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LOVELL'S SERIES OF SCHOOL BOOKS.

THE

BRITISH-AMERICAN READER.

BY THE

REV. J. DOUGLAS BORTHWICK,

AUTHOR OF "CYCLOPÆDIA OF HISTORY AND GEOGRAPHY," "THE HARP OF CANAAN," AND "THE BATTLES OF THE WORLD."

"Nullum munus Reipublicæ afferre majus meliusve possumus, quam si doceamus atque erudiamus juventutem."

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PREFACE TO THE FIRST EDITION.

THE following compilation was undertaken at the request of several Teachers, who, in their scholastic experience, have felt the great want of a School Reader, the main object of which would be the better knowledge of the British possessions in North America.

Our youth have hitherto been taught far too little of their native land, and whilst School Books from other countries have been widely used, the pupils have been left in total or at least partial ignorance of the History and Geography, Geology and Botany, Natural History and Productions, Climate and Scenery of those Provinces which truly constitute the "Brightest gem in the diadem of England." Communication between the Mother Country and her American Provinces is of such frequent, almost daily occurrence now, that a young man from British America going to England, either to complete his education at any of the older Universities or to enter business, is naturally supposed to be able to describe the principal features of the country or province in which he has been born; but how many of our youth have left school as entirely ignorant of some of the Geographical and Natural features of their native land as the unlettered Red-man who roams the western prairie? It is to endeavour to remedy this great defect in our public teaching that this com-

pilation has made its appearance; and, if it shall be the means of introducing into our schools a better knowledge of these magnificent colonies, the great labour which has been bestowed on it will in some measure be repaid.

I take this opportunity of returning my sincere thanks to all those gentlemen who have kindly assisted me either by advice or otherwise—but particularly to J. W. Dawson, L.L.D., Principal of McGill College; A. Morris, A.M., Advocate; and T. A. Gibson, A.M., High School, for the handsome manner in which they have allowed me the free use of their various publications, from which I have largely extracted in the following compilation. To Dr. Hingston, I am particularly under obligation for his valuable article on the Climate of Canada, which he wrote expressly for this work, and which will be found not only interesting to the Climatologist, but to all who wish to know something of the peculiar climatological features of British America.

J. DOUGLAS BORTHWICK.

MONTREAL, *2nd January*, 1860.

PREFACE TO THE SECOND EDITION.

A SECOND edition of the British American Reader being required, and the publisher being about to stereotype it, I take this opportunity of making some corrections and emendations which will render the work still more useful to the teachers and children of Canada, for whom it was originally specially compiled. In the Natural History Lessons, as well as in the Lessons on Canadian forest trees, the Zoological and Botanical names have been left out, as it has been proved by experience that children are puzzled and bewildered by these names, especially when they have no previous knowledge of these subjects. Another great feature, and a good one, because requested by more than one teacher from the country, is the introduction of a short Glossary at the end of the volume to enable teachers who have not the opportunity of consulting a large unabridged Dictionary, as well as to become conversant with the difficult words found interspersed throughout the Reader. The large number too of statistics found in different places of the work, being now out of date, have been left out, and the various lessons descriptive of the principal Cities, Lakes, Rivers, &c., have been corrected to the present day.

Since the first issuing of the book, four years ago, it has been adopted by the Council of Public Instruction unanimously, and authorized by the Government, as the Public

Reader in Lower Canada Schools, and nothing can be more gratifying to the publisher than the notice given of it not long since in the Journal of Education, where the Superintendent says:—"We must also call the attention of our readers to a very excellent book, approved *on the recommendation of the whole committee*, and which will suit equally well Protestant and Catholic schools—we mean Rev. Mr. Borthwick's *British-American Reader*."

The poetical pieces have been corrected according to the wishes of the authors, received per letter, or otherwise by the compiler, and the whole made as complete as possible, to enable all to know more and more of these magnificent provinces, which, under God and Confederation, will become one of the great powers of this earth. Let the teachers, when they are exhausted from their toil, remember the words on the title page of this book. No greater gift can a man bestow on his country, than to teach the rising generation the spirit of true patriotism, the spirit of manliness, and the love of knowledge. Let the blessings derived from the diffusion of a sound education be widely spread, and a generation will arise when we are in our graves who will bless us for the benefits they enjoy—who will thank the teachers of these Provinces as the founders of their position among the nations—as the means of the greatness and prosperity of their country. God grant it may be so.

J. DOUGLASS BORTHWICK.

Montreal, 20th September, 1866.

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THE

BRITISH-AMERICAN READER.

LESSON I.

DISCOVERY OF AMERICA BY COLUMBUS.

On Friday the 3rd day of August, A.D. 1492, Columbus set sail, a little before sunrise, in the presence of a vast crowd of spectators, who sent up their supplications to Heaven for the prosperous issue of the voyage which they wished rather than expected. Columbus steered directly for the Canary Islands, and arrived there without any occurrence that would have deserved notice on any other occasion. But on a voyage of such expectation and importance, every circumstance was the object of attention. The rudder of the Pinta broke loose the day after she left the harbour; and that accident alarmed the crew, no less superstitious than unskilful, as a certain omen of the unfortunate destiny of the expedition. Even in the short run to the Canaries, the ships were found to be so crazy and ill-appointed, as to be very improper for a navigation which was expected to be both long and dangerous. Columbus refitted them, however, to the best of his power; and having supplied himself with fresh provisions, he took his departure from Gomera, one of the most westerly of the Canary Islands, on the 6th of September.

Here the voyage of discovery may properly be said to begin; for Columbus, holding his course due west, left immediately the usual track of navigation, and stretched into unfrequented and unknown seas. The first day, as it was very calm, he made but little way; but on the second day he lost sight of the Canaries; and many of the

sailors, dejected already, and dismayed, when they contemplated the boldness of the undertaking, began to beat their breasts, and to shed tears, as if they were never more to behold land. Columbus comforted them with assurances of success, and the prospect of vast wealth in those opulent regions whither he was conducting them. This early discovery of the spirit of his followers taught Columbus that he must prepare to struggle not only with the unavoidable difficulties which might be expected from the nature of his undertaking, but with such as were likely to arise from the ignorance and timidity of the people under his command; and he perceived that the art of governing the minds of men would be no less requisite for accomplishing the discoveries which he had in view, than naval skill and undaunted courage. Happily for himself and for the country by which he was employed, he joined to the ardent temper and inventive genius of a projector, virtues of another species, which are rarely united with them. He possessed a thorough knowledge of mankind, an insinuating address, a patient perseverance in executing any plan, the perfect government of his own passions, and the talent of acquiring an ascendancy over those of other men. All these qualities, which formed him to command, were accompanied with that superior knowledge of his profession, which begets confidence in times of difficulty and danger. To unskilful Spanish sailors accustomed only to coasting voyages in the Mediterranean, the maritime science of Columbus, the fruit of thirty year's experience, improved by an acquaintance with all the inventions of the Portuguese, appeared immense. As soon as they put to sea, he regulated everything by his sole authority; he superintended the execution of every order; and allowing himself only a few hours for sleep, he was at all other times upon deck. As his course lay through seas which had not formerly been visited, the sounding line, or instruments for observation, were continually in his hands. After the example of the Portuguese discoverers, he attended to the motion of tides and currents, watched the flight of birds, the appearance of fishes, of seaweeds, and of everything that floated on the waves, and entered every occurrence with a minute exact-

ness in the journal which he kept. As the length of the voyage could not fail of alarming sailors habituated only to short excursions, Columbus endeavoured to conceal from them the real progress which they made. With this view, though they ran 18 leagues on the second day after they left Gomera, he gave out that they had advanced only 15, and he uniformly employed the same artifice of reckoning during the whole voyage. By the 14th of September, the fleet was above 200 leagues to the west of the Canaries, at a greater distance from land than any Spaniard had been before that time. There they were struck with an appearance no less astonishing than new. They observed that the magnetic needle, in their compasses, did not point exactly to the polar star, but varied towards the west; and as they proceeded the variation continued. This appearance which is now familiar, filled the companions of Columbus with terror. They were now in a boundless and unknown ocean, far from the usual course of navigation; nature itself seemed to be altered, and the only guide which they had left was about to fail them. Columbus, with no less quickness than ingenuity, invented a reason for this appearance, which, though it did not satisfy himself, seemed so plausible to them, that it dispelled their fears, or silenced their murmurs.

He still continued to steer due west, nearly in the same latitude as the Canary Islands. In this course he came within the sphere of the trade winds, which blow invariably from east to west, between the tropics and a few degrees beyond them. He advanced before this steady gale with such uniform rapidity that it was seldom necessary to shift a sail. When about 400 leagues to the west of the Canaries, he found the sea so covered with weeds, that it resembled a meadow of vast extent, and in some places they were so thick as to retard the motion of the vessels. This strange appearance occasioned new alarm and disquiet. The sailors imagined that they had now arrived at the utmost boundary of the navigable ocean, that these floating weeds would obstruct their further progress, and concealed dangerous rocks, or some large tract of land which had sunk, they knew not how, in that place. Columbus en-

deavoured to persuade them, that what had alarmed them ought rather to have encouraged them, and was to be considered a sign of approaching land. At the same time, a brisk gale arose and carried them forward. Several birds were seen hovering about the ships, and directing their flight towards the west. The desponding crews resumed some degree of spirit, and began to entertain fresh hopes.

Upon the 1st of October, they were, according to the admiral's reckoning, 770 leagues to the west of the Canaries; but lest his men should be intimidated by the prodigious length of the navigation, he gave out that they had proceeded only 584 leagues, and fortunately for Columbus, neither his own pilot nor those of the other ships, had skill sufficient to correct this error, and discover the deceit. They had now been above three weeks at sea; they had proceeded far beyond what former navigators had attempted or deemed possible; all their prognostics of discovery, drawn from the flight of birds and other circumstances, had proved fallacious; the appearances of land, with which their own credulity or the artifice of their commander had from time to time flattered and amused them, had been altogether illusive, and the prospect of success seemed now to be as distant as ever. These reflections occurred often to men who had no other object or occupation than to reason and discourse concerning the intention and circumstances of their expedition. They made impression at first upon the ignorant and timid, and extending by degrees to such as were better informed or more resolute, the contagion spread at length from ship to ship. From secret whispers or murmurings they proceeded to open cabals and public complaints. They taxed their sovereign with inconsiderate credulity, in paying such regard to the vain promises and rash conjectures of an indigent foreigner, as to hazard the lives of so many of her own subjects in prosecuting a chimerical scheme. They affirmed that they had fully performed their duty, by venturing so far in an unknown and hopeless course, and could incur no blame for refusing to follow any longer a desperate adventurer to certain destruction. They contended that it was necessary to think of returning to Spain, while their crazy vessels were still in a con-

dition to keep the sea, but expressed their fears that the attempt would prove vain, as the wind, which had hitherto been so favourable to their course, must render it impossible by force to adopt a measure on which their common safety depended. Some of the more audacious proposed, as the most expeditious and certain method of getting rid at once of his remonstrances, to throw him into the sea, being persuaded that, upon their return to Spain, the death of an unsuccessful projector would excite little concern, and be inquired into with no curiosity.

LESSON II.

SAME SUBJECT—CONTINUED.

Columbus was fully sensible of his perilous situation. He had observed, in the great uneasiness, the fatal operation of ignorance and of fear in producing disaffection among his crew, and saw that it was now ready to burst out into open mutiny. He retained, however, perfect presence of mind. He affected to seem ignorant of their machinations. Notwithstanding the agitation and solicitude of his own mind, he appeared with a cheerful countenance, like a man satisfied with the progress he had made, and confident of success. Sometimes he employed all the arts of insinuation to soothe his men. Sometimes he endeavoured to work upon their ambition or avarice, by magnificent descriptions of the fame and wealth which they were about to acquire. On other occasions he assumed a tone of authority and threatened them with vengeance from their sovereign, if, by their dastardly behaviour, they should defeat this noble effort to promote the glory of God, and to exalt the Spanish name above that of every other nation. Even with seditious sailors, the words of a man whom they had been accustomed to reverence, were weighty and persuasive, and not only restrained them from those violent excesses which they meditated, but prevailed with them to accompany their admiral for some time longer.

As they proceeded, the indications of approaching land seemed to be more certain, and excited hope in proportion. The birds began to appear in flocks, making towards the south-west. Columbus, in imitation of the Portuguese navigators, who had been guided, in several of their discoveries, by the motion of birds, altered his course from due west towards that quarter whither they pointed their flight. But, after holding on for several days in this new direction, without any better success than formerly, having seen no object, during thirty days, but the sea and sky, the hopes of his companions subsided faster than they had risen; their fears revived with additional force; impatience, rage and despair, appeared in every countenance. All sense of subordination was lost; the officers, who had hitherto concurred with Columbus in opinion, and supported his authority, now took part with the private men; they assembled tumultuously on the deck, expostulated with their commander, mingled threats with their expostulations, and required him instantly to tack about and return to Europe. Columbus perceived that it would be of no avail to have recourse to any of his former arts, which, having been tried so often, had lost their effect; and that it was impossible to rekindle any zeal for the success of the expedition among men in whose breasts fear had extinguished every generous sentiment. He saw that it was no less vain to think of employing either gentle or severe measures to quell a mutiny so general and so violent. It was necessary, on all these accounts, to soothe passions which he could no longer command, and to give way to a torrent too impetuous to be checked. He promised solemnly to his men that he would comply with their request, provided they would accompany him, and obey his command for three days longer, and if, during that time, land were not discovered, he would then abandon the enterprise, and direct his course towards Spain.

Enraged as the sailors were, and impatient to turn their face again towards their native country, this proposition did not appear to them unreasonable. Nor did Columbus hazard much in confining himself to a term so short. The presages of discovering land were now so numerous and

promising, that he deemed them infallible. For some days the sounding line reached the bottom, and the soil which it brought up indicated land to be at no great distance. The flocks of birds increased, and were composed not only of sea-fowl, but of such land birds as could not be supposed to fly far from the shore. The crew of the Pinta observed a cane floating, which seemed to have been newly cut, and also a piece of timber artificially carved. The sailors aboard the Nigna took up the branch of a tree with red berries perfectly fresh. The clouds around the setting sun assumed a new appearance; the air was more mild and warm, and during the night the wind became unequal and variable. From all those symptoms, Columbus was so confident of being near land, that on the evening of the 11th of October 1492, after public prayers for success, he ordered the sails to be furled, and the ships to lie to, keeping strict watch, lest they should be driven ashore in the night. During this interval of suspense and expectation, no man shut his eyes; all kept the deck, gazing intently towards that quarter where they expected to discover the land, which had been so long the object of their wishes.

About two hours before midnight, Columbus standing on the forecastle, observed a light at a distance, and privately pointed it out to Pedro Guttierez, a page of the Queen's wardrobe. Guttierez perceived it, and calling to Salcedo, comptroller of the fleet, all these saw it in motion as if it were carried from place to place. A little after midnight the joyful sound of *land! land!* was heard from the Pinta, which kept always ahead of the other ships. But, having been so often deceived by fallacious appearances, every man had now become slow of belief, and waited in all the anguish of uncertainty and impatience for the return of day. As soon as morning dawned, all doubts and fear were dispelled. From every ship an island was seen about two leagues to the north, whose flat and verdant fields, well stored with wood, and watered with many rivulets, presented the aspect of a delightful country. The crew of the Pinta instantly began the Te Deum, as a hymn of thanksgiving to God, and were joined by those of the other ships, with tears of joy and transports of congratulation. This office of grati-

tude to Heaven was followed by an act of justice to their commander. They threw themselves at the feet of Columbus, with feelings of self-condemnation mingled with reverence. They implored him to pardon their ignorance, incredulity, and insolence, which had created him so much unnecessary disquiet, and had so often obstructed the prosecution of his well-concerted plan; and passing, in the warmth of their admiration, from one extreme to another, they now pronounced the man, whom they had so lately reviled and threatened, to be the person inspired by Heaven with sagacity and fortitude more than human, in order to accomplish a design so far beyond the ideas and conceptions of all former ages. As soon as the sun arose all the boats were manned and armed. They rowed towards the island with the colours displayed, with warlike music, and other martial pomp. As they approached the coast, they saw it covered with a multitude of people, whom the novelty of the spectacle had drawn together, whose attitudes and gestures expressed wonder and astonishment at the strange objects which presented themselves to their view. Columbus was the first European who set foot in the new world which he had discovered. He landed in a rich dress, and with a naked sword in his hand. His men followed, and kneeling down, they all kissed the ground which they had so long desired to see. They next erected a crucifix, and prostrating themselves before it, returned thanks to God for conducting their voyage to such a happy issue. They then took solemn possession of the country, for the crown of Castile and Leon, with all the formalities which the Portuguese were accustomed to observe in acts of this kind, in their new discoveries.

LESSON III.

AMERICA.

. . . . . Thou astounding main,
Time never felt so awful since his birth,—
Angels and demons o'er thy terrors hung,
When, visioning afar his nameless world,
On thine immensity Columbus launch'd.
Yet thou wert well-aveng'd! for storm and doubt,
Despair and madness, on the billows rode,
And made the ocean one dark agony!
Dismal as thunder-clouds, the fated hours
Toil'd on; a living solitude still howl'd
And heav'd in dread monotony around!
Yet hope was quenchless! and when daylight clos'd,
The ocean wanderers, in the wooing glow
Of sunset, gladdening their despondent brows,
Hymn'd o'er the mellow wave their vesper song!
Ave Maria! mingling with the choirs
Of billows, and the chant of evening winds.

But he was destin'd; and his lightning glance
Shot o'er the deep, and darted on thy world,
America!—Then mighty, long and loud,
From swelling hearts, the Hallelujahs rang,
And charm'd to music the Atlantic gales;
While silent as the Sun above him thron'd,
Columbus look'd in rapture to the skies,
And gave his glory to the God of heaven!

Thou hugest region of the quarter'd globe,
Where all the climates dwell, and Nature moves
In majesty,—hereafter, when the tides
Of circumstance have roll'd their changing years,
What empires may be born of thee!—Thy ships
By thousands, dancing o'er the isle-strewn deep;
Thy banners wav'd in every land! E'en now
Defiance flashes from thy fearless eye,

While Nature tells thee, greatness is thy own —
Who on those dreadful giants of the South,
Those pyramids by thy Creator rear'd,
Thine Andes, girdled with the storms, can gaze;
Or hear Niagara's unearthly might
Leap downward in a dash of proud despair,
Mocking the thunder with impassion'd sound,—
Nor think the Spirit of Ambition wakes
From each free glory?—What a grandeur lives
Through each stern scene!—in yon Canadian woods,
Whose stately poplars clothe their heads with clouds
And dignify Creation as they stand;
Or in the rain-floods—rivers where they fall!
Or hurricanes that howl themselves along,
Life-wing'd monsters, ravenously wild;
Sublimity o'er all her soul hath breath'd,
And yet, a curse is on thee!—'tis the curse
Of havoc, which the violaters reap'd,
For thy young destiny, when first amid
Thy wilds, the cannon pour'd its thundering awe,
Shaking the trees that never yet had bow'd,
Save to the storminess of Nature's ire.

LESSON IV.

RECEPTION OF COLUMBUS ON HIS RETURN TO SPAIN.

THE fame of his discovery had resounded throughout the nation, and as his route lay through several of the finest and most populous provinces of Spain, his journey appeared like the progress of a sovereign. Wherever he passed, the surrounding country poured forth its inhabitants, who lined the road and thronged the villages. In the large towns, the streets, windows, and balconies, were filled with eager spectators, who rent the air with acclamations.

His journey was continually impeded by the multitude pressing to gain a sight of him, and of the Indians, who

were regarded with as much admiration, as if they had been natives of another planet. It was impossible to satisfy the craving curiosity which assailed himself and his attendants, at every stage, with innumerable questions: popular rumour, as usual, had exaggerated the truth, and had filled the newly-found country with all kinds of wonders.

It was about the middle of April, that Columbus arrived at Barcelona, where every preparation had been made to give him a solemn and magnificent reception. The beauty and serenity of the weather, in that genial season and favoured climate, contributed to give splendour to this memorable ceremony. As he drew near the place, many of the more youthful courtiers, and hidalgos of gallant bearing, together with a vast concourse of the populace, came forth to meet and welcome him.

His entrance into this noble city has been compared to one of those triumphs, which the Romans were accustomed to decree to conquerors. First were paraded the Indians, painted according to their savage fashion, and decorated with tropical feathers, and with their national ornaments of gold; after these were borne various kinds of live parrots, together with stuffed birds and animals of unknown species, and rare plants, supposed to be of precious qualities: while great care was taken to make a conspicuous display of Indian coronets, bracelets, and other decorations of gold, which might give an idea of the wealth of the newly-discovered regions. After these followed Columbus, on horseback, surrounded by a brilliant cavalcade of Spanish chivalry.

The streets were almost impassable from the countless multitude; the windows and balconies were crowded with the fair; the very roofs were covered with spectators. It seemed, as if the public eye could not be sated with gazing on these trophies of an unknown world, or on the remarkable man by whom it had been discovered. There was a sublimity in this event, that mingled a solemn feeling with the public joy. It was looked upon as a vast and signal dispensation of Providence, in reward for the piety of the monarchs; and the majestic and venerable appearance of the discoverer, so different from the youth and buoyancy

that are generally expected from roving enterprise, seemed in harmony with the grandeur and dignity of his achievement.

To receive him with suitable pomp and distinction, the sovereigns had ordered their throne to be placed in public, under a rich canopy of brocade of gold, in a vast and splendid saloon. Here the king and queen awaited his arrival, seated in state with the prince Juan beside them, and attended by the dignitaries of their court, and the principal nobility of Castile, Valentia, Catalonia, and Arragon, all impatient to behold the man, who had conferred so incalculable a benefit upon the nation.

At length Columbus entered the hall, surrounded by a brilliant crowd of cavaliers, among whom, says Las Casas, he was conspicuous for his stately and commanding person, which, with his countenance rendered venerable by his gray hairs, gave him the august appearance of a senator of Rome. A modest smile lighted up his features, showing that he enjoyed the state and glory in which he came; and certainly nothing could be more deeply moving, to a mind inflamed by noble ambition, and conscious of having greatly deserved, than were these testimonials of the admiration and gratitude of a nation, or rather of a world.

As Columbus approached, the sovereigns rose, as if receiving a person of the highest rank. Bending his knees, he requested to kiss their hands; but there was some hesitation on the part of their majesties to permit this act of vassalage. Raising him in the most gracious manner, they ordered him to seat himself in their presence; a rare honour in this proud and punctilious court.

At the request of their majesties, Columbus now gave an account of the most striking events of his voyage, and a description of the islands which he had discovered. He displayed the specimens he had brought of unknown birds and animals, of rare plants, of medicinal and aromatic virtue, of native gold, in dust, in crude masses, or laboured into barbaric ornaments, and, above all, the natives of these countries, who were objects of intense and inexhaustible interest, since there is nothing to man so curious as the varieties of his own species. All these he pronounced mere

harbingers of greater discoveries he had yet to make, which would add realms of incalculable wealth to the dominions of their majesties, and whole nations of proselytes to the true faith.

The words of Columbus were listened to with profound emotion by the sovereigns. When he had finished, they sunk on their knees, and raising their clasped hands to heaven, their eyes filled with tears of joy and gratitude, they poured forth thanks and praise to God for so great a providence; all present followed their example; a deep and solemn enthusiasm pervaded that splendid assembly, and prevented all common acclamations of triumph.

The anthem of *Te Deum laudamus*, chanted by the choir of the royal chapel, with the melodious accompaniments of the instruments, rose up from the midst, in a full body of sacred harmony, bearing up, as it were, the feelings and thoughts of the auditors to heaven, 'so that,' says the venerable Las Casas, 'it seemed as if in that hour they communicated with celestial delights.' Such was the solemn and pious manner in which the brilliant court of Spain, celebrated this sublime event: offering up a grateful tribute of melody and praise; and giving glory to God for the discovery of another world.

When Columbus retired from the royal presence, he was attended to his residence by all the court, and followed by the shouting populace. For many days he was the object of universal curiosity, and wherever he appeared, he was surrounded by an admiring multitude.

LESSON V.

VOYAGE OF JACQUES CARTIER.

The conduct of the Pope, in granting to Spain the possession of the whole continent of America, roused Francis I to a determination to claim his equal right to a share of the new world. He facetiously remarked, that "he would fain see the article in father Adam's will, which bequeathed

this vast inheritance to the Spaniard." He soon after dispatched an expedition under Jacques Cartier, which sailed on the 20th of April, 1534, but proceeded no further than Gaspé.

In the following year, Cartier obtained a new commission, and sailed with three vessels. It was on this second voyage, that he entered the great river of Canada, which he named the St. Lawrence, because he began to explore it on the festival of that martyr. He proceeded up the river as far as the Isle of Orleans, which he named the Isle of Bacchus, on account of its fertility, and the fine vines he found there.

Soon after his arrival, he was visited by Donnacona, "the Lord of Canada," who lived at Stadacona. Donnacona came in 12 canoes, but commanding them to remain at a little distance, he approached the vessels, and commenced an oration. After conversing with the two interpreters, who told him of their visit to France, and the kindness with which they had been treated, he took the arm of Cartier, kissed it, and placed it upon his neck. Cartier immediately went into his canoe, and presented to him and his attendants bread and wine, and after some time, Donnacona departed in the same manner in which he came. Cartier then moored his vessels safely in the river St. Charles, which he named "Port de St. Croix" or the Port of the Holy Cross. Here he received another visit from the chief, attended by 500 warriors, who came to welcome the strangers. The two natives, who had accompanied him to France, acted on all these occasions as interpreters, and opened a friendly communication with their countrymen. They told them that they were Tiagnoany and Donagaia, words supposed to mean, "those who had been taken away from their own land by the strangers, and had returned again." After this many canoes, laden with men and women, came to visit them, rejoicing and dancing round them, and bringing them presents of eels and other fish, with mullet, and great musk melons.

Having heard that there existed, far up the river, a large settlement called Hochelaga, he determined to advance in quest of it. Previous to his setting out, at the request of

his two interpreters, he caused his men to shoot off 12 cannons, charged with bullets, into the wood near them. "At whose noise" says Hakluyt, an old historian, "they were greatly astonished and amazed, for they thought that heaven had fallen upon them, and put themselves to flight, howling, crying and shrieking." Leaving his vessels, he proceeded in two boats and the pinnace, as far as Lake St. Peter, where, on account of the shallowness of the water he was obliged to leave the pinnace and proceed in the boats. Here they met with five hunters, "who," says Cartier, "freely and familiarly came to our boats without any fear, as if we had even been brought up together." Everywhere he seems to have been received with kindness, for the chief of the district of Hochelai, now the Richelieu, paid him a visit, and presented him with one of his own children about seven years of age, whom he afterwards visited, while Cartier was wintering at St. Croix.

Delighted with his journey, Cartier proceeded, and soon came to Hochelaga, which he found to be a fortified town, on a beautiful island, under the shade of a mountain. On his landing he was met by more than 1000 of the natives, who received him with every demonstration of joy and hospitality. He was delighted with the view from the mountain, which he named Mont Royal—time has changed it to Montreal. He seems to have considered the village below as a favourable site for a French settlement, but he did not live to see his idea realized.

The way to the village of Hochelaga, at that time, passed through large fields of Indian corn. Its outline was circular, and it was encompassed by three separate rows of palisades, well secured, and put together; only a single entrance was left in this rude fortification, but this was guarded by pikes and stakes. The cabins, or lodges of the inhabitants, about 50 in number, were constructed in the form of a tunnel, each 50 feet in length, by 15 in breadth. They were formed of wood, covered with bark. Above the doors of these houses, ran a gallery—each house contained several chambers, and the whole was so arranged, as to enclose an open court-yard, where the fire was made.

The inhabitants were of the Huron tribe, and seem to

have regarded Cartier as a being of a superior order, as they brought to him all their sick, decrepit and aged persons, with an evident expectation that he would heal them. Touched by this display of confiding simplicity, he did all he could to soothe their minds. The French historians relate that he made the sign of the Cross upon the sick, distributed *Agni Dei* amongst them—recited, with a loud voice, the sufferings and death of our Saviour—and prayed fervently with these poor idolaters. How they could understand these well-meant and pious proceedings, we are quite at a loss to know, but we can easily believe that "the grand flourish of trumpets," which terminated the ceremony, "delighted the natives beyond measure." On his return to his boats, he was accompanied by a great number of the inhabitants, to the landing place below St. Mary's current. They even carried on their shoulders some of his men, who were fatigued. They appeared to be grieved at the shortness of their stay, and followed their course along the banks of the river, with signs of kindly farewell.

The scenery on both sides of the St. Lawrence seems to have delighted Cartier and his companions, who were several of them gentlemen volunteers, more fit to sketch a beautiful scene, than to endure the hardships of settling a new country. It is said, that an Indian woman named Unacona, wife of one of the natives, who had been taken to France, excited her tribe to follow the boats along the shore on their return, and on the landing of the party for the night, they were cruelly attacked, and Cartier was nearly murdered. He was saved by the intrepidity of his boatswain, an Englishman, who, finding that the Indians were becoming intoxicated with the wine procured from the boats, became alarmed for Cartier's safety. He stole quietly round behind where Cartier lay, and carrying him off to one of the boats, launched out into the St. Lawrence. The gallant fellow pulled stoutly through the stream, and just at the dawn of morning, had the satisfaction to find himself close upon the place where the ships lay. When the Indians made their attack, the party attending Cartier escaped by running to one of the boats, and on getting on board, he was much surprised to find that they had not

returned. He immediately gave orders for a party to go in search of them, which fell in with them about four miles up the river. It appeared that, fearful of being capsized by floating trees and rapids, they had dropped the kedge at a secure distance from the shore, and remained quietly till the day broke.

On his return to St. Croix, Cartier was again visited by Donnacona, and returned his visit. He found the people docile and tractable, and their houses well stored with every thing necessary for the approaching season. Cartier and his company, unaccustomed to a Canadian winter, and scantily supplied with proper clothing, suffered so much that 25 of their number died from scurvy. Being advised to use a decoction of the spruce fir, which yields the well known Canada balsam, and is a powerful remedy for that disease, the rest of the party soon recovered their health, and, in the ensuing spring, returned to France. They obliged the Lord of Canada, with two of his chiefs and eight of the natives, to accompany them, an act of treachery which justly destroyed the confidence which the Indians had hitherto reposed in their guests.

LESSON VI.

EXPEDITIONS OF CHAMPLAIN.

RETURN OF CHAMPLAIN TO CANADA 1608.

The command of some vessels was given to Champlain, who sailed in the month of April, and arrived at Tadousac in June. Pontgravé, who had accompanied him, remained at Tadousac, which had been hitherto the chief seat for the traffic in furs, but Champlain proceeded up the river as far as the Isle of Orleans. He examined the shores carefully, and soon fixed on a promontory, richly clothed with vines, and called by the natives Quebio or Quebec, near the place where Cartier passed the winter and erected a fort in 1541. Here on the 3rd of July, 1608, he laid the foundation of the present City of Quebec. His judgment has never been

called in question, or his taste disputed in this selection. He first erected buildings on the high grounds, and afterwards a space was elevated or embanked above the inundation of the tide, on which store houses and a battery were built, on the site of the present Mountain Street. The only settlement at this period established in the new world, besides, was one by the English, at Jamestown in Virginia, which was founded in 1607.

As soon as the weather permitted, Champlain resumed his voyage up the river for the purpose of exploring the country of which he had taken possession. On his way he met with a band of Indians belonging to the Algonquin nation, who solicited and obtained his aid against the powerful Iroquois, or Five Nations, with whom they were at war. He accompanied the Indians up the river now called the Richelieu, which rises in the country then belonging to the Iroquois, and was greatly delighted by its picturesque scenery.

They had reached its southern extremity, and entered the extensive and beautiful lake, now called after this celebrated man, and then passed into another connected with it, now called Lake George, before the hostile tribes came in sight of each other. The allies of the French gained the victory, and Champlain returned to Quebec. Here he received the unpleasant news that De Monts' commission had been finally revoked. This took place chiefly through the influence of the merchants, who made loud and just complaints of the injury sustained in the fur trade, by its being confined to a single individual. This induced Champlain to return home again. He was well received by Henry, who invited him to an interview at Fontainebleau, and received from him an exact account of all that had been done for New France.

We find him, with a considerable reinforcement, and fresh supplies, landing at Quebec in 1610, having made an arrangement with the merchants of the different French posts, to use the buildings he had erected at Quebec as a depôt for their goods and furs. Here he received another application from the Indians for assistance, which he promised. Happily, however, nothing of importance took

place. In a few months after, he set sail again to France, taking with him, at the request of his allies, a native youth.

In 1611, Champlain again returned to Canada, accompanied by his young savage. Not finding the Indians at Quebec, he employed himself in choosing a spot, higher up the river, for a new settlement. He fixed upon the ground in the vicinity of the eminence, which had been named Mont Royal by Cartier, and his choice has been amply justified by the importance to which Montreal has since arisen.

He soon after returned to France, where he was so fortunate as to gain the assistance of the Count de Soissons, who obtained the title of Lieutenant General of New France. He delegated to Champlain all the duties of that high office, and soon after died. A still more influential friend was, however, found in the Prince of Condé, who succeeded to all the privileges of the deceased, and made them over to Champlain in a manner equally ample.

His commission, including a monopoly of the fur trade, excited loud complaints, but he removed the chief objection to it by allowing as many of the merchants as would accompany him to embark in the traffic. There came accordingly three from Normandy, one from Rochelle, and one from St. Malo. These were allowed free trade, burdened only with the condition of contributing six men each to assist Champlain in his projects of discovery, and a twentieth part of their profits towards the expenses of the settlement. This expedition arrived at Quebec in May, 1613.

It must be borne in mind that one of the great objects of adventure in that age was the finding of a north-west passage to China and India; and it was probably for the purpose of prosecuting this discovery that the six men were demanded. So fully convinced was Champlain at the time he made his settlement at Hochelaga, that China was to be reached in this manner, that he named the river above the rapids Lachine, meaning to point out that it was the way to China—a name it retains to this day.

On his return to France in 1614, Champlain found affairs still favourable to the new colony. The Prince of Condé, being powerful at court, no difficulty was found in organizing an expedition from Rouen and St. Malo. This was accompanied by four fathers of the Recollet order, whose benevolence led them to attempt the conversion of the Indians. These were the first priests that settled in Canada.

Champlain, with his new company, arrived at Tadousac in May, 1615, whence he immediately went up to Quebec, and thence to the usual place of rendezvous near the Sault St. Louis. Here he found his old allies, the Algonquins, full of projects of war against the Iroquois, who lived in that part of the country, now called the State of New York. He accompanied them on a very long and interesting voyage up the Ottawa, the river of the Algonquins, and then, by carrying the canoes overland, proceeded with them to Lake Nepissing, Lake Huron, and the Georgian Bay. A Frenchman, who had spent a winter among the Indians, spread a report that the river of the Algonquins issued from a lake which was connected with the North Sea. He said that he had visited its shores, and witnessed the wreck of an English vessel, and that the crew, eighty in number, had all been killed, except a boy. As everything connected with the idea of a sea beyond Canada inspired the greatest hope of finding the north-west passage, and Champlain anxiously desired to accomplish this enterprise, he was induced, by this account, to ascend the Ottawa. After much trouble and research, he found the whole to be a fabrication. It is supposed that the man made this statement in the hope of deriving eclât from his discovery, and of raising himself into a conspicuous situation.

The account of this journey to the great and unknown lakes of the West is extremely interesting. On the arrival of the party at Lake Nipissing, they were kindly received by the tribe of that name, 7000 or 8000 in number. After remaining there two days, they set out and made their way, by land and water, to the great Lake Attigouantan, evidently the northern part of Lake Huron, which is almost separated into a distinct body of water by the chain of

islands, now called the Manitoulin. After coasting along for a considerable distance, they turned the point which forms its extremity, and struck into the interior. This country they found to be much superior to that they had passed, being well cultivated, and abounding in Indian corn and fruits. At the appointed rendezvous of their friends, which was probably somewhere about Green Bay, they found a joyful welcome, and several days were spent in dancing and festivity.

On their return, after quitting Lake Huron, they came to a smaller expanse of water, finely diversified by islands, which appears to have been the Georgian Lake or Bay, and on its banks they discerned a fort belonging to the Iroquois, which was the object the Indians had come to attack. After a very unfortunate skirmish, they resolved to abandon the enterprise altogether, and return home. This, however, could not easily be accomplished, and Champlain had to remain in the country the whole winter, having no other employment or amusement than that of accompanying the Indians in their hunting and fishing excursions. Indeed it was not until the month of June, that he found himself again at the Sault St. Louis. Having remained here but a short time, he repaired to Tadousac, whence he sailed for Honfleur, in September, 1616.

While we cannot sufficiently admire the activity and energy displayed by Champlain in his researches in Canada, we must own that he committed a fatal error in joining the Hurons and Algonquins, in their wars against the Iroquois, and in teaching them the use of fire arms. This art was afterwards turned to the most terrible account, for more than a century, against the European settlements.

On the first settlement of the French in Canada, three great nations divided the territory,—the Algonquins, the Hurons, and the Iroquois, or Five Nations. The dominion of the Algonquins extended along the banks of the St. Lawrence, about a hundred leagues, and they were once considered as masters of this part of America. They are said to have had a milder aspect, and more polished manners than any other tribe. They subsisted entirely by hunting, and looked with disdain on their neighbours

who condescended to cultivate the ground. A small remnant of this race is still to be found at the Lake of the Two Mountains, and in the neighbourhood of Three Rivers.

The Hurons, or Wyandots, were a numerous people, whose very extensive territory reached from the Algonquin frontier to the borders of the great lake bearing their name. They were more industrious, and derived an abundant subsistence from the fine country they possessed, but they were more effeminate, and had less of the proud independence of savage life. When first known, they were engaged in a deadly war with their kindred, the Five Nations, by whom they were finally driven from their country. A remnant of this tribe is still to be found in La Jeune Lorette, near Quebec.

The Iroquois, or Five Nations, destined to act the most conspicuous part among all the native tribes, occupied a long range of territory on the southern border of the St. Lawrence, extending from Lake Champlain to the western extremity of Lake Ontario. They were thus beyond the limits of what is now termed Canada, but were so connected with the interests of this country, that we must consider them as belonging to it. The Five Nations, found on the southern shore of Lake Ontario, embraced the Mohawks, Oneidas, Onondagas, Senecas and Cayugas. They were the most powerful of all the tribes east of the Mississippi, and were farther advanced in the few arts of Indian life than their Algonquin neighbours. They uniformly adhered to the British, during the whole of the contest that took place subsequently between the French and English. In 1714, they were joined by the Tuscororas, since which time the confederacy has been called the Six Nations. Remnants of the once powerful Iroquois are still found in Canada East, at Sault St. Louis or Caughnawaga, the usual rendezvous of Champlain, at St. Regis, and at the Lake of the Two Mountains, whilst a considerable body of the same people, under the title of 'The Six Nations Indians,' are settled at Tyendenaga, on the Bay of Quinté, and on the Grand River, in Canada West.

LESSON VII.

EXPEDITIONS OF CHAMPLAIN—CONTINUED.

After the return of Champlain to France in 1616, the interests of the colony were in great danger from the Prince of Condé, Viceroy of Canada, being not only in disgrace, but in confinement, for the share taken by him in the disturbances during the minority of Louis XIII. After a great deal of quarrelling amongst the merchants, the Duc de Montmorency made an arrangement with Condé, for the purchase of his office of Viceroy, which he obtained upon the payment of 11,000 crowns. Champlain considered this arrangement as every way favourable, as the Duc was better qualified for such functions, and from his situation of High Admiral, possessed the best means of forwarding the objects of the colonists.

Disputes between Rochelle and the other commercial cities, and between the Catholics and Protestants, prevented the departure of any expedition for several years. During this time, attempts were made to degrade Champlain from the high situation in which he had been placed, but by virtue of commissions both from Montmorency and the King, he succeeded in crushing this opposition; and in May, 1620, set sail with his family and a new expedition, and, after a very tedious voyage, arrived at Tadousac. The first child born of French parents at Quebec, was the son of Abraham Martin and Margaret L'Anglois; it was christened "Eustache," on the 24th of May, 1621.

The office of Viceroy had been hitherto little more than a name, but, at this period, it came into the hands of a man of energy and activity. The Duc de Ventadour, having entered into holy orders, took charge as Viceroy of the affairs of New France, solely with a view of converting the natives. For this purpose, he sent 3 Jesuits and 2 lay brothers, who were fortunately men of exemplary character, to join the 4 Recollets at Quebec. These 9, we have reason to believe, were the only priests then in Canada.

The mercantile company, which had now been entrusted with the affairs of the colony for some time, was by no

means active, and was in consequence deprived of its charter, which was given to the Sieurs De Caen, uncle and nephew. On the arrival of the younger De Caen at Tadousac, Champlain set out to meet him, and was received with the greatest courtesy. The appointment of a superintendent could not have been very agreeable to Champlain, who was certainly the person best fitted for the management of the local affairs of the colony. His amiable disposition and love of peace, however, induced him to use conciliatory measures. The new superintendent, on the contrary, acted in the most violent manner, claimed the right of seizing on the vessels belonging to the associated merchants, and actually took that of De Pont, their favourite agent. Champlain remonstrated with him, but without effect, as he possessed no power which could effectually check the violence of this new dictator. Fortunately, he thought proper to return to France, and left with the settlers a good supply of provisions, arms, and ammunition. His conduct, however, induced the greater part of the European traders to leave the colony; so that eventually, instead of its being increased by him, it was considerably lessened, a spirit of discontent diffused, and the settlers were reduced to 48.

Having got rid of this troublesome superintendent, Champlain set himself earnestly to terminate the long and desolating war, which now raged between the Hurons and the Iroquois. He accompanied some of the chiefs to the head quarters of the Iroquois, where they met with a very kind reception. The treaty between the nations was about to be concluded, when it was nearly broken off by the relentless conduct of a savage Huron, who had accompanied the party, in the hope of making mischief and preventing peace. This barbarian, meeting one of the detested Iroquois in a lonely place, murdered him. Such a deed in a member of any civilized mission, would have terminated all negociations; but the deputies having satisfied the Iroquois, that it was an individual act, lamented by the Huron nation, it was overlooked, and the treaty was concluded.

The colony was at this time in a very unsatisfactory state, the settlement at Quebec consisting only of 55

persons. Indeed the whole of the available possessions in New France included only the fort at Quebec, surrounded by some inconsiderable houses—a few huts on the island of Montreal,—as many at Tadousac, and at other places on the St. Lawrence,—and a settlement just commenced at Three Rivers.

The Indian affairs were also in disorder. The Iroquois had killed a party of 5, on their way to attack a nation called the Wolves, and a hostile spirit was kindled amongst these fierce tribes. Champlain did all in his power to check this spirit, but he found it impossible to prevent a body of hot headed young Indians from making an inroad into the Iroquois territory.

This band having reached Lake Champlain, surprised a canoe with 3 persons in it, 2 of whom they brought home in triumph. The preparations for torturing them were already going on, when intelligence was conveyed to Champlain, who immediately repaired to the spot. The sight of the captives quickened his ardour in the cause of humanity, and he entreated that they might be sent home unhurt, with presents to compensate for this wanton attack.

This advice was so far adopted, that one of them was sent back, accompanied by a chief, and one Mangan, a Frenchman. This expedition had, however, a most tragical end. An Algonquin, who wished for war, contrived to persuade the Iroquois that the mission was devised with the most treacherous intentions. The Iroquois, misled by this wicked man, determined to take cool and deliberate revenge. When the poor prisoner, the chief, and the Frenchman arrived, they found the fire kindled, and the cauldron boiling, and being courteously received, were invited to sit down. The Iroquois then asked the Algonquin chief, if he did not feel hungry?—on his replying that he did, they rushed upon him, and cut slices from different parts of his body, which soon after they presented to him half cooked, and thus continued to torture him, till he died in lingering agonies. Their countryman, who had returned to them so gladly, attempted to escape, and was shot dead on the spot; and the Frenchman was tormented to death in the usual manner.

When the news of this dreadful tragedy reached the allies of the French, the war cry was immediately sounded, and Champlain, though deeply afflicted, saw no longer any possibility of averting hostilities. He felt that, as one of his countrymen had been deprived of life, the power of the French would be held in contempt if no resentment were shown. Indeed, he experienced no little trouble amongst the friendly tribes who surrounded him, and in several cases Europeans were murdered in an atrocious and mysterious manner.

In the meantime, the De Caens, though not resident in the colony, took an active interest in the trade. Being Huguenots, however, and not likely to forward the Duc's measures, Cardinal Richelieu, prime minister to Louis XIII, revoked the privileges which had been granted to them and encouraged the formation of a company, to be composed of a great number of men of property and credit. A charter was granted to this company in 1627, under the title of "The Company of One Hundred Associates."

This company engaged—first, to supply all those that they settled, with lodging, food, clothing, and implements for 3 years—after which time they would allow them sufficient land to support themselves, cleared to a certain extent, with the grain necessary for sowing it; secondly, that the emigrants should be native Frenchmen and Roman Catholics, and that no stranger should be introduced into the country; and thirdly, they engaged to settle 3 priests in each settlement, whom they were bound to provide with every article necessary for their personal comfort; as well as the expenses of their ministerial labours for 15 years. After which, cleared lands were to be granted by the company to the clergy, for maintaining the Roman Catholic Church in New France.

In return for these services, the king made over to the company the fort and settlement at Quebec—and all the territory of New France, including Florida—with power to appoint judges, build fortresses, cast cannon, confer titles, and take what steps they might think proper for the protection of the colony, and the fostering of commerce. He granted to them, at the same time, a complete monopoly

of the fur trade, reserving, to himself and heirs, only supremacy in matters of faith, fealty, and homage as sovereign of New France, and the presentation of a crown of gold at every new accession to the throne. He also secured for the benefit of all his subjects, the cod and whale fisheries, in the gulf and coasts of the St. Lawrence.

The company were allowed to import and export all kinds of merchandize, duty free. Gentlemen, both clergymen and laity, were invited to a share in the concern, which they readily accepted till the number of partners was completed. This was a favourite scheme of Richelieu's; and the French writers of the day speak of it with great applause, as calculated, had it been strictly adhered to, and wisely regulated, to render New France the most powerful colony of America.

This plan of improvement met with a temporary interruption, by the breaking out of a war between England and France in 1628. Charles I of England immediately gave to Sir David Kirkt, a French refugee, a commission authorising him to conquer Canada. In consequence of this, after some offensive operations at Tadousac, he appeared with his squadron before Quebec, and summoned it to surrender; but he was answered in so spirited a manner, that he judged it prudent to retire.

In 1629, however, when Champlain was reduced to the utmost extremity by the want of every article of food, clothing, implements and ammunition, and exposed to the attacks of the Iroquois, Sir David Kirkt, and his brothers Louis and Thomas, appeared again with an English squadron before Quebec. The deplorable situation of the colony, and the very honourable terms proposed to him by Kirkt, induced Champlain to surrender Quebec with all Canada to the crown of England. The English standard was thus, for the first time, raised on the walls of Quebec, just 135 years before the battle of the Plains of Abraham.

No blame can be attached to Champlain for this act, as famine pressed so closely on the colonists, that they were reduced to an allowance of 5 ozs. of bread per day for each person. Kirkt's generosity to the settlers, who were his own countrymen, induced most of them to remain. Those

who wished to go, were allowed to depart with their arms, clothes, and baggage, and though the request to convey them home to France could not be complied with, they were provided with a commodious passage by the way of England.

Champlain, with two little native girls, whom he had carefully educated, arrived at Dover, in England, on the 27th of October. He proceeded thence to London, for the purpose of conferring with the French ambassador. He soon afterwards returned to France, where his counsels prevailing at the court of Louis XIII, he was, upon the return of peace, again invested with the government of Canada.

LESSON VIII.

QUEBEC.

EARTH has no scene, however bright and fair,
Tho' golden floods and beauteous skies are there,
Unhallow'd by the magic of the past,
With power its image in the heart to cast.
The sweetest flowers their crimson leaves may throw,
Unblest, unnoted, to the radiant glow
Of eastern suns; the purest stream may glide,
Bright foliage twining o'er its silver tide,
Through vales of perfume, circling isles of light,
Unlov'd, unhonour'd, if no spell be cast
Upon those flowers, that stream, by love or glory;
But bring the rich memorials of the past,
The hallow'd legacy of ancient story,
And all is fair, and beautiful, and bright.

QUEBEC, thy name with magic power can start
The peace-bound pulses of the warrior's heart!
Above thy rocks a burning halo plays,
To light the record of departed days,
And throws its rays o'er height, and rock, and flood,
To mark the Hero's triumph, or his blood.

Long o'er conflicting Europe, Fame had thrown
His eagle-pinions, but no field, no flood
Appear'd, which ne'er had heard the soldier's groan,
Or drank the warm stream of his gushing blood:—
To trans-atlantic realms he bent his flight,
Where glory ne'er had shed one beam of light.
And hovering o'er QUEBÉIS, settled there,
Rob'd in the bright hues of the morning air,
High on the Cape he stood, and cast his eye
O'er the deep forest and unclouded sky:—
Proudly beneath him roll'd a sun-lit tide,
And o'er it, fairy skiffs were seen to glide,
Guided by dusky figures on their way,
With seeming effort of a fairy's play.
And, through the western vale which lay below,
The same dark, visionary forms would go,
Like the wing'd lightning in its brief career,
Chasing, along the streams, the flying deer;
Now seen a moment, and now lost again,
In the deep foilage of the spreading plain.
"This spot be mine," he said; "here death shall lay
"My noblest children of a future day;
"And here shall glory weave his brightest wreath
"Of laurel, for their youthful brows in death."
Then, from the crystal rocks around, there came
Redoubled sparklings and a brighter flame;
While on the cloud o'er Montmorency's height
The sun was seen to play in forms of light,
And gold and crimson flashes play'd around
The vapoury foldings of that misty mound.

Soon from these scenes the children of the wood
Retir'd, as came the Pale-face o'er the flood.
Those Christian plunderers of a simple train,
Who came to cleanse them from all earthly stain,
Gave the insidious draught, whose madd'ning sway
Stole both their senses and their lands away;
And then, to quell their indignation, gave
A little part of what was theirs—a grave!

Long years of savage conflict then came on—
All bloodshed and confusion.—They are gone;
But still imagination hears the cry
Of the wild Red-man, sprung from ambush nigh;
Sees the fierce gleaming of his eye, whose light
Burns like the meteor through the shades of night,
As tomahawk and unsheath'd scalping-knife
Kindle the horrors of nocturnal strife.

Past are these scenes; and passing too, are they
Who o'er this western world once held the sway.
Where now is gone the towering, martial form,
Which heard as naught the conflict's gathering storm;
The bounding step; the arm, whose sinewy strength
Drew the long arrow to its utmost length;
The eye of fire, which guided on its way
That death-stain'd arrow to its distant prey?

Far in the western wild the Red-man still
Securely wanders by his native rill;
But when the Pale-face beckons him away
From his last home, where shall the wanderer stray?
Sons of the injur'd! o'er the western main
Thy sun descends, and ne'er shall rise again!

Away, inglorious themes; and let us turn
To where the vestal lights of glory burn!
And tho', O WOLFE! the poet's votive wreath
Can add no light to thy triumphant death;
Yet, as the mountain's brow, at setting sun,
Shines with a flood of glory not its own,
So may thy cherish'd name a hallow fling
Upon the poet's humble offering.
Thrice happy thou, in life's fair morn to be
Wedded in death, to fame eternally.
Thy course was like the sun's, all light and flowers,
Shining thro' dazzling clouds and wreathéd bowers;
Thy death his setting, where all beauteous things
Hover around, on gold and crimson wings.

On Abram's Plains the storm of battle grew,
As night his shadowy mantle round him drew,
And fled, affrighted at the wild uproar,
On towering height, and from each forest hoar;
As if a thousand fiends were in the air,
Spreading wild screams and wreaths sulphureous there.
There was the grappling of the fatal steel;
The quick discharge of musket, peal on peal;
The enlivening trumpet, and the shriek of death;
The savage war-whoop, and the panting breath
Of hard press'd valour.—Here the veteran lay,
On his last field; his locks of reverend grey
Dyed with the noble blood which ne'er again
Shall burn at hearing sound of martial strain:—
His country still his mistress, for whose weal,
He brav'd the death-wing'd ball, or shining steel.
There lay the youthful soldier's graceful form,
Like some fair flower o'er which has pass'd the storm.
Gone is the burning cheek, the eagle eye,
Nor starts he tho' the foeman's shout be nigh;
Gone, too, his dreams of her, who turn'd away,
And sicken'd at his plumes and bright array;
Who, on that day, her first, her last kiss gave,
And said: "Be faithful still—and, O, be brave!"

There is not, in this world of light and shade,
A sight more glorious than the warrior laid
Upon the battle-ground:—No vain parade—
No mocking pageant of funereal rite;
No feignéd moans, no hard-wrung tears are here;
His pall the shining heavens and sun-beams bright,
With the soft verdure of the field his bier.

And many a form of beauty press'd those Plains,
As roll'd the sable cloud of war away;
The evening sun look'd forth on dust and stains,
Where shone at morn that gallant, bright array.
The star of even look'd on Britain's glory,
And saw a new wreath laid upon its shrine;
A bright page added to its former story;
A new-born star o'er Fame's fair temple shine;

And long that star a beacon light shall wave,
To guide the young, the noble, and the brave!

And thou, MONTCALM, tho' vanquish'd, thou didst bear
The warrior's spirit in that youthful frame;
With WOLFE shalt thou the wreath of glory share!
With his be register'd the foeman's name!
And thy fair frame, when hastening to decay,
Told that its spirit had not pass'd away:
High words of martial glory from thee came,
Like the last gleaming of the dying flame.

Years roll'd along, and war's tumultuous roar
Was heard along these rugged heights once more.
Once more a noble victim gave his breath,
And met, beneath these walls, a soldier's death.
MONTGOMERY, thy radiant name shall soar,
A fair companion for those gone before.
E'en they who sent the hasty summons forth,
Knew well, and mourn'd the generous foeman's worth,
Thus early blighted, which more brightly shone,
As all things valued, when forever gone:—
Like that bright bird, which, as its wings aspire,
Shines in the sun a wreath of lambent fire.*

On the proud front of Fame's fair temple shines
A hallow'd circle, trac'd with golden lines;
Within those lines, in lightning stamp'd, we see
Three bright names:—"WOLFE, MONTCALM, MONTGOMERY."
A diamond lustre round that circle plays,
And lights the pencil'd deeds of former days!
Fair flowers, with laurel wreath'd, around are flung,
And on a thousand golden banners hung;
While everlasting day shines doubly bright
Upon those dearly cherish'd names of light.

*The Virginian Nightingale.

LESSON IX.

TAKING OF QUEBEC BY GENERAL WOLFE.

The campaign of 1759 was opened with a plan of combined operations by sea and land. Canada was to be invaded at three different points, by generals of high talent. The commander-in-chief, General Amherst, undertook the reduction of the forts at Crown Point and Ticonderoga. He was to cross Lake Champlain, and proceeding along the Richelieu, was to reach the St. Lawrence, and join the other army before Quebec. The force destined to proceed by sea to Quebec, was under the command of the heroic General Wolfe. General Prideaux, with another army, and a large body of friendly Indians, under Sir William Johnson, was appointed to reduce the fort at Niagara.

Wolfe's army, amounting to about 8000 men, was conveyed to the vicinity of Quebec by a fleet of vessels of war and transports, and landed in two divisions on the island of Orleans, on the 27th of June. The Marquis de Montcalm made vigorous preparations for defending Quebec. His armed force consisted of about 13,000 men, of whom six battalions were regulars, and the remainder well disciplined Canadian militia, with some cavalry and Indians. He ranged these forces from the river St. Charles to the Falls of Montmorency, with the view of opposing the landing of the British.

Wolfe first attempted the entrenchment of Montmorency, landing his troops under cover of the fire from the ships of war, but he was gallantly repulsed by the French. In consequence of this repulse, he sent dispatches to England, stating, that he had doubts of being able to reduce Quebec during that campaign. His prospects indeed were not encouraging,—the great stronghold kept up an incessant fire from its almost inaccessible position, bristling with guns, defended by a superior force, and inhabited by a hostile population. Above the city, steep banks rendered landing almost impossible; below, the country for 8 miles was embarrassed by two rivers, many redoubts, and watchful In-

dians. A part of the fleet lay above the town, the remainder in the north channel, between the Island of Orleans and Montmorency.

Soon after this repulse, however, Wolfe roused his brave and vigorous spirit, called a council of war, and proposed, it is generally said at the instigation of his second in command, General Townsend, to gain the Heights of Abraham behind and above the City, commanding the weakest part of the fortress. The council acceded to this daring proposal; and their heroic commander commenced his preparations, in the meanwhile making such active demonstrations against Montcalm's position, that the French still believed it to be his main object.

On the 11th of September, the greater part of the troops landed, and marched up to the south shore opposite Quebec, —forded the river Etchemin—and embarked on board the men of war and transports which lay above the town. On the 12th, the ships of war sailed nine miles up the river, to Cap Rouge. This feint deceived Montcalm, and he detached de Bougainville, who with his army of reserve, proceeded still farther up the river to prevent the English from landing. During the night, the English troops dropped silently down the river, with the current, in boats, and at four o'clock in the morning began to land.

It is surprising how the troops contrived to land, as the French had posted sentries along the shore, to challenge boats and give the alarm. The first boat was questioned, when Captain Donald M'Donald, one of Frazer's Highlanders, who was perfectly well acquainted with the French language and customs, answered to "*Qui vive?*" which is their challenge, the word "*La France*"—when the sentinel demanded "*A quel regiment?*" the captain replied, "*De la Reine,*" which he knew by accident to be one of those commanded by de Bougainville. The soldier took it for granted that it was an expected convoy, and saying "*Passe,*" the boats proceeded without further question. One of the sentries more wary than the rest, running down to the water's edge called out, "*Pourquoi est ce que vous ne parlez pas plus haut?*" to which the captain answered in a soft tone of voice "*Tais-toi, nous serons entendus.*" Thus

cautioned, the sentry retired, and the boats proceeded without further altercation, and landed at the spot now celebrated as "Wolfe's Cove."

General Wolfe was one of the first on shore, and on seeing the difficulty of ascending the precipice, observed familiarly to Captain M'Donald, "I don't believe there is any possibility of getting up, but you must do your endeavour." Indeed the precipice here was so steep, that there seemed no possibility of scaling it, but the Highlanders, grasping the bushes which grew on its face, ascended the woody precipice with courage and dexterity. They dislodged a small body of troops that defended a narrow pathway up the bank; and a few more mounting, the General drew up the rest in order as they arrived. With great exertion they reached the summit, and in a short time, Wolfe had his whole army drawn up in regular order on the plains above.

Montcalm struck with this unexpected movement, concluded that unless Wolfe could be driven from this position Quebec was lost. Hoping probably that only a detachment had as yet reached it, he lost his usual prudence and forbearance, and finding that his opponent had gained so much by hazarding all, he, with an infatuation for which it is difficult to account, resolved to meet the British army.

He crossed the St. Charles on the 13th, sallying forth from a strong fortress, without field artillery—without even waiting the return of de Bougainville, who with 2000 men formed a corps of observation,—before he could concentrate his forces, advanced with haste and precipitation, and commenced a most gallant attack, when within about 250 yards of the English line. The English moved forward regularly, firing steadily, until within 30 or 40 yards of the French, when they gave a general volley which did great execution. The English had only a light cannon, which the sailors had dragged up the heights with ropes. The sabre, therefore, and the bayonet decided the day. The agile Scotch Highlanders, with their stout claymores, served the purposes of cavalry, and the steady fire of the English Fusiliers compensated, in some degree, for the want of artillery.

The heroism of Montcalm was as conspicuous as that of his illustrious opponent,—both headed their men,—both rushed with eagerness where the battle raged most fiercely. Often by their personal prowess and example did they change the fortune of the moment. Both were repeatedly wounded, but still fought on with enthusiasm. And, at last, both these gallant commanders fell mortally wounded, whilst advancing to the last deadly charge at the head of their respective columns.

Wolfe was first wounded in the wrist. He immediately wrapped a handkerchief round his arm, and putting himself at the head of his grenadiers, led them on to the charge. He was then struck with a second ball, but still pressed on, when, just as the enemy were about to give way, he received a third ball in the breast and groin, and sank. When they raised him from the ground, he tried with his faint hand to clear the death-mist from his eyes. He could not see how the battle went, and was sinking to the earth, when the cry "*They run!*" "*They run!*" arrested his fleeting spirit. "*Who run?*" asked the dying hero. "*The French,*" replied his supporter, "*they give way everywhere.*" "*What!*" said he, "*do they run already? now God be praised,—I die happy;*" and so saying, the youthful victor breathed his last. Such was the death of Wolfe, at the early age of 35, when but few men begin even to appear on the theatre of great events.

There is a small monument at the place of his death, with the date, and this inscription, "Here Wolfe died victorious." He was too precious to be left even on the field of his glory;—England, jealous of his ashes, laid them with his father's in Greenwich, the town in which he was born. The news of these events reached Britain but 48 hours later than the first discouraging despatch, and spread universal joy for the great victory, and sorrow for its price. Throughout broad England were illuminations and songs of triumph; one country village was, however, silent and still—there Wolfe's widowed mother mourned her only son.

Wolfe is described as of a handsome and robust person, with fair complexion and sandy hair, possessing a counte-

nance calm, resolute, and beaming with intelligence. A very interesting and beautiful monument is erected to the memory of Wolfe in Westminster Abbey.

The chivalrous Montcalm also died nobly. When his wounds were pronounced mortal, he expressed his thankfulness that he should die before the surrender of Quebec. On being visited by the commander of the garrison, M. de Ramsay, and by the commandant de Rousselon, he entreated them to endeavour to secure the retreat of the army beyond Cap Rouge. On de Ramsay's pressing to receive his commands, he refused to interfere, and addressed himself to his religious duties, passing the rest of the night with the bishop and his confessor.

Before he died, he paid the victorious army this magnanimous compliment, "Since it has been my misfortune to be discomfited and mortally wounded, it is a great satisfaction to me to be vanquished by so brave and generous an enemy." Almost his last act was to write a letter, recommending the French prisoners to the generosity of their victors. He died at five o'clock on the morning of the 14th of September, and was buried in an excavation, made by the bursting of a shell within the precincts of the Ursuline convent.

The battle had scarcely closed before de Bougainville appeared in sight; but the fate of Canada was decided, the critical moment was gone. He retired to Pointe aux Trembles, where he encamped, and thence he retreated to Three Rivers and Montreal. Had all the French forces been concentrated under Montcalm, it is doubtful if the heroism of the British troops could have secured the victory—so great was the valour displayed. On the 17th a flag of truce came out of the city, and on the 18th a capitulation was effected on honourable terms to the French, who were not made prisoners, but conveyed home to their own country. General Murray then assumed the command.

It is universally conceded that the Highlanders contributed greatly to the success of the enterprise. The French had formed the most frightful and absurd notions of the "Sauvages d'Ecosse," as they called them. They believed that they would neither give nor take quarter; that they

were so nimble, that, as no man could catch them, so nobody could escape them; that no one had a chance against their broad swords; and that, with a ferocity natural to savages, they made no prisoners, sparing neither man, woman, nor child.

Well was Great Britain rewarded at Quebec for the wise measures she had adopted of employing the Highland clans. They were composed of some of the bravest and noblest of men. They lay under the imputation of disloyalty from having taken part with Charles Stuart in the rebellion of 1745; but gladly entered into the British service, and embraced the opportunity of proving their attachment to the more moderate and grateful house of Brunswick. The command of these forces was given to officers chosen from among the most esteemed Scottish families; a hardy and intrepid race of men was thus drawn into the army, who served the crown with fidelity, fought with valour, and conquered for England in every part of the world.

The battalion at Quebec was commanded by the Honourable Simon Fraser, son of that Lord Lovat who was beheaded for high treason. 800 of the men belonged to his own estate, and 660 were added by the gentlemen of the country around; so that the battalion, commanded by "the Master of Lovat," consisted of 1460 men. They formed a splendid body, wore the full Highland costume, winter and summer, even in this rigorous climate; their arms were the musket and broadsword, whilst many wore the dirk. In all their movements they were attended by their chaplain, the Rev. Robert Macpherson. The temperance and moderation of their behaviour soon overcame prejudice, and produced everywhere a favourable impression as to "the Sons of the Mountain."

The capture of Quebec may be said to have decided the fate of the French dominion in Canada. In a short time General Amherst, with his large force, reduced the strong forts of Ticonderoga and Crown Point; and General Prideaux, aided by Sir William Johnson and his Indians, took Niagara.

LESSON X.

AN INCIDENT IN NEW BRUNSWICK HISTORY.

On ascending the Ristigouche from Dalhousie, whether by land or water, the traveller will be everywhere impressed with the manifold charms of its scenery; and among the more prominent objects of interest which will engage attention, at the respective distances of 8, 12 and 14 miles above the town, will be the several points, named Aninnipk, Le Garde, and Battery Point. Upon all these, as may be gathered from the older inhabitants of the region, there once stood warlike fortifications, but so long ago that their remains are almost obliterated by the dense growth of forest trees. The story which they recall is this:—When, in the autumn of 1760, the French were driven from Acadia, or Nova Scotia, the ships in which they sailed were hotly pursued by the British; and, instead of making their "desired haven," which was the River St. Lawrence, they accidentally entered the Bay of Chaleurs. The British pursued them as far as the Ristigouche; but as winter was nigh at hand, the pursuers abandoned the chase, and went to England, while the pursued ascended the river, and built themselves cabins upon the shore as well as the three fortifications above mentioned. Early in the following spring the British fleet, commanded by Captain John Byron, returned from England, sailed up the Ristigouche, and with one blow totally destroyed the habitations, batteries, and vessels of the unfortunate French. Seven skeletons of the destroyed vessels, which numbered some 22 in all, may be seen in the bed of the Ristigouche at the present day, and other memorials of this "great victory," in the shape of French cannon and swords, pistols, cutlasses, military buttons, spurs, gun barrels, bayonets, iron pans, and spoons, may be seen in the possession of the older inhabitants; but the most curious articles recently discovered are a bottle of molasses, a small cask of wine, and a number of iron balls, found incased in the trunks of certain trees growing on the banks of the river. As the tide of fortune was decidedly against France at the time in question

—for with her defeat on the Ristigouche terminated her dominion in Acadia and Canada—and as England unquestionably had the advantage in the affair, the result was not to be wondered at; the victory was rendered even more complete by the heroism of a British sailor. His name has not come down to us, but the deed he performed was this;—He was a prisoner on board of a French ship, and while yet the British fleet were at the mouth of the Ristigouche meditating a plan of attack, he made his escape at night, and with the assistance of a plank, swam a distance of 16 miles, and having boarded one of the ships of his country, marked out the exact position of the enemy, and the victory immediately followed.

LESSON XI.

DEATH OF GENERAL MONTGOMERY.

The first Congress of what is now called "The United States," met in Philadelphia, on the 5th of September, 1774. It is remarkable that one of their first objects after obtaining their own independence was to attempt to seize on the country they had assisted England to conquer. It is a singular fact that the money, which it was endeavoured to levy upon the New Englanders and their fellow colonists, and which in a great measure caused the rupture, was for the express purpose of defraying the great expenses incurred by England in the capture of Canada.

Having resolved to invade Canada, the Americans entered it in the fall of 1775 in two directions—by Lake Champlain and by the sources of the Kennebec River. The first division under General Montgomery was very successful. After obtaining possession of Ticonderoga, Crown Point, and St. Johns, it advanced towards Montreal. His force was very considerable, while there were but few British soldiers in Canada. General Carleton, who succeeded General Murray in the military command, had been repulsed at Longueuil; so that Montgomery had only to

take possession of the City, which he did on the 19th of November. The naval force in the River, and all the military stores and provisions, were surrendered into his hands, and General Prescott, with the volunteers and soldiers, became prisoners of war. Finding plenty of woollen cloth in the City, General Montgomery took the opportunity of new-clothing his troops, who had suffered much from the severity of the weather.

The second division of the American army, under General Arnold, reached the St. Lawrence on the 9th of November. They had traversed, with dreadful fatigue, the forests and swamps in the District of Maine, and arrived at Point Levi, opposite Quebec, worn out and dispirited. Quebec was at this time defenceless: and had General Arnold been able to cross the river, that capital, and with it the territory of Canada, must have passed into the hands of the Americans. Fortunately all the shipping had been removed to the other side, and it was not until the 14th that he was able to cross over. He landed 500 men at Wolfe's Cove, and waited near that place in the hope of being joined by Montgomery from Montreal.

General Carleton, the British Governor, was at this time occupied with his troops near Montreal in endeavouring to repulse Montgomery. The latter wished to effect a junction with General Arnold, that they might unitedly attack the fortress. Perceiving that the safety of the country depended upon the possession of Quebec, Carleton effected a masterly movement to reach that place. In this, he was assisted by Captain Bouchette, of the Royal Navy, who conveyed him through the American forces by night in a canoe with muffled paddles. He arrived at the Citadel of Quebec on the 19th, whilst the Americans thought him busily engaged with Montgomery near Montreal.

General Carleton's arrival at Quebec was hailed with great joy by the Canadians, who vied with the oldest British soldiers in preparations for defence. The force under his command amounted to only 1800 men. Not more than 350 were regulars—of whom 230 were Fraser's Highlanders, who had settled in the country, and were re-embodied under Colonel M'Lean. The remainder were 450

seamen, and a gallant band composed of Canadian militia and artificers.

The American generals had now effected a junction of their forces, and summoned the fortress to surrender. This was at once rejected. After pushing the siege during the month of December, without any prospect of success, Montgomery determined upon making a night-attack. This intention soon became known to General Carleton, who made every preparation to defeat the enemy. The governor, with the officers and gentlemen off duty, took up their quarters for several days at the Recollet Convent, where they slept in their clothes.

During this month's siege the American riflemen kept up an unintermitting fire upon the sentinels, and threw from 40 to 50 shells every night into the city. The inhabitants became so accustomed to the occurrences of a siege that they ceased to regard them with alarm, all joining cheerfully in bearing arms and performing the duty of soldiers.

Two strong parties were formed on 31st of December—one under Montgomery, the other under Arnold, whose local knowledge of Quebec was accurate. They were to advance from opposite sides and meet at the foot of Mountain street; then force Prescott gate and reach the Upper town.

The besiegers approached the city with the most careful silence, aided by the raging of a furious storm. Advancing by the road which winds round the face of the rock, the army was crowded into the narrow pass which led to the gate. Notwithstanding every precaution the confused noise of the approaching troops rose above the conflict of the elements, and struck the watchful ear of the outer sentinel, who, receiving no answer to his challenge, roused the British guard.

The party, who defended the battery, consisted of Canadian militia, with 9 British seamen to work the guns. They kept a close watch, and, as soon as the day broke, discovered the troops marching in the snow. Orders were given to make no movement; and the Americans, having halted at the distance of 50 yards, sent forward an officer to reconnoitre. On his return the troops marched forward

with a quickness and precision deserving the highest praise. The English then opened a tremendous fire from the artillery which commanded the path; the groans which succeeded plainly revealed the enemy; and it was not until every sound in answer to their fire had died away, that they ceased their cannonade.

The enemy having retired, 13 bodies were found in the snow. Montgomery's orderly sergeant, desperately wounded, but yet alive, was found and brought into the guard-room. On being asked if the General himself had been killed, he evaded the question by replying that he had not seen him for some time. This faithful sergeant died in about an hour afterwards. It was not ascertained that the American General had been killed, until General Carleton, anxious to learn the truth, sent to inquire if any of the prisoners would identify the body. An officer consenting accompanied the aide-de-camp to the "*Près de Ville*" guard, and pointed out the body, pronouncing over it a glowing eulogium on Montgomery's bravery. His two aides-de-camp were also recognised among the slain.

This brave man had fought by the side of Wolfe on the Plains of Abraham; but, marrying an American lady, the daughter of Judge Livingston, he imbibed the politics of his father-in-law's family, and joined the cause of the colonists against the Mother Country. The excellence of his qualities and disposition procured him an uncommon share of private affection and esteem. After his death the Continental Congress ordered a magnificent cenotaph to be erected to his memory in St. Paul's Church, New York. Thither his remains were removed in 1818 by the desire of his widow, and with the permission of the then British Governor, Sir John Sherbrooke.

In the meantime Arnold, who had been repulsed at the opposite side of the town, took the command, and attempted still to maintain his ground; but the dispirited state of his men rendered him unable to keep up more than an imperfect blockade at the distance of 3 miles, which he at last abandoned. In the whole attack upon Quebec the Americans lost about 100 killed and wounded, and 6 officers of Arnold's division, inclusive of the loss at *Près de Ville*.

The British had 1 officer and 17 men killed and wounded. The number of those who surrendered was 426.

LESSON XII.

WAR OF 1812 AND DEATH OF GEN. BROCK.

THE INVASION.

The American Government assembled at the Niagara frontier a force of 6,300 men ; of this force, 3,170 (900 of whom were regular troops) were at Lewiston, under the command of General Van Rensselaer. In the American reports this army is set down at 8,000 strong, with 15 pieces of field ordnance.

To oppose this force Major-General Brock had part of the 41st and 49th Regiments, a few companies of militia, and about 200 Indians, in all 1,500 men ; but so dispersed in different posts at and between Fort Erie and Fort George, that only a small number were available at any one point.

Before daylight on the morning of the 13th of October, a large division of General Van Rensselaer's army, numbering between 1300 and 1400, under Brigadier-General Wadsworth, effected a landing at the lower end of the village of Queenstown (opposite Lewiston), and made an attack upon the position, which was defended with the most determined bravery by the two flank companies of the 49th Regiment, commanded by Captains Dennis and Williams, aided by such of the militia forces and Indians as could be collected in the vicinity. Captain Dennis marched his company to the landing place opposite Lewiston, and was soon followed by the light company of the 49th, and the few militia who could be hastily assembled. Here the attempt of the enemy to effect a passage, was for some time successfully resisted, and several boats were either disabled or sunk by the fire from the one-gun battery on the heights, and that from the masked battery, about a mile below. Several boats were, by the fire from this last battery, so annoyed,

that falling before the landing place, they were compelled to drop down with the current and re-cross to the American side. A considerable force, however, had effected a landing some distance above, and succeeded in gaining the summit of the mountain. No resistance could now be offered to the crossing from Lewiston, except by the battery at Vromont's Point, half a mile below, and from this a steady and harassing fire was kept up, which did considerable execution.

THE FATAL SKIRMISH.

At this juncture Sir Isaac Brock arrived. He had for days suspected this invasion, and on the preceding evening he called his staff together and gave to each the necessary instructions. Agreeable to his usual custom he rose before daylight, and hearing the cannonade, awoke Major Glegg, and called for his horse Alfred, which Sir James Craig had presented to him. He then galloped eagerly from Fort George to the scene of action, and with two aides-de-camp passed up the hill at full gallop in front of the light company, under a heavy fire of artillery and musketry from the American shore. On reaching the 18 pounder battery at the top of the hill, they dismounted and took a view of passing events, which at that moment appeared highly favourable. But in a few minutes a firing was heard, which proceeded from a strong detachment of American regulars under Captain Wool, who, as just stated, had succeeded in gaining the brow of the heights in rear of the battery, by a fisherman's path up the rocks, which being reported as impossible, was not guarded. Sir Isaac Brock and his aides-de-camp had not even time to remount, but were obliged to retire precipitately with the 12 men stationed in the battery, which was quickly occupied by the enemy. Captain Wool having sent forward about 150 regulars, Capt. Williams' detachment of about 100 men advanced to meet them personally directed by the General, who, observing the enemy waver, ordered a charge, which was promptly executed; but as the Americans gave way, the result was not equal to his expectations. Capt. Wool sent a reinforcement to his regulars, notwithstanding which, the whole was driven to the edge of the

bank. Here some of the American officers were on the point of hoisting a white flag with an intention to surrender, when Captain Wool tore it off and re-animated his dispirited troops. They now opened a heavy fire of musketry, and, conspicuous from his cross, his height, and the enthusiasm with which he animated his little band, the British Commander was soon singled out, and he fell about an hour after his arrival.

DEATH OF GENERAL BROCK.

The fatal bullet entered his right breast, and passed through his left side. He had but that instant said, "Push on the York Volunteers!" and he lived only long enough to request that his fall might not be noticed to prevent the advance of his brave troops; adding a wish which could not be distinctly understood, that some token of remembrance should be transmitted to his sister. He died unmarried, and on the same day, a week previously, he had completed his 43rd year. The lifeless corpse was immediately conveyed into a house close by, where it remained until the afternoon, unperceived by the enemy. His Provincial Aide-de-camp, Lieutenant-Colonel McDonell of the militia, and the Attorney General of Upper Canada, a fine promising young man, was mortally wounded soon after his chief, and died the next day, at the early age of 25 years. Although one bullet had passed through his body, and he was wounded in four places, yet he survived 20 hours, and during a period of excruciating agony his thoughts and words were constantly occupied with lamentations for his deceased commander and friend. He fell while gallantly charging up the hill with 190 men, chiefly York Volunteers, by which charge the enemy was compelled to spike the 18 pounder in the battery there.

LESSON XIII.

THE BATTLE OF QUEENSTON HEIGHTS.

At this time, about two in the afternoon, the whole British and Indian force thus assembled was about 1,000

men, of whom 600 were regulars. In numbers the Americans were about equal—courage they had, but they wanted the confidence and discipline of British soldiers.

After carefully reconnoitering, Gen. Sheaffe, who had arrived from Fort George, and had now assumed the command, commenced the attack by an advance of his left flank, composed of the light company of the 41st under Lieut. McIntyre, supported by a body of militia and Indians. After a volley, the bayonet was resorted to, and the American right driven in. The main body now advanced under cover of the fire from the two three-pounders, and after a short conflict forced the Americans over the first ridge of the heights to the road leading from Queenston to the Falls. The fight was maintained on both sides with courage truly heroic. The British regulars and militia, charged in rapid succession until they succeeded in turning the left flank of the enemy's column, which rested on the summit of the hill. The Americans who attempted to escape into the woods were quickly driven back by the Indians, and many cut off in their return to the main body; and terrified by the sight of these exasperated warriors, flung themselves widly over the cliffs, and endeavoured to cling to the bushes which grew upon them; but some, losing their hold, were dashed frightfully on the rocks beneath; whilst others, who reached the river, perished in the attempt to swim across it. The event of the day no longer appeared doubtful.

Major-General Van Rensselaer, commanding the American army, perceiving his reinforcements embarking very slowly, recrossed the river to accelerate their movements; but, to his utter astonishment, he found that at the very moment when their services were most required, the ardour of the unengaged troops had entirely subsided. General Van Rensselaer rode in all directions through the camp urging his men by every consideration to pass over. Lieut. Col. Bloome, who had been wounded in the action and recrossed the river, together with Judge Peck, who happened to be in Lewiston at the time, mounted their horses and rode through the camp, exhorting the companies to proceed, but all in vain. Crowds of the United States'

militia remained on the American bank of the river, to which they had not been marched in any order, but ran as a mob; not one of them would cross. They had seen the wounded recrossing, they had seen the Indians, and they had seen the "green tigers," as they called the 49th from their green facings, and were panic stricken. There were those to be found in the American ranks who, at this critical juncture could talk of the Constitution and the right of the militia to refuse crossing the imaginary line which separates the two countries.

General Van Rensselaer having found that it was impossible to urge a single man to cross the river to reinforce the army on the heights, and that army having nearly expended its ammunition, sent boats immediately to cover their retreat; but a desultory fire which was maintained upon the ferry from a battery on the bank at the lower end of Queenston, completely dispersed the boats, and many of the boatmen relanded and fled in dismay. Brigadier-General Wadsworth was therefore, compelled, after a vigorous conflict had been maintained for some time upon both sides, to surrender himself and all his officers and 900 men, between three and four o'clock in the afternoon.

The loss of the British army was 16 killed and 69 wounded; while that on the side of the Americans was not less than 900 men, made prisoners, and one gun and two colours taken, and 90 killed and about 100 wounded. But amongst the killed of the British army, the government and the country had to deplore the loss of one of their bravest and most zealous generals in Sir Isaac Brock, and one whose memory will long live in the warmest affections of every Canadian and British subject. The country had also to deplore the loss of the eminent services and talents of Lieutenant Colonel McDonnell, Provincial Aide-de-camp and Attorney General of the Province, whose gallantry and merit rendered him worthy of his chief.

THE FIRST MONUMENT.

The gratitude of the people of Canada to the memory of Brock was manifested in an enduring form. They

desired to perpetuate the memory of the hero who had been the instrument of their deliverance, and they were not slow in executing their design; and whilst his noble deeds were still fresh in the memory of all, the Provincial Legislature erected a lofty column on the Queenston heights, near the spot where he fell. The height of the monument from the base to the summit was 135 feet; and from the level of the Niagara River, which runs nearly under it, 485 feet. The monument was a Tuscan column on rustic pedestal with a pedestal for a statue; the diameter of the base of the column was 17½ feet and the abacus of the capital was surmounted by an iron railing. The centre shaft containing the spiral staircase was 10 feet in diameter.

DESTRUCTION OF THE MONUMENT.

On Good Friday, the 17th April, 1840, a vagabond of the name of Lett introduced a quantity of gunpowder into the monument with the fiendish purpose of destroying it, and the explosion effected by a train caused so much damage as to render the column altogether irreparable. Lett had been compelled to fly into the United States for his share in the rebellion of 1837, and well knowing the feeling of attachment to the name and memory of General Brock which pervaded all classes of Canadians, he sought to gratify his malicious and vindictive spirit, and at the same time to wound and insult the people of Canada by this atrocious deed.

THE SECOND MONUMENT.

After the first monument had remained in the dilapidated condition to which it was reduced, for some years, a new and beautiful column has been raised on its site. It is thus described:

Upon the solid rock is built a foundation 40 feet square and 10 feet thick of massive stone; upon this the structure stands in a grooved plinth or sub-basement 38 feet square and 27 feet in height, and has an eastern entrance by a massive oak door and bronze pateras, forming two galleries to the interior 114 feet in extent, round the inner pedestal, on the north and south sides of which, in vaults under the

ground floor, are deposited the remains of General Brock, and those of his Aide-de-camp, Colonel McDonell, in massive stone sarcophagi. On the exterior angles of the sub-basement are placed lions rampant 7 feet in height, supporting shields with the armorial bearings of the hero.

The column is of the Roman composite order, 95 ft. in height a fluted shaft, 10 ft. diameter at the base; the loftiest column known of this style; the lower one enriched with laurel leaves, and the flutes terminating on the base with palms.

The height from the ground to the top of the statue is 190 ft., exceeding that of any monumental column, ancient or modern, known, with the exception of that on Fish-street Hill, London, England, by Sir Christopher Wren, architect, in commemoration of the great fire of 1666, 202 feet high, which exceeds it in height by 12 feet.

LESSON XIV.

VAST GROWTH OF CANADA.

During the 10 years from 1841–1851, the free population of the United States increased 37 per cent., the slave 27 per cent.; and this certainly was a sufficiently large increase for a country numbering, at the commencement of the period, nearly 17,000,000 of inhabitants. But it was trifling in comparison with the growth of the two Canadas during the same year, the population of which, chiefly in consequence of immigration from the British Islands, increased no less than 59 per cent., while the increase of the Upper Province was 104 per cent. So rapid and substantial a growth, in so short a period, is unexampled in the history of the world. Not less remarkable has been the increase in the agricultural produce of the province, which, in Upper Canada, quadrupled itself in 10 years preceding 1851, while its shipping doubled during the same period; and the consumption of British manufactures since 1852, when the gold discoveries came into play, is, on an average, £2 6s. a-head for each inhabitant, being more than

double of what it is in the United States. Many causes have contributed to produce this astonishing increase of material prosperity and inhabitants in Canada, during the period which has elapsed since the union of the provinces and the establishment of popular and responsible government in 1841; and it would be unreasonable to ascribe it entirely to any one of them. Among these, a prominent place must be assigned to the establishment of free trade in Great Britain in 1846; the immense emigration from these islands in the 5 years immediately preceding 1853, a large part of which went to Canada, and contributed essentially to the growth of the province; and the gold discoveries in California and Australia, which, since 1852, have added 40 per cent. to the value of its produce,—exports and imports. But giving full effect to the influence of these causes, which without doubt were the main-spring of Canadian prosperity, it seems, at the same time, not unreasonable to conclude that much also is to be ascribed to the establishment, in 1841, of a form of government essentially democratic, and therefore suited to the circumstances of the country, and calculated to soften down, and at length extinguish, its unhappy rivalry of races. There is much truth in the observation of Lord Elgin, whose liberal and enlightened administration has done so much to heal the divisions and permit the expansion of the material resources of the province, that "In a society singularly democratic in its structure, where diversity of race supplied special elements of confusion, and where, consequently, it was most important that constituted authority should be respected, the moral influence of Government was enfeebled by the existence of perpetual strife between the powers that ought to have afforded each other mutual support. No state of affairs could be imagined less favourable to the extinction of national animosities, and to the firm establishment of the gentle and benignant control of those liberal institutions which it is England's pride and privilege to bestow upon her children."

LESSON XV.

CANADIAN SCENERY.

I.

Wake, sylvan muse, that slumbering long hast lain,
Where early spring birds thy sweet requiem sing,
Entomb'd 'neath forest's high elm vaulted fane,
By the calm river softly murmuring;
O'er thy soft rustling harp thy fingers fling,
If thou canst with thy lay some soul inspire,
If thou canst light upon some tuneful string,
Or raise one voice to song, one soul to fire.
Nor let forever sleep, thy yet untutor'd lyre.

II.

Shall I the roving fancy take
To the wild shores of Orford Lake,
Where nought excels her noon-tide scene,
Save splendor of her moon-lit sheen
When, evening clos'd, with softening hue,
The changeful rose-tints yield to blue,
And the moon shows calm and carelessly
The place where the dashing ripples die?
Such nights, not made for sleep impart
A sweet soft lull to the throbbing heart.

III.

Or to the Lake of the Thousand Isles,
Where the setting sun each evening smiles
A soft good night to the Indian maid,
As careless on the green bank laid,
She weaves the forms from her fancy rare,
On the wild moose skin with wild moose hair;
And she looks abroad o'er the isle gemm'd Lake,
Where some 'lated crew the silence break
With their own wild enchanting lay,
Timing their voice to the splash of the spray.

IV.

Or shall I guide my wandering lay
To forests vast, or mountains grey;
Or where the river flowing by
Smiling reflects the clear blue sky,
Or, darken'd with embowering elms,
Glides 'mid the woods' high pillar'd realms,
And peaceful in the evening shade,
Continues thro' the lengthening glade?
—Sudden starts forth from unseen cave
Some fury maddening the wave,
The spirits of the waterfall
Revel in gamesome carnival:
They wildly foam—the water's roar
Is echo'd back from either shore,—
All rushing in one wild career,
Unmindful where their course may steer,
And headlong with impetuous flow
Strive to fill up the gulf below.

V.

I've seen Niagara by day—
I've seen it in the evening grey—
I've watched it as the rising sun
Lit up its diamonds one by one;
And as the morning face he kissed,
Hung a light rainbow in the mist.
At midnight I have heard its sound,
As of a storm low rumbling round,
Whose viewless waters ever pour;
I've gazed upon the rock-bound shore—
The scene with blending beauties fraught,
That one vast grandeur passing thought.

VI.

The Arab loves to course his native sand;
The Scot, the Switzer, love their mountain home;
Should I not better love my own bless'd land,
Nor from it let my heart's affection roam?

Where should I seek? From Persia's proudest dome
To the gold sands of Californian sea.
Faithful my spirit homeward still would come,
And ever turn, my native land to thee,
Where looks the sky so blue?—where breathes the air so free?

LESSON XVI.

THE INDIAN SUMMER.

This mysterious second summer comes for a brief season to quicken the vegetation of the newly sown grain, and to perfect the buds that contain the embryo leaves and blossoms of the future year, before the frost of winter shall have bound up the earth with its fetters of ice. The misty warmth of the Indian Summer steals drowsily upon our senses. We linger lovingly over each soft day that comes to us—folded in a hazy veil, and fear each one will be the last. They seem to us,

> "Like joys that linger as they fall,
> Whose last are dearest."

We watch, with anxious eye, the sun go down in the smoky horizon, and wonder if we shall see another Indian Summer day arise on the morrow.

The earth is rendering up her increase on Nature's great altar, giving back to ussome of the teeming warmth that she had collected during the long hot days of July, August, and September. It is natural to suppose that the mist which softens the atmosphere at this peculiar season arises from vegetable decomposition, or perhaps it has its origin in a remoter cause, the commencement of the polar winter.

Among the peculiarities of this season may be noticed frosty nights, followed by warm soft days; sometimes a hot stirring breeze comes on about noon; at other times, a stillness almost sultry, continues through the day. From notes made in my Journal during a succession of years, I have remarked that the Indian Summer comes on directly after the rains which prevail during the equinox, and the

first two weeks in October. From the 10th or 15th of October to the first week in November, I should fix as the usual period of Indian Summer. Old settlers say that it comes earlier now than in former years. The date used to be as late as the 20th of November, but it is rarely so late now, whatever be the cause.

The Northern Lights are frequently seen about the commencement of the Indian Summer, after being visible for many successive nights. The termination of this lovely season is very generally accompanied with a tempest, or hurricane, and violent rain, ending in snow and sharp frost.

Though so lovely to the senses, it is not always a season of health; autumnal fevers and agues, with affections of the chest, are sometimes common. Nevertheless the Indian Summer is hailed by the Indian people with joy. It is, emphatically speaking, indeed the INDIAN SUMMER, his own peculiar season—his harvest in which he gathers in his winter stores.

At this time the men forsake the villages and summer-lodges, and go off to their far hunting grounds, for venison and furs. Now is their fishing-season, and it is in the month of October that the lakes swarm with myriads of water-fowl.

The term *Indian Summer*, always appears to me, as expressive of the wants, habits and circumstances of the race. Their summer is not our summer. Like the people, it is peculiar to this continent:—*They* reap while *we* sow. While *they collect, we scatter abroad* the seed for the future harvest.

It is by minute observation upon the objects with which he is most familiar, that the Indian obtains his knowledge: a knowledge which has hitherto been sufficient for the supply of his very limited wants. He knows by the thickness of the down on the breasts of the wild fowl, and the fur of his peltries, whether the coming winter will be a severe one or not; by the number of small animals that congregate in their several haunts, and the stores which they lay up, whether the season will be of longer or shorter duration; by the beaver repairing their dams; and the muskrats building their houses earlier than usual, that the cold will

also set in early. In all these things the Indian trusts to the instinct of the lower animals, which is a knowledge given from God above—a great gift to help the weakest of his creatures.

The unlettered Indian, in the simple faith of his heart, believes that the Almighty Creator—whom he adores as the GOOD SPIRIT, speaks to his creatures, tells them of his will, and guides them how to act, and provide for the winter's cold, whether it be long or short.

A great deal of the fruitfulness of the next year's harvest depends upon the length or shortness of the Indian Summer. It is during this season that much of the farmer's *fall* work is done, and therefore he considers the length of the Indian Summer as a great blessing. Nature has now exhausted her rich store of buds and blossoms. The rains and winds of October have scattered the last bright leaves upon the earth. The scarlet maple, the crimson oak and cherry, the dark purple of the black ash, the lighter yellow of the birch and beech, lie withering at our feet—"the fading glories of the dying year."

Is there nothing but sadness and decay in those fallen leaves? In those grey, leafless branches, through which the wind is sighing a requiem over the faded flowers and foliage? In yonder grey elder, those round knobs contain the embryo blossoms, closely packed like green seeds, yet each tiny flower-cup is as perfect as it will be in the month of May;—it is only abiding its time! Yes, truly, there is much of hope and promise revealed to us at this season. There is a savour of death;—but it is a death unto LIFE.

Look on those broad fields of emerald verdure; brightening into Spring-like beauty, with the rays of the noonday sun. Do they not speak to us of the future harvest—of the fruits of the coming year, which the harvest man is to reap? He, too, must bide his time; first the blade; then the ear; then the ripened grain; then, again, the seed cast upon the earth—the renewal of his toil and his trust. Thus, then, we perceive that the fall of the year is the renewal of Hope, In its darkest gloom, there is even a gleam of sunshine, pointing onward to future joys.

LESSON XVII.

OUR ABORIGINES.

I heard the forests as they cried
Unto the valleys green,
"Where is the red-brow'd hunter race,
Who lov'd our leafy screen?
Who humbled 'mid these dewy glades
The red deer's antler'd crown,
Or soaring at his highest noon,
Struck the strong eagle down."

Then in the zephyr's voice replied
Those vales, so meekly blest,
"They rear'd their dwellings on our side,
Their corn upon our breast;
A blight came down, a blast swept by,
The cone-roof'd cabins fell,
And where that exil'd people fled,
It is not ours to tell."

Niagara, of the mountains gray,
Demanded, from his throne,
And old Ontario's billowy lake
Prolong'd the thunder tone,
"The chieftains at our side who stood
Upon our christening day,
Who gave the glorious names we bear,
Our sponsors, where are they?"

And then the fair Ohio charg'd
Her many sisters dear,
"Show me once more, those stately forms
Within my mirror clear;"
But they replied, "Tall barks of pride
Do cleave our waters blue,
And strong keels ride our farthest tide,
But where's *their* light canoe?"

The farmer drove his ploughshare deep;
"Whose bones are these?" said he,
"I find them where my browsing sheep
Roam o'er the upland lea."
But starting sudden to his path,
A phantom seem'd to glide,
A plume of feathers on his head,
A quiver at his side.

He pointed to the rifled grave,
Then rais'd his hand on high,
And with a hollow groan invok'd
The vengeance of the sky.
O'er the broad realm so long his own
Gaz'd with despairing ray,
Then on the mist that slowly curl'd,
Fled mournfully away.

LESSON XVIII.

GOVERNMENT OF CANADA.

In A.D. 1840, the Upper and Lower Provinces were re-united, and constituted into the Province of Canada, with one Legislature, composed, as before, of a Legislative Council nominated by the Crown, and an Assembly of 84 members elected by the people, 42 from each Province. Under this Act, the Government of the country has been conducted; but the House of Assembly has been latterly increased to 130 members, 65 from each Province, returned by counties, cities and towns. The Legislative Council, after the death of those members who were nominated by the Crown, will be elective. Before a statute becomes law, the assent of the two Legislative bodies and of the Crown is necessary. Money Bills originate in the People's House. The power of the Legislature is almost unchecked, regulating taxes, customs, private rights, and the general government of the Province by its acts, the Queen rarely

withholding, as she has power to do, her assent from a measure. Sessions are required to be held annually, and the duration of the Parliament is 4 years, though it may be previously dissolved by the Governor General.

The Government of the Province is conducted by a Governor General appointed by the Crown, who presides at the deliberations of an Executive Council nominated by the Crown, but who must, according to the theory of Responsible Government, in practical force in Canada, possess the confidence of the people, as evinced by a majority of the House of Assembly; and who, consequently, may lose their places on a vote of want of confidence. The Executive Council is composed of the following officials, viz: a President of the Committee of the Council who is also Chairman of the Bureau of Agriculture, and of the Board of Registration and Statistics, a Provincial Secretary, a Minister of Finance, a Commissioner of Crown Lands, a Receiver General, one Attorney General for each section of the Province, the Speaker of the Legislative Council, a Commissioner of the Board of Public Works, and a Postmaster General. These incumbents preside over the public departments indicated by their titles, in addition to exercising the functions of Executive Councillors. On the acceptance of office, the incumbent elect, already a member of the Government, must present himself to the people for re-election.

Such is the system of governing by Legislative majorities and responsibility to the electors, which is in force in Canada. Practically the Government of the Province is self-government, the British Government rarely interposing the weight of its authority, but, on the contrary, distinctly enunciating its desire to allow the Province the widest latitude in self-government, compatible with the Colonial relation. In fact, the Canadas enjoy the largest measure of political liberty possessed by any country or people. The public offices, and the seats in the Legislature, are practically open to all. The people, by their representatives in Parliament, regulate all matters of Provincial interest, and by their municipal system they regulate their municipal matters; while they possess and exercise the power of

rejecting at the polls those who have forfeited their confidence. The inhabitants of Canada are bound to Britain by the ties of common interest, common origin, and filial attachment. Owning a grateful allegiance to their Sovereign, they are proud to share the heritage of Britain's ancestral glories; while they are not slow in evincing their sympathy with her struggles, as the munificent grant of £20,000 sterling, gracefully appropriated by the Legislature to the Patriotic Fund, and to the widows and orphans of the soldiers of her ally, France, proudly shews. The policy of Britain is a wise one. She is building up on the broad foundations of sound political liberty, freedom of thought and conscience, a colony which will one day (though the connection will never be rudely severed,) attain the position of a nation, and, peopled by inhabitants knit to Britain by the strongest ties of blood, and identity of feeling, will strengthen her hands and support her position by the reflex influence of sound, national and constitutional sentiment.

LESSON XIX.

NOVA SCOTIA, &c.

The Province of Nova Scotia now includes Cape Breton, from which it is severed by the Straits of Canso. Nova Scotia proper, says Andrews, is a long peninsula nearly wedge-shaped, connected at its eastern and broadest extremity with the continent of America by an isthmus only 15 miles wide. This narrow slip of land separates the waters of the Bay of Fundy from those of the Gulf of St. Lawrence. The peninsula, 280 miles in length, fronts the Atlantic ocean.

The Island of Cape Breton is a singularly formed network of streams and lakes, and it is separated into two parts, with the exception of an isthmus but 767 yards wide, by the Bras d'Or Lake, an arm of the sea. The most remarkable feature in the peninsula of Nova Scotia is the numerous indentations along its coasts. A vast and uninterrupted body of water, impelled by the trade-wind

from the coast of Africa to the American continent, forms a current along the coast till it strikes the Nova Scotian shore with great force, and rolls its tremendous tides, of 60 or 70 feet in height, up the Bay of Fundy, which bounds Nova Scotia on the north-west. The harbours of Nova Scotia on its Atlantic coast are unparalleled in the world. Between Halifax and Cape Canso there are twelve ports capable of receiving ships of the line, and fourteen others of sufficient depth for merchantmen. The peninsula is supposed to contain 9,000,000 acres, and, including Cape Breton, 12,000,000. The country is undulating, and abounds with lakes. The scenery is picturesque. Nova Scotia is possessed, it is believed, of valuable mineral wealth, including large fields of coal. The development of these riches has however been checked by the fact, that in the year 1826 a charter was granted to the Duke of York, for the term of 60 years, of the mines and minerals of the Province. The lease was assigned to an English Company, who now holds it. The Province has come to an arrangement with this company, by which they are confined within certain limits. The other minerals which are turned to economic uses, are iron, manganese, gypsum, &c.

The western and milder section of Nova Scotia is distinguished for its productiveness in fruits. Wheat grows well in the eastern and in the central parts. Wheat, oats, hay, pease, beans, potatoes, turnips, &c., are raised in large quantities, and butter and cheese are largely made. The character of Nova Scotia for farm stock is good. In its general and fishing trade it employs a large marine, which must prove a fruitful nursery for seamen. Nova Scotia has reclaimed by dikes 40,012 acres of land. Cape Breton too, has a large trade, produces large quantities of fish, and there is mined besides a considerable amount of coal.

NEWFOUNDLAND.

It lies on the north-east side of the entrance to the St. Lawrence, separated from Canada by the Gulf. Its south-west point approaches Cape Breton within about forty-six miles, the Straits of Belle Isle to the north and north-west

separate it from the shores of Labrador, the Atlantic washes it on the east. It is triangular in form, broken by bays, creeks, and estuaries. Its circuit is 1000 miles. Its breadth at the widest is 300 miles, its extreme length 419. From the sea it has a wild, sterile appearance. It is rugged in character, hills and valleys succeeding each other. It comprises woods, marshes, and barrens; the woods clothing the sides and summits of the hills, and the valleys and low lands. The trees are pine, spruce, fir, larch, and birch. In the survey of the Atlantic Telegraph, pine of most excellent quantity was found in the interior of the island. The marshes are not necessarily low or level land, but are often undulated and elevated a considerable height above the sea. They are open tracts covered with moss. The barrens are exposed elevated tracts, covered with scanty vegetation. The most remarkable general feature of the country is the great abundance of lakes, which are found even on the tops of the hills. In fact, it is estimated that one-third of the surface of the whole island is covered with fresh water. The area is 23,040,000 acres. Fishing has chiefly employed the population, and not over 200,000 acres are under cultivation. The climate too is variable, its vicissitudes being great. Spring comes on more slowly than in Canada. Summer is shorter, and the winter a series of storms, winds, rain, and snow. The last rarely remains long on the ground, and the frost is never so intense as in Western Canada. This arises no doubt from its insular position.

The fisheries carried on are cod, the great staple, herring, mackerel, salmon whale, and seal fisheries.

The principal town of Newfoundland is St. John. It is alleged that a very fast steamer could cross thence to Galway in five days. It is distant from Ireland only 1665 miles. Its geographical position is very important, and its fisheries are a source of inexhaustible wealth. It carries on a large foreign trade, exclusively of an extensive one with the West Indies.

LABRADOR.

Of the Labrador coast little is known. It was at one

time included in Canada, but was re-annexed to Newfoundland in 1808. It has a sea-coast of over 100 miles, and is frequented during summer by 20,000 persons. This vast country, equal in extent to France, Spain, and Germany, includes the Esquimaux and the Moravians. The climate is very severe, but the sea on its shores teems with wealth. Seals and salmon are both plentiful. The furs are very valuable. The exports from this coast are cod, herring, salmon, sealskins, cod and seal oil, furs, and feathers.

PRINCE EDWARD'S ISLAND.

Prince Edward's Island is situated in a deep recess on the western side of the Gulf of St Lawrence. It is separated from New Brunswick and Nova Scotia by the Straits of Northumberland, which at the narrowest are 9 miles wide. The island is crescent-shaped, 130 miles in length, and at its greatest breadth 34 miles. The east point is 27 miles from Cape Breton, and 125 miles from Cape Ray, Newfoundland. It is a level country, well adapted for agricultural purposes. Wheat, oats, and barley are the staple products. Its area is 2134 square miles. The climate is neither so cold in winter nor so hot in summer as in Lower Canada. One drawback to the progress of the island has been the holding of the land by non-resident landlords, who lease the soil. From the productiveness and the other advantages of the soil, it might, easily sustain 1,000,000 persons. The island is believed to have been discovered by Cabot in 1497. In 1761 it became permanently a territory of Great Britain.

NEW BRUNSWICK.

New Brunswick abuts on Canada. In 1784, it was erected into a Province distinct from Nova Scotia. Its length is 190 miles, its breadth 150. It lies nearly in the form of a rectangle, and is bounded on the south-east by the Bay of Fundy and Nova Scotia, on the west by Maine, on the north-west by Canada and the Bay of Chaleurs, on the east by Northumberland Straits and the Gulf of St. Lawrence. It contains 32,000 square miles or 22,000,000 of acres. It has a sea-coast of 400 miles, with many har-

bours. Its staple trades are shipbuilding, the fisheries, and the timber trade. Its great agricultural capabilities are only now beginning to be known. The Commissioners appointed by the Imperial Government to survey the line for the proposed railway from Halifax to Quebec thus speak of New Brunswick in their report:—

"Of the climate, soil, and capabilities of New Brunswick it is impossible to speak too highly. There is not a country in the world so beautifully wooded and watered. An inspection of the map will show that there is scarcely a section of it without its streams, from the running brook up to the navigable river. Two-thirds of its boundary are washed by the sea· the remainder is embraced by the large rivers, the St. John and the Ristigouche. The beauty and richness of scenery of this latter river and its branches are rarely surpassed by anything on this continent.

"The lakes of New Brunswick are numerous and most beautiful; its surface is undulating, hill and dale varying up to mountain and valley. It is everywhere, except a few peaks of the highest mountains, covered with dense forests of the finest growth.

"The country can everywhere be penetrated by its streams. In some parts of the interior, a canoe, by a portage of three or four miles only, can float away either to the Bay of Chaleurs or the Gulf of St. Lawrence, or down to St. John and the Bay of Fundy. Its agricultural capabilities and climate are described by Bouchette, Martin, and other authors. The country is by them, and most deservedly so, highly praised. For any great plan of emigration, or colonization, there is not another British colony which presents such a favourable field as New Brunswick.

"On the surface is an abundant stock of the finest timber, which in the markets of England realizes large sums annually, and affords an unlimited supply to the settler. If the forests should ever become exhausted, there are the coal-fields beneath. The rivers, lakes, and sea-coast abound with fish."

Such is the sister Province of New Brunswick; and though a very large extent of her very best agricultural

territory, reaching onwards to Canada, is still a primeval forest, yet, her position, in regard to her trade relations, is no insignificant one.

LESSON XX.

MODERN ALLUVIAL DEPOSITS.

BAY OF FUNDY, NOVA SCOTIA.

The western part of Nova Scotia presents some fine examples of *marine alluvial soils*. The tide wave that sweeps to the north-east along the Atlantic coast of the United States, entering the funnel-like mouth of the Bay of Fundy, becomes compressed and elevated, as the sides of the bay gradually approach each other, until in the narrower parts the water runs at the rate of 6 or 7 miles an hour, and the vertical rise of the tide amounts to 60 feet or more. In Cobequid and Chegnecto Bays, these tides, to an unaccustomed spectator, have rather the aspect of some rare convulsion of nature than of an ordinary daily phenomenon. At low tide, wide flats of brown mud are seen to extend for miles, as if the sea had altogether left its bed; and the distant channel appears as a mere stripe of muddy water. At the commencement of flood, a slight ripple is seen to break over the edge of the flats. It rushes swiftly forward, and, covering the lower flats almost instantaneously gains rapidly on the higher swells of mud which appear as if they were being dissolved in the turbid waters. At the same time the torrent of red water enters all the channels, creeks, and estuaries; surging, whirling, and foaming, and often having in its front a white, breaking wave or "bore" which runs steadily forward, meeting and swallowing up the remains of the ebb still trickling down the channels. The mud flats are soon covered, and then, as the stranger sees the water gaining with noiseless and steady rapidity on the steep sides of the banks and cliffs, a sense of insecurity creeps over him, as if no limit could be set to the advancing deluge. In a little time however,

he sees that the fiat, "Hitherto shalt thou come and no farther" has been issued to the great bay tide; its retreat commences, and the waters rush back as rapidly as they had entered.

The rising tide sweeps away the fine material from every exposed bank and cliff, and becomes loaded with mud and extremely fine sand, which, as it stagnates at high water, it deposits in a thin layer on the surface of the flats. This layer, which may vary in thickness from a quarter of an inch to a quarter of a line, is far coarser, and thicker at the outer edge of the flats than nearer the shore, and hence these flats as well as the marshes are usually higher near the channels than at their inner edge. From the same cause, the more rapid deposition of the coarser sediment, the lower side of the layer is arenaceous, and sometimes dotted over with films of mica, while the upper side is fine and slimy, and when dry has a shining and polished surface. The falling tide has little effect on these deposits, and hence the gradual growth of the flats, until they reach such a height that they can be overflowed only at the high spring tides. They then become natural or salt marsh covered with the coarse grasses and *carices* which grow in such places. So far the process is carried on by the hand of Nature, and before the colonization of Nova Scotia, there were large tracts of this grassy alluvium to excite the wonder and delight of the first settler on the shores of the Bay of Fundy. Man however carries the land making process further, and by diking and draining excludes the sea water, and produces a soil capable of yielding for an indefinite period without manure, the most valuable cultivated grains and grasses. Already there are in Nova Scotia more than 40,000 acres of diked marsh or "dike" as it is more shortly called, the average value of which cannot be estimated at less than £20 currency per acre. The undiked flats bare at low tide are of immensely greater extent.

The differences in the nature of the deposit in different parts of the flats, produce an important difference in the character of the marsh soils. In the higher parts of the marshes, near the channels, the soil is red and comparatively

friable. In the lower parts, and especially near the edge of the upland, it passes into a gray or bluish clay called "blue dike," or from the circumstance of its containing many vegetable remains and fibres, "corky dike." These two varieties of marsh differ very materially in their agricultural value. The red marsh, though varying somewhat in quality, is the best soil in the province, and much of it compares favourably with the most celebrated alluvial soils of the old and new world. So valuable is this soil, though nearly destitute of organic matter, that it is found profitable to cart it upon the upland as a manure. Its best varieties have now been cropped without manure, for more than 200 years without becoming unproductive, though there can be no question that under this treatment a gradual diminution of its fertility is perceptible. The low or inner marsh is less valuable than the red. It contains however much more vegetable matter and sometimes approaches to the character of a boggy swamp; so that, when a quantity of it is taken out and spread over the upland, it forms a useful manure. It emits a fetid smell, when recently turned up, and the water oozing from it stains the ground of a rusty colour. It produces in its natural state crops of coarse grass, but, when broken up, is unproductive with the sole exception that rank crops of oats can sometimes be obtained from it.

The chemical composition of this singular soil, so unlike the red mud from which it is produced, involves some changes which are of interest both in agriculture and geology. The red marsh derives its colour from the peroxide of iron. In the gray or blue marsh the iron exists in the state of sulphuret, as may be easily proved by exposing a piece of it to a red heat, when a strong sulphureous odour is exhaled and the red colour is restored. The change is produced by the action of the animal and vegetable matters in the mud. These in their decay have a strong affinity to oxigen, by virtue of which they decompose the sulphuric acid present in sea-water in the forms of sulphate of magnesia and sulphate of lime. The sulphur thus liberated enters into combination with hydrogen, obtained from the organic matter or from water, and the product is sulphureted

hydrogen, the gas which gives to the mud its unpleasant smell. This gas, dissolved in the water which permeates the mud, enters into combination with the oxide of iron, producing a sulphuret of iron, which, with the remains of the organic matter, serves to colour the marsh blue or gray. The sulphuret of iron remains unchanged while submerged or water-soaked; but, when exposed to the atmosphere, the oxygen of the air acts upon it, and it passes into sulphate of iron or green vitriol—a substance poisonous to most cultivated crops, and which, when dried or exposed to the action of alkaline substances, deposes the hydrated brown oxide of iron. Hence the bad effects of disturbing the blue marsh, and hence also the rusty colour of the water flowing from it. The remedies for this condition of the soil are draining and liming. Draining admits air and removes the saline water. Lime decomposes the sulphate of iron and produces sulphate of lime and oxide of iron, both of which are useful substances to the farmer.

LESSON XXI.

DESCRIPTION OF MONTREAL.

Montreal is the largest city in British North America, and covers, with the suburbs, upwards of 1500 acres. It is situated in Lat. 45½° N. and Long. 73½ W., thus in the parallel of latitude agreeing exactly with the cities of Lyons and Venice in Europe, and in longitude nearly with the City of New York. In 1535 Jacques Cartier, whilst surveying with delight the magnificent prospect from the brow of the "Mountain," gave it the name of *Mont Royal* in honour of the king of France. About a century afterwards, this name having undergone a not unusual corruption (*Mont Réal*), was imparted to the French settlement that arose about that period to the west of Hochelaga, the ancient Indian village. On the 15th of August, 1642, the day observed by the Romish Church in honour of the Assumption of the Virgin Mary, the spot destined for the City was consecrated with due solemnities, commended to

the protection of the "Queen of Angels," and named *Ville Marie*, a name which it retained for a long period. The Corporation comprehends a Mayor, 5 Aldermen and 15 Councillors. The City is represented by 3 Members in the House of Assembly. In general the principal streets run north and south, parallel with the River, and are intersected at right angles by secondary streets. Those of the old city have been named after a variety of the Saints, whilst those in the more modern portion remind us of Governors Craig, Dorchester, Sherbrooke, &c. Of late years a marked improvement both in regard to durability and style has taken place in the architecture of the public buildings and stores in the business part of the city; whilst private dwellings are for the most part built of stone, or of bricks with the fronts of hewn stone, and so with the lintels and sills of the doors and windows. Among the former may be enumerated the English and French Cathedrals; the Churches of St. Andrew's, St. James' Street, and St. Patrick's, and the Gesu and some others lately built, are ornaments to the City; the Convents of Notre Dame and the Grey Sisters; the General Hospital, Hotel Dieu, the Orphan and St. Patrick's Hospitals; the French and Jesuits' Colleges and the Seminary; the Banks of Montreal, British North America, City Bank, Molson's Bank, Savings' Bank, and People's Bank; the Bonsecours and St. Ann's Markets. The Donegana House, Montreal House, Ottawa Hotel and St. Lawrence Hall are hotels upon a very extensive scale. To these have been added the massive Court House, Crystal Palace, Post-office, Bonaventure Hall, and Mechanics' Institute. Large sums were expended in the erection of several of these edifices; as, £100,000 for the French Cathedral, £70,000 for the Bonsecours Market; £50,000 for the English Cathedral; £30,000 for the Jail; £24,000 for the Montreal Bank. The City is now well furnished with flour-mills, foundries, gas-works, roperies, ship-yards and water-works. An aqueduct and reservoir, conveying water from the River near the Lachine Rapids, have been completed at an expense of £100,000. The port is unsurpassed on this Continent, and altogether is one of the finest in the World. The quay, which extends crescent-like along the whole

front of the City for nearly a mile, contains numerous basins and wharves for vessels of every size. The River in front is nearly 2 miles wide, and runs at the rate of from 6 to 7 miles an hour.

LESSON XXII.

QUEBEC.

Quebec is situated on the point between the St. Lawrence and St. Charles. Its latitude is close upon 47° N., and its longitude is 71° W., the former thus coinciding nearly with that of Geneva in Switzerland. It was founded in 1608 by the celebrated Champlain, Geographer to the King of France. It is divided into the Upper and Lower Towns. The former includes the Citadel, which surmounts the summit of Cape Diamond, and is 350 feet above the River. The fortified portion covers an area of about 40 acres. This fortress has been frequently and appropriately called the "Gibraltar of America." From the circumstance of quartz crystals, sparkling like *diamonds*, being found in the dark-coloured slate of which the Cape is composed, it acquired the name of *Diamond*. Here formerly stood the Castle of St. Louis, which was entirely consumed by fire in 1834. In this Castle was the residence of the Representative of the Crown, while Quebec continued the Seat of Government. On the promenade between the gardens attached to the Castle stands the obelisk to the memory of Wolfe and Montcalm. In this division of the City besides the Admiralty Barracks, and the Court-house, the chief religious edifices of the Protestant population are the English Cathedral, St. Andrew's and St. Ann's, whilst those of the Roman Catholic are the Bishop's Palace, the Cathedral, the Seminary, and the Church and Convent of St. Ursula. With the Seminary and Convent are connected establishments for imparting an advanced education to either sex respectively on a very extensive scale. The site of the Lower Town may be regarded as almost entirely the creation of human industry, having

been gained by excavation from the base of the impending precipice or redeemed from the River by building-out into its waters. The wharves are generally carried upwards of 200 yards into the River. Besides the Custom-house, the Exchange (a commodious edifice containing also a well-conducted Reading-room, and the rooms of the Board of Trade and the Telegraph Office,) and the handsome edifice occupied by the Quebec Bank and the Quebec Fire Assurance Company, the Chapel standing in the Square is noticeable on account of its antiquity and the origin of its name of *Notre Dame des Victoires*. It was built and used as a church before 1690. In that year Sir Wm. Phipps, in attempting to capture Quebec, was defeated; and in consequence the *fête* of *Notre Dame de Victoire* was instituted for annual celebration in this church on the 7th of October. After the shipwreck of the English fleet in 1711, which was regarded by the inhabitants not only as a second victory, but as a miraculous interposition in their favour, the present name was imposed on the church, in order that both events might be commemorated at once. In the growing suburbs of St. John's and St. Roch's are several handsome and substantial ecclesiastical structures. Among the charitable institutions we must not omit the Marine Hospital for the reception of sick sailors and others landing in Quebec. This truly noble institution, comprising three stories, can accommodate 362 persons, including Catholic and Protestant chapels, with apartments for the officiating clergymen, medical-staff, housekeeper, nurses, steward, &c., &c. In the months of May and June, 1845, at an exact interval of four weeks, the city was visited by two most calamitous fires. About 1,600 buildings, of which 1,200 were dwellings, were destroyed, and nearly 40 lives were lost. The total loss was estimated at £875,000. A sum, amounting to nearly £100,000, was raised, and the sufferers were thus enabled to rebuild their houses, in many instances in a more substantial manner than before. In consequence of these two most disastrous conflagrations the Corporation wisely enjoined the use of bricks and stone instead of wood for the walls, and of tin instead of shingles for the roofs.

LESSON XXIII.

OTTAWA.

Ottawa is the name now given to the town of Bytown, by which it has long been known, as the centre of the immense lumber district of the River Ottawa. It is situated on that river, where the rivers Rideau and Gatineau, and the Rideau Canal, all meet.

The City is intersected by the Rideau Canal and bridge, and forms three districts, viz: that of Lower Town on the east; Central Town on the west; and Upper Town on the north-west; all of which, however, are on the south side of the River Ottawa and in Canada West; the River Ottawa, as is well known, forming the boundary line between Canada East and Canada West. The town was laid out under the command of Colonel By of the Royal Engineers, who also constructed the Rideau Canal. Hence the original name of the town was Bytown, although now called Ottawa after the magnificent river on which it stands.

The streets are all wide and regularly laid out, and so far reflect great credit on the engineering skill employed. Lower Town is the most important portion of the town, and in all probability will become the chief business part, as the population and business increase. The two principal streets of Lower Town are Rideau street and Sussex street. In the former there are several substantial, stone built stores and dwellings. In the latter there are also a few; the majority, however, are wooden erections, both old and new. In Central Town the buildings are almost all of stone, presenting one excellent street, called Spark street; whilst Upper Town exhibits a mixture of both stone and wooden buildings in its Wellington street. All the buildings in the town are exceedingly plain, but substantially built, and, being built of gray limestone, resemble very much in appearance some of the streets of Montreal. On "Barrack Hill," the highest elevation of the town, are situated the Government Buildings, a massive pile which have cost the country an enormous sum. The "location" of these buildings, is certainly one of the finest in either Canada or the United States—equal in some respects even to the famous

citadel of Quebec, In the rear is Central Town, whilst Upper and Lower Town are completely commanded by it on each side, whilst in front is a precipitous embankment running down, almost perpendicular to the river, several hundred feet, thus completely sweeping the river and opposite shore, north, east and west; so that in a military point of view Ottawa certainly occupies one of the finest natural positions anywhere in Canada, and in that respect is the key to an immense territory of back country, valuable for its wood and minerals.

The scenery around Ottawa is one of surpassing grandeur and extent, combining in it both that of river, and landscape, which few places can boast. At the west end of the town are situated the celebrated Chaudière Falls, which fall about 40 feet, and the spray of which may be seen a long way off, ascending in the air. In the early part of the season these falls are not seen to much advantage, the river then being generally so much swollen with the immense volume of water from the upper lakes and the tributaries of the Ottawa. Then they partake in some respects more of the character of huge rapids. Farther on in the season, however, they appear more in their real character of "falls," and are a sight worth seeing, although they are very much encroached upon by lumber establishments. An excellent view of the Falls, as well as of the rapids, is obtained from the Suspension Bridge, which crosses the river quite close to them. At the eastern suburb of Ottawa, called New Edinburgh, there is a miniature Niagara in the Rideau Falls.

The City of Ottawa is supplied in many parts with gas. Its markets afford an excellent supply of cheap provisions, whilst the purity of the air from its elevated position renders it one of the healthiest towns in Canada.

LESSON XXIV.

KINGSTON.

Kingston was the original capital of United Canada. It is built on the site of the old Fort Cataraqui, subsequently

called Fort Frontenac, in honour of the Count de Frontenac, one of the French Viceroys. Its advantageous position at the outlet of Lake Ontario into the St. Lawrence, and at the southern extremity of the Rideau Canal, has raised it to considerable commercial importance. The streets are regularly arranged at right angles, and the houses are chiefly built of stone, of which there is an abundant supply. The principal building is the Market-house, so called although only a portion of it is occupied as such. In the front are several public offices, and above are the Town-hall and a large commodious room. A very extensive view is commanded from the gallery surrounding the interior of the dome. This edifice cost £25,000. The Hospital, supported partly by government and partly by voluntary contributions, the Hotel Dieu, attended by Sisters of Charity, and the Roman Catholic Cathedral, with the College, called Regiopolis, are conspicuous structures. The Presbyterians in connection with the Church of Scotland have a Collegiate Institution, called Queen's College and University of Kingston. Kingston has been put into a state of defence by the erection of large substantial martello towers. There are several spacious warehouses on the wharves, and the tonnage of steamers and schooners owned here is considerable. It is distant 200 miles from Montreal. About half a mile to the east is a low peninsula, ending in Point Frederick, which with the other parallel one terminating in Point Henry, encloses Navy Bay, the depôt for the maritime armament formed during the war of 1812. On an eminence of the peninsula is Fort Henry, commanding the entrance to the Lake. Point Frederick is connected with the town by a wooden bridge, 600 yards in length, across the Cataraqui Bay. It is solidly constructed. Near it are the Marine Barracks. A mile to the west lies the Provincial Penitentiary, a large stone building, surrounded by a high and most substantial wall with towers at the corners. The arrangements are so complete that escape seems, under any circumstances, impracticable. The cells are so arranged that each keeper has a great number of prisoners, apart from each other, completely under his eye in his round, and can at all times

ascertain, without being perceived, what is going on. Blacksmiths, carpenters, shoemakers, tailors, &c., are busily employed in different workshops. The silent system is pursued except in necessary intercommunication at work. Perseverance in good behaviour entitles, in remarkable cases, to a discharge some years before the expiration of the term of confinement. It seems that there are not a few instances of convicts becoming inmates for the second time, and but shortly after receiving their liberty. Near the Penitentiary are baths and mineral springs, which have been much frequented. In the neighbourhood is an extensive saleratus factory.

LESSON XXV.

TORONTO.

Toronto is situated on the north-west shore of Lake Ontario, facing a very spacious Bay, or beautiful sheet of water, somewhat oval in form. The City is laid out in the form of a parallelogram with singular regularity; the streets intersecting each other at right angles. Owing to the banks of the Lake being low and the site of the City rather flat, Toronto presents at a distance no striking aspect from any of its approaches. The site was selected by Governor Simcoe in 1793, when only two Indian families resided in it. It was at first called York, but was afterwards altered to the sonorous Indian name of Toronto or "the Place of Meeting." It continued to be the capital of Upper Canada from 1797 to 1841, when Lord Sydenham removed the seat of Government to Kingston. Of late years the City has been vastly improved by the erection of many handsome buildings, notwithstanding its labouring under the disadvantage of possessing no stone quarries. It has many industrial establishments, some of them extensive,—including foundries, tanneries, a great variety of other factories, and some very fine milling establishments,—which are rapidly extending, and improving their produc-

tions. Her spacious land-locked harbour, easy of access to the largest craft that navigate our inland waters, and perfectly sheltered by the bar which faces it, and keeps out the Lake, affords the utmost facility for any possible extension of business or trade. Among the principal public buildings may be enumerated the Banks, the Anglican and Catholic Cathedrals with several churches, the Court-house, the new City-hall, the old Market-house, the Lyceum, the Normal School (perhaps the finest structure in Canada), Osgoode Hall, containing the courts of Justice, Bishop's College, Upper Canada College, &c., King's College. Its extensive grounds are tastefully laid out. The Jail stands at the east end of the city, and the Lunatic Asylum at some distance beyond the west end. Connecting, as it does, at all seasons of the year with almost every place of importance in Canada and the United States (seaboard as well as inland), by means of the Grand Trunk, Great Western and Northern Railways, and by navigation during summer, the future of Toronto cannot but be prosperous. Thanks to her steady energy and enterprise no less than to her centralized position, she is already reaping the first-fruits of her new connections in an extending trade, a steady prosperity, which seems destined to be both durable and progressive. Toronto is distant from Niagara Falls 50 miles, Collingwood 93 miles, Hamilton 45 miles, London 114 miles, Kingston 165 miles, Montreal 333 miles, New York 500, and Boston 593 miles.

LESSON XXVI.

HAMILTON.

Hamilton is situated on Burlington Bay, at the western extremity of Lake Ontario, and seems destined to become second to no city in Upper Canada. Indeed, the inhabitants, in their zeal for progress and their anxiety to become the first city in the Western Province have styled it "The Ambitious Little City." It was laid out and settled in 1813 by a person of the name of Hamil-

ton, when the Camp on Burlington Heights was an important station, and the centre for military operations against the American invaders of Upper Canada. It is situated a mile from the Bay at the foot of a hilly range, which extends from the Niagara Falls and which at Hamilton receives the name of "The Mountain." An ample supply of freestone and limestone behind the city, affords the means of erecting handsome buildings, of which the inhabitants now generally avail themselves. This city is the chief station of the Great Western Railway, from the Niagara Suspension Bridge to Windsor, opposite Detroit, in the state of Michigan. It is an important commercial city, its trade, imports and exports, rivalling those of Toronto. In the neighbourhood, overhanging the Bay, is Dundurn, the handsome mansion of Sir Allan M'Nab, formerly Speaker of the House of Assembly. It and the numerous villa residences near the Mountain evince great taste as well as wealth and prosperity.

LESSON XXVII.

HALIFAX.

Halifax is one of the chief cities of British North America, and the capital of Nova Scotia. It was founded by Col. Cornwallis in 1749, who afterwards became the Governor of the Colony. So ardently did he and his associates work, that between the months of June and September following, 300 comfortable wooden houses were erected and all surrounded by a strong wooden palisade.

The original name of the town was Chebucto. The harbour, formed by a bay 16 miles long and Bedford Basin, is the finest in America and rarely freezes in winter. It is well protected. When Gov. Cornwallis arrived, the surrounding country was covered with the thick foliage of the spruce and fir even to the water's edge, presenting to the gaze of the admiring emigrants a scene altogether new and delightful. Few places present so pleasing an aspect as Halifax, when viewed from the harbour. The City is

built on the declivity of a hill, and is two miles long and about a mile broad. Its streets are laid out with great regularity, its spires have a picturesque and even a magnificent effect, and the trees which are scattered throughout it give it an appearance softened and refreshing. The streets are spacious and broad and cross each other at right angles. The Province Building, Court House, Government House, and Dalhousie College are fine structures. Province Building is built of brown free-stone. It is one of the best built and handsomest buildings in North America. It contains all the various Provincial Offices, &c., and apartments for the Council, House of Assembly, and Superior Courts. Many of the private residences are built of stone and are very handsome. The dockyard covers 14 acres and is the chief naval station of the Royal Navy in British America.

The wharves are numerous. By means of the Cunard and other steamers and the telegraph, Halifax has direct communication with Europe and all other parts of this Continent. The projected railway to Canada *via* New Brunswick will have its terminus here. The commerce of Halifax is very extensive. The women of this city are accounted very handsome and beautiful, and all the inhabitants of Nova Scotia receive the peculiar epithet of the "Blue Noses," from a particular kind of potatoe which was grown there in great abundance, but which disappeared by the terrible rot a few years ago. The City was called Halifax, from the Earl of Halifax, who had been the chief promoter of the settlement of Nova Scotia in 1749.

LESSON XXVIII.

FREDERICKTON.

Frederickton, the capital of New Brunswick, is pleasantly situated on a level plain on the right bank of the river St. John, County of York, 84 miles from the Bay of Fundy. Its streets are wide, and cross each other at right angles. In front of the City the river makes a bold sweep,

and in the rear a range of hills extend, giving a fine appearance to the City. The Government house is a large and handsome building. Both it and King's College are substantially built of stone. The Parliament House is of wood. There are barracks and other public buildings, with some fine churches.

ST. JOHN.

St. John is the chief city of the Province of New Brunswick. It is situated at the mouth of the river St. John, and was incorporated by Royal Charter in 1785. It is well built, and contains many fine houses of stone and brick. The City stands on the declivity of a rocky peninsula projecting into the harbour, and is regularly laid out, and when approached from the sea, has an imposing appearance. A projecting rock divides the City into two parts, called the Upper and Lower Coves. The principal buildings, besides the Churches, are the Marine Hospital Barracks, Court House, Prison and Government Storehouse. Carlton is a thriving suburb. In 1837 a destructive fire visited the city. The harbour is capacious, safe, and free from ice. The entrance, which is two miles south of the City, is protected by a battery on Partridge Island. The tide rises from 20 to 25 feet. The commerce of St. John is very extensive.

LESSON XXIX.

INDIAN'S DEATH SONG.

An American Indian, when captured in war by savages of another tribe, was commonly tortured to death by fire. The following extract is taken from Carver's Travels into the interior parts of North America :

" During the time his captors were torturing him, the Indian sung his warlike exploits. He recapitulated every stratagem he had made use of to surprise his enemies ; he boasted of the quantity of scalps he possessed ; and enu-

merated the prisoners he had taken. He then spoke of different barbarous methods by which he had put them to death; and seemed even then to receive inconceivable pleasure from the recital of the horrid tale. But he dwelt more particularly on the cruelties he had practised on such of the kindred of his present tormentors as had fallen into his hands; endeavouring by these aggravated insults to induce them to increase his torments that he might be able to give greater proofs of fortitude. Even in the last struggles of life, when he was no longer able to vent in words the indignant provocations his tongue would have uttered, a smile of mingled scorn and triumph sat on his countenance."

The Indian ideas of futurity are thus described.

"They doubt not but they shall exist in some future state. They, however, fancy that their employments there will be similar to those they are engaged in here, without the labour and difficulty annexed to them in this period of their existence. They consequently expect to be translated to a delightful country, where they shall always have a clear sky, and enjoy a perpetual spring; where forests will abound with game and lakes with fish, which may be taken without requiring a painful exertion of skill or a laborious pursuit. But they expect that these pleasures will be proportioned and distributed according to their merit. The skilful hunter, the bold and successful warrior will be entitled to a greater share than those who through indolence or want of skill cannot boast of any superiority over the common herd."

"Why pause ye ere I burn?
Your torments I defy!
Convoke your chiefs, from me to learn
How Mohawk warriors die."
Impatient torture hail'd the morn;
The stake was rear'd, the captive bound,
The smouldering fagot slowly blaz'd;
Age and youth, assembled round,
With taunting aspect gaz'd;
While thus, retorting scorn for scorn,
The song of death he rais'd.

"Pale at the sight of blood,
Ye women chiefs, go, hunt some helpless prey!
Lurk for the marten, traps for sables lay;
Or spear the beaver, plunging in the flood;
But, cowards, well beware
The wolf or rugged bear!
Vilest of the Indian name!
Children, that tremble at Mohawk's frown;
Unskill'd with glorious pangs to crown
The dying warrior's fame.

"Is this your vaunted art?
Is this to act the torturer's part?
Go, rival a Mosquito's smart!
Your bravest chiefs of yore
I seiz'd; their flesh my burning pincers tore,
Round them I wove the burning cane;
Red splinters pierc'd each hissing vein;
While from my back, in bloody triumph hung,
Scalps of their slaughter'd brethren swung.
The woods return'd their moan,
I watch'd the writhing limb,
Saw the rack'd eye-ball swim,
And laugh'd at every groan!

"Prepare to meet their fate,
See Mohawk vengeance rise!
Your race I doom to Mohawk hate!
So, swift as lightning flies,
My sons your sculking wiles have cross'd;
The wood they scour, the swamp, the glen;
I see the short-liv'd fray!
Wood, and hill, and trackless fen
Echo your wild dismay,
Cowards, your scorchéd bones are toss'd,
Of Mohawk dogs the prey.

"Behind yon mountains blue,
(Clear to the valiant, to the coward's eye
Like a dim vapour), in the distant sky

My sires the chase renew
Mid scenes of martial deed,
The dauntless warrior's meed,
There they see your servile race
To women's toils, the coward's doom, consign'd.
—My sires ! I come ; we mount the wind,
And scoff at their disgrace !"

He spoke, he laugh'd, he died :
" Hail my unequall'd son !" said Pride—
" Not so ;" a voice from Heaven replied,
" Is he the truly brave,
Victor of pain, but direful passions' slave ?
—His holy head see Stephen bow ;
See meekness calm his angel brow.

Around see malice scowl, see vengeance glare ;
See rage the murderous stones prepare ;
And Saul the garments keep—
Hark ! ' Lord, their sins forgive !
My spirit, Lord, receive !'—
He spake and fell asleep !"

LESSON XXX.

BRITISH NORTH AMERICAN FOREST TREES.

The principal of the resinous evergreens of British America are the white Pine, usually called by way of eminence, Pine ; the Hemlock, the Spruce, the Balsam or Fir, and the Tamarack. There are others, but little known except to botanists. Of these the Pine is the most valuable, as from the ease and smoothness with which it is worked, added to its large and straight growth, it is in great request for sawing into boards. This tree makes a prettier appearance than the other species ; the diverging fascicles of the leaves give it more the appearance of a deciduous tree by making the surface more irregular ; and it is not so conical as the others.

The Spruce is the most valuable after the pine, for which it is in some degree a substitute, though spruce boards do not possess the good qualities of pine in the same degree. It is much used in building.

The Hemlock is a majestic tree, though of little use; and, as it grows on the poorest and most swampy land, it is generally regarded as an incumbrance, not worth the labour of felling—yet it is sometimes sawn into planks and boards; the latter, though rough-grained, answers for under-covering of roofs and for fencing, and the former from its solidity is well enough adapted for the flooring of barns. But, as many good-looking trees prove unsound at heart, it is not much sought for, and is often burnt on the land when cut down, after having been first stripped of its bark, which is bought at a good price by the tanners. The appearance of a young hemlock is quite different from that of an old. The young tree has a feathery and graceful lightness, bending to the slightest breeze; but, when old, it has become sturdy, the bark rough and deeply furrowed, full of gnarled snags and broken limbs, the top generally blighted and dead, and the foliage almost deprived of that penciled grace which gave such a charm to its youthful days.

The Fir or Balsam is the most elegant of the pine family: it usually grows very straight; the branches project all of the same angle, and grow to a length which diminishes with great regularity as they approach the top; giving to the tree the form of a slender but very regular cone. The foliage is dense and of a greener tint than that of the others, which gives it additional beauty, and the bark is very smooth and fair. Its surface is covered with bladders full of a fluid resin which hardens by long exposure: this is the Canada Balsam of the apothecaries, and gives the specific name. The wood of this tree is not often used for sawing; it does not make good boards; the timber however is valuable for staves of casks and buckets and is likewise made into sap-troughs for the sugary.

The Larch or Tamarack, though mentioned among the evergreens from its belonging to the same family, is really deciduous; it loses its leaves in October, resuming them in May. Its wood is very little used; sometimes however it

is hewn for building or applied to other more trivial purposes; it is close-grained and hard, when seasoned.

All these woods, when green, burn with difficulty notwithstanding their resinous nature; and, even when dry, they consume so quickly and so continually throw out lighted fragments, "flankers," as they are called, that they are confined *to our close stoves.*

The White Cedar, notwithstanding its general resemblance to the pines, belongs to a different genus. The leaves are small and curiously imbricated or lapped over each other; the branches are slender and usually pendent; the bark fibrous and stringy; from the facility with which it is split, but chiefly from its great durability, almost incorruptibility, it is in great request for the *rails* that compose those unsightly zigzag fences, so offensive to the eye of one accustomed to the verdant and blooming hedge-rows of England. Cedar rails may be exposed to every vicissitude of weather for a man's lifetime without manifesting any symptom of decay except the separation of the bark. It chiefly grows in marshes and so densely as to render them almost impenetrable. A cedar swamp is a valuable addition to a Canadian farm.

The Rock Maple sends up a straight trunk, disfigured with hard and gnarled protuberances, shooting out its branches nearly at right angles, which are bent and contorted in every possible direction.

The Beech has a straight trunk, but it is remarkably smooth, of a bluish-grey with white and dark patches; its branches are longer and straighter, and the twigs come to a finer point than those of the maple. It is much used for firewood, ranking third in quality for that purpose, maple being first and birch second.

The Bass-wood is much like the maple, but the trunk is usually rounder and more pillar-like, and, though fissured like it, yet they are more regular, and it is free from those knobs which characterize the sugar maple.

The Elm growing in the open clearing with a full supply of light and air, divides near the bottom into several leading branches which continue to grow upward to a great length, dividing and subdividing into many

ramifications, which pursue the same upward direction, gradually spreading outwards, which gives the tree a broad and somewhat flattened top, while all the other trees are conical or rounded. In the forest, the elm is the most lofty of trees, with a remarkably straight round trunk, deeply furrowed and almost white, without a branch till the top, which is small for the height and size of the tree, and much contorted.

The White and Brown Ash growing in the clearing, are graceful trees; the branches diverge from the central stem with a double curve, like the branches of a chandelier diminishing in length with great regularity as they proceed upward. The twigs are thick and do not taper to a point; but end abruptly, the terminal buds being large. In the forest, the size of the twigs is the chief difference between the large ashes and elms, the twigs of the latter being very fine; the brown ash however is more liable to be crooked, and the bark is more smooth and scaly; the white rarely grows so large, its trunk is not so light coloured, and its furrows not perpendicular, but somewhat lozenge-shaped.

The Butternut can with difficulty be distinguished from the white ash without close examination of the buds; it is however a more spreading tree, the lower limbs being longer. It is much used by cabinet-makers and others of that class.

The Birch is easily known by its bark, which, when young, has a satiny glossiness that is always retained on the limbs; when old, the bark becomes ragged, and peels off in paper-like rolls, many of which, half separated, are always seen on the old tree. The bark of the Cherry has somewhat of the same peeling property, but in a much less degree; it is not so silky nor so flexible, and is of a more scaly nature; it generally has a purplish tinge.

The Poplar is remarkable for the colour of its bark, a smooth greenish white, which comes off on being touched, as if it were whitewashed. The Balm of Gilead has a similar appearance, but the trunk is furrowed, and the terminal buds much larger.

LESSON XXXI.

THE MAPLE TREE.

HAIL to the pride of the forest—hail!
To the maple stout and green;
The treasure it yields shall never fail
While leaves on its boughs are seen.
When the moon shines bright
On the wintry night,
And silvers the frozen snow,
And echo dwells
On the lingering bells,
As the sleighs dart to and fro;
Then it brightens the mirth
Of the social hearth
With its red and cheering glow.

Afar 'mid the bosky forest shades
It lifts its tall head on high,
When the crimson tint of daylight fades
In the glowing saffron sky,
And the sun's last beams
Through the foliage streams
And brightens the gloom below;
And the deer bounds by
With his flashing eye,
And the shy, swift-footed doe,
And the sad winds chide
Through the branches wide
With a tender plaint of woe.

The Indian leans on its rugged trunk
With the bow in his red right hand,
And mourns that his race like a stream has sunk
From the glorious forest land;
But, blithe and free,
The maple tree

Still tosses to sun and air
Its thousand arms,
And in merry swarms
The wild bees revel there;
But how soon not a trace
Of the red-man's race
Shall be found in the landscape fair.

When the snows of winter are melting fast,
And the sap begins to rise,
And the biting breath of the frozen blast
Yields to the spring's soft sighs;
Then away to the wood!
For the maple good
Shall unlock its honied store;
And boys and girls,
With their sunny curls,
Bring their vessels brimming o'er
With the luscious flood
Of the brave tree's blood
In the cauldron deep to pour.

The blaze from the sugar bush gleams red
Far down in the forest dark;
Its burning glow on the trees is shed
And lights up their rugged bark—
And with noisy shout
The busy rout
Watch the sap as it bubbles high;
And they talk of the cheer
Of the coming year,
And the jest and the song pass by;
And brave tales of old
Round the fire are told,
That kindle youth's beaming eye.

Hurrah! for the sturdy maple tree!
Long may its green branch wave
In native strength sublime and free,
Meet emblem for the brave—

And a nation's peace
With its growth increase,
And its worth be widely spread;
For it lifts not in vain
To the sun and rain
Its tall majestic head—
May it grace our soil,
And reward our toil,
Till the nation's heart is dead.

LESSON XXXII.

MAPLE SUGAR MAKING.

A DIALOGUE BETWEEN CHARLES AND HIS FATHER.

Father. We will go into the Sugary, where the men are collecting the sap from the maple-trees, which has been flowing for two or three days.

Charles. I have a curiosity to see the process, for I cannot understand how sugar can be made from the sap of a tree; I always thought, until lately, that it was procured from the sugar-cane of tropical climates.

Father. The sugar is in itself the same, whether produced by the cane, the maple or the beet; for from all these it is manufactured for consumption. But few substances are more generally diffused through the vegetable creation than sugar, and it is even found in animal substances. It is true that in many of these it can be detected only by the chemist, but in dried fruits, in germinating grain especially barley, in many roots, as turnips, parsnips, &c., in the stalks of maize, and even in straw, it can be readily appreciated by the senses. A most singular discovery has been made that starch and sugar are chemically the same, composed of the same elements and in the same proportions, and that in certain circumstances the former becomes changed to the latter in every property. The cereal grains, or corn in general, are principally composed

of starch, which in the process of germination is transformed to sugar; this is the manner in which malt is made out of barley.

Charles. I suppose these tubs are set at the foot of the trees to receive the flowing sap.

Father. Yes; one to every tree, except where two grow so close to each other as will allow the sap to flow into one tub or bucket,—you see a hole is first bored in the trunk with an auger about an inch deep; some cut an oblique notch with the axe, but this wounds the tree unnecessarily and causes premature decay. Beneath the hole or notch a semicircular incision is made with a large iron gouge, called a *tapping iron*, into which a spout, made of pine-wood, guttered down the centre, is driven to catch the sap as it flows from the hole above and conduct it down to the bucket beneath. This is the Canadian way; but in the State of Vermont I have seen a much handier way. A nail is driven into the tree just below the spout, and on this is hung the bucket by a hole in one of the staves; the advantages are that a shorter spout serves, and the sap cannot be overturned by hogs or stray cattle, as it frequently is when it stands on the ground.

Charles. How much sap does a maple yield in a day?

Father. That varies exceedingly, according to the size, age, health and situation of the tree and to the weather. Sometimes a tree will yield a gallon or two in 24 hours, at other times not a drop can be collected. A young tree, provided it has attained a growth of about a foot in diameter, yields better than an old one; and one growing in a clearing that is *raised* there, better than a forest tree.

Charles. What weather is most favourable?

Father. A warm sunny day after a frosty night. In frosty, cold weather, or rainy weather, or when the nights are mild the sap almost ceases to flow; but, when a sharp frost has continued all night and the sun is warm through the day the sap drops rapidly and keeps the men going. Sometimes it runs all night.

Charles. How many trees generally compose a sugary?

Father. From 200 to 300, or as many as can conveniently be attended to at one boiling place or camp; but

sometimes 1000 trees are tapped with two or three camps. If the trees generally are near together, more can be tended than if they are scattered; and, when little or no snow lies on the ground, more business can be done than in deep snow, owing to the greater facility of carrying the sap to the camp. I have known the snow more than two feet deep at the sugar season, causing it to be very laborious for the men to move about, and, from the shelter of the forest, it continues unmelted there much later than in the fields and roads.

Charles. How can the men carry the sap? the buckets have no handles.

Father. These are not nearly full either. They carry a couple of pails suspended from each end of a yoke fitted on their shoulders, as you have seen milkmen carry their pails in other countries. They go a regular round with these, visiting every tree in succession, emptying into their pails the contents of each bucket, and replacing it under the tree, until their pails are full, when they carry them to the camp, empty them into a large cask called a *holder*, and proceed again on their round. When this holder is nearly filled, it is considered time to begin boiling.

Charles. How much sugar will a tree produce in one season on an average?

Father. From two or three pounds in a favourable season, for as much depends on the season in this, as in any other object of the farmer's attention. 2000 pounds' weight is sometimes made by a farmer in one spring, worth perhaps 5d. per lb., making a sum of upwards of £40 currency.

Charles. What are the men engaged in when not carrying sap or boiling?

Father. Chiefly in felling trees and cutting and splitting them up for firewood, to be used in boiling down, as this process consumes a large quantity of fuel. They select those hard-wood trees that stand near the camp, such as superannuated maples, beeches, birches and other trees.

LESSON XXXIII.

SAME SUBJECT—CONTINUED.

Charles. I see a fire yonder: I suppose that is the camp.

Father. Yes; we will go thither as they are boiling; it may interest you to see it.—You perceive here are two forked poles stuck into the ground, across which another strong pole is laid, from which the large boiling kettle is suspended by a chain over the fire. In some parts of the process it is necessary to stop the boiling very suddenly, and they do this by throwing shovelsful of snow on the fire; but I have seen it managed in a much neater manner, thus:—The kettle is suspended over the fire from the short arm of a long lever, which works around a pivot on some stump near; by pushing the long arm of this lever, a man can instantly swing the kettle off the fire with all ease, and these posts and cross-beams are not needed.

Charles. What is in the pot now?

Father. It was filled this morning with sap out of the holder, that large cask that stands before you, and, as the watery part has been evaporated, its place has been supplied by repeated fillings-up from the reservoir. A piece of fat pork thrown in has the effect of refining it, by making all extraneous matters rise in a thick coat of scum, which is carefully taken off from time to time as it accumulates. When it has boiled to a considerable consistence, about that of oil, it is baled out into another cask and is called *syrup*. The first part of the process, the first boiling, is then complete.

Charles. What more remains to be done?

Father. The same process is repeated when they have sap enough, and the syrup is added to what is already in the cask, until there is a sufficient collected "*to sugar off*" as it is called, that is, to complete the process by boiling the syrup over again until it will granulate or crystallize. This is a delicate operation and requires constant attention; they fill the kettle with syrup, adding the indispensable

piece of pork for the same purpose as before; as the syrup wastes away, it is refilled and kept constantly skimmed; it is needful to keep a regular fire and, towards the close of the business, to watch the sugar attentively, to stop the boiling at the right instant, as a minute's delay may spoil the whole, or at least greatly injure it. When it is about half done, it is called maple honey, from its resemblance to honey in taste, consistence and appearance.

Charles. How is it known when it is time to remove it from the fire?

Father. By a very simple but infallible test. They take a twig and bend the ends of it into a hoop or circle about an inch wide; dipping this into the kettle and taking it out, a film of sugar is stretched across the bow, they gently blow on this with their breath; if the breath break through, it is not done, but, if the film be sufficiently glutinous to be blown out into a bubble, it is ready to granulate; and then the fire instantly goes out.

Charles. Is the sugar then *made?*

Father. Yes, it is immediately baled out of the kettle and carried home in the buckets; if soft sugar be intended to be made it is poured, when somewhat cooled and granulating, into wooden vessels, the bottoms of which are bored with holes; the surface and sides soon become hard, having crystallized first; this crust is repeatedly broken and the whole stirred together; the molasses gradually drains through the bottom, and the sugar is left exactly resembling the cane-sugar. But it is more usual to let the sugar cool in vessels, without either disturbing it or draining off the molasses, so that it becomes a mass nearly as hard as a rock and very dark in colour.

Charles. How large must the maple become before it will yield saccharine juice?

Father. The sap contains sugar from the first period of its existence; but it is not usual to tap a tree until it attains about the diameter of a foot at the bottom; too early tapping is injurious to the health of a tree, and causes premature decay; old trees, too, produce little or none and are cut down for fuel.

Charles. Is there never more than one incision made in a tree at one time?

Father. With us there is no more; but in the United States it is not unusual to tap a maple in 3 or 4 places at once. No doubt more sap can be collected in this way, but it must be very detrimental to the health of the tree to extract so large a quantity of its nutritive juices.

Charles. How long does the sugar season continue?

Father. It lasts generally about 3 or 4 weeks; but there are many days in this period, during which nothing at all can be done. If the spring is late, it is sometimes necessary to close the sugar-making prematurely, in order to commence the more important operations of agriculture.

LESSON XXXIV.

DETACHED PIECES—FUNGUS.

The curious excrescences growing on the bark of trees and old stumps are a species of Fungus called the Hoof Boletus, from the resemblance which they often bear to the shape of a horse's hoof; they may be seen from the size of a walnut to a foot or more in diameter, varying in colour above from dull white to bright polished brown, like mahogany. They grow on many trees, but seem chiefly to affect the birch; they are also very frequently found on the underside of upturned roots. From the elevated ridges on the surface forming parts of concentric circles parallel with the edge, it would appear that they grow not by gradual increase of the whole but by additions to the outer margins. The upper part is of a tough leathery consistence, often becoming hard and woody; the under part consists of a congeries of long capillary tubes, parallel with and close to each other, fixed on the under surface of the *pileus* or covering, and proceeding downwards at right angles to it. These tubes, though minute, are so straight that, if you cut off a piece of this part, and hold it up towards the light, slowly turning

it, the light will suddenly flash through them, when the orifices come opposite the eye, as through a spyglass. This mass of tubes is elastic and capable of taking up and holding a large quantity of water, like a sponge. The Boletus constitutes the food of some beetles.

THE MAGDALEN ISLANDS AND ANTICOSTI.

To the northward of Prince Edward's Island lie the Magdalen Islands, under the jurisdiction of Canada, and for electoral purposes included in the County of Gaspé. They are 7 in number, and are used as fishing stations. These islands are almost in the centre of the Gulf of St. Lawrence, and the length of the group is 56 miles.

Within the Gulf and at the very threshold of Canada is the large island of Anticosti, 420 miles below Quebec. It comprises 2,000,000 of acres. It has been till lately owned in England, and has been much neglected. The geological survey under the direction of Sir William Logan has served to dispel many existing prejudices regarding this island. It is believed to contain much arable land, and is well wooded. It should be no longer overlooked as its position is very important, and it may become an important *entrepôt* of trade.

LESSON XXXV.

DETACHED PIECES—CONTINUED.

SCENERY IN THE FAR WEST.

On the 3rd of July, 1840, Sir George Simpson's adventurous cavalcade defiled "through the gates of Fort Garry, into the open plains, with a horizon before them as well defined as that of the blue ocean, the scene resembling the moving of an eastern caravan in the boundless sands of Arabia; a medley of pots and pans and kettles in one single vehicle, the unruly pack-horses prancing under their

loads, and every cavalier armed to the teeth, assisting his steed with boot and spur to neigh and caper; the effect being not a little heightened by a brilliant sunrise, the firing of cannon, the streaming of flags and the shouting of spectators." The scenery of the first day was "a perfect level. On the east, north and south there was not a mound or a tree to vary the vast expanse of green sward, while to the west were the gleaming bays of the winding Assiniboine, separated from each other by wooded points of considerable depth." Next day the cavalcade "brushed the rich grass with their knees." The rankness of the vegetation savoured of the torrid zone. In the afternoon the plains gave place to a "rolling succession of sandy hills covered with brush." Next day the journey lay through tolerably well wooded hills with a succession of lakes. In the neighbourhood of these waters the pasture was rich and luxuriant. The pace now became slower, to keep with that of the loaded carts. On ascending the eastern embankment of the valley of the Assiniboine a large band of horses was seen, belonging to Fort Ellice.

Leaving that fort and passing through a swampy wood and through a level meadow, several thousand acres in extent, the party trotted away over prairies studded with clumps of trees, then over swampy ground, then over prairies, and past a boundless one as level and smooth as a pond and covered with an alluvial soil of great fertility. And so the pace was kept up at the rate of 4 or 5 miles an hour, for 10, 12 or 14 hours a day. And thus the journey went on amid a country with such characteristics as these: a picturesque country, sloping bank of green sward crowned with thick woods, a beautiful country with lofty hills and long valleys, till the south branch of the Saskatchewan was reached. A ride of 4 or 5 hours from the Bow River, through a country much resembling an English park, brought the cavalcade to Fort Carlton on the Saskatchewan. The distance of 600 miles was accomplished in 13 days. The river is here a quarter of a mile wide, and is navigable for boats from Rocky-Mountain House to Lake Winnipeg, upwards of 700 miles in a direct line. At the Fort "there are large gardens and fields, producing abund-

ance of potatoes and other vegetables." Next they journeyed on from Carlton to Edmondton on the north bank of the Saskatchewan. The route lay at first through a hilly country; then through vast prairies, the grazing-grounds of the buffalo, a herd of 5000 having been overtaken by the party. Sir George Simpson states that buffaloes are incredibly numerous, and that in 1829 he saw 1,000 of their carcasses mired in a single ford of the Saskatchewan. As they advanced towards Edmondton, an extensive forest was passed, than a plain covered with a luxuriant crop of wild vetches. At length Edmondton was reached. Here they found a farm. The pasturage was most luxuriant and a large dairy was maintained. The garden produced potatoes, turnips, and a few other hardy vegetables.

THE RED RIVER SETTLEMENT.

The settlement at the Red River was formed by Lord Selkirk in 1811, and it has passed through a severe and trying ordeal. It has not advanced much in population, owing to the difficulty of ingress and egress, and to the want of a market of sufficient extent to stimulate industry and encourage production. The soil at the Red River Settlement is, according to Dr. Rae, of a very rich quality. According to the Rev. Mr. Corbett, an Anglican clergyman who was stationed in the territory, the country is excellent for agricultural operations, which might probably be extended to a great distance from the river. The soil is alluvial. The settlers cultivate the soil without manuring it; they sow for 12 or 14 years in succession, and produce from 4 quarts, 12 bushels of wheat, 64 or 70 lbs. to the bushel. According to Bishop Anderson, the crops at the Red River are as good as in any part of Canada. Melons grow luxuriantly, and "all kinds of farm-produce common in Canada succeed admirably in the district of the Assiniboine; there are wheat, oats, barley, Indian corn, hops, flax, hemp, potatoes, root-crops and all kinds of garden vegetables"; and, as a grazing country in summer and in autumn, the Red River territory has perhaps no equal.

LESSON XXXVI.

THE MINES AND MINERALS OF CANADA.

The mineral resources of Canada are especially valuable, and are now being developed. The Legislature of the Province has with characteristic liberality, for some years employed a geologist of European reputation, Sir William Logan, and a staff of competent assistants, in prosecuting a geological survey of the country. In the prosecution of this survey and otherwise, many important deposits of economic minerals have become known, while others are continually being discovered, to such an extent and of such varied and useful characters as to place it beyond doubt that Canada is possessed of vast mineral wealth.

In general terms it may be stated that iron ores are found in great abundance and variety. Magnetic iron ore of excellent quality and great richness, as well as good percentage, is found in large beds in many localities, such as Marmora, South Sherbrooke, Hull, Madoc, &c. At Marmora, works have been carried on at much disadvantage, owing to their inland position; but an English Company has been incorporated for working the very valuable and extensive bed of metal at this place, and they have overcome the difficulty by constructing a tram-way connecting with the Grand Trunk Railway. At Hull an American firm is engaged in mining the ore for the purpose of transport to Pittsburg, Pennsylvania. Specular iron ore is found on Lake Huron, and in the township of McNab in Upper Canada, where there is a large deposit. Bog ore is found in a great number of localities, such as Middleton, West Gwillimburg, Eardly, Marsh, Hull, Templeton, St. Maurice Forges, Stanbridge, &c. At the St. Maurice Forges, smelting works have been carried on successfully for upwards of a century, the iron produced being singularly excellent in quality. The stoves produced at St. Maurice from this material enjoy a high local reputation. In the vicinity a new work has been erected and is in operation.

Titaniferous ore is found in abundance in the Eastern Townships of Lower Canada and in other localities. Sulphuret of zinc has been found on Lake Superior, and sulphuret of lead in Fitzroy, Bedford and Bastard, and also in the County of Gaspé. A valuable lead mine has lately been discovered and is now worked at Carlton, C.W.

Sulphurets of copper of various characters, and native copper in small quantites, are found in abundance on Lakes Superior and Huron. On Lake Huron the Montreal Mining Company have been engaged for years in carrying on mining operations at the Bruce Mines, and have exported considerable quantities of crushed ore of good quality. Owing to the great distance and the cost of conveyance, their success has been varied and uncertain, though they are possessed of a valuable mine. Sulphuret of copper has also been met with in the Eastern Townships of Lower Canada, at Upton, Acton, and Inverness.

Native silver has been met with at Prince's Location, Lake Superior, and elsewhere in that region, which, however, has not yet received that full exploration which it merits.

There is a large auriferous tract of country in Canada, though, in the opinion of the Provincial Geologist, it will not be found in sufficient quantities to repay any but skilled labourers. In the valley of the Chaudière there are many indications of the existence of gold, and in fact, in the opinion of Sir Wm. Logan, the gold region covers a tract of 3000 miles, embracing the mountain ranges which are but a continuation of the Rocky Mountains. To a country possessed of so many natural advantages, and so many elements of material prosperity as Canada, it is not, in the opinion of judicious men, desirable that gold should be found in such quantities as to create a rush to the diggings, and thus interfere with the pursuits of legitimate industry, and the development of the less attractive but perhaps more permanently enduring sources of wealth.

I now notice, adopting a classification which was carefully framed under scientific auspices, for the purposes of the Canadian effort at representation in the Great Exhibition, *the chemical materials, being such as require peculiar*

chemical treatment to fit them for use; and without specifying localities, mention, as having been already discovered in Canada: *uranium*, for the purposes of glass staining and porcelain painting, &c.; *chromium* and *cobalt*, used for the same purposes; *manganese bog*, for bleaching and decolourizing; *iron pyrites*, for the manufacture of copperas and sulphur; *dolomite*, containing 45 per cent. of carbonate of magnesia, for the manufacture of epsom salts and the magnesia of commerce; and *magnesite*, containing 83 per cent. of carbonate of magnesia.

Passing on to *stone paints* as a general head, I notice that *sulphate of barytes*, largely used in mixing with white lead and also in the manufacture of Dutch white, is found in several localities. *Iron ochre*, for the manufacture of yellow ochre and Spanish brown; and Talcose slate, adapted to the making of yellow ochre and French white, are found in various localities. *Soapstone* is abundantly found, and *ferruginous clay* is also met with. *Ochre* is being manufactured near Three Rivers, by an American firm, for transport to New York.

Lithographic stone of good quality is found in the Township of Marmora and also in Rama.

Among materials applicable to jewellery and ornamental purposes are found *agates, jasper, labradorite, sunstone, hyacinths, amethysts, oriental rubies, ribboned chert* (for cameos,) and *jet*.

Materials for *glass-making* are to be obtained, viz: white quartz sandstone, for ordinary purposes; and pitchstone, basalt, and allied rocks, for black glass. Among *refracting materials* have been discovered *soapstone, asbestos, sandstone* and *plumbago*. In the list of *manures* are included *phosphate* of *lime, gypsum*, and *shell marl*.

Next, among *grinding* and *polishing materials* are found granitic and syenitic boulders, derived from the granitic or gneissoid rocks, and adapted for millstones, and silicious conglomerate, granular and corneous quartz rock, granite and pseudo-granite. Sandstones suitable for grindstones, though not of the very best quality, are also found among the Potsdam sandstone, and also in some portions of the Gaspé sandstone beds. Materials applicable for the making

of whetstones and hones are freely found. Canadian tripoli, a silicious infusorial deposit, is found and used for polishing.

Materials for paving and *tiling* are abundant. Quarries of *roofing slate* have been opened and slates manufactured at Kingsey and Shipton, and they have also been found in Halifax and Frampton. The slate from the Kingsey works is likely to come into extensive use, they being, as are also the Shipton works, easy of access to the City of Montreal by railway. *Flag stones* are found in very great numbers. There is no lack of *materials suitable for building purposes*, and in great variety, viz: granite of superior quality, white and durable pseudo-granite, sandstone, yellowish white calcareous sandstone and limestone. The latter material is that generally in use in the City of Montreal, and being a compact dark stone, imparts a peculiarly substantial appearance to the buildings and the whole city. Common lime is largely found, and a material applicable to the making of hydraulic lime is also to be obtained. *Clay*, for the manufacture of red bricks, white bricks, tiles, and common pottery, is abundant. Owing to the want of stone at accessible distances, the buildings in the City of Toronto are chiefly constructed of white bricks, of superior excellence, made from the blue clay found in the vicinity. The bricks are compact and substantial, while the whiteness of the material gives an air of graceful elegance to the structures for which they are used. *Marble* of various qualities is found in many localities, and of varied character, viz; white, black, brown, grey, mottled, variegated, white, green and verd antique. *Serpentine*, in many parts, suitable for ornamental purposes, is found in a range of 135 miles, running through the Eastern Townships, and in another range of 10 miles running through Leeds. As coal has not yet been discovered in Canada, and as from its geological formation it is unlikely to comprehend within its limits any portion of the coal measures, though in the neighbouring Province of Nova Scotia it is found fortunately in immense fields, it is of consequence that peat is very abundant and may prove to some extent a profitable article of consumption for fuel. It is now being cut in one locality in the vicinity of Montreal. *Petroleum*, *naphtha*, and *asphalt* are also found.

LESSON XXXVII.

CANADIAN LAKES.

ONTARIO, the most easterly of the lakes, and the safest for navigation, is about 200 miles long by about 60 in its greatest breadth. It is 234 feet above the Atlantic, and is so deep that in many places it exceeds 100 fathoms. Besides receiving the waters of the Upper Lakes from the Niagara River about 45 miles from its western extremity, it is augmented on the Canadian side by the waters of the Napanee, Salmon, Moira, Trent, and other rivers and creeks, whilst the Black, Oswego and Genesee Rivers, with various creeks, contribute their abundant waters from the State of New York on the southern shore, on which are situated the ports of Sackett's Harbour, Oswego, and Carthage, about a mile from the rapidly rising City of Rochester. It has two remarkable bays, Burlington Bay at the western extremity, and the Bay of Quinté, which is an expansion of the River Trent, at the mouth of which it commences. The former is nearly triangular, having the base towards the Lake, and is about 6 miles long and 4 in its greatest width. By means of a canal, formed through a low sandy ridge nearly separating it from the Lake, vessels are enabled to reach Hamilton; and access has been opened up as far as Dundas by means of the Desjardins Canal, constructed through the marsh 5 miles westward of the Bay. The Bay of Quinté is very irregularly shaped, lying between the mainland on the north, and the peninsula of Prince Edward and Amherst Island. Besides the large peninsula of Prince Edward, whose shores are indented by numerous bays, these are two narrow peninsulas stretching opposite to the village of Brighton and the City of Toronto, and enclosing bays which afford excellent shelter for vessels. The former goes by the name of *Presqu'Isle* and the latter by that of the *Peninsula*, the extremity of which is called Gibraltar Point.

ERIE, the most southerly of the Lakes, and on account of its extreme shallowness the most dangerous for naviga-

tion, is nearly 260 miles long and 65 broad at the centre. It is 565 feet above the Ocean, and in depth seldom amounts to more than 250 feet. Receiving the waters of the Upper Lakes through the Detroit River, it is augmented on the Canadian shore by the discharge of the Grand or Ouse River and numerous creeks, such as Little Otter, Big Otter, and Kettle. The American shore is distributed between the States of New York, Pennsylvania, and Ohio, and contains the much frequented ports of Buffalo, Dunkirk, Erie, Cleveland, and Sandusky. The Canadian shore presents a bolder character than the American, although the banks seldom exceed 100 feet. There is a similarity between this Lake and Ontario, inasmuch as the northern shore contains the 2 long and narrow peninsulas of Long Point or North Foreland and Pointe-aux-Pins. There is also a dissimilarity between the Lakes, inasmuch as Ontario has several considerable islands, such as Amherst, Garden, Grand or Wolfe, scattered over the *eastern* extremity, whereas Erie has its *western* extremity dotted with several islands, of which one only, Isle Pelée, is inhabited. This isle lies about midway between the peninsula enclosing Sandusky Bay and Pointe Pelée, which is remarkable as the southernmost point of the mainland of Canada, lying a few minutes south from the 42° of North lat., and nearly corresponding with the City of Chicago on the southwestern angle of Lake Michigan, the boundary-line between the States of New York and Pennsylvania, and Cape Cod in Massachusetts.

ST. CLAIR, receiving the waters of the Upper Lakes through the River St. Clair, and nearly equidistant from Lakes Erie and Huron, is an expanse of nearly a square form of about 25 miles. From the Canadian shore the rivers Thames and Sydenham contribute a large body of water. The opposite shore belongs to the State of Michigan. The upper portion of the Lake contains several large islands formed by the branches into which the St. Clair divides itself. All to the west of Walpole Island belongs to the Americans. It is worthy of notice that there took place in 1827 a great rise of the Lake, by which much of the lowland was laid under water,

and many fine orchards were destroyed. The land is becoming dry again by the gradual subsidence, but the damage to the fruit-trees is irreparable.

HURON, the second in size of the Canadian Lakes, besides receiving the waters of Lake Superior and Michigan, receives a vast accession from numberless rivers and streams from the eastern shore, among which may be mentioned, as leading affluents, the French River from Lake Nipissing, the Severn from Lake Simcoe, the Nottawasaga, the Beaver, the North River aux Sables, the Saugeen, the Maitland, the Bayfield, and the River aux Sables, so named from the sandy plains through which it passes. The south-western shore belongs to the American State of Michigan. It is about 250 miles in length and 220 at its widest part, and is 578 feet above the Ocean. Like Lake Erie, it is rather subject to sudden storms, and the southern portion is unfortunately deficient in good harbours, the principal ones being Goderich and Saugeen. Vessels, caught in a storm not too far to the north, generally run for shelter to the Bay in the St. Clair formed by the projection of Point Edward a little above Port Sarnia. Here under such circumstances a dozen of vessels may be seen weatherbound. Its waters have been gradually rising for the last few years, so that many parts along the south-eastern shore, where there were previously several yards of gravelly beach between the base of the cliff and the water's edge, are now submerged. A large wing, called the Georgian Bay, extends in a south-easterly direction for about 100 miles, including within its bounds the bays of Colpoy, Owen Sound, Nottawasaga, Gloster and Penetanguishene. The Georgian Bay is studded with several thousands of islands, chiefly along the indented shores. In the north of the Lake lies a very large island, called the Great Manitoulin or Sacred Isle, being viewed by the Indians with peculiar awe as the abode of the *Manitou* or Great Spirit. It is about 100 miles long and from 4 to 25 miles wide, and has several small islands scattered around, but is itself the only one inhabited. The southern extremity of the Lake goes by the name of Gratiot's Bay. Among the principal headlands may be noticed Point Edward, Kettle Point or Cape Ipperwash, Cape Hurd and Cabot's Head.

SUPERIOR, whose name implies that it is the largest of our Canadian Lakes, is in truth the most extensive body of fresh water in the World. It is bounded on the south chiefly by Michigan State, and on the south-west and west by Illinois and Minnesota States. Its form is an irregular crescent, and its length has been estimated at upwards of 400 miles. Its surface is 625 feet above the level of the Ocean, whilst its shores afford indication of its having once been 40 or 50 feet higher. It is remarkable that the most capacious lake on the face of the Globe receives its ample supply from the waters which more than 200 rivers and streams of very considerable length contribute from the surrounding mountains. The most considerable of these is the St. Louis, which has a course of about 200 miles. Its waters are remarkably transparent, so that rocks even at extraordinary depths are rendered distinctly visible. This transparency seems to be caused by the mud and sand having time to subside. On the south side are immense cliffs rising 300 feet, and stretching along the coast for 12 miles, which have been called the Pictured Rocks, in consequence of the variety of appearances which they present to the passing voyageurs. On the same shore there are two remarkable objects, the Cascade of La Portaille and the Doric Arch. The former consists of a considerable stream precipitated from a height of 70 feet by a single leap into the Lake to such a distance that a boat can pass perfectly dry beneath the fall and the rock. The sandstone of the rock has been worn away by the ceaseless action of the water to such a degree that the superincumbent mass rests upon huge arches, and is intersected in every direction by caverns, through which the wind rushes with an awful sound. The latter consists of an isolated mass of sandstone with pillars supporting an entablature of stone, covered with earth, on which grows a grove of pine and spruce trees, some being 60 feet high. The surplus waters of the Lake, issuing near the south-western extremity, are transmitted through St. Mary's channel to Lake Huron. It is confidently hoped that the vast copper-mines on the shores of the Lake, which have been wrought for some years, will eventually prove highly remunerative.

In connection with Lake Huron there are Lakes SIMCOE, GOUGICHING and NIPISSING. The first discharges itself through Lake Gougiching and the Severn into the Georgian Bay of Lake Huron, above which it is said to be about 170 feet; so that its surface will be 764 feet above the Atlantic. Its southern extremity commences about 35 miles north from Toronto. It is nearly 35 miles in length, and about 18 in the widest part. It is much indented with bays, of which Cook's Inlet, occupying the southern extremity, is 8 miles long and from 2½ to 4 miles wide; while the beautiful one called Kempenfeldt Bay, is about 10 miles long and from 2 to 3 miles wide. On the north-western extremity of this bay is situated Barrie, the County town, and on its shores are sometimes picked up fine white cornelians. Very fine white fish and maskalongé are taken in the Lake, which in winter is completely frozen over, so as to be passable with safety for sleighs. It is studded with many islands, only one of which, Snake Island, is inhabited by Indians. The northern extremity is connected with Lake Gougiching by a narrow channel, called the "Narrows," over which a handsome bridge has been constructed. This small lake, whose scenery is very romantic, is about 12 miles in length by 3 to 5 in breadth. On its western shore is the village of Orillia, and at the northern extremity is that of Rama, near which its waters are discharged into the Severn. A commodious steamboat makes regular trips thrice a week betwixt Holland Landing at the south end of Lake Simcoe and Orillia, starting from the former place on Monday morning, passing the night at Orillia, and thence returning next day along the opposite shore to Holland Landing. By this arrangement the Lake is circumnavigated thrice each week, and in each trip the eastern and western shores are taken alternately.

NIPISSING is situated nearly 100 miles north from Penetanguishene, and discharges its waters in the Georgian Bay by the French River and into the Ottawa by the Southwest Branch. It has several islands, some of which are inhabited by Indians. It is noted for its immense flocks of wild geese.

RICE LAKE is chiefly formed by the waters of the

Otanabee River, which connects it with a chain of Lakes such as Salmon Trout, Shebauticon, Chemong, Pigeon, Sturgeon, Scugog and Balsam Lakes. These lakes are noted for the superior quality of their fish, which are caught in great numbers, particularly maskalongé and bass. Rice Lake at its outlet forms the Trent.

LESSON XXXVIII.

LAKES—CONTINUED.

LAKE ST. PETER'S.

This lake, which is formed by an expansion of the St. Lawrence, is about 25 miles long and 9 miles broad, but is, for the most part, rather shallow. Improvements, however, have rendered the navigation such that the largest sailing vessels, and the Canadian and Liverpool steamers now pass up during the summer season to Montreal. Like all the other lakes, that of St. Peter's assumes a very different appearance in the summer season, during mild weather, from what it does during a gale of wind. Then it presents all the appearance, as well as the dangers of the sea, and rafts on their way down the river are frequently wrecked on its waters, the violence of the winds and waves being such as to render them unmanageable, and parts them asunder, to the loss sometimes of life as well as the timber.

LAKE OF THE THOUSAND ISLANDS.

These Islands, which have obtained a world-wide celebrity, consist of fully 1800 islands, of all sizes and shapes—from a few yards long, to several miles in length, some presenting little or nothing but bare masses of rock, whilst others are so thickly wooded over, that nothing but the most gorgeous green foliage in summer is to be seen; whilst in autumn the leaves present colours of different hues of light crimson, yellow, purple and other colours scarcely imaginable, and yet more difficult to describe.

"Here Nature holds her Carnival of Isles,
Steep'd in warm sunlight all the merry day;
Each nodding tree and floating greenwood smiles,
And moss-crown'd monsters move in grim array;
All night the fisher spears his finny prey,
The piney flambeaux reddening the deep
Past the dim shore, or up some mimic bay,
Like grotesque banditti as they boldly sweep
Upon the startled prey, and stab them while they sleep

Many a tale of legendary lore
Is told of these romantic Isles. The feet
Of the Red Man, have press'd each wave-zon'd shore,
And many an eye of beauty oft did greet
The painted warriors and their birchen fleet,
As they return'd with trophies of the slain;
That race has pass'd away: their fair retreat,
In its primeval loneness smiles again
Save where some vessel snaps the isle-enwoven chain.

Save where the echo of the huntsman's gun
Startles the wild duck from some shallow nook,
Or the swift hounds' deep baying as they run,
Rouses the lounging student from his book:
Or, where assembled by some sedgy brook,
A pic-nic party, resting in the shade,
Spring to their feet to catch a hurried look,
At the strong steamer, through the watery glade
Ploughing like a huge serpent from its ambuscade."

LESSON XXXIX.

THE CLIMATE OF CANADA.

Climate, by the ancients was defined to be the spaces between the imaginary circles parallel to the equator, drawn in such a manner over the earth, that the longest day in each circle is half an hour longer than the preced-

ing. This would make 24 climates, from the equator (where the longest day is 12 hours) to the Polar circle (where it is 24 hours). But we now regard "climate" as the *weather* peculiar to every country, the heat and cold, dryness and moisture, courses and character of the winds, fertility and aridity of the soil, salubrity and insalubrity, and the changes of the seasons. *Zones*, which were long in vogue, have really no existence in Nature, and have given place to "Isothermal lines," lines passing through places where the mean temperature is the same. The elements of climate are not always the same in different regions of the globe; they bear an intimate relation to the physical geography of a country. When the rays of heat and light reach the earth's surface, their effects are substantially according to the angle of incidence; but, falling on material elements so diversified, a vast variety of movements are generated and phenomena the most complicated are incessantly developed. Unequal degrees of heat are accumulated in portions of a continent having the same latitude, but different elevation; either, as they are covered with forests, or destitude of shade. The heating and cooling of the land and water do not proceed according to the same laws; aqueous vapour is raised into the air from the oceans and in Canada, from the vast inland lakes, and transported over the continents by winds generated by the unequal heating of the atmosphere, to be condensed and precipitated on regions remote from those in which the evaporation took place; in the condensation of the vapour, caloric is liberated,—by the evaporation of the fallen water it is absorbed; the clouds intercept the rays of the sun and limit their effects upon the surface, but at the same time arrest and throw back much of the caloric which radiates from the surface.

A knowledge of the physical features of a country is necessary to an appreciation of its climate, and the circumstances affecting it.

Canada, as laid down in maps, extends from Gaspé in the St. Lawrence Gulf, in the east, to Sandwich or Windsor, at the end of Lake Erie, in the west—a distance of about 1100 miles. But if we include the possessions of the Hudson Bay Company, we have a territory extend-

ing from the Atlantic in the east to the Pacific in the west; and from the Arctic Ocean, Baffin's Bay and Davis' Straits in the north and north-east, to the boundary line 45°, and the great chain of lakes and the St. Lawrence on the south and south-east.

This Canada, the *Canada of the future*, occupies a great portion of what has been styled the *interior valley* of North America. This valley is of moment in a climatological point of view. If we assume 8,000,000 miles as the area of North America, the valley may be estimated at three-fourths or 6,000,000 miles. Beginning within the tropics, it terminates within the polar circle, traversing the continent from North to South, passing through the entire northern temperate zone. It is protected from the Pacific Ocean on the west by the Rocky Mountains, whose elevations vary from 10,000 to 14,000 feet, beginning beyond the Polar-circle and terminating in the Mexican Cordilleras within the torrid zone. The Appalachian chain of mountains bounds the valley in the east, but being only one-fourth the height of the Rocky Mountains, one-third the length, and interrupted by the great Lakes and the St. Lawrence, the interior is more influenced by the Atlantic Ocean on the eastern, than by the Pacific on the western side.

The northern side of this somewhat quadrangular valley is a great flat, and receives the full benefit of the Arctic Ocean and Hudson Bay. The Gulf of Mexico indents the valley on the extreme south; the south-western third of the valley is nearly destitute of lakes; while the other parts present them in almost countless numbers. The great lacustrine chain—a chain having no parallel in length or extent in the known world—begins with the Great Bear Lake, in a *Cul-de-Sac* formed by the Arctic Ocean near the Arctic circle, and the Rocky Mountains; Great Slave Lake, Lakes Athabasca, Wollaston, Deer, Winnipeg, and Lake of the Woods, some of them exceeding 9,000 miles in area, follow in the order in which they are enumerated. This chain brings us to that huge basin of clear water, Lake Superior,—the largest basin of fresh water yet discovered—having an area of 32,000 square miles,

and a mean depth of 900 feet. Lake Huron, with a scarcely less area, and a mean depth of 1000 feet; Michigan, (altogether American) and Lakes Erie and Ontario bring us to the beautiful St. Lawrence. These immense fresh water seas covering a surface of about 100,000 squares miles, and containing nearly one-half of all the fresh waters on the surface of the Globe, exert a most important influence on the climate of the country.

The greater portion of the surface of the continent is but little elevated above the sea at its northern and north-western extremities; it ascends by a series of gentle slopes till a mean altitude of 748 feet is reached, and a series of short rapid counter slopes carry us to the Pacific. The height of table land is reached on the south side of Hudson Bay. The low altitude of Canada is favourable to its climate and vegetation: were the plateaux on the north coast much elevated, vegetation would be confined to the mosses: and animal life would be comprised in the few, hardy, thick furred, thinly scattered animals who could remain to nip them.

LESSON XL.

SAME SUBJECT—CONTINUED.

The size and shape of this continent operate in controlling the distribution of heat. The greater the land surface, the greater the measure of heat; and as the continent widens as we ascend in latitude, we find the centre of the system of atmospheric circulation north of the geographical equator. Yet the Arctic and sub-Arctic regions are colder than those of Europe and Asia, and why? In the words of Blodgett: "the refrigeration at the extreme north of this continent is excessive in winter, and there is no accumulated or accumulating heat at the south to balance it, as the land area narrows off so rapidly." The continent diminishes in breadth as we advance towards the south, and there is no accumulated heat there, to temper the cold of the north.

Canada, minus its lakes, is not unlike the north of Europe in being both continental and oceanic. Its oceanic features, however, are exceedingly limited, being lost in the continental at no great distance from the coast. The extreme heat of summer is associated with profuse rains at almost regular intervals; and the cold of winter, like the heat of summer, is extreme, without being destructive. The changes which occur in any one part, sweep with a regulated progression to other and more distant parts; intervening districts sometimes favouring, sometimes retarding, but never preventing that progression.

The climate of Canada is more uniform than that of Europe, the meteorological differences being such as are produced by position alone. It may be regarded as a dry climate, yet more rain falls in Canada than in Britain, but it falls in a shorter period and in larger quantities at a time. While 30 inches of rain fall during the year in England, nearly 50 inches fall here. If we seek European comparisons we find a parallel to a Canadian winter at St. Petersburg, while the summer resembles that of Paris. But the sky of Canada rivals the former in clearness. This clearness is obstructed only for a short period every few days; or, it may be, by a succession of showers which are developed by the heat and move with the west winds. This, perhaps, is one of the most attractive features of our climate.

The division of the year into seasons of three months each, is, at best, an arbitrary division, and totally inapplicable to Canada. Spring, here, like the "gloamin," is of short duration—yet obedient to custom, we rob winter of its March, and summer of May, and join them with April, that Canada may also have a Spring, the season when

> "The juicy groves
> Put forth their buds, unfolding by degrees,
> Till the whole leafy forest stands display'd,
> In full luxuriance."

According to Blodgett, a line of 40°, mean temperature, passes through Nova Scotia near Halifax, Montreal, then parallel with the St. Lawrence, north of Kingston, Toronto, south of Penetanguishene to the Red River of the north.

This may be regarded as the temperature of April—being too low for May, and too high for March. The advance in temperature is pretty uniform for the following three months; and towards the Atlantic coast, more rapid than at inland stations.

The advance in temperature may be well illustrated by changes in the animal world: the song sparrow sings in the month of March, and the robin, while snow yet dapples the fields, will mount a post or stake of the fence and make short and frequent attempts at the song. The moose deer, representing the elk of Europe, leaves his winter haunts, and approaches the marshes, ponds and rivers, in search of his summer food. Wild geese, according to Dr. Rae, visit the north on the 23rd of April, and in Eastern Canada, the harsh guttural croak of the bull-frog is first heard in response to the music of "merrie England" upon St. George's day.

With June commences refulgent summer,—July and August being periods of extreme heat. The mean summer temperature ranges from 55° in the northern, to 65° in the southern parts of the country, but the thermometer often indicates a temperature more exalted than that of the blood. The mean distribution of rain is 10 inches. In the middle of June, fire flies are first seen, and Salmon appear in the estuaries; and about the end of the following month, says Forrelle, they begin to ascend the rivers, seeking the spot where they were born, and where they spent the first year of their life.

The first month of Autumn (September,) is one of peculiar beauty. Rains are now more frequent than during summer; the days are cool and evenings chilly. The transition from the heat of summer to the temperature of Autumn is sudden,—the sering of the leaf being a prelude to the speedy rustle of its dry lifeless form. November is in reality a winter month, though custom has assigned it a place with Autumn. The mean temperature of this season may be stated 43°. Early in September the song sparrow (*Rossignol*) migrates during the night, singly, or in groups, to the warm regions of the Southern States. On the 25th October, wild geese, and the larger

kinds of duck, pass from the north. On the 31st, the snow birds leave the north, and on the 20th November come around our dwellings; and, at about the same period, the black bear, sleek, fat and glossy, retires to his den, to dream of returning warmth till spring.

Ere we have caught the last sad lingering look of Autumn, we are ushered into another but not less pleasant season. The change from Autumn to Winter is more gradual than that from Spring to Summer. A foretaste of Winter is afforded us, and the cold sharp winds give place, for a day or two, to soft balmy breezes, and we revel for a time in Indian summer:

The year's last loveliest smile.

This is a period of variable duration, and of uncertain occurrence. The French *habitant* styles it

L'été St. Martin
De soir au matin.

It is peculiarily a Canadian feature in climatology, but were it not for fear of destroying a pretty poetical conceit, it might well be allowed to pass as the mild weather which precedes or follows a storm. 'Tis quickly gone, and

Winter holds his unrejoicing court;
And through his airy hall the loud misrule
Of driving tempest is for ever heard;
Here the grim tyrant meditates his wrath,
Here arms his winds with all subduing frost,
Moulds his fierce hail, and treasures his snows.

The temperature of this portion of the continent is according to Sir John Richardson, 8° to 15° lower than that of the same latitude in Europe. An Isothermal of 15° passes through the St. Lawrence valley. The influence of the waters of the Superior, Huron, Michigan, Erie and Ontario, with the long chain of smaller lakes, in exalting the temperature at this season is most marked. The thermometer indicates the difference, but our bodies recognize only the increased moisture.

LESSON XLI.

SAME SUBJECT—CONTINUED.

What become of the Isothermal lines as they pass from Canada into the Hudson's Bay possessions? Were we to receive the statements of interested parties, quicksilver could not be coaxed into registering the low temperature of that inhospitable region. But no! Scarcely do we pass the upper end of Lake Superior, than they turn due N. W., and the line of 15°, the temperature of Montreal, passes through the Red River settlement; while the great plains of the Saskatchewan are as warm as Kingston in Western Canada, or Pictou in Nova Scotia.

The largest amount of snow falls usually in the months of December and February. In the first month of the year there is an interruption of the cold, by the January thaw. The mean distribution of snow for the winter season is 60 inches; but it is rarely that depth, for the snow very quickly *packs* as it is termed, and the January and other winter thaws diminish it still more, converting a portion of it into water, which, in the latter form, occupies but one-twelfth its former bulk. The melted surface snow, freezing, forms a crust capable of supporting men, dogs, and wolves, but not the timid deer. In many parts of Western Canada the snow melts, soon after precipitation.

The snow crystals (as Dr. Smallwood pointed out long before those pretty geometrical figures of Mr. Glaisher's appeared in the *Illustrated London News*,) present as distinct a mathematical form of crystallization as that which characterizes the more lasting gem that bedecks the regal crown. They are well defined hexagonal or six-sided prisms, and vary from 1 to $\frac{1}{5}$th of an inch. Dr. Smallwood has observed that when electricity was of a vitreous or positive character the snow crystals present a stellar or star form; while negative or resinous electricity accompanied crystals of another form.

On reviewing the differences between Canadian and European climate, we observe that those differences of temperature are mainly caused by winter.

There is another difference, which, however, the thermometer does not register; the quick fading of that soft, subdued light which follows the setting sun. A few minutes—and a few only—after that luminary has disappeared behind the western hills,

> Twilight lets her curtain down,
> And pins it with a star.

The winter nights are beautifully clear—the hard crisp snow reflecting and refracting nearly all the moon's pale rays of borrowed light.

Nothing appears to influence climate more than the forests or herbage which cover the earth's surface; but cereals and grasses—forests and mosses are the result—not cause—of peculiarity of climate. The oak, elm, beech, maple, linden, chestnut, ash, hickory, walnut, and other deciduous trees, flourish in certain latitudes between the regions of umbrageous plants and evergreens; and the pine and cedar, and still hardier lichens. From one end of Canada to the other, the mixed forest is met with in rich luxuriance. The pine and spruce are interspersed with beech and maple; while plants with slender shrunken leaves and feeble stems, are no where to be met with. The wild grape flourishes as far north as the 52° of N. latitude, and according to Sir George Simpson, is abundant in the Kaministiquoia. As a wheat-growing country, Canada may be compared to Central Russia. From the valley of the Saskatchewan, and from far down the Mackenzie river in the N. W., along the chain of lakes and rivers, wheat, of a finer and whiter description than that of Great Britain, is grown—inferior, in gluten, only, to that cultivated near the shores of the Mediterranean. Buffaloes have, of late years, found their way through the Rocky Mountains to the head waters of the Saskatchewan, where, according to Sir Geo. Simpson, they roam in countless herds. The grass to feed them is rich and abundant, and the buffaloes winter there, together with the domestic animals taken thither for the use of the white man and the Indian. No fuller proof can be required or given of the climatological and productive capacity of the country.

The highly stimulating properties of a Canadian atmosphere, which, all things being equal, bear a certain relation to vegetation, have not only been observed by meteorologists, but also by travellers. It was such as to arrest the attention of the author of the "Constitution of Man," George Combe, while visiting this continent. Europeans, long accustomed to add wine to water for their stomach's sake, perceive, after their arrival in Canada, that stimulating beverages do not agree with them *quite* so well, or, rather, disagree with them *more* than when in Europe; and, ignoring the hyper-stimulating climate, seek in the fancied, or at least, alleged impurity of the article, for the cause of that difference. Temperance soon becomes with them a measure of prudence if not of necessity.

A residence in Canada is attended with certain physiological changes.

Many of the tissues become dryer, as the skin, hair, mucous membranes, &c. Physicians recognize still further changes in some of the internal organs, especially in the liver. The whole temperament changes, becomes less sanguineous; yet those changes are not prejudicial to life or to health. On the contrary, the maritime and continental features, harmoniously blended in our Canadian climate, are favourable to the highest development of a hardy, long-lived, intelligent people. May that people be a *Canadian* people—not loving the land of their European forefathers less—BUT LOVING CANADA MORE.

LESSON XLII.

BELŒIL MOUNTAIN.

Belœil Mountain, which is about 12 miles distant from Chambly, is by far the most prominent object in the surrounding landscape. Belœil is the name of the village and parish on the opposite side of the Richelieu; by which name, as well as by those of Chambly and Rouville, the mountain is popularly called, although its proper title is

Mount St. Hilaire. The Richelieu being crossed, a very picturesque road conducts the traveller to the southern base of the Mountain, which towers like a wall of rock above the flat country around. The road winds through a deep grove of maples, and has been so far improved as to offer no obstacles even to the enterprising female who may be desirous of making the ascent. Soon the traveller reaches a lake of singular formation, varying in extent according to the humidity of the season. Its circumference therefore may be two miles, more or less. Although there is an outlet through which the water is constantly flowing so as to turn several mills, there is no perceptible inlet. It is supposed to be the crater of an extingnished volcano; and certainly the geological structure of the mountain, in which it is embosomed, favours such a supposition. It abounds with excellent fish. This lake occupies a site so secluded and raised above the surrounding country that, according to the somewhat poetic language of one writer, it seems a Mountain-spirit's bath or the magic lake of some Arabian fiction. According to the popular notion entertained in regard to so calm and sequestered bodies of water, it has been pronounced unfathomable. As one surveys the lake in a deep and thickly timbered valley, overhung by precipitous and lofty hills, the scene, which is presented to the view, though somewhat contracted, is extremely imposing.

At a short distance from the lake's margin commences the ascent of the peak. It is studded at intervals by fourteen wooden crosses, each of which bears an inscription having reference to our Saviour's journey as He bore the cross to the place of crucifixion. The spots where these crosses are erected are called *stations*. There are printed "Meditations and Prayers adapted to the Stations of the Holy Way of the Cross," of which the pious Catholics make use, who visit this solemn retreat in considerable numbers. Some years ago a dignitary of the Church of Rome, the Bishop of Nancy, visited Canada, and caused a small oratory to be constructed on the very crest of the mountain. On this as a base was erected a gigantic cross, covered with bright tin. This cross might have been descried from a great distance, when it was

illuminated by the sun's rays, and presented a very imposing appearance. It was destroyed some years ago. On reaching the summit of the cone, which is usually called the *Sugar Loaf*, and whose height is variously estimated at from 1100 to 1400 feet above the river at its base, the panorama that burst upon the view amply repays the beholder for all the fatigue he has undergone. The mountain comprises 7 eminences covering a space of about 7 miles square. The base is granitic, and forms a bold termination to that branch of the Green Mountains which divides the waters of Lake Champlain from the sources of the Yamaska and St. Francis, and is similar to that of the White Mountains of New Hampshire. The spectator occupies, as it were, the centre of a circle, whose circumference extends before his eyes upwards of 60 miles in almost every direction. In one direction he sees the Green Mountains of Vermont, Lake Champlain stretching along its sluggish length until it is cut off by the visible horizon, or the blue hills that crowd the north-eastern frontier of the State of New York. In another direction, when the state of the atmosphere is favourable, he can trace the St. Lawrence, after receiving into its capacious channel at Sorel the waters of the Richelieu, winding its shining current until it is lost in the distance; or he can trace the majestic river upwards to Montreal and Lachine, and some 20 or 30 miles farther up. Again, reverting to Sorel, he can trace the Richelieu to Chambly, thence to St. John's, and onwards to the upper end of Lake Champlain.

LESSON XLIII.

THE FUR BEARING ANIMALS OF BRITISH AMERICA.

Hudson's Bay Sable.

The sable skins next in repute to the Russian, are those imported from the Hudson Bay Territory, of which no less than 120,000 are annually exported to England. As

the natural colour of the skins is much lighter than the prevailing taste, it is the practice to dye many of them a darker hue, and the furs thus treated are scarcely inferior to the natural sable.

Mink.

The enormous number of 240,000 skins of this pretty little animal are annually sent to Britain. The fur resembles the sable in colour, but is considerably shorter and more glossy; it is a very desirable and useful fur, and is exported in large quantities to the Continent of Europe from England.

North American Skunk.

This animal is allied to the pole-cat of Europe. It has a peculiar property of emitting an offensive fetor when attacked, which has been known to affect persons with sickness at 100 yards distance, and hence the skunk has received the soubriquet of "*enfant du diable.*" It has a soft black fur, with two white stripes running from the head to the tail, which is short and bushy; the skins, though imported into England, are usually re-exported to the Continent of Europe.

Musquash or Muskrat.

The animal known under this name is found in great numbers in North America, frequenting swamps and rivers, and like the beaver building its habitation of mud with great ingenuity. Dr. Richardson states that it has 3 litters of young in the course of the summer, producing from 3 to 7 at a litter. The animal has a peculiar smell similar to that of musk; but it must not be mistaken for the animal from which the musk of commerce is obtained, which is a native of the northern parts of Asia. Nearly 1,000,000 skins are annually sent to England; the fur somewhat resembles that of the beaver, and is used by hat manufacturers; the skins are also dyed by the furrier, and made into many cheap and useful articles.

Otter.

The large supply of otter skins used by the Russians and Chinese, is derived principally from North America. The quality of the fur is in most respects similar to the otter of the British Isles, of which there are about 500 skins collected annually. This animal has frequently been tamed, and from its extreme agility in the water, has been rendered serviceable in catching fish for the use of its owner. The American Otter is much larger than the European, being about 5 feet from the nose to the tip of the tail; a smaller variety abounds in the West Indies, the fur of which is very short.

Fox.

There are many varieties of this animal, but the skins of the black and silver foxes are the most valuable. In the Great Exhibition of London, in 1851, there were exhibited skins of foxes from the Arctic regions worth from £10 to £40. The skins which are sent from North America generally are purchased for the Russian market, being highly prized in that country. The cross and red foxes' skins are used in England and other countries for ladies' dresses.

Wolverine.

This animal, which is only met with in North America, Norway and Sweden, is now generally considered by zoologists as identical with the glutton of old writers. It is extremely mischievous to the fur trader, and will follow the marten hunter's path round a line of traps, extending 40 or 50 miles, merely to eat off the baits. The fur is generally dark nut brown, passing in the depth of winter almost into black, and is chiefly used in Germany and other northern countries for cloak linings.

Bear.

There are several descriptions of bear-skins used by the furrier. The skin of the black bear of North America is used in Great Britain for military purposes, for rugs,

and for carriage hammer cloths. In Russia it is frequently manufactured into sleigh coverings, and the skin of the cub-bear is highly prized for trimmings and coat linings. That of the grey bear is applied to similar purposes. That of the white Polar bear, of which the supply is very limited, is frequently made into rugs, bordered with the black and grey bear skins. The fur of the brown or Isabella bear has frequently been very fashionable in England. It is still used in America for various articles of dress.

Hudson's Bay Rabbit.

This little creature is remarkable for the length and texture of its fur, but the skin is so fragile, and the fur so liable to fall off with slight wear, that it has little value as an article of dress.

Racoon.

The Racoon is an inhabitant of North America; the skins of this animal are imported into England in immense quantities; but they meet with very little demand in that country, and are therefore re-exported by merchants to the Continent of Europe. They are principally used throughout Germany and Russia for lining shubes and coats, and being of a durable nature, and very moderate in price, are esteemed as one of the most useful furs.

Canada Lynx.

The fur of the lynx is long, soft, and of a greyish colour, sometimes, as in the Norway lynx, covered with brown spots; the belly is white, silky, and not unfrequently spotted with black. A change of fashion has for some time discarded this animal's skin in England, but it is dyed, prepared, and exported in considerable quantities for the American market, where it is much valued and admired. It is generally used for cloaks, linings, and facings, for which purposes it is very appropriate, being exceedingly soft and light.

LESSON XLIV.

THE MUSKRAT.

Where the wild stream, half chok'd with sedgy weeds,
Winds its dark course through transatlantic meads,
And, sweeping onwards, joins the river's flow,
That tumbles down in swift cascades below,
Bound for St. Lawrence and his islets,—there
Inhabit many a busy muskrat pair,
That rove the verdant shores and pluck the weed,
And in fond concert, on the foliage feed;
Or gather fruits, or dive where, in its shell,
The pearly muscle and green mya dwell,
Sometimes their food; but stay, delighted, where
Spreads on the bank the strawberry's wild parterre;
And on the bank the mother finds some cave
To nurse her young beside the silent wave;
And all are foragers; soon as her brood,
In ripen'd strength, may learn to seek their food,
Then oft, at midnight, by the moon's pale beam,
Their moving shadows dance beside the stream,
And vanish quick: whilst, sweet as vernal hay,
Their fragrance breathes where'er the ramblers stray.
But when the fading leaves of autumn fall,
Their guardian gnomes the scatter'd wanderers call,
And teach their bands in fed'ral strength to form,
Ere winter comes, a shelter from the storm.
The solid structure, fram'd with twisted reeds,
Plaster'd with mud, and interlac'd with weeds,
Four cubits measures in its space around,
Rais'd, like a little turret, from the ground;
Within, thick buttress-steps around supply
Strength to their walls, and keep their lodgings dry;
At top, a rounded cupola or dome,
Twelve inches thick, roofs in the winter-home.
Here, with their young, whole families repose,
Whilst gather'd o'er them, rest the winter snows,
Yet do they not, like marmots, hoard nor sleep,
But wander still, and forage in the deep;

Like mining moles, through hollow pathways stray
To spreading roots; and catch retiring prey;
And still beneath the frozen stream they feed
Upon the water-lily and the reed.
And thus they live, secluded from the light,
In total darkness, in perpetual night.
At length the sun resumes, as Winter yields,
A strength'ning empire o'er the wither'd fields.
The ice dissolves, the snows all melt away,
And leave expos'd the musk-rat's house of clay.
Then comes the hunter, and his efforts tear
The dome-roof off, and pour the day's full glare
Upon their darkness, and bewilder all,
And in their home the easy victims fall;
For e'en their gnomes, the sudden burst of day
Frights from their post and drives confus'd away;
But soon they rally, and a part redeem,
And through their galleries lead them to the stream:
And, these again, are wanderers as before,
Within the river, and upon the shore.

LESSON XLV.

THE BEAVER.

The Beaver is an amphibious animal, and said to form the connecting link between quadrupeds and fishes. Its length is about 2 feet 9 inches. It has 4 front teeth called incisors, the 2 upper truncated and excavated with a transverse angle; the 2 lower transverse at the tips. They have also 16 grinders; 8 in the upper jaw, and the same number in the lower. With the former they cut down trees of soft wood, such as white maple, whit e birch, poplar, elder and willow; and with the latter they break any hard substances. The fore feet are very short and the toes separated; the hinder feet are membraneous, and adapted for swimming. The tail is oval, scaly, destitute of hair and about a foot in length. The body is

covered with soft glossy fur, of a brown colour, and the skin generally weighs 2 pounds. The castor used in medicine, is found in sacks formed behind the kidneys. Beavers dwell in houses of their own construction, for which purpose they sometimes unite and form communities. These are built either in ponds or running streams. If in the former, there is no occasion for a dam, but merely to select a situation which will admit an open passage from the cellar to the water under the ice. If in the latter, they select a stream which is capable of being built against, and having cut down trees suitable for their purpose, they commence making the foundation of their dams by placing the sticks up and down the stream, and cementing them with mud. When the dam is erected it receives a final coating of mortar of twigs and clay, for which purpose their tails serve as trowels. There is always a sufficient sluice made in the dam to carry off the surplus water. Almost all the wild meadows in the country have been made by these ingenious and industrious little creatures; and their dams, which by covering the ground with water, destroy the trees and bushes, and form a reservoir in which the melted snow and autumnal rains deposit the rich particles of soil which they detach from the higher grounds in the vicinity. When the dam is built they proceed to erect their houses. These they build of the same wood which serves them for food, and in selecting the trees for their formation they are careful to choose those near the water, that they may be floated down the stream; or to cut them in such manner that they may fall in the proper direction; their houses generally consist of 2 or 3 stories, and are so constructed that the upper floor shall be above the level of the highest flood and perfectly dry. The shape of the building is oval, and the covering is impervious to the weather. Of the size of the trees which these animals cut down, many wonderful stories have been told, but it may be affirmed, that they have been known to fell a tree 18 inches in diameter. This, however, is by no means common, and the trees which they usually select average about 8 inches. Their food in winter consists of the bark of poplar logs and

other wood, which they generally provide in the autumn, and sink in the pond near their dwelling. As there are always several breathing holes in the ice which the little creatures keep constantly open, the Indians select one of these, for the position of their traps—a short stake is driven into the ground, to which the trap is fastened to prevent its being carried off by the beaver. The trap is then strewed with pieces of willow or elder, of which that animal is very fond, and in this manner he is generally decoyed. When the beaver first perceives an enemy, he gives a smart blow on the water with the broad part of his tail, at which signal the whole family disperse under water. It is not convenient for it to remain a long time in the water, nor is its fur injured, even when the animal is drowned in the traps. The best fur is that which is taken in Frebruary and March; in summer it is considered much inferior.

LESSON XLVI.

THE MOOSE DEER.

The Moose is the largest animal of our forest, and is generally 16 hands high. He is of the deer kind with palmated horns, weighing from 20 to 50 lbs., which are shed annually in February. He has no brown antlers. His head is long, neck short, ears large and pointed, and nostrils greatly distended. His upper lip, commonly called the *moufle*, is very broad and pendant, his legs remarkably long, his tail short, his withers elevated and covered with a thick hair, like those of the buffalo. There is also a tuft of black hair dependant from his neck. His hoof is cloven, and when he trots, the clattering of it is heard at a great distance. His colour is a light grey, mixed with a dark red. His hide is very suitable for leather, being thick and strong, yet soft and pliable, the hair is long and elastic, and proper for mattrasses. His flesh is blacker than that of the ox, but tender and delicate, easy of digestion, palatable and nourishing. He

ruminates like the ox, and feeds on moss, on the natural grass of *intervales*, and on the leaves and tender buds of a species of the maples, called *moose-wood*. When the Indians kill a moose, they carefully preserve the sinews, of which they make the strongest cords, and the tongue and moufle are sold as great delicacies. His gait is an exceedingly fast trot, which he is enabled to prolong for a considerable length of time, and his course through the woods is proverbially straight. In summer, to avoid the annoyance of flies, he frequently wades in the lakes, where he feeds on aquatic grasses and pond lilies. In winter they form herds, and when the snow is deep they describe a circle, and press the snow with their feet, until it becomes hard, which is called by hunters, *a yard* or *pen*. Here they remain till the snow dissolves, or until they have consumed all the branches and bark suitable for food. As soon as the snow becomes encrusted in March, by alternate thaw and frosts, the Indians go out in quest of them. By the aid of *rackets* or *snow-shoes*, they are enabled to pass over the indurated surface, with great ease and rapidity, while the moose, who breaks through the icy crust at every step, with his small and forked feet, wounds his legs and extricates himself with difficulty and fatigue from the holes. In this manner he is wearied out, overtaken and shot.

LESSON XLVII.

THE ALARM BIRD.

Near the Coppermine River, which falls into Hudson's Bay, there is a tribe of Indians, who traverse the immense and dreary solitudes that surround them in pursuit of deer or other game, from which they derive their only subsistence. The animals, however, taught by experience to shun the haunts of men, and instinctively led to conceal themselves in the most sequestered spots, would with difficulty be discovered, were it not for one of the winged tribe of the owl genus, called the alarm-bird.

No sooner does this bird descry man or beast than it directs its flight towards them, and, hovering over them, forms gyrations round their head. Should two objects at once arrest its attention, it flies from the one to the other alternately with a loud screaming, resembling the crying of a child; and in this manner it will follow travellers or attend a herd of deer for a whole day.

By means of this guide, whose qualities so well correspond with its name, the Copper Indians are apprised of the approach of strangers or directed to the herds of deer and musk-oxen, which otherwise they would frequently miss. Is it to be wondered at, then, that they hold the alarm-bird in the highest veneration? It seems, indeed, to have been intended by Providence for the solace and friend of the miserable inhabitants of those wild and sterile regions; and will furnish a new evidence of that superintending care which watches over all.

The Cuculus Indicator, so celebrated in warmer climates for detecting the treasures of the bees in the deep recesses of the woods within the hollow trunks of trees, has, or may be thought to have, a view and an object in its services. It feels the want of human assistance to enable it to enjoy the fruits of its discoveries, and therefore instinctively calls for it, in hopes of being recompensed with a share of the honey, which, we are told, the natives readily allow it; but the alarm-bird appears perfectly disinterested in its labours, it answers no purpose of its own, and therefore may be considered as one of the bounties of Heaven to a people and a country almost shut out from the participation of the common blessings of life. It confers benefits without the prospect of a reward; and for this reason is entitled to the greater regard.

To contemplate the various animals that are dispersed over the globe, and the various blessings and advantages of different climates, will naturally lead us to the Source and Dispenser of all; and, though some parts of the works of Creation are more conspicuously beneficial and cannot escape the most common observer, yet we may from analogy and reason conceive that nothing was made in vain.

LESSON XLVIII.

THE WILD PIGEON.

"For three miles together the pigeons' nests were so thick that 500 might be reckoned on the beech-trees at one time, and, could they have been counted on the hemlocks as well, I did not doubt that 5000 might be seen at one look. Twenty-five nests were frequently found in one beech-tree. The earth was covered with these trees and hemlocks, thus loaded with the nests of pigeons. Their noise in the evening was extremely troublesome, and so great that the traveller could not get any sleep where their nests abounded. About an hour before sun-rise they rose in such quantities as to darken the air. When the young pigeons were grown to a proper size, it was common for the first settlers to cut down the trees and gather a horse-load in a few minutes. The markets at this season, are often overstocked with them; a score of them have been purchased for sixpence. But, as the land becomes settled, they retire into the back forests, where they are at this day in equal numbers! In different parts of America wild pigeons pass over the country in such numbers as to darken the air, devouring quantities of grain in their progress. A musket, loaded with small shot, fired among them, has killed scores; and boys knock them down with sticks and stones. I did not see this phenomenon; but was credibly informed that it occurs once in 7 and sometimes in 10 years. During my residence in North Carolina, I cut holes in the top of my barn, and by placing food on the roof soon enticed about half a dozen from the adjacent woods. In a short time they became domesticated and fed with the fowls, affording a constant and an agreeable food. When I left my residence, they had, notwithstanding the use I made of the young ones, increased to many scores. They grew so familiar that they would watch my appearance in the morning, and perch upon me in the hopes of obtaining food, with which it was my practice to supply them. They distinguished me from my domestics, whom

they would not suffer to approach them. They would permit me to go into their dovecot without retreating; but the dam would often oppose my taking her young ones."

LESSON XLIX.

THE HUMMING BIRD.

There are 60 species enumerated by Latham, and Gmelin has 65. The birds of this genus are the smallest of all birds. These diminutive creatures subsist on the juices of flowers, which they extract, like bees, while on the wing, fluttering over their delicate repast and making a considerable humming sound, from which they derive their designation. They are gregarious, and build their nests with great neatness and elegance, lining them with the softest material they can possibly procure.

The red-throated humming-bird is rather more than 3 inches long, and is frequent in various parts of North America. Its plumage is highly splendid and varying; it extracts the nectar of flowers, particularly those of a long tube, like the convolvulus or tulip. They will suffer themselves to be approached very near, but on observing an effort to seize them, dart off with the rapidity of an arrow. A flower is frequently the subject of bitter conflict between two of these birds: they will often enter an open window, and after a short contest retire. They sometimes soar prependicularly to a considerable height with a violent scream. If a flower which they enter furnishes them with no supply, they pluck it, as it were in punishment and revenge, from its stalk. They have been kept alive in cages for several weeks, but soon perish for want of the usual food, for which no adequate substitute has yet been found. Latham, however, mentions a curious circumstance of their being preserved alive by a Captain Davies for 4 months by the expedient of imitating tubular flowers with paper appropriately painted, and filling the bottom of the tubes with sugar and water as often

as they were emptied. They then took their nourishment in the same manner as when unconfined, and soon appeared familiarized and happy. They build on the middle of the branch of a tree and lay two eggs in an extremely small and admirably constructed nest.

The smallest of all the species is said, when just killed, to weigh no more than 20 grs. Its total length is an inch and a quarter. It is found in the West Indies and South America, and is exceeded both in weight and magnitude by several species of bees.

LESSON L.

THE BLUE BIRD.

When winter's cold tempests and snows are no more,
Green meadows and brown furrow'd fields reappearing,
The fishermen hauling their shad to the shore,
And cloud-cleaving geese to the lakes are a-steering;
When first the lone butterfly flits on the wing;
When red grow the maples, so fresh and so pleasing;
Oh, then comes the blue-bird, the herald of spring,
And hails with his warblings the charms of the season.

Then loud-piping frogs make the marshes to ring,
Then warm glows the sunshine, and fine is the weather;
The blue woodland flowers just beginning to spring,
And spicewood and sassafras budding together;
Oh, then to your gardens, ye housewives, repair,
Your walks border up, sow and plant at your leisure,
The blue-bird will chant from his box such an air,
That all your hard toils will seem truly a pleasure!

He flits through the orchard, he visits each tree,
The red-flowering peach, and the apple's sweet blossoms,
He snaps up destroyers wherever they be,
And seizes the caitiffs that lurk in the bosoms;

He drags the vile grub from the corn it devours,
The worms from the webs where they riot and welter;
His songs and his services freely are ours,
And all that he asks is, in summer, a shelter.

The ploughman is pleas'd when he gleans in his train,
Now searching the furrows,—now mounting to cheer him;
The gardener delights in his sweet simple strain,
And leans on his spade to survey and to hear him;
The slow ling'ring school-boys forget they'll be chid,
While gazing intent as he warbles before them,
In mantle of sky-blue and bosom so red,
That each little loiterer seems to adore him.

When all the gay scenes of the summer are o'er,
And autumn slow enters, so silent and sallow,
And millions of warblers, that charm'd us before,
Have fled in the train of the sun-seeking swallow;
The blue-bird, forsaken, yet true to his home,
Still lingers and looks for a milder to-morrow,
Till forc'd by the horrors of winter to roam,
He sings his adieu in a low note of sorrow.

While spring's lovely season, serene, dewy, warm,
The green face of earth, and the pure blue of heaven,
Or love's native music has influence to charm,
Or sympathy's glow to our feelings is given,
Still dear to each bosom the blue-bird shall be;
His voice, like the thrillings of hope, is a treasure;
For through bleakest storms, if a calm he but see,
He comes, to remind us of sunshine and pleasure.

LESSON LI.

ON THE PACKING OF ICE IN THE RIVER ST. LAWRENCE.

The Island of Montreal stands at the confluence of the rivers Ottawa and St. Lawrence, and is the largest of seve-

ral islands splitting up these mighty streams, which can not be said to be thoroughly mingled until they have descended some miles below the same cluster. The rivers first come in contact in a considerable sheet of water called Lake St. Louis, which separates the upper part of the Island of Montreal from the southern main. But, though the streams here touch, they do not mingle. The waters of the St. Lawrence, which are beautifully clear and transparent, keep along the southern shore, while those of the Ottawa, of a darker aspect, though by no means turbid, wash the banks of the Island, and the contrast of colour they present strongly marks the line of contact for many miles. The interval between St. Helen's Island and the south shore is greater than between it and Montreal; but the former is so floored and crossed by hard trap rocks that the St. Lawrence has as yet produced but little effect in wearing them down, while in the latter it has cut out a channel between 30 and 40 feet deep, through which the chief part of its waters rush with a velocity of between 6 and 7 miles an hour. It is computed that by this channel alone upwards of 1,000,000 tuns of water flow past the City of Montreal *every minute*. Between this point and Lake St. Peter, about 50 miles down, the river has an average breadth of 2 miles, and, proceeding in its course with a moderate current, accelerated or retarded a little according to the presence or absence of shoals, it enters the Lake by a multitude of channels, cut through its delta and forming a group of low flat alluvial islands. The frosts commence about the end of November, and a margin of ice of some strength soon forms along the shores of the river, and around every island and projecting rock in it; and, wherever there is still water, it is immediately cased over.

The wind, acting on this glacial fringe, breaks off portions in various parts, and these proceeding down the stream constitute a moving border on the outside of the stationary one, which, as the intensity of the cold increases, is continually augmented by the adherence of the ice-sheets which have been coasting along it; and, as the stationary one thus robs the moving one, this still fur-

ther outflanks the other, until in some part the margins from the opposite shores nearly meeting, the floating ice becomes jammed up between them, and a night of severe frost forms a bridge across the river. The first ice-bridge below Montreal is usually formed at the entrance of the river into Lake St. Peter, where the many channels into which the stream is split up greatly assist the process.

As soon as this winter barrier is thrown across (generally towards Christmas), it, of course, rapidly increases, by stopping the progress of the downward floating ice, which has by this time assumed a character of considerable grandeur, nearly the whole surface of the stream being covered with it; and the quantity is so great, that, to account for the supply, many, unsatisfied with the supposition of a marginal origin, have recourse to the hypothesis that a very large portion is found on and derived from the bottom of the river where rapid currents exist. But, whatever its origin, it now moves in solid and extensive fields, and, wherever it meets with an obstacle in its course, the momentum of the mass breaks up the striking part into huge fragments that pile over one another; or, if the obstacle be stationary ice, the fragments are driven under it and there closely packed. Beneath the constantly widening ice-barrier mentioned, an enormous quantity is thus driven, particularly when the barrier gains any position where the current is stronger than usual. The augmented force with which the masses there move pushes and packs so much below, that the space left for the river to flow in is greatly diminished, and the consequence is a perceptible rise of the waters above, which indeed from the very first taking of the bridge gradually and slowly increases for a considerable way up.

There is no place on the St. Lawrence where all the phenomena of the taking, packing and shoving of the ice are so grandly displayed as in the neighbourhood of Montreal. The violence of the currents is here so great and the river in some places expands to such a width, that whether we consider the prodigious extent of the masses moved or the force with which they are propelled, nothing can afford a more majestic spectacle, or impress the

mind more thoroughly with a sense of irresistible power. By the time the ice has become stationary at the foot of St. Mary's current, the waters of the St. Lawrence have usually risen several feet in the harbour of Montreal, and, as the space through which this current flows affords a deep and narrow passage for nearly the whole body of the river, it may be well imagined that, when the packing here begins, the inundation rapidly increases. The confined nature of this part of the channel affords a more ready resistance to the progress of the ice, while the violence of the current brings such an abundant supply, and packs it with so much force, that the river, dammed up by the barrier, which in many places reaches to the bottom, attains in the harbour a height of 20 and sometimes 26 feet above its summer level; and it is not uncommon between this point and the foot of the current within the distance of a mile, to see a difference in elevation of several feet, which undergoes rapid changes, the waters ebbing and flowing according to the amount of impediment they meet with in their progress, from submerged ice.

It is at this period that the grandest movements of the ice occur. From the effect of packing and piling and the accumulation of the snows of the season, the saturation of these with water, and the freezing of the whole into a solid body, it attains the thickness of 10 to 20 feet and even more; and, after it has become fixed as far as the eye can reach, a sudden rise in the waters, occasioned no doubt in the manner mentioned, lifting up a wide expanse of the whole covering of the river so high as to free and start it from the many points of rest and resistance offered by the bottom, where it had been packed deep enough to touch it, the vast mass is set in motion by the whole hydraulic power of this gigantic stream. Proceeding onward with a truly terrific majesty, it piles up over every obstacle it encounters; and, when forced into a narrow part of the channel the lateral pressure it there exerts drives the *bordage* up the banks, where it sometimes accumulates to the height of from 40 to 50 feet. In front of the City of Montreal there has been built a magnificent revetment wall of cut limestone to the

height of 23 feet above the summer level of the river. This wall is now a great protection against the effects of ice. Broken by it the ice piles on the street or terrace surmounting it, and there stops; but, before the wall was built, the sloping bank guided the moving mass to those of the gardens and houses in a very dangerous manner, and many accidents used to occur. It has been known to pile up against the side of a house more than 200 feet from the margin of the river and there break in at the windows of the second floor.

Several movements of the grand order just mentioned occur before the final setting of the ice, and each is immediately preceded by a sudden rise of the river. Sometimes several days and occasionally but a few hours will intervene between them; and it is fortunate that there is a criterion by which the inhabitants are made aware when the ice may be considered at rest for the season, and when it has therefore become safe for them to cut their winter roads across its rough and pinnacled surface. This is never the case until a longitudinal opening of considerable extent, appears in some part of St. Mary's current. It has embarrassed many to give a satisfactory reason why this rule, derived from the experience of the peasantry, should be depended on. But the explanation is extremely simple. The opening is merely an indication that a free sub-glacial passage has been made for itself by the water, through the combined influence of erosion and temperature, the effect of which, where the current is strongest, had been sufficient to wear through the surface. The formation of this passage shows the cessation of a supply of submerged ice and a consequent security against any further rise of the river to loosen its covering for any further movement. The opening is thus a true mark of safety. It lasts the whole winter, never freezing over even when the temperature of the air reaches 30° below zero of Fahrenheit; and from its first appearance the waters of the inundation gradually subside, escaping through the channel of which it is the index.

LESSON LII.

THE RIVER SAGUENAY.

The St. Lawrence at its junction with the Saguenay is two and a half miles broad between Point Vaches and Alouettes Point at either entrance. It is a remarkable circumstance that the depth of the former at this place is 250 feet, while that of the latter is nearly 1000; so that, should the bed of the St. Lawrence become dry, there would remain a depth of upwards of 700 in the Saguenay. A little above Point Vaches at the east entrance is situated Tadousac, on a semi-circular terrace at the top of a beautiful bay with a sandy beach, hemmed in by mountains of solid rock, and thus presenting a secure retreat from almost every wind, though the entrance to vessels descending the St. Lawrence is somewhat intricate. Tadousac is interesting from the circumstance of its having been at an early period the capital of the French Settlements, and on that account always called at by the first explorers of the Great River.

Here is the ruin of a religious establishment of the Jesuits, which is considered to have been the first building of stone and mortar on the Continent of North America. There is still standing in excellent repair a chapel, which is understood to have been built by the Jesuit Missionaries among the Indians. About a mile and a half hence are pointed out some flat lands, which are said to have been the gardens of the Jesuits. From Pointe aux Alouettes (Lark Point) at the western entrance to Grand Bay, a distance of 60 miles, the scenery on either bank is acknowledged unrivalled for magnificent grandeur and wildness, whilst the river, varying in width seldom more than from one to two miles, presents an unruffled surface over a depth not less in many parts than 1000 feet. The shores present a steep rocky front, composed chiefly of granite, and thinly clad with pines, birches, and other trees of northern climes. At a few intervals are seen small clearances at the head of coves, where saw-mills have been

erected. Into these coves are discharged the waters of rapid tributaries, flowing through valleys generally capable of cultivation, although thickly wooded. The dark naked bluffs, which every bend brings in view, are generally about 800 feet in height, while some shoot up beyond 1500. Of this description are Cape Eternity, Point Trinity, the Tableau, and La Tête du Boule. Within a few feet of these precipitous shores the depth is usually as great as towards the middle of the channel. Ever-and-anon the eye is attracted by the flight of an eagle sweeping along the summits of these beetling cliffs, or by salmon leaping into the air for their insect food, whilst numerous seals are seen popping their dark heads out of the waters, and white porpoises in droves tumbling their huge bodies. Nearly 50 miles up, the Saguenay turns suddenly to the northward between Cape East and Cape West, a beautiful expanse receding from the west bank to the distance of nearly 10 miles. At its extremity is situated a village, at the mouth of a small river, upon which is a large saw-mill, giving employment to a number of men. The progress of this settlement was considerably retarded by a destructive fire in 1846. There is a Roman Catholic Church in the village; and some fine farms are springing up at different points on the Bay. It is said that the Bay was originally called "Ah! Ah!" or "Ha! Ha!" descriptive of the surprise which was experienced by the first French explorers, when they ascertained that this expanse, instead of conducting up the noble river, had no other outlet except the one by which they had entered it. Hence to the trading port of Chicoutimi, which by land is about 10 miles distant, but upwards of 20 by water, the river is comparatively shallow, and tastes fresh when the tide is out. Chicoutimi is an important trading-port, containing two settlements about two miles apart, and has a population of upwards of 400, chiefly French Canadians employed in lumbering. It has been observed that grain ripens earlier in this locality than around Quebec. In the vicinity there stands on an eminence a small Catholic Church almost entire, but stripped of all its ornaments except a crucifix and a few candlesticks. It is said to have been constructed

by Jesuit missionaries upwards of a century ago. Several of these were buried in the church, and the tombstones may still be seen. In the belfry is a bell, on which is an inscription that has hitherto baffled the learned of Canada to explain or translate. About 50 miles above Chicoutimi, the Saguenay issues from Lake St. John, which is about 40 miles long, and receives 11 large rivers. The country surrounding the Lake is well timbered, and rather level, and holding out the prospect of being well adapted for agriculture, while the climate is said to be far preferable to that of the sea-coast of the St. Lawrence. The only outlet of the Lake besides the Saguenay is the Metabethshuan, the waters of which, after passing the expanse of Lake Kiguagomi become the Chicoutimi, and unite with those of the Saguenay near the village of Chicoutimi. The portion of the Saguenay from this village to the Lake is unavailable on account of the numerous falls and rapids, and the Chicoutimi affords a very circuitous communication by boats through the lake Kiguagomi and the River Metabethshuan. The influence of the tide is felt as far up as the Rapid of Terre Rompue, 6 miles above Chicoutimi. The ordinary spring-tides rise 17 feet at Tadousac, and 12 at Chicoutimi. To this point schooners and steamers can ascend with the assistance of flood-tide, and the largest ships to Point Roches, 57 miles up. At the mouth of the Metabethshuan on the south shore of Lake St. John is situated one of the Queen's Posts, leased by the Hudson's Bay Company. It was established by the Jesuit missionaries in the sixteenth century, and traces of their cultivation still remain. On both shores of the Saguenay at frequent intervals occur good anchorages for vessels. Chicoutimi, the name which the Indians gave to this *deep* tributary of the Great River, is said to denote *deep water*, while the name imposed on it by the Jesuit missionaries is Saguenay (Sacnez), the interpretation of which is *Nose of the Sack*. Tadousac is a transposed corruption of Saguenay.

LESSON LIII.

THE RIVER RICHELIEU.

At the head of Lake St. Peter the St. Lawrence receives the Richelieu River, which issues from Lake Champlain and flows for about 70 miles through a fertile country. It differs from most rivers from being narrow at its mouth and widening upwards; its banks are generally from 8 to 12 feet high, diversified on each side by farms and extensive settlements in a high state of improvement. On or near it are neat, populous and flourishing villages, handsome churches, numerous mills of every description, good roads in all directions and every characteristic of a prosperous country. The breadth of the bed of the Richelieu at its mouth is 250 yards. This it preserves with a few exceptions occasioned by some small and beautiful islands up to Chambly Basin. This is an expansion of the river nearly circular, about 1½ miles in diameter, embellished by several little islands, which are covered with verdure and fine wood, as ornamentally disposed as if regulated by the hand of art. A very fine bridge has been erected over the Richelieu, which is of immense benefit to the country. From the basin of the Chambly the River continues to widen more or less to St. John's, where there is a ship navigation to the towns on Lake Champlain. There is a canal too, which has been formed to avoid the rapids of the Richelieu and to connect the St. Lawrence and Lake Champlain.

LESSON LIV.

THE RIVER OTTAWA.

The Uttawas or Ottawa has even yet been but partially explored.

Formerly from 40 to 50 canoes proceeded every year from Lachine, in the Island of Montreal, with articles

of traffic, and ascended the Ottawa for about 300 miles, whence they were carried across portages or paddled along lakes and then passed through French River to Lake Huron. The coasts of this lake and those of Lake Superior were then traversed until the *voyageurs* met at the *Grande Portage* with the messengers called "*Coureurs de Bois*," who brought the furs from the Indian hunting-grounds. They here exchanged their skins, called *peltries*, for the European goods brought by the *voyageurs*. Although the exchange was effected with much difficulty, and at so great a distance from the sea-shore, large fortunes were frequently made by the merchants engaged in this traffic. The *voyageurs* returned with these furs to Montreal in their light bark canoes, in which these adventurers have been known to perform voyages of thousands of miles. The Ottawa was then the grand route of the fur traders, and was little known except to those employed in that business.

The Ottawa is connected with Lake Huron by the French River and Lake Nepissing. Two cataracts occur in French River—one just as it leaves the Lake, and the other 20 miles below, called the "Recollet." There are also several other rapids, one of which is distinguished by 13 wooden crosses, which commemorate an equal number of fatal accidents that have occurred in crossing it.

French River is about 75 miles long. Its breadth varies, sometimes extending more than a league, and then flowing between lengthened ledges of rock, in which are excavated deep and narrow bays. It is said that few prospects exceed in singularity and grandeur those which are here afforded by groups of long and lofty islets scattered along the deep dark bays, the clear water reflecting their rugged outlines and wild foliage amidst the solemn stillness which pervades these solitudes. From Lake Nepissing you pass by a rapid river into the Ottawa.

The navigation of this beautiful river is interrupted by cataracts and rapids, and the scenery is extremely picturesque. It divides Upper from Lower Canada, and settlements are formed along its banks for upwards of

100 miles. The lands are excellent with abundance of fine timber and mountains of iron ore, which when the country is farther advanced in manufactures will doubtless prove exceedingly valuable.

Little is known, however, of the Ottawa country beyond the falls and Portage "*des Allumets*," 100 miles above the Townships of Hull. Here the river is divided into two channels by an island 15 miles long; and about 12 miles after its junction has taken place, it is again divided by an island 20 miles long. Owing to the numerous cascades and falls the scenery here is extremely romantic. The banks of the Ottawa for some distance are composed of white marble, which may be traced along the margin of the stream. This delightful district is now colonized.

The magnificent "*Lake des Chats*" is 15 miles long and about one mile wide, but its spacious bays extend it to three miles. Kinnel Lodge, the residence of the Highland Chief McNab, is romantically situated on the south shore, which is more bold, more elevated and better settled than the northern.

The Chaudière Falls, which are in the Ottawa just above the entrance to the Rideau Canal, are 80 feet in height by 212 in width. They are situated near the centre of the river, and attract a considerable portion of the waters, which are strongly compressed by the shape of the rock that impedes them. In the Great Chaudière or Kettle the sounding line has not found bottom at 300 feet. It is supposed that there are subterranean passages which convey the immense mass of waters beneath the river. In fact half a mile lower down it comes boiling up again from the *Kettles*.

Across these Falls has been thrown the celebrated Union Bridge, which connects Eastern and Western Canada. It is said to be one of the most remarkable bridges in the world both with respect to situation and construction. Vast rafts of timber are brought down this river from a distance of several hundreds of miles. The dexterity with which the lumberers manage these masses is astonishing, particularly when directing them down these Falls. The improvement of the slides made for passing these tim-

bers is amongst the numerous works which Government has completed.

The Rideau Canal commences at the termination of a small bay in the Ottawa 128 miles distant from Montreal, and 150 from Kingston, and about a mile below these Falls. This communication is more correctly a succession of raised waters by means of dams with natural lakes intervening, than a canal properly speaking. Lake Rideau is the summit pond, and the waters which burst out at White Fish Falls flow into the Gananoque River, which is the waste weir for regulating the waters in Lake Rideau. Thus the water in the whole canal whether in times of flood or drought, is kept at a steady height. The connection between Kingston and Ottawa City, a distance of 132 miles, is kept up by this canal.

Below the Chaudière the Ottawa has an uninterrupted navigation for steam-boats to Grenville, 60 miles distant. The current is gentle, and the scenery pleasing from the numerous islands, the luxurious foliage of the trees, and the glimpses which are obtained of infant settlements upon the skirts of the forest and the margin of the stream. At Grenville commences the impetuous rapid called the "Long Sault," which is only descended by *voyageurs* or raftsmen of experienced skill and energy. Below the Long Sault the river continues at intervals rapid and unmanageable as far as to Point Fortune, where it expands into the Lake of the Two Mountains, and finally forms a junction with the St. Lawrence.

LESSON LV.

CANADIAN BOAT SONG.

LISTEN to me, as when ye heard our father
Sing, long ago, the song of other shores:
Listen to me, and then in chorus gather
All your deep voices, as you pull your oars:
Fair these broad meads—these hoary woods are grand;
But we are exiles from our fathers' Land.

From the lone shieling of the misty Island
Mountains divide us, and the waste of seas ;
Yet still the blood is strong, the heart is Highland,
And we in dreams behold the Hebrides :
Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' Land.

We ne'er shall tread the fancy-haunted valley,
Where 'tween the dark hills, creeps the small clear stream,
In arms around the patriarch banner rally,
Nor see the moon on royal tombstones gleam :
Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' Land.

When the bold kindred, in the time long vanish'd,
Conquer'd the soil and fortifi'd the keep,
No seer foretold the children would be banish'd,
That a degenerate lord might boast his sheep :
Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' Land.

Come, foreign raid, let discord burst in slaughter !
Oh, then for clansmen true, and stern claymore !
The hearts that would have given their blood like water,
Beat heavily, beyond the Atlantic roar :
Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' Land.

LESSON LVI.

DESCENT OF THE LONG SAULT.

These Rapids, universally allowed to be the most extensive and the most exciting to be found on this Continent, extend in continuous lines for a distance of 9 miles, the stream being divided near its centre by an island. The channels on both sides are descended with safety, although steamers usually pass on the south side, which is a little

narrower than the other. The current moves along this channel with astonishing velocity, drifting rafts at the rate of 12 or 14 miles an hour, the waters alone moving at least 20 miles an hour. It needs not the aid of wind or steam to descend these swift sweeping waters, and hence, when vessels enter the current, they shut off the steam, and trust to the guidance of the helm only as they are borne on their rapid voyage by the force of the stream alone. Nature presents but few sights more grand and beautiful than is presented from the deck of a steamer when descending these rapids. The unequal movement of the waves, as they plunge from one eddy to another, causes the boat to rise and fall with a motion not unlike that experienced on the ocean after a gale of wind has disturbed its bosom. The constant roar of the waters as they dash and leap along their furious course, filling the atmosphere with misty foam, the wild and tumultuous force with which wave struggles with wave to reach the depths below ; the whirlings of the yawning eddies, that seem strong and angry enough to engulf any and every thing that ventures within their embrace, and the ever-changing features. form and course of the writhing, restless stream, all unite in presenting a scene of surpassing grandeur.

The navigation of these rapids, although generally conducted with entire safety, requires nevertheless great nerve, force, and presence of mind on the part of the pilots, generally Indians, who essay to guide the staggering steamer on its course. It is imperative that the vessel should keep her head straight with the stream, for, if she diverges in the least, so as to present her side to the current, she would be instantly capsized and lost. In order to prevent such catastrophes, boats traversing these rapids have their rudders constructed in such a manner that any amount of power can be brought to bear upon them at any moment. Not only is the wheel guided by strongly-wrought but pliable chains, which are managed from a position near the bows, but a strong tiller is adjusted at the stern, which requires the aid of four powerful men, while two are working at the wheel, to keep the vessel's head in its proper direction.

The greatest danger attends the adventurous raftsmen,

whose skill, courage, and physical strength are, perhaps, not excelled by any similar body of men in the world. But, despite all these advantages, many a raft has been broken, and many a gallant raftsman's life has been lost within this remorseless tide of waters.

LESSON LVII.

ST. ANNE'S RAPIDS.

Faintly as tolls the evening chime,
Our voices keep tune and our oars keep time;
Soon as the woods on the shore look dim,
We'll sing at St. Anne's our parting hymn.
Row, brothers row, the stream runs fast,
The rapids are near, and the daylight's past.

Why should we yet our sail unfurl?
There is not a breath the blue wave to curl;
But when the wind blows off the shore,
Oh! sweetly we'll rest our weary oar.
Blow, breezes blow, the stream runs fast,
The rapids are near, and the daylight's past.

Ottawa's tide! this trembling moon
Shall see us float over thy surges soon;
Saint of this green isle! hear our prayers,
Oh! grant us cool heavens and favouring airs.
Blow, breezes blow, the stream runs fast,
The rapids are near, and the daylight's past.

LESSON LVIII.

SHOOTING THE RAPIDS.

To appreciate the magnitude of the canals and their locks on the St. Lawrence, it is necessary to glance at the

splendid river, of whose nearly 2000 miles of navigation they form the completing links. Let me conduct the reader then, to where the steamer, destined to "shoot the rapids," first winds in amongst the *Thousand Islands*. It is between Kingston and Brockville, and usually just after sunrise. The scene here of a bright morning—and mornings are seldom otherwise in Canada—is magnificent beyond description. You pass close by, near enough often to cast a pebble from the deck of the steamer upon them—cluster after cluster of beautiful little circular islands, whose trees, perpetually moistened by the river, have a most luxuriant and exquisitely tinted foliage, their branches overhanging the water. Again, you pass little winding passages and bays between the islands, the trees on their margins interlacing above them, and forming here and there natural bowers; yet are the waters of these bays so deep that steamers of considerable size might pass under the interlacing trees. Then opens up before you a magnificent sheet of water, many miles wide, with a large island apparently in the distance dividing it into two great rivers. But, as you approach this, you discover that it is but a group of small islands, the river being divided into many parts, and looking like silver threads thrown carelessly over a large green cloth. Your steamer enters one of these bright passages, and you begin at length to feel that in the multitude of ways there must be great danger; for your half embowered and winding river comes to an abrupt termination four or five hundred yards in advance of you. But, as you are approaching at headlong speed the threatening rocks in front, a channel suddenly opens upon your right; you are whirled into it like the wind; and the next second a magnificent amphitheatre of lake opens out before you. This again is bounded, to all appearance, by a dark green bank, but at your approach the mass is moved as if in a kaleidoscope, and, lo, a hundred beautiful little islands make their appearance! And, such, for seventy miles, and till you reach the rapids, is the scenery through which you glide.

It is impossible, even for those whose habits and occupations naturally wean them from the pleasure derivable from

such scenery, to avoid feelings akin to poetry while winding through the *Thousand Islands*. You feel, indeed, long after they have been passed, as if you had been awakened out of a blissful dream. Your memory brings up, again and again, the pictures of the clusters of islands rising out of the clear cold water. You think of the little bays and winding passages embowered in trees; and, recurring to the din, and dust, and heat, and strife of the city you have left, or the city you are going to, you wish in your heart that you had seen more of nature and less of business. These may be but dreams—perhaps they are so,—but they are good and they are useful dreams; for they break in, for the moment, upon the dull monotony of our all-absorbing selfishness; they let in a few rays of light upon the poetry and purity of sentiment which seem likely to die of perpetual confinement in the dark prison-house of modern avarice.

The smaller rapids, and the first you arrive at, are the *Galops*, *Point Cardinal*, and some others. The great rapids are the *Long Sault*, the *Coteau*, the *Cedars*, the *Cascades*, and the *Lachine*. The first of these is the most magnificent, the highest waves rising in the Lost or North Channel. The last is the most dangerous, extensive, and difficult of navigation. The thrilling and sublime excitement of "*shooting them*" is greatly heightened by contrast. Before you reach them there is usually hardly a breath of air stirring; everything is calm and quiet, and your steamer glides as noiselessly and gently down the river as she would down an ordinary canal. But suddenly a scene of wild grandeur breaks upon you: waves are lashed into spray and into breakers of a thousand forms by the dark rocks they are dashed against in the headlong impetuosity of the river. Whirlpools,—narrow passages beset with rocks,—a storm-lashed sea,—all mingle their sublime terrors in a single rapid. In an instant you are in the midst of them! Now passing with lightning speed within a few yards of rocks, which, did your vessel but touch them, would reduce her to an utter wreck before the sound of the crash could die upon the air. Again, shooting forward like an arrow towards a rocky island, which your bark

avoids by a turn almost as rapid as the movement of a bird. Then, from the crests of great waves rushing down precipices, she is flung upon the crests of others receding, and she trembles to her very keel from the shock, and the spray is thrown far in upon her decks. Now she enters a narrow channel, hemmed in by threatening rocks, with white breakers leaping over them; yet she dashes through them in her lightning way, and spurns the countless whirlpools beneath her. Forward is an absolute precipice of waters; on every side of it breakers, like pyramids, are thrown high into the air. Where shall she go? Ere the thought has come and gone, she mounts the wall of wave and foam like a bird, and, glorious, sublime science, lands you a second afterwards upon the calm, unruffled bosom of a gentle river! Such is "*shooting the rapids.*" But no words can convey a just idea of the thrilling excitement that is felt during the few moments you take in passing over them. It is one of the sublime experiences which can never be forgotten, though never adequately described.

It is in the highest degree creditable to the naval skill and care of the Canadians that, since the rapids have been navigated by steamers, no accident of any consequence has occurred, nor has a single life been lost.

LESSON LIX.

THE FALLS OF SHEWINAGAM.

These Falls of the St. Maurice lie about 30 miles in rear of the town of Three Rivers. The general mode of accomplishing a visit to them is by engaging a canoe with voyageurs at Three Rivers. The voyageurs usually ascend as far as the Portage of the Grês, where they receive into their canoe the stranger, who has been transported thither by vehicle, according to arrangement. Shortly after, the Isle Tourte is passed, which is about a league in length. In approaching the Falls, at about the distance of a mile, their head is seen through the tops of the highest trees. The descent, from the top to the basin below, is fully 200

feet. The Portage des Hêtres or Beech Portage is soon after reached. Notwithstanding the numerous rapids, there is much less difficulty in ascending than might be expected; for, while a current runs down the mid-channel, at the rate of 5 or 6 miles an hour, there are opportunities of taking advantage of an eddy on either side, running up at the rate of 3 or 4 miles by shooting rapidly across the main stream. There are 3 falls in time of high water, unconnected with each other, and meeting in a large basin. These a facetious writer in a Canadian periodical, who remarks that he had learned some Latin in his boyhood, appropriately contradistinguishes by the names of *Shewinagus*, *Shewinaga*, and *Shewinagum*. There are two conspicuous rocks distinguished by the names of *La Grande Mère* or *The Great Mother*, and *Le Bon Homme* or *The Good Fellow*. "Of these three falls," says the writer alluded to, "Shewinagus and Shewinagum, though distinct falls, meet in the chasm before they are discharged into the bay below. Shewinagum is the most easterly, or towards the left bank of the river; Shewinagus is the middlemost, and Shewinaga (I make her the lady, from her superior elegance) is to be seen only in time of flood: therefore, as Sir Walter Scott says,—

"If you would see fair Melrose right,
Go visit her by the pale moon-light."

So do I say,—

"If you would see fair Shewinagā,
Go visit her in the month of May."

The same writer, keeping up his happy nomenclature, thus carries on the description:—"On ascending the portage path we descried through the trees fair Shewinaga dancing down the slope of the hill on our right hand, with sinuous courses; about midway she grows suddenly fretful, and tosses herself headlong down a precipice of 30 feet; then, skipping along as before, glides gently at last with the main body of the river. So much for the beauty and elegance of Shewinaga. But what pen shall describe

the terrific contrast, the collision, the conflict, the co-thunder of the waters of Shewinagus and Shewinagum. I ascended the hill, with the chasm on my right hand, till I came to a point which I shall call the *Point of Co-thunder*. There, looking up, I saw an inclined plane, swift as an arrow, and Shewinagus tumbling and bounding from rock to rock to meet him; and, when they met in the chasm below, what a sublime and terrific scene! what rattling, roaring, tossing, boiling and foaming of waters!

"When Greek meets Greek, then comes the tug of war!"

It was indeed an angry "meeting of the waters," and far from a "mingling in peace." There are large fissures in the precipitous rock, into which the waves are driven by the force of the collision. Immediately above the Falls, the current is unbroken and quiet, though very rapid, as might be observed on seeing a huge log suddenly dip one end, and wholly disappear, on approaching the edge of the precipice." The traveller, on returning, embarks in his canoe, and swiftly descends. These falls are rendered memorable for the melancholy event which took place there —the drowning of the late Governor Sir Edmund Head's son.

LESSON LX.

THE FALLS OF NIAGARA.

At the point where the river issues from Lake Erie, it assumes the name of Niagara. It is something more than three quarters of a mile in width, and the broad and powerful current embosoms two islands: one of them, Grand Isle, the seat of Mr. Noah's famous Jewish colony, containing 11,000 acres, and the other, Navy Island, opposite to the British village of Chippewa.

Below this island the river again becomes an unbroken sheet, a mile in width. For half a mile below it seems to be waxing in wrath and power. Were this rapid in any

other place, it would be noted as one of the sublimest features of river scenery. Along this rapid, the broad and irresistible mass of rolling water is not entirely whitened, for it is too deep to become so. But it has something of that curling and angry aspect which the sea exhibits when swept by the first burst of a tempest.

The momentum may be conceived, when we are instructed, that in half a mile the river has a descent of 50 feet. A column of water a mile broad, 25 feet deep, and propelled onward by the weight of the surplus waters of the whole prodigious basin of the lakes, rolling down this rapid declivity, at length pours over the cataract, as if falling to the eternal depths of the earth.

Instead of sublimity, the first feeling excited by this stupendous cataract is amazement. The mind, accustomed only to ordinary phenomena and common exhibitions of power, feels a revulsion and recoil, from the new train of thought and feeling forced in an instant upon it. There is hardly sufficient coolness for distant impressions, much less for calculations.

We witness the white and terrific sheets—for an island on the very verge of the cataract divides the fall—descending more than 150 feet into the abyss below. We feel the earth trembling under our feet. The deafening roar fills our ears. The spray, painted with rainbows, envelopes us.

We imagine the fathomless caverns, which such an impetus, continued for ages, has worn. Nature arrays herself before us, in this spectacle, as an angry irresistible power, that has broken away from the beneficent control of Providence.

We have gazed upon the spectacle and heard the roar, until the mind has recovered from its amazement. We believe the first obvious thought, in most minds, is a shrinking comparison of the littleness and helplessness of man, and the insignificance of his pigmy efforts, when measuring strength with nature.

Take it all in all, it is one of the most sublime and astonishing spectacles seen on our globe. The eye distinctly measures the amount of the mass, and we can hardly avoid thinking with the peasant, that the waters of the upper

world must be drained down the cataract. But the stream continues to pour down, and this concentrated and impressed symbol of the power of Omnipotence, proclaims His majesty through the forest from age to age.

An earthquake, the irruption of a volcanic mountain, the conflagration of a city, are all spectacles in which terror is the first and predominant emotion. The most impressive exertion of human power is seen in the murderous and sickening horrors of a conflict between two mighty armies. These, too, are transient and contingent exhibitions of sublimity.

But, after we have stood an hour at the foot of these Falls, after the eye has been accustomed to look at them without blenching, after the ear has been familiarized with the deafening and incessant roar, when the mind begins to calculate the grandeur of the scale of operations, upon which nature acts; then it is, that the entire and mingled feeling of sublimity rushes upon it, and this, probably, is the place on the whole globe where it is felt in its most unmixed simplicity.

LESSON LXI.

THE FALLS OF NIAGARA.

The thoughts are strange that crowd into my brain
When I look upward to thee. It would seem
As if God pour'd thee from His "hollow hand,"
And hung His bow upon thine awful front;
And spoke in that loud voice which seem'd to him
Who dwelt in Patmos for his Saviour's sake,
"The sound of many waters;" and had bade,
Thy flood to chronicle the ages back,
And notch His centuries in th' eternal rocks.
Deep calleth unto deep. And what are we,
That hear the question of that voice sublime?
Oh! what are all the notes that ever rung
From war's vain trumpet, by thy thundering side.
Yea, what is all the riot that man makes

In his short life, to thy unceasing roar!
And yet, bold babbler, what art thou to Him,
Who drown'd a world, and heap'd the waters far
Above its loftiest mountains?—a light wave,
That breaks, and whispers of its Maker's might.

LESSON LXII.

Bras d'Or.

This Lake is a body of water measuring in a direct line 42 miles, and nearly dividing Cape Breton Island into two parts. The expanse of water in this lake is so great and has so much of a sea-like character that the effect of the scenery on the shore is in a great measure lost, being in many parts out of sight, and resembling, in fact, the coast of the Ocean, in its exposure. Upon the borders of such a sheet of water, tremendous heights only would be adequate to effect a showy picture. These the Bras d'Or does not possess, its greatest elevations aspire to no loftier title than high ranges of hills, and in many parts the shore is flat. It is not until the traveller approaches the heads of the arms, or enters the inlets or straits, that his eye is much attracted by the beauty of the prospect. In those recesses many picturesque views occur, generally partaking more of the placid and harmonious than of the bold and sublime. The high craggy cliffs of the Atlantic coast, near St. Annes, and to the northward, afford more scenes of grandeur. From the summits of some of the Bras d'Or heights indeed, where the forest has been displaced, extensive views may be obtained, over woods, islands and waters, at the same time grand and tranquil, and admirable vistas may be had through the intervening forest, from some of these eminences.

The rivers flowing into the Bras d'Or, are streams of 60 or 100 feet wide, extremely winding, with a great number of short turns, and descending through flat lands between ranges of hills. These flats are called intervales by the

inhabitants, and often present scenes of uncommon beauty; large open meadows of bright verdure appearing by clumps of trees, huge elms, along the meandering courses of the river, and backed on either side by the lofty forest on the hills, irregularly approaching and receding from the stream. The prospect at the entrance of these rivers is far different, and by no means of a sort to raise pleasing anticipations of the scenery above; the stream being obstructed and parted into several smaller channels, by low marshy islands, the land on each side near these mouths being also generally low, and being overhung with the dark foliage of the hemlock and spruce. The water here is sluggish, the bottom muddy; and the surface disfigured by the huge roots and branches of the fallen trees, brought down by the river, and there water-logged and sunk, to the no small peril of the frail birch bark canoes of the Indians.

LESSON LXIII.

DETACHED PIECES.

THE FALLS OF MONTMORENCY.

Few strangers visit Quebec without going to see the Falls of Montmorency. These Falls, which are situated in a beautiful nook of the river, are higher than those of Niagara, being more than 250 feet; but they are very narrow, being only about 50 feet wide. This place is a very celebrated focus of winter amusements. During the frost, the spray from the Falls accumulates to such an extent as to form a cone of sometimes 80 feet high. There is also a second cone of inferior altitude, and it is this of which visitors make the most use, as being less dangerous than the higher one. They carry "toboggins,"—long, thin pieces of wood —and, having arrived at the summit, place themselves on these and slide down with immense velocity. Ladies and gentlemen both enter with equal spirit into this amusement. It requires much skill to avoid accidents; but sometimes people tumble heels over head to the bottom. They

generally drive to this spot in sleighs, taking their wine and provisions with them; and upon the pure white cloth, which Nature has spread out for them, they partake of their dainty repast and enjoy a most agreeable pic-nic. One does not feel in the least cold, as the exercise so thoroughly warms and invigorates the system. The distance of these Falls from Quebec is 8 miles.

ORIGIN OF THE WORD "CANADA."

"Some suppose the origin of this name to be from an Indian word of the Iroquois language *ka-na-ta*, signifying a village or collection of huts, a word used by Brant in his translation of the gospel of St. Matthew to signify a village. The other is subjoined:—The Spaniards visited this country previous to the French, and made particular searches for gold and silver, and finding none, they often said amongst themselves, "*Aca nada*," (there is nothing). The Indians, who watched closely, learned this sentence and its meaning. After the departure of the Spaniards the French arrived, and the Indians, who wanted none of their company, and supposed they were Spaniards come on the same errand, were anxious to inform them that their labour was lost by tarrying in the country, and incessantly repeated to them the Spanish sentence—"Aca nada." The French, who knew as little of Spanish as the Indians, supposing this incessantly recurring sound was the name of the country, gave it the name of "Canada," which it has borne ever since.

LESSON LXIV.

VANCOUVER'S ISLAND.

"This splendid island," says Nicholay, "is in form long and narrow; in length about 250 miles, in average breadth 50; with a surface of upwards of 12,000 square miles. A range of lofty hills extends through its whole length; and it is perhaps even more fertile and has more open glades and land fit for cultivation than the southern continental

shore. Its western side is pierced by deep canals, and it has many excellent harbours. It has beautiful rivers of water; and clumps and groves of trees are scattered through the level lands. The Hudson's Bay Company have here established a large cattle farm and post called Victoria. At the northern extremity of the Island there is a large and excellent field of coal." Iron, copper and silver, according to Spanish writers, are found there; and gold according to more recent accounts. Martin, the apologist of the Hudson's Bay Company's regime, testifies to the excellence of the climate of the Island, and to its adaptation for the cultivation of wheat and other grains; and further states, that,—

"The position, resources and climate of Vancouver's Island eminently adapt it for being the Britain of the Northern Pacific. There is no port between the Strait of Juan de Fuca and San Francisco; it is within a week's sail of California; within double that distance from the Sandwich Islands, with which a thriving trade has already been established; 5 days' voyage from Sitka or New Archangel, the head-quarters of the Russian Fur Company's settlements, where large supplies of provisions are required, and it is within 3 weeks' steaming distance of Japan. This commanding position justifies the expectation that Vancouver's Island will become, not only a valuable agricultural settlement, but also a rich commercial *entrepot* for British trade and industry."

He also adds, that "whether it be possible to establish regular and rapid communication, *viâ* Canada, with the coast of the Pacific, remains to be ascertained;" and concludes with the remark, that "by whatever means Vancouver's Island be brought within half its present distance of England, great good cannot fail to accrue to the Colony and to the Parent State."

LESSON LXV.

THE HABITANT.

No persons can contrast more strongly than the *habitant* of Lower and the farmer of Upper Canada. The latter

is enterprising, adventurous, and cosmopolitan in his feelings. He is always ready to change his neighbourhood for a better one; and his homestead of 100 acres of cleared land is never more dear to him than 500 acres of wilderness, if he can satisfy himself that the latter would be better for his children. The *habitant* on the contrary knows no love stronger than that for his often contracted farm. The place where he was born, though giving him in many cases but a slender livelihood, is still dearer to him than all the World. In vain for him has the magnificent West been opened up, in vain for him have America and Europe been filled with accounts of prosperity in them. His dreams hover round his own fireside. His imagination is bounded by the fences round his farm. He asks no better lot than to live where his father lived and to die where his father died.

As might naturally be expected, avarice has little to do with such a character. If he knows not the rewards of grasping ambition, he knows not its feverish disappointments or its mortified pride. There is not in consequence a more cheerful, happy and contented being in existence than the Canadian *habitant*. His little farm—for, as a general rule, on account of frequent subdivisions the farms in Lower Canada are small—supplies him with enough to live upon; and he never by any chance invokes the cares of tomorrow. He has 5 or 6 cows, and he knows they *should* give milk enough for himself and his family. He copies no man's improvements and imitates no person's mode of living. His life, his food, his enjoyments are regulated by the opportunities of the day. If he fares sumptuously, he thanks Providence and is happy. If he occasionally fares otherwise, he thinks it is all right and is equally contented. Simple therefore is his life, but happy in its simplicity. For generations his character has not undergone a perceptible change; but happily his gentleness, his innocence, and his cheerfulness have been equally enduring.

I cannot take leave of the *habitant* of Lower Canada without alluding to his amiable disposition and native politeness. You pass through a country parish in any part

of the Province no matter how remote, and you are saluted on all hands by both young and old, and so gracefully, yet with so much ease and frankness that you forget for the moment where you are. You go into a *habitant's* house, always clean, with flowers in the windows and the walls well white-washed, and, though the man may be the poorest in the parish, his hospitality is dispensed with so much cordiality and refinement, so wholly unembarassed and unembarassing, that you can with difficulty believe such people could always have lived in such a place. You speak execrable French—many English people unfortunately do—and make mistakes that would provoke the risibility of a very saint, yet you never see a smile on the face of your entertainer, 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,—if it were for months,—you would never hear a word that could hurt your feelings or wound your pride. In enterprise, in that boldness of thought and action which make a people great and a country prosperous, they are unquestionably far behind the rest of America. In not seeking to understand, and sometimes opposing the introduction of palpable improvements and inventions, their conduct is below their own intelligence. But in refinement and good breeding, in all that fascinates a stranger and makes the resident happy among them, they are immeasurably above any similar class on this Continent. And all that America can teach them in enterprise would not exceed what they could teach America in the finest features of civilization—viz., gentleness and good manners.

LESSON LXVI.

THE VICTORIA BRIDGE.

The Victoria Bridge is tubular and is built on the principle of the Britannia Bridge, which spans the Menai Straits near Bangor, Wales.

It is the longest bridge in the World, its length from bank to bank being only 166 feet less than 2 miles.

The Menai Bridge is 1,880 feet long. The Victoria Bridge is, therefore, nearly 5½ times longer.

The place where it crosses the St. Lawrence is about half a mile to the westward of Montreal, a short distance below the "Lachine" Rapids; and about 15 miles from St. Annes, the place immortalized in Moore's Canadian Boat Song.

There are 24 piers, which, with the two abutments will leave 25 spaces or spans for the tubes. The centre span is 330 feet wide, and each of the other spans is 242 feet. The width of each of the piers, except the 2 at the centre, is 25 feet. The 2 centre piers are each 18 feet wide. This difference is very evident in the beautiful model of the bridge, which formed a prominent object of attraction in the Canadian department of the Crystal Palace at Sydenham. This model (the length which is 32 feet) was made in every part exactly to scale; it is therefore a truthful representation of the actual structure, in miniature.

The western faces of the piers—that is, those towards the current (which flows here at a rate varying from 7 to 10 miles an hour)—terminate in a sharp-pointed edge, and the fore-part of each pier presents two beautifully smooth beveled-off surfaces. They are so shaped in order that the least possible resistance may be offered to the avalanches of ice that come at the departure of winter, and that would hurl away every impediment, less solid than massive rock, that might be opposed to their progress. For it should be remembered that not only is the whole length of the St. Lawrence from its first receipt of lake water at Kingston to tidal water at Quebec—a distance of 360 miles—solidly frozen over in winter; but the 2,000 miles of lake and upper river, together with the tributaries of the St. Lawrence likewise send down their defiant masses, all to aggregate in the immediate vicinity of Montreal. The "piling" of the ice is sometimes as high as 30, 40 and even 50 feet, and on several occasions great damage has been done by it to the massive stone buildings which line the quays, and form the noble river front for which this city is celebrated.

The stone used in the construction of the piers and abutments is a dense blue limestone, partly obtained from a quarry at Pointe Claire, 18 miles above Montreal, and partly from a quarry on the borders of Vermont, United States, about 40 miles from Montreal. The piers close to the abutments contain each 6,000 tons of masonry. Those to support the centre tube contain about 8,000 tons each.

The total amount of masonry is about 3,000,000 cubic feet, which, at 13½ feet to the ton, gives a total weight of about 222,000 tons.

Scarcely a block of stone used in the piers is less than 7 tons' weight, and many of those exposed to the force of the breaking-up ice weigh fully 10 tons. The blocks are bound together not only by the use of the best water cement but each stone is clamped to its neighbours in several places by massive iron rivets, bored several inches into each block, and the interstices between the rivet and the block are made one solid mass by means of molten lead.

The piers as yet have stood "firm as a rock." Had it been otherwise, and that the mighty St. Lawrence had conquered the combined appliances above stated, there would then indeed have been an end to all mechanical resistances.

Each of the abutments is 242 feet long and 90 feet wide. The north shore of the St. Lawrence is connected with the northern abutment by an embanked causeway, faced with solid masonry towards the current, 1,400 feet in length. The causeway from the south bank of the river is 700 feet long. The distance between this outer or river end of one abutment to the outer end of the other is 8,000 feet.

The clear height of the ordinary summer level of the St. Lawrence above the under surface of the centre tube is 60 feet; and the height diminishes towards either side with a gradient at the rate of 1 in 130 or 40 feet in the mile, so that the outer or river edge of each abutment in the height is only 36 feet above the summer level.

The navigation of the river through the Lachine Rapids is limited to steam vessels only, and they pass exclusively between the 2 centre piers, as the river is unsuited for navigation at the site of the bridge, except between these two points.

The tubes are 19 feet high at each end, whence they gradually increase to 22½ feet in the centre. The width of each tube is 16 feet, or 9½ feet wider than the rail track, which is 5½ feet—the national railway guage of Canada.

The total weight of iron in the tubes is 10,400 tons. They are bound and riveted together precisely in the same manner and with the same machinery as at the Britannia Bridge.

Mr. Robert Stephenson and Mr. A. M. Ross were the engineers of this great work. The Bridge cost about £1,250,000.

As regards the Commerical importance of the Victoria Bridge, Mr. Robert Stephenson, in a report addressed to the directors in May, 1854, says:—

"The great object however, of the Canadian system of railways is not to compete with the St. Lawrence, which will continue to accommodate a certain portion of the traffic of the country, but to bring those rich provinces into direct and easy connection with all the ports on the east coast of the Atlantic from Halifax to Boston, and even New York, and consequently through these parts nearer Europe.

"If the line of railway communication be permitted to remain severed by the St. Lawrence, it is obvious that the benefits which the system is calculated to confer upon Canada must remain in a great extent nugatory, and of a local character.

"The Province will be comparatively insulated and cut off from that coast to which her commerce naturally tends; the traffic from the West must either continue to adopt the water communication, or, what is more probable—nay, I should say certain,—it would cross into the United States by those lines completed to Buffalo, crossing the river near Niagara."

There can be no doubt that without the Victoria Bridge the large and comprehensive traffic system involved in the construction of the Grand Trunk Railway could only be partially and by comparison ineffectually carried out at a very great cost. Montreal is the terminal point of an Ocean navigation, and is connected with the Lower St. Lawrence and the Ocean on one side, and with the great

Canadian and American Lakes—extending 2,000 miles into the heart of the Continent—on the other. It is also the centre from which lines of railway now radiate to Portland, Boston and New York, and to which lines will converge from the Ottawa and the other rich, though as yet only partially developed, districts of Canada. It is therefore the conviction of those persons most capable of forming a sound judgment on the question, that, great as was the cost of the bridge, by means of it a better, more rapid and cheaper communication will be afforded for the produce of the magnificent districts of Western Canada and of the Northwestern States of America, including Michigan, Illinois, Wisconsin, Minesota, Iowa, &c., to the Atlantic seaboard, and for the supply of those districts with imported goods, than any other route on the American continent.

LESSON LXVII.

CANADIAN ISLANDS.

In the north-eastern extremity of Lake Ontario is situated the large island called *Grand* or *Wolfe Island*. It is of an irregular shape, indented by numerous bays. It is well settled, having upwards of 6000 acres under cultivation. Between its western shore and the City of Kingston lies *Garden Island*. It contains about 30 acres, and belongs to a firm largely engaged in the rafting business. They employ a large number of vessels in bringing staves from the western portion of the Upper Province to the Island, where they are made into rafts for the voyage to Quebec. The boundary line between the British dominions and the United States extends along the middle of the south channel of the St. Lawrence, betwixt Wolfe Island and the opposite American shore, on which is Cape Vincent, and afterwards passes between Duck Island and the Galops Islands.—Westwards lies *Amherst Island*, so called after Lord Amherst, one of the British Generals in 1760, when Canada was transferred to Britain. The original

French name was the "Isle of Tanti." The Crown granted it to Sir John Johnson for military services. The upper portion has been settled about 85 years. The Earl of Mountcashel now owns the principal part, and his tenants are in comfortable circumstances. The land is of very good quality, and 5000 acres and upwards are under cultivation. The channels between the extremities and the mainland are called the *Upper* and *Lower Gaps*.—In the widest portion of the Bay of Quinté is *Big Island*, to the north of which is *Grape Island*, where there was formerly a missionary station for the Indians.

The principal islands in the Niagara river belong to the Americans, such as *Goat* or *Iris*, *Grand* and *Navy Islands*. —Towards the western extremity of Lake Erie are a few islands, as *Pelée Island* lying about 7 miles from Point Pelée, and about 8 miles in length, with an average width of two. About 600 acres are under cultivation, and there is a light-house on the north-east point. The boundary line passes midway betwixt this Island and Sandusky and Cunningham Island to the south. Of the three islands called the "Sisters," two belong to Canada, and one, the West, belongs to the United States. The *East Sister* is the largest, containing 35 acres, while the *Middle Sister* does not contain half the number. They are uninhabited.

In the Detroit River there lies, opposite to Amherstburg, the long narrow *Bois Blanc Island*, containing 230 acres fit for cultivation. As the name shows, it was formerly thickly wooded. During the insurrection the timber was cut down, that the forts might better command the channel on the American side. On the south point is a light-house, commanding a view of Lake Erie. Three miles below Sandwich is *Fighting Island*, containing 1800 acres, 300 being fit for cultivation, and the remainder, which is marshy, being used for grazing. It possesses a good fishery. Near the Canadian entrance of Lake St. Clair is *Peach Island*, used principally for a fishing station.—In the upper portion of Lake St. Clair are several large islands, the principal of which are *Walpole* and *St. Annes*. All to the west of the former belong to the States. The channel separating these two islands

from the mainland is called "Chenal Ecarté," while that running betwixt them is called "Johnson's Channel." The former, about 10 miles long and from 3 to 4 wide, is a fine island, occupied by parties of Chippewa, Ottawa and Pottawatomie Indians, the last being immigrants from the United States. In 1842 presents were distributed to 1140, all of whom were heathens. For some years little success attended the labours of a missionary of the Church of England, although 20 families had applied for religious instruction. However, a chapel and schoolhouse, with residences for a missionary and schoolmaster have been erected, the cost being paid from funds belonging to the Indians; and their aversion to become Christians has greatly diminished since the death of their old chief.

In the northern or Canadian portion of Lake Huron extending from Matchedash and Nottawasaga Bays to the outlet of the River St. Mary, there are calculated to be upwards of 23,000 islands. These lie chiefly along the greatly-indented shores of the Georgian Bay or Lake Iroquois, and between the 4 Manitoulin Islands and the opposite shore to the north. Such a vast number of islands, excepting these 4 and St. Joseph Isle, present extremely little worthy of notice. The *Manitoulin Islands* are thus distinguished from each other: 1st. Manitoulin or Drummond Island; 2nd, Manitoulin or Cockburn Island; 3rd, Grand Manitoulin Island; and 4th, Manitoulin or Fitzwilliam Island. The last, which is the most eastern, and situated at the south-eastern extremity of the Grand Manitoulin, is separated from it by Owen's Channel. *Drummond Island*, the most westerly of the four, and separated from the Michigan shore by a channel called the "Detour," and from *Cockburn Island* to the east by the "False Detour," was formerly a military post of Great Britain, but was ceded to the United States in 1829. *St. Joseph Isle* lies about 9 miles to the north of Drummond Island. *Cockburn Island* is separated from the *Grand Manitoulin* by the Strait of Mississauga. The boundary line passes through the False Detour Channel between Cockburn and Drummond Islands, or the 2nd and 1st Manitoulins. The *Grand* or *Great Manitoulin* is

the principal island in the Lake, being nearly 100 miles in length, and varying from 3 or 4 to 25 in width. On the north shore it is indented by numberless bays, dotted with isles. Towards the eastern extremity, where the width is greatest, two arms of the Lake run so far into the land as to approach within three miles of each other; thus forming a narrow isthmus, and nearly dividing the Island into two very disproportioned peninsulas. The inlet from the south is Manitoulin Gulf, and that from the north is Heywood's Bay. The island may be considered as exclusively settled by Indians; from which circumstance it is frequently visited by Indian traders. There are two villages, Manitowawning and Wequamekong, distant about 8 miles. The former is about 103 miles from Penetanguishene, and 176 from Goderich. The only whites are a few attached to the Government station at Manitowawning, and still fewer at Wequamekong. Previously to 1829 the distribution of presents to a large portion of Indians, included under the term "Western Tribes," was made at Drummond Island. In 1829, the Government being desirous of ascertaining the disposition of the Indians to embrace civilization, the distribution took place on St. Joseph Island. In the early part of that year Major Winnet had stated in his report in reference to the civilization of the Indians that the Great Manitoulin offered greater advantages for the formation of a settlement than St. Joseph, particularly in respect to fishing, an object of no small importance in the estimation of old Indians. Besides, it is distant upwards of 100 miles from any military post of the States, and between 60 and 70 from any part of their territory. In 1830 and the five following years the distribution of presents was held at Penetanguishene. In this way the Western tribes were brought within the influence of the Government's efforts for their civilization. During frequent visits to the prosperous settlements at Coldwater in Medonte Township, and the Narrows between Lakes Gougiching and Simcoe, they witnessed the advantages enjoyed by their brethren settled there, and numerous applications for a participation in such benefits were consequently made. Mr. Superintendent Anderson having

during his first visit in the spring of 1835 found about 80 Chippewas and Ottawas on the entire island, a scheme for forming an extensive establishment upon it, and for making it the future place of distribution, was matured and authorised by Sir John Colborne. On this visit he found the Ottawas, Roman Catholics, amounting to about 40, settled on Wequamekong Bay. There they had cultivated two or three acres, and were living in temporary bark huts. In 1836 the settlement of Manitowawning was commenced, and 2697 persons attended when the first issue of presents was made at this post in the autumn of this year. On that occasion Sir Francis Bond Head, the Governor, was present. He had formed the project of attracting, not only the wild Indians from the north of Lake Huron, but those who had settled or were wandering among the white population in various parts of Upper Canada, to the Grand Manitoulin Island. With this intention he succeeded in inducing the chiefs of the Chippewa and Ottawa nations, who were then present, to resign their exclusive rights to the occupancy of this and all the other islands. With this view he obtained also the surrender of the larger portion of the territory of the Saugeen Indians, and offered the assistance and encouragement of the Government to other Indians whom he visited in the Western parts of the Province if they would remove to the Island. Very few, however, availed themselves of the offers, as the settlers have for the most part come from the shores of Lakes Huron and Superior or from the United States. In the autumn of 1838 the Superintendent, Mr. Anderson, a clergyman of the Church of England, and a surgeon, accompanied by several artisans and labourers, took up their residence at Manitowawning, being the first whites who had wintered in the island. Each village contains a church and schoolhouse, with a residence for the missionary and schoolmaster. Manitowawning has residences for a superintendent and surgeon. The greater increase of the settlement at Wequamekong may be accounted for by the earlier conversion of the Ottawas from heathenism, and their readier adoption of the habits of civilized life. The work of conversion among the Chippewas at Manitowaw-

ning only commenced in 1838, when a missionary of the Church of England was attached to the establishment. In the cultivation of the land and the acquisition of stock the settlement at Wequamekong has upwards of 300 acres cleared, exceeding Manitowawning by upwards of 80 acres. The principal support at both villages is derived from farming and fishing. They sometimes kill hares, partridges and even deer and bears. They manufacture considerable quantities of maple-sugar, for which they find a ready market at Penetanguishene, Goderich and sometimes in the towns on the American frontier. Four schooner-loads were shipped from Wequamekon during the spring of 1845, much of which was equal in appearance to Brazil or West India sugar. The climate of the island is very healthy, and the cold is not unusually severe, the snow seldom lying more than two feet deep. The geological formation is limestone. Both the soil and climate are favourable to cultivation, abundant crops of all kinds of grains raised by the Indians in other parts of the Province having been annually produced. Cattle thrive well, and during the winter are allowed to roam about and find their own food in the bush. The *La Cloche Island* forms a charming contrast to the bleak hills of the same name on the northern shore. The name is believed to be derived from the circumstance that the dark rocks, of which this and some of the islands are composed, sound like *a bell*, when struck hard.

Within the semicircular portion of Lake Superior, extending from Goulais Bay at the south-eastern extremity to Pigeon River at the northwest, which forms the boundary between Canada and the United States, are situated numerous islands, especially in Batcheaaung, Michipicoton, Neepigon, Black and Thunder Bays. The formation of these islands and of the circumjacent coast is chiefly of granite, greenstone, porphyry, and occasionally of amygdaloid and sienite. *Michipicoton Island*, lying about 30 miles northwest from Michipicoton Station, one of the stations of the North West Company at the mouth of a river of the same name, and 120 miles from Sault Ste. Marie, contains two mines, one of copper and the other of

silver, which are successfully worked. A large cove at the mouth of the river forms an excellent harbour, the water being from two to six fathoms in depth, sufficiently large to give commodious anchorage to 200 vessels. Near the harbour the land rises 700 feet above the Lake, while that to the north of Neepigon Bay attains to an elevation of 1000 feet. Fort William, another of the Hudson Bay Company's Stations, is 3 miles from Thunder Bay. The boundary line in the Lake passes to the north of the considerable island, *Isle Royal*, belonging to the United States.

LESSON LXVIII.

THE CANADIAN INDIANS.

A family of Indians have pitched their huts very near us; on one of the islands of our lake we can distinguish the thin blue smoke of their wood fires, rising among the trees, from our front window, or curling over the bosom of the waters.

The squaws have been several times to see me; sometimes from curiosity, sometimes with a view of bartering their baskets, mats, ducks, or venison, for pork, flour, potatoes, or articles of wearing apparel. Sometimes their object is to borrow "kettle to cook," which they are very punctual in returning.

Once a squaw came to borrow a washing tub, but not understanding her language, I could not for some time discover the object of her solicitude; at last she took up a corner of her blanket, and pointing to some soap, began rubbing it between her hands, imitated the action of washing, then laughed, and pointed to a tub; she then held up two fingers, to intimate it was for two days she wanted the loan.

These people appear of gentle and amiable dispositions; and, as far as our experience goes they are very honest. Once indeed, the old hunter, Peter, obtained from me some bread, for which he promised to give a pair of ducks, but

when the time came for payment, and I demanded my ducks, he looked gloomy, and replied with characteristic brevity, " No duck—Chippewa (meaning S—, this being the name they have affectionately given him) gone up lake with canoe—no canoe—duck by-and-by." By-and-by is a favourite expression of the Indians, signifying an indefinite point of time: maybe it means to-morrow, or a week, or a month or it may be a year, or even more. They rarely give you a direct promise.

As it is not wise to let any one cheat you if you can prevent it, I coldly declined any further overtures to bartering with the Indians until the ducks made their appearance.

Some time afterwards, I received one duck by the hands of Maquin, a sort of Indian Flibbertigibbet; this lad is a hunchbacked dwarf, very shrewd, but a perfect imp: his delight seems to be tormenting the grown babies in the wigwam, or teasing the meek deer-hounds. He speaks English very fluently, and writes tolerably for an Indian boy; he usually accompanies the women in their visits and acts as their interpreter, grinning with mischievous glee at his mother's bad English, and my perplexity at not being able to understand her signs. In spite of his extreme deformity, he seemed to possess no inconsiderable share of vanity, gazing with great satisfaction at his face in the looking glass. When I asked his name, he replied " Indian name Maquin, but English name Mister Walker, very good man;" this was the person he was called after.

These Indians are scrupulous in their observance of the Sabbath, and show great reluctance to having any dealings in the way of trading or pursuing their usual avocations of hunting or fishing on that day.

The young Indians are very expert in the use of a long bow, with wooden arrows, rather heavy, and blunt at the end. Maquin said he could shoot ducks and small birds with his arrows; but I should think they were not calculated to reach objects at any great distance, as they appeared very heavy.

'Tis sweet to hear the Indians singing their hymns of a Sunday night; their rich soft voices rising in the still evening air. I have often listened to this little choir

praising the Lord's name in the simplicity and fervour of their hearts, and have felt it was a reproach that these poor half-civilized wanderers should alone be found to gather together to give glory to God in the wilderness.

I was much pleased with the simple piety of the squaw of our friend the hunter, Peter, a stout swarthy matron of a most amiable expression. We were taking our tea when she softly opened the door and looked in : an encouraging smile induced her to enter, and depositing a brown papoose (Indian for baby or little child) on the ground, she gazed round with curiosity and delight in her eyes. We offered her some tea or bread, motioning her to take a vacant seat beside the table. She seemed pleased by the invitation, and drawing her little one to her knee, poured some tea into the saucer, and gave it to the child to drink. She ate very moderately, and when she had finished, rose and wrapping her face in the folds of her blanket, bent down her head on her breast in the attitude of prayer. This little act of devotion was performed without the slightest appearance of pharisaical display, but in singleness and simplicity of heart. She then thanked us with a face beaming with smiles and good humour; and taking little Rachel by the hands, threw her over her shoulder with a peculiar sleight that I feared would dislocate the slender thing's arms; but the papoose seemed well satisfied with this mode of treatment.

In long journeys the children are placed in upright baskets of a peculiar form, which are fastened round the necks of the mothers by straps of deer skin; but the young infant is swathed to a sort of flat cradle, secured with flexible hoops, to prevent it from falling out. To these machines they are strapped so as to be unable to move a limb. Much finery is often displayed in the outer covering and the bandages that confine the papoose.

There is a sling attached to this cradle, that passes over the squaw's neck, the back of the babe being placed to the back of the mother, and its face outward. The first thing a squaw does on entering a house, is to release herself from her burden and place it up against the wall, or chair, chest, or anything that will support it, where the passive prisoner stands looking not unlike a mummy in its case.

The squaws are most affectionate to their little ones. Gentleness and good humour appear distinguishing traits in the tempers of the female Indians; whether this be natural to their characters, the savage state, or the softening effects of Christianity, I cannot determine.

The squaws are very ingenious in many of their handywork. We find their birch-bark baskets very convenient for a number of purposes. My bread-basket, knife-tray, and sugar-basket, are all of this humble material. When ornamented and wrought in pattern with dyed quills, they are by no means inelegant.

They manufacture vessels of birch-bark so well, that they will serve for many useful household purposes, such as holding milk, soup, water or any other liquid; they are sewn or rather stitched together with the tough roots of the tamarack or larch, or else with stripes of cedar bark. They also weave very useful sorts of baskets from the inner rind of the bass-wood and white-ash. Some of these baskets, of a coarse kind, are made use of for gathering up potatoes, Indian corn, or turnips; the settlers finding them very good substitutes for osier baskets used for the same purpose in the Old Country. The Indians are acquainted with a variety of dyes, with which they stain the more elegant fancy baskets and porcupine quills. Our parlour is ornamented with several very pretty specimens of their ingenuity in this way, which answers the purpose of note and letter-cases, flower stands, and work-baskets.

They appear to value the useful rather more highly than the merely ornamental articles that you may exhibit to them. They are very shrewd and close in all their bargains, and exhibit a surprising degree of caution in their dealings. The men are much less difficult to trade with than the women; they display a singular pertinacity in some instances. If they had fixed their mind on any one article, they will come to you day after day, refusing any other you may offer to their notice. One of the squaws fell in love with a gay chintz dressing-gown belonging to my husband, and though I resolutely refused to part with it, all the squaws in the wigwam by turns came to look at "gown," which they pronounced with their peculiarly plaintive tone of

voice; and when I said, "No gown to sell," they uttered a melancholy exclamation of regret, and went away.

They will seldom make any article you want on purpose for you. If you express a desire to have a basket of a particular pattern that they do not happen to have ready made by them, they give you the usual reply of "by-and-by." If the goods you offer them in exchange for theirs do not answer their expectations, they give a sullen and dogged look or reply, "*car-car*" (no, no,) or "*carwin*," which is still a more forcible negative. But when the bargain pleases them, they signify their approbation by several affirmative nods of the head, and a note not much unlike a grunt; the ducks, venison, fish or baskets are placed beside you, and the articles of exchange transferred to the folds of their capacious blankets, or deposited in a sort of rushen wallet, not unlike those straw baskets in which English carpenters carry their tools.

The women imitate the dresses of the whites, and are rather skillful in converting their purchases. Many of the young girls can sew very neatly. I often give them bits of silk, and velvet, and braid, for which they appear very thankful.

LESSON LXIX.

SPEECH OF A CREEK INDIAN IN A COUNCIL OF HIS NATION, AGAINST THE USE OF SPIRITUOUS LIQUORS.

I do not stand up, O countrymen! to propose the plans of war, or to direct the wisdom of this assembly in the regulation of our alliances. My intention is to open to your view, a subject not less worthy of our deliberate notice.

I perceive the eye of this assembly dwells upon me.—Oh! may every heart be unveiled from its prejudice, and receive the disinterested, the pious, the filial obedience I owe to my country, when I step forth to be the accuser of my brethren:—not of treachery, not of cowardice, not of deficiency in the noblest of all passions, the love of the

public: these, I glory in boasting, are *incompatible* with the character of a Creek.

The tyrant I *arraign* before you, O Creeks! is no native of our soil, but a lurking *miscreant*, an *emissary* of the evil principle of darkness. 'Tis that pernicious liquid, which our pretended white friends artfully introduced, and so plentifully pour in amongst us.

Tremble, O ye Creeks! when I thunder in your ears *this denunciation*,—that if the cup of perdition continue to rule with so intemperate a sway amongst us, ye will cease to be a nation: ye will have neither heads to direct, nor hands to protect: this *diabolical* juice will undermine all the powers of your bodies and minds. In the day of battle the warrior's enfeebled arm will draw the bow with inoffensive zeal:—in the day of council, when national safety hangs suspended on the lips of the hoary Sachem, he will shake his head with uncollected spirits, and drivel out the babblings of a second childhood.

Think not, O Creeks! that I present an imaginary picture, to amuse or affright you: it is too evident! it is too fatally evident that we find the vigour of our youth abatting; our numbers decreasing; our ripened manhood a premature victim to diseases, to sickness, and to death; and our venerable Sachems a scanty number.

Does not that desertion of all our reasoning powers, when we are under the dominion of that depraved monster, that barbarian madness wherewith it inspires us, prove, beyond a doubt that it dislocates all our intellectual faculties, pulls down reason from her throne, and dissipates every ray of the Divinity within us? I need not, I hope, make it a question to any in this assembly, whether he would prefer the intemperate use of this liquor, to clear perceptions, sound judgment, and a mind exulting in its own reflections?

However great may be the force of habit, how insinuating soever the influence of example, I persuade myself, and I perceive by your countenances, O Creeks! that there is not one before whom I stand, so shameless, so lost to the weakest impulses of humanity, and the very whisperings of reason, as not to acknowledge the *turpitude* of such a choice.

LESSON LXX.

CANADIAN INDIAN ENCAMPMENT.

Feeling some desire to see these singular people in their winter encampment, I expressed my wish to a friend, who happens to be a great favourite with the Indians, who, as a mark of distinction, have bestowed upon him the title of Chippewa, the name of their tribe. He was delighted with the opportunity of doing the honours of the Indian wigwam; and it was agreed that he, with some of his brothers and sisters-in-law, should accompany us to the camp in the woods.

A merry party we were that sailed forth that evening into the glorious starlight. The snow sparkled as with a thousand diamonds on its frozen surface; and truly never did I look upon a lovelier sight than the woods presented. There had been a heavy fall of snow the preceding day: owing to the extreme stillness of the air, not a particle of it had been shaken from the trees. The evergreens were bending beneath their brilliant burden; every twig, every leaf and spray, was covered, and some of the weak saplings actually bowed down to the earth with the weight of snow, forming the most lovely and fanciful bowers and arcades across our path. As you looked up towards the top of the trees, the snowy branches, seen against the deep blue sky, formed a silvery veil, through which the bright stars were gleaming with a chastened brilliancy.

Leaving the broad road, we struck into a by-path, deep tracked by the Indians, and soon perceived the wig-wam, by the red smoke that issued from the basket-work top of the little hut. This is first formed with light poles, planted round, so as to enclose a circle of 10 or 12 feet in diameter; between these poles are drawn large sheets of birch bark, both within and without, leaving an opening of the bare poles at the top, so as to form an outlet for the smoke; the outer walls were also banked up with snow, so as to exclude the air entirely from beneath.

Some of our party ran on before, so that when the blanket that served the purpose of a door was unfastened, we found a motley group of the dark skins and pale faces

reposing on the blankets and skins that were spread around the walls of the wigwam.

The swarthy complexions, shaggy black hair, and singular costume of the Indians, formed a striking contrast with the fair-faced Europeans who were mingled with them, seen as they were by the red and fitful glare of the wood fire that occupied the centre of the circle. The deer-hounds lay stretched in indolent enjoyment close to the embers, near to whom were 3 or 4 dark-skinned little urchins playing with each other.

There was a slight bustle among the party when we entered, one by one through the low blanket doorway. The merry laugh rang round among our friends, which was echoed by more than one of the Indian men, and joined by the peculiar half laugh or chuckle of the squaws. "*Chippewa*" was directed to a post of honour beside the hunter Peter, and squaw Peter, with an air of great good humour, made room for me on a corner of her own blanket, to effect which two papooses and a hound were displaced.

The most attractive persons in the wigwam were two Indian girls, one about 18—Jane, the hunter's eldest daughter, and her cousin, Margaret. I was greatly struck with the beauty of Jane; her features were positively fine, and though of Gispy darkness, the tint of vermillion on her cheek and lip rendered it, if not beautiful, very attractive. Her hair was of jetty blackness, soft and shining and neatly folded over her forehead, not hanging loose and disorderly in shaggy masses, as is generally the case with the squaws. Jane was evidently aware of her superior charms, and may be considered as an Indian belle, by the peculiar care she displayed in the arrangement of the black cloth mantle, bound with scarlet, that was gracefully wrapped over one shoulder and fastened on the left side by a gilt brooch. Margaret was younger, of lower stature, and though lively and rather pretty, yet wanted the quiet dignity of her cousin; she had more of the squaw in face and figure. The two girls occupied a blanket by themselves, and were busily engaged in working some most elegant shades of deer-skin, richly wrought over with coloured quills and beads. They kept the beads and quills in a small tin pan on their knees;

but the old squaw held her porcupine quills in her mouth, and the fine dried sinews of the deer, which they make use of instead of thread in work of this sort, in her bosom.

On my expressing my desire to have some of the porcupine quills, she gave me a few of different colours, that she was working a pair of mocassins with, but signified that she wanted from me "bead to work mocassin;" by which I understood I was to give some in exchange for the quills. Indians never give away anything when they have learned to trade with white men.

She was greatly delighted with the praise I bestowed upon Jane. She told me Jane was soon to marry the young Indian who sat on one side of her, in all the pride of a new blanket coat, red sash, embroidered powder-pouch, and great gilt clasps to the collar of his coat, which looked as warm and as white as a newly-washed fleece. The old squaw evidently felt proud of the young couple, as she gazed on them, and often repeated, with a good-tempered laugh "Jane's husband; marry by and by." We had so often listened with pleasure to the Indians singing their hymns of a Sunday night, that I requested some of them to sing to us. The old hunter nodded assent, and, without removing his pipe, with the gravity and phlegm of a Dutchman, issued his commands, which were as instantly obeyed by the younger part of the community; and a chorus of rich voices filled the little hut with a melody that thrilled through our very hearts.

The hymn was sung in the Indian tongue—a language which is peculiarly sweet and soft in its cadences, and seems to be composed of many vowels. I could not but notice the modest air of the girls: as if anxious to avoid observation that they felt was attracted by their sweet voices, they turned away from the gaze of the strangers, facing each other, and bending their heads down over the work they still held in their hands. The attitude—which is that of the Eastern nations—the dress, dark hair and eyes, the olive complexion, the heightened colour, and meek expression of face, would have formed a study for a painter. I was pleased with the air of deep reverence that sat on the faces of the elders of the Indian family, as they listened

to the voices of their children singing praise and glory to the God and Saviour they had learned to fear and love.

The Indians seem most tender parents. It is pleasing to see the affectionate manner in which they treat their young children, fondly and gently caressing them with eyes overflowing and looks of love. During the singing, each papoose crept to the feet of its respective father and mother, and those that were too young to join their voices to the little choir, remained quite silent till the hymn was at an end. One little girl of three years old beat time on her fathers knee, and from time to time chimed in her infant voice. She evidently possessed a fine ear, and natural taste for music.

I was at a loss to conceive where the Indians kept their stores, clothes, and other moveables, the wigwam being so small that there seemed no room for anything besides themselves and their hounds. Their ingenuity, however, supplied the want of room, and I soon discovered a plan that answered all the purposes of closets, bags, boxes, &c., the inner lining of birch bark being drawn between the poles, so as to form pouches all around. In these pouches were stowed their goods; one set held their stock of dried deer's flesh, another dried fish, a third contained some flat cakes. Their dressed skins, clothes, materials for their various toys—such as beads, quills, bits of cloth, silk, with a great number of miscellaneous articles, occupied the rest of these reservoirs.

Though open for a considerable space at the top, the interior of the wigwam was so hot, I could scarcely breathe and was constrained to throw off all my trappings during the time we stayed. Before we went away, the hunter insisted on showing us a game which was something after the manner of our cup and ball, only more complicated, and requiring more sleight of hand. The Indians seemed evidently well pleased at our want of adroitness. They also showed us another game which was a little like ninepins, only the number of sticks stuck in the ground was greater. I was unable to stay to see the little rows of sticks knocked out, as the heat of the wigwam oppressed me almost to suffocation, and I was glad to feel myself once more breathing the pure air.

LESSON LXXI.

THE AMERICAN FOREST GIRL.

Wildly and mournfully the Indian drum
On the deep hush of moonlight forests broke;—
'Sing us a death-song, for thine hour is come.'
So the red warriors to their captive spoke.
Still, and amidst those dusky forms alone,
A youth, a fair-hair'd youth of England stood,
Like a king's son; though from his cheek had flown
The mantling crimson of the island blood,
And his press'd lips looked marble.—Fiercely bright
And high around him, blaz'd the fires of night,
Rocking beneath the cedars too and fro,
As the wind pass'd, and with a fitful glow
Lighting the victim's face:—thick cypress boughs
Full of strange sound, waved o'er him, darkly red
In the broad stormy firelight;—savage brows,
With tall plumes crested and wild hues o'erspread,
Girt him like feverish phantoms; and pale stars
Look'd through the branches as through dungeon bars,
Shedding no hope.—He knew, he felt his doom—
Oh! what a tale to shadow with its gloom
That happy hall in England!—Idle fear!
Would the winds tell it?—Who might dream or hear
The secret of the forests?—To the stake
They bound him: and that proud young soldier strove,
His father's spirit in his breast, to wake.
Trusting to die in silence! He, the love
Of many hearts—the fondly rear'd—the fair,
Gladdening all eyes to see!—And fetter'd there
He stood beside his death-pyre, and the brand
Flam'd up to light it in the chieftain's hand;
He thought upon his God.—Hush! hark!—a cry
Breaks on the stern and dread solemnity:—
A step hath pierc'd the ring!—Who dares intrude
On the dark hunters in their vengeful mood?—
A girl—a young slight girl—a fawn-like child
Of green savannas and the leafy wild,

Springing unmark'd till then, as some lone flower,
Happy because the sunshine is its dower;
Yet one that knew how early tears are shed,—
For *hers* had mourn'd a playmate brother dead.
She had sat gazing on the victim long,
Until the pity of her soul grew strong;
And, by its passion's deepening fervour sway'd,
Even to the stake she rush'd, and gently laid
His bright head on her bosom, and around
His form her slender arms to shield it wound,
Like close Liannes; then rais'd her glittering eye
And clear-ton'd voice, that said, 'He shall not die!'

'He shall not die!'—the gloomy forest thrill'd
To that sweet sound. A sudden wonder fell
On the fierce throng; and heart and hand were still'd,
Struck down, as by the whisper of a spell.
They gaz'd,—their dark souls bow'd before the maid,
She of the dancing step in wood and glade!
And, as her cheek flush'd through its olive hue,
As her black tresses to the night wind flew,
Something o'ermaster'd them from that young mien—
Something of heaven, in silence felt and seen;
And seeming to their child-like faith, a token
That the Great Spirit by her voice had spoken.

They loos'd the bonds that held their captive's breath;
From his pale lips they took the cup of death;
They quench'd the brand beneath the cypress tree;
'Away,' they cried, 'young stranger, thou art free!'

LESSON LXXII.

THE FLAT-HEAD INDIANS.

The Flat-Head Indians are met with along the banks of the Columbia river, from its mouth eastward to the Cascades, a distance of about 130 miles; they extend up the Walamett river south, about 30 or 40 miles, and through

the district lying between the Walamett and Fort Astoria, now called Fort George. To the north they extend along the Cowlitz river and the tract of land lying between that and Puget's Sound. About two-thirds of Vancouver's Island is also occupied by them, and they are found along the coasts of Puget's Sound and the Strait of Juan de Fuca. The Flat-Heads are divided into numerous tribes, each having its own peculiar locality, and differing more or less from the others in language, customs and manners. The process of flattening the head, which is peculiar to these tribes, is as follows:—The Indian mothers all carry their infants (papooses) strapped to a piece of board covered with moss or loose fibres of cedar bark, and in order to flatten the head, they place a pad on the forehead of the child, on the top of which is laid a piece of smooth bark bound on by a leathern band passing through holes in the board in either side, and kept tightly pressed across the front of the head. A sort of pillow of grass or cedar fibres is placed under the back of the neck to support it.

This process commences with the birth of the infant, and is continued for a period of from eight to twelve months, by which the head has lost its natural shape and acquired that of a wedge, the front of the skull becoming flat, broad, and higher at the crown, giving it a most unnatural appearance.

It might be presumed that from the extent to which this is carried, the operation must be attended with great suffering to the infant, but I never heard the infants crying or moaning, although I have seen their eyes seemingly starting out of their sockets from the great pressure. But on the contrary, when the bandages were removed, I have noticed them cry until they were replaced. From the apparent dullness of the children, I should imagine that a state of torpor or insensibility is induced, and that a return to consciousness occasioned by its removal must be naturally followed by the sense of pain.

This unnatual operation does not, however, seem to injure the health, the mortality amongst the Flat-Head children not being perceptibly greater than amongst other Indian tribes. Nor does it seem to injure their intellect;

on the contrary, the Flat-Heads are generally considered fully as intelligent as surrounding tribes, who allow their heads to remain in their natural shape; and it is from amongst the round-heads the Flat-Heads take their slaves. They look with contempt even upon the whites for having round-heads, the flat-head being considered as the distinguishing mark of freedom.

LESSON LXXIII.

THE RED-INDIAN.

Rest, warrior, rest! thine hour is past,—
Thy longest war-whoop, and thy last,
Still rings upon the rushing blast,
That o'er thy grave sweeps drearily.

Rest, warrior, rest! thy haughty brow,
Beneath the hand of death bends low,
Thy fiery glance is quenchéd now,
In the cold grave's obscurity.

Rest, warrior, rest! thy rising sun
Is set in blood, thy day is done;
Like lightning flash, thy race is run,
And thou art sleeping peacefully.

Rest, warrior, rest! thy foot no more
The boundless forest shall explore,
Or trackless cross the sandy shore,
Or chase the red deer rapidly.

Rest, warrior, rest! thy light canoe,
Like thy choice arrow, swift and true,
Shall part no more the waters blue,
That sparkle round it brilliantly.

Rest, warrior, rest! thine hour is past,
Yon sinking sunbeam is thy last,
And all is silent, save the blast,
That o'er thy grave sweeps drearily.

LESSON LXXIV.

INDIAN FASTING.

The Indians of the Odahwahs are most exact in enforcing their rules of fasting. With young children it lasted the whole day, and if a child put anything in his mouth during the day as, for instance, snow or a piece of icicle—which the children are very apt to do when playing in the open air in winter, that day went for nothing, the child was then permitted to eat, with strict injunctions to renew his fast next day. It was also imposed as a punishment upon those children who manifested a disposition to be disobedient and disrespectful; and was found a useful and excellent means of discipline to make children sensible of their duties, and exercised a wholesome restraint upon the youth. With young men from 16 to 25 years of age it was no longer necessary to remind them of the practice. It was looked upon as a duty by every young man, who had too much honourable feeling, to submit to the sneers of his companions as a worthless glutton. They, moreover, believed gluttony to be highly displeasing to the Great Spirit; and that in order to obtain special favours from him, it was absolutely necessary to restrain the appetite. The young men frequently spent one or two months during the winter in fasting, taking only one meal in the day, after sun-set. In summer less time was spent, but the fast was more severe; it lasted from two to four and even five days, according to the strength of the individual. On those occasions it was usual for the young men to withdraw from the family residence to a retired spot, under the shade of a tree, where they passed their time in fasting and contemplation. To this spot the mother sometimes repaired with a small bunch of wild, unripe berries, which she suspended from a twig about a foot and a half from the ground, so that the young man might have the poor consolation of fixing his eyes occasionally upon them. The sight of these berries had the effect of watering the mouth in the same way as we feel before tasting any un-

ripe fruit, especially when we have reason to suspect its being sour. The dreams of the last night which terminated their regular fasting days at any time of the year, were considered the most important, and were carefully studied as revelations from the Great Spirit. In the evening small wigwams were put up at a little distance from the family residence, each just big enough for the accommodation of one person. The youths who were practising the rite of fasting had to take up their quarters in these lodges for the night, using, if possible, only new furniture. Next morning it was the duty of the grandmother, or some elderly female, to visit the young fasters by day-light. The first thing she did was to make a very thin corn soup, or some kind of broth, after which she went to ask them one by one of their dreams. She congratulated those who had favourable dreams upon their good fortune, and for those who had unlucky dreams she threw a piece of fur of some animal on the fire, in order to avert the consequences of such ill-omened visions. The longest fast practised among the Indians, lasted 10 days, during which time it was indispensable that the candidates for the special honours which it secured should neither taste anything nor sleep. They were made to dance every night, and sometimes were put into small cribs suspended from the ground, which were moved sideways, like a cradle, for the purpose of inducing sleep. Those who yielded, and fell asleep were dismissed forthwith as unworthy. Most frequently, all the candidates failed; but on some rare occasions one or two succeeded in completing the time. Even with these, however, this severe undertaking seems to have exceeded the powers of nature, and those who were successful—though regarded ever after with a certain degree of superstitious veneration—never fully recovered from the effects of it. Young girls when fasting, rubbed clay on their temples, whilst the young men partially blackened their faces, or occasionally painted them with one or two other colours. Like the Jews, the Indians regarded several animals as unfit to be eaten; in fact they had strong prejudices against their flesh. Among the feathered tribes, may be mentioned the raven, the crow,

the blue jay, the owl; and amongst quadrupeds the fox, the mink, and the wolf.*

LESSON LXXV.

CHARACTER AND DECAY OF THE NORTH AMERICAN INDIANS.

There is, in the fate of the unfortunate Indians, much to awaken our sympathy, and much to disturb the sobriety of our judgment; much that may be urged to excuse their own atrocities; much in their characters which betrays us into an involuntary admiration. What can be more melancholy than their history? By a law of their nature, they seemed destined to a slow, but sure extinction. Everywhere at the approach of the White Man, they fade away. We hear the rustling of their footsteps, like that of the withered leaves of Autumn, and they are gone for ever. They pass mournfully by us and they return no more. Two centuries ago the smoke of their wigwams, and the fires of their councils, rose in every valley, from Hudson's Bay to the farthest Florida, from the Ocean to the Mississippi and the Lakes. The shouts of victory and the war-dance rang through the mountains and the glades. The thick arrows and the deadly tomahawk whistled through the forests; and the hunters' trace, and the dark encampment startled the wild beasts in their lairs.

* The writer of the above is Francis Assikinack, a full-blooded Indian, and the son of one of the Chiefs of the Odahwahs or Ottawas, as they are more generally designated—now settled in the Manitoulin Island in Lake Huron. In A.D. 1840, he was sent, at the age of 16, to the Upper Canada College, Toronto. At that time he was totally ignorant of the English language, and after having been three months in the Institution, he got one of the other boys to interpret for him, and solicit permission to return home, as he thought he could never learn the English language. The request was not complied with, and he remained so long in the Institution, not only to acquire such a command of English as is seen in his papers, read before the Canadian Institute, Toronto, but also to obtain a familiar knowledge of Latin and Greek.

The warriors stood forth in their glory. The young listened to the songs of other days. The mothers played with their infants, and gazed on the scene with warm hopes of the future. The aged sat down; but they wept not. They should soon be at rest in fairer regions, where the Great Spirit dwelt in a home prepared for the brave beyond the Western skies. Braver men never lived; truer men never drew the bow. They had courage and fortitude, and sagacity and perseverance, beyond most of the human race. They shrunk from no dangers, and they feared no hardships. If they had the vices of savage life, they had the virtues also. They were true to their country, their friends, and their homes. If they forgave not injury, neither did they forget kindness. If their vengeance was terrible, their fidelity and generosity were unconquerable also. Their love, like their hate, stopped not on this side of the grave. But where are they? Where are the villages, the warriors and youth? the sachems and the tribes? the hunters and their families? They have perished—they are consumed. The wasting pestilence has not alone done the mighty work. No,—nor famine, nor war. There has been a mightier power, a moral canker, which hath eaten into their hearts-core—a plague which the touch of the White Man communicated; a poison, which betrayed them into a lingering ruin. Reason as we may, it is impossible not to read, in such a fate, much that we know not how to interpret; much of provocation to cruel deeds and deep resentments; much of apology for wrong and perfidy; much of pity mingling with indignation; much of doubt and misgiving as to the past; much of painful recollections; much of dark foreboding as to the future.

LESSON LXXVI.

THE GRAVE OF THE INDIAN CHIEF.

They laid the corse of the wild and brave
On the sweet, fresh earth of the new-dug grave,
On the gentle hill, where the wild weeds wave,
And flowers and grass were flourishing.

They laid within the peaceful bed,
Close by the Indian chieftain's head,
His bow and arrows; and they said,
That he had found new hunting-grounds.

Where bounteous Nature only tills
The willing soil; and o'er whose hills,
And down beside the shady rills,
The hero roams eternally.

And these fair isles to the westward lie,
Beneath a golden sunset sky,
Where youth and beauty never die,
And song and dance move endlessly.

They told of the feats of the dog and gun,
They told of the deeds his arm had done,
They sung the battles lost and won,
And so they paid his eulogy.

And o'er his arms, and o'er his bones,
They rais'd a simple pile of stones;
Which, hallow'd by their tears and moans,
Was all the Indian's monument.

And since the chieftain here has slept,
Full many a winter's winds have swept,
And many an age has softly crept
Over his humble sepulchre.

LESSON LXXVII.

THE ESCAPE.

On a point of land, at the confluence of the Oswegatchie with the St. Lawrence, is a broken stone wall, the remains of a fortification. Tradition says, that a commandant of this fort (which was built by the French to protect their traders against the savages), married a young Iroquois, who was before or after the marriage converted to the

Catholic faith. She was the daughter of a chieftain of her tribe, and great efforts were made by her people to induce her to return to them. Her brother lurked in the neighbourhood and procured interviews with her, and attempted to win her back by all the motives of national pride and family affection; but all was in vain. The young Garanga, or, to call her by her baptismal name, Marguerite, was bound by a threefold cord—her love to her husband, to her son, and to her religion. Mecumeh, finding persuasion ineffectual, had recourse to stratagem. The commandant was in the habit of going down the river on fishing excursions, and when he returned, he would fire his signal gun, and Marguerite and her boy would hasten to the shore to greet him. On one occasion he had been gone longer than usual. Marguerite was filled with apprehensions natural enough, at a time when imminent dangers and hair breadth escapes were of every day occurrence. She had sat in the tower and watched for the returning canoe, till the last beam of day had faded from the waters;—the deepening shadow of twilight played tricks with her imagination. Once she was startled by the water-fowl, which as it skimmed along the surface of the water, imaged to her fancy the light canoe, impelled by her husband's vigorous arm—again she heard the leap of the heavy maskalongé and the splashing waters sounded to her fancy like the first dash of the oar. That passed away, and disappointment and tears followed. Her boy was beside her; the young Louis, who, though scarcely 12 years old, already had his imagination filled with daring deeds. Born and bred in a fort, he was an adept in the use of the bow and the musket; courage seemed to be his instinct, and danger his element,and battles and wounds were "household words" with him. He laughed at his mother's fears; but in spite of his boyish ridicule, they strengthened, till apprehension semed reality. Suddenly the sound of the signal gun broke on the stillness of the night. Both mother and son sprang on their feet with a cry of joy, and were pressing hand in hand towards the outer gate, when a sentinel stopped them to remind Marguerite, it was her husband's order that no one should venture without the walls after sunset. She, how-

ever insisted on passing, and telling the soldier that she would answer to the commandant for his breach of orders —she passed the outer barrier. Young Louis held up his bow and arrow before the sentinel, saying gaily, "I am my mother's body-guard, you know." Tradition has preserved these trifling circumstances, as the events that followed rendered them memorable. The distance, over a gentle declivity, from the fort to the place where the commandant moored his canoe, was trifling, and quickly passed. Marguerite and Louis flew along the narrow foot path, reached the shore, and were in the arms of———Mecumeh and his fierce companions. Entreaties and resistance were alike in vain. Resistance was made with a manly spirit by young Louis, who drew a knife from the girdle of one of the Indians, and attempted to plunge it in the bosom of Mecumeh, who was roughly binding his wampum belt over Marguerite's mouth, to deaden the sound of her screams. The uncle wrested the knife from him, and smiled proudly on him, as if he recognised in the brave boy, a scion from his own stock. The Indians had two canoes; Marguerite was conveyed into one, Louis to the other—and both canoes were rowed into the Oswegatchie, and up the stream as fast as it was possible to impel them against the current of the river.

Not a word nor cry escaped the boy; he seemed intent on some purpose, and when the canoe approached near the shore, he took off a military cap he wore, and threw it so skilfully that it lodged, where he meant it should, on the branch of a tree which projected over the water. There was a long white feather in the cap. The Indians had observed the boy's movement—they held up their oars for a moment, and seemed to consult whether they should return and remove the cap; but after a moment, they again dashed their oars in the water and proceeded forward. They continued rowing for a few miles, and then landed, hid their canoes behind some trees on the river's bank, and plunged into the woods with their prisoners. It seemed to have been their intention to have returned to their canoes in the morning, and they had not proceeded far from the shore when they kindled a fire and prepared some food, and

offered a share of it to Marguerite and Louis. Poor Marguerite, as may be supposed, had no mind to eat; but Louis ate as heartily as if he had been safe within the walls of the fort. After the supper, the Indians stretched themselves before the fire, but not till they had taken the precaution to bind Marguerite to a tree, and to compel Louis to lie down in the arms of his uncle Mecumeh. Neither of the prisoners closed their eyes, Louis kept his fixed on his mother. She sat upright beside an oak tree, the cord was fastened around her waist, and bound around the tree which had been blasted by lightning; the moon poured its beams through the naked branches, upon her face, convulsed with the agony of despair and fear. With one hand she held a crucifix to her lips, the other was on her rosary. The sight of his mother in such a situation, stirred up daring thoughts in the bosom of the little boy—but he lay powerless in his uncle's naked brawny arms. He tried to disengage himself, but at the slightest movement, Mecumeh, though still sleeping seemed conscious and strained him closer to him. At last the strong sleep, that in the depth of the night steeps the senses in utter forgetfulness overpowered him—his arms relaxed their hold, and dropped beside him and left Louis free. He rose cautiously, looked for one instant on the Indians, and assured himself they all slept profoundly. He then possessed himself of Mecumeh's knife, which lay at his feet, and severed the cord that bound his mother to the tree. Neither of them spoke a word—but with the least possible sound, they resumed the way, by which they had come from the shore; Louis in the confidence, and Marguerite with the faint hope of reaching it before they were overtaken. It may be imagined how often the poor mother, timid as a fawn, was startled by the evening breeze stirring the leaves, but the boy bounded forward as if there was neither fear nor danger in the world. They had nearly attained the margin of the river, where Louis meant to launch one of the canoes and drop down the current, when the Indian yell resounding through the woods struck on their ears. They were missed, pursued, and escape was impossible. Marguerite panic-struck, sunk

to the ground. Nothing could check the career of Louis. "On—on, mother," he cried, "to the shore—to the shore." She rose and instinctively followed her boy. The sound of pursuit came nearer and nearer. They reached the shore, and there beheld three canoes coming swiftly up the river. Animated with hope, Louis screamed the watch-word of the garrison, and was answered by his father's voice.

The possibility of escape, and the certain approach of her husband, infused new life into Marguerite. "Your father cannot see us," she said, "as we stand here in the shade of the trees; hide yourself in that thicket, I will plunge into the water." Louis crouched under the bushes, and was completely hidden by an overhanging grape-vine, while his mother advanced a few steps into the water, and stood erect, where she could be distinctly seen.

A shout from the canoes apprised her that she was recognised, and at the same moment, the Indians who had now reached the shore, rent the air with their cries of rage and defiance. They stood for a moment, as if deliberating what next to do; Mecumeh maintained an undaunted and resolved air, but with his followers the aspect of armed men, and a force thrice their number, had its usual effect. They fled.

He looked after them, cried "shame!" and then with a desperate yell, leaped into the water and stood beside Marguerite. The canoes were now within a few yards—He put his knife to her bosom—"The daughter of Tecumseh," he said, "should have died by the judgment of our warriors, but now by her brother's hand must she perish:" and he drew back his arm to give vigour to the fatal stroke, when an arrow pierced his own breast, and he fell insensible at his sister's side. A moment after Marguerite was in the arms of her husband, and Louis, with his bow unstrung, bounded from the shore, and was received in his father's canoe; and the wild shores rung with the acclamations of the soldiers, while his father's tears of pride and joy, were poured like rain upon his cheek.

LESSON LXXVIII.

THE EMIGRANT'S ABODE.

In making remoter journeys from the town, beside the rivulets and in the little bottoms not yet in cultivation, I discerned the smoke rising in the woods and heard the strokes of the axe, the tinkling of bells, the baying of dogs, and saw the newly arrived emigrant either raising his log cabin, or just entered into possession.

It has afforded me more pleasing reflections, a happier train of associations, to contemplate these beginnings of social toil in the wild wilderness, than, in our more cultivated regions, to come in view of the most sumptuous mansion. Nothing can be more beautiful than these little bottoms upon which these emigrants deposit, if I may so say, their household gods.

Springs burst forth in the intervals between the high and low grounds. The trees and shrubs are of the most beautiful kind. The brilliant red-bird, as seen flitting among the shrubs or perched on a tree, seems welcoming in her mellow notes, the emigrant to his abode, and grey squirrels are skipping from branch to branch.

In the midst of these primeval scenes, the patient and laborious father *fixes* his family. In a few weeks they have reared a comfortable cabin and other outbuildings. Pass this place in a few years, and you will see extensive fields of corn and wheat, a young and thrifty orchard, fruit trees of all kinds,—the guarantee of present abundant subsistence and of future luxury.

Pass it in 10 or 15 years, and the log buildings will have disappeared. The shrubs and forest trees will be gone. The Arcadian aspect of humble and retired abundance and comfort, will have given place to a brick house, with accompaniments like those that attend the same kind of house in the older countries.

I admit that the first residence among the trees affords the most agreeable picture to my mind; and that there is an inexpressible charm in the pastoral simplicity of those years, before pride and self-confidence have banished the

repose of their Eden, and when you witness the first strugglings of social toil, with the barren luxuriance of Nature.

LESSON LXXIX.

THE AMERICAN IN ENGLAND.

England is as classic ground to an American, as Italy is to an Englishman; and old London teems with as much historical association as mighty Rome.

But what more especially attracts his notice, are those peculiarities which distinguish an old country, and an old state of society, from a new one. I have never yet grown familiar enough with the crumbling monuments of past ages, to blunt the intense interest with which I first beheld them.

Accustomed always to scenes where history was, in a manner, in anticipation; where everything in art was new and progressive; and pointed to the future rather than to the past; where, in short, the works of man gave no ideas but those of young existence, and prospective improvement; there was something inexpressibly touching in the sight of enormous piles of architecture, grey with antiquity and sinking decay.

I cannot describe the mute but deep-felt enthusiasm, with which I have contemplated a vast monastic ruin, like Tintern Abbey, buried in the bosom of a genial valley, and shut up from the world, as though it had existed merely for itself; or a warrior pile like Conway Castle, standing in stern loneliness on its rocky height, a mere hollow, yet threatening phantom of departed power. They spread a grand, a melancholy, and to me, an unusual charm over the landscape. I for the first time beheld signs of national old age, and empire's decay, and proofs of the transient and perishing glories of art, amidst the ever-springing and reviving fertility of Nature.

But, in fact, to me everything was full of matter: the footsteps of History were everywhere to be traced; and poetry had breathed over and sanctified the land. I experi-

enced the delightful freshness of feeling of a child, to whom everything is new. I pictured to myself a set of inhabitants, and mode of life for every habitation that I saw; from the aristocratical mansion, amidst the lordly repose of stately groves and solitary parks, to the straw thatched cottage, with its scanty garden, and its cherished woodbine.

I thought I never could be sated with the sweetness and freshness of a country, so completely carpeted with verdure; where every air breathed of the balmy pasture, and the honey-suckled hedge. I was continually coming upon some little document of poetry, in the blossomed hawthorn, the daisy, the cowslip, the primrose, or some other simple object that has received a supernatural value from the muse. The first time that I heard the song of the nightingale, I was intoxicated more by the delicious crowd of remembered associations, than by the melody of its notes; and I shall never forget the thrill of ecstacy with which I first saw the lark rise, almost from beneath my feet, and wing its mercurial flight up to the morning sky.

LESSON LXXX.

THE EXILE.

Oh! bear me back to my native shore,
O'er the circling Ocean's foam;
And ere I die, let me gaze once more
On my father's humble home.
O! bear me back to the greenwood shade,
To the well-known chestnut tree—
To the quiet vale and sunny glade,
The haunts of my childish glee.

My spirit pines for the breezy hills,
Far off in my own bright land;
For the warblings that gush from its lonely rills,
And the joyous household band—
Kind faces met by the fireside's gleam,
When arose the evening hymn—
But their spells are gone, like a passing dream,
Their memories vague and dim.

I list to the billows' thundering sound,
As their surges break in the bay:
I watch them fringing the cliffs around,
With a beautiful girdle of spray.
But nor bark nor ship to the wand'ring breeze
Their cloud-like sails unroll,
And the anthem sublime of the swelling seas
Like the death-song thrills my soul.

On the mountain top the wild deer springs
In happiest freedom by,
And the proud eagle soars on his golden wings
To the crystalline dome of the sky;
And the midnight wind unchang'd sweeps past
O'er mountain and forest dell—
But o'er me there's a strange dull feeling cast
With a power I cannot quell.

Then bear me back to my native shore,
O'er the circling ocean's foam;
And ere I die, let me gaze once more
On my father's humble home.
Oh! bear me back to the greenwood shade,
To the well known chestnut tree—
To the quiet vale and sunny glade,
The haunts of my childish glee.

LESSON LXXXI.

MOSQUITOES AND THEIR USES.

The mosquito is accounted one of the most noxious and numerous of all the insects; at least of such as are esteemed noxious by the vulgar and ignorant. In some countries, indeed, their numbers and the effects produced by them are wonderful. There is no instance on record more striking than the following as related by Dr. Clarke:—

"No contrivance on our part could prevent millions of mosquitoes from filling the inside of our carriage, which,

in spite of gloves, clothes, and handkerchiefs, rendered our bodies one entire wound. The natives light numerous fires, to drive them from the cattle during the night; but, so insatiate is their thirst of blood, that hundreds will attack a person attempting to shelter himself even in the midst of smoke. At the same time, the noise they make in flying cannot be conceived by persons who have only been accustomed to the humming of such insects in our country. Almost exhausted by fatigue, pain and heat, I sought shelter in the carriage, sitting in water and mud. It was the most sultry night I ever experienced; not a breath of air was stirring; nor could I venture to open the windows, though almost suffocated; through fear of the mosquitoes. Swarms, nevertheless, found their way to my hiding-place; and when I opened my mouth, it was filled with them My head was bound in handkerchiefs; yet they forced their way into my ears and nostrils. In the midst of this torment, I succeeded in lighting a lamp over the sword-case, which was instantly extinguished by such a prodigious number of these insects, that their dead bodies actually remained heaped in a large cone over the burner for several days afterwards: and I know not any mode of description which can convey a more adequate idea of their afflicting visitation, than by simply relating this fact: to the truth of which, those who travelled with me, and who are now living, bear indisputable testimony."

Those who have laboured under so painful a visitation, as that to which this lively account refers, may not perhaps be so ready to admit the general utility of these irritating insects, though their usefulness is more evident, and far more easily proved, than that of the locust, or indeed of most other animals of a similar nature. Bred in the midst of stagnant pools, of bogs, and marshes, in regions unwholesome to man, and where the effluvia arising from animal bodies, and from rank decaying vegetable substances, are so abundant as to form thick pestilential vapours, that would inflict almost instant destruction on the human inhabitant, and most other creatures, if not removed as quickly as they were formed;—bred in such regions, and gifted with functions and propensities directed to the

proper ends, the mosquito supports its existence by consuming the noxious particles exhaled from the swamps and the bodies of animals, as rapidly as they are generated ;—thereby preventing that horrible putrefaction of the air, and consequent pestilence, which would infallibly take place, if the mosquitoes, and similar insects, were not employed to purify it.

LESSON LXXXII.

DESCRIPTION OF A HERD OF BISONS.

"There come the buffaloes themselves, and a noble herd it is." Every eye was now drawn to the striking spectacle that succeeded. A few enormous bison bulls were first discovered scouring along the most distant roll of the prairie, and then succeeded long files of single beasts, which in their turns were followed by a dark mass of bodies, until the dun-coloured herbage of the plain was entirely lost in the deeper hue of their shaggy coats. The herd, as the column spread and thickened, was like the endless flocks of the smaller birds, whose extended flanks are so often seen to heave up out of the abyss of the heavens until they appear as countless as the leaves in those forests over which they wing their endless flight. Clouds of dust shot up in little columns from the centre of the mass, as some animal more furious than the rest ploughed the plain with his horns, and from time to time a deep, hollow bellowing was borne along on the wind, as though a thousand throats vented their plaints in a discordant murmuring.

A long and musing silence reigned in the party, as they gazed on this spectacle of wild and peculiar grandeur. It was at length broken by the trapper, who, having been long accustomed to similar sights, felt less of its influence or rather felt it in a less thrilling and absorbing manner, than those to whom the scene was more novel. "There," said he, "go 10,000 in one drove without keeper or master except Him who made them, and gave them these open plains for their pasture! But the herd is heading a little

this way, and it behoves us to make ready for their visit. If we hide ourselves altogether, the horned brutes will break through the place and trample us beneath their feet, like so many creeping worms; so we will just put the weak ones apart, and take post, as becomes men and hunters, in the van." As there was but little time to make the necessary arrangements, the whole party set about them in good earnest. By the vacillating movements of some 50 or 100 bulls, that led the advance, it remained questionable for many moments what course they intended to pursue. But a tremendous and painful roar, which came from behind the cloud of dust that rose in the centre of the herd, and which was horridly answered by the screams of carrion birds, that were greedily sailing directly above the flying drove, appeared to give a new impulse to their flight, and at once to remove every symptom of indecision. As if glad to seek the smallest signs of the forest, the whole of the affrighted herd became steady in its direction, rushing in a straight line towards a little cover of bushes, which was affording a temporary shelter to the hunters. The appearance of danger was now in reality of a character to try the stoutest nerves. The flanks of the dark moving mass were advanced in such a manner as to make a concave line of the front, and every fierce eye, that was glaring from the shaggy wilderness of hair in which the entire heads of the males were enveloped, was riveted with mad anxiety on the thicket. It seemed as if each beast strove to outstrip his neighbour in gaining this desired cover, and as thousands in the rear pressed blindly on those in front, there was the appearance of imminent risk that the leaders of the herd would be precipitated on the concealed party, in which case the destruction of every one of them was certain. Each of our adventurers felt the danger of his situation in a manner peculiar to his individual character and circumstances. The old man, who had stood all this while leaning on his rifle and regarding the movements of the herd with a steady eye, now deemed it time to strike his blow. Levelling his piece at the foremost bull with an agility that would have done credit to his youth, he fired. The animal received the bullet on the matted hair between his horns, and fell to

his knees; but, shaking his head, he instantly arose, the very shock seeming to increase his exertions. There was now no longer time to hesitate. Throwing down his rifle, the trapper stretched forth his arms and advanced from the cover with naked hands directly towards the rushing columns of the beasts.

The figure of a man, when sustained by the firmness and steadiness that intellect can only impart, rarely fails of commanding respect from all the inferior animals of the creation. The leading bulls recoiled, and for a single instant there was a sudden stop to their speed, a dense mass of bodies rolling up in front, until hundreds were seen floundering and tumbling on the plain. Then came another of those hollow bellowings from the rear, and set the herd again in motion. The head of the column, however, divided, the immoveable form of the trapper cutting it, as it were, into two gliding streams of life. Middleton and Paul instantly profited by his example, and extended the feeble barrier by a similar exhibition of their own persons. For a few moments the new impulse given to the animals in front served to protect the thicket. But as the body of the herd pressed more and more upon the open line of its defenders, and the dust thickened so as to obscure their persons, there was at each instant a renewed danger of the beasts breaking through. It became necessary for the trapper and his companions to become still more and more alert; and they were gradually yielding before the headlong multitude when a furious bull darted by Middleton so near as to brush his person, and at the next instant swept through the thicket with the velocity of the wind. All their efforts would have proved fruitless, however, against the living torrent, had not Asinus, whose domains had just been so rudely entered, lifted his voice in the midst of the uproar. The most sturdy and furious of the bulls trembled at the alarming and unknown cry, and then each individual brute was seen madly pressing from that very thicket which, the moment before, he had endeavoured to reach with the same sort of eagerness as that with which the murderer seeks the sanctuary.

As the stream divided, the place became clear, the two dark

columns moving obliquely from the copse to unite again at the distance of a mile on its opposite side. The instant the old man saw the sudden effect which the voice of Asinus had produced, he coolly commenced re-loading his rifle, indulging at the same time in a most heartfelt fit of his silent and peculiar merriment. The uproar which attended the passage of the herd was now gone, or rather it was heard rolling along the prairie at the distance of a mile. The clouds of dust were already blown away by the wind, and a clear range was left to the eye in that place, where 10 minutes before, there existed such a strange scene of wildness and confusion.

LESSON LXXXIII.

A PRAIRIE ON FIRE.

"We had seen, during the latter part of our day's journey a remarkable appearance in the Eastern horizon, and during supper observed a smell of burning, and a few light cinders fell about the camp, and presently we remarked that the luminous appearance in the East had very much augmented. There being a little hill in front of us, we could not see distinctly what caused it; but, having consulted together, we agreed that it proceeded from a prairie on fire, which, however, was a long way off. About 8 o'clock, the smell of burning and the glare having materially increased, we walked up to the top of the hill, when a spectacle presented itself to us the most grand that can well be conceived. The whole horizon from North to South was one wall of fire, blazing up in some places to a great height, at others merely smouldering in the grass. It was, however, at least 8 miles off; but the wind seemed to set in our direction; so we instantly returned and took measures to preserve the camp. We were in a corner, as it were, on the bank of the stream with a good deal of brushwood running up on our left, and the ground sloping up gradually from the creek to the top of the hill. Our guides, on looking at the fire, said that it would not harm us—"*Ce n'est*

rien—le vent change." In short they would do nothing. In about 20 minutes, however, it approached so near that there was no time to be lost, and all hands were immediately employed in burning a road across the face of the hill to stop the fire at that part. A more picturesque scene could hardly be imagined. As far as the eye could reach, all across the horizon, about 4 miles in front of us, was a broad, bright, lurid glare of fire, with a thick canopy of smoke hanging over it, whose fantastic wreaths, as they curled in the breeze, were tinged with the red reflection of the flames. Even at that distance we could hear the crackling and rushing of the fire, which, as it advanced, caused a strong wind, and every now and then a brighter flame would shoot high up into the black cloud of smoke over the top of the hill, illuminating for an instant our tents and waggons in the dark hollow, and giving a momentary glimpse of the horses which were picketed on the side of the rise, on the crest of which the figures of the men engaged in lighting the opposition fire which, as it became too extended, they beat down with blankets, only suffering it to burn a space about 12 feet broad, across the line of the advancing conflagration, stood out in strong relief against the glowing wall of light behind them; and as they ran about, tossing their arms and waving the blankets and little torches of lighted grass, they looked in the distance like demons rather than men. We had no time to look at the picturesque, however, for every moment (owing to their previous obstinacy in neglecting to take precautions in time) became more pregnant with danger, and by the time they had burned as much as would only about half cover the camp, the fire was raging in the bottom at the other side of the hill. I ran up for an instant to the top, and shall never forget the scene. Although still half a mile off, the fire seemed close to me, and the heat and smoke were almost intolerable, while the dazzling brightness of the flames made it painful to look at them; they were in three lines nearly parallel, the first of which was just below me, burning with a rushing noise, and crackling as it caught the dry grass, that gave an idea of total destruction which it is impossible to convey, and stretching

away over hill and dale for 12 or 14 miles on each side of me, lighting up the sides of the hills and the little groves of wood far away. The two lines in the rear were not so much connected, and seemed rather licking up any little spots of grass which had escaped at first. Every now and then a prairie hen would flirr past, flying in a wild uncertain manner, as if fear had almost deprived her of the use of her wings, while all the songsters of the grove were wheeling about among the trees, uttering the most expressive cries of alarm, and the melancholy hooting of several owls and wailing yells of the wolves, together with the shouts and cries of the men, almost drowned occasionally by the roaring of the flames, added to the savage grandeur of the scene, and one could have fancied the end of all things was at hand. On returning to the camp, I found all hands cutting the lassoes and halters of the mules, some of which galloped instantly into the river, where they remained standing till the hurricane of flame had passed over, the others seemingly trusting themselves instinctively more to man than to their own energies in such an emergency, followed us up the space which we had burned, and remained quietly there, trembling, indeed, but without an effort to escape. By the time the animals were collected in this spot, the fire was blazing on the top of the hill, and we all rushed away with blankets to arrest its progress, if possible, at the part which we had left unguarded; all our efforts would have been in vain, however, and our tents and everything else must have been consumed, but that, just at that weak point, the grass suddenly became thin and scanty, with much stony ground, and we had the satisfaction of seeing the flame stopped there and turned off to the northward along the edge of the brushwood. It was really terrific to be, as we were, trying to break it down in the very middle of the blaze (which, after all, was so narrow that, where the flames were not high, you could jump across it); we were, indeed, nearly suffocated by the smoke and heat. As soon as we perceived the fire turned off, we returned to the camp and horses, and all danger was over; but the sight of the three lines of fire stretching up the rising grounds behind the camp, just like the advance of a vast army, was magnifi-

cent; and it was still more extraordinary to watch the manner in which the fire passed itself on, as it were, over the tops of the highest trees to the height of at least 40 or 50 feet. The whole scene lasted altogether about two hours, and nothing could be conceived more awfully grand. The extraordinary rushing and crackling sound of the flames was one of the most terrific parts of it, and, when one considers that the grass is nowhere more than 5 or 6 feet high, it is difficult to imagine how the flame blazes up to such a vast height as it did. The contrast, presented two hours afterwards, was most striking. Instead of the brilliant glare of the fire and lurid appearance of the sky there reigned an impenetrable darkness, earth and sky being alike shrouded in a black gloom which could almost be felt; not a star was to be seen, and the air retained a suffocating, sulphureous smell. We could not distinguish objects at 10 paces' distance, and were right glad when a fresh breeze came gently breathing over the prairie, dissipating the murky vapours still hanging in the atmosphere; and a fine starlit sky with a sharp frost at length relieved us from the close, choking feeling we had experienced for hours before. This prairie fire had travelled at the rate of 5 miles an hour, bringing with it a strong gale of wind; for, otherwise, the night was quite calm both before and after it had passed over."

LESSON LXXXIV.

WILD HORSES.

The day before we came in view of the Rocky Mountains, I saw in the greatest perfection that impressive and to me almost sublime spectacle, an immense drove of wild horses for a long time hovering around our path across the prairie. I had often seen great numbers of them before, mixed with other animals, apparently quiet and grazing like the rest. Here there were thousands unmixed, unemployed; their motions, if such a comparison might be allowed, as

darting, and as wild as those of humming birds on the flowers.

The tremendous snorts, with which the front columns of the phalanx made known their approach to us, seemed to be their wild and energetic way of expressing their pity and disdain for the servile lot of our horses, of which they appeared to be taking a survey. They were of all colours, mixed, spotted and diversified with every hue from the brightest white to clear and shining black and of every form and structure from the long and slender racer to those of firmer limbs and heavier mould; and of all ages from the curveting colt to the range of patriarchal steeds, drawn up in a line and holding their heads high for a survey of us in the rear.

Sometimes they curved their necks and made no more progress than just enough to keep pace with our advance. Then there was a kind of slow and walking minuet, in which they performed various evolutions with the precision of the figures of a country dance. Then a rapid movement shifted the front to the rear. But still in all their evolutions and movements, like the flight of sea-fowl, their lines were regular and free from all indications of confusion.

At times a spontaneous and sudden movement towards us almost inspired the apprehension of an united attack upon us. After a moment's advance a snort and a rapid retrograde movement seemed to testify their proud estimate of their wild independence. The infinite variety of their rapid movements, their tamperings and manœuvres were of such a wild and almost terrific character that it required but a moderate stretch of fancy to suppose them the genii of these grassy plains.

At one period they were formed for an immense depth in front of us. A wheel, executed almost with the rapidity of thought, presented them hovering on our flanks. Then, again, the cloud of dust, that enveloped their movements, cleared away and presented them in our rear. They evidently operated as a great annoyance to the horses and mules of our cavalcade. The frighted movements, the increased indications of fatigue, sufficiently evidenced with their frequent neighings what unpleasant neighbours they considered their wild compatriots to be.

So much did our horses appear to suffer from fatigue and terror in consequence of their vicinity that we were thinking of some way in which to drive them off; when on a sudden a patient and laborious donkey of the establishment, who appeared to have regarded all their movements with philosophic indifference, pricked up his long ears and gave a loud and most sonorous bray from his vocal shells. Instantly this prodigious multitude, and there were thousands of them, took what the Spanish call the "*stompado*." With a trampling like the noise of thunder, or still more like that of an earthquake, a noise that was absolutely appalling, they fled and were all in a few moments invisible in the verdant depths of the plains, and we saw them no more.

LESSON LXXXV.

A WEEK IN GASPE.

The peninsula of Gaspé, the Land's-end of Canada toward the east, presents within itself an epitome of several of the leading geological formations of the Province; and here, as elsewhere, these impress with their own characters the surface and its capabilities. On that side which fronts the River St. Lawrence, it consists of an enormous thickness of shales and limestones, belonging to the upper part of the Lower Silurian series, and the lower part of the Upper Silurian. These beds, tilted in such a manner that they present their up-turned edges to the sea and dip inland, form long ranges of beetling cliffs running down to a narrow strip of beach, and affording no resting-place even for the fishermen, except where they have been cut down by streams, and present little coves and bays opening back into deep glens, affording a view of great rolling wooded ridges, that stand rank after rank behind the steep sea-cliff, though no doubt with many fine valleys between. At present this inland country appears little settled, but every cove and ravine along the shore is occupied by fishermen, who either permanently reside here or resort to

this coast in summer. This bold and picturesque coast, after running down to the low point of Cape Rosier, on which stands an imposing white brick tower, falls back suddenly to the southward, and then stretches out into the narrow promontory of Cape Gaspé, which marks the out-crop of an upper Silurian limestone believed to be the geological equivalent to that which forms that cliff of Niagara, and the great ridge which divides Lake Huron. Here, with its feet in that same ancient Ocean in which shell-fish and corals long since collected its molecules of lime, it asserts its usual character by standing forth as the last member of the Silurian series that lifts its head above the waters. As we passed it the sea broke heavily upon it, and we could in some degree sympathize with stout old Jacques Cartier, when in his first voyage, after battling for many days off this Cape, and on the opposite shore, against the Autumnal north-westers, he called a council of his officers, and anxious though he was to see what lay beyond, bore away on his return to France. When he returned and at last made land he found here only a tribe of Indians, who appeared to him among the rudest he had ever seen; a branch of the Micmac tribe, that stretched along all the coast from Maine to Gaspé, and afterwards called in this district the Gaspesians. They appeared to have no property but thin bark canoes, under which they slept at night, and nets made of some kind of Indian hemp; and were probably a fishing party whose wigwams might have been at the head of the Bay where their descendants still reside. They had abundance of maize and various kinds of fruits, some of which they dried for winter use. The name Gaspé is derived from the language of these Indians, and is stated to mean, as nearly as possible, the "*land's-end.*" For the present, Gaspé is essentially a fishing district, and its population scattered along the coast, presents all those social features which elsewhere mark those who earn their subsistence from the sea. The British American fisherman is an amphibious being; combining much of the roving, adventurous temperament of the sailor with the more steady industry of the agriculturist. At one time tossing on the bosom of the deep, at another guiding the

plough, living much apart, yet often seeing new faces and strange places, he acquires much mental activity and force of character, and, if blessed with the influence of education and pure religion, becomes a superior style of man. Among the principal disadvantages of his pursuits are the comparative isolation of many families, and the consequent difficulty of access to schools, and the frequent absences of the head of the household from his home. This, however, creates an early spirit of self-reliance in the young—and I have known in the fishing districts mere boys carry on the work of the family and its intercourse with neighbours, in a manner which would be quite startling to the little people of more inland districts.

One branch of the fishing long successfully carried on by the people of Gaspé, is very adventurous in its character. Seven whaling schooners are at present owned in the Bay; and with their comparatively humble outfit of two whale boats and sixteen men to each, they appear to carry on a thriving business. Formerly whales could be obtained plentifully in the Bay and its vicinity; but they are timid and not prolific, and the fishermen have already driven them to the north shore of the Gulf, and will probably soon have to follow them farther. Several species are taken by the Gaspé whalers; but it is not at present possible with certainty to identify all of them with those described by naturalists. The *black* or *right whale* is the principal and most valuable though not very frequent. The great *rorqual* or *finner*, usually shunned by whalers, is also sometimes killed, but it yields less oil and is much more dangerous and troublesome than the "*right whale*." Another rorqual, or perhaps a variety of the same, is known as the "*sulphur whale*," from its yellow belly, and is said to attain the length of seventy feet. Another whale often taken is the "*humpback*," which is either the Rorqualus Rostratus, or one of the whales included in the Genus Megaptera of Gray. All these belong to the Balænidæ or whale-bone whales. But besides these, the Gaspé whalers take the "*Grampus*," known here as the "*killer*," and is said to attack the large whales in packs and to destroy them, a habit attributed to it by the whalers elsewhere, though it has been doubted by

naturalists. A smaller whale, known as the "*black-fish*" in the Gulf of St. Lawrence, has been referred by various writers to different species. The skull, the only part that I have examined, corresponds with that of Gray's Delphinus Intermedius. The singular and beautiful white porpoise of the St. Lawrence and the common porpoise, though well known, do not appear to be among the species to which the Gaspé whalers trust for their profits.

Gaspé Bay, like most other good fishing grounds, is rich in the humbler tenants of the sea, those "creeping things innumerable," fantastic and curious in form and structure, of which old Ocean is the habitation, and which so vastly outnumber the denizens of the land. The Bay presents many varieties of dredging ground for the Naturalist; in addition to the deeper banks off its mouth. Much of the deeper part consists of mud full of tiny Foraminifera, and containing Sellina Calcarea and a fine Leda; a mud in short, very *similar* in appearance, fossils and origin, to the clay which the sea, when it stood at a higher level, has left over all our Lower Canadian plains. In other places there is a sandy bottom, full of the curious flat cake-like shells of *Echinarachnius Atlanticus*, the "*Dollar-fish*" of some parts of the coast. On the more rocky grounds, are immense numbers of various species of zoophytes and bryozoa. A very choice spot is just off the mouth of the Basin, and on gravelly ground in about ten fathoms, and with a strong tidal current. Here every stone was coated with nullipores and zoophytes, and there were abundance of brittle stars, echini, chitons and sea-anemones, in addition to many shells.

LESSON LXXXVI.

MACKEREL FISHING OF NOVA SCOTIA.

The vessels employed for this fishing generally set sail from the County of Annapolis, in the Bay of Fundy, about the 5th or 6th of June. These vessels generally range in burden from 20 to 35 tons, and the whole voyage

occupies from 4 to 6 weeks, according to the weather. They are fitted out upon shares. The merchant furnishes the schooner, the salt, provisions and fishing apparatus, for which he receives half the catch, and the crew divide the other half equally among them. The certainty of finding the fish, and the celerity with which they are taken, are such, that an experienced fisherman has but little advantage over an active landsman, and an able-bodied young man commonly earns at this work from $30 to $40 dollars per month. The skipper is always provided with a barrel of old pickled herring or either fresh or stale mackerel for bait, which is cut up into small pieces, and thrown overboard, for the purpose of alluring the fish to rise to the surface; and sometimes he scatters a small quantity of salt upon the water, which has a similar effect. In this seems to consist the great secret of mackerel fishing. As soon as this food is thrown upon the water, although there be no fish visible, myriads rise and surround the vessel. As the cutting of the bait into minute particles is a work of time and labour, American ingenuity has invented a machine for that purpose, very similar in shape and construction to a hand organ. It consists of a small box, through the centre of which passes a circular wooden bar, covered with the blades of knives, and turned by means of a small handle. When this is put into motion, the bait is cut into innumerably small pieces. As soon as the mackerel rise to the surface, the fishermen lay the vessel to, under the mainsail, and stow the other sails; they then bait their hooks with a piece of fresh mackerel or shark, and when they bite freely, fish with the lines in their hands, and at other times with rods. While the mackerel continues to bite eagerly the whole crew is busily employed in catching them, but as soon as there is any intermission, they remove them out of the influence of the sun, and commence the operation of splitting and salting. Although the mackerel are generally packed at sea, a different practice sometimes prevails, and it is found that they will keep, if well salted, for 3 weeks in *kinches*, or separate apartments made athwart the hold of the vessel, but the fish thus cured are not considered equal in quality to those preserved in bar-

rels. The British vessels seldom accomplish more than 3 and never exceed 4 trips during the season, although the Americans persevere for nearly 6 weeks longer. The fish taken in the Autumn, are always fatter and better than those caught earlier in the season.

LESSON LXXXVII.

COD FISHERY OF NEWFOUNDLAND.

The cod-fish are found only in the seas of the northern part of the World; and the principal places of rendezvous are the sand-banks of Newfoundland, Nova Scotia, and New England. These shallows are their favourite situations, as they abound with worms, a kind of food that is peculiarly grateful to them. Another cause of their attachment to these places is their vicinity to the Polar seas, where they return to spawn. There they deposit their roes in full security and afterwards repair, as soon as the more southern seas are open, to the banks for subsistence; consequently the cod may justly be placed at the head of the migrating or wandering tribes of fish. Few are taken north of Iceland, and the shoals never reach so far south as the Straits of Gibraltar. Previously to the discovery of Newfoundland, the principal fisheries for cod were in the seas off Iceland, and the Western Islands of Scotland. To the former of these the English resorted for nearly four centuries, and had no fewer than 150 vessels employed in the Iceland fishery in the reign of James I. The hook and line are the only implements which are used in taking this fish, and they are caught in from 16 to 60 fathoms water. More than 15,000 British seamen are employed in this fishery. An expert hand will sometimes catch 600 in a day. The cod is one of the most prolific of the fish tribe. In the roe of only a middling sized cod, there have been counted more than 9,000,000 of eggs. They begin to spawn in January in the European seas. Their principal food consists of the smaller species of fish, worms, shellfish and crabs; and their stomachs are capable of dissolving the greater part of

the shells that they swallow. They grow to a great size. The largest cod that was ever taken weighed 78 lbs, and was 5 feet 8 inches in length.

LESSON LXXXVIII.

WHALE FISHERY.

The whale fishery begins in May, and continues all June and July; but whether the ships have good or bad success, they must come away, and get clear of the ice by the end of August, so that in the month of September, at farthest, they may be expected home; but a ship that meets with a fortunate and early fishery in May, may return in June or July. The manner of taking whales is as follows: As soon as the fishermen hear the whale blow, they cry out, *Fall! fall!* and every ship gets out its long-boat, in each of which there are 6 or 7 men, who row till they come pretty near the whale; then the harpooner strikes it with the harpoon: this requires great dexterity, for through the bone of his head there is no striking, but near his spout there is a soft piece of flesh, into which the iron sinks with ease. As soon as he is struck, they take care to give him rope enough, otherwise, when he goes down, as he frequently does, he would inevitably sink the boat: this rope he draws with such violence, that, if it were not well watered, it would, by its friction against the side of the boat, be soon set on fire. The line fastened to the harpoon is 6 or 7 fathoms long, and is called the fore-runner; it is made of the finest and softest hemp, that it may slip the easier: to this they join a heap of lines of 90 or 100 fathoms each, and when there are not enough in one long-boat, they borrow from another. The man at the helm observes which way the rope goes, and steers the boat accordingly, that it may run exactly out before; for the whale runs away with the line with so much rapidity, that he would overset the boat if it were not kept straight. When the whale is struck, the other long-boats row before, and observe which way the

line stands, and sometimes pull it: if they feel it stiff, it is a sign the whale still pulls in strength; but if it hangs loose, and the boat lies equally high before and behind upon the water, they pull it in gently, but take care to coil it, that the whale may have it again easily, if he recovers strength: they take care, however, not to give him too much line, because he sometimes entangles it about a rock, and pulls out the harpoon. The fat whales do not sink as soon as dead, but the lean ones do, and come up some days afterwards. As long as they see whales, they lose no time in cutting up what they have caught, yet keep fishing for others; when they see no more, or have fished enough, they begin with taking off the fat and whiskers in the following manner. The whale being lashed alongside, they lay it on one side, and put two ropes, one at the head and the other in the place of the tail, (which, together with the fins, is struck off as soon as he is taken,) to keep those extremities above water. On the off-side of the whale are two boats, to receive the pieces of fat, utensils, and men, that might otherwise fall into the water on that side. These precautions being taken, 3 or 4 men, with irons at their feet to prevent slipping, get on the whale, and begin to cut out pieces about 3 feet thick and 8 long, which are hauled up at the capstan or windlass. When the fat is all cut away, they cut off the whiskers of the upper jaw with an axe, previously lashing them together to keep them firm, which also facilitates the cutting, and prevents them from falling into the sea; when on board, 5 or 6 of them are bundled together, and properly stowed: and after all is got off, the carcase is turned adrift, and devoured by the bears, who are very fond of it. In proportion as the large pieces of fat are cut off, the rest of the crew are employed in slicing them smaller, and picking out all the lean. When this is prepared, they stow it under the deck, where it lies till the fat of all the whales is on board; then cutting it still smaller, they put it up in tubs in the hold, cramming them very full and close. Nothing now remains but to sail homewards, where the fat is to be boiled, and melted down into train oil.

LESSON LXXXIX.

SUBLIME APPEARANCE OF THE OCEAN IN A STORM.

When crossing the Banks of Newfoundland, we were startled, at 5 o'clock in the morning, by the vociferation of the Mate, calling to the Captain below, "*Ice, sir, ice!*" We were running at the rate of 10 knots an hour, directly upon one of those drifting masses that descend from the North, during the months of April, May and June, known by the name of icebergs. It was beautiful, indeed, in the grey light of the morning; but it too clearly resembled other objects of sense, which are at once attractive and destructive.

This danger was skilfully avoided; but the increase of the wind, and a storm of 48 hours, which drove us 300 miles from our course, and shivered every sail of another ship that started with us from Liverpool, gave a full, though fearful opportunity of seeing "The works of the Lord, and His wonders in the deep." Watery mountains rose in magnificent succession, and appeared, every moment, ready to overwhelm us; yet we often ascended from the liquid valleys, and scaled the watery heights with a dignified ease and triumph, as if our floating ark were maintaining a desperate, but ever-successful struggle with the roaring elements around. Frequently, indeed, the froth and foam-covered summits of these Alpine peaks and ridges, would pour in hogsheads of water upon us, and dash with irresistible fury across the deck; or, when prevented by dexterous management, would seem to deal forth upon our agitated ship the blows of some maddened giant's hand.

Awful was the solitude—awful the contrasted silence of the ship's company, and the thunder of conflicting elements—awful, too, the frequent descent of the wind perpendicularly, holding us in long suspense, as if resolved to push and bear us down into the depths—and awful the occasional suspense of our gallant bark upon the top of the white billows, when every timber trembled, as in terror, while about the next moment to be precipitated into the yawning gulf below! What moments were these for humil-

iation before God, for solemn searchings of heart, and for the secret breathings of fervent prayer! What moments these for tender recollections, yet filial and firm dependence on Omniscient Love. Yet was the scene full of *beauty* as well as grandeur. Who that has never witnessed similar exhibitions, can conceive of the variety of forms, into which the giant waves were tossed by the tempest; the majesty; and terror of the motions; the ever limiting, ever widening horizon of view; the continual shifting of the fine perspective of rolling billows and mountain ranges; the frequent lifting up of the waters into a kind of perpendicular cliff, or apparent headland, crowded with fleecy snow, and streaked with inimitable colours, as if a thousand Niagaras were there!

The wind would sometimes catch the top of a wave, and disperse it in a furious spray, which, in its diffusion, would reflect innumerable rainbows; while immediately beneath the foaming and curling summit, would appear, for a depth of several feet, streams and streaks of transcendently clear, bright, living colours, contrasting with the general hue of the Ocean. Mountains of deep indigo were crowned with summits of brilliant green, and these again crested with white foam, which sometimes blended with other cataracts, and spread into silvery sheets. Nothing could be at once more beautiful and more terrible. We thought of the power and grace of Him, who, in the days of His humanity, said to the troubled sea, "*Peace be still!*" and whose gracious providence, at length, permitted *us* to enjoy "A great calm."

LESSON XC.

THE PETREL.

It is an interesting sight to observe these little birds in a gale, coursing over the waves, down the declivities and up the descents of the foaming surf that threatens to burst over their heads; sweeping along the hollow troughs of the sea as in a sheltered valley, and again mounting with the rising billow: and just above its surface, occasionally dropping their feet, which, striking the water, throws them up

again with additional force; sometimes leaping with both legs parallel, on the surface of the roughest waves for several yards at a time. Meanwhile they continue coursing from side to side of the ship's wake, making excursions far and wide, returning again to the ship as if she were stationary, though perhaps running at the rate of 10 knots an hour. But the most singular peculiarity of this bird is its faculty of standing, and even running on the surface of the water, which it performs with apparent facility.

There are few persons who have crossed the Atlantic who have not observed these solitary wanderers of the deep, skimming along the surface of the wild and wasteful ocean; flitting past the vessels like the swallows; or following in her wake, gleaning their scanty pittance of food from the rough and whirling surges. Habited in mourning, and making their appearances generally in greater numbers previous to, or during a storm, they have long been fearfully regarded by the ignorant and superstitious, not only as the foreboding messengers of tempests and dangers to the hapless mariner, but as wicked agents, connected, somehow or other, in creating them. "*Nobody*," as sailors say, "*can tell anything whence they come.*" This mysterious uncertainty of their origin, and the circumstance above recited, have doubtless given rise to the opinion, so prevalent among this class of men, that they are, in some way or other connected with the "Prince of the power of the air." In every country where they are known, their names have borne some affinity to this belief. They have been called Witches, Stormy Petrels, the Devil's Birds, and Mother Carey's Chickens; and their unexpected and numerous appearance has frequently thrown a momentary damp over the mind of the hardiest seaman. It is the business of the Naturalist, and the glory of philosophy, to examine into the reality of these things; to dissipate the clouds of error and superstition wherever they darken and bewilder the human understanding, and to illustrate Nature with the radiance of truth. As well might the mariners curse the midnight light-house, that star-like guides them on their watery way; or the buoy that warns them of the sunken rocks below, as this harmless wanderer, whose man-

ner informs them of the storm, and thereby enables them to prepare for it. The Petrels are nocturnal birds. When, therefore, they are seen flying about and feeding by day, the fact appears to indicate that they have been driven from their usual quarters by a storm; and hence, perhaps arose the association of the bird with the tempest. When they cannot find an island or a rock to shield them from the blast, they fly towards the first ship they can descry, crowd into her wake, and even close under the stern: heedless, it would appear, of the rushing surge, so that they can keep the vessel between them and the unbroken sweep of the wind. It is not surprising in such cases that their low wailing note of *weet, weet*, should add something supernatural to the roar of the waves and whistling of the wind, and infuse an ominous dread into minds prone to superstition.

LESSON XCI.

DETACHED PIECES.

GULF-STREAM.—This is a remarkable current in the Ocean, which runs along the coast, at unequal distances, from Cape Florida to the Sable Island and the Banks of Newfoundland, where it turns off and runs through the Western Islands, thence to the coast of Africa, and along that coast in a southern direction till it arrives at and supplies the place of those waters carried by the constant trade-winds from the coast of Africa towards the West; thus producing a constant circulating current. This stream is about 75 miles from the shores of the Southern States, and the distance increases as you proceed northward. The breadth of it is about 40 or 50 miles, widening towards the north. Its common rapidity is 3 miles an hour. A north-east wind narrows the stream, renders it more rapid, and drives it nearer the coast. North-west and west winds produce a contrary effect. The Gulf-stream is supposed to be occasioned by the trade-winds, that are constantly driving the water to the westward, which, being compressed in the

Gulf of Mexico, finds a passage between Florida and the Bahama Islands, and runs to the north-east along the American coast.

ORIGIN OF THE WORD ACADIA.

The aboriginal Micmacs of Nova Scotia, being of a practical turn of mind, were in the habit of bestowing on places the names of the useful articles which could be found in them, offering to such terms the word *Acadie*, denoting the local abundance of the particular objects to which the names referred. The early French settlers appear to have supposed this common termination to be the proper name of the country, and applied it as the general designation of the region now constituting the Provinces of Nova Scotia, New Brunswick, and Prince Edward's Island, which still retain *Acadia* as their poetical appellation, and as a convenient general term for the Lower Provinces of British America as distinguished From Canada.

THE LABRADOR STONE.

THE LABRADOR STONE is a curious species of feld-spar, or rhombic quartz, which exhibits all the colours of a peacock's tail. It was discovered some years ago by the Moravians, who have a colony among the Esquimaux in Labrador. It is found of a light or deep gray colour, but for the most part of a blackish gray. When held in the light in various positions, it discovers a diversity of colours, such as the blue of lapis lazuli, grass-green, apple-green, pea-green, and sometimes, but more seldom, a citron-yellow. Sometimes it has a colour between that of red copper and tornbuck gray; at other times the colours are between gray and violet. For the most part the colours are in spots, but sometimes in stripes on the same piece. The stones are found in pretty large angular pieces, appear foliated when broken, and the fragments are of a rhomboidal figure.

LESSON XCII.

THE ATHEIST AND THE ACORN.

Methinks this world is oddly made
And every thing amiss,
A dull complaining Atheist said,
As stretch'd he lay beneath a shade,
And instancéd in this.

" Behold " quoth he " that mighty thing
A pumpkin large and round,
Is held but by a little string,
Which upward cannot make it spring,
Nor bear it from the ground.

" While on this tree a fruit so small,
So disproportion'd grows,
That whosoe'er surveys this all,
This universal casual ball,
Its ill contrivance knows.

" My better judgment would have hung
That fruit upon this tree,
And left this nut thus slightly strung,
'Mongst things that on the surface sprung,
And weak and feeble be."

No more the caviller could say,
No further faults descry,
For upward gazing as he lay,
An acorn, loosen'd from its stay,
Fell down upon his eye.

The wounded part with tears ran o'er
As punish'd for the sin,
Fool ! had that bough a pumpkin bore,
Thy whimsies would have worked no more,
Nor skull have kept them in.

LESSON XCIII.

ACCOUNT OF AN ESQUIMAUX WOMAN.

The Esquimaux exhibit a strange mixture of intellect and dullness, of cunning and simplicity, of ingenuity and stupidity; few of them could count beyond 5, and not one of them beyond 10, nor could any of them speak a dozen words of English after a constant intercourse of 18 months; yet many of them could imitate the manners and actions of the strangers, and were on the whole excellent mimics.—One woman in particular, of the name of Sligluik, very soon attracted the attention of our voyagers, by the various traits of that superiority of understanding for which, it was found, she was remarkably distinguished, and held in esteem, even by her own countrymen. She had a great fondness for singing, possessed a soft voice and excellent ear; but like some other singers, there was scarcely any stopping of her when she was once begun; she would listen, however, for hours together to the tunes played on the organ. Her superior intelligence was, perhaps, most conspicuous in the readiness with which she was made to comprehend the manner of laying down, on paper, the geographical outline of that part of the coast of America she was acquainted with, and the neighbouring islands, so as to construct a chart.

I am, however, compelled to acknowledge that, in proportion as the superior understanding of this extraordinary woman became more and more developed, her head began to be turned by the general attention and numberless presents she received. The superior decency and even modesty of her behaviour had combined, with her intellectual qualities, to raise her, in our estimation, far above her companions; and I often heard others express what I could not but agree in, that for Sligluik alone, of all the Esquimaux women, that kind of respect could be entertained which modesty in a female never fails to command. Thus regarded, she had always been freely admitted into the ship, the quartermasters at the gangway never think-

ing of refusing entrance "To the Wise Woman," as they called her. Whenever any explanation was necessary between the Esquimaux and us, Sligluik was sent for as an interpreter; information was chiefly obtained through her, and she thus found herself rising into a degree of consequence, to which, but for us, she could never have attained. Notwithstanding a more than ordinary share of good sense on her part, it will not, therefore, be wondered at if she became giddy with her exaltation, assuming certain airs, which, though infinitely diversified in their operation according to circumstances which, perhaps, universally attend a too sudden accession of good fortune in every child of Adam from the Equator to the Poles. The consequence was, that Sligluik was soon spoiled; considered her admission into the ships no longer an indulgence, but a right; ceased to return the slightest acknowledgment for any kindness or presents; became listless and inattentive in unravelling the meaning of our questions, and careless whether her answers conveyed the information we desired. In short, Sligluik in February, and Sliguik in April, were very different persons; and it was at last amusing to recollect, though not very easy to persuade one's self, that the woman who now sat demurely in a chair, so confidently expecting the notice of those around her, and she who had at first, with eager and wild delight, assisted in cutting snow for the building of a hut, and with the hope of obtaining a single needle, were actually one and the same individual.

LESSON XCIV.

ROSS'S EXPEDITION.

The twofold project of approaching the north pole and making the north west passage—that is, sailing round the northern extremity of America, from the Atlantic to the Pacific—after lying long dormant, was revived in 1817, chiefly by Capt. Scoresby and his son, who for many

years followed the whale-fishing trade from Hull with enterprise and success. From the representations that were made, an expedition was fitted out to attempt the discovery of the supposed passage, but with no useful result. Betwixt 1817 and 1826, 10 voyages and journeys overland took place all at the public expense. They, however, produced nothing beyond hazardous enterprises and a few discoveries within the Arctic circle. The Government being at length tired of fitting out expeditions of this description, the project of another voyage was set on foot by Capt. Ross, and his nephew Commander Ross, with the assistance of a private patron, Felix Booth, Esq., a rich merchant and distiller in London, who advanced £18,000 to purchase and equip a vessel to proceed upon the voyage. The ship which was by this means engaged was the Victory, a vessel, it seems, unsuitable for the expedition. She was fitted up with steam-engine and paddles, but the enginery was very inadequate. She sailed from Woolwich May 23rd, 1826. A second vessel, named the John, was taken to carry stores and provisions; but the crew of the John mutinied, and the Victory was allowed to proceed alone. Upon the 23rd of July, the Victory reached Holsteinberg, a Danish settlement in Davis' Straits. Capt. Ross there purchased stores from a wrecked vessel, and the Governor presented him with 6 Esquimaux dogs; afterwards of essential use in dragging the sledges. The Victory then stood to the northward along the coast of Baffin's Bay; and having reached the lattitude of 74° 14 on the 3rd of August, ran across to, and on the 5th reached the entrance of Lancaster Sound. On the 11th of August, he steered direct for the south-west side of Priuce Regent's Inlet; and having passed Elvin and Batty Bays, saw the spot where the Fury had been wrecked in 1825. It had been one of Capt. Ross's speculations to avail himself of the stores of the Fury, a vessel abandoned by Capt. Parry: and it turned out decidedly successful. The following is his account of the wreck and her stores:—

"We found that coast almost lined with coal, and it was with no common interest that we proceeded to the only tent which remained entire. This had been the mess tent of

the Fury's officers; but it was too evident that the bears had been making frequent visits. Where the preserved meats and vegetables had been deposited, we found every thing entire. The cannisters had been piled in two heaps; but though quite exposed to all the changes of the climate for four years, they had not suffered in the slightest degree. There had been no water to rust them, and the security of the joinings had prevented the bears from smelling their contents. On examining the meats, they were not found frozen, nor did the taste of the several articles appear to have been in the least degree altered. This was, indeed, no small satisfaction, as it was not our luxury, but our very existence, and the prospect of success, which were implicated in this most gratifying discovery. The wine, spirits, sugar, bread, flour, and cocoa, were in equally good condition, with the exception of part of the latter, which had been lodged in provision casks. The lime-juice and the pickles had not suffered much; and even the sails which had been well made up, were not only dry, but seemed as if they never had been wetted. It was remarkable, however, that, while the spun yarn was bleached white, all appearance and smell of tar had vanished from it. We proceeded now to the beach where the Fury had been abandoned, but not a trace of her hull was to be seen. We therefore returned on board, and made preparations for embarking a sufficiency of stores and provisions to complete our equipment for two years and three months, being what we expected to want on the one hand, and to obtain on the other. Yet all that we could possibly stow away seemed scarcely to diminish the piles of canisters, of which we embarked whatever we could, together with such flour, cocoa, and sugar, as we wanted, all that we took being in excellent condition. We had found the spare mizen-topmast of the Fury, and this was selected by the carpenter for a new boom, in place of one that we had lost. We also got some anchors and hawsers, together with some boatswain's and carpenter's stores, to make up our deficiencies." After selecting these and other stores, the Victory stood along the coast to the southward. It was here Capt. Ross found the land, which he named Boothia Felix, but

which seems rather to have been the imposing of a new name, than making any discovery. Capt. Parry had twice visited the same land before. The progress now made was but slow, for they had large masses and floes of ice, and contrary winds to contend with, while their miserable engines could not help them onwards more than a mile an hour. Sometimes they had to make fast to an iceberg, and drift with it.

After this, Capt. Ross passed along the coast southward for about 150 miles to the south of Cape Parry, but was obliged to bring up for the Winter in what he was glad to consider a commodious harbour, and upon which, always rendering honour to whom honour is due, he bestowed the name of Felix Harbour. Having reached their winter home, the first step was to lighten the ship, then to throw overboard the unserviceable engines, and to make such arrangements and regulations for the winter as appeared to be proper. The lightening of the ship made it necessary to cut away the ice from around her to allow her to settle at the natural line. She rose 9 inches by the operation. The men then proceeded to build an embankment of snow and ice all around her, to shelter her from the cold. The upper deck was covered with 2½ feet of snow, which, after being trodden down into a solid mass of ice, was sprinkled with sand and made like a gravel walk. A roofing over all was made from the spare sails of the wrecked vessels, the canvass sides being carried so low as to cover the sides of the ship down to the embankment of snow at the gunwale. The lower deck, which was the floor of the house, was covered with hot sand every morning, and scrubbed with sand until 8 o'clock, the usual breakfast hour. Copper flues were placed round the apartment to carry off the vapour; iron tanks with the open side downwards were placed over the apertures in the upper deck, to receive the flues from the steam kitchen, oven, and other parts of the lower deck. By this plan the apartments were kept dry and warm. The system of comfort and economy within was as perfect as could be desired; and although the temperature without usually ranged so low as 37 *minus*, yet the men, if there was no wind, could take exercise and make hunting excursions.

When confined to the house, walking for some hours a-day upon the upper deck and beneath the canvass roof, was another mode of occupation towards keeping the crew healthy. Spirits were not served out, it being supposed that the use of them in these regions is conducive to scurvy; but the men had tea regularly every evening at 5 o'clock. They seem to have been unable or averse to muster a dramatic corps, but they had an evening school, which they attended with some degree of profit. Each Saturday night they were always allowed to dance and to drink to sweethearts and wives. On Sunday no work was performed, and the day was spent principally in religious observances.

They kept their first Christmas in these regions in due form; indeed the minced pies and cherry-brandy from the Fury's stores enabled them to do this in the most appropriate manner. After Christmas they were amused by an unexpected visit from a tribe of Esquimaux, who, to the number of 30, made their appearance upon the 9th January, 1830. Miserable and forlorn as these people are, they were found by our voyagers to have some useful knowledge, and they showed provident habits. Some of them, and, as in Parry's case, one of them a female, could even give such lessons in Geography as our travellers were glad to receive. They were acquainted with Winter Island and Repulse Bay. One man drew with a pencil several large lakes close to that part of the country—showed the spots where his countrymen were to be found, and assured the voyagers that the land might be crossed in 9 days to the Ocean. Capt. Ross, it ought here to be mentioned, had it in his power to show gratitude to the schoolmaster, by rather a singular recompense. Tallapin, one of his instructors, had lost a limb by having been frost-bitten, and the Captain presented him with a wooden leg, which he received with the most reverential gratitude and wonder, at its suddenly, yet effectually restoring to him the power of locomotion.

Commander Ross set out on a land expedition about the beginning of April. He was accompanied by the chief mate, Blanky, and two Esquimaux guides, with their sledges and provisions. The result of the journey seems to have been, that the Commander and his party, having crossed an isth-

mus a little to the south-west of the ship, reached the Ocean; whereupon he says;—"I concluded that we were now looking upon the great Western Ocean, of which these people had so frequently spoken to us, and that the land on which we stood was part of the great Continent of America." A second and third journey were undertaken by the Commander towards the end of April. The Commander besides acquiring, in augmentation of his stores, two musk oxen, now possessed himself fully of the Geography of the isthmus connecting the peninsula, now named Boothia, with that land which has been considered above as part of the great Continent of America. The isthmus was found to separate Prince Regent's Inlet from the Western Sea. A fourth expedition made it certain that the extent of the isthmus was about 15 miles in width, consisting of a lake 10 miles long in the centre, and of 5 miles of land.

In place therefore, of proving an inlet into the Western Ocean, the expeditions of Commander Ross showed that Prince Regent's Inlet was shut in by land; and it having been ascertained that the southern and western shores of the inlet were closed round with land, the next important point was to ascertain whether the land to the south of the isthmus was part of the Continent of America. This could only be done by Commander Ross and his party tracing the western shore, and that again depended upon the limited quantity of provisions which they could carry with them. The matter of short allowance had to be well considered. It being generally agreed to persevere a little longer, Ross proceeded, first, to a projecting headland which he called Cape Felix; then 20 miles farther, over hummocks, ice, and snow, brought them to another headland, which he named Victory Point, and which was found to be in Lat. 69° 37′ 49″, and Long. 98° 40′ 49″. They saw a still more distant point, which they named Franklin Point; the difference of latitude between which and the general line of the coast of America seems barely one degree. The distance from Victory Point to Cape Turn-again is stated to be not greater than the space they had travelled from the ship—namely 210 miles. But the Commander was here obliged to desist, and to return. The

party had hardly enough of provisions, even at a reduced allowance, to carry them back to the ship. Before quitting Victory Point, the travellers erected, in testimony of their visit, a cairn of stones 6 feet in height, and they placed in it an account of their proceedings contained in a cannister, but with little hope that their brief chronicle would ever meet an European eye. During the months of August, September, and October, attempts were made to put to sea; but the season proving singularly unpropitious, and the ice forming early, it became evident that they were doomed to pass another Winter upon the spot, and as much of the following Summer as might expire before circumstances permitted of their liberation; they therefore once more commenced housing the ship and building embankments, and they resumed all those practices and devices, formerly used with so much success, for passing the long dreary Winter.

LESSON XCV.

SAME SUBJECT—CONTINUED.

Second Year.—In April, 1831, Capt. Ross and his nephew, the Commander, set off on an expedition towards the isthmus. The Captain's object appears to have been to ascertain the height of the land above the Western Sea, the Commander's to fix the position of the magnetic pole. It was presumed, on their leaving England, that the magnetic pole was in Lat. 70°, Long. 98° 30′ West of Greenwich. The Commander has fixed the spot at Lat. 70° 5′ 77″, and Long. 96° 46′ 45″ West; but in this there is a good deal conjectural and unsettled, and it may be stated that neither of the expeditions resulted satisfactorily. The ship became loose upon the 28th of August; but after various attempts to get her free, they began again, in October, to dismantle and make their Winter preparations. This Winter passed away much as the last.

Third Year.—In February 1832, the effect of the long

seclusion and peculiar habits of the voyagers began to be too perceptible. An old wound in the captain's side now broke out with bleeding, a sure indication of scurvy; and the medical report bore that all the crew were much enfeebled. The purpose to abandon the ship and try the boats came to be entertained; and towards the end of April they commenced carrying forward with the sledges a certain quantity of provisions and the boats. The labour of travelling over ice and snow was very severe, and made more so by the occasional wind and snow-drift. The final abandonment of the ships took place on the 20th of May, 1832.

After a month's fatiguing work, and every attempt at escape having been baffled, they had once more to fix themselves in Winter quarters, which they did at Fury Beach, where they constructed a house 31 feet by 10 in the ceiling to be covered with canvass, and upon which they bestowed the name of Somerset House. Here they set the carpenter to work to repair the 3 boats remaining of the Fury. Upon the 1st of August, the ice unexpectedly broke up, and the travellers set off in the boats in the hope of reaching Baffin's Bay before the departure of the whalers. The sudden setting in of the ice, however, obliged them again to desist. They hauled the boats on shore, left them there, and on the 25th of September, set out across the ice on their return to Somerset House, where they arrived, after a most toilsome and harassing march, on the 7th of October. They had still in store plenty of flour, sugar, soap, peas, vegetables, pickles, and lemon-juice; but of preserved meats there was not more than might suffice for another voyage in the boats during next season.

Fourth Year.—The death of that most important member of a ship's crew, the carpenter, cast a damp upon the party. He expired on the 26th of February, 1833. Want of employment—short allowance of food—the melancholy induced by the uniform waste, where snow and ice were the only elements, had the effect by this time of reducing the whole party to a more indifferent state of health than had hitherto been experienced. M. Thom, the purser, and two of the seamen, were severely afflicted with scurvy.

The monotonous and depressed state of existence into which they had thus fallen, is well expressed in the following passage:—When snow was our decks, snow our awnings, snow our observatories, snow our larders, snow our salt, and when all the other uses of snow should be at last of no more avail, our coffins and our graves were to be graves and coffins of snow. Is this not more than enough of snow than suffices for admiration? Is it not worse, that during two of the months in a year the ground is snow, and ice, and slush; that during the whole year its tormenting, chilling, odious presence, is ever before the eye?"

But deliverance was at hand. They finally quitted Somerset House, Fury Beach, upon Monday the 8th of July, 1833, with their boats. They were detained for a short time at Batty Bay; but finding the ice to separate, and a lane of water to open out, they succeeded in crossing over to the eastern side of Prince Regent's Inlet. They then stood along the southern shore of Barrow's Straits, and upon the 26th of August, 1833, they discovered a sail. Tantalising delays and disappointments ensued for a time, but they at length succeeded in making themselves visible to the crew of one of her boats, who speedily came to the rescue. "She was soon alongside, says Capt. Ross, when the mate in command addressed us, by presuming that we had met with some misfortune, and lost our ship. This being answered in the affirmative, I requested to know the name of his vessel, and expressed our wish to be taken on board. I was answered that it was the "Isabella of Hull, once commanded by Capt. Ross;" on which I stated that I was the identical man in question, and my people the crew of the Victory. That the mate who commanded this boat was as much astonished at this information as he appeared to be, I do not doubt; while, with the usual blunder-headedness of men on such occasions, he assured me that I had been dead two years. I easily convinced him, however, that what ought to have been true, according to his estimate, was a somewhat premature conclusion, as the bear-like form of the whole set of us might have shown him, had he taken time to discover that we were certainly not whaling gentlemen, and that we

carried tolerable evidence of our being "True men, and no impostors," on our backs, and in our starved and unshaven countenances. A hearty congratulation followed of course, in the true seaman style; and after a few natural inquiries, he added, that the Isabella was commanded by Capt. Humphreys; when he immediately went off in his boat, to communicate his information on board, repeating that we had long been given up as lost, not by them alone but by all England. As we approached slowly after him to the ship, he jumped up the side, and in a minute the rigging was manned; while we were saluted with three cheers as we came within cable's length, and were not long in getting on board of my old vessel, where we were all received by Capt. Humphreys with a hearty seaman's welcome. The ludicrous soon took place of all other feeling; in such a crowd and such confusion, all serious thought was impossible, while the new buoyancy of our spirits made us abundantly willing to be amused by the scene which now opened. Every man was hungry, and was to be fed; all were ragged, and were to be clothed, there was not one to whom washing was not indispensable, nor one whom his beard did not deprive of all English semblance. All, everything, too, was to be done at once; it was washing, dressing, shaving, eating, all intermingled; it was all the materials of each jumbled together; while, in the midst of all, there were interminable questions to be asked and answered on both sides; the adventures of the Victory, our own escape, the politics of England, and the news which was four years old. But all subsided into peace at last. The sick were accommodated, the seamen disposed of and all was done for us which care and kindness could perform."

The fate of Capt Ross and his crew had been long lamented in England, where it was universally believed that his voyage had terminated fatally. Of course his reappearance with his party was hailed with great rejoicing as a kind of resurrection from the dead. Their exertions and sufferings had been great, still neither he nor his men had any claim upon the Government, who had not appointed them, or given its sanction, in any way whatever, to the expedition, but which had been throughout a mere private

adventure. They became claimants, however. Their applications for relief were well received, and, in the tide of general sympathy, readily and liberally complied with. The men, by order of the Lord of the Admiralty, received double full pay until they had finally abandoned the ship, and full pay after that until their arrival in England, amounting in gross to a sum of £4580. Capt. Ross himself received £5000 by a vote of Parliament, and, with his friend and patron Booth, received the honour of knighthood. The gunner and purser of the Victory were promoted to ships of the line; the medical officer was put in the way of being made full surgeon in the navy; and Commander Ross was appointed to a ship, and put upon full pay for 12 months, in order that he might at the end of that service receive the rank of post-captain. Add to all this, Sir John Ross published his travels in a dear form by general subscription, whereby he no doubt realized further remuneration.

LESSON XCVI.

SIR JOHN FRANKLIN—A PRIZE POEM.

At the annual Convocation of the University College, Toronto, the following composition, to which the first prize had been awarded, was read by Professor Wilson; the author, who was called to read it, failing to appear or make himself known.

The golden clouds of even, river-mirror'd, calmly lie
On an old church tower that by Father Thames, stands up against the glowing sky,
As a strange long weather-beaten ship on the ancient stream glides by.

Toll for the fair and sweet; a knell from the old church tower
Makes melancholy the young night's breeze, as the clouds grow gray and lower,
Where they bring a mother's coffin'd child to its grave from its mother's bower.

There's a murmur on the waters, a sunset in the sky,
And the gathering clouds of even, deeply mirror'd, slumbering lie,
And the ship, as the knell is knoll'd, glides on in majestic silence by.

And the knell knolls on, and the ship glides on to her haven in the stream,
———Ah! woe is me for the mother's heart in that knell of love's fond dream;
But the freight of that ship as a weight of gloom shall quench other hope's last gleam.

Ring out, lone sorrowing knell, for the brave that are no more,
For they who brav'd the icy deep 'mid the Arctic tempest's roar,
And sleep death's tranquil dreamless sleep far on yon ice-bound shore.

They for whom Mother England has watch'd and wept in vain,
They on whose unknown northern track again and yet again
Mission'd have gone the searching ships to question that northern main.

Within the guarded ramparts of the Polar North they sped,
A dauntless band of truth's pioneers with Franklin at their head,
But never shall England's sons return till the sea gives up her dead.

Sound on, as the ship glides calmly by, the knell of a broken heart;
Weep, mother, for thy buried child, and Mother England too,
Shall make long-wept bitter tears afresh in a gush of bitterness start.

For the sea gives not up her dead and the northern ice holds on,
And the gallant and the fondly lov'd lie there each a bleaching skeleton,
And that ship sweeps by with its strange won freight of a reply to a widow's moan.

What recks it—fondly—the mother's love for her babe—
The widow'd love of that noble wife, strong only not to save,
And a people's love, and pride, and grief, for sons buried 'neath ice and wave.

What recks it—defying death, on yon icy ramparts won,
They died, in daring a noble strife, as the brave before them have done,
And the struggle and the grief are all past, and the glory and worth live on.

England! build up thy memorial pile for thy brave ones gone to rest.
Where Arctic tempests in snowy shroud are folding each gallant crest;
They sleep as sweetly as that fair child just laid from its mother's breast.

Grave deep on their loving country's heart, each name that with Franklin shar'd,
The struggle to wrest Truth's golden key of science from Arctic ward,
But say,—who have done what Britons have done—who dar'd what they have dar'd?

LESSON XCVII.

THE AURORA BOREALIS.

——————Silent from the North
A blaze of meteors shoots: ensweeping first
The lower skies, they all at once converge
High to the crown of Heaven, and all at once
Relapsing quick, as quickly reascend,
And mix and thwart, extinguish and renew
All ether coursing in a maze of light.

Thomson.

THE AURORA BOREALIS, sometimes called Streamers, is an extraordinary meteor, luminous appearance, shewing itself in the night time in the northern part of the heavens: and most usually in frosty weather. It is generally of a reddish colour, inclining to yellow, and sends out frequent corruscations of pale light, which seem to rise from the horizon in a pyramidical undulating form, and shoot with great velocity up to the zenith. The Aurora Borealis appears frequently in the form of an arch, chiefly in the Spring and Autumn, after a dry year. The arch is partly bright, partly dark, but generally transparent: and the matter of which it consists, is found to have no effect on rays of light which pass through it. Dr. Hamilton observes, that he could plainly discern the smallest speck in the Pleiades through the density of those clouds which formed the Au-

rora Borealis in 1763, without the least diminution of its splendour, or increase of twinkling. This kind of meteor, which is more uncommon as we approach the equator, is almost constant during the long Winter, and appears with the greatest lustre in the Polar regions. In the Shetland Isles, the "Merry Dancers," as the Northern Lights are there called, are the constant attendants of clear evenings, and afford great relief amidst the gloom of the long Winter nights. They commonly appear at twilight, near the horizon, of a dun colour, approaching to yellow; they sometimes continue in that state for several hours, without any perceptible motion; and sometimes they break out into streams of stronger light, spreading into columns, and altering slowly into 10,000 different shapes, and varying their colours from all the tints of yellow, to the most obscure russet. They often cover the whole hemisphere, and then exhibit the most brilliant appearance. Their motions at this time are most amazingly quick; and they astonish the spectator with the rapid changes of their form. They break out in places where none were seen before, skim briskly along the heavens, are suddenly extinguished, and are succeeded by a uniform dusky streak. This again is brilliantly illuminated in the same maner, and as suddenly left a dark space. In some nights, they assume the appearance of large columns, on one side of the deepest yellow, and on the other gradually changing, till it becomes undistinguished from the sky. They have generally a strong tremulous motion from one end to the other, and this continues till the whole vanishes.

As for us, who see only the extremities of these northern phenomena, we can have but a faint idea of their splendour and motions. According to the state of the atmosphere, they differ in hue; and sometimes assuming the colour of blood, they make a dreadful appearance. The rustic sages who observe them, become prophetic, and terrify the spectators with alarms of war, pestilence, and famine. Nor, indeed, were these superstitious presages peculiar to the Northern Islands: appearances of a similar nature are of ancient date; and they were distinguished by the appellations of "*phasmata*," "*trabes*," " and "*balides*," accord-

ing to their forms and colours. In olden times they were either more rare, or less frequently noticed; they were supposed to portend great events, and the timid imagination formed of them aërial conflicts. In the northern latitudes of Sweden and Lapland, the Aurora Borealis is not only singularly beautiful in its appearance, but it affords travellers, by its almost constant effulgence, a very beautiful light during the whole night. In Hudson's Bay the Aurora Borealis diffuses a variegated splendour, which is said to equal that of the full moon. In the north-eastern parts of Siberia, according to the description of Gmelin, these Northern Lights are observed to "Begin with single bright pillars, rising in the north, and almost at the same time in the north-east, which, gradually increasing, comprehend a large space of the heavens, rush about from place to place with incredible velocity, and finally, almost cover the whole sky up to the zenith, and produce an appearance as if a vast tent were expanded in the heavens, glittering with gold, rubies, and sapphires. A more beautiful spectacle cannot be painted; but whoever should see such a Northern Light for the first time, could not behold it without terror. For, however fine the illumination may be, it is attended, as I have learned from the relation of many persons, with such a hissing, crackling, and rushing noise through the air, as if the largest fire-works were played off. To describe what they then hear, they make use of the expression, "The raging host is passing." The hunters, who pursue the white and blue foxes in the confines of the Icy Sea, are often alarmed in their course by these Northern Lights. Their dogs are then so much frightened, that they will not move, but lie obstinately on the ground, till the noise has passed. Commonly, clear and calm weather follows this kind of Northern Lights. This account has been confirmed by the uniform testimony of many, who have spent part of several years in these northern regions, and inhabited different countries from the Yenisei to the Lena; so that no doubt of its truth can remain. Here seems, indeed, to be the real birth-place of the Aurora Borealis." A person who resided 7 years at Hudson's Bay, confirms

Gmelin's relation of the fine appearance and brilliant colours of the Northern Lights, and particularly of their rushing noise, which he affirms he has frequently heard, and he compares it to the sound produced by whirling round a stick swiftly at the end of a string. A similar noise has likewise been noticed in Sweden. Mr. Nairne also, being in Northampton, England, at the time when the Northern Lights were remarkably bright, is confident he heard a hissing or whizzing sound. Mr. Belknap of Dover, in New Hampshire, North America, testifies to this fact. Cavallo says, that the crackling noise is distinctly audible, and that he has heard it more than once. Similar lights, called also Aurora Australis, has been long since observed towards the South Pole, and their existence has been ascertained by Mr. Forster, who assures us, that in his voyage round the world with Captain Cook, he observed them in high southern latitudes, though attended with phenomena somewhat different from those which are seen here. "On February 17th, 1733, in south latitude 58°, a beautiful phenomenon was observed during the preceding night, which appeared again this and several following nights. It consisted of long columns of a clear white light, shooting up from the horizon to the eastward, almost to the zenith, and gradually spreading on the whole southern part of the sky. The columns were sometimes bent sideways at their upper extremities; and though in most respects similar to the Northern Lights (Aurora Borealis) of our hemisphere, yet they differed from them in being always of a whitish colour, whereas ours assume various tints, especially those of a fiery and purple hue. The sky was generally clear when they appeared, and the air sharp and cold, the thermometer standing at the freezing point."

The periods of the appearance of these Northern Lights are very inconstant. In some years they occur very frequently, and in others they are more rare; and it has been observed, that they are more common about the time of the equinoxes than at any other seasons of the year. Dr. Halley has collected several observations, which form a kind of history of this phenomenon. After having parti-

cularly described the various circumstances which attended that observed by himself, and many others, in March, 1716, and which was singularly brilliant, he proceeds, by informing us, that the first account of similar phenomena recorded in the English annals, is that of the appearance noticed January 30th, 1560, and called, Burning Spears, by the author of a book, entitled "A Description of Meteors." The next appearance of a like kind, recorded by Stow, occurred on October 7th, 1564. In 1574, as Camben and Stow inform us, an Aurora Borealis was seen for two successive nights, viz., on the 14th and 15th of November, with appearances similar to those observed in 1716, and which are now commonly noticed. The same phenomenon was twice seen in Brabant, in 1575, viz., on the 13th of February, and the 28th of September; and the circumstances attending it were described by Cornelius Gemma, who compares them to "Spears, fortified cities, and armies fighting in the air." In the year 1580, M. Masline observed these *phasmata*, as he calls them, at Baknang, in Wirtemberg, Germany, no less than 7 times in the space of 12 months; and again at several different times in 1581. On September 2nd, 1621, the same phenomenon was seen all over France; and it was particularly described by Gassendus, in his "Physics," who gave it the name of Aurora Borealis. Another was seen all over Germany, in November, 1623, and was described by Kepler. Since that time, for more than 80 years, we have no account of any such phenomenon, either in England or abroad. In 1707, Mr. Neve observed one of small continuance in Ireland; and in the same year, a similar appearance was seen by Romer, at Copenhagen; and during an interval of 18 months, in the years 1707 and 1708, this sort of light was seen no less than five times. Hence it would seem, (says Dr. Halley,) that the air or earth, or both, are not at all times disposed to produce this phenomenon, though it is possible it may happen in the day-time, in bright moonshine, or in cloudy weather, and so pass unobserved. Dr. Halley further observes, that the Aurora Borealis of 1716, which he described, was visible from the west of Ireland to the confines of Russia, and to the east

of Poland; extending at least near 30° of Longitude, and from about the 50th degree of North Latitude over almost all the north of Europe; and in all places at the same time, it exhibited appearances similar to those which he observed in London. He regrets, however, that he was unable to determine its height, for want of contemporary observations at different places.

Father Boscovich determined the height of an Aurora Borealis, observed on the 16th of December, 1737, by the Marquis of Poleni, to have been 825 miles; and Mr. Bergman, from a mean of 30 computations, makes the average height of the Aurora Borealis to be 72 Swedish, or (supposing a Swedish mile to be about 6½ English miles) 468 English miles. Euler supposes the height to be several thousand of miles; and Mairan also assigns to these phenomena a very elevated region, the far greater number of them being, according to him, about 200 leagues above the surface of the earth. Dr. Blagen, speaking of the height of some fiery meteors, says, that the Aurora Borealis appears to occupy as high a region above the surface of the earth as any other. This may be judged from the very distant countries in which it has been visible at the same time. He adds, that the great accumulation of electric matter seems to lie beyond the verge of our atmosphere, as estimated by the cessation of twilight. But as it is difficult to make such observations on this phenomenon as are sufficient to afford a just estimate of its altitude, they must be subject to considerable variation, and to material error.

Dr. Blagden also informs us, that instances are recorded, in which the Northern Lights have been seen to join, and form luminous balls, darting about with great velocity, and even leaving a train behind them like the common fire-balls. This ingenious author, however, conjecturing that distinct regions are allotted to the electrical phenomena of our atmosphere, assigns the appearance of fire balls to that region which lies beyond the limits of our crepuscular atmosphere; and a greater elevation above the earth, to that accumulation of electricity in a lighter and less condensed form, which produces the wonderfully diversified streams and

coruscations of the Aurora Borealis. On the 28th day of August, 1859, there was seen a most magnificent Aurora Borealis, at the same time all over both Europe and America. So powerful was the electrical fluid in this continent that communications were received and transmitted by telegraph between different places in Canada and the United States. A correspondent of the London *Times* thus describes its appearance in England in a letter to that paper: "I lose no time in sending you an account of perhaps the most extraordinary phenomenon I have ever seen (my experience dates back about 30 years)—a brilliant display of Aurora Borealis in August. It commenced last night (Sunday) about 10:45 P.M., and has lasted probably the whole night (2 hours' unavoidable sleep prevents my speaking with absolute certainty on this point). On its first appearance they were several fine streamers, some of them white and some faint crimson, extending from near the horizon almost vertically to *a* and *b* of Ursa Major. From that time till midnight there were generally very beautiful streamers, but without lateral motion (which remark applies to the whole display), most of them being not quite vertical, but inclining slightly towards the east at the top. There was also always a general light, extending at midnight from north-east to west, and sometimes bright enough to enable a person to read the time on the face of an ordinary watch." It is remarkable that the day after the above gorgeous appearance was seen in the Northern Hemisphere, a similar sight was observed in the Southern. A gentleman writing to the same paper thus describes it:

"Kapunda, South Australia, September 16th. I hasten to give you an account of the most magnificent sight I ever witnessed in the heavens. On Monday evening, the 29th of August, just after dusk, the Aurora Australis appeared like a large and brilliant pink cloud extending about 25° or 30° above the horizon, and 60° or 70° in length. It continued visible for about 20 minutes, during the last five of which splendid "streamers" of pink and white light were shooting vertically through it. It commenced immediately after sunset, and increased in splendour during the evening. The moon was in her first quarter. For

several hours little was to be seen but a deep rich pink light over the southern part of the sky, but by degrees it extended, and about 9 o'clock a huge pillar of fire appeared in the west, where it remained until midnight. After the moon went down, the brilliancy of the Aurora increased, and from about half-past eleven o'clock till midnight a beautiful pale, soft, greenish-blue light, like the dawn of morning, extended itself above the southern horizon for about 100° to 110° and about 18° or 20° in height; from this, streamers or radii of red, white, and blue light shot upwards even beyond the zenith, fully half the sky being covered with this splendid illumination, the light from which equalled that of the full moon in England. These radii converged towards a point about 15° north of the zenith. This was its last appearance, and a splendid *finalé* it was. Fifty of the largest comets blazing away at once could hardly have presented a finer sight. The powerful electric excitement in the atmosphere had an extraordinary effect on the telegraph wires, agitating the instruments violently in some places, and quite interfering with the transmission of messages."

LESSON XCVIII.

THE GEYSERS OR BOILING SPRINGS OF ICELAND.

Iceland is an island situated on the Northern Ocean amid regions of ice and snow; yet it gives abundant evidence of the volcanic fires which are slumbering beneath its surface. Among the remarkable features of this interesting island, are its hot springs, which, in some places, throw up a column of water to the height of 100 feet, accompanied by a tremendous noise. These springs abound in many parts of the coast, as well as in the interior of the island, and in some cases, the waters of the ocean are sensibly heated by their action. The most celebrated of these hot springs are the Geysers, situated in the north of the Island, where within the space of a few acres, more than 50 of

them may be seen. Some emit hot water as clear as crystal; others send out hot vapours and troubled waters.

The Great Geyser, which has attracted most attention, rises from a mound of flinty earth, deposited by the water to the height of about 30 feet, and extending about 200 feet across. On the top of this mound is a basin 60 feet wide, and seven feet deep, in the centre of which is the pipe or opening through which the water rises. The basin and pipe are lined with the same flinty deposit, polished to great smoothness by the constant action of the water; but on the inside of the basin the deposit forms beautiful groups of crystals greatly resembling cauliflowers. Small eruptions of the Geyser take place every two or three hours, but the great eruption occurs once in about 30 hours. This is preceded by a hollow rumbling sound, and many thundering explosions which cause the ground to quiver violently. The water at the same time begins to boil more furiously; suddenly a vast body of water rises with a fluctuating motion to the height of 80 or 90 feet accompanied by a thick pillar of vapour. From the principal column smaller veins jet out to a greater height, while others stream in arches from the cloud of vapour. Much of the beauty of the column is concealed by the steam, but when this is blown aside by the wind, the water appears shooting upwards in innumerable rays, "Spreading out at the top like a lofty pine, and descending in fine rain." The column often descends suddenly, as if its force were exhausted: but it again rises with renewed energy, accompanied by thunders rolling in the earth. The whole eruption continues about 10 minutes. The scene during one of these eruptions is said to be indescribably grand. "The whole surrounding atmosphere is filled with volumes of steam rolling over each other as they ascend, and through which columns of water, shivering into foam, are seen spreading in all directions. Much of the water is lost in vapour; but the greater part falls to the ground in heavy showers of spray. As the jets rise out of the basin, the water reflects the most beautiful colours; sometimes the purest and most brilliant blue; at others, a bright sea-green; but in the further ascent all distinction of colour is lost, and the jets,

broken into a thousand parts, appear as white as snow. Some of them are forced upwards perpendicularly; but many are thrown out in beautiful curves. The eruption thus continues, changing its form at every instant, till the force which drives it from beneath is exhausted." The water then subsides through the pipe, and disappears, but immediately rises again, and fills the basin to the height of about four feet; and in this state it remains till the next eruption.

At a short distance from the "Great Geyser," is situated the "New Geyser," also called from its continual noise, the "Roaring Geyser." The natives call it *Strokr*, or the "Churn." The spring rises from a small mound 4 or 5 feet high, forming a border at the mouth of the tube, which is 5 feet in diameter, and filled with water to within 10 or 14 feet of the surface. The eruption is thus described:—"A thick cloud of smoke suddenly burst forth, succeeded by a liquid column, which was almost immediately dissipated by the violence of the eruption into fine spray, and rose to an immense height. From time to time, jets shot upwards more than 100 feet, and some large stones which had been thrown in were cast out with great violence, rising almost out of sight, several of which ascended so perpendicularly, as to fall back into the basin, serving for balls to this gigantic jet. The water was soon exhausted, but the clouds of steam continued to escape with a whistling or hissing sound three quarters of an hour, when the eruption ceased, and the fluid remained boiling in the tube as usual.

Some of these natural fountains play for a much longer time than the Great Geyser, and also send their waters to a greater height. The body of water is not so great, but the force of the eruption is quite as remarkable. The flinty matter which these springs deposit, causes the eruptions to vary constantly in force and character, and in time destroys the spring by entirely choking up the tube from which the water rises. Immediately after an eruption, the water in the basin is near the boiling point, and lower down in the tube it is said to be 40 degrees hotter than boiling water. These Geysers are supposed to be caused by the collection of heated vapours in large cavities of the earth,

which at length acquire sufficient force to expel the waters subject to their pressure. The word *Geyser* signifies in the Icelandic dialect "*fury*." Thus, amid the wildness and desolation of Icelandic scenery, the simple inhabitants have abundant opportunity of recognizing in these magnificent fountains, and in the awful grandeur of volcanoes and volcanic remains, the constant presence and mighty power of their Creator.

LESSON XCIX.

EXPANSIVE FORCE OF FREEZING WATER.

Although cold, in general, contracts most bodies, and heat expands them, yet there are some instances to the contrary, especially in the extreme cases or states of these qualities of bodies. Thus, though iron, in common with other bodies, expands with heat; yet when melted, it is always found to expand in cooling again. Thus also, though water expands gradually as it is heated, and contracts as it cools, yet in the act of freezing it suddenly expands again, and that with an enormous force, capable of rending rocks, or bursting very thick shells of metal, &c. A computation of the force of freezing water, has been made by the Florentine academicians, from the bursting of a very strong brass globe or shell by freezing water in it; when, from the known thickness and tenacity of the metal, it was found the expansive power of a spherule of water only one inch in diameter, was sufficient to overcome a resistance of more than 27,000 pounds, or 13½ tons.

Such a prodigious effect of expansion, almost double that of the most powerful steam-engines, and exerted in so small a mass, seemingly by the force of cold, was thought a very material argument in favour of those, who supposed that cold like heat, is a positive substance. Dr. Black's discovery of latent heat, however, has afforded a very easy and natural explication of this phenomenon. He has shewn, that, in the act of congelation, water is not cooled more than it was

before, but rather grows warmer: that as much heat is discharged and passes from a latent and a sensible state, as, had it been applied to water in its fluid state, would have heated it to 135°. In this process, the expansion is occasioned by a great number of minute bubbles suddenly produced. Formerly these were supposed to be cold in the abstract, and to be so subtile, that, insinuating themselves into the substance of the fluid, they augmented its bulk at the same time that, by impeding the motion of its particles upon each other, they changed it from a fluid to a solid. But Dr. Black shews, that these are only air extricated during the congelation; and to the extrication of this air he ascribes the prodigious expansive force exerted by freezing water. The only question, therefore is, by what means this air comes to be extricated, and to take up more room than it naturally does in the fluid? To this it may be answered, that perhaps part of the heat, which is discharged from the freezing water, combines with air in its unelastic state, and by restoring its elasticity, gives it that extraordinary force: as is seen in the case of air suddenly extricated in the explosion of gunpowder. The degree of expansion of water, in the state of ice, is by some authors computed at one tenth of its volume. Oil and quicksilver shrink and contract after freezing. Mr. Boyle relates several experiments of vessels made of metal, very thick and strong; in which, when filled with water, closely stopped and exposed to the cold, the water being expanded in freezing, and not finding either room or vent, burst the vessels. A strong barrel of a gun, with water in it, closed, stopped and frozen, was rent the whole length. Huygens, to try the force with which it expands, filled a cannon with it, whose sides were an inch thick, and then closed up the mouth and vent, so that none could escape; the whole being exposed to a strong freezing air the water froze in about 12 hours, and burst the piece in 2 places. Hence mathematicians have computed the force of the ice on this occasion; and they say, such a force would equal 27,720 lbs.

Maj. Williams, R. A., made many experiments on the force of freezing water, at Quebec, in 1784–1785. He filled all sizes of bomb shells with water, then plugged the

fuzé-hole close up, and exposed them to the strong freezing air of the winter; sometimes driving in the iron plugs as hard as possible with a sledge hammer; and yet they were all thrown out by the sudden expansion of the water in the act of freezing, like a ball shot by gunpowder, sometimes to the distance of between 400 and 500 feet, though they weighed nearly 3 pounds; and when the plugs were screwed in, or furnished with hooks or barbs to lay hold of the inside of the shell so that they could not possibly be forced out, in this case the shell was always split in two, though the thickness of the metal of the shell was about $1\frac{1}{4}$ inches. Through the circular crack, round about the shells, where they burst, there stood out a film or sheet of ice, like a fin; and in the cases where the plugs were projected by freezing water, suddenly issued out from the fuzé-hole a bolt of ice of the same diameter, and stood over it to the height sometimes of $8\frac{1}{2}$ inches.

LESSON C.

ICEBERGS.

Icebergs, or Ice Mountains, are enormous masses of ice formed in the Arctic Regions. They are of two kinds—*fixed and floating*. A fixed iceberg, situated to the north of Horn Sound, is described as occupying 11 miles in length of the sea coasts. It rose precipitously from the sea to the height of 402 feet, and extended backwards towards the summit of the mountain, to about four times that elevation. Its surface formed a magnificent inclined plane of smooth snow; but the lower parts in Summer presented a bare surface of ice. Floating icebergs are common in the Arctic and Antarctic regions and are transported by currents to a very considerable distance from the places where they were formed. In Hudson's Strait, Davis' Strait, Baffin's Bay, and other parts of the North Atlantic Ocean, they are very numerous and of an enormous size. They usually have one high perpendicular side with a gradual slope to the opposite

side, which is very low: their base is commonly much larger in extent than their upper surface. According to Capt. Scoresby, the proportion of ice appearing above water is seldom less in elevation than one-seventh of the whole thickness, and when the summit is conical, the elevation above water is frequently one-fourth of the whole depth of the berg. Some of these floating masses present the most fantastic forms: others resemble palaces, churches crowned with spires and pinnacles, castles, towers and arched gateways. A number of them seen at the distance of a few miles greatly resemble a mountainous country. The ice of these bergs has a fine green tint, verging on blue, but from a distance the whole mass appears to be composed of white marble, except in cases where the ice is mixed with earth, gravel, or sand, which alters its appearance. The state of the atmosphere also causes same variety in the appearance. Capt. Ross says it is hardly possible to imagine anything more exquisite than the variety of tints which icebergs display; by night, as well as by day, they glitter with a vividness of colour that no art could represent: while the white portions have the brilliancy of silver, the colours of other parts are as various and splendid as those of the rainbow. In the Antarctic Ocean, floating icebergs, from a quarter of a mile to 5 miles in length, have been described by navigators. Many of them represent a tabular and stratified appearance, and are perfectly wall-sided, varying from 180 to 210 feet in height. Some of the bergs described by Capt. Hudson, were about one-third of a mile in length and from 150 to 250 feet in height, with sides perfectly smooth as though they had been chiseled. "Others, again, exhibited lofty arches of many-coloured tints, leading into deep caverns, open to the swell of the sea, which rushing in, produced loud and distant thunderings. The flight of birds passing in and out of these caverns, recalled the recollection of ruined abbeys, castles and caves, while here and there a bold projecting bluff, crowned with pinnacles and turrets, resembled some Gothic tower. A little farther onwards would be seen a vast fissure, as if some powerful force had rent in twain these mighty masses. Every noise on board, even our own voices,

reverberated from the massive and pure white walls. These tabular bergs are like masses of beautiful alabaster: a verbal description of them can do little to convey the reality to the imagination of one who has not been among them. If an immense city of ruined alabaster palaces can be imagined, of every variety of shape and tint, and composed of huge piles of buildings grouped together, with long lanes or streets winding irregularly through them, some faint idea may be formed of the grandeur and beauty of the spectacle."

In navigating the seas where icebergs abound, the sailor can scarcely fail to be impressed with the wonderful scene around him, and to feel deeply conscious of the fact, that nothing but the immediate protection of the Almighty can so direct those moving mountains as to save his vessel from being crushed between them. In crossing the Atlantic at certain seasons, ships are frequently exposed to this danger, and it is supposed that many ships which have been lost, and not since heard of, have met their fate by being crushed between two icebergs. On approaching them, the air is felt to be cooled by their presence, a circumstance which frequently warns the navigator by night of his danger; but sometimes the whalers seek the shelter of an iceberg from the violence of the gale, and also from the other descriptions of ice which float past with considerable speed, while, from its vast size and depth in the water, the iceberg moves but slowly. There are, however, some dangers to a ship in being moored to the frozen cliff; large fragments of ice, from the under part of the mass, sometimes dart up to the surface, and strike holes in the ship's bottom; projecting points, a little below the surface, may also pierce the planking; the strong current which generally runs along the side of an iceberg may dash the vessel against it. But, perhaps, the greatest danger arises from the circumstance that an iceberg is generally so nicely balanced in the water, that if a large piece breaks off on one side, the whole mass will suddenly turn over, and stave or wreck the vessel, producing at the same time vast waves to a considerable distance around, sufficient to overwhelm all smaller craft. The swell of the sea causes the bergs to

rise and fall with a tremendous noise; but is far less effectual in breaking them up than the heat of the sun. Few of these icebergs are destroyed in the Arctic seas, but they are brought down by currents into the Atlantic, where, by the action of heat and the warmer water, they become hollow and rotten; large pieces fall off, the masses roll over until at length they fall entirely asunder, producing a noise of equal effect to thunder, and launching forth huge waves, which travel for miles, breaking up the fields and floes of ice, checking the dominion of the frost, and preventing the ice of the Arctic Regions from accumulating.

The icebergs afford retreat to a great number of seals, which are thus floated, in the month of March off the coasts of Newfoundland; and a dangerous, but profitable fishery has of late years been established, by sending out vessels in pursuit of the seals on these icy masses. Foxes, bears, and other animals are annually transported on similiar icy carriages from one country to another. Icebergs contain many deep cavities, which are filled with the purest and most refreshing water, often flowing over the edges in beautiful cascades. Vessels in want of fresh water often obtain it from this source. The water-casks are either landed, filled, and then rolled into the sea; or, they remain in the boat or even on the deck of the ship, and the water is conveyed into them by means of a long tube of canvas or leather.

The origin of these mighty masses of ice is to be found in the glaciers which fill the polar valleys, most of which, so far as they are known, open at once into the sea. The Alpine glaciers run into valleys which terminate on dry land, where the increasing warmth prevents their further progress. The glaciers of polar valleys extend down steep banks into the sea, where they are slowly corroded by the salt water; the ice still pressing on from behind, the projected mass can no longer support its own weight; it snaps off and plunges into the deep, where it splits into several pieces, forming as many icebergs. The shores of Greenland are so beset with ice, that in many places it is quite impossible even for a boat to find a landing. The Greenlanders call this launching of an iceberg, the *calving of the ice-blink*; and Mr. Scoresby was once so fortunate

as to witness it. A strong north-westerly swell having for some hours been breaking on the shore, had loosened a number of fragments attached to the iceberg, and various heaps of broken ice denoted recent shoots of the seaward edge. As we rowed towards it with a view of proceeding close to its base, I observed a few little pieces fall from the top; and while my eye was fixed upon the place, an immense column, probably 50 feet square, and 150 feet high, began to leave the parent ice at the top, and, leaning majestically forward, with an accelerated velocity, fell with an awful crash into the sea. The water into which it plunged was converted into an appearance of vapour or smoke, like that from a furious cannonading. The noise was equal to that of thunder, which it nearly resembled. The column which fell was nearly square, and in magnitude resembled a church. It broke into thousands of pieces." Almost every iceberg, like every glacier, is covered with masses of stones from the size of a walnut to that of a house. As the iceberg melts, these stones are deposited in various parts of the ocean, and resemble the boulder stones which have been left in places from which glaciers have long receded.

LESSON CI.

THE BREAKING UP OF ICE-FLOES.

Sea water requires a much greater degree of cold to freeze it than fresh water, and the motion of the waves interferes with the formation of solid ice. In the Arctic Regions, when a strong freezing wind blows over the Ocean, the water at the surface forms into a spongy mass, called *sludge;* this has the effect, to some extent, of stilling the waves, and it forms itself into small plates, which, being rounded by continual rubbing, are called by the sailors *pancakes.* These cakes, by adhering together, form a solid surface, which, under the influence of the frost, extends in every direction, until at length a *field* of ice is formed, which, joining with other fields, often occupies an extent

of several hundred square miles. In these regions the winter lasts 7 or 8 months, during which the cold is fearfully severe. The greatest danger to the navigator is when the warmth of summer has begun to loosen the icy floor; for the first strong wind, creating a swell in the ocean, breaks up the ice again into fields. These being set afloat, are, by the violence of the winds and currents, broken into *Floes*, the size of which can be distinguished from the mast-head of a ship. If the field is broken up into a number of pieces, none of which are more than 40 or 50 yards across, the whole is called a *pack;* if the pieces are broad they are called a *patch;* and when long and narrow, a *stream*. When a ship can sail freely through these masses, the ice is said to be *loose* or *open*, and is called *drift* ice. When it is crumbled into small pieces, it is called *brash* ice. The numerous fields of ice, once set afloat, are driven about by the violence of winds and currents, and sometimes, approaching in opposite directions, strike against each other with the force of millions of tons, the effect of which is to squeeze up one piece over another, above the common level, and to form what are called *hummocks*. These hummocks have various shapes, and often rise to the height of 30 feet. The situation of a ship exposed to these moving masses of ice is one of great danger. It may either be crushed between them like a walnut, or lifted completely out of the water and placed high and dry upon the ice. The ships engaged in the northern Whale Fishery are frequently exposed to such dangers as these. In the winter of 1836–7, H.M. ship Terror, was frozen into a large ice-floe in Hudson's Strait, and continued drifting about during several months. The ship was tolerably secure so long as this floe held together; but when it broke up the ship was exposed to the most fearful attacks of enormous waves of solid ice. A few passages abridged from Capt. (now Sir George) Back's Journal, will convey some idea of the dangers of navigating icy seas. On the 17th of February, alarm was given that the floe was breaking up. A rent extended from the stern of the ship to the edge of the floe and another from the bow to the east brink, forming a continuous line of separation

directly through the centre. The ship began to complain, and strained considerably; gaping rents opened in the snow walls about the ship; a crashing, grinding, and rushing noise was heard beneath as well as at the borders of the floe; the cracks now extended in all directions to the ship; and in the midst of all this confusion and peril the intense cold and the dimness of the early hour, combined to render the situation of the crew most alarming. At 5 o'clock A.M., a commotion like an earthquake took place; additional cracks opened across the snow houses, galleries, and court-yard. The ship creaked in her beams and timbers, and to the great dismay of all, day-light displayed an advancing rampart of ice, forming a semicircle to seaward, rolling in one vast body at a height of about 30 feet. All around, enormous calves of ice escaped from confinement, and tossed into irregular positions, looked like so many engines threatening destruction. But just when the danger seemed greatest the tumult suddenly ceased. But the ship was destined to endure far rougher usage than she had yet experienced. At ten o'clock P.M., on the 1st of March, several sudden jerks were heard, and an hour after, a general rumbling. After a time, when all was still and apparently ended, suddenly the vast bodies in contact with, and immediately surrounding the ship, were in fearful agitation, rising up in grinding conflict, piece thrown over piece, until the ponderous walls tumbled over, the whole being accompanied by noises as of screeching and howling, and whining, which were absolutely hideous. Such was the violence of the pressure, that the ship was lifted up abaft, and both hull and rigging trembled violently. Another pause ensued: The stars shone brightly; a faint gleam of Aurora was playing near the zenith, and so beautiful and hushed was everything, that Nature seemed as it were in a trance. But scarcely had the idea flitted across the mind when the war burst out again with more fury than ever, and huge fragments and masses seemed to be rolling down upon us with an impetuosity that threatened immediate destruction. Repose was impossible; many started from their beds, preferring, though they could do nothing, rather to see than merely hear the danger. The current rushed irresistibly to the stern, and taking the hull

fore and aft, forced a complete stream of broken ice under the bottom, lifting the after part still higher up than before. At length the ship became so completely hampered by the ice underneath, that the remainder of the floe on either side moved about 8 or 10 feet ahead, leaving the ship fixed in the middle, and wedged up in every direction. As daylight broke, the havoc was more clearly perceived, and a wild scene of confusion it was.

At the beginning of March light westerly winds prevailed; but some ominous rushing sounds were heard, which gradually drew nearer as the flood made its way either under the compact bodies that withstood the shock, or along the cracks and openings, gaining in these latter a furious velocity to which everything seemed to yield. It happened that there were several of these around the ship, and when opened upon it, like so many conduits pouring their contents into a common centre, the concussion was absolutely appalling, rending the lining and bulk-heads in every part, loosening some of the shores, so that the slightest effort would have thrown them down, and compressing others with such force as to make the turpentine ooze out of their extremities. One fir plank placed horizontally between the beams and the shores actually glittered with globules. At the same time the pressure was going on from the larboard side, where the three heaviest parts of the ruin of the floe remained, cracked here and there, but yet adhering in firm and solid bodies. These, of course, were irresistible, and after much groaning and splitting, and cracking, accompanied by sounds like the explosion of cannon, the ship rose fore and aft, and heeled over about 10° to starboard. Bolts and other iron fastenings of the ship were loosened by the strain. On the 8th of March, the ice closed and wedged the vessel tightly in; not a hole of water was visible from the mast head; and for the first time for many nights the crew enjoyed a tolerably favourable night. Next day, however, the hubbub returned, and seemed to have reached its climax. A hollow grinding, as from the onward motion of some vast body, came louder and louder on the ear, the speed and the sound increasing as it approached; finally, it burst with dreadful fury on the ship, causing such fearful cracks and ominous tremblings,

that all waited the result in painful suspense. A little more and she must go! What things of human construction, could withstand the violence of such an onset? Still she continued to rise as the pressure increased. In an instant it ceased, and all was as still as death.

On the 10th of April a crisis again appeared to be at hand. "Wherever our eyes were turned, they were met by rising waves of ice rolling their burdens towards the ship. One in particular, not more than 30 paces away, had reared itself at least 30 feet on our inner floe-piece, which, strong as it was, gave way under the accumulated weight, and a mass of several tons being thus upturned and added to the original bulk, the whole bore down slowly upon our quarter. The ship herself was high out of the water on the ice, but this overtopped her like a tower. The ship was also getting nearer and nearer the land-ice, and being unable to right herself, began to complain. Every moment the scene became more dark and threatening. Again, preparations were made for a wreck; but now the case was different. Hitherto, any one of the large pieces of ice about the ship would have held the boats, provisions, &c., but now they were surrounded by crushed and broken ice, large indeed, but too sharp and jagged to trust a boat on; nor could any one have maintained a footing thereon, as every part was in motion. Hence, it was quite impossible to reach the land. Knowing this, and feeling acutely for the many beings entrusted to my charge, it may be conceived with what intense anxiety I listened to the crashing and grinding around. The strength of the ship, tried and shaken as it had already been, could hardly be expected to withstand the overwhelming power opposed to it, and what the result of that night might have been it is impossible to say and painful to contemplate, had not an overruling Providence mercifully averted the crisis by suddenly, and at the moment of greatest peril, arresting the tumult. In less time than it could be spoken, there was the stillness of death, and we were saved. The watch was called, the crew dismissed; and I trust that no one that night laid his head on his pillow without offering up a devout thanksgiving for the mercy which had been vouchsafed him."

It was not till the middle of July that the ship got free from her icy chains. As the advancing heat of summer, and the diligent use of the ice-saw separated large portions of the floe, the ship was discovered to be attached to a sunken iceberg, which, on rising, threw the ship on her beam ends, to the great dismay of all on board. This enormous encumbrance, however, was cut away, and the poor ship, admitting water from numerous leaks, was, with the utmost difficulty and exertion, prevented from sinking during her passage across the Atlantic.

LESSON CII.

THE ICEBERG.

'Twas night,—our anchor'd vessel slept out on the glassy sea;
And still as heaven the waters kept, and golden bright as he,
The setting sun, went sinking slow beneath th' eternal wave;
And the ocean seem'd a pall to throw over the monarch's grave.

There was no motion of the air to raise the sleeper's tress,
And no wave-building winds were there, on ocean's loveliness;
But ocean mingl'd with the sky with such an equal hue,
That vainly strove the 'wilder'd eye to part their gold and blue.

And ne'er a ripple of the sea came on our steady gaze,
Save when some timorous fish stole out to bathe in the woven blaze,—
When floating in the light that play'd all over the resting main,
He would sink beneath the wave, and dart to his deep blue home again.

Yet while we gaz'd, that sunny eve, across the twinkling deep,
A form came ploughing the golden wave, and rending its holy sleep;
It blush'd bright-red, while growing on our fix'd, half-fearful gaze;
But it wander'd down, with its glow of light, and its robe of sunny rays.

It seem'd like molten silver thrown together in floating flame;
And, as we look'd, we nam'd it then the fount whence all colours came:
There were rainbows furl'd with a careless grace, and the brightest red that glows;
The purple amethyst there had place, and the hues of a full-blown rose.

And the vivid green, as the sun-lit grass where the pleasant rain
hath been;
And the ideal-hues, that, thought-like, pass through the minds
of fanciful men;
They beam'd full clear,—and that form mov'd on, like one from
a burning grave;
And we dar'd not to think it a real thing, but for a rustling
wave.

The sun just linger'd in our view from the burning edge of ocean,
When by our bark that bright one pass'd with a deep disturbing motion;
The far-down waters shrank away, with a gurgling rush upheaving,
And the lifted waves grew pale and sad, their mother's bosom leaving.

Yet as it pass'd our bending stern, in its throne-like glory going,
It crush'd on a hidden rock and turn'd like an empire's overthrowing.
The uptorn waves roll'd hoar,—and, huge, the far-thrown undulations
Swell'd out in the sun's last ling'ring smile, and fell like battling nations.

LESSON CIII.

THE SUGAR CANE.

SUGAR is one of the most valuable vegetable substances with which civilised beings have become acquainted —so varied and extensive are its uses, and so greatly does it minister to the social gratifications of mankind.

The Sugar Cane must be considered as a native of China, since its cultivation was prosecuted in that empire for 2000 years before sugar was even known in Europe, and for a long period before other Eastern nations became acquainted with its use. For some time after this substance in its crystalline form had found its way to the westward, through India and Arabia, a singular degree of ignorance prevailed in regard to its nature and the mode of its production; and there is reason for believing that the Chinese, who have always evinced an unconquerable repugnance to foreign intercourse, purposely threw a veil of mystery over the subject. A knowledge of the origin of Cane Sugar was

correctly revealed in the middle of the thirteenth century, by the celebrated traveller, Marco Polo; though it was partially known much earlier. The plant was soon conveyed to Arabia, Nubia, Egypt, and Ethiopia, where it became extensively cultivated. Early in the 15th century the Sugar Cane first appeared in Europe. Sicily took the lead in its cultivation; thence it passed to Spain, Madeira, and the Canary Islands; and shortly after the discovery of the New World, by Columbus, this plant was conveyed to Hayti and Brazil, from which latter country it gradually spread to the islands of the West Indies. The canes have knotty stalks, and at each joint or knot a leaf is produced. The number of joints varies in different specimens, some having as many as 80, and others not half that number. The Sugar Cane varies exceedingly in its growth, depending on the nature of the soil. In new and moist land it sometimes attains the height of 20 feet. It is always propagated from cuttings. The planting of canes does not require to be renewed annually.

The hoeing of a cane-field is a most laborious operation, when performed as it must be under the rays of a tropical sun. Formerly this task was always effected by hand labour, but of late years where the nature of the ground will admit of the employment of a plough, that instrument has been substituted, to the mutual advantage of the planter and his labourers. When the canes are fully ripe they are cut close to the ground, and being then divided into convenient lengths, are tied up in bundles and conveyed to the mill. The canes on being passed twice between the cylinders of this mill, have all their juice expressed. This is collected in a cistern, and must be immediately placed under process by heat to prevent its becoming acid. A certain quantity of lime in powder is added at this time to promote the separation of the grosser matters contained in the juice: and these being, as far as possible, removed at a heat just sufficient to cause the impurities to collect on the surface, the cane liquor is then subjected to a very rapid boiling, in order to evaporate the watery particles, and bring the syrup to such a consistency that it will granulate on cooling. Upon an average, every 5 gallons imperial measure of cane-juice, will yield 6 pounds of crys-

tallized sugar, and will be obtained from about 110 well-grown canes.

When the sugar is sufficiently cooled in shallow trays, it is put into the hogsheads wherein it is shipped to Europe. These casks have their bottoms pierced with holes, and are placed upright over a large cistern into which the molasses—which is the portion of saccharine matter that will not crystallize—drains away, leaving the raw sugar in the state we see it in our grocers' shops. The casks are then filled up, headed down and shipped. The molasses which has drained from the sugar, together with all the scummings of the coppers, is collected, and, being first fermented, is distilled for the production of Rum.

LESSON CIV.

THE RICE PLANT.

How beautifully visible is the provident hand of the Creator in the manner in which the fruits of the earth are distributed over its surface; and how well adapted to the climate in which we live, is the food provided for our use! In the sultry regions between the tropics, where the scorching rays of the sun descend in an almost perpendicular direction, we find the animals calculated for the subsistence of mankind but few, and those widely spread, while, at the same time, the quality of their flesh is much inferior to that of the same description of animals which inhabit temperate climates. The celebrated traveller, Belzoni, when crossing the desert between Egypt and the Red Sea, found that the average weight of the sheep in that country did not exceed 15 pounds. It is well known that an abundance of animal food is in hot climates injurious to health, even to the natives themselves, but much more so to strangers; and for this reason, no doubt, the provision made by Providence has been sparingly distributed. The distribution of the different kinds of grain with which the earth is blessed, follows the same general rule; of this, rice is an instance. It is of a drier nature, and less subject to fermentation, than wheat or barley, and therefore more fitted for the food of the

inhabitants of hot countries. We may also instance maize or Indian corn, the qualities of which in some measure, resemble those of rice. The cultivation of rice occupies a large portion of the population of the East, particularly in China, India, and Sumatra; large quantities are also grown in Italy, Spain, and Piedmont, and in some parts of America, particularly South Carolina. The mode of culture varies considerably, according to the climate and local circumstances. The following is the method employed among the Chinese, who cultivate it to a very great extent in the midland and southern parts of their dominions, the low grounds of which are annually flooded by the Kiang and the Yellow rivers. These extensive inundations are occasioned by the heavy rains that fall near the sources of these rivers, which have their origin in the Himalayan chain of mountains. When the waters have receded, the earth is covered with a thick coating of slime and mud, which fertilizes the ground as perfectly as the richest manure. The ground is then carefully harrowed, and this operation is several times repeated until it is well worked. In the meantime the rice intended for seed has been soaked in water in which a quantity of manure has been stirred; this has forwarded its growth so much, that young plants appear above the ground in two days after they have been deposited in the earth. As soon as the young plants have reached the height of 9 or 7 inches, they are pulled up, the tops are cut off, the roots carefully washed, and the whole planted out in rows about a foot asunder. The first crop, for they obtain two in the course of the year, is harvested about May or June, and the second in October or November. The sickle employed for the purpose of reaping the rice is, like the European instrument, bent into the form of a hook; but the edge, instead of being smooth, is notched like that of a saw. The chief food of the Chinese consists of this useful grain, prepared in various ways. They

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Very extensive swamps are found in various parts of North America, where wild rice can be seen growing in its native luxuriance. Indeed, in Canada there is, in some localities, abundance of this grain, growing in a wild state; and one large lake (Rice Lake) received its name from the quantities of wild rice growing on its banks, which the Indians used to gather, by laying the stalks over the edges of their canoes, and then beating out the grain with wooden mallets.

use no spoons at their meals, and it is curious to notice the dexterity with which two small skewers called *chopsticks* are employed to jerk the rice into their mouths; a kind of wine is also prepared from the grain by fermentation. Formerly, rice used to be brought into England with the husk removed; but of late years, a manufactory for the purpose of cleaning the grain has been established in London, and it is found that, by being imported in the husk, it retains its flavour much better. In this state, it is sometimes called by the Sumatran name, *paddee*. The value of rice, as an article of food, can hardly be too highly estimated. In the East it is the chief dish of all orders of people, from the Sultan to the beggar.

LESSON CV.

THE FIREMAN.

Hoarse wintry blasts a solemn requiem sung
To the departed day, upon whose bier
The velvet pall of midnight had been flung,
And nature mourn'd through one wide hemisphere.
Silence and darkness held their cheerless sway,
Save in the haunts of riotous excess;
And half the world in dreamy slumbers lay,
Lost in the maze of sweet forgetfulness;
When lo! upon the startled ear
There broke a sound so dread and drear—
As like a sudden peal of thunder
Burst the bands of sleep asunder,
And fill'd a thousand throbbing hearts with fear.

Hark! the faithful watchman's cry
Speaks a conflagration nigh!
See! yon glare upon the sky,
Confirms the fearful tale.
The deep mouth'd bells, with rapid tone,
Combine to make the tidings known;
Affrighted silence now has flown,
And sounds of terror fright the chilly gale!

At the first note of this discordant din
The gallant fireman from his slumbers starts;
Reckless of toil and danger, if he win
The tributary meed of grateful hearts.

From pavement rough or frozen ground,
His engine's rattling wheels resound,
And soon before his eyes
The lurid flames with horrid glare,
Mingled with murky vapours rise
In wreathing folds upon the air
And veil the frowning skies.

Sudden a shriek assails his heart—
A female shriek so piercing wild,
As makes his very life-blood start:
"My child! oh save my child! my child!"
He hears,
And 'gainst the tottering wall
The ponderous ladder rears;
While blazing fragments round him fall,
And crackling sounds assail his ears.

His sinewy arm, with one rude crash,
Hurls to earth the opposing sash;
And heedless of the startling din—
Though smoky volumes round him roll,
The mother's shriek has pierc'd his soul,
See! see! he plunges in!
The admiring crowd with hopes and fears,
In breathless expectation stands,
When lo! the daring man appears
Hail'd by a burst of warm ecstatic cheers,
Bearing the child triumphant in his hands.

LESSON CVI.

THE MAHOGANY TREE.

This tree is one of the most elegant, if not the largest of the country in which it is found, and frequently grows in the crevices of rocks, and other places of the same description. The appearance of so large a vegetable production in such a situation is extremely curious and picturesque; and is to be accounted for from the construction of the seed, which is like that of the thistle, *winged*, or capable of being borne along by the action of the air, and in that manner deposited in holes and fissures in the rocks, where it speedily vegetates and springs up. As long as the plant remains young, the place in which it is found is sufficiently large for its growth, but as it increases in size, the roots

gradually, but irresistibly force asunder the walls of their rocky prisons, and throw off large portions of stone, thus by degrees penetrating into the very heart of the rock. It is not always, however, found in these situations, the largest timber being produced in some of the flat and marshy spots on the coasts of America; for this description is that known by the name of *Honduras mahogany*, which is much looser in texture, and of less value than that from the mountainous districts of Cuba and Hayti. This last kind is known in commerce as *Spanish mahogany*, and is chiefly purchased for the purpose of being cut into veneers. The introduction of this wood into England took place about the end of the 17th century, in the following manner. A London physician of the name of Gibbon had a brother the captain of a West India ship. On his return to England he had several logs of mahogany on board his vessel for the purpose of ballast, and, as his brother was at that time employed in a building project, he made him a present of the wood, supposing it might be useful; his carpenter, however, cast it aside, observing that it was of too hard a nature to be worked. Some time after, Mrs Gibbon being in want of a box to hold candles, the cabinet maker was directed to make it of this same wood; he, in his turn, made the same objection as the carpenter, and declared that it destroyed his tools. Being urged, however, to make another trial, he at length succeeded; and when the box was polished, the beautiful colour of its grain was so apparent and novel, that it became an object of great curiosity, and attracted the notice, among others, of the Duchess of Buckingham, for whom a bureau was made of the same material. Before this time it had been used partially in the West Indies for shipbuilding; but this new discovery of its beauty soon brought it into general use in the making of furniture. The chief supply, at the time we speak of, came from the Island of Jamaica, and the wood exported was of the finest description; but since then, the constant demand has nearly exhausted the island, and it is now, as we have already said, chiefly brought from the Spanish main, and several of the larger West India Islands. There is a species of mahogany in the East Indies, which grows to a much larger size

than the American tree, it is also much heavier, but the colour of the wood is of a dirty red.

LESSON CVII.

COCOA-NUT AND TREE.

One of the most bountiful provisions made by the Creator for the inhabitants of the Torrid Zone, is certainly the cocoa-nut tree; and no where is it found in greater abundance and perfection than in India. It grows in a stately column, from 30 to 50 feet in height, crowned by waving branches, covered by long spiral leaves; under this foliage, bunches of blossoms, clusters of green fruit, and others arrived at maturity, appear in mingled beauty. The trunk furnishes beams and rafters for habitations; and the leaves, when plaited together, make excellent thatch, common umbrellas, coarse mats for the floor, and brooms. The covering of the young fruit is extremely curious, resembling a piece of thick cloth; it expands after the fruit has burst through its enclosure; and then appears of a coarser texture. The nuts contain a delicious milk, and kernels sweet as the almond; these, when dried, afford abundance of oil; and, when that is expressed, the remains feed cattle and poultry, and make good manure. The shell of the nut furnishes cups and other domestic utensils, while the husk which encloses it, is of the greatest use; it is manufactured into ropes and cordage of every kind, from the smallest twine to the largest cable, which are far more durable than those of hemp. In the Nicobar Islands, the natives build their vessels, make their sails and cordage, supply them with provisions and necessaries, and provide a cargo of arrack, vinegar, oil, coarse sugar, cocoa-nuts, cordage, black paint, and several inferior articles, for foreign markets, entirely from this tree.

LESSON CVIII.

THE TEA-TREE.

The history of commerce does not perhaps present a parallel to the circumstances which have attended the introduction of tea into Great Britain. This leaf was first imported into Europe by the Dutch East India Company, in the early part of the 17th century; but it was not until the year 1666, that a small quantity was brought over from Holland to England by Lords Arlington and Ossory. The tea plant is a native of China or Japan, and probably of both. It has been used among the natives of the former country from time immemorial. It is only in a particular tract of the Chinese empire that the plant is cultivated; and this tract, which is situated on the eastern side, between the 30th and 33rd degrees of north latitude, is distinguished by the natives as "The Tea Country." The more northern part of China would be too cold; and farther south the heat would be too great. There are, however, a few small plantations to be seen near to Canton.

The Chinese give to the plant the name of *tcha* or *tha*. It is propagated by them from seeds, which are deposited in rows 4 to 5 feet asunder; and so uncertain is their vegetation, even in their native climate, that it is found necessary to sow as many as 7 or 8 seeds in every hole. The ground between each row is always kept free from weeds, and the plants are not allowed to attain a higher growth than admits of the leaves being conveniently gathered. The first crop of leaves is not collected until the third year after sowing; and when the trees are 6 or 7 years old, the produce becomes so inferior that they are removed to make room for a fresh succession. The flowers of the tea-tree are white, and somewhat resemble the wild rose in our marshes; these flowers are succeeded by soft green berries or pods, containing each from 1 to 3 white seeds. The leaves are gathered from 1 to 4 times during the year, according to the age of the trees. Most commonly there are 3 periods of gathering; the first commences

about the middle of April; the second at Midsummer, and the last is accomplished during August and September. The leaves that are earliest gathered are of the most delicate colour and aromatic flavour, with the least portion of either fibre or bitterness. Leaves of the second gathering are of a dull green colour, and have less valuable qualities than the former; while those which are last collected are of a dark green, and possess an inferior value. The leaves, as soon as gathered, are put into wide shallow baskets, and placed in the air or wind, or sunshine during some hours. They are then put on a flat cast-iron pan, over a stove heated with charcoal, from a half to three quarters of a pound of leaves being operated on at one time. These leaves are stirred quickly about with a kind of brush, and are then as quickly swept off the pan into baskets. The next process is that of rolling, which is effected by carefully rubbing them between men's hands; after which they are again put in larger quantities on the pan, and subjected anew to heat; but at this time to a lower degree than at first, and just sufficient to dry them effectually without risk of scorching. The tea is then placed on a table, and carefully picked over, every unsightly or imperfectly dried leaf that is detected being removed, in order that the sample may present a better appearance when offered for sale. The names by which some of the principal sorts of tea are known in China are taken from the places in which they are produced, while others are distinguished according to the periods of their gathering, the manner employed in curing, or other extrinsic circumstances. It is a commonly received opinion, that the distinctive colour of green tea is imparted to it by sheets of copper, upon which it is dried. For this belief there is not, however, the smallest foundation in fact, since copper is never used for the purpose. Repeated experiments have been made to discover, by an unerring test, whether the leaves of green tea contain any inpregnation of copper, but in no case has any trace of this metal been detected. The Chinese do not use their tea until it is about a year old, considering it too actively narcotic when new. They drink the infusion prepared in the same manner as we do, but they do not mix it with either sugar or milk.

LESSON CIX.

THE COFFEE-TREE.

Coffee is the seed contained in a berry, the produce of a moderately-sized tree called the *Coffeo Arabica.* This tree grows erect with a single stem, to the height of from 8 to 12 feet, and has long, undivided, slender branches, bending downward; these are furnished with evergreen leaves, not unlike those of the bay-tree. The blossoms are white, sitting on short foot-stalks, and resembling the flower of the jasmine. The fruit which succeeds is a red berry, resembling a cherry, and having a pale, insipid and somewhat glutinous pulp, enclosing two hard oval seeds, each about the size of an ordinary pea. One side of the seed is convex, while the other is flat, and has a little straight furrow inscribed through its longest dimension: while growing, the flat sides of the seeds are towards each other. The trees begin bearing when they are two years old; in their third year they are in full bearing. The aspect of a coffee plantation during the period of flowering, which does not last longer than one or two days, is very interesting. In one night the blossoms expand themselves so profusely as to present the same appearance which has sometimes been witnessed in this country, when a casual snow-storm at the close of Autumn has loaded the trees while still furnished with their full complement of foliage. The seeds are known to be ripe, when the berries assume a dark red colour, and if not then gathered will drop from the trees. The planters in Arabia do not pluck the fruit, but place cloths for its reception, beneath the trees, which they shake, and the ripened berries drop readily. These are afterwards spread upon mats and exposed to the sun's rays until perfectly dry, when the husk is broken with large heavy rollers of wood or stone. The coffee thus cleared of its husk is again dried thoroughly in the sun, that it may not be liable to heat when packed for shipment. The use of coffee as an alimentary infusion was known in Arabia at an early period. It was first introduced by Megalleddin, Mufti of Aden, in Arabia Felix, who had become acquainted with it in Persia, and had recourse to it medicinally when he returned to his own

country. The progress which it made was by no means rapid at first, and it was not until the year 1554, that coffee was publicly sold at Constantinople. Coffee houses date their origin in London from the year 1652; the first was opened by one Pasqua, a Greek, who was brought over by a Turkey merchant named Edwards.

The roasting of coffee is a process which requires some nicety: if burned, much of the fine aromatic flavour will be destroyed, and a disagreeable bitter taste substituted. The roasting is now usually performed in a cylindrical vessel, which is continually turned upon its axis over the fire-place, in order to prevent the too great heating of any one part, and to accomplish the continual shifting of its contents. Coffee should never be kept for any length of time after it has been roasted, and should never be ground until it is required for infusion, as some portion of its fine flavour will be dissipated. The quantity of coffee consumed in Europe is very great,—Humboldt estimated it at 120,000,000 lbs., about one-fourth of which is consumed in France. Since that time a vast increase has been experienced in the use of coffee in Great Britain, the public taste growing more and more favourable to its consumption.

LESSON CX.

THE OCEAN.

Perhaps no scene, or situation, is so intensely gratifying to the naturalist as the shore of the ocean. The productions of the latter element are innumerable, and the majesty of the mighty waters lends an interest unknown to an inland landscape. The loneliness too of the sea-shore is much cheered by the constant changes arising from the ebb and flow of the tide, and the undulations of the water's surface, sometimes rolling like mountains, and again scarcely murmuring on the beach. As you gather there,

"Each flower of the rock and each gem of the billow,"

you may feel with the poet, that there are joys in solitude, and that there are pleasures to be found in the investigation of Nature of the most powerful and pleasing influence.

" There is a pleasure in the pathless woods;
There is a rapture on the lonely shore;
There is society where none intrudes
By the deep sea, and music in its roar."

But nothing can be more beautiful than a view of the bottom of the Ocean during a calm, even round our own shores, but particularly in *tropical* climates, especially when it consists alternately of beds of sand and masses of rock. The water is frequently so clear, undisturbed, that at great depths, the minutest objects are visible; groves of coral are seen expanding their variously-coloured clumps, some rigid and immoveable, and others waving gracefully their flexile branches. Shells of every form and hue glide slowly along the stones, or cling to the coral boughs like fruit; crabs and other marine animals pursue their prey in the crannies of the rocks, and sea-plants spread their limber leaves in gay and gaudy irregularity, while the most beautiful fishes are on every side sporting around.

In the beautiful language of Percival, an American poet—

" The floor is of sand, like the mountain-drift,
And the pearl-shells spangle the flinty snow;
From coral rocks the sea-plants lift
Their boughs, where the tides and billows flow,
The water is calm and still below,
For the winds and waves are absent there;
And the sands are bright as the stars that glow
In the motionless fields of the upper air:
There, with its waving blade of green,
The sea-flag streams through the silent water,
And the crimson leaf of the dulse is seen
To blush like a banner bath'd in slaughter;
There with a light and easy motion
The fan-coral sweeps through the clear deep sea,
And the yellow and scarlet tufts of ocean
Are bending like corn on the upland lea;
And life in rare and beautiful forms
Is sporting amid those bowers of stone,
And is safe when the wrathful spirit of storms
Has made the top of the waves his own:

And when the ship from his fury flies
Where the myriad voice of ocean roar,
When the wind-god frowns in the murky skies,
And demons are waiting the wreck on shore,
Then far below in the peaceful sea
The purple mullet and gold-fish rove,
Where the waters murmur tranquilly
Through the bending twigs of the coral-grove."

LESSON CXI.

NATURAL HISTORY IN ITS EDUCATIO AL ASPECTS.

Art takes her true place when she sits at the feet of Nature, and brings her students to drink in its beauties, that they may endeavour, however imperfectly, to reproduce them. On the other hand, the Naturalist must not content himself with "Writing Latin names on white paper," wherewith to label Nature's productions, but must rise to the contemplation of the order and beauty of the Kosmos. Both will thus rise to that highest taste, which will enable them to appreciate not only the elegance of individual forms, but their structure, their harmonies, their grouping and their relations, their special adaptation and their places as parts of a great system. Thus art will attain that highest point in which it displays original genius, without violating natural truth and unity, and Nature will be regarded as the highest art. Much is said and done in our time, with reference to the cultivation of popular taste for fine art, and this so far as it goes is well; but if the above views are correct, the only sure path to success in art education, is the cultivation of the study of Nature. This is also an easier branch of education, provided the instructors have sufficient knowledge. Good works of art are rare and costly; but good works of Nature are everywhere around us, waiting to be examined. Such education, popularly diffused, would react on the efforts of art. It would enable a widely extended public to appreciate real excellence, and would cause works of art to be valued just in proportion

to the extent to which they realise or deviate from natural truth and unity.

Natural history rising from the collection of individual facts to such large views, does not content itself with merely managing the objects of Nature. A naturalist is not merely a man who knows hard names for many common or uncommon things, or who collects rare and curious objects, and can tell something of their habits and structures. His studies lead him to grand generalizations, even to the consideration, in part at least, of the plans that from eternity existed in the Infinite Mind, and guided the evolution of material things. Natural History thus rises to the highest ground occupied by her sister sciences, and gives a mental training which in grandeur cannot be surpassed, inasmuch as it leads her pupils as near as man may approach, to those counsels of the Almighty in the material universe which are connected, at least by broad analogies, with our own moral and religious interests.

It follows from the preceding views, that the study of Nature forms a good training for the rational enjoyment of life. How much of positive pleasure does that man lose who passes through life absorbed with its wants and its artificialities, and regarding with a "brute, unconscious gaze," the grand revelation of a higher intelligence in the outer world. It is only in an approximation through our Divine Redeemer to the moral likeness of God, that we can be truly happy; but of the subsidiary pleasures which we are here permitted to enjoy, the contemplation of Nature is one of the best and purest. It was the pleasure, the show, the spectacle prepared for man in Eden, and how much true philosophy and taste shine in the simple words, that in that paradise, God planted trees "pleasant to the sight," as well as "good for food;" and, other things being equal, the nearer we can return to this primitive taste, the greater will be our sensuous enjoyment, the better the influence of our pleasures on our moral nature, because they will then depend on the cultivation of tastes at once natural and harmless, and will not lead us to communion with, and reverence for merely human genius, but will conduct us into the presence of the infinite perfection of the Creator.

LESSON CXII.

TRIUMPHS OF THE ENGLISH LANGUAGE.

Now gather all our Saxon bards, let harps and hearts be strung,
To celebrate the triumphs of our own good Saxon tongue;
For, stronger far than hosts that march, with battle flags unfurl'd,
It goes with FREEDOM, THOUGHT and TRUTH, to rouse and rule the world.

Stout Albion learns its household lays on every surf-worn shore,
And Scotland hears its echoing, far as Orkney's breakers roar;
From Jura's crags, and Mona's hills, it floats on every gale,
And warms with eloquence and song, the homes of Innisfil.

On many a wide and swarming deck it scales the rough wave's crest,
Seeking its peerless heritage—the fresh and fruitful West;
It climbs New-England's forest steeps, as Victor mounts a throne;
Niagara knows and greets the voice still mightier than its own.

It spreads where Winter piles deep snows, on bleak Canadian plains,
And where on Essequibo's banks, eternal Summer reigns;
It glads Acadia's misty coasts, Jamaica's glowing isle,
And bides where, gay with early flowers, green Texan prairies smile.

It lives by clear Itasca's lake, Missouri's turbid stream,
Where cedars rise on wild Ozark and Kansas' waters gleam:
It tracks the loud swift Oregon, through sunset valleys roll'd,
And soars where Californian brooks wash down their sands of gold.

It sounds in Borneo's camphor groves, on seas of fierce Malay,
In fields that curb old Ganges' flood, and towers of proud Bombay;
It wakes up Aden's flashing eyes, dusk brows and swarthy limbs;
The dark Liberian soothes her child with English cradle-hymns.

Tasmania's maids are woo'd and won in gentle Saxon speech;
Australian boys read Crusoe's life by Sidney's shelter'd beach;
It dwells where Afric's southmost capes meet oceans broad and blue,
And Nieuveld's rugged mountains gird the wild and waste Karroo.

It kindles realms so far apart, that while its praise you sing,
These may be clad with Autumn's fruits, and those with flowers of Spring;
It quickens lands whose meteor lights flame in an Arctic sky,
And lands for which the Southern Cross hangs its orb'd fires on high.

It goes with all that prophets told, and righteous kings desir'd,
With all that great apostles taught, and glorious Greeks admir'd;
With Shakspeare's deep and wondrous verse, and Milton's lofty mind;
With Alfred's laws and Newton's lore, to cheer and bless mankind.

Mark as it spreads, how deserts bloom, and error flees away,
As vanishes the mist of night before the star of day;
But, grand as are the victories whose monuments we see,
These are but as the dawn which speaks of noontide yet to be.

Take heed, then, heirs of Saxon fame; take heed, nor once disgrace
With deadly pen or spoiling sword, our noble tongue and race;
Go forth prepar'd, in every clime, to love and help each other,
And judge that they who counsel strife would bid you smite—a brother.

Go forth, and jointly speed the time, by good men pray'd for long,
When Christian States, grown just and wise, will scorn revenge and wrong;
When earth's oppress'd and savage tribes shall cease to pine or roam,
All taught to prize these English words—FAITH, FREEDOM, HEAVEN and HOME.

A GLOSSARY OF THE MOST DIFFICULT WORDS AND PHRASES FOUND IN THE VARIOUS LESSONS OF THE READER, ARRANGED ALPHABETICALLY FOR THE SAKE OF CONVENIENCE.

A.

Abacus—A flat table of stone—the upper part of a column.
Aborigines—The first inhabitants of a country.
Adieu—Literally signifies "to God"—used when parting with any one.
Aerial—Of or belonging to the air.
Affluent—A river flowing into another—wealthy, abundant.
Agate—A precious stone.
Agni Dei—Small images of a lamb with a cross—to represent Jesus as "The Lamb of God."
Akin—like.
Alabaster—A stone—a species of gypsum.
Alimentary—Nourishing—belonging to food.
Alkaline—Having the properties of alkali.
Alluvium—Matter consisting of a mass of substances collected by the action of water.
Alpine—belonging to the Alps.
Amethyst—A precious stone—so called from a Greek word—which stone the ancients supposed gave to its wearer certain virtues against being intoxicated.
Amphibious—Living both on land and in water, the beaver, otter, muskrat and seal are examples.
Ammunition—Powder and shot required by soldiers.
Anchor—That which holds the vessel at rest in water.
Anemone—Wind-flower, a genus of plants.
Annals—Events of history recorded chronologically under their respective year.
Apologist—One who speaks or writes in defence of another.
Aqueduct—A bridge for conveying water across valleys.
Aquatic—Of or belonging to water.
Arenaceous—Belonging to sand; sandy.
Aridity—Dry, barren, sterile.
Aromatic—Of a sweet smell.
Arrack—The name of spirituous liquors in India.
Artillery—Soldiers who manage cannon—or the cannon and guns themselves.
Asbestos—A species of talc called also ameanthus.
Asphalt—A kind of pitch.
Atheist—One who denies the existence of God.
Atrocious—very wicked—or bad.
Attorney—One who pleads for another in a court of justice—so called because anciently a champion did justice for the condemned at the tourney or tournament.
Auriferous—producing gold.

B.

Balcony—A platform placed before windows.
Balides—Another name for the Northern lights, from the Greek verb to dance because they appear to move or dance in the Heavens.
Balsam—An oily, resinous substance flowing from certain trees.
Bandage—A roller of cloth for binding up wounds.
Bandits—Robbers found in Italy—Plural banditti.
Barbarian—A savage—properly one who wore a long, unshaven beard, from *barba* a beard.
Barracks—The place where the soldiers live—a word of modern French origin.
Barytes—Heavy spar—a species of stone.
Basalt—A rock formed by the action of fire—Fingal's Cave and the Giant's Causeway are examples of this kind of rock.
Battery—Something thrown up to cover artillery when firing.
Beetling—Jutting out—projecting.
Belfry—That part of the steeple of a Church where the bell is hung.

Belle—A smartly dressed female—from the French, Mas. beau, Fem. belle.

Bier—A carriage for the dead.

Blanket—Something for the bed. It was so called from Thomas Blanket, who first wove such a covering and called it by his own name.

Blenching—Making or causing to shrink or give way.

Blockade—Shutting up a place by surrounding it with hostile troops—a siege.

Boatswain—Pronounced (bosn)—the officer on board ship who has charge of the rigging, sails, and boats, and calls the men to work.

Bordage—The outer rim or border of land—the brink or margin.

Bosky — Woody — covered with thickets.

Botanist—One who studies botany or the science of flowers.

Bras d'or—Signifies "the arm of Gold"—so called from the large quantity of fish taken there—the sale of which is as valuable to the inhabitants as "gold diggings."

Brash—Brittle, applied to the polar ice in spring.

Brocade—A silk stuff, variegated with raised gold or silver flowers.

Bryozoa—Inhabitants of the sea.

Buoyancy—The quality of floating on the surface of water.

Buoy—Something to show shallow water or rocks—a float or mark.

Buttress—A prop—a wall built like an arch.

C.

Cabal—A junto—intrigue, plot, conspiracy. This name was given to the ministry of Charles II, Clifford, Ashley, Buckingham, Arlington, and Lauderdale—the initials of whose names formed the word.

Cairn—A heap of stone raised like a cone.

Caitiffs—Bad people—vagabonds.

Caloric—heat.

Canker—A disease that eats away the skin and flesh.

Cannister—A small tin box for holding any thing.

Capillary—Like hair—small tubes like those of the hair.

Carnival—A great festival celebrated with revelry in Roman Catholic countries during the week before Lent.

Castor—A beaver—or the fat found on the animal.

Cathedral—The principal Church in a Diocese.

Cauldron—A large kettle or boiler.

Cauliflower—A kind of cabbage—literally signifying the flower of cabbage.

Causeway—A road laid regularly with large stones.

Cavalcade—A procession of persons on horseback.

Chandelier—A branch candlestick hung from the roof.

Chanter—One who chants or sings.

Chasm—A deep fissure or cleft between rocks.

Chaudiere—The name of one of the Falls on the Ottawa.

Chert—A kind of quartz or flint.

Chintz—Cotton cloth printed with flowers, &c.

Chitons—Sea productions.

Chromium—A whitish metal remarkable for the beauty of its preparations.

Citron—A fruit tree.

Climax—The height of any thing in speech or rhetoric.

Cobalt—A metal of a reddish-gray colour.

Cocoa—A fruit or nut of the tree of the same name; the following puzzle is applied to this word.

"A semicircle and a circle,
The same again repeat,
An isosceles triangle
Standing on its feet."

Confluence — Where two rivers meet.

Congeries—A collection of several particles into an aggregate or whole.

Conglomerate—Gathered into a ball or mixed up.

Convex—Opposite of concave—gibbous.

Corneous—Full of horny substance.

Corse—A dead body.

Countrydance—A kind of dance not because it is only danced in the country, but because it comes from two French words Contre danse—a dance where the performers stand opposite to each other, and thus mispronounced.

Coureurs de Bois—Runners into or of the woods.

Crepuscular—Pertaining to twilight glimmering.

Crescent—A half moon—the badge of Mahometans.
Criterion—A rule of judging any thing.
Critical—Making nice distinctions.
Crystalize—To form into crystals.
Cul-de-Sac—Literally the bottom of the bag—figuratively a street not open at both ends.
Cupola—The dome on the top of a house.
Curves—A bending without angles.

D.

Dairy—A place where they keep cows and make butter and cheese.
Dams—The Mothers of animals.
Deciduous—Falling, not lasting long.
Decoction—A boiling—or extraction.
Decrepit—Wasted by old age.
Deluge—A great fall of rain.
Demons—Devils or evil spirits.
Depôt—A place for leaving or depositing goods, &c.
Diabolical—Like devils—devilish.
Dike—A fence made of stones—or peat moss.
Dolomite—A kind of carbonate of lime—much of the common white marble is dolomite.

E.

Echini—Sea-urchins—a production of the sea.
Echo—A sound returned—a repercussion of sound.
Economic—Frugal—saving—thrifty—careful.
Effluvia—Noxious or bad exhalations from dead and putrefying bodies.
Electricity—Lightning—a fluid called the electric fluid—first seen by rubbing, hence the word.
Embargo—A duty laid on cargo or ships.
Electron—Greek for amber.
Emigrants—People who remove from one country to another.
Emphatically—with emphasis, strongly, forcibly.
Enfant du Diable—Child of the devil—a name applied to the skunk.
Entablature—That part of a pillar or column that is over the capital.
Enthusiasm—With all the spirit—heat of imagination.
Entrepôt—A warehouse for the deposit of goods—applied in France the same as our custom house.
Equinox—Equal day and night—happening twice a year, on the 21st of March and 23rd of September.
Estuaries—Arms of the sea, firths or friths.
Eulogium } Praise—applause—pane-
Eulogy } gyric.
Exasperated—Made very angry—much irritated.
Excrescence—Something growing out—a wart or tumour.
Excruciating—Torturing, tormenting, extremely painful;—from the idea of the suffering of the *crux* or cross comes this word.
Extraneous—Foreign, belonging to another kind or species.

F.

Fagot—A bundle of sticks.
Fasicle—A cluster of flowers whose footstalks spring from several points at the top of the main stem.
Fealty—Fidelity to a lord.
Fen—A bog or marsh.
Feldspar—A species of rock.
Ferruginous—Partaking of iron.
Fetid—Stinking or putrid.
Fiat—Decree or order.
Finale—The end—the finish.
Flambeaux—Torches—lighted branches of wood.
Flibbertigibbet—An English slang word signifying an imp—or restless person.
Floes—A large mass of floating ice in the ocean.
Fluted—Channeled—furrowed.
Foraminifera—Very minute shells.
Fountainebleau—The name of a place near Paris, called so from a celebrated dog Bleau who discovered the fountain when lost from his master's pack.
Friable—Easily crumbled or pulverized.
Funnel—An instrument for pouring liquors from one cask or bottle to another.
Fuzé—A tube filled with combustible matter used for firing cannon—blasting stones, &c.

G.

Gait—Walk—going.

Gaspé—Signifies Land's-end.
Germination—Budding.
Geyser—The cauldron or boiling spring.
Glacier—A large field of ice.
Gloamin—Twilight—between the going down of the sun and dark.
Gluten—The tough substance found in wheat, &c.
Glutton—An immoderate eater—a wild beast.
Gnarled—Knotty, full of knots.
Gneissoid—Having the character of the rock gneiss.
Gnomes—An imaginary being supposed to inhabit the inner parts of the earth.
Granitic—Like granite.
Granular—Consisting or resembling grains.
Grotesque—Funny, curious, queer.
Grub—A worm.
Gunwale—Part of the side of a ship.
Gurgling—Running or flowing with a purling sound.
Gypsum—Plaster of Paris, a soft stone ground down for a manure, &c.
Gyrations—Whirlings round.

H.

Habitant—A Lower Canadian farmer.
Habitat—The lair of a wild beast.
Harpoon—The instrument used for striking whales.
Hawsers—Small ropes or cables on board ships.
Heroism—Brave deeds.
Hexagonal—Six sided.
Hideous—Horribly ugly.
Horizon—That part of the heaven which appears to meet the earth.
Hubbub—Noise, confusion.
Hammock—The bed of a sailor on board ship.
Hurricane—A tempest or tornado.
Hyacinth—A flower, also a stone.
Hybrated—Mongrel, produced from the mixture of two species.
Hydraulic—Pertaining to fluids in motion.
Hyperstimulating—Something over and above common stimulating.

I.

Imbricated—Hollowed like a roof tile.
Incisors—Fore-teeth.
Infusiorial—Very small animals seen in water, &c., by the microscope.
Irreparable—Cannot be repaired.
Isothermal—Having an equal degree of heat.
Isthmus—A narrow neck of land joining two larger.

J.

Jasmine—A beautiful flower.
Jet—A species of black substance found in coal beds.
Judicious—According to sound judgment.

K

Kaleidoscope—An optical instrument, which by the arrangement of reflecting surfaces, shows a beautiful variety of colours.
Kedge—A small anchor.
Keel—The principal timber of a ship extending from stem to stern.
Kinches—Boxes into which the fish are placed after being taken and cured.
Knell—The sound of a bell rung at a funeral.
Knob—A hard swelling, or round ball at the end of any thing.
Knolled—Rung or tolled as a bell.
Knots—Ties, bunches, groups; in nautical or sea language it means miles.

L.

Labradorite—A beautiful spar stone from Labrador.
Lair—The place where a wild animal lies down, its den or habitat.
Lapsis—Lazuli—a precious stone.
Larders—Places where provisions are kept; pantries.
Lassoes—Ropes with nooses at the end for catching wild animals.
Latent—Hid, that cannot be discovered.
Leak—A hole in a boat or ship, crack, fissure.
Lease—Term of keeping a house or farm.
Leda—A shell found on the sea shore.
"L'été St. Martin, de soir au matin"—"The summer of St. Martin, from evening to morn'g."
Lever—An iron rod for raising articles or heavy weights.
Lichens—Mosses growing on stones and trees.

Limber — Supple, pliant, elastic, springy.
Lithographer—A man who engraves on stone.
Litter — Straw bed — number of young of an animal.
Lore—Long ago, of ancient time.
Lozenge—A shape or figure with four equal sides, having two acute and two obtuse angles.
Ludicrous—Funny, laughable.
Luscious—Sweet, full of juice.
Lyre—A musical instrument.

M.

Margin—The edge or brink.
Marine—Of or belonging to the sea.
Marl—A kind of small gravel.
Marmot—A small animal.
Maskalongé—A large fish found in Canadian waters.
Maze—A labyrinth or many passages.
Maize—Indian corn.
Meads—Meadows or parterres.
Meteor—A light in the heavens.
Minus—Less, sign in subtraction.
Miscreant—A very wicked person.
Mocassin—An Indian shoe.
Molten—Melted.
Monopoly—Having the entire receipts of any business.
Monotony—All of the same tone or key.
Montreal—The Royal Mount, called so by the first French explorers.
Moufle—The upper lip of the Moose Deer.
Mullet—A fish.
Munificent—Very great, generous.
Murky—Dark, dismal.
Muscle—A small edible shell fish.
Myà—A shell fish in Canadian waters.
Myriad—Literally 10,000; a great multitude.
Mysterious—Very strange or wonderful.

N.

Naphtha—A very inflammable substance which oozes out from the ground in various parts of Asia.
Narcotic—Causing sleep.
Nectar—A sweet and pleasant drink, supposed in ancient mythology to be the drink of the gods.
Niagara—Means "The Thunder of Waters," the great fall of Canada.
Nomenclature — Vocabulary, the names of things in any art.
Notch—A neck or cut in trees.
Nugatory—Trifling, vain, futile, or insignificant.

O.

Obliterated—Rubbed out.
Ochre—A kind of soft stone used for paint.
Omen—A sign of some future event.
Omniscient—Knowing all things.
Oozing—Trickling out or down.
Oratory—Good or fine speaking.
Ordeal—A severe trial.
Oriental—Of or belonging to the east.
Osier—A twig of the willow tree.
Oxygen—A gas, a component part of water and air.

P.

Paddee—Fields of rice.
Panorama—A large movable picture.
Papoose—Indian infant or child.
Paradise—Heaven, the place of bliss.
Parallelogram—A four-sided figure whose opposite sides are equal and parallel.
Parterre—A green smooth meadow or bank.
Pateras—Part of a column or monument.
Peltries—Skins, bundle of skins.
Permeates—Trickles through, soaks in.
Peroxide—The oxyde of a certain base which contains the greatest quantity of oxygen.
Petroleum—Rock oil, liquid bitumen.
Phalanx—A body of men in close array.
Phantom—A ghost or banshee.
Phasmata—Phantoms or apparitions.
Phenomenon—Something strange or uncommon.
Phlegm—Cold animal fluid or humour, watery matter.
Phosphate—A salt formed by combination.
Picturesque—Like a picture, beautiful scenery.
Piers—Wharves.
Pigmy—Very small, extremely little.
Pincers—Articles for holding by.
Pinnace—A small boat.

Piping—Singing loud.
Pivot—The point on which anything is turned round.
Plinth—The foundation of a column or pedestal.
Plumbago—A species of lead for making pencils.
Pottery—Made of clay, crockery.
Prairies—Plains, savannas, steppes.
Premature—Before its time, not ripe.
Pseudo—Not true, false.
Pumpkin—A large fruit, familiar to the inhabitants of this Continent.
Pyre—A funeral pile.
Pyrites—Ore of iron or copper of a particular kind.

Q.

Quadrupled—Four times doubled.
Quarries—Places where stones are taken from.
Quartz—A kind of stone.
Quay—A wharf where ships discharge cargo or load.
Quebeis—The Indian name for Quebec.
Quiver—Where the arrows are kept previous to shooting.

R.

Rackets—Snow shoes.
Reanimate—To cheer up, to encourage.
Reconnoitre—To look out for.
Refuge—A place to flee to for safety.
Regime—Government administration.
Requiem—A song for the dead.
Reservoir—A pond for water.
Resinous—Full of gum or resin.
Retrograde—A going backward.
Revêtement—A strong wall on the outside of a rampart.
Rhombic—Like a rhomb, a lozenge shape is rhombic.
Rideau—Signifies a curtain; a Canadian waterfall.
Ripples—Small waves.
Risibility—Laughter.
Rorqual—A species of whale.
Russet—A colour, a reddish-brown.

S.

Sachems—The learned among the Indians.
Saffron—A flower.
Salaretus—A mineral substance.
Sarcophagi—Tombs or monumental tombs.
Sassafras—A plant of America.
Sault—Pronounced So, a big leap.
Sauvages d'Ecosse—Savages of Scotland.
Savannas—Level plains or prairies.
Savour—Taste, reputation, character.
Scalps—The hair and skin cut off the top of the head.
Scowl—To frown or look back.
Sculking—Lurking like the Indian.
Scum—A film which rises to the top of a kettle or pot.
Scurvy—A disease to which sailors are subject.
Semicircular—Half round.
Serpentine—Like a serpent.
Servile—Slavish.
Shad—A fish found in Canadian waters.
Shales—Fine grained rock of slate character.
Shieling—Cottage or hut in the Highlands of Scotland.
Shube—A kind of cloak worn on the Continent of Europe
Silicious—Flinty, full of flint.
Skipper—The master of a small sailing vessel.
Skirmish—A fight between outposts or the advance guards of two armies.
Sludge—Rotten, broken ice.
Snags—Trees sunk in rivers and pointing up with one end.
Soubriquet—Title, name, epithet.
Spangle—Brilliant or sparkling.
Spherule—A small sphere or globe.
Sponsors—Sureties, those who bind themselves to answer for another; a godfather and godmother.
Sponge—A porous marine substance.
Spout—A pipe.
Stellar—Full of stars, starry.
Stripe—A long narrow slip.
Subglacial—Under the ice.
Subsidence—A lessening or going down.
Subterraneous—Under the earth.
Sulphate—A salt formed by sulphuric acid.
Sulphuret—A combination of sulphur with a base.
Sultan—Emperor of Turkey.
Surf—The foam of the Ocean.
Surplus—Over and above, more.

T.

Tar—A gum or resinous substance made from the pine.

Teems—Abounds in, is abundant.
Terminal—Of or belonging to the end.
Tiller—A rudder or helper.
Tint—A hue, a color.
Titaniferous—Of or belonging to iron.
Toboggins — Long Indian hand sleighs.
Tornback — Joined generally with the adjective grey, and called tornback grey, a colour.
Toronto — Means "The Place of Meeting."
Torpor—State of sleep.
Trabes—A name for the Northern Lights, because they appear like huge beams or pillars.
Traffic—Trade or business.
Tragical—Dreadful.
Traps—Gins, snares.
Trapper—A hunter for wild animals.
Tripoli—A kind of clay first found in Tripoli, Africa.
Trivial—Small, of no consequence.
Trophies—Someting preserved as a mark of victory.
Tropical—Belonging to the equatorial or warm regions of the world.
Trough—A hollow vessel, or wood excavated for holding liquors.
Truncated — Cut off, cut short, maimed.
Tub — An open wooden vessel formed with staves and hoops.
Turpitude — Baseness, shameful wickedness.

U.

Umbrella—Literally something for giving a shade.
Uranium — A metal discovered in 1789, and also called *pitchblende*.

V.

Veneers — Thin slices of wood to overlay other wood.
Veneration — The highest degree of respect and reverence.
Venison—The flesh of the deer or hare.
Villa—A house without the city limits.
Vindictive—Spiteful, revengeful.
Vitriol—A soluble sulphate of the metals.
Vociferation — Calling out very loudly.
Volunteers—Soldiers of their own free will.
Voyageurs—Travellers, men who long ago rowed up the rivers and lakes for peltries.

W.

Wampum — Small beads made of colored shells, and strung on a belt, hence the wampum belt.
Wanton—Cruel, blood-thirsty.
Whimsies—Vagaries, fancies.
Wigwam—An Indian hut.

Y.

Yarn—Spun wool, woollen thread.
Yell — A loud, sharp, or hideous outcry.

Z.

Zenith—That part of the heaven directly over head.
Zephyr—A gentle breeze or wind.
Zigzag—Not straight, going from side to side.
Zinc — A semi-metal called also *spelter*.
Zoologist—A man who delights in, and studies the natural history of animals.
Zoophytes — Polypi, or compound individuals found in groups in the ocean.

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