Indeed, it may be safely said that the whole country, especially to the east of the Cascades, is one great gold-producing country. The towns are chiefly villages, which are, for the most part, scattered along the banks of the Fraser, or in the vicinity of the other routes to the gold mines. They owed their existence originally to the "gold excitement," and rise and dwindle almost in an exact ratio to the success or decline of the gold mines. The great resource of British Columbia, which is destined to give it future prosperity, is coal. It is of cretaceous age, and therefore inferior to that of England and Pennsylvania, but yet much superior to any other found on the Pacific coast, which is of still later geological date. At present it is only mined at Nanaimo, ninety miles from Victoria; but as the whole of the east coast of Vancouver Island is underlaid by the strata more mines will in time be opened out. There is also coal, but of an inferior description, on the southern coast, and it has also been found on the western shores of Vancouver Island, particularly in the extensive sounds of Quatsecno and Koskeemo, and in thick beds on the banks of Brown's River, a tributary of the Puntledge, which flows into the sea at the settlement of Comox (p. 197). In 1870 the yield of gold from British Columbia was 1,300,000 dols., in addition to which silver is found; and copper is almost everywhere abundant, while ironstone exists in various places. Manufactures are few; saw-mills, the fur-trade, the fisheries, and farming are among the other occupations. Gold was discovered in 1865 in Leech River, twenty miles from Victoria, by the expedition under the command of the writer. Some of these primitive buildings in this "city" we have sketched on pp. 248, &c. They may stand as portraits of many other such dwellings in the mushroom settlements of the Far West. For a time considerable quantities of metal were extracted from the bed of the little stream, a tiny town sprung up, and a number of men found employment. The gold, however, soon became exhausted, and as no new deposits of any extent have been discovered, the diggings are now abandoned by all except a few Chinese, who still occasionally come on what are to those thrifty Mongols prizes of no small importance. The fisheries are really valuable, and would rank among the richest in the world were they properly developed. The rivers abound in sturgeon; cod-banks are found off the northern coast; halibut is extremely abundant and of enormous size, while, among other fish the very name of which would be strange to the reader, salmon of several species and of excellent qualities are found in prodigious abundance. In the bays they are caught during the season by the Indians by spearing,

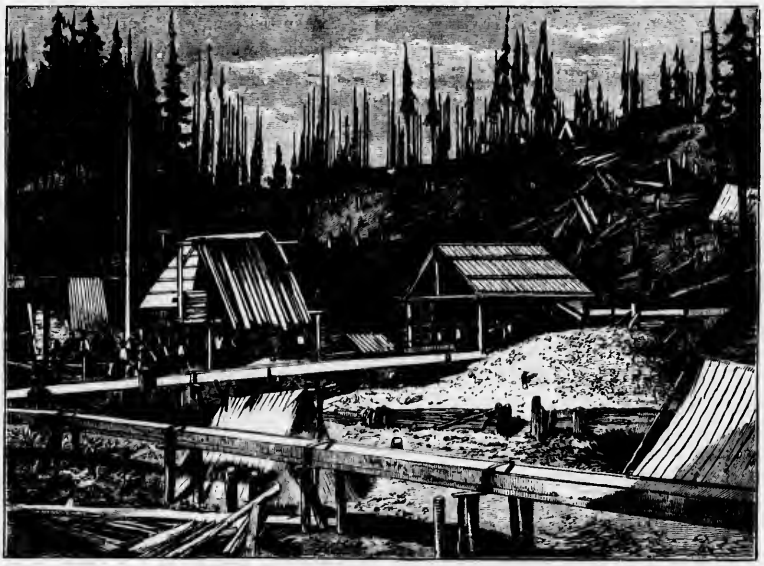
* Diggings in which the gold is scattered in detached grains, nuggets, &c., through deposits of earth, gravel, &c., as distinguished from those in which the metal must be extracted from the quartz in veins.

and they ascend the rivers in such quantities that at times the fishermen are compelled to allow their catch to rot for want of salt to preserve it. It is a tale—and unlike many of a similar description is perfectly true—that at one of the Hudson's Bay forts so many were on one occasion caught that they were used to manure the gardens with. Salmon can be bought in Victoria for 2½d. per lb., and I have seen the Indians selling them in the streets at the rate of three for a shilling when they happened to be very abundant. At Alberni, on the western shores of Vancouver Island, the traders bought them for salting at the

A STORE AT THE LEECH RIVER GOLD MINES, VANCOUVER ISLAND, 1865. (*From an Original Photograph.*)

rate of a fish-hook apiece, and at the saw-milling establishment there the men used to all but mutiny if they had salmon oftener than twice a week for dinner. I may add that so plentiful were deer that now and then the same compliment was paid to venison or "deers'-meat." After the rivers fall the salmon may be seen "wobbling" about in the pools in the ford, affording most profitable amusement to the brown bears, who are fond of them, and are easily caught in traps baited with the fish. The dogfish (*Acanthus Suckleyi*) is also plentiful, and is caught by the Indians for the sake of the oil in its liver. This forms a considerable article of trade, being used to lubricate the machinery in the saw-mills of the province and of Puget Sound. Oysters are also found of small size, but the clam (*Lutraria maxima*) is the mullusk, which, either plain boiled, baked, or in the form of "chowder" or soup, is most popular as an esculent. The Indians dry it for

winter food, and its collection and preservation are among the most characteristic occupations in a native village. The last fish which I shall mention is the oulachon, or candle fish (*Osmerus pacificus*), a species of smelt, which ascends the northern rivers in March. It is captured in great numbers by the Indians for food, but more particularly for the purpose of extracting the oil from its tissues. This oil, which is, when cold, of the consistency of palm-oil, is used for cooking, and is also eaten by the natives. It has also the good qualities



THE CAMERON CLAIM, WILLIAM'S CREEK, CARIBOO GOLD MINES (1863).

of cod liver oil without its nausea. Probably its use is the salvation of the natives of that part of the coast where chest diseases are very common. So highly valued is it by the Indians, that when they come to Victoria they always bring some boxes of it with them. One of them remarked to me that there were only two good things in the world —"rum and oulachan oil!"

British Columbia is not an agricultural country, and no number of pamphlets will ever make it so. The soil and climate are excellent for all crops of the milder temperate zone; but the open tracts are small in comparison with those found in the more favoured regions of the United States lying immediately south of the forty-ninth parallel. Clearing land at the present rate of labour will not pay, but when the market is sufficiently great to make it remunerative some of the drier tracts between the Cascades and the Rocky Mountains

will doubtless be cultivated by means of irrigation. In 1871 the sea-going vessels which entered the ports of British Columbia numbered 292, with a tonnage of 131,696. In the same year 285 vessels with a tonnage of 127,864, cleared. The imports in 1870 were valued at 1,605,809 dols., while the exports, including gold, were 1,848,803 dols. Excluding gold, these exports were supplied by twenty-one articles of home produce; yet, in spite of all her resources, her pleasant climate, and great seaboard, British Columbia is not prospering. She is a lady with "great expectations." She has been, ever since the first flush of the Fraser River gold excitement expired, waiting—a sort of Micawber of Colonies—for "something to turn up." At one time Cariboo was to "make the country;" but that died the death of Fraser River. Then "lumber" was to be the fortune of everybody, but there was no market, and the big trees still grew. Then copper, then coal, gold, and sometimes silver have been the materials on which the often sanguine colonists hoped "to hold on." Now and then a Governor more complaisant than ordinary was the coming man who was to "develop their resources," but in due time His Excellency was as the Pro-consuls who had gone before him and came after him. For a brief spell the colonists would decline to put their trust in princes, and try to make the best of what they had. They would salt salmon and send them to Sandwich Island, and to the Roman Catholic countries to the south, or would put them up in tins for whoever would buy them. But somehow or other the province progresses slowly, notwithstanding the political changes it makes. As present the Canadian Pacific Railroad is the something of the future which, when completed, everybody is to grow rich on. But Ottawa and Victoria are on indifferent terms. The railway is slow in completion, and it is doubtful if the longest-lived colonist will survive to see its accomplishment. Meantime the population is not increasing, and the undoubtedly great resources of the country are in that condition so abhorrent to the energetic sojourner in the new country—"undeveloped."

The chief obstacle to the progress of British Columbia is its isolation from its sister provinces, and from the mother country. The protective duties of the United States shut out its timber, and even to some extent its coal, from the San Francisco market, while the great distance of England and of Australia interferes with the wants of these countries being supplied from the "Queen Province of the Pacific." Could these difficulties be overcome, British Columbia would undoubtedly prosper. In her there is the making of a great colony, but at the present time it is a pleasanter country to visit than to reside in and win bread from, disagreeable as it is to say so of a land in whose joys and toils, anxieties and successes, the writer was for some of the pleasanter years of his life a sharer.

Concluding Remarks.

We have probably given a fuller account of the Canadian provinces than it will be possible to afford to some other portions of the world which will come before us in due course. But we are anxious, since it is impossible to devote full space to every country, to describe those which are less known, or which are of more peculiar interest to Englishmen, in greater detail, more especially when the writer possesses particular acquaintance with them. We have, however, left ourselves no space to speak of many features of Canada,

or of Canadian life in its general aspects. The people of that country differ in many respects from those of the United States and of England. They have an accent of their own—partaking of the general Transatlantic drawl—and in their character they have also some features which at once stamp them as a race not yet out of the gristle period, but hardening into the bone of manhood. The men are equally energetic in business with those of the United States, but are capable of greater physical exertion. They bear the reputation, perhaps undeserved, of being exceedingly careful of their money, though, possibly, a little more scrupulous in obtaining it than some of their neighbours over the border. Sweeping censure, like sweeping praise, is, however, always dangerous, and in some cases utterly erroneous. Accordingly, it may be as well not to generalise upon premises, which will undoubtedly be declared erroneous, no matter what conclusions they may lead to. It cannot, at least, be denied that the Canadian women are as healthy in appearance as the men are robust. The true "American" woman may be pretty, but she soon fades, and she is ageing at thirty. The Canadian girl is, on the contrary, like the Englishwoman, in her prime at that period, and being addicted to out-of-door exercise maintains her freshness longer. She walks on snow-shoes, "trabogens," and "rinks" out of doors, while inside her daily domestic duties take so much of her time that she indulges in little of the lassitude and langour which, unfortunately, too often afflict her American sister. The moral character of the people is high. In the town there are rogues, as there always are in large communities. In the country the people are orderly and peaceable. Farmyards are rarely enclosed. Timber lies all winter on the banks of the stream ready to be floated down when the ice disappears, and yet it is perfectly safe from depredation. In the farmhouse bolts and locks are unnecessary, while the farm implements lie in the field, and the stock often wander all summer through the woods till the autumn, when each owner claims his own. Education is free and compulsory, the teachers being paid by a school-tax levied on every citizen, while every ratepayer over twenty-one is entitled to a vote. Lastly, it may be added that the "manifest destiny" of Canada to go over to the United States is not believed in, except by a very small section of the country.

CHAPTER XIII.

The Commerce of the Forest.

The woods of America were at first its most distinguishing feature. It was the primeval forests that the first settlers had to contend with, and though their pride has been in many places humbled, yet, doubtless, for long the art of felling giant trees will be the prime art which the backwoodsman must be possessed of. They are not, however, always the enemy of the settler, for in Eastern Canada and the neighbouring United States they contain food also.

"Sugaring."

The sugar maple (*Acer saccharinum*) is familiar to nearly every one who has the most elementary knowledge of America. Spring is the season when the trees are tapped for the juice out of which the sugar is crystallised. Early in April the Indians and settlers, with their wives and families, repair to the backwoods for sugar making. The work partakes of all the character of a pienic, and, independently of the profit made, is enjoyed accordingly. Their first duty is to improvise pails, cups, and scoops out of the birch bark, out of which the canoes are also made. The "sugarie" is then ready to be started. The trees are tapped in V-shaped incisions, and a spout of bark inserted into the place. The saccharine sap is then ascending briskly, and as it arrives at the cut flows out into the scoop, which conveys it into the trough below. A good tree will yield three gallons in a day; but this depends on the season, a warm day being better for it than a cold one, and especially is a sunny day after a frosty night favourable for the flow of the juice. About one pound of sugar is extracted from four gallons of sap. The sap is boiled until it becomes hard when dropped on the snow. It is then considered sufficiently boiled, and is strained through a blanket—not always a perfectly clean one—and poured into bark basins, when it soon hardens. The work of preparing the sap falls to the lot of the men, the women and children being always too fully occupied in tapping the trees and collecting the sap. Mr. Rowan mentions that one man will sometimes tap 200 or 300 trees; and that an Indian, with his wife and child, can make 600lbs. of maple sugar in one spring. The average run of a tree is twenty gallons in the season; and, strange to say, the tapping process does not seem to injure it, as it can be bled several seasons after without utterly destroying its health. In 1871 it was calculated that 17,267,000lbs. of maple sugar were manufactured in the four oldest Canadian provinces. Passing over the many beautiful and useful trees with which the Eastern American forests abound, and which give them a gayer and more varied aspect than is possible in the more monotonous though even more extensive pine solitudes of the Pacific coast, we may pass on to the use to which of all others they are put, viz., hewing them down for the sake of their timber. A settler born in the backwoods seems to have a perfect antipathy to trees. He is—metaphorically—born with an axe in his hand, which is to him what the proverbial silver spoon is to more favoured youths. With that handy American axe of his he slashes and hews at the great woodland crop which, though he never sowed, he yet reaps. He "clears" the land to sow corn on it, and burns what timber he cannot utilise for fuel or for buildings. If the timber be of a size and character fitted for being sawn into boards, and his "location" is near a river or lake, the settler finds it more profitable to convert it into "lumber;" and to do this requires careful felling, and an entirely new system of going to work. It is quite a mistake to suppose that land cleared of salable timber is ready for the plough; on the contrary, it is covered with spare forest-trees unfitted for the axe, bush, and a wilderness of tall stumps. In a few years—fourteen or fifteen, it has been estimated—the slim trees will be thick ones, and again the lumberman may erect his

camp and hew again at the forest. In fact, if the Canadian and United States Government showed anything like foresight and care, there need—over a great portion of both countries—

SAW-MILLS IN A FOREST OF PINES.

be no outcry respecting the destruction of the "lumber" forests. Timber is one of the most lucrative of crops; and if the trees cut down were replanted, as they are in many countries, or even care taken to prevent forest fires, which in a very great number of cases are

caused by carelessness and wanton mischief, this important branch of American commerce might be fed for a period practically indefinite. Arboriculture and forestry are, however, sciences the meanings of which are as yet scarcely understood in America, and already it is experiencing the exceeding wastefulness of a civilisation, which consists in destroying recklessly every wild beast and every wild tree within its borders.

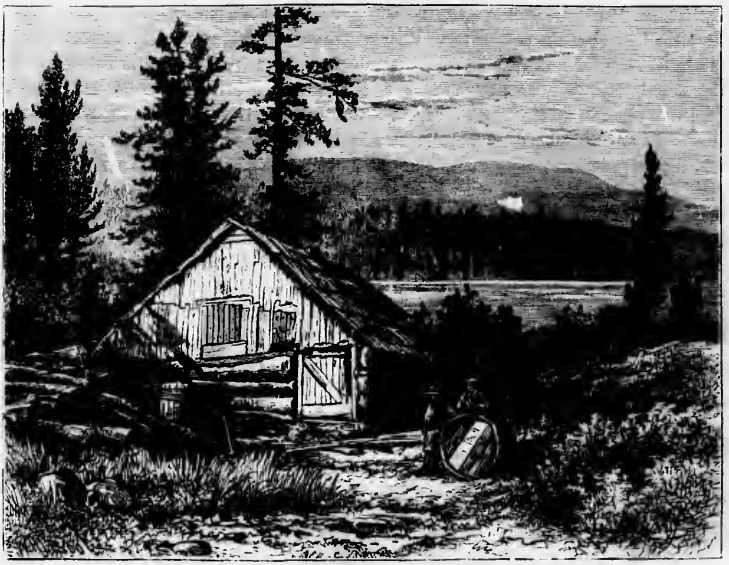
Lumbering in Eastern America.

"Lumbering," both in Canada and the United States, is an important employment. Winter is, over great portions of the country, a dead season. The settlers are unemployed, and those who have skill in that direction take to chopping the pine woods. It is also one of those employments which are well paid. The wages are from ten to thirty dollars per month, and twenty to thirty dollars for a pair of horses, food, in both cases, being provided by the employer and hirer.

In Eastern America winter is the season when lumbering commences. The first snow is the signal for the men to take to the woods to hew down the trees which have been previously marked by the parties sent out to explore the various timber limits leased from the Government by the mill-owners. In gangs of from six up to twenty men they go to work. First of all, they build log camps, or "shanties," for themselves, and "hovels" for their horses, or cattle, if they prefer them. "Each camp has a main or 'portage road' leading to the nearest settlement or turnpike road, which is sometimes as much as fifty, sixty, or one hundred miles distant. Along this road their provisions are 'portaged.' This alone gives work to one team when the gang is large and the distance great. Flour, pork, tea, and molasses form the staples of their diet. They breakfast before daybreak, dine about ten or eleven, have a 'bite' at two or three, supper at six, and a 'lunch' before they go to sleep—not bad living; and at any hour of the day or night that a stranger happens to visit them, on go the kettle and frying-pan, and he is treated to the best they can give him." In a camp of, say, twenty men, there are the "boss" or foreman, the cook, the teamster, and the teamster's "divil" or assistant, young men, highly paid, and gifted with a profundity of bad language, which they plentifully bestow on their charges, the beasts of draught. The latter haul the logs from the stump, and deposit them on the bank of the stream down which they are to be floated in the spring. These are the officials; then come the rank and file, viz., five broad-axemen, who square the logs; the "head swamper," *i.e.*, the engineer or road maker, who, of course, is also an officer, but not so highly paid as the teamster and cook; and four "fallers," or choppers, who initiate the work for all the others. The men are worked hard, but the labour is tolerably lucrative, though, indeed, much of their wages is swallowed up in the "store" of their employer; and it is only the very provident who come out of the woods in the spring with any great savings. The horses are fed on oats, but are too hard worked to last long, though they are selected for their strength, and actually calculated at so much per pound when being bought. In the winter the cold is often intense; the men accordingly consume great quantities of pork and other fat food. That this diet is best suited for them, is

proved by the fact that they look down on beaver, rabbit, moose, caribou, and all other deers' meat, as "having no strength in it." "The camps are generally situated in hardwood land, near a brook or river. They are built of spruce logs, well padded with moss, and roofed with cedar or pine splits [p. 256]. The hearth is in the centre of the camp, with a bench or 'deacon seat' on each side of the fire. Back of this are the beds or 'bunks,' made of hay or hemlock boughs, constantly renewed. The stables and hovels are close to the camp, and are made in the same manner, but, of course, without the fireplace, and with a loft for hay overhead. Neither horses nor men ever suffer from cold in the lumber woods; there is no wind, and the deep snow banked up round the camps and hovels adds greatly to the warmth." Nor are the "logging camps" without their amusements. The talk is monotonous after the accumulated stock of anecdotes has become exhausted; and its character is not of the most refined description; but, on fine Sundays, to get the horses of rival logging camps to pull against each other is, to the loggers, superb enjoyment, and is perhaps somewhat more moral than a race at Ascot or at Epsom. Yet they lead a happy life; free from care and in robust health, they earn by their day's toil a sound sleep at night, and if their winter work is dull the summer finale to it is, on the other hand, lively in the extreme. The store of logs accumulated on the bank of some stream, the lumbermen leave their camp and prepare for the exciting work of the spring campaign. Hitherto, all the rivers have been frozen over; land and water have slept. In spring the world comes back to life. Little by little, slowly and growlingly at first, but eventually with a crash and a roar, the ice-sheets burst asunder, pile over one another, undermine the banks, and then sail down the current, perhaps to reach the sea half melted, or to be stranded on meadow or intervales many miles from the rendezvous of all the rivers. Then the lumberman is busy—for "freshet time" is the most critical of all seasons to him. If he neglect to get his logs rafted down he may have to wait another year before the produce of his winter labour can be sold. "If the snow thaws very rapidly, and the freshet rushes to an unusual height, his logs are scattered over the meadows and intervales, and collecting them is great labour. Each log and stick of timber has upon it the private mark of the owner. They all float down the stream together, but are claimed and sorted out at the rafting grounds. Here booms are stretched across the river to collect the lumber, which is made into rafts, and either floated down by the stream or towed by steam tug down to the sea. The rivers in Canada have a lively appearance in the months of May and June. Hardly has the last of the ice disappeared when the logs commence to run. From daybreak in the morning until dark the stream drivers are at work: some in the water; some walking on the slippery floating logs—as only a lumberman can; others paddling about in canoes, pushing off their logs from the bank, guiding them through the broken water, and finally making them into rafts. This is a period of very hard and severe work for the men, who are highly paid, and of great anxiety to the lumberer." These floating villages, with their shanties, their blazing fires kindled on an earthen hearth, and the streaming banners waving in the wind as they float down stream, is one of the most characteristic and impressive sights of Canada during the early spring and summer months (pp. 212, 225). If a log could speak, it would tell of many an hour's hard toil spent on it, from the day it was first marked for cutting in the heart of the forest to the day it was shipped at Quebec. It would also bear testimony to the honesty of the Canadian people. The

lumber is cast away in all sorts of strange places by the freshet—in meadows, in fields, in creeks, and gullies, far away from the banks of the river, where it lies sometimes for months unsought and unclaimed; but rarely, if ever, is a stick of timber stolen in Canada. Nor is this work unattended with danger. Loosely joined together in huge uncouth rafts, the logs are set adrift, and with a few poles and roughly-shapen oars to guide them, the lumbermen in charge go down the currents and rapids of deep rivers, swollen and



A LOGGING CAMP NEAR ALBERNI, ON THE WESTERN SHORES OF VANCOUVER ISLAND, WITH SPROAT'S LAKE IN THE BACKGROUND. (*From Original Sketches.*)

flowing fiercely with the waters from the melting snow. A large raft in New Brunswick contains about 18,000 logs, and covers a space of some ten acres. As long as the logs hold together, all is well; but, hurried and tumbled over rapids, they often break up; and woe betide the unhappy lumbermen who are on them when the great logs come rolling in fierce confusion one on the other, and go smashing down the rapids from rock to rock till they are cast adrift in some open reach! When such accidents occur, as they frequently do, it sometimes happens that the logs get so wedged and bound together on the brow of some strong rapid that they remain immovable, and all the miles of logs which are following them are stopped at once. It then becomes necessary to cut the obstructing logs, or "timber jam," as it is called, with axes

Only the bravest, coolest, and most experienced of the lumberers can attempt this most dangerous of all their tasks; for when once he logs which bar the passage are half cut through, the weight of the press behind breaks them like straws, and some 10,000 trunks of trees come plunging down with a rush and confusion that but too often render all the coolness and activity of those who are trying to escape the avalanche of no avail. During the summer the shanties and the lakes become a perfect solitude,

A BACKWOODS HOTEL, LEECH RIVER 1865. (*From an Original Photograph.*)

for the "log-chopper" has become a "log-driver," and the toiling oxen or horses are permitted to enjoy their summer rest on the farms of their masters.

In the provinces of Ontario and Quebec, a large portion of the logs are transformed at the saw-mills, near the mouth of the rivers on which they have been cut, into sawed lumber, deals, and planks. It is these mills, in fact, which have developed the country for miles around them, and opened up in the heart of the wilderness fruitful lands and settlements. As a specimen of how one trade helps another it may be added that one firm of saw-millers alone, employing 165 men and boys, consume annually 750 tons of hay, 25,000 bushels of oats, 5,000 bushels of turnips, 6,000 bushels of potatoes, 1,000 barrels of pork, 9,000 barrels of flour, and 2,000 barrels of oatmeal—in all, about 2,000 tons of produce alone are absorbed by a single firm, which is, moreover, only one of many similar.* Mr.

* Canadian Correspondent of the *Scotsman*, December 29, 1870.

Rowan, to whose account of Canadian lumbering we are indebted for much of this description —and the description applies equally to all Eastern America—very truly remarks that to the immigrant this business presents no attraction. It is one that cannot easily be overdone by competition or swamped by cheap European labour. Long education is necessary for any one to become an adept in the use of the axe. It is really a fine-art sight to see a thorough axeman at work. How easily—almost without an effort, one would think—he swings the axe over his head, but every time brings it down within a hair's-breadth of the right place! Not a blow is wasted. At every stroke a huge wedge-shaped chip flies; and with a sound that makes the silent forest echo, the great tree shriven, creases, and then crashes to the ground, bringing along with it often a thicket of its smaller relatives, which have grown up under its shade. The work of an axeman is well calculated to bring into play all the muscles of the body. Accordingly, the *physique* of the Canadian and State of Maine men—who are all accustomed to this work—is splendid. Most of them are unusually tall, and without having that yellow sickly colour so common in the American townsman. The lumberman who passes his life in active, healthy work, inhaling the reviving breath of the pine forest, has not an ounce of superfluous fat, while every muscle is developed to its normal size. In addition to the lumber trade proper, there is an increasing demand in Canada for the minor products of the forest, such as Canada balsam, spruce gum, oil of hemlock (*Abies Canadensis*), hemlock bark, sassafras root (*S. officinale*), sumach for dyeing, &c. An extract has been obtained from the hemlock bark which puts all the tanning properties of the bark into smaller space—always a desideratum in a country where the labour of transport is great. This trade also aids the lumberman; for by causing numbers of hemlock trees to be stripped of their bark, it leaves them ready for cutting into logs. These hemlock trees, when growing, are graceful in appearance, their foliage being peculiarly feathered; but when old, the bark gets rough and gnarled, and the foliage loses that pencilled grace which it possessed in its younger growth, thus proving false to the song in its honour, which says—

"O hemlock tree! O hemlock tree! how faithful are thy branches"

In 1874 the exports of Canada amounted to 73,924,718 dollars, of this sum 26,817,715 dollars must be credited to her forests. Much capital is embarked in the trade, and immense energy, foresight, and enterprise are developed by it. In addition to the sums expended in wages and in provisions for men and beasts, great expense is often incurred in forming timber slides in rivers which are interrupted by falls. So important, however, is it to the interests of the country that the rivers should be suitable for rafting down logs, that on some of the main channels, such as the Ottawa, the Government has, very properly, charged itself with the construction and maintenance of the chief timber slides. The yearly expense of transporting timber from the districts where it is hewn to Quebec is estimated at about 700,000 dollars, and at least three months are consumed in its transport; the interest of that money being necessarily lost in the interval. Rafting, moreover, can only be conducted at certain seasons; and, accordingly, the Quebec merchants have to accumulate large stocks to lie over all the winter, so as to be ready for the spring fleet, thus locking up capital to the extent

of about two millions of dollars, with interest on the same lost altogether for six months.

All over North America lumbering is followed on a more or less extensive scale. It is, however, only in the great forests of the North, and along the courses of the rivers and lakes, that it can be pursued profitably as a branch of commerce. Accordingly we find it pursued here and there in the vicinity of all the higher rivers, and right on to the bottom of Lake Michigan, where, at Green Bay, for example, there is considerable work of this description done. As we get further and further from the sea, and water communication gets less and less, lumbering ceases to be a trade, and is only followed for the purpose of supplying domestic or farming wants. In the central regions of the Continent, indeed, the *materiel* itself ceases. When we cross the Rocky Mountains the business begins again. At first we find small saw-mills, for the purpose of supplying the gold-diggers with "sluice-box" lumber, and other timber used in building houses or in mining operations. Small mills are also found in the vicinity of the settlements; and when we reach the sea again the business attains the dignity of commerce, and great saw-mills ship it off from the Pacific sea-board as it was shipped from the Atlantic. Puget Sound, Vancouver Island, and the sea-board of British Columbia, are the chief localities in the north; while further south, here and there on the coast of Washington Territory and Oregon, the trade is followed; and in California, in addition to many smaller saw-mills for local purposes, there are great logging or saw-milling establishments in the red wood (*Sequoia sempervirens*) forest, which extend along the coast up to lat. 42°. Lumbering on the Pacific and Atlantic sides of the Continent are, however, somewhat different. In the first region, the trees are different in species and more gigantic in size, owing to the milder and wetter climate; then, little snow falling in the winter, and the rivers rarely being frozen up, lumbering is not followed in the winter alone, but all the year round. Again, labour being high, and the virgin forests as yet almost untouched, it is neither practicable nor necessary to go so far back into the wilds to obtain logs as in Canada and "the States;" indeed, operations are carried on almost on the sea-board. To complete this sketch, therefore, of the earliest, and one of the most wide-spread of American industries, I must describe lumbering on the Pacific separately.*

Lumbering on the North Pacific Coast.

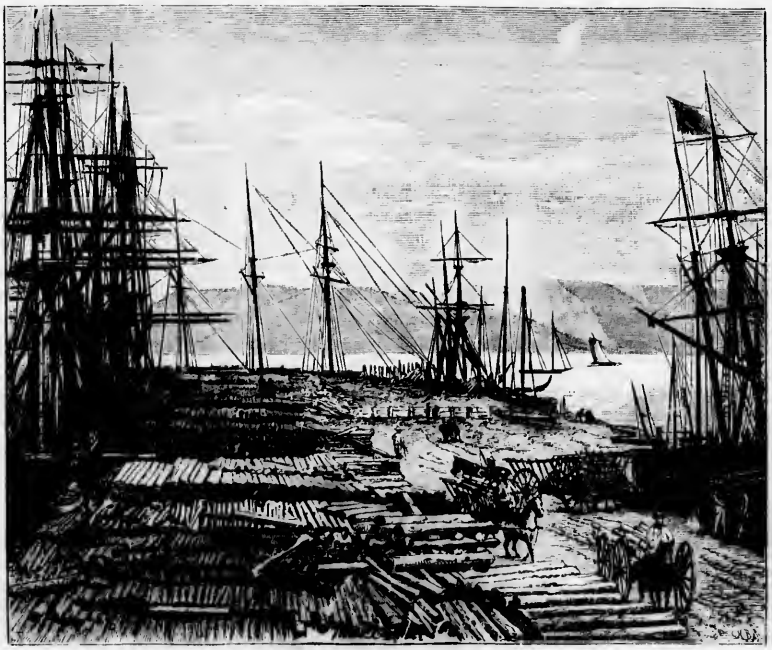
The work at a saw-milling establishment, say in Vancouver Island or Puget Sound, as elsewhere, consists of two main divisions, namely, getting the timber from the woods, and cutting it up into planks, at the mills. The saw-mill owner occasionally undertakes the work in the woods on his own account, but more usually makes a contract with a "logger," who engages for a certain price to deliver logs into the mill-pond close to the mill.

Having secured his "claim" to a portion of forest land bordering on the water, the "logger" proceeds to make a "main" road from the most densely-wooded part of the land to the water-side, commonly to some small bay. At the water-side end of the road

* In drawing up this description, though speaking of what I am personally familiar with, I have been greatly indebted to notes supplied me by my friend, the Hon. Gilbert Malcolm Sproat, Commissioner of Indian Affairs in British Columbia, and formerly Agent-General of the Province, who is very intimately acquainted with the whole subject.

he makes a slide of smooth logs, down which the logs brought from the forest roll into the water. Each logger, it may be added, has, as in the Eastern States, private marks chipped on every log, so that it may be at once recognised and claimed if it should go adrift. "Booms" are placed across to confine the logs until a sufficient quantity is obtained to form what is called a "boom of logs" for the mill. The logger next selects a suitable spot for his hut, and for a hovel for the oxen employed in dragging the logs, oxen being here universally employed in preference to horses. About a dozen men are engaged for the different operations of clearing away the brushwood, cutting the tree down, barking it, and sawing it across when felled into the required lengths, and for driving the team of oxen. A cook is also employed to take charge of the house and stores, and to cook for the party. This small establishment in the forest is called a "logging camp;" and at these camps, as in logging camps generally, the traveller generally receives a hearty welcome, and abundance of good wholesome fare—coffee, fresh bread, venison, salmon, beef and pork, potatoes, dried apples, fresh butter, pickles, &c. The work is very hard, and can only be done by men long accustomed to it. Most of the loggers come from Canada or the State of Maine, where they have been used to the axe from boyhood. Europeans are hardly worth their food until they have been some time at it. Removing the brushwood, called "swamping" (p. 254), is the only portion of the work that a "green hand" can undertake, and he must be a handy man to make a figure at that. The choppers and the teamster are the highest paid men. They receive from fifty to sixty dollars (£10 to £12) per month, with food. The others are only paid from £6 to £8 per month, with food, which, it may be added, is invariably the rule when workmen are employed at such establishments on the Pacific coast. Where the place is distant from a mill, and boards cannot be obtained, the house is built of logs, with moss stuffed between them, and the roof is made of long splints of cedar (*Thuja gigantea*). It is warm and water-tight. The inside is a large room, with open sleeping "bunks" placed round. In the centre is a wood fire, and above it a wooden open chimney coming down through the roof, like a vast extinguisher. In one corner of the room the cook has an American iron cooking-stove, while a long table and benches, at which the men take their meals, complete the furniture of these artizans of the forest. The axe used in chopping is a small one, of American make, with a long handle. The English manufacturers, though furnished with samples of this axe, do not seem to have succeeded in making it so as to satisfy the woodmen. A true woodman hardly knows what to do with his hands unless he has an axe in them. It seems indispensable to him, and it is astonishing how quickly and well he can fell trees, make roads, or build houses with it. Failing the axe, the lumberman, like most Western men, is fond of whittling, and when sitting in the summer evening in front of his often picturesquely-situated cabin, is usually seen leisurely and artlessly shaving down a "shingle," or, still better, the soft cheese-like white pine, if he be fortunate enough to lay his hands on a piece. The loggers of the North-West are a fine, manly, intelligent set of men. They have generally been fairly educated, and have seen a good deal of the world. Having few opportunities of spending money in the woods, and being well paid, those of them who resist the temptation to spend their earnings when they visit the towns are able to save money, and can get on to be logging contractors themselves.

The other portion of the work, namely, at the saw-mill, may now be noticed. From fifty to sixty men are employed at a large mill, in the capacity of engineers, firemen, log-haulers, gang-sawyers, circular-sawyers, cross-cutters, filers, blacksmiths, and men employed in carrying and stacking the planks. Several of these occupations require special skill, but many are open to the ordinary labourer. Consequently, the men at a



A LUMBER WHARF ON THE NORTH PACIFIC COAST.

mill are, on an average, scarcely equal to those in the logging camps. There are more rough characters among the people at the mill. The married men at a saw-mill live in small wooden cottages; the unmarried men have one or two barracks or dormitories. There is a cook-house, with a large mess-house attached, where the men have their three daily meals. They work from six to six, with only half an hour for dinner. The wages of the labourers are about £5 or £6 per month, with board and lodging, and the skilled men receive, according to their occupations, from £8 to £12 and £13 per month, board and lodging. The proprietors usually have a large general shop at the mill to supply the wants of the men and their families. The mills are generally driven by steam power, the

refuse of the logs supplying abundance of fuel. The saws consist of upright "gang" saws and "circular" saws. The wood on being sawn is run out of the mill on to the wharf, and the ships' crews take it into the vessels, which load "bow on" to the wharf (p. 261).

With the exception of the cedar, which is used for making shingles for roofing, and by the natives for canoes and a dozen other uses, the *Abies Douglasii* is the only "merchantable" wood in large quantities of the forest trees north of the Columbia River. (In California they have the red wood, the scented cedar—*Cupressus Lawsoniana*—and other trees, but these do not extend to the great lumbering region of the North.) The Douglas fir is called indiscriminately, in foreign markets, Oregon, Puget Sound, Vancouver or red fir, pine, &c. It grows all over the North-West, though not north of Milbank Sound, in 52° N.L. Though contracting greatly in drying, yet, from its strength and power of bearing tension, it is the best of North-West conifers. The white fir (*Picea*), to the unscientific observer, looks in the forests not unlike it, but its wood is soft, and not believed to be durable. A cargo of masts or of sawn timber would be spoilt if it were known that white firs were amongst it. The *Abies Douglasii* grows very sound. Those from the Eastern provinces who have been accustomed—as, for instance, on the Ottawa—to see tracts of fine-looking forest useless from the unsoundness of the trees, are surprised to find such a healthy forest growth in the North-West. The price of the sawn wood, or "lumber," is from 40s. to 44s. per thousand feet of "board measure" (twelve inches square and one inch thick), for ordinary lengths, say, from twenty to thirty feet. Large pieces cost more; flooring boards, planed on one side, tongued and grooved, cost £4 per thousand feet. As a "merchantable" wood, the *Abies Douglasii* does not enter into competition with the Swedish or Canadian yellow pine. It is a stronger, coarser, and more durable wood, and more resembles the pitch pine of the South States than either the Swedish or Canadian. It is possible to make planed doors and window-frames, or flooring, of selected pieces of *Abies Douglasii*, and these look well and wear well; but the wood is specially fitted for rafters, joists, and heavy carpentering work, in which the Canadian and Swedish timber would be less suitable. Owing to its compactness and tough strong fibre, the *Abies Douglasii* is not so easily sawn or worked as the softer pines, and is, therefore, less liked by the carpenters. Large quantities are exported to the northern parts of China, the Sandwich Islands, the west coast of South America, and to Australia. The freight is too high to enable it to be brought to England at a profit, except in the form of masts. In 1871, 182,490 dollars worth of lumber were exported from British Columbia.

From the first days of San Francisco, that town and a large portion of the State of California have been supplied with this wood by the saw-mills of Puget Sound, 800 miles north of San Francisco. The wood, the cribs or coffer dams, forming part of the "made" ground on which a great portion of the city stands, also the wharves, the wooden houses, the heavy carpentering in the brick and stone structures, and all the agricultural requirements of the districts accessible to the wood merchants of San Francisco, are supplied by this wood. The red wood, or red cedar (*Sequoia sempervirens*), which is lighter and smoother, and used for door and window-frames, is the only wood for general use obtainable in any quantity in that portion of California which borders the ocean. San Francisco thus looks to Puget Sound for her supply of fir wood.

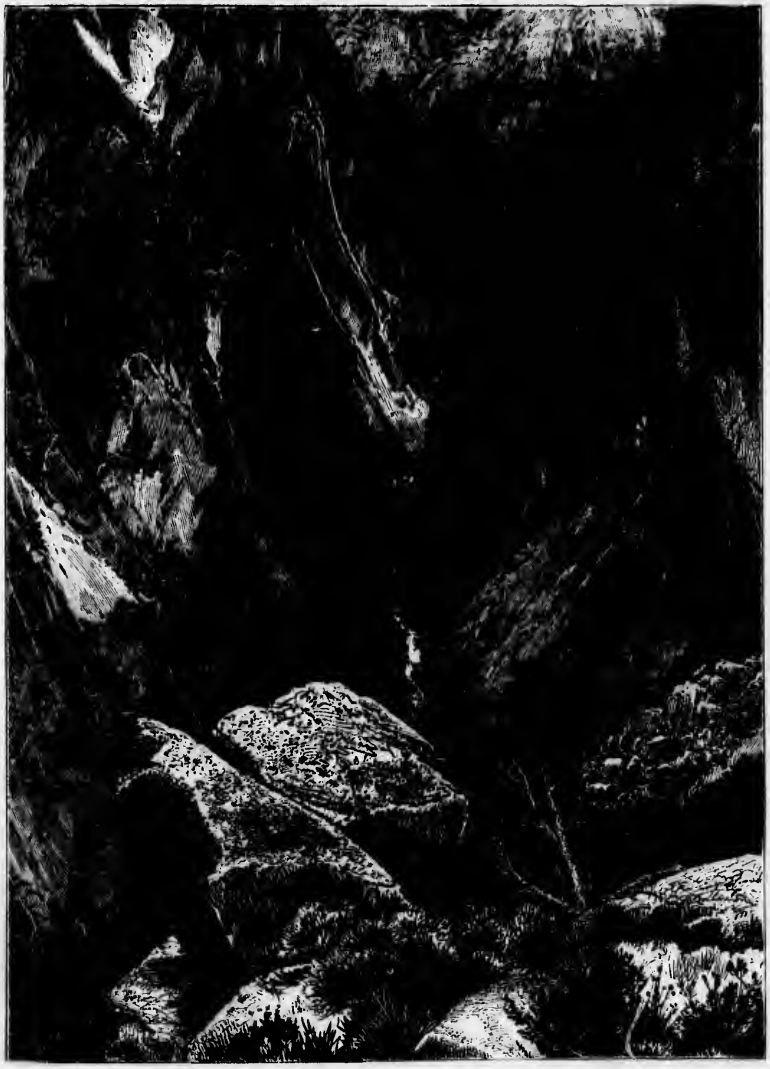
There are no finer trees in the world for masts and yards than the *Abies Douglasii*. The wood of these is probably superior to the best Riga pine that can be got. Those who have tried the Douglas and the Southern States pitch pine prefer the former. It is used in the navies of various European countries.* There would be a large consumption of this wood in Britain for the mercantile navy if the high freight did not check its importation. Of late years, also, many of our merchant vessels use iron masts. Masting pieces can be got of all sizes, from five inches in diameter to forty inches; the large pieces being, of course, much more easily obtained than the small. The price, free on board, in the North-West, is, according to size and character, so much per running foot. It is only a portion of a tree, of course, which has all the requisites for making a mast or a yard. The height of many of the trees as they grow in the woods is very great. "I have been told," writes Mr. Sproat in his notes, "that there was a tree lying on the ground, in some part of Puget Sound, which measured over 400 feet as it lay; but I am inclined to think the feet must have been short in this case. I can speak of what I have myself seen. The highest flag-pole in Europe is the Douglas fir one in Kew Gardens, near London, which measures 165 feet. This tree was sent home by a friend of mine from the North-West coast, and presented to the Gardens. Another flag-pole, still larger, was sent home by the same gentleman for the Great Exhibition of 1862, but arrived too late; and this, which measured 185 feet, was broken by being knocked against a bridge in the River Thames as it was being conveyed up-stream on the deck of a small steamer. The last-mentioned pole had no greater diameter than twenty inches, being meant for a flag-pole. As it grew in the woods it measured 221 feet, for I myself measured it after it fell. It was one of the shortest of five trees, all of which broke in the felling. Beds of branches were prepared to receive them, but four of the trees, one after the other, received injury in falling. The beds of branches were very carefully attended to for the last tree. Just as it was about to fall, a puff of wind blew it in the opposite direction, and the tree crashed down between the other trees, and, happily, fell on the bare ground uninjured. Beds of branches are only required in felling these long slender poles; the largest full-proportioned trees fall without breaking the trunks." The gigantic stature of the Douglas fir is not confined to that tree. The Menzies spruce (p. 161) and others are equally tall, and even thicker. I have measured a cedar (*Thuja gigantea*), on the Nittinat River, in Vancouver Island, which was forty-five feet in circumference; and, of course, the "Big trees" of California (*Sequoia* or *Wellingtonia gigantea*) are very familiar by reputation to every one. In a future chapter I may have a little to say of these and other Californian wonders.

* See Forbes' "Prize Essay on Vancouver Island" (1862); Sproat's "British Columbia" (1875); Anderson's "The Dominion at the West—Prize Essay" (1872); Lundin Brown's "Prize Essay on British Columbia" (1863); and the works of Mayne, Macfie, Pemberton, Rattray, and others on the Province.

CHAPTER XIV.

The United States: The Furthest West.

The preceding chapters have afforded us glimpses of the physical geography of North America. Partially the Dominion of Canada shares in the physical features of the United States. Like it, it falls naturally under three divisions—the Eastern, the Central, and the Furthest West, or Pacific region. But it is only when we consider the United States that we see the marked character of these three great geographical regions of the Northern portion of the Continent. Accordingly, we may arrange what we have to say of the Great Republic and its people under these heads. Information about the United States being so easily accessible, and the subject being too extensive to be anything but sketched in the space we can afford to it, in accordance with the plan already described, we shall merely trace a few of the more prominent features of the United States, and mainly those which, unlike the statistics, manufactures, towns, population, and settlements, are not changeable, and liable to be altered before the pages which describe them have been long before the reader. Physically considered, therefore, with reference to its conformation, climate, and productions, the United States may be divided into three great and tolerably well-marked regions—the mountain slope of the East, or Atlantic section, the central plains, and the mountain region of the West. Leaving the first two to be described in future chapters, we may briefly characterise the last, as consisting, in the words of Dr. Bryce, of an elevated plateau, extending through 15° of latitude, and from 600 to 1,000 miles broad, supported on the east by the great chain of the Rocky Mountains, and on the west by the Sierra Nevada and Cascade ranges. The plateau, in its middle and broadest part, comprehends the States of Nevada, Utah, and parts of Colorado and Wyoming, and has an area of 250,000 square miles. In its eastern and southern parts the height is between 5,000, and 6,000 feet, but in Western Utah and Nevada from 4,000 to 5,000 feet, while north of the Humboldt River, where the waters divide, it exceeds 4,000 feet. It is divided into two unequal portions by the Wahsatch Mountains, whose highest summits reach from 4,000 to 7,000 feet above the plateau—that is, from 8,000 to 11,000 feet above the sea—and are always covered with snow (p. 265). The western part is the largest, and is about 400 miles long from east to west, and 300 broad. Spurs from the bounding ranges descend into it, and it has several short ridges of hills running north and south, of recent volcanic origin, and rising 1,000 to 4,000 feet above the general level. The valleys between are about twenty miles wide, and of great length, but often they are cut off by low cross-ridges connecting the higher north and south ranges. Almost wholly shut in by mountains, and having its own system of lakes and rivers, this region is aptly termed the Great Basin. Much of the surface is covered with saline and alkaline incrustations, which give off a blinding dust under strong winds. The country is almost rainless, and the waters are most salt and brackish, and one lake at least is saturated with salt, and without life of any kind. Except the Humboldt River, and the few streams descending from the snow-clad peaks of the bounding ranges, and soon lost in "sinks,"



A CANON IN THE WAHSATCH MOUNTAINS (UTAH TERRITORY).

the only fresh water in the basin is Lake Utah, with the River Jordan issuing from it, and entering the Great Salt Lake. It is only near these waters that fertile tracts and thriving settlements are found; the rest of the basin is a hopeless desert. The tract of Utah, east of the Wahsatch Mountains, is equally sterile, and we have there an area somewhat larger than Spain or Portugal, unfit, save in a few favoured spots, for the permanent abode of civilised man. The south-eastern part of the plateau consists of an arid broken country, into which strata the Colorado, and its tributaries, the Grand and Green Rivers, have cut through several hundreds of miles cañons or gorges from 2,000 to 4,000 feet in depth, not only in the soft beds of chalk and sandstone, but even through several hundred feet of the underlying hard granite (p. 288). These vast cañons render much of the country quite impassable by man and quadrupeds. Emerging from its cañoned plateau, about the thirty-fifth parallel, the Colorado wanders through sultry valleys from 1,000 to 2,000 feet in height, the country becoming more arid and sterile as the head of the Gulf of California is approached. In this wide region of the West vast tracts are occupied by mountain ranges, and much of it must ever remain untenanted. It contains, however, one of the finest states of the Union, the great state of California, and the maritime region or Pacific slope. West of the Coast range and Cascade Mountains is a well-watered and fertile region, with a fine climate and rich vegetation. In it are comprised most of Alaska, Vancouver Island, and British Columbia, Washington Territory, and Oregon.

Before saying a few words on each of these political divisions individually, we may describe more generally and systematically the physical features of the Great Pacific slope. In doing so we will divide our original materials, published and unpublished, acquired during many days' weary wandering afoot through the whole region to be described from California to Alaska, and from the sea to the Rocky Mountains.

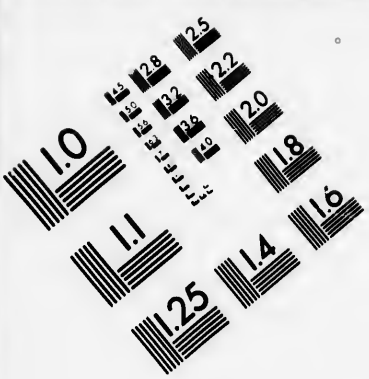
There are three great ranges of mountains which materially affect the physical geography of the Pacific slopes of the Rocky Mountains. These are (1), the Rocky (or as it was formerly and ought still to be called, the Chippewayan) Mountain range, stretching into South America under the name of the Andes;* (2), the Cascade range; and (3), the Coast range, a low and comparatively insignificant chain bordering the region immediately off the coast. All of these chains run nearly north and south from—or as far as we have yet explored—Alaska, until, entering California, they change their names in some instances, but are *de facto* to a great extent the same ranges. This is eminently true of the Cascade range, which runs down through British Columbia, Washington Territory, and Oregon, until, in the southern portion of the last-named

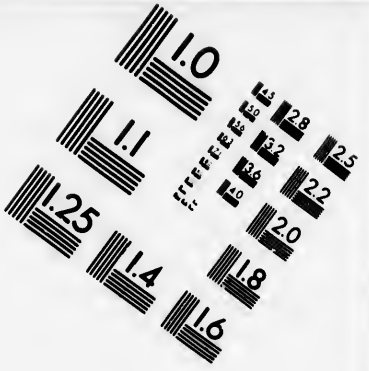
* I am well aware that this is only a sweeping generalisation, for, speaking in strict orographical language, there are many breaks in the continuity of the chain. Thus, the Sierra Madre of Mexico lies several degrees, both of latitude and longitude, distant from the nearest point of the Rocky Mountains, and the Andes are but imperfectly represented in the hills of the Isthmus of Panama, while these again are only distantly connected with the mountains and table lands of Upper Mosquito, of Honduras, and Guatemala, or with the volcanic cones which stand out in isolated beauty from the Plains of Nicaragua and San Salvador. Still, I cannot but think that Julius Froebel takes up an untenable position when he entirely denies the connection of the mountains mentioned.—"Smithsonian Report" (1854), p. 253.

state, and in Northern California, it gets somewhat broken up into various spurs of the Siskiyou range, and extending, by connecting spurs, far to the east, it forms the famous Sierra Nevadas of California.* It has a breadth varying from fifteen to fifty miles, and an average height of about 7,000 feet, though peaks in it have a much greater elevation. Its average distance from the Pacific Ocean is about 1,200 miles. Its main crest is crowned by several peaks of considerable magnitude, and particularly by Mounts Jefferson and Hood, and trends due north. On the northern frontier of California it is marked by Mount Pitt or McLaughlin, and by Shasta Butte, when it deflects eastward, again to be turned south at Lassens Butte in the Sierras.† In the range are many extinct as well as active volcanoes. To enumerate all of the former would be to mention almost every summit of the range. The following may suffice as examples:—In the autumn of 1865 I visited a curious crater in the mountains between Fort Klamath and Rogue River. It lay at an altitude of some 2,000 feet, and the crater was about seven or eight miles in circumference. The walls were composed of blackish lava and reddish scoriæ, with pumice. Obsidian, or volcanic glass, was scattered around, being also found all over the country adjoining the mountains, where it is used by the Indians to make arrow points. At a depth of 800 feet, in the crater, was a lake of fresh water with an island in the centre. This lake is now one of the sights of Oregon. It is undoubtedly of the same nature as the Gemunder Meer, the Pulvermaar, and the Meerfelder Maar in the Eifel, and the island is only the top of that cone which we often see in craters. In Nevada Territory is another, 400 feet in length by 200 in breadth, in which no bottom has been found at 700 feet. Mount Scott presents the appearance of a truncated cone, and is doubtless also an extinct volcano. There are many peaks covered with perpetual or all but perpetual snow, for some of them are also active volcanoes. Mount Hood, 11,225 feet in height, is one of these; Mount Baker, which, in company with my friend Mr. Edmund T. Coleman, a well-known member of the Alpine Club, and the Hon. Mr. Darwin, a Territorial Judge, I attempted to ascend in 1866, but was repulsed by the Tukullum Indians encamped near its base, is another. Coleman, by dint of characteristic mountaineering skill and energy, succeeded in gaining the summit by another route after I had left that part of the country, and found its height by aneroid to be 10,613 feet. For the first time he established the presence of glaciers on the mountains, a fact previously doubted, though they are now known to be found even in the Coast range close to the sea. The mountain is a prominent object from the southern end of Vancouver Island, and is generally viewed with no inconsiderable pride by the dwellers in those parts. The chief rivers of this region rise in the Rocky Mountains, or some of its tributary spurs, and though the Cascade range gives various tributaries to the rivers which flow into the Pacific, none of them, with the exception of the Willamette, Rogue River, Chehalis, and some smaller streams, all rising on the western slope either of the Cascade or of the Coast range, can be truly styled rivers. Scarcely any

* For a full description of the picturesque aspects of this range, see Clarence King's "Mountaineering on the Pacific."

† "Pacific Railroad Reports," Vol. VI. (Geology).





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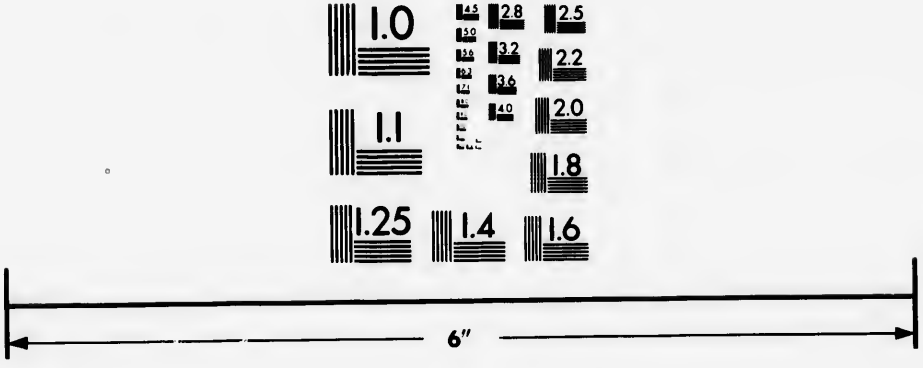

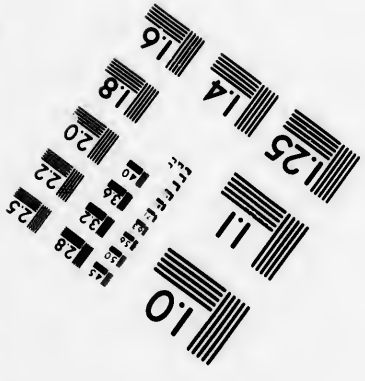

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of these maintain an independent existence, but unite with some of the larger rivers before reaching the sea. Vancouver Island and Queen Charlotte Islands do not possess any rivers of consequence. All of these are wild streams broken by falls, rapids, or cascades, rising in lakes or in the melting of the interior snows, and wending a tortuous course through gloomy pine forests. They eventually fall into the sea without forming an estuary. Only one river of the slightest consequence arises on the eastern or arid side of the Cascades. This is the Deschutes, which, after keeping along the base of the mountains, dashing over falls and rapids, between high walls, joins the Columbia not far from Celilo, "the drifting sand," a little sand-choked post of the railway which runs round the Dalles of the Columbia River for twelve miles. Many of these streams from the Cascades are intermittent, being almost dry in the morning, and flowing full in the afternoon. This is owing to the melting of the snow by the midday sun, and the stoppage of the melted water by the night frosts in the high elevations where their sources are. The same fact has been observed in the Rocky Mountains, and other mountain regions. Some of the rivers, like the Columbia, are exposed in portions of their course in long narrow lakes, which have received distinctive names, though in reality only part of the river which flows in at one end and out at the other. Many of them, like the Rio de las Plumas (or Feather River), a tributary of the Sacramento, and the Willamette, are subject to great floods, by the sudden melting of the snows, and frequently cause great damage, as the town of Sacramento has good reason to know. Wet seasons also is another cause of these destructive floods, the amount of rain falling in the winter being often very great.

The Cascade range is extremely important, in so far that it acts as a great barrier between two sub-divisions of the Pacific slope—the western, or maritime, which is mild in climate, and in general densely wooded, and the east, or region between the Cascades and Rocky Mountains, which is dry, cold in the winter, warm in the summer, and in general treeless, or only slightly wooded. The plants and animals of the two regions are also widely different; in fact, though they have a general likeness, yet the two sides of the Cascade range throughout its entire extent might be classed as entirely different sections of America.

The western slope is the one in which the largest number of settlements are, and that chiefly selected for the town sites. The eastern has few attractions for the agriculturist, unless in the well-watered valleys, or in places wherer irigation can be applied. Gold and silver mining have been the causes which have led to the few settlements in it, but sage brush is its great feature. All of Vancouver Island partakes of the character of the western slope, though those portions of British Columbia east of the Cascades, owing to their more open character, and more northern position, are not so arid as the corresponding regions to the south. Hence the chief settlements, with the exception of New Westminster and Yale on Fraser River, are found there. The greater portion of the forest south of lat. 52° is composed of *Abies Douglasii*, the economic value of which we have already described. This tree does not extend north of Milbank Sound, and south of the limits of Oregon it becomes rare, or no longer a Coast tree, the increased warmth of the more southern regions causing it to retreat to the interior mountains, where, retiring higher and higher as it

reaches further to the warmer regions of the south, it holds out an Alpine existence, having even been found in Mexico, but nowhere out of the limits of this district is it seen in perfection, or forms a feature in the scenery. It is this region with which I am most familiar, and where the scene of my researches lay for a considerable time. As I have said, the great bulk of the forest consists of the conifer named, the tree attaining its

CRYSTAL LAKE IN CALIFORNIA.

maximum of development between Vancouver Island and the Columbia River; north and south of these limits, its number or magnitude is less important. Here it forms the almost sole tree which cumbers nearly every footbreadth of the forest, growing in almost any soil, and maintaining an uncertain footing in the chinks of the rocks, where one would think it impossible to find soil enough to nourish any plant, far less a tree of its size; and it may even be found in places so close to the sea that the waves must wash its trunk and roots. In the interior of the country, a little back from the coast, *Abies Mertensiana* disputes the possession of the territory with *Abies Douglasii*, rivalling it in height and beauty, though not in economic value. The hemlock (*Abies Mertensiana*)

forest is lighter and more airy than the Douglas fir one, and the tree not branching so near the trunk, is (in my opinion) conducive to a more open and lightsome forest than the dark gloomy *Abies Douglasii*. Here is a "savage wood," which Dante might have taken for the model of that in which he found himself astray—

> "——and o'en to tell
> It were no lazy task, how savage wild
> That forest, how robust and rough its growth."

There the only sounds which break on the ear are the *tap tap* of the woodpeckers, the drum of the grouse among the bracken or bush, or the rush of some mountain stream, which now, in the summer time, runs trickling along, but in the winter, swollen with the great rainfall of this wet region, roars through its rocky bed, flooded from bank to bank, undermining the loose soil, and carrying off with it, as a sacrifice to its fury, a perfect hetacomb of noble trees, which lie athwart its current lower down, in great drifts accumulating every year. Under the shade of these trees few living things prosper. A startled deer ambling through the forest, or a black bear crashing its way through fallen timber and crab-apple bushes to the mountains, are about the only creatures seen. Few birds inhabit the trees, and the only living things which seem to prosper are the squirrels, which feed on the seeds of the firs.

In the more open places by the banks of streams, and in rich river bottoms, the broad-leaved maple (*Acer macrophyllum*), with its bright green leaves in summer, and yellow ones in autumn, adds a pleasant variety to the scene; and the swampy places are invariably distinguished by the Oregon alder (*Alnus Oregana*), and the crab-apple (*Pyrus rivularis*); while during the lovely June weather the bright white flowers of the dog-wood (*Cornus Nuttallii*) are reflected in the deep pools as the traveller glides down a river in the cool of evening. Here is also found, for the first time, *Pinus monticola*, the Western representative of the Weymouth pine, but unlike it all, nowhere forming forests, but only growing in solitary clumps of two or three trees, in a few places. The gloomy foliage of the Douglas fir, and the lighter evergreen of the hemlock, are varied by the broad glossy frond-like branches, with their silver under-surface, of the Piceas. Here and there may also be found the yew (*Taxus brevifolia*), and Henry's graceful juniper (*Juniperus Henryana*, R. Br. Campst.); while the laurel-like leaves and smooth mahogany-coloured bark of *Arbutus Menziesii*, here and there, in open places, relieves the dead uniformity of the forest. Ascend the great rivers of this region in summer time, and the canoe voyager will find Menzies spruce (*A. Menziesii*, p. 161), and the cottonwood (*Populus monilifera*), shedding its downy seeds in sheets on the water, the most characteristic trees. Prairies are few. The south-eastern end of Vancouver Island, and the Willamette Prairies, are the chief open places, though here and there are other little grassy parks shut in by woods on every side. It is in these open places that Garry's Oak (*Quercus Garryana*) dots the plain—as near Victoria—everywhere eschewing the forest, and rarely found except in similar situations.

A dense growth of shrubs, consisting of huckleberry, thimbleberry, and salmonberry, and in open places the red flowery currant, now so familiar in our shrubberies, impede the

traveller, while in the proper season the birds and the Indians are in search of the berries. Accordingly, we always find dense thickets of these shrubs in the immediate vicinity of the native villages, these bushes having been naturally planted by long generations of Indians, while the mock orange (*Philadelphus macropetalus*), the wild cherry (*Cerasus mollis*), &c., add further variety. The shrubbery is all bright-blossomed, and humming-birds flit from flower to flower in search of insects, so that these thickets are often the prettiest part of the North-Western forest; the huge pine wastes striking one with a feeling of awe rather than with a sensation of pleasure. When a storm arises the trees sway backwards and forwards, creaking and groaning, and every now and again one snaps, and the crash of its fall brings a dozen smaller ones, and innumerable branches from the neighbouring trees, to the ground, waking up the sleeping wayfarer in these forests with terror. When the thunder echoes through them, and the lightning plays down the tree, the effect is grand, no doubt; but the traveller feels that he could enjoy it better at a distance, and under shelter. During the dry weather of summer the trees, rubbing against each other, catch fire, and often great tracts of fine timber are destroyed. In the vicinity of the coast this is doubtless often due to Indians and hunters leaving, as is their universal custom, their camp-fires unextinguished; but I have often seen forests high up in the mountains on fire, and frequently come across tracts in the interior only covered with burnt stumps in localities where no human being probably ever trod before, so that I am convinced they are set on fire in many cases by natural causes.

Prairies—or breaks in this great forest—are, as we have already remarked, few. Still they are found, such as in the vicinity of Nisqually, in Washington Territory, where, however, the surrounding forest is encroaching again on the prairie, and more especially near the Willamette River, where there are extensive tracts of fine open grassy land. As we get further south the open places get more common, but in the north they are rare indeed. The southern end of Vancouver Island is one of these localities, and is often taken by the untravelled colonists as a specimen of the country. In reality it is an exception. Some years ago I made a journey through this region, and as I may, perhaps, more easily convey to the reader an idea of such pleasant oases in the pine forest, as well as by contrast the forest itself, I may sketch this journey, more especially as it will afford a relief to the drier geographical details given in more systematic form.

The White Oak Country.

In the sunshiny spring days of the year of grace, one thousand eight hundred and sixty-four, there came unto me — "our right trusty and well-beloved cousin," the writer of this doleful tale — semi-royal commission appointing me sole leader and Government agent of an expedition to explore the unknown wilds of Vancouver Island; and (for my sins) in a weak and inexperienced moment, I accepted the proposed honour, for was not I the choice of the people! In discharge of my duties therewith connected, one glorious July day, ever to be remembered, not only here but in many other lands where the companions of those anxious but yet happy times are scattered, in company with my ever faithful esquire—whom, in the impossibility of asking his permission to designate more clearly, I may conceal under the then disguise of A.B

I made a most prosaic journey afoot through this White Oak region at the southern end of Vancouver Island; through a district, which, perhaps I might offend honest men who there live, and I hope prosper, if I called savage, but yet which my conscience will scarcely allow me to style as partaking in a pre-eminent degree of the amenities of civilisation. My readers will bear with me if I ask them, in imagination, to accompany us on this the first of many journeys which, in my capacity of *cicerone*, I shall invite them to share with me before we part company.

After many devious weary wanderings through bush, through forest, and through fenland, we were encamped one July evening on the banks of the Sooke River, which arises out of a lake in the interior, and flows into the bay of the same name on the Straits of Juan De Fuca. Our camp was pitched; we were resting from our labour and making as merry as explorers, careless of all the world, and out of it too, in no man's land, can be. The camp-fire was blazing cheerily, the axe was ringing in the quiet summer air as the stalwart backwoodsmen of our party hewed down more timber for the watch-fire. The river was silently flowing past, and, save the echo of our voices, and the startled cry of some wild-fowl, there was nought to disturb the indescribable quietness and stillness of the beautiful summer evening, so characteristic of the region we are describing. Tomo Antoine, our Iriquois hunter, had killed a deer; we had finished the evening meal, and the party were lolling on the ground round the fire, talking or making entries into their note or sketch-books. The astronomer and I are in consultation regarding the "value" of a certain altitude of the sun, and we have finally come to the conclusion that we are in nearly about longitude 123° 42′ 30″ west of Greenwich, and therefore not much more than between twenty and thirty miles from Victoria. That fair town we have not seen for many a sunrise and sunset; and charming though savagedom may be, yet none of us could deny that the temptation to visit the haunts of civilisation was exceedingly strong. We had, however, no intention that way; but before many hours circumstances fell out which led to a change in our plans. We are just on the borders of civilisation. Settlers are, we know, not without calling distance, but we are too tired to go a-gossiping to-night, much as the craving to get up the leeway of the world's history since we dropped out of it may be on us. A curiosity similar in kind if not in degree brings us, however, two visitors. One is a quondam French-Canadian *voyageur*, of the Hudson's Bay Company, now settled hereabouts in semi-barbarism, with a little farm, an old Indian squaw, who rules him, and an endless brood of black-eyed, half-breed children, who, in their turn, rule both. He speaks but little, and that in indifferent French. Our thirsty hunter, Tomo, however, manages to learn that for a consideration he could let him have a bottle of rum, the result of which is that Tomo looses his gorgeous scarlet sash, gets particularly talkative, and the *voyageur* is ordered out of camp, peaceably if he so desires, if not, with the alternative of being kicked. He accepts the former, and leaves. Not long after, a strange-looking Indian makes his appearance, from down river, in a shallow canoe. His village is only a little way off, and he has just looked up in a casual friendly way to see if we have finished supper, what we want, and if he can steal anything. He gains nothing by his visit, and is proposing to leave, when Tomo, who is always fully alive to the delight of playing "big In'jun," sees in this promising youth a useful henchman to pack home his deer and

generally to kick about, and begs that he may be allowed to try to persuade him to accompany the expedition. He receives a hint, however, not to allow his tongue to boast

POLLARD STATION, ON THE OLD STAGE-COACH ROUTE, LAKE DONNER, CALIFORNIA.

too freely regarding the salary he is to receive, otherwise our dusky friend may fix his demand a little too high. Tomo, in his turn, rather overshoots the mark, and in much

voluble Tsongeisth, talks to the barbarian of Sooke. He pictures the delights of the expedition, the over-abundance of food—(saying nothing about the many, very many, banyan days we had experienced, and had yet in store for us)—the wonderful affability of his "hyass tyhee," or great chief, to all which he of Sooke replies by the only English phrase he knows, and which seems to tickle his fancy exceedingly—"Good Heavings!" As Tomo concludes one of his fictions, the Indian opens his eyes and his mouth, and exclaims "Good Heavings!" "We have almost nothing to do, eat, drink, and grow fat and merry," Tomo relates. "Good Heavings!" "We are quite a band of brothers, everybody is as good, if not better, than another, and the Indian is, if possible, better treated than the Whites." "Good Heavings!" Then taking courage at the success of his romances, Tomo "piles the agony" a little higher. "Indeed, in every village where we come to, we rule the roast, stay as long as we like, and go where we choose!" The Indian is fast yielding, but he has one little question to ask: "How much pay do you get for all this?" Tomo gets fifty dollars per month, but he has no intention of giving the Indian one-half of that, so he meekly confesses that as the labour is so light, and the loving-kindness so abundant, we are forced to accept of one-quarter of a dollar per diem! At this startling announcement, the magnate of Sooke springs into his canoe, and as he turns a bend of the river there comes floating back a derisive and most emphatic "Good Heavings!" We never saw him again.

However, in process of cross-questioning, our visitor let out some little trifles which led me also to drop down the river before nightfall, and to return determined to visit Victoria before the next four-and-twenty hours passed by. I intimate my intentions to those whose duty it is to act upon them. I gave my lieutenant, Mr. P. J. Leech, R.E., written directions where to meet me within the next week, and in an hour all the camp is slumbering save Leech, B——, and I, who hold a privy council by the smouldering fire, arranging our respective plans. Gradually, all sleep as soundly as proverbially do men of sound consciences. Whether we all came under this heading I have my strong suspicions, for our party is a wondrously motley one—hardly two of the same nationality, very few of any recognised religion, though there are several university graduates, and one ex-parson, on the roll; but all are handy enough with rifle, axe, pistol, and paddle. A more heterogeneous party of ten men, who worked more homogeneously together, or better or heartier, I think would be hard to find. I never have since, and have long ago despaired of doing so. At all events, they are all sleeping soundly enough when B—— and I shake ourselves out of our Mackinaw blue blankets at an early dawn next morning, blow up the fire, and boil the coffee-pot, while we breakfast staunchly on the remains of last night's pork and beans. Our blankets are strapped on our backs, our pistols and knives adjusted, and we bid farewell for a time to the "V.I.E.E. camp." We half ford, half swim the river, and are soon tramping down the Indian trail on the other side. Our dress is light, if not gaudy—a pair of shoes or moccasins, leather or canvas trousers, either of which can stand by themselves, an old felt hat, and a grey flannel shirt. Western dandies are rather divided regarding the method of wearing this latter garment. Some tuck it in after the manner of the civilised, but my worthy 'squire wears his shirt hanging loose outside his trousers, in

free, elegant style, like a Devonshire carter's "smock." Altogether, the garb is light and airy, if not over-picturesque; and we care little for that, for critics are not many hereabouts. We soon arrive at the Indian village. It is yet early morning, and nobody is about. An Indian village in this part of the world consists of one or two long parellelograms of boards fastened with withes of cedar (*Thuja gigantea*) to upright poles, with square holes cut for doors. You enter by a passage with high boards at either side, and the interior is roughly divided off by a breast-high partition half-way across into the lodge, for each family. The roof is flat, and consists of boards, which are loose enough to allow the smoke from the fire in the middle of the floor to escape out. Sometimes it gets overpoweringly strong, and then the boards are moved aside. The roof serves for a drying-place for berries, salmon, &c.; and, in the season, there is an ever-unctious dripping from the fat split salmon, which are being there smoked and dried for winter provender. As it is, there is a peculiarly ancient and fish-like smell around the Sooke village. A few mongrel curs yelp and sneak off as we approach, and a half-awake old fisher of salmon creeps out to see what's the matter. He seems not to have been a-bed last night, and as we playfully suggest this to him, he merely yawns, and points out to us the lodge where we may find the object of our search—the youth who was to put us on the Victoria trail by a shorter cut than going round the head of the bay. We subsequently learn that our sleepy friend is a fashionable physician, and has been making "tamanawos," or something akin to the Old World "scorcery," to cure a patient of his. On this we humbly apologise to the excellent gentleman for insinuating that he had been spending the evening in dissipation—vinous or otherwise—and shove our canoe off the fishy beech. Just then, two damsels, who are setting out on a berry-gathering expedition, beg that we will give them a lift. We gallantly consent, on the express condition that they shall assist in paddling, keep quiet, and indulge in no flirtations with the youth who is speeding us on our journey. It is a true Western summer morning. All is still. The sun is just appearing above the forest of gloomy firs in the east, struggling through the heavy fog which drapes everything in its mantle, causing the trees and rocks to look like ghosts in their weird-like indistinctness, and becoming the source of many a quaint Indian legend. The fog clearing away allows us a view of the pretty land-lock cove we are paddling through; a few pleasantly civilised-looking houses of some of the few settlers are seen. Yonder is the M——'s, perhaps the oldest settlers outside of the Hudson Bay Company's people in the island, a worthy Scotch family, with sons and daughters, to three generations, within their household. Not far off is another old covenanting Scot, of whom an amusing story is told, viz., that when the Bishop offered to baptise his grandchild, he politely asked to be excused, preferring, as he told his lordship, in his instinctive horror of Episcopacy, to "wait till a *reg'lar* minister cam' doun!" Vancouver Island has always been—fortunately or unfortunately, opinion differs—an elysium for gentlemen of the African race, and accordingly our Indians, who are now getting, as usual, very talkative, and inclined to seek an excuse for being idle, point out to us with the paddle the abode of what they call the *clayl*, or black man, whom they affect to exceedingly despise. This particular negro, who in

early life was a "field hand" in Georgia, bears the reputation of having the thickest skull of any man in the North Pacific, and as soon as ever he gets under the influence of rum, boasts loudly and deeply that he can split a cheese with it. Accordingly, at the present moment, he is a-bed with a slight headache; for, the other day, when in Victoria, he had attempted this feat, and had nearly succeeded, when some of the spectators quietly substituted a grindstone for the cheese! He manfully butted the substitute until any head but his would have been broken, and declares that if he had only got time, he would have succeeded in smashing the grindstone too!

With such tales, B——, who seems to know everybody, beguiles the way, and the peals of laughter with which his sallies of Indian wit are received by our companions, make the woods and cliffs echo again. We hear a plash of paddles, and a canoe emerges out of the mist, and, according to wont, sidles alongside. It contains the chief on his way home from some detached fishing camp; and, after he has gratified his curiosity regarding many particulars, begged a little tobacco, and tried to borrow a dollar, we bid each other a lazy *cla-how-ya*, and move off. This chief, who was then an old man, is said to be the only person saved from a wrecked ship on these shores many years ago. All the people were drowned except a baby, who was adopted by the then chief, and brought up as his son, in due time succeeding him. This is a current story thoroughly believed in the tribe; and, indeed, we have no reason to doubt this strange tradition, for he is almost as fair as a white, though continual exposure to the weather has bronzed him rather more than his white neighbours. He is very proud of his descent, and frequently boasts that he is as good as any white man. Wherever the ship came from, or aught else about it, is now for ever lost. At all events, the "White Chief" is now—or was, for I speak of a decade ago—and has ever been, one of the veriest savages in Vancouver Island, and can speak not one word of any language but his own. His tribe is a small one, and at one time was wholly carried into slavery by the Pachenats farther along the Strait.

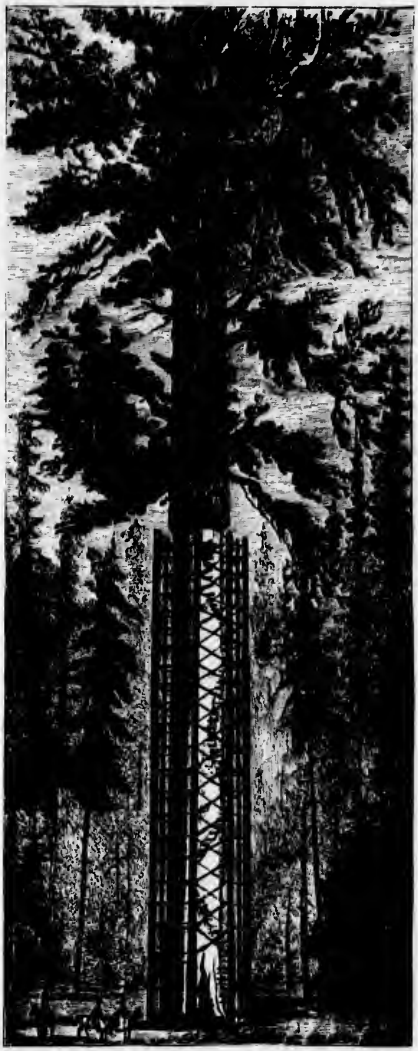
It is still early morning, and few sounds disturb the calm stillness of the solitary scene. The sweet tinkle of the cattle bells, as their owners crop the fern in the woods, strikes our ear through the fog, and a few hours later the blows of the woodman's axe will come echoing from among the tall trees. A white-headed eagle (*Haliaetus leucocephalus*, p. 185) sits perched on the summit of a lofty pine, intent after a salmon, numbers of which are now making the waters of the bay ripple. This fish eagle is found all over the American continent, and nowhere more abundantly than here. The young, until its fifth year, is brown-coloured, without the marked white head of the adult, and looks entirely like another bird. Out of the mist also comes the long weird cry of the crane (*Ardea herodias*), and B—— thinks he can detect the peculiar sound of the bittern, or "stake driver" (*Botaurus lentiginosus*), but we do not see it, and it therefore alone stands in the list of Vancouver birds on the authority of Mr. Lord.* The ravens (*Corvus carnivorus*), and especially the peculiar North-Western fish-crow (*Corvus caurinus*) sit croaking after the manner of that ilk, on some old salmon-drying frames

* The "Naturalist in British Columbia and Vancouver Island" (1867); R. Brown, "Synopsis of the Birds of Vancouver Island."—*The Ibis*, 1868.

along the shore. They are, as all the world over, birds of ill-omen and superstition, and foretell rain, war, and all sorts of disaster to the ears of the hapless tribesmen. No less a bird of superstition is the owl, of which five species, viz., the great horned owl (*Bubo virginianus*), the screech or mottled owl (*Scops Asio*), the sawhet owl (*Nyctale acadica*), the snowy owl (*Nyctea nivea*), and the little or pigmy owl (*Glaucidium gnoma*), are found in Vancouver Island and neighbouring territory. Indians are frightened to hear owls hooting in the woods or near their lodges. Then they think they must have offended the dead in some way, by speaking regarding them. For this reason, Indians will always avoid mentioning the dead by name, and only refer to them in a roundabout way.

We get to the head of the cove, and we are again landed in the bush, to make the best of our way to Victoria. Having rewarded our boatmen, and at the same time declined the young Indian damsels' modest request to be presented with our pocket handkerchiefs, we bid them good-bye, and they paddle back with an alacrity fully accounted for when we learn that there is to be a great feast, or "potlach," at Chowitzen or Becher Bay, to which our friends are bound.

We scramble over rocks covered with a stone-crop (*Sedum spathulifolium*), now in full yellow flower, and through among spirea and rubus bushes, every now and then tangling our feet in the matted carpet of salal (*Gaultheria shallon*), or stumbling over and barking our shins on the knotty "snaggs" of fallen trees, now concealed by



THE MOTHER OF THE FOREST (*Sequoia gigantea*), CALIFORNIA.

herbage. We soon, however, make the Victoria trail, and merrily jog on our way, discussing our camp life, future plans, and many other things in which the reader of this narrative can have but little interest. We were now again in the midst of a dense pine forest with tall trees—every one fit for a spear for the Titans when they warred against the gods—on either side of us. The rude little path which the settlers have hewn out of this dense wooded mass is every now and again barred by one of these forest giants, which the wind has thrown athwart it. How painfully silent are these fir forests of the North Pacific! At one portion of my life it was my happy lot every morning to walk through part of a great tropical forest in Central America. Fragrant odours of many flowers and spices were wafted in the sultry air, and everywhere the forest rang with the scream of tropical birds of gorgeous plumage, and the chatter of the long ring-tailed monkeys,* which swung themselves from branch to branch, and tree to tree, in utter astonishment at this degenerate descendant of theirs, who was permitted to walk afoot, while they disported themselves among the leaves of the india-rubber trees, and ate the luscious fruits from among the waves of flowers which rolled from forest tree to forest tree, until, as you looked from a rising ground, the whole expanse of country before you seemed in places like a sea of foliage and flowers. Above all, filling up as it were every vacant space, was the never-ceasing din and hum of insect life, which arose from among the trees. That forest seemed like one huge temple where ten millions of unseen choristers sang a never-ending hymn of praise to the "Unknown God!" Here, 40° to the north, all is different. There are odours, but they are those of fir-trees and turpentine, and you may listen for hours without hearing the sound or beholding the sight of living being. We sit down and draw breath for a few minutes. From overhead comes a gentle tapping, and from a tree close at hand another similar sound; we look up and find that it proceeds from two species of woodpeckers boring the tree for insects. They are Audubon's *Picus Harrisi* and *P. Gairdneri*, the only two species found on the island. We almost repent what we had said about the scarcity of life in the forest, for down jumps from a tree a little brownish squirrel, which stares at us for a second, then, tail on end, skips along a fallen tree, tears open a fir cone, extracts the seed, and then skips off on the errand he is bound. There are several species of squirrels in the North Pacific Slope of the Rocky Mountains, but this is the common one (*Sciurus Douglasii*). In the mild climate of this region it does not hybernate, but may be seen all the year round jumping about, fearlessly approaching the traveller, and then tossing up its tail as it runs off scolding and barking. As we are moving off, a pretty fawn† ambles into the pathway just before us, and after eyeing us for some time, again trots into the bush, and in a minute is lost among the thick foliage.

As we jog along, the woodland scene, though monotonous, is yet varied by glimpses here and there of little lakelets, surrounded by alders and willows, while in more open places, when the soil is good, the beautiful maple-tree makes its appearance. Enlivened by the scene, my companion makes the wood ring with his merry French-Canadian *chanson à l'aviron*. As we proceed, making the forest echo back the chorus, we rouse up

* *Ateles paniscus.* † *Cervus Columbianus.*

from among the bushes a man who has been resting there "for a spell." He is of tall stature, tremendous breadth of shoulders, and profuse beard, dressed pretty much after our own fashion, but yet with a "something" which at once stamps him as having been once very different from what he is now. He shoulders his deer and rifle, and keeps step with us on the narrow trail in single file with as much ease as if he had only a rabbit on his shoulder. He insists that he has met me somewhere; he is sure it was in Caius College, Cambridge. I am perfectly certain it was not, but do not care to remind him that it was once on the way to the Cariboo Gold Mines in British Columbia, where I was particularly astonished at the profuse variety and vehemence of the expletives he addressed to his mule, and found on inquiry that he was a Cambridge graduate, and rumoured to be an ex-curate. His old faculty of apostrophisation seemed in no way to have deserted him, for he vented anathemas on everything and everybody very freely, as we discoursed together for the next few miles. What did we talk about? Woodcraft and the noble art of venery? Not at all. With me he discussed Aristotle's Natural History, and the never-failing subject of the authorship of the Letters of Junius, about which he seemed to have a special theory of his own; and with B—— he was once or twice nearly coming to blows, about some particular question in fluxions, concerning the merits or demerits of which I knew nothing. After in vain attempting to convince my companion, who was a mathematician of no mean degree, he would whip the deer from his shoulders, and seizing a bit of burnt stick which might happen to be handy, on the barkened trunk of a tree would protract a figure over which the two would argue so long, that I had frequently to remind them that time was short, and art was long, and Victoria many an hour's tramp yet.

Our newly-found friend was a hunter by profession, and lived in a lodge in the vast wilderness of fir-trees close by. He was particularly anxious to know the latest quotation of venison in the Victoria market, and on our failing to enlighten him on this topic, he turned off the trail a few hundred yards to a rough hut, where lives another hunter, by name Saul (surname unknown). Apparently the intelligence was unsatisfactory, for his feelings burst out at the evil tidings conveyed to him by "Saul the Hunter" in a tornado of the kind of expressions which may possibly be known to such of my readers as may have made the acquaintance of Squire Western. Just then we parted from him as he turned off the trail to his lodge, after being forced to decline his professed hospitality, in the shape of "pot-luck," as the sun was past meridian. It may astonish some readers to hear of such an extraordinary personage on the "Sooke Trail," but those who have lived in gold countries, and especially any one familiar with Vancouver Island in those days, would have little hesitation in fixing upon our acquaintance, or his match. Indeed, so familiar were men of his stamp in 1864, that he seemed never to be surprised at meeting two rough-looking fellows in the usual casual way who could discuss literature and science with him, and never once hinted a query as to who we were. Indeed, if we had only cared that day to have turned off the trail a few miles further, we could have come across two brothers in many ways—the verbal impropriety omitted—similar, who had been professional hunters for years, and were perfectly well known to me, and hundreds more, in this

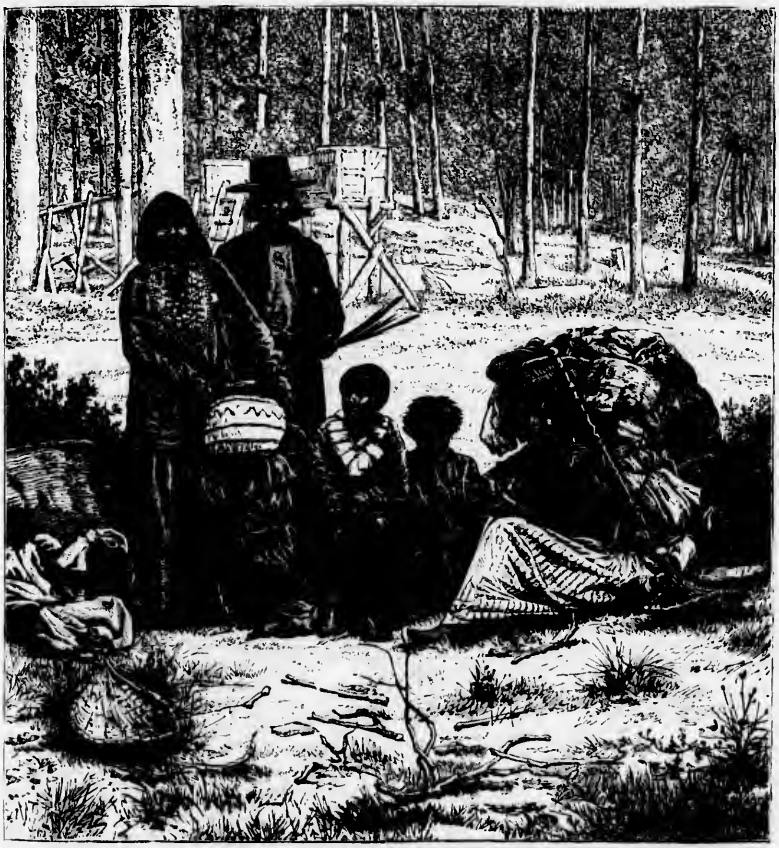
capacity. Yet the one was a clerk in holy orders, and the other a physician, and both graduates of a university. The one is now practising medicine in England, and the last time I saw the other was when he was doing duty in a London church. At that period baronets were driving carts, and peers' nephews keeping taverns. One of the latter was a waiter in the first hotel in which I lived in Victoria, and when I left the country it was the heir to the honours of the Red Hand of Ulster who drove the dray with my

THE CALIFORNIAN QUAIL (*Lophortyx Californica*).

luggage to the steamer. All society was turned upside down, and to our Old World conventional notions the *contretemps* was sometimes rather ludicrous, as the previous sketch illustrates.

We had not long parted from the clerical hunter before the scenery changed, and the pleasant country, scattered with Garry's oak (*Quercus Garryana*), began to appear. Farm-houses and corn-fields now became familiar; we had entered the district of Metchosin, which in those days returned a member to the Vancouver House of Parliament, as, indeed, also did Sooke, where there were not a dozen voters. The last member this Western old Sarum elected had never seen his constituents or the "county" he was supposed to represent. He had once made an attempt to reach it, but found the forest on fire, and turned back again, and was elected by the faithful on the credit of nobody

opposing him. I may add that this hon. gentleman, when I last heard of him, was following the profession of restaurant keeper on a very small scale in a Scottish town.



INDIAN CHIEF OF NORTHERN CALIFORNIA, AND FAMILY.

Very quickly the Metchosin district spread out before us in all its beauty, and we were elated by the sight of human beings, male and female, the latter having been rarities to us for a long time past. Many birds new to us met our eye, and we flush the Californian quail (*Lophortyx Californica*, p. 280), which had been lately imported and set free

in this district as a useful addition to the island list of game birds. The English rabbit had also been set free, but it was, we believe, soon killed off by pot-hunters, a calamity not much to be deplored, if it bade fair to become a nuisance anything like that which it has proved in Australia. We also occasionally saw the king bird, or bee master (*Tyrannus Carolinensis*), quarrelsome, jealous, and pugnacious, as usual with its genus. Had it been night it is quite possible that it might have cultivated a nearer acquaintance with the panther of the West (*Felis concolor*), which is common in this district, and a great pest to the farmers. It is, however, rarely seen, and seldom attacks man, though a member of our party on the Pachenat River (San Juan) was followed by one after nightfall. We are now in a comparatively civilised country, and the sight of fields, and above all the oak groves, through which we can see some distance ahead, delight us who have been so long accustomed to the trackless, viewless fir woods. We are approaching a piece of country we are familiar with, from having reached on our hunting trips from Victoria, and the rural tavern marks the place where the known and unknown districts meet. The good-humoured landlady looks upon her hungry guests in much the same light as did her prototype, in "David Copperfield," when, with the help of the waiter, he finished the hotel dinner on his way to school. She used to be a great fern collector, in which capacity I had cultivated some slight acquaintance with her. My face, however, she seems to have forgotten, or to have failed to recognise me in my present surroundings. As I had no desire to remind her, for reasons connected with our journey to Victoria, I share in the amusement created by her showing me an *Osmunda*, or Royal fern, closely allied to the English species, which she had picked up near Langford's Lake. She wishes she knew the name, but there is nobody hereabouts could tell her. "If Mr. Brown was still to the fore, I daresay he could tell me all about it, but he, poor fellow, we have seen the last of!" In the cool of the long summer evening, we pursue our journey, every now and then passing pleasant houses where we know we would both be right welcome, and getting glimpses of pretty lakes, and anon of the sea. We pass a party of naval officers returning from cricket, who hail us, and ask if we have "heard anything of the Exploring party?" Though astonished, we avoid the question, as we see they belong to a ship arrived since we left. Just as the sun is setting, we cross the fine harbour of Esquimault, from Belmont to the little village of Esquimault, as the Indian name of Tsoi'mathlet has been corrupted into. Three war-ships are lying in the harbour, and a merchant vessel. It is the only harbour near here where large ships can enter, Victoria only admitting small vessels. Accordingly, all Her Majesty's ships, and most large merchant ships, lie here, and have their cargoes conveyed to Victoria, three miles off, either by sea, or by a capital road which unites the two towns.

The village is, of course, full of "libertymen," in the usual "libertyman's" condition, and a few little middies, who gather around us as we halt for awhile in the dusk at one of the hostelries. They also inquire after our party, and now we learn the secret. Some person or persons unknown had spread a report that we had all been lost or killed in the mountains, a circumstance to which our long absence, and the frequent Indian murders occurring at that time, only give grounds for too ready a credence. We scarcely "enjoy" the story, and in a few minutes more take the road for Victoria, very

footsore, and very weary altogether. The road is a pleasant one, now amidst dark firs, now in an oak grove, and anon with the sea gleaming through among Arbutus or Madrona (*A. Menziesii*) trees. We cross the two bridges, run the gauntlet of the usual number of Indians, who infest the road in harmless, lazy idleness, and enter the town of Victoria, at that time, in the winter, possessed of some 6,000 inhabitants, but in the summer with perhaps only 4,000, the rest being off in the wilds, gold mining or gold hunting. We get the key of our "town house," and in ten minutes are sound asleep on the floor of my cabin.

In a few days more we rejoin our companions at the harbour of Cowitchan, and what we did, and what they did, and why we visited Victoria, let other documents tell.*

Such is the region immediately west of the Cascades, in the latitude of Vancouver Island, which, though not in the United States, we have, for the sake of convenience, taken as a type of that portion of the American Republic immediately south and north of it. Still further to the north, near the limits of trees, there are stunted forests, dwarfed by the chill blasts from the Arctic Ocean. The southern limit of this region is the southern range of *Abies alba* (the white fir), and the commencement of Menzies spruce (p. 161), which is found as far north as lat. 57° 40′, and luxuriates in the parallel of Sitka (lat. 57°·03′.) † Further south again, in the region of Southern Oregon, we find pines, such as the sugar-pine, common, oaks of another species frequent, and forming beautiful groves, while the trees are festooned with the wild Californian vine, and the oaks are hoary with a peculiar species of mistletoe. Further south we get into the forests of red-wood (*Sequoia sempervirens*), so characteristic of the Coast regions of California, but which, curiously enough, never go beyond lat. 42°, this being entirely confined to the State. Here also appear a new and characteristic group of coniferous trees (*Pinus insignis, P. muricata, P. tuberculata, P. Coulteri, P. deflexa, P. Bolanderi*, &c.), which are limited to the sea-coast. Among the firs peculiar to the Coast range in this region is the Santa Lucia, or incense fir (*Picea bracteata*), which has hitherto been only found in one locality in the Santa Lucia Mountains. Various species of cypress also appear, while a new group of shrubs unknown in the North add variety to the landscape. To enumerate them would be beyond the province of a popular work. However, it may be noted that there are found the box elder, the buck eye, the Western spindle tree, the Californian lilac, and among a profusion of flowers, the silver-leaved lupine, yellow lupine, the nine bark, and a host of other species.‡

* "Vancouver Island Explorations" (Victoria, V. I., 1865); "Das Innere der Vancouver Insel," Petermann's *Geographische Mittheilungen* (1868); Cassell's "Illustrated Travels," Parts 8, 9, 10, 28, 29, 33, 34, 35, 36, &c.

† Bognard's "Vegetation de Sitcha" ("Memoirès de l'Académié de St. Petersbourg," Ser. VI., t. 2), and "Smithsonian Report" (Flora of Sitka), 1867.

‡ "Geological Survey of California" (Botany), 1870.

CHAPTER XV.

The United States: The Pacific Slope.

The region between the Cascades and the Rocky Mountains is very different from that between the former range and the sea. Towards the north it is not so distinct from the other side of the mountains as further south, the amount of moisture in the former district approximating the two. Immediately south of Fraser River, a little cactus (*Opuntia*), which creeps on the ground, is one of the most characteristic plants, and this attains its northern limits about the Fraser. The country is thinly scattered with *Pinus ponderosa*, which, here and there, form park-like regions, while a *Juniperus* and a few oaks are also here and there found. Easterly it is bounded by a great basin or desert which lies beyond the influence of the moisture of either the Cascades or Rocky Mountains. Most of the finer plants of this region have been introduced in our gardens by Douglas, Jeffrey, the author, and others. In the vicinity of the Kootanie are some beautiful prairies, and altogether this region is an infinitely more enticing one than that on the other side of the Cascades. Further south, however, the country is by no means so inviting. Whole tracts are without water, and often leagues are covered with lava or volcanic *débris*. The black pine (*P. contorta*), which is also found on the sea-coast further north, thinly clothes considerable tracts, even where there are no springs, while the moister regions support *P. ponderosa*. The sage-brush, however, frequently tells the tale of a thorough desert. A sage rabbit (*Lepus artemisiæ*), a coyote wolf (*Canis latrans*), a prairie chicken (*Pediocætus phasianellus*), sage fowls (*Centrocircus urophasianus*), an antelope (Plate VI.), a mule-deer, or worst of all, a half-naked Shoshonee Indian, bounding out of some rocky cañon with a demoniac yell, are nearly the only creatures to be seen, unless, indeed, we add rattlesnakes, which make the vicinity of a camp-fire hereabouts by no means agreeable to a nervous man, who has, however, no business east of the Cascades. Towards the southern portion, *Juniperus occidentalis* (the Western juniper) is about the only timber on the bare hills, and upon this the soldiers sent to check the marauding Indians have to depend for timber, though, indeed, sometimes this failing, recourse has to be had to the sage-brush, which gives out some degree of heat, though it burns up like a wisp of straw. Further south, the country becomes even barer—an utter desert—"a waste and weary land, where no man comes or hath come since the making of the world." Some parts of the district, such as the great plain of the Columbia, are entirely without trees. A little way above the Dalles of the Columbia River stands, or at least stood, a solitary pine, generally known to the *voyageurs* of the fur companies as "Ogden's tree." This was the last tree for fifty miles. All of the plains between the Rocky and Cascade Mountains are not, however, uniform. Here and there are spots—oases in the desert—with a vegetation different; owing to moisture and other causes on the Blue Mountains, and other similar ranges in this district, we get forest when we reach a certain elevation, if the height of the range be sufficient to intercept any of the moist breezes from the Pacific, which the Cascades usually precipitate

MAP OF THE UNITED STATES, MEXICO, ETC.

before they can reach this treeless eastern region. This country gradually merges into the Colorado Desert; but of this we may have something to say by-and-by, and will, therefore, not confuse the reader by describing it in strict physio-geographical sequence. Perhaps he who runs may read, in the following outline of a journey I made into the region immediately east of the Cascades, more information in a less severely didactic form about it than from a mere dry description. As a contrast, therefore, to the sketch in the preceding chapter, I need not hesitate to give it.

Eastern Oregon.

It fell out in the halcyon days of '65, that I was roving to and fro—a plant-hunter on the Rocky Mountain slopes—into this valley, and out of that, up one mountain and down another, now staying at a hospitable little Western settlement a few days, and after recruiting, diving once more into the wilds, trusting to my usual good luck that I should come out with a whole skin. In the course of these wanderings, I landed by devious paths in the little village of Eugene, in the State of Oregon, not far from the head waters, and at the height of winter steam navigation of the Willamette River, a tributary of the Columbia, on which is situated Salem, the capital, and still lower down the larger and more thriving town of Portland. It is now a station on the railway; but in those days there was no railway in Oregon, except twelve miles around the Dalles of the Columbia, and Eugene was a somewhat primitive place, though fresh and cheerful enough when one got familiar with it. A Methodist "meetin' house," and a big white painted hotel, were the chief buildings. The female portion of the population went to the former, while outside the latter, from "morn till dewy eve," there was always seated a by no means select body of citizens, whittling sticks and chewing tobacco in a ruminating and solemn manner. Nevertheless, Eugene and the Eugenites, with their pretty little one-storeyed wooden houses scattered over the prairie-like expanse of village, with the tall fir-trees around, and the river flowing past, had an excellent opinion of themselves.

Eugene boasted of two papers, the *State Journal*, devoted to the interests of the Republicans, and the *Review*, an equally violent Democratic partisan. Now, every other day these rival sheets announced "Lieut. John M. M'Call's Co. A, 1st Oregon Cavalry, would shortly leave for an expedition east of the mountains, as an escort to Pengra and Oddel, who are about to locate a military road to the Owyhee country, and at the same time act as an escort to Mr. Superintendent Huntingdon, who was to meet the Snake Indian chiefs, in order to endeavour to form a treaty of peace with them." These military gentlemen, in company with the empty stage-coach which rumbled once a day into Eugene, formed the chief items of sensation to the sleepy little place.

Now, to "John M. M'Call," as the gallant lieutenant was widely known, I had a special letter from the Governor of Oregon, enjoining on him to show me what attention lay in his power; and finding that it was my intention to attempt to penetrate alone into the country to the east of the Cascades, I was strongly advised that if I valued my scalp, I had better accept the escort of "Co. A" on their proposed expedition. Accordingly, on the 17th July, our whole party left the little frontier village, amid the cheers of the "loafers,"

who sat chewing and whittling in the hotel "stoup," and the regrets of the fair Eugenites. I overtook the party in the evening, encamped a few miles out on the M'Kenzie fork of the Willamette, under some pleasant maple-trees, with droves of horses grazing around, cattle for our own consumption herded on the prairie, and the quartermaster busily making out "forage warrants" (for we had not yet quite left civilisation, as this abundantly showed).

The scene looked quite like a Tartar encampment, and I could not help remarking the difference between English and American officers; that while the former going on an expedition of this nature would have provided all sorts of impossible apparatus and wardrobe, usually supposed to be necessary to gentlemen of the British Isles when they go "roughing" it out of sight of their homes, these worthy Western men, accustomed all their lives to such journeys, had not deviated one whit from what they would have worn down in the settlements, and appeared here at the base of the Cascade Mountains, on the eve of undertaking a long summer's expedition into the outer world—even of Oregon—in all the accustomed glory of white shirts and standing collars, alarming ties, and that shambling slip-shod style of uniform that Transatlantic *militaires* delight in on all occasions, be it in Washington or on the Willamette.

Discipline can scarcely be expected to be found in great perfection among a mob of soldiers hastily "scared up" on the Indian frontier, every man thinking himself as good as the President, or his colonel; but, nevertheless, everything went on very smoothly, and if even a private did occasionally address his commanding officer by his Christian name, requesting at the same the favour of a chew of tobacco, why, no great dignity was sacrificed, and no great harm was done.*

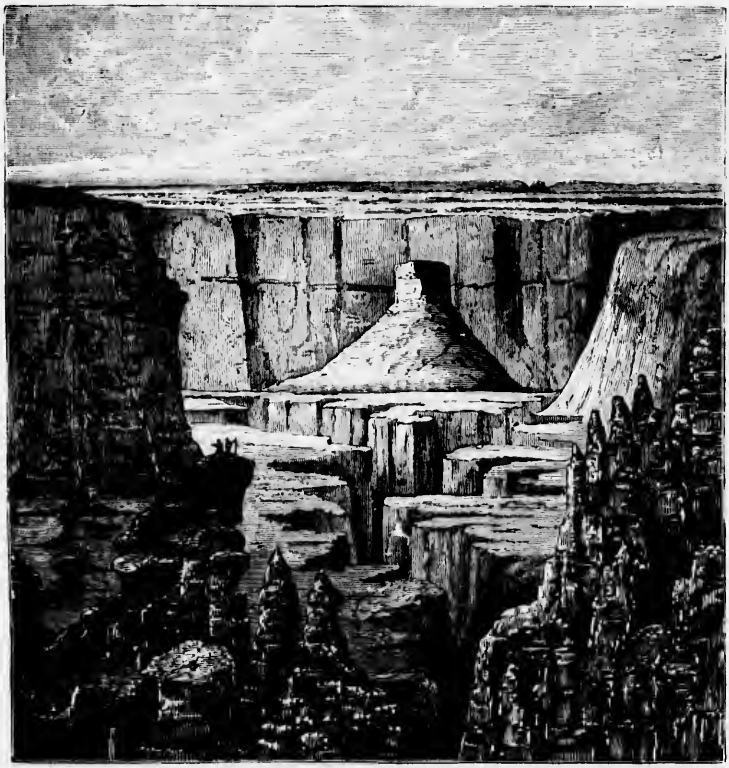
For two pleasant days our route lay among the outlying settlements of the Willamette, among rounded knolls, or as they are called here "buttes,"† with neat little primitive farms, at the base of rocky bluffs, where rough voices hailed us cheerily, and shouted to us to "take care of your *hair!*" an advice no doubt tendered in the kindliest spirit, but sounding rather unpleasant to men perfectly familiar with the whole *rationale* of the Shoshonees' scalping-knife!

The country was well watered and well wooded, and many were the roaring mountain creeks we had to cross or swim "when ford there was none." Our daily routine was much the same. At daybreak the bugle sounded the *réveille;* all commenced packing up, and the cooks to prepare our modest breakfast, of which the inevitable pork and beans formed the staple. The horses were then driven up, every man lassooing his own and saddling it; for no horseman of the Western, be he captain or private, would ever think of allowing any one else to do it, knowing well that a wrong adjustment of the blanket, or a girth too much or little, may cost him his life—or what is just about the same thing—his horse. The mules were then packed with the usual ejaculations in Spanish and English, for muleteers declare that the nature of that animal is much

* Two of our muleteers were half and quarter castes, respectively the grandson and son of Pierre Dorion, whose name and deeds have been celebrated in Washington Irving's "Astoria."

† A useful French-Canadian *voyageur's* term to express a rounded elevation too low for a mountain, but too high to be called a hill. This distinction is, however, not strictly adhered to, *e.g.*, Shasta Butte (more than 14,000 feet).

too demoniacal to do anything without using towards it (to speak mildly) very bad language. These ejaculations are generally nicely graduated—carambo! carajo!! madre de dios!!! sacramento!!!! diabalo!!!!! Such soft "Castilian words" coming floating to



VIEW OF THE CAÑONS OF THE COLORADO.

your ears upon a calm summer evening in some silent mountain valley, have decidedly a fine effect! Then came up in the rear the cattle herds.

Our march was rarely prolonged beyond midday, though we often halted much earlier, to allow of the overloaded train resting for the grass, or for convenient camping places. We spent the rest of the day reconnoitring the neighbourhood for plants, fishing in the mountain streams, hunting deer through the long dark wooded dells, or in sleeping under

a bush, each as his own individual *penchant* inclined him, the bugle calling us back to camp for supper, which was served on the military chest. The evening was spent, until dark, telling round the watch-fire tales of our former adventures, or those "bear and rattlesnake" stories for which the Western frontier is so notorious, after which each

SNAKE INDIANS OF OREGON.

man rolled himself in his blanket, under his own particular tree, with the stars for our lamps and the sky for a canopy, until the cheery bugle again woke us at daybreak to make our toilet in those gray misty summer mornings by the banks of some nameless stream, and then to resume our happy march further and further from the haunts of civilised man, from the country of the little known into that of the still less known. The widely scattered "clearings" became fewer and fewer, until a "claim shanty," consisting of a few logs raised in the middle of a "land claim," to fulfil the bare

letter of the law, was the only appearance of the tide of civilisation having flowed thus far. The road (such as it was) became worse and worse. Then we rode through timber and in sight of the middle fork of the Willamette, gliding along between wooded banks of pine and cedar, and the maple in its summer green, when we suddenly emerged upon a pleasant encampment, with tools and cooking utensils and tents scattered around; but like the camp of the Assyrians, all was vacant. Soon the party began to return. They had been out gathering berries for more than a week, a favourite sort of picnic party among the simple-minded people of Long Tom Creek, and used (under the supervision of some grave senior) like camp-meetings, without the preaching, by the young people of those primitive sections for much the same purposes as garrison balls and flower shows are by those hailing from better-known places on this side of the *blasé* Old World. As the young men and elders of the party emerged from the bush, bearing deer from the mountain, grouse from the woods, and strings of speckled trout from the creeks, and the prairie belles, bearing baskets of the yellow salmonberry, the huckleberry, and the strawberry, some of us could not help thinking that they do things much better here than in France.

With certain misgivings that we had made a mistake in leaving civilisation we crossed the river, past the last frontier house, killed a rattlesnake (*Crotalus lucifer*, Baird)* which was coiling itself up inconveniently near to where we were about lying down, and wrote in our journals that we had ridden seventeen miles through cultivated valleys, well watered and wooded, but that we were now in the wilderness. No longer was our eye refreshed with a sight of a sunburnt frontier damsel, wild as a deer, but with a refreshing innocence of cities. How severely the loss was felt may be imagined when a trooper declared that "He'd give a barrel of whiskey for the sight of a gal!" On the 19th, after travelling for a distance of six miles through cañons and thick woods, over many small creeks, by the banks of the river, with no cultivation, though good spots here and there, we met three Indians returning to the Siletz Reservation from Mr. Simpson's party, which was a little ahead, and who informed us that we could encamp on a small prairie thinly scattered with timber and separated from the river by a piece of rich timbered land. Here we found an old hunter's log cabin, and accordingly christened it "Cabin Prairie." Next day our route lay through dense timber, and after passing Mr. Simpson's party of Indians making a trail, we had to drive our horses before us, scrambling over fallen trees and among rocks, up steep inclines, until we came to a point which was named "Point Look-out," where we had great difficulty to get our horses over, and where we lost one mule in the river. Here we encamped, driving our horses across the river, but little or no pasture could be found, and we spent a portion of the day cutting grass with our knives for them. The next eight miles was through wooded river bottoms, when a party went ahead to clear some of the worst impedimenta, swam the river again, climbed a steep mountain trail (for we were now entering among the foot hills of the Cascade Mountains), and emerged into a beautiful prairie valley shut in by mountains, but covered with grass, a good creek flowing through it,

* Rattlesnakes are usually said not to come to the west of the Cascades. I have killed them frequently in Lane county, Oregon, and similar country.

and with shady woods on the border, so that one might fancy himself in the "Happy Valley of Rasselas." It was totally uninhabited, save by a very curious dilapidated horse, which the drummer-boy rode all the afternoon. This forlorn brute was covered with something, scarcely hair, and accordingly we set it down as the famous woolly horse which Barnum exhibited as having been captured by Fremont in this region.

Tradition, however, lingers in the Valley of the Willamette, that once upon a time a half-savage Missourian and his three sons came here, and found a few renegade Indians, whom they managed, with the help of the Klamath Indians, to "civilise off the face of the earth," hunting them in the valley with their rifles as if they were wild beasts, and then appropriating their squaws. We could see their houses and the remains of the Indian lodges, but where they had gone to we had no opportunity of learning. We were, however, led to believe that they were concealed somewhere in the woods until our departure. During the next two days the country was pretty similar, and we encamped (after travelling five miles) on a little prairie, so delightful a scene that it set us wishing for "that lodge in some vast wilderness," which most of us, after passing so many lonely years wandering among the Indian villages of the North, and in solitary encampments, had got over. The trail therein lay through woods of fine timber—white cedar (*Thuja gigantea*), red cedar (*Libocedrus decurrens*), and we now noticed, for the first time, the stately sugar pine (*Pinus Lambertiana*), with the sweet exudations from which it derives its name, and which is one of the huntery catharties. A rhododendron and a honeysuckle (*Lonicera Douglasii*) added variety to the sombre woods, hitherto only diversified by an undergrowth of berry bushes—the bright salmonberry flowers (*Rubus spectabilis*), and the more modest thimbleberry (*Rubus Nutkanus*), and the waxy sal-al (*Gaultheria shallon*), forming an undergrowth like a carpet throughout the woods—a sure sign of poor stony ground. The stately alder (*Alnus Oregana*), with its dark green leaves, affected moist ground everywhere, in company with the hemlock, most graceful tree of all. The North-Western conifers began to disappear from the woods, the silver fir (*Picea grandis*), supplying its place. Now and then we would break through thickets of the mountain laurel (*Ceanothus velutinus*), sending an almost overpowering fragrance from its glistening leaves as we trampled it down under our horses' feet. Amid these pleasant scenes we had a day of disasters—two mules with their loads had rolled over a precipice and were dashed to pieces, and another, after rolling end over end (after the manner of mules), had survived and packed its load into camp. Part of the loads was recovered, but a side of bacon up a Douglas pine-tree will remain as a monument of the passing of the first expedition through these mountains. Some emigrants had attempted it in 1853, and we could yet see remains of their disastrous trip, in which some of them died of starvation. I have seen some of them in the Valley of the Willamette, and they used to declare that in the bed of a creek they saw a metal which they were *sure* was gold, and parties even went out to search for it, but did not find it. It was, they said, "in chunks as big as hen's eggs," but we had all been too long on the Pacific coast to believe such tales, generally classifying them with the proverbial "bear and snake stories." Our track had hitherto been always in general in the south-east direction, and to-day it lay by the banks of the Middle Fork, seeing little but the woods and forest-clothed hills of the Pass. We frequently noticed "sign" of bears, wolves, and panthers. Deer were seen, and

trout abundant. The rocks were all volcanic (trap), and the soil sandy, and with the exception of the wooded river bottoms, rarely fit for cultivation. We encamped in an open space in the woods, with good pasture, but of small extent, and the soil stony and poor. We had gone ten miles, and named the camp the "corral" (a Spanish term in common use on the Coast to signify an enclosed place for horses). We saw around here many Indian bough encampments, but apparently old, and remnants of days long gone by, when the Indians used to come hunting here. I had here the misfortune to lose my horse, and after vainly following his trail, mounted behind a good Samaritan, hoping to meet some Indians and purchase another. We travelled fourteen miles before camping, over a fair track with a good creek portion of the way, and latterly leading over a country with many steep places, where we had to ride by an almost perpendicular path. In one of these wooded gulches we met a number of Cyuse Indians and a white man, all dressed in most gorgeous array of buckskin and beads, crossing for horses to the Willamette country, and as we emerged into the "pine opening" a hill-track, covered with good grass, and thinly scattered with yellow pine (*P. ponderosa*), I was delighted to again recover my faithful horse, which had been found by the rear-guard. The scenery was here very fine—on every side bold wooded mountains, with the head-waters of the Willamette sparkling between the trees, and the snows of Diamond Peak in the distance. After every preparation had been made, we commenced the passage of the Cascades into Eastern Oregon. The ascent was comparatively easy, crossing over many mountain creeks, through woods, where I saw many trees of a species of yew (*Taxus brevifolia*), until the elevation began to be perceptible in the Flora. Plants which were long ago in fruit in the valleys were here in partial flower, while on the summit they were in full bloom. Thickets of rhododendrons (*R. maximimum*), with their huge bunches of pink flowers, stood out in fine contrast to the drifts of snow, giving one a faint idea of the splendid rhododendron thickets of Sikkim, Himalayas, so graphically portrayed by Dr. Joseph Hooker. Occasionally a magnificent species of mountain lily would bloom by the side of some beautiful saxifrage, and the shrubbery of the ceanothus would add fragrance to the mountain air. The scene from the summit of the pass (4,141 feet) was grand in the extreme. The bold snow-covered crags of Diamond Peak, with its old crater, and the "Three Sisters," appear to the north, and on the left, away to the south, the tops of Scott's Peak and Mount Williamson, while the wooded valleys and lesser heights of the Cascade range lay below, and off to the east appeared the long slope of flat-wooded country, with the peaks of the "Three Brothers," the only break in the monotony of the view. Drifts of snow lay in shady places, and green grassy spots formed halting-places by the side of mountain streams. Now and then a beautiful mountain lake, unsuspected before, lay glistening in all its quiet beauty in some unbroken valley. As we began the descent, a marked change was apparent in the country. Instead of moist woods, our route lay by an easy descent through groves of pine thickly scattered over that country (*P. contorta*), encumbered with no undergrowth, and the soil a mass of volcanic ashes and pumice-stone. At two p.m. we were right glad, after a weary ride of twenty-six miles, to reach the head-waters of the Deschutes, or Falls River (lat. 43° 27′ 22″ N.), here only a little creek meandering through a world of rich grassy meadows—a sort of "horse heaven"—but with little of the characteristics which

A VIEW IN THE ROCKY MOUNTAINS (COLORADO.

it possesses near its mouth. This river lower down flows through high cañons—along the banks of which you may be dying of thirst, yet fail to reach the water—and falls into the Columbia about eighteen miles above the Dalles. Deschutes River arises by several forks, some of which take their source in the marshes, another in a lake which we named "Summit Lake" (which we had seen on the right hand descending), that communicates by a small creek with another sixteen miles in length lower down (named "Crescent Lake"), and this is again connected with a third among the mountains, styled, in honour of one of the party, "Lake Oddel." Our camp* here was 1,200 feet below the summit, and though cold at nights, the mosquitoes in the early portion of the evening were very troublesome. Chipmonks (*Tamias Townsend*) were very abundant here, and so continuously "popped" at, that I verily believe they even yet come out of their holes in the expectation of finding a pistol-bullet aimed at them. Herons, cranes, and grouse were plentiful near the river, but otherwise few birds were seen in this solitary region. As our provisions did not come up for two days, we provided ourselves with trout, which were caught in great abundance by hooks baited with field-crickets or "grasshoppers" (*Acheta nigra*), an insect abounding all over the eastern side of the Cascades, and as a pest almost equal to locusts. The winds which every now and then sweep over this desert-like tract will blacken the rivers and lakes with them, and the miserable digger Indian draws the main portion of his substance from these insects.

On the 29th of July we began to direct our course in a E.S.E. direction, over a level desert flat, with a soil composed of volcanic ashes, and thinly scattered with a forest of *Pinus contorta*, a scrubby looking tree at best, abounding in resin. To the E. and N.E. lay a long stretch of flat land, probably ninety miles in breadth, of a similar character to this, but which we found to be impracticable to traverse, on account of the almost entire want of water in it; the creeks flowing from the Cascades sinking into the sandy soil before flowing far into this desert tract. Mr. Thompson attempted to explore it, and though he carried water portion of the way, both he and his party suffered fearfully. Pah-nine, the celebrated war chief of the "Snakes," told me that after the battle in which Lieut. Watson was killed he traversed this waste. "I determined," he said, "never more to fight against the whites, and separated from my brother, We-wow-weya, and hoped to flee to a country where the white man could never reach me. So I took my horses and my men, my squaws and my children, in the direction of the dying sun, and went over the dry country between there and *Queyia* (Deschutes River), filling the stomachs of antelopes with water, *for there is none there*, and I came to a valley where my men hunted and my women gathered berries, and I thought that the whites had forgotten me, and that I was safe. But, when I came back one night to my lodges, the fires were out, my warriors slain, and my women and my little boy taken prisoners. My heart was sad, and again I fled, wifeless and childless, poor and hungry, with no food for the winter, with none to dress

* According to the "Pacific Railroad Surveys" (Vol. VI., Appendix C., p. 29 of Appendices), Deschutes River is 4,411 feet above mean tide at Benecia, California. I presume their observations were taken at the same place as ours. The other altitudes on our route were as follows:—Klamath Lake (lat. 42° 17′ 10″ 2 N.), 4,180; Klamath River (lat. 42° 31′ 31″ 4 N.), 4,196; Klamath Marsh, 4,512. This latter observation, taken from the same authority, differs much from ours, as do most of them, Lieut. Williamson making the elevations greater.

my deer, with none to make, with none to cook my food. I was poor after I fought with the whites, for you burnt up my dried meat and my ammunition, and took away my horses; but now I was poorer than ever. My people said, let us go to We-wow-weya, who has gone to join Hälluck at the rising sun, and band together against the whites; we can but be killed. But I said, No! and all winter I lived by the border of Silver Lake, killing my horses for food, and my heart was sad and weary, until the warm days came again, but still I hunted and lived poor. You see I have no horses, and how miserable we are. I would not go against the whites, for I was sick of war, and blood, and scalps, and so we hunted the elk and the antelope, and gathered *wocus*,* and *gamass*,† and *kous*, and got trout from the lake, until Huntingdon's messenger came telling me to come and make peace, but my young men on the hills saw the soldiers were coming, and said they would be killed, but I knew that Huntingdon would not tell a lie, and so I came weary and ashamed on foot." I have given this extract in order to show the character of the people we were entering among, but more particularly for the geographical data it affords.

The "Three Brothers" are the only breaks in the nearly level landscape in that direction, and the snow peaks of the Cascades gleaming through the trees, diversify the view to the right, and now and then a cool breeze tempers the hot summer's day as we slowly in long file traverse this arid tract. There was no undergrowth in the groves of pine, but here and there occasionally bushes of the wormwood, or as it is universally called, the "sage" (*Artemesia tridentata*), so characteristic of the whole of the country we were now entering, began to appear, and with the exception of the "black pine" formerly mentioned, a few sugar pines, and one not unlike it in foliage (*P. ponderosa*) there was no timber. After a march of eleven miles, we halted on a branch of the Deschutes River, where we found a tolerably good stretch of meadow ground in the immediate vicinity of the river. Deer were plentiful, and the beautiful little humming-birds flitted about among the few flowers which the invigorating moisture allowed to spring up here and there among the long swampy grasses. A journey over these wastes, though interesting from a topographical point of view, is yet to a "general reader" about as entertaining as the time-honoured sea journals kept by the mates of merchant vessels, wherein is recorded with minute accuracy how the wind "in the first part of these twenty-four hours was E.N.E. ½ E., and how in the second portion it was ditto, ditto, and in the dog-watch ditto, ditto, the boatswain's hands employed as before, ditto, ditto, the tradesmen at their trades, and the hands employed variously; lat., by dead reckoning, so-and-so." But the exigencies of geography requiring such, more especially since so little can be said, the readers will pardon me if for the next five days I trouble them with a somewhat monotonous narrative. The track continued much as before, only more hilly and varied, more sugar-pine, and the country more open; and so for sixteen miles, until we came to a creek named "Miller's Creek," with good water and a little grass, in the prairie-like openings near the river.

Hitherto, though a sharp look-out had been kept, we had seen no Shoshonee Indians, but this evening our scouts came in with very long faces, describing the "great mocassin" tracks crossing our trail after we had come into camp, and as every one knows that this

* *Nuphardeena* (Ait). † *Gamassia esculenta* (Dougl).

was the "sign" of that tribe, we slept with only one eye shut. Indeed, though we could obtain no sight of our pursuers, yet it was only on arrival at Fort Klamath that we learned from the Indians there that we had been dogged by three lodges of "Snakes" the whole of our journey, seeking an opportunity to stampede our horses, or capture an odd scalp or two when it could be done without the disagreeable accompaniment of running their heads

THE BLOOMER CUTTING ON THE PACIFIC RAILWAY.

against a leaden bullet. Once, as we crossed Fremont, the "Pathfinder's" trail, the tracks of moccassins and "barefooted" (unshod) horses, with camp-fires not extinguished, began grievously to alarm us, and to suggest very serious jokes about the period of time we should be favoured with the possession of our individual scalp-locks. However, we afterwards found that we were unnecessarily frightened: it was only the Superintendent of Indian Affairs for Oregon, on his way with his band of Cyuse scouts to try and make a treaty of peace with Pah-ni-ne. The next day, travelling over a similar country, only with more open spaces and finer trees, we came to a spring gushing out in the form of a large creek from the ground. Fremont doubtless mistook this for the great Klamath Lake, in his

A MINING CAMP ON A NORTH WEST AMERICAN RIVER.
(From Original Photographs.)

expedition of 1843-4, and the river, which I have mentioned as permeating it, he thought to be the Klamath (or, as he spells it, *Kamath*) River, but that flows out of the lower lake proper, and the former is probably Williamson's River. His camp here was about lat. 42° 51′ 26″ N. long. 121° 20′ 42″. In these errors he has been followed by other writers. Antelopes (*Antilocapra Americana*) were plentiful in the vicinity, but the horse-fly rendered our horses almost frantic, sucking their blood, so much so that we

A MINING CAMP ON A NORTH WEST AMERICAN RIVER.
(From Original Photographs.)

VIEW OF SILVER CITY, NEVADA.

had to enclose them with a circle of smoky fires, and when riding to be continually switching them off, until the poor animals were perfectly bespattered with their blood. These, and mosquitoes (which "crowd" into their ears), are the great pests of horses, though the latter only trouble man, and disappear as settlements and clearings progress. So troublesome are the latter insects on some of the flats of Fraser River, as to render them uninhabitable in summer, and I have known horses in their agony to jump into the river and be drowned.

For the last two days—in fact, immediately after getting over the summit—the

"Manzanita," of Californian celebrity (*Arctostaphylos glauca*), and the "Chinquapin" (*Castanopsis chrysophylla*), began to appear, along with the diminutive *Arbutus tomentosa*. Two Indians were seen on horseback, and waking up at night, I could see the light of a camp-fire gleaming among the trees somewhere on the other side of the marsh.

On the 2nd of August, after travelling ten miles, we came to a straggling creek, with a great extent of rich grasses by its borders, but the soil very poor and sandy. We named this stream—the only one for several miles—"Rifle creek," from the circumstance of our finding a rifle, shot-pouch, and powder-horn complete, suspended in the trees. The pouch contained two flint arrow-heads, used evidently to raise fire, and the rifle had been apparently purchased or stolen, or was the gift of a white man. Underneath was a fire, in which most probably the body and possessions of its former owner had been, in accordance with the customs of the neighbouring tribes, burnt; but how the rifle escaped we could not tell. Having no desire to rob the dead Indian's pyre, we merely kept the arrow-heads as a memento, replacing the rifle; but one of our packers was not so delicate: looking upon it as a fair prize, he tinkered it up, and within an hour shot an elk with it. Scott's Peak was here directly abreast of us, and is a truncated cone of a very marked character.

On the morning of the 3rd of August we were early astir, and after a march of seven miles turned down again to a beautiful prairie near the Klamath Marsh, where the party lay over for several days, and the animals revelled in a paradise of clover. We could see Indians in canoes gathering the pods of the yellow water-lily on the marsh, and tracks of the grizzly bear did not make our woodland botanisings any pleasanter. Here I bade good-bye to my gallant *compagnons de voyage*, from whom I had received so many kindnesses, and accompanied by Lieutenant M. M'Call, and an escort of six troopers, rode over the ridge to the westward to a fort established in Klamath Basin, and supposed to be distant between fifteen and twenty miles. A pleasant ride had we over a low ridge, and spur of the Cascades, through a fine grove of yellow pine (*P. ponderosa*), where we shot a skulking cayote wolf (*Canis latrans*, Say), and then descended into a valley where Indian sign was plentiful; until from an eminence the lovely prairie of Klamath Basin, shut in by snowy mountains with cold rivers meandering through the valley, and studded with groves of trees, like wooded islands in a sea of grass, burst upon our astonished view, so long accustomed to the arid track over which we had been passing. We crossed the "Fort Creek," a stream of icy-cold water (which springs out of the ground in one torrent), our horses almost hidden amidst the luxuriant herbage, and then passed through a mile or two of country, which required recollection of where we were not to suppose was some old English park. We arrived at the fort just in time for dinner, but covered with dust, and most unpresentable figures; for here in the middle of the Indian country were several of the Oregon ladies, of whose politeness generally, and more particularly of the "square meal" we received that August evening, I daresay the lieutenant and I have some very grateful memories to this day.

There were also a number of children here, semi-civilised youths, learned in all the dialects of the Chinook jargon, and in the relative merits of Maynard's carbine and the old jager. They were, however, about to erect a school, which promised to impart something more substantial to them. The valley of Klamath Basin is excellent soil, but cold

springs come down from the snow-capped mountains, which shut it in on every side, so as to render the ground so cold that snow lies for such a time that cattle cannot subsist here in the winter, and garden produce, with the exception of beets and turnips, do not come to any size. Down by the borders of Klamath Lake and Sprague's River the snow lies only for a short time, and there the Indians winter their horses. Close by the fort flows an icy cold stream, which rises directly out of the ground not far distant. This Fort Creek joins Wood's River and Crooked Creek, which empty into the Klamath Lake some three or four miles down. During the few days we passed at Fort Klamath, Major Rheinhardt and his officers took us on an excursion down Wood's River, meandering through grassy meadows to the great Klamath Lake, and back again on horseback over the green prairies by evening, with a picnic dinner under the groves of pine, will live in the memories of some of us. At Fort Klamath we overtook the Hon. W. P. Huntingdon, Superintendent of Indian Affairs for Oregon, who was awaiting a messenger whom he had despatched to Pah-nine, war chief of the Shoshonees, with a view to make a treaty of peace. Mr. Huntingdon was good enough to invite me to join him, and as the distance was not great, and such a sight would not be soon likely to be seen again, I occupied myself in rambling round the hills until his messenger returned. Our visit had created some stir among the neighbouring tribes, who were suspicious of the import of it. Accordingly, one day a messenger arrived from a distant tribe to make inquiries what it all meant. He was informed, and invited to stay, Major Rheinhardt at the same time offering him fodder for his horse, and food accommodation for himself. He steadily refused, however, and would receive neither bite nor sup with the whites, bringing provision from the Klamath Indians in the vicinity of the fort, and sleeping in the open air. This cavalier stayed long enough to satisfy himself of our intentions, and then left as he came, refusing presents or any kindness which might seem to compromise him with the whites into surrendering his freedom.

In the immediate vicinity of the fort were a number of Klamath Lake Indians, a people at no time of a very exalted morality, but now thoroughly debased. The northern tribes have a thorough contempt for them, and used to come south and capture them as slaves. It is, however, a common practice of many of these tribes—Shastas, Umpquas, Klamath, Pit River, &c.—to sell their own children as slaves. Mr. Stanley, an artist, who travelled for some years on this coast, tells us that during a tour through the Willamette valley in 1848 he met a party of Klikitaks returning from one of these trading excursions, having about twenty little boys whom they had purchased from the Umpqua tribe. They have, however, a number of slaves, principally stolen from the Pit River Indians, who are again a race much lower in the scale of humanity. A runaway slave is severely punished among them, being generally put to death. If a woman, she is impaled on a stake in a manner too horrible to describe. Their other property consists in beads, horses, blankets, and women. The Hioqua shell (*Dentalium preciosum*, Nutt) is highly valued among them, and is generally worn by the men through the septum of the nose, the women also occasionally adopting this ornament, and more frequently using it in the form of ear-ornaments. The women have a custom of tattooing their chin, and some of them are far from ill-looking. They have now for the most part

adopted a portion of European dress, but all the women still wear the little brimless hat, like a pitcher. This hat is made of a species of sedge, but is quite water tight, and is used for a variety of domestic purposes, such as carrying water or lighted coals, as a drinking vessel, and a trencher for food. They have a belief in a Supreme Being, and think that He made the land good and bad—sage-brush, desert, and pasture land—because the Indians quarrelled and had to be separated. Some of them also believe in a place of reward and punishment, and others even go so far as to believe in a resurrection from the dead, and that the place of resurrection will be at the Dalles of the Columbia. They have a great belief in their "medicine-men," who excel in the usual tricks of that class of impostors, such as causing blood to flow from the nostrils, and so on. They have a superstitious dread of owls, believing, like all Indians, that the spirits of the dead go into these birds, and that they peck out people's eyes. They bury their dead in mounds in an upright position, but destroy by fire the whole of their property, because it is very unlucky to mention the name of the dead; they do not wish to see anything around which would act as a reminder to them of those who are now dead. I have sometimes heard it stated that they burn their dead, but as I saw their graves, I cannot believe that this custom is at least unvariable. After a death, and in the case of women at certain periods, they must purify for five days at a sacred spring near the fort. Eclipses they believe, with many of the people of antiquity and modern times, portend evil. They have many other superstitions about almost every act of their daily life. They are said to have some knowledge of diamonds, which are believed to be found in their country. They are also reported to be tolerably honest about the fort, for the good reason that they would soon be found out, and be most summarily punished. They are not allowed to purchase powder from the trader at the fort, except by order from the Superintendent of Indian Affairs; but they buy all they wish at Yreka, in California, to which place there is a trail from here. They occasionally go to war against the Pit River tribes, and have a curious method of declaring war. A number of young fellows prowl about the border of the enemy, until they see some women gathering berries, or otherwise engaged, when they seize upon them. This indignity is reported to the tribe, when war is the consequence. Throwing in this bone of contention is fully as effectual as the Roman custom of throwing a javelin into the enemy's territory. They marry either in their own tribe, or in the neighbouring ones, and as a natural consequence of the increased immorality of the tribe, infanticide is common. The number of males, owing to this and other causes, is also decreasing. As a race, they are swarthier than the northern tribes, but not badly made. I used often to meet them on my rambles through the valleys and groves near the fort, and they were always particularly civil to me when they heard that I was an Englishman. The English they both fear and respect, because the earliest knowledge they had of the race was by experiencing the severity and determined character of a Hudson's Bay trader named M'Kay—a son of that M'Kay who blew up the Tonquin—as narrated in "Astoria." Hence the Hudson's Bay Company's people were long known as the "M'Kays." Fremont they distinctly recollect, and tell some long story about his spitting on a fish, the exact point of which I could never exactly learn, further than that it was looked upon with great superstition, and was supposed to have been productive of no great good.

VIEW OF MOORES LAKE, UTAH.

In addition to Indians, many other wild animals used to dart across my path while roaming about in search of flowers.* The cayote wolf (*Canis latrans*) will even now and again skulk through the valley, or yelp when at a safe distance from me. The silver fox (*Vulpes macrourus*), so valuable as a fur, was once seen, and the holes of the badger (*Taxidea Americana*) were occasionally stumbled on. The fisher (p. 198) is common by the Klamath Lake, and the beaver may be occasionally seen. The *Hesperomys Gambelii*,

AT WORK IN THE SILVER MINES OF NEVADA.

rather rarer, is sometimes captured with other small mammals, while the sage rabbits (*L. artemesiæ* and *L. campestris*) scuttled through the low grass and brushwood very commonly. Many wild fowl breed in the lakes, and in this vicinity a naturalist might pass many weeks in the spring with great profit.

The monarch of all these solitudes is, however, the grizzly bear (*Ursus horribilis*),

* For the botany, see Horticultural Department of "Farmer" (1865), and "Pacific Railroad Surveys" (Newberry's Collection), Vol. vi. (Williamson's Report); 'Transactions of the Botanical Society of Edinburgh,' Vol. ix.

VIEW OF MOORES LAKE, UTAH.

which abounds in the mountains. The winter before, the soldiers, by surrounding him in parties on horseback, managed to kill a large number. He is rarely, however, tackled by a single hunter, as the danger is great. Not a year passes in California but some men are killed by this fierce animal, and further north the Indians are often maimed in encounters with it. The country eastward I afterwards visited. It is still drier, for the fort was built in a moist valley of the mountains, mountain-walled on almost every side. But this other journey again westward into California I need not describe, as the gist, so far as space will admit of, I have given already, or will give in due course. It is the country of the Shoshonee and Modoc Indians, aborigines whose murderous doings have made them very familiar public characters of late years.

CHAPTER XVI.

The United States: The Pacific Territories and States.

After the preceding sketch of the physical geography and general appearance of the region to the west of, and in the vicinity of the Rocky Mountains, we must devote a brief space to a more special description of the political divisions into which this great region is divided. British Columbia has already been spoken of. Accordingly, it is only the states and territories of the United States that demand a few lines at our hand. First, therefore, we must take up

Alaska,

Or Aliaska, of which the name is an abbreviation. Up to the year 1867 it was known as Russian America, being a possession of the Northern Empire, and used solely as a hunting-ground of the Imperial Fur Company, though governed by State-appointed officials. It is the most northern portion of America, and has a coast line facing the Arctic Sea on the north, and the Pacific on the west. Historically it is insignificent; and from a literary point of view its only eminence is due to the fact that it is the locality selected by Eugène Sue for opening the remarkable travels of his hero, *Le Juif Errant*, a fact which may possibly give it celebrity in the eyes of those to whom geography and treatises are but dry realities. It comprises all North America, from 141° W. long. to the sea, as well as the many islands which stretch seaward along the coast line, in addition to a strip of territory fifty miles broad, extending south-east along the Pacific Coast to the confines of British Columbia in 54° 40′ N.L. Altogether, its length is about 1,000 miles, its greatest breadth from east to west 800 miles, and its area about 514,700 square miles. It is for the most part covered with dense forest, and when not rocky and forest-covered consists of swampy plains, and is altogether unsuited for agriculture. The Yukon, or Kwichpak, which rises in British America, and falls into the sea at Norton Sound, is the finest of its rivers. At a distance of 600 miles from the sea it is a mile in breadth, and

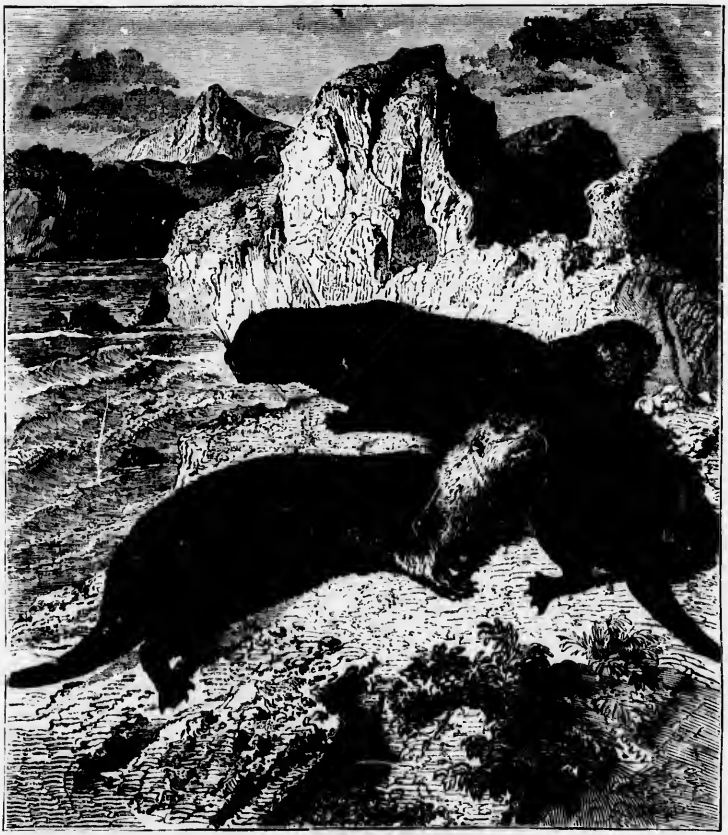
some of its tributaries, such as the Porcupine, which is receives at Fort Yukon, would be reckoned large rivers in Europe. Such is the volume of water which it pours into Behring Strait, that ten miles from its principal mouth the surface-water sea is fresh. Among its mountains may be mentioned Mount St. Elias, an active volcano 14,070 feet in height, while in the peninsula of Alinska are several volcanic cones, and in the Island of Umenak there are volcanoes so large that one rises to the height of 8,000 feet. The Imperial Fur Company, which in 1799 obtained a grant of the country from the Tsar Paul VIII., had their chief settlement at New Archangel, on the Island of Sitka, and about forty other trading stations. They exported annually about 25,000 skins of fur seal, sea-otter, beaver, &c., and about 20,000 walrus tusks, obtained from the more Northern tribes. In 1867 the Russian Government sold the whole country to the United States Government for 7,200,000 dollars, not a large sum for so huge a mass of territory, but great when we consider that it can never be of any value to the authorities at Washington, except for a possible political contingency, which, since British Columbia has thrown in its lot with Canada, is not likely ever to occur. It is at present governed by the military force stationed at Sitka, though it is proposed to put its control into the hands of the Treasury; but the trade is of the most infinitesimal description, and the settlers so few, that it has not been thought necessary to organise a territorial government. The climate of the Southern Coast region is comparatively mild, but excessively wet. The mean temperature of Sitka is 42·0°, and its rainfall about seven feet per annum. During the winter it rains almost continuously, and the summer and autumn are exceedingly moist seasons. Cereals grow, but do not ripen, though grain, if there were only more open land, would prosper very well as a cultivated crop. Traces of coal have been found, and gold has in some places been discovered in considerable abundance. Salmon abound in all the rivers; and about eighty whalers pursue their dangerous trade off the coast of this far northern possession of the United States. There are said to be about 8,000 whites in the country, but this is a very shifting population indeed. The Indians far outnumber them, being about 15,000, in addition to some Eskimo on the northern shores. Sitka contains about 1,000 inhabitants, and is the residence of a Greek bishop and a few storekeepers. The fur trade must, however, always supply the chief trade of the territory, that is to say, if the fur animals are not exterminated through ignorance or indifference on the part of the government, and rapacity on the side of the settlers. The trapping in the interior is chiefly left to the natives; but the fur seal is killed by the settlers, aided by the Aleutians, in such great numbers, that it threatens in time to meet the fate of the *Rhytina*, a species of sea-cow once abundant on the islands of Behring Strait, but now so entirely extinct, that a few of its bones are accounted prizes of great value by any European museum. The privilege of killing these animals is let out to private individuals by the government, and the contracts have given rise to not a few scandals of a description with which these pages need not concern themselves. As a specimen, however, of the value of this "fishery," I may note the terms of one of the bids. It offered 50,000 dols. a year rental, with a royalty of 62½ cents on each skin. The number of seals to be killed was limited to 100,000 a year; the royalty would thus amount to 62,500 dols. a year. The contractor offered a further bonus of 55 cents a gallon for all oil taken from these seals. Each seal is estimated to furnish, on an average, ten gallons of oil. This would

make 111,000 a year, or a total of 2,225,000 dols. The contractor, whose bid we quote, also offered to supply the Aleutians on the St. George and St. Paul Islands with free school facilities, fish, oil, firewood, red shirts, and all other necessities that the 300 aborigines required, including the luxury of a priest of the Greek faith. Probably the government thought that the contractors were offering more than they could pay, for, as a matter of fact, the fishery is at present let for 65,000 dols. *per annum*.

The sea-otter fishery is even more valuable. This animal is found all down the Pacific coast, from Alaska to California, and also for some little way on the Asiatic side. It is, perhaps, the most valuable fur animal in America, and therefore I may devote a short space to its description, more especially as in the notes which follow I am indebted for much of the information to my old friend, Mr. Pym Nevins Compton, formerly of the Hudson's Bay Service, and who is, perhaps, as well acquainted with the habits of the sea-otter as any man living. I will, therefore, first quote what he has to say in his own words:—

"The sea-otter (*Enhydra marina*, p. 305) is an animal whose habitat is confined to the waters of the North Pacific, and is found as far north as the Aleutian Islands, or thereabouts, and as far south as the coast of southern California, on the coast of North America, whilst it also occurs on the coasts of Japan and the northern parts of China. Unlike the common otter of North America (*Lutra Canadensis*), it is now never found in the numerous inlets with which this western coast is so plentifully indented; but is always seen in the open ocean in the neighbourhood of rocks and rocky islets, such as those around Scott's Islands, at the northern end of Vancouver Island, and appears to prefer those localities where very strong tides cause broken water, in which it loves to disport itself. The young, which are produced generally (as far as I can learn) one or two at a time, and that once a year, are of a rusty-brown hue, with numerous long hairs of a yellowish colour about the head, and when born are not much more than a foot or eighteen inches in length, but appear to grow rapidly; though it is long before they lose the brownish colour which with age changes from the rusty hue of the young to a dark chocolate tint, and from that to the beautiful dark black fur of the adult male. The appearance of the *Enhydra* in the water is (although its habits are very similar) very different from that of the seal, not only in colour (being much darker), but in the shape of the head, that of the seal being very round, whilst that of the sea-otter is of a much more elongated and pointed form. The feet are more like the feet of the beaver than the flippers of the seal family; the hind feet are webbed, but unlike the web of the beaver, that of the sea-otter is covered with hair almost, if not quite, to the extremity. It is needless to add that the sea-otter swims and dives with extreme rapidity, but does not sink immediately on being killed like the seal. The size of a full-grown male sea-otter is about six feet, though I have frequently seen skins measuring upwards of seven feet without the tail, which is always cut off, and forms a separate item in the trade, and is generally a perquisite of the wife of the fortunate hunter. The females are rather smaller, and seldom entirely lose the brownish tinge on the fur, and, I believe, never acquire the white head of the old males. These animals are rarely seen on shore, though they are capable of walking on land, and are not confined to the awkward though rapid 'flop' (I can find no other word so expressive) of the seals

when on *terra firma;* but at the breeding season they frequent isolated and barren rocky islands, seldom troubled by man. Their food consists in a great part of shell-fish, for the



SEA-OTTER (*Enhydra marina*).

grinding up of which their massive molar teeth are admirably fitted; and they are stated by the Indians to be very partial, like the common otter, to a small species of haliotis (*H. Kamtschatkiana*), ear-shell or ubelone, as it is called in California, which is plentiful all along the coasts of North-West America. The skin of the sea-otter varies much in price

according to size, colour, fineness of fur, &c., and the best idea one can give of it is a mole about six or seven feet long; but that even gives an inadequate notion of the beauties of this costly fur, for costly it is, as a single good skin will, before being dressed, fetch as much as £30 in England, and considerably more when prepared and sent to China, where they are in great demand. Formerly the sea-otter was killed with the bow and arrow and spears, but since the whites have supplied the Indians with muskets and ammunition, firearms have taken the place of the more primitive weapon; but I do not think that more animals are killed now than formerly, and in fact the Indians themselves say that the noise of the gun frightens the otters (naturally a very wary animal), and that fewer are seen, and these more difficult to approach than in the 'good old times' of the bow and arrow. The otters used to be purchased by the Hudson's Bay Company by the size; a blanket being given for a span of the trader's hand, measuring lengthways of the skin, and the Indians employ even now all sorts of means to make the otters as long as possible (a practice decidedly detrimental in many cases to the fur), such as putting the skin in a frame after they reach home, wetting the hide with warm water, and scraping it with a shell to make it soft and pliable, and even in some cases pricking it all over with a number of needles tied together, and at the same time tightening up the lines at each end by which the skin is attached to the frame, so as to make it reach the required number of 'spans' in length." It may be added that a trader with a long thumb and forefinger was specially in request by the fur companies!

Formerly it was very abundant along the Californian coast, and was one of the attractions that induced the Russian Fur Company to establish Fort Ross in lat. 38° 30', where for a number of years (from 1812–1840) Aleutians were engaged in the fishery. Mr. Hittel describes these Indians as going out in their kayaks fifty miles to sea, or travelling up and down the coast, usually coming home well laden with skins, these worth from sixty to eighty dollars each. At one time the Hudson's Bay Company used to employ Sandwich Island in the trade. The hunters went up and down the coast in small vessels shooting the otters. Instantly on the animal being struck, the aquatic Kanakas swam off to it, or, if necessary, dived in pairs, and it was rare indeed that they did not succeed in bringing the valuable carcass to the surface. Off the coast of Santa Barbara country they are still plentiful, and there are men in that section of California who make a trade of killing them. It only approaches near the shore once a day for food; and when attacked makes no resistance, but endeavours to escape by sinking in the sea. The skins are chiefly in demand by the wealthy Russians, and are also exported to China, where a market is found for them among the higher mandarins of the Celestial Empire.

Washington Territory, Oregon, and Idaho.

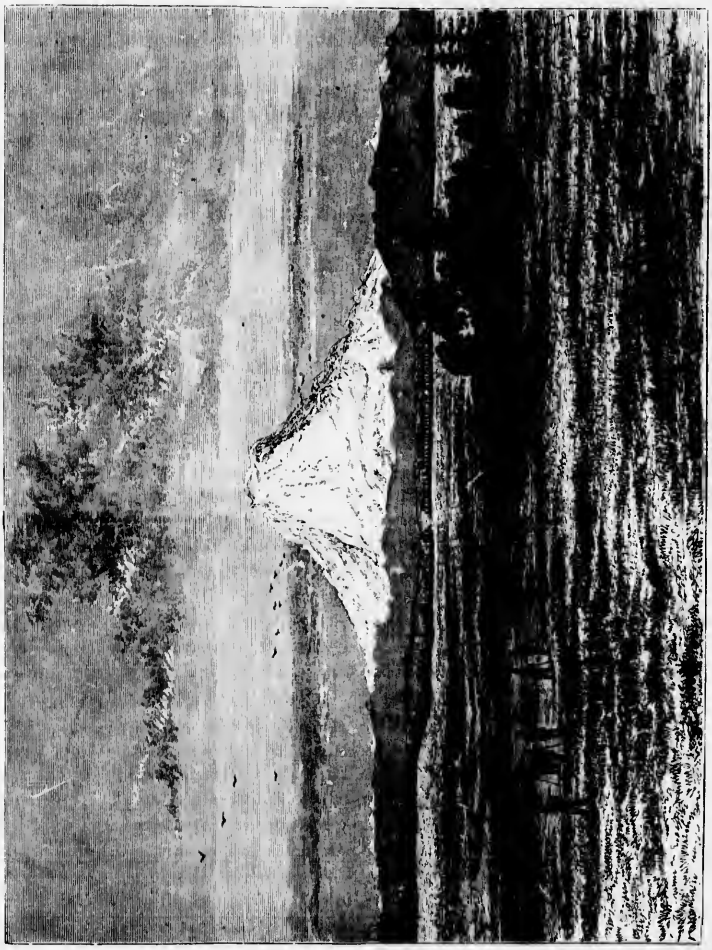
A very few words will suffice to give the salient features of these three political divisions of the United States. The first two are divided into two almost equal portions, differing widely, however, in climatic, agricultural, and commercial character by the Cascade Mountains. The other—Idaho—is altogether to the east of the Cascades, and is to the west of the Rocky Mountains, thus partaking of the arid character of that region (p. 284).

Washington Territory lies south of British Columbia, and is divided from it by the Columbia River, which runs in the British province, and after forming a bar falls into the sea between Capes Adams and Disappointment. The territory is 360 miles in breadth and 220 in length, while of its area of 44,796,160 acres, only 192,016 are improved, very little land being adapted for agriculture. The region to the east of the Cascades, though open, is in general rather mountainous or dry, while that to the west is densely wooded, the price of labour on the Pacific coast rendering the cost of "clearing" the land in most cases out of all proportion to its return. The soil, however, is rich, and when, as in the vicinity of the Puget Sound and the Columbia River, cultivation goes on, the yield of grain to the acre is very high. The eastern region is, however, well adapted for grazing purposes, while in the vicinity of the mouth of the Columbia, and especially of Puget Sound, extensive saw-milling operations go on (p. 258). The Columbia is the only navigable river, and vessels of 300 tons can pass up it to the Dalles or rapids of the river, where there is a little town of the same name. The scenery on the banks is not fine, the sombre woods to the west of the Cascades making the view rather monotonous, while on the other hand the bare wastes to the east of that range weary the eye of the voyager up this noble river. Here and there, however, the traveller has glimpses of the snow-capped peaks of the Cascade range, such as Mount St. Helen's, Mount Adam (9,570 feet), Mount Rainier (12,366 feet, p. 309), Mount Baker, and Mount Olympus, nearer the coast, and from which a cool breeze daily blows. Some of the rivers are interrupted by falls, such as the Snoqualami, which falls into the Puget Sound, and some distance from the sea falls over a sheer cliff 197 feet in height. This is, however, surpassed by the falls of the Snake River, a tributary of the Columbia in Idaho, which are said to be only inferior to those of the Yosemite and Niagara. The "Shoshone Falls" of the Snake, just below the Malade, are in clear perpendicular height 200 feet, the river being at this place about 250 yards in breadth. Gold is mined here and there in Washington Territory, as in almost every other portion of the United States, but its chief resources are lumber, grazing, hunting, and fishing, all the rivers abounding with salmon, numbers of which are salted, dried, or put up in tins for exportation. The fur animals, once abundant, are now almost exterminated, though deer and other kinds of game are still plentiful, and in the vicinity of Puget Sound and elsewhere give employment to several professional hunters. The Indians, though now mostly removed on "reservations," and as everywhere else on the decrease, are still numerous, but peaceable. The territory, however, has never recovered from the Indian war which in its earlier days desolated it. It is not fitted at present for a large population. Olympia, the capital, is a small village on Puget Sound, and none of the towns are much bigger, while the white population is not over 23,000, and is not increasing rapidly. In 1869 there were a little over 15,000 Indians in the territory.

Oregon is an infinitely more prosperous state. The eastern region is not so well suited either for grazing or agriculture as the eastern region of the territory north of it; but we have already spoken sufficiently regarding it. The country to the west of the Cascades, however, is much superior. It is not so densely wooded, the climate

is not so wet, and there are numerous open valleys and fertile tracks along the river banks which support a flourishing population of farmers. It is on an average about 260 miles broad and 360 long. It contains an area of 60,975,360 acres of land, of which about 1,116,000 are improved, and a population (in 1870) of 90,878 whites, 24,500 Indians, more than 3,000 Chinese, and a number of other nationalities, including negroes and a few Sandwich Islanders. The population is increasing at the rate of about 5,000 a year. The climate is mild and pleasant, though warmer in the summer, and scarcely so wet in the winter as that of British Columbia and the northern parts of Washington Territory, otherwise it is much the same. The mean temperature of Astoria at the mouth of the Columbia is 42°, 43′ Fah., while Corvallis in the centre of the Willamette Valley is 39°, 27′. By way of comparison it may be mentioned that New York in winter has a climate averaging one degree below the freezing point, while Albany, the capital of the State, suffers a mean winter cold of 25°, 83′. Few of the products of temperate North America but will grow in the State, while cattle, sheep, pigs, and all other kinds of stock are abundant. In Rogue River Valley nothing is more common than to see the porches of the pleasant-looking farm-houses covered with bunches of ripe grapes, while water-melons, Indian corn, and tomatoes are the most common kind of crops in this pleasant region of the world. The scenery is pleasing, and even in places grand, consisting, especially in the southern portion of the State, of rich, beautiful valleys, fine mountains, forests, and rivers, while the lake country described in the last chapter, and soon to be the site of a big manufactory and a young population, is very magnificent. The Willamette Valley alone is capable of producing 100,000,000 bushels of wheat annually. Already it "raises" 3,000,000 bushels, but it is not all under cultivation. The Umpqua, Rogue River, Illinois, Nehelemi, and Grande Ronde Valleys are other localities supporting a considerable farming population, and destined to support still more. The Willamette is, however, the chief locality for settlement, and in this region are the principal towns, Portland, Oregon City, Salem, &c., the last named, though by no means the largest, being the capital. Fruit is also extensively grown, while wool mills are becoming plentiful, and are run entirely upon the State-grown wool. The fisheries will always be important if properly nursed. In addition to incredible numbers of salmon, the sale of which is estimated at 1,500,000 dollars annually, the sucker fish (*Catostomus Sucklii*?) is got in great numbers in Lost River, twenty-five miles beyond Link River, in the months of April and May. This river, according to Mr. Small,* from whom we derive our information, is deep and sluggish, and yet these fish are so numerous that they can be thrown on the bank with the greatest ease. Settlers have been known to take out in this way as much as a ton weight of them in an hour. Cod, bass, flounder, carp, sturgeon, and smelt are caught in great abundance in the Columbia River and in the bays off the coast, while shell-fish are equally plentiful. The gold mines of Eastern Oregon yield plentifully. In Grant County alone 10,000,000 dollars worth were taken out in the seven

* "Oregon and Her Resources" (1872). See also, for very trustworthy information, "The Oregon Handbook and Emigrant's Guide," by J. M. Murphy (1873); and the article on the State, by Mr. Hawes, in Ripley and Dana's "American Encyclopædia" (1875).



VIEW OF MOUNT RAINIER, WASHINGTON TERRITORY (FROM THE NISQUALLY PLAINS).

years prior to 1872, while Jackson and Josephine to the west of the range have done very well. In the former county, from 1852 to 1868, about 15,000,000 dollars worth were obtained. In the sands at Coos Bay is scattered a considerable quantity of fine gold, and as the tide retires it is washed and amalgamated with quicksilver; the quicksilver thus catching the fine gold, and being afterwards driven off by heat, leaves the precious metal behind. The same method is pursued at Crescent City in North California and at other places. Silver is also mined, while lead, copper, and iron promise in time to be profitable mining industries. Railways now intersect the State, where a few years ago there was nothing but Indian trails. Even the "Central Oregon," which Thackeray in his satire on the Railway Mania of 1845 classed with "Patagonian Consolidated" as one of the absurdities of the Stock Exchange, is now an actual reality. It runs from California to the Columbia.

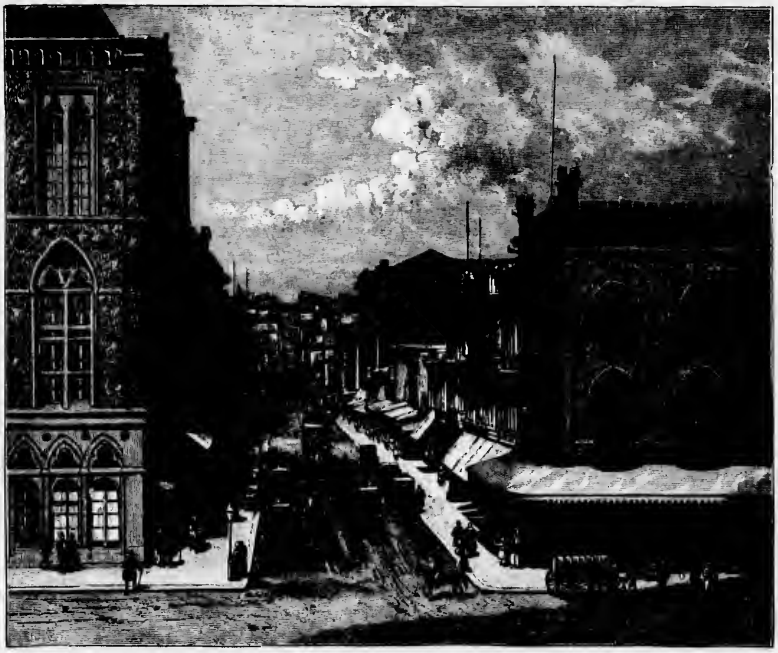
Of *Idaho*, little need be said. It is the territory west of Wyoming and Montana, north of Utah and Nevada, and east of Oregon and Washington Territory. It is, from its extreme northern to its extreme southern points, 485 miles long, and varies in breadth from nearly 300 miles at the south to 50 at the north. Its area is 55,228,160 acres, of which 26,603 are cultivated. The population was, in 1870, exclusive of tribal Indians, 14,999, of which 4,274 were Chinese, and the rest Indian or "coloured." Of this number less than, 3,900 were females. The territory is intersected by spurs of the Cascades or the Rocky Mountains, under the names of the Bitter Root Range, the Salmon Mountains, and the Blue Ridge. The southern country is more elevated than the north; but, agriculture, owing to the dryness of the country, cannot even with the aid of irrigation ever be a great industry. Gold and silver mining is the chief occupation of the rather roving population. Gold to the value of 1,571,733 dollars, and silver to the amount of 928,267 dollars, were mined in 1873. The winter climate is cold and stormy, and frequently rainy, but the summers are dry and hot. The Lewis or Snake River, the Salmon River, the Clearwater, and a portion of Clarke's River, traverse respectively the east and south parts of the State. The centre and the northern parts, Idaho City, Malade City, Silver City, Lewiston, and Bosé City (the capital), each having in 1870 less than 1,000 inhabitants, are the chief towns, and the population, looked at in its entirety, is about the roughest on the Pacific slope of the Rocky Mountains. It used to be told as a veritable tale that one Sunday morning, in the first-named town, a citizen was disturbed by shouts and yells down the street. He rushed out, but returned intensely disgusted and disappointed. "Why! *only* a man shot; I thought it wor a dorg fight!" was the soliloquy of the murder-ennuyed Idahoan. Though it is very tempting to generalise on this anecdote regarding the manners and customs of the population of this territory, I should be exceedingly sorry to present it as anything more than a materialised impression of a portion of the ideas that obtained possession of gold miners during the "rough times" of 1862, 1863, or 1864.

California.

The "Golden State" is not only the greatest of all the United States Pacific possessions, but it is the most typical of them all. Oregon, no doubt, was partially settled by Americans before California was, but all the other territories and states, including even British Columbia and Vancouver Island, received a contingent from California, while they one and all took their ways of life, and their impetus from, what was, prior to 1848, a province of Mexico, and, with the exception of a few Europeans here and there on the coast, or living in the interior, peopled by Hispano-Americans. I believe that it would be impossible to better economise the brief space at our disposal than to simply quote the remarks with which Mr. Hittel prefaces his classical work on California.* In a few words they present a condensed view of the remarkable features of the State. "I undertake," writes this graphic and most trustworthy historian, "to write the resources of a State which, though young in years, small in population, and remote from the chief centres of civilisation, is yet known to the furthest corners of the earth, and, during the last twenty-six years, has had an influence upon the course of human life, and the prosperity and trade of nations, more powerful than that exercised during the same period by kingdoms whose subjects are numbered by millions, whose history dates back through millions of years, and whose present stock of wealth began to accumulate before our continent was discovered or our language was formed. I write of a land of wonders; I write of California, which has astonished the world by the great migration that suddenly built up the first large Caucasian community on the shores of the North Pacific: by her vast yield of gold, amounting, within thirteen years, to 700,000,000 dollars, which has sensibly affected the markets of labour and money in all the leading nations of Christendom; by the rapid development and great extent of her commerce; by the greatness of her chief port, which at one time had more ships at her anchorage than were ever seen together in the harbours of either Liverpool, New York, or London; by the swift settlement of her remote districts; by the prompt organisation of her government; by the liberality with which the mines were thrown open and made free to all comers; by the rush of adventurers of every colour and tongue; by the prices of her labour and the rates of her interest for money—double those of the other American States, and quadruple those of Europe; by the vast extent of her gold-fields, and the facility with which they could be worked; by the auriferous rivers, in which fortunes could be made in a week; by antediluvian streams richer than those of the present era; by beds of lava, which, after filling up the beds of antediluvian rivers, were left by the washing away of the banks and adjacent plains to stand as mountains, marking the position of a great treasure beneath; by nuggets, each worth a fortune; by the peculiar nature of the

* "The Resources of California" (4th Ed.). The literature of the State is voluminous. However, in this treatise, and in that of Cronise ("The Natural Wealth of California") and Fisher ("The Californians"), as well as in the publications of the "Californian Geological Survey," especially the contributions of the Director—Professor Whitney—the reader will obtain ample and all but exhaustive information on this interesting portion of America.

mining industry; by new and strange inventions; by the washing down of mountains; by filling the rivers of the Sacramento basin with thick mud throughout the year; by lifting a hundred mountains from their beds; by thousands of miles of mining ditches; by aqueducts, less durable, but scarcely less wonderful, than those of ancient Rome; by silver mines that promise to rival those of Peru; by quicksilver mines surpassing



A STREET IN SAN FRANCISCO.

those of Spain; by great deposits of sulphur and asphaltum; by lakes of borax; by mud volcanoes, geysers, and natural bridges; by a valley of romantic and sublime beauty, shut in by walls nearly perpendicular, and more than three-quarters of a mile high, with half a dozen great cascades, in one of which the water at two leaps falls more than a third of a mile [the Yosemite Valley]; by a climate the most conducive to health, and the most favourable to mental and physical exertion—so temperate on the middle coast that ice is never seen, and thin summer clothing never worn, and that January differs in average temperature only eight degrees of Fahrenheit from July; by

THE CAPITOL, SACRAMENTO.

a singular botany, including the most splendid known group of coniferous trees, of which half a dozen species grow to be more than 250 feet high, and one species that reached a height of 450 feet and a diameter of 40 feet in the trunk; by a peculiar zoology, composed almost of animals found only on the coast, and including the largest bird north of the Equator [the Californian vulture], the largest and most formidable quadruped of the continent [the grizzly bear]; by the importation in early years of all articles of food, and then by the speedy development of agriculture, until her wheat and wine have gone to the farthest cities in search of buyers, and until her markets are unrivalled in the variety and magnificence of home-grown fruits; by the largest crop of grain and the largest specimens of fruits and vegetables on record; by a society where for years there was not one woman to a score of men, and where all the men were in the bloom of manhood; by the first large migration of Eastern Asiatics from their own continent; by the first settlement of Chinamen among white men; by the entire lack of mendicants [?], paupers [?], and almshouses; by the rapid fluctuations of trade; by the accumulation of wealth in the hands of men, most of whom came to the country poor; by the practice—universal in early years—of going armed; by the multitude of deadly affrays and extra constitutional courts [viligance committees], which functionaries punished villains with immediate execution, and sometimes proceeded with a gravity and slow moderation that might become the most august tribunals. I write of California while she is still youthful and full of marvels; while her population is still unsettled; while her business is still fluctuating, her wages high, her gold abundant, and her birth still fresh in the memory of men and women who are yet youthful: and I write of her while she still offers a wide field for the adventurous, the enterprising, and the young, who have life before them, and wish to commence it where they may have the freest career, in full sight of the greatest reward of success, and with the fewer chances of failure."

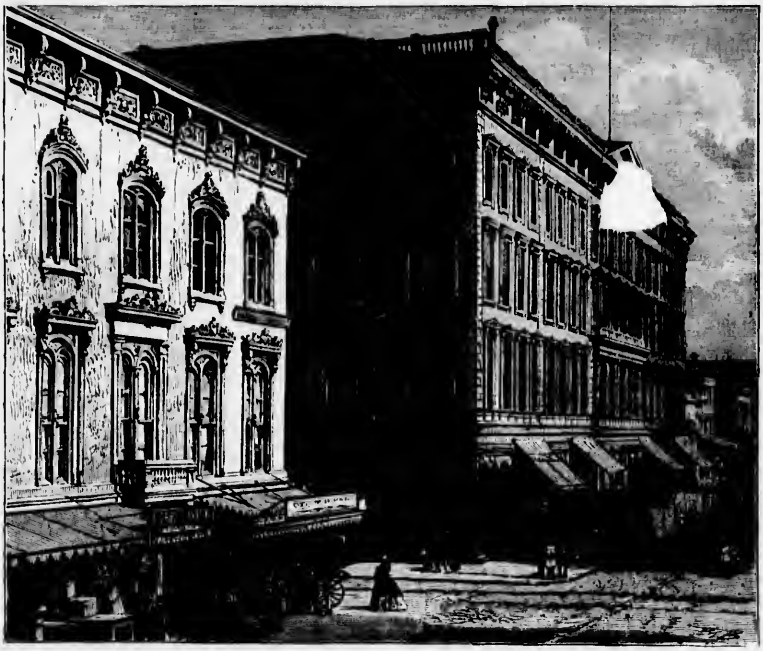
These words are almost a synopsis of the history and resources of the State, and I need only supplement them with a few particulars regarding some of the more interesting, though, indeed, to any one of the points many chapters could be pleasantly devoted. The name California—"Las Californias"—was originally applied by the Spaniards to the country north of Mexico for a rather indefinite extent, but is now confined simply to the American State of that name annexed to the Great Republic in 1848, though not formally admitted as a State until 1850. "Baja," or Lower "California," is the peninsula from Cape St. Lucas to the boundary between the United States and Mexico, and is a part of Mexico. Its breadth varies, and its area is believed to be not more than about 50,000 square miles. The northern and southern extremities of this peninsula, according to Mr. Gabb, consist chiefly of granite rocks and high ranges. Between the spurs of these mountains are numerous small valleys, many of them well watered and fertile. Here, also, are situated the principal mines of the peninsula, which are still worked with success, and in 1867 were producing silver to the extent of 20,000 dollars per month. The middle section is made up of a mountain range called the Sierra Gigantea, or del Gigante, the peaks of which attain an elevation of from 3,000 to 4,000 feet. The settlements are confined to the eastern part of this range, while along the coast are numerous small valleys, with good harbours close by. These spots are fertile, and well adapted for the growth of tropical products. Most, however, of the peninsula is, owing to the extreme dryness of the climate, barren and forbidding in the extreme.

The population has never exceeded from 8,000 to 15,000, chiefly on the southern coast. The fishery of the Californian "grey whale" (*Rhachianectes glaucus*) at one time occupied a number of vessels, chiefly in Sebastian Viscaino Bay, and the pearl-fishery is still pursued actively, the divers being chiefly Yaqui Indians: within the last century and a half it has been estimated that from five to six million dollars worth of pearls have been obtained from the Gulf of California and neighbouring sea. So much for Lower California, a consideration of which ought properly to come under Mexico. But it is more convenient to speak of it here, though not in political relationship with the United States.

The State of California, or what the Spaniards used to partly know as "Alta California," extends from the Mexican frontier to lat. 42°, while on the east the parallel of 120° is its limits. Its area is estimated at something between 155,000 and 160,000 square miles (Whitney), though as many as 188,981 square miles are given in some official publications.* Its climate is very different from that of the Atlantic Coast and the Mississippi States. It is divided into a wet and dry season, while that of Lower California is decidedly tropical in its character. Professor Whitney divides the State as to its physical character into three different portions, the central being by far the most populated, and in every respect the most valuable. It comprises the great central valley, drained by the Sacramento River flowing from the north and the San Joaquin from the south. Its length is 450 miles, and its level area about 18,000 square miles. A striking feature of the Sacramento River is the fact that for 200 miles north from the mouth of the Feather River it does not receive a single tributary of any note, though walled in by high mountain ranges. Indeed, the whole of the Great Valley is thus surrounded, and the only break being at San Francisco, where the channel which connects it with the sea, viz., the Golden Gate, is only one mile broad at its narrowest portion. In this area are several large mountain lakes, some of which are of pure and fresh water, while others are alkaline and without any outlet. The first of these is Lake Tahoe, which is 1,500 feet deep, and its overflow—the Truckee River—falls into Pyramid Lake, where it sinks or disappears by evaporation. Clear Lake is another sheet of the same nature, while Owen's Lake is the "sink" of Owen's River, and is about eighteen miles in length. Mono Lake is the "sink" of the streams, rising in the Sierra Nevada between Mount Dana and Castle Peak, while Death Valley is the "sink" of the Amargosa River. It has evidently been once an extensive lake, but is now a mud flat in winter and a dusky alkaline plain in summer. At the southern end of the Sacramento division of the Great Valley there is situated the Tulare Lake, which is not over forty feet in depth, but it has an area of 700 square miles, and is surrounded by the "tules" or reeds (*Scirpus lacustris*) which gave it its name. In the Sierra Nevadas of California are several high peaks, the highest, Mount Whitney (14,886 feet), being 600 feet greater than any elevation in the Rocky Mountains, and therefore the highest point in the United States. The second region comprises seven counties north of the parallel of 40°. It is thinly populated,

* Walker's "Statistical Atlas of the United States" and "Report of the Commissioner of the United States Land Office for 1866."

and much of it consists only of barren volcanic plains, lying between precipitous "though not lofty ranges." That portion of California lying south and east of the southern inoculation of the Coast ranges and the Sierra comprises an area of fully 50,000 square miles. It is also thinly inhabited, except along the coast, and comprises among other portions the San Diego and San Bernardino counties, which have no drainage towards



AN HOTEL IN SAN FRANCISCO.

the sea. It is the Great Basin of California. The fertile portion of it is Les Angelos county, which comprises some of the best lands in the State.

Towards the south-eastern border of the State is a district 70 miles wide by 140 miles long, which belongs to the Colorado River, and is known for its bareness at the Colorado Basin. The soil is chiefly sand, here and there packed into low hills, which are continually shifting.

The climate, as might be supposed from the foregoing description, is varied according to the region. If it can be compared with any portion of the world probably Western

A CHINESE QUARTER IN SAN FRANCISCO.

Europe would supply the nearest likeness to it. The winters are warmer and the summers —especially at night—cooler than the Eastern States of America. The rain is chiefly confined to the winter and spring months, the atmosphere is drier than that of the Atlantic slope, the cloudy days few, thunder, lightning, hail, snow, ice, and the aurora rarer, the winds more regular, viz., blowing from the north for fair weather, from the south for storms, while earthquakes, though rarely of a severe character, are rather frequent. There is, as Mr. Hittel properly remarks, one climate for the west slope of the Coast range between Point Conception and Cape Mendocino; another for the low land of the Sacramento Basin; another for the Sierra Nevada and Klamath Basin; another for the coast south of Point Conception; another for the Colorado Desert, and possibly even more. We will not attempt to tire the reader by a description of all of these climatic differences. Most of them are very pleasant on the whole, and altogether the climate of California is an immense improvement on that of the Eastern States of America and most parts of Northern Europe. The coldest winter days are at noon as warm as the warmest in Philadelphia, while the summer weather in Lower California is hot even to excess. San Francisco has about the worst climate—speaking comparatively, not positively, of the atmosphere—of all California. There the common custom is to wear woollen clothing of the same thickness all the year round. In the interior of the State the climate is much warmer, and thin linen coats are assumed as soon as the summer arrives. One of the inhabitants of that part of the State expresses himself after this fashion, and his plaint gives a very fair idea of the Coast climate at the chief city of the State in July:—"You go out in the morning shivering, notwithstanding the fact that you are dressed in heavy woollen clothing and underclothing, and have a thick overcoat buttoned up to your throat. At 8.30, you unbutton two of the upper buttons; at 9, you unbutton the coat all the way down; at 9.30, you take it off; at 10, you take off your woollen coat and put on a summer coat; at 11, you take off all your woollen and put on light summer clothing; at 4, it begins to grow cool, and you put on your woollen again; and by 7 o'clock your overcoat is buttoned to the chin, and you shiver until bedtime." The mean of the year at San Francisco is 56°, of the summer 60°, and of the winter 51°. At Washington, on the other hand, the means are 56·07, 76·3, and 36·05. The variability of the rainfall is a great drawback to agriculture, and the "drying-up" of the summer has supplied a slang phrase to the Californian vocabulary, so familiar is it. The dust of summer is also a great drawback to the otherwise delightful climate, but the old residents are quite accustomed to it, though the new arrivals consider the gritty clouds which daily roll along the streets quite unbearable.

The scenery of California is very fine at a distance. Near at hand it is disappointing, by reason of the parched appearance of everything. It is only in early spring that the country assumes that blooming appearance which has been so raved about by passing tourists. Old residents, though not unwilling to hear their favourite State lauded—and never were people so in love with a fair land as the Californians are with their huge State, a single county in which is as big as some of the Eastern States—are rather silent when the ever-rich flowery meadows are talked of, as they remember the dried-up brown summer country they had just left.

The sights of California are many, but have already been done to death by the book-inditing tourist, whom the Pacific railroad has given facilities for descending easily on California. Of course, the Yosemite Valley is the chief of these sights. It is chiefly remarkable owing to the great height and almost verticality of the walls of the valley, and the small amount of *débris* at the base of the cliffs, that hem in the valley, which is also remarkable for its comparative narrowness. "The water-falls," wrote Professor Whitney, who has published the best and fullest description of them, "in and about this valley are also of wonderful beauty and variety. Those for the Yosemite Creek, which descend from the cliffs on the north side, are most remarkable for their height, which is, on the whole, not less than 2,600 feet, but divides into three parts, with one vertical fall of 1,500 feet. The Nevada and Merced Falls of the Merced River, which flows through the whole length of the valley, combine great height with a large body of water, and are wonderfully grand. The Half-Dome is one of the most striking features of the Yosemite, its elevation being 4,737 feet above the bottom of the valley, with an absolutely vertical face of 1,500 feet at the summit turned towards the Tenaya fork of the Merced, above which it rises. The scenery of the cañon of Tuolumne River, which flows parallel with the Merced, a few miles further north, is also extremely picturesque and remarkable, especially for the great number of varieties of the cascades which occur at short intervals in the deep gorge, the walls of which are bare, and almost vertical precipices, in places more than 1,000 feet high. The river, which is not much less than 100 feet wide, falls 4,650 in a distance of seventy-seven miles. A few miles further down, the narrow gorge opens out into a beautiful valley, in many respects a wonderful counterpart of the Yosemite, though inferior to it in grandeur. This is called the Hetch-Hetchy. Above the Yosemite valley the scenery of the High Sierra is very attractive, immense conical knobs or domes of granite being a prominent and very characteristic feature of this and other portions of the Sierra. Mount Dana, a little over 13,000 feet in height, dominates over the region above the Yosemite, and from its summit, which is quite easy of access, a magnificent panorama may be had of the Sierra Nevada, with Mono Lake, nearly 7,000 feet below, spread out like a map, and beyond it the lofty, and, in some instances, snow-clad ranges of the Great Basin, while several well-formed and very large volcanic cones are seen just to the south of the lake." The "Big Trees" are another of the familar wonders of California. The tree is the *Sequoia*, or as it was long called by botanists, the *Wellingtonia gigantea*, one of the fir and pine order. It is found in company with the sugar pine, the Douglas fir, and the pitch pine (*Pinus ponderosa*), but is much more limited in its distribution than any of these widely-spread trees. It is found only in California, and in groves or patches, from lat. 36° to 38° 15', never at a higher elevation than 7,000 feet, and never much lower than 4,000. There are eight or nine patches of these trees in the State, the largest being that which stretches along the tributaries of King's or Kaweah River, about thirty miles N.N.E. of Visalia. The trees, unlike, however, those in the Mammoth Grove, Calaveras County, are not in a clump, but scattered among other species. The highest yet seen is 352 feet in height, and the circumference of some of them near the ground is nearly 100 feet, or more than thirty feet in diameter. The trunk of many of them

six feet above the ground is fifty feet in circumference. One cut down in the Calaveras Grove—(the cutting down is now prohibited by a State law)—measured six feet above the ground, without the bark, twenty-four feet one and a half inches, and, judging from the rings, was 1,300 years old—or, in other words, it was a very tiny bush at the same time the Roman Empire was beginning to fall in pieces. These trees being now a common sight for all visitors to make a pilgrimage to, they have received—at least, in the Mariposa Grove—all manner of fanciful names, chiefly in honour of passing heroes, which frequently in their turn absurdly give place to other favourites of the hour. The stump of one of them which was cut down has now a house built over it, and is used as a ball-room. We have figured one of these trees at page 277. It is known as the "Mother of the Forest," there being also a father. It is 305 feet in height, and 63 in circumference. The bark has been stripped off for 121 feet. The wood of the big tree is of little value, even were it available, but its close ally, the redwood (*Sequoia sempervirens*), is extensively used for lumber. This species is found in forests on a narrow belt, 300 miles in length, along the coast, in silurian soil, but it does not cross the Oregon boundary, nor go south of the Bay of Monterey.* It is possible that most of the trees of this species are little, if any, smaller than some of those of the *Sequoia sempervirens*. I have seen one not far from Crescent City, which had been hollowed out by fire as it lay on the ground, leaving only the fire and a thin shell. A laden mule-train is said to have passed through, nor need the fact be doubted. I have myself seen an elk, or wapiti, hard pressed, take refuge in the angle formed by two fallen trees of this species, and yet fail to leap over them when the hunters approached it, the height being too great for it. The geysers, the hot springs, and a score of other remarkable though not exclusive features of California, might also be cited among its wonders. It is necessary, however, for us now to devote some space to the Californian mines, and, what is even more interesting, the miners themselves.

* For some curious speculations regarding these trees, and botanical history of California generally, see Professor Asa Gray, in "Annals of Natural History," Vol. xi., 4th series, p. 52 (1873).

Cassell Petter & Galpin, Belle Sauvage Works, London, E.C.