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Travels into North America

[VOLUME 2]

by Peter Kalm

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TRAVELS
INTO
NORTH AMERICA;

CONTAINING

Its NATURAL HISTORY, AND
A circumstantial Account of its Plantations
and Agriculture in general,

WITH THE
CIVIL, ECCLESIASTICAL AND COMMERCIAL
STATE OF THE COUNTRY,

The MANNERS of the INHABITANTS, and several curious and
IMPORTANT REMARKS on various subjects.

By PETER KALM,

Professor of Oeconomy in the University of *Abo* in Swedish *Finland*,
and Member of the *Swedish* Royal Academy of Sciences.

TRANSLATED INTO ENGLISH

By JOHN REINHOLD FORSTER, F. A. S.

Enriched with a Map, several Cuts for the Illustration of Natural
History, and some additional Notes.

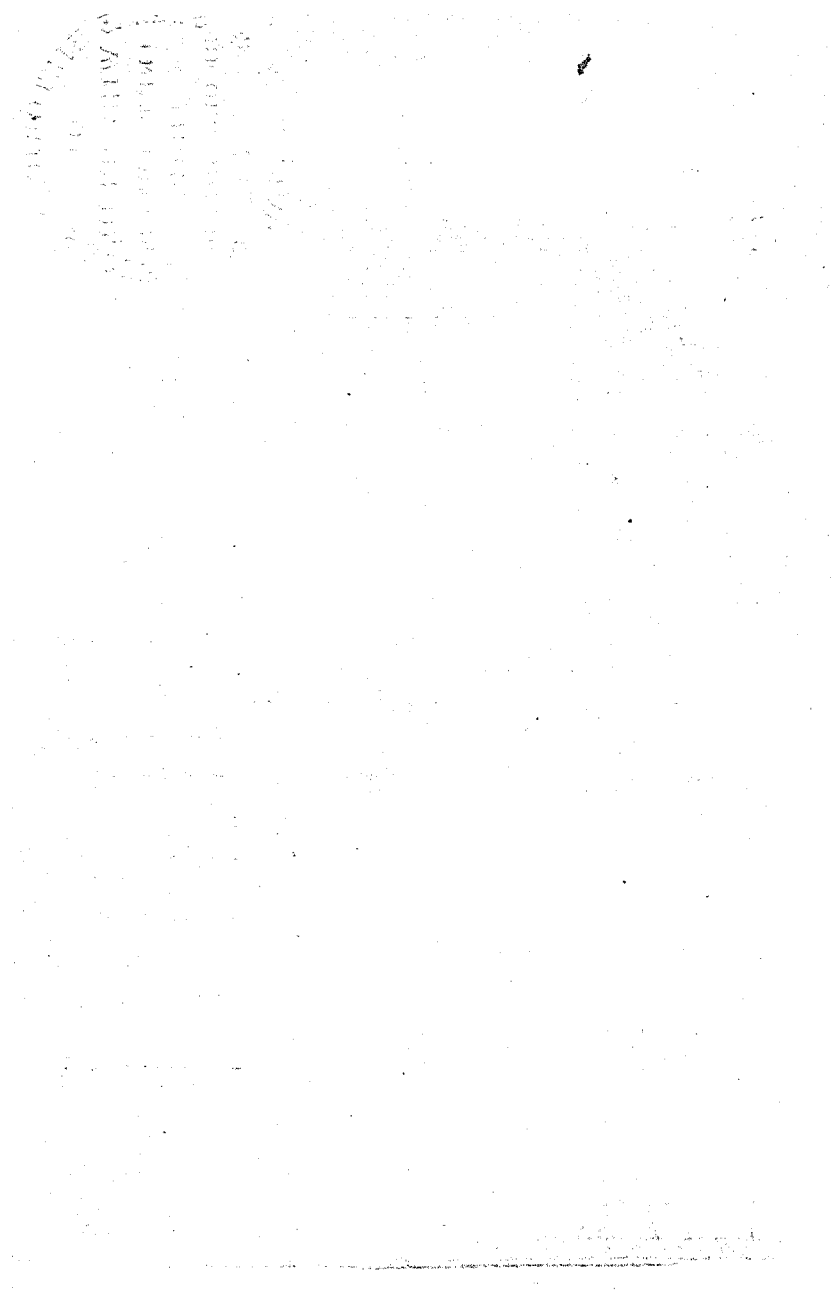
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P R E F A C E

O F T H E

E D I T O R.

I COULD have left this volume without preface, was it not for some circumstances which I am going to mention.

THE author of this account of *North-America* is a *Swede*, and therefore seems always to shew a peculiar way of thinking in regard to the *English* in general, and in regard to the first proprietors and inhabitants of *Philadelphia* in particular. The *French*, the natural enemies of the *English*, have, for upwards of a century, been the allies of the *Swedes*, who therefore are in general more fond of them than of the *English*. The external politeness of the *French* in *Canada* fully captivated our author, prejudiced him in their favour, and alienated his mind, though unjustly, from the *English*. I have therefore now and then, in remarks, been obliged to do the *English* justice, especially when I saw the author carried away either by prejudice or misinformation. He passed almost all the winter, between 1748 and 1749, at *Raccoon*, and conversed there with his countrymen; when he came to *Philadelphia* he likewise was in the company of the *Swedes* settled there; these, no doubt, furnished him with many partial and disingenuous accounts of the *English*, and gave his mind that unfavourable bias which he so often displays

in

in prejudice of a nation, now at the head of the enlightened world, in regard to every religious, moral, and social virtue. The author frequently seems to throw an illiberal reflection on the first proprietors of *Pensylvania*, and the quakers; tho' they got that province not by force, but by a charter from the *English* government, to whom the *Swedes* gave it up by virtue of a public treaty. Prompted by such false insinuations of his countrymen, he likewise enters very minutely into the circumstances of the *Swedes*, and often omits more important points, relative to the legislator and father of *Pensylvania*, *William Penn*, who gave that province existence, laws, and reputation.

THE author, however, often does justice to the excellent constitution of *Pensylvania*, as may be seen in Vol. I. But when he speaks of *stones attracting the moisture of the air*, see Vol. I. this is somewhat unphilosophically expressed. No stone attracts the moisture of the air, unless impregnated with saline particles; however, when the stones are colder than the atmosphere, they then condense the moisture of the air on their surface: the porous stones absorb it immediately, but those of a more solid texture, as marbles, &c. keep it on their surface till it evaporates.

I HERE take the opportunity of returning my humble thanks to my friends, who have generously promoted this publication; as without this public manner of acknowledging their favours, I would think myself guilty of ingratitude, which, in my opinion, is one of the most detestable vices.

London,
Feb. the 15th. 1771,

P E T E R K A L M ' s
T R A V E L S .

April the 12th, 1749.

THIS morning I went to *Philadelphia* and the places adjacent, in order to know whether there were more plants lately sprung up, than at *Raccoon*, and in *New Jersey* in general. The wet weather which had happened the preceding days, had made the roads very bad in low and clayey places.

THE leaves which dropt last autumn had covered the ground, in depth three or four inches. As this seems to hinder the growth of the grass, it was customary to burn it in *March*, or at the end of that month, (according to the old stile) in order to give the grass the liberty of growing up. I found several spots burnt in this manner to-day; but if it be useful one way, it does a great deal of damage in another; all the young shoots of several trees were burnt with the dead leaves, which diminishes the woods considerably; and in such places where the dead leaves had been burnt for several years together, the old trees were only left, which being cut down, there remains nothing but a great field, without

any wood. At the same time, all sorts of trees and plants are consumed by the fire, or at least deprived of their power of budding; a great number of plants, and most of the grasses here, are annual; their seeds fall between the leaves, and by that means are burnt: this is another cause of universal complaint, that grass is much scarcer at present in the woods than it was formerly; a great number of dry and hollow trees are burnt at the same time, though they could serve as fuel in the houses, and by that means spare part of the forests. The upper mould likewise burns away in part by that means, not to mention several other inconveniencies with which this burning of the dead leaves is attended. To this purpose, the government of *Pennsylvania* have lately published an edict, which prohibits this burning; nevertheless every one did as he pleased, and this prohibition met with a general censure.

THERE were vast numbers of *Woodlice* in the woods about this time; they are a very disagreeable insect; for as soon as a person sits down on an old stump of a tree, or on a tree which is cut down, or on the ground itself, a whole army of *Woodlice* creep upon his clothes, and insensibly come upon the naked body.

I HAD a piece of petrified wood given me to-day, which was found deep in the ground at *Raccoon*. In this wood the fibres and inward rings appeared very plainly; it seemed to be a piece of hickory; for it was as like it, in every respect, as if it had but just been cut from a hickory tree.

I LIKEWISE got some shells to-day, which the *English* commonly call *Clams*, and whereof the *Indians* make their ornaments and money, which I shall take an opportunity of speaking of in the sequel. These *Clams* were not fresh, but such as are every where found in *New Jersey*, on digging deep into the ground; the live shells of this kind are only found in salt water, and on the sea coasts. But these *Clams* were found at *Raccoon*, about eight or nine *English* miles from the river *Delaware*, and near a hundred from the nearest sea-shore.

AT night I went to Mr. *Bartram's* seat.

Ap. 13th. I EMPLOYED this day in several observations relative to botany.

Two nests of wasps hung in a high maple-tree, over a brook. Their form was wholly the same with that of our wasp-nests, but they exceeded them in size. Each nest was ten inches in diameter; in each nest were three cakes, above one another, of which the lowermost was the biggest, and the two uppermost decreased in proportion: there were some eggs of wasps in them. The diameter of the lowest cake was about six inches, and one quarter, and that of the uppermost, three inches, and three quarters. The cells in which the eggs, or the young ones were deposited, were hexagonal, and the colour of the nest grey. I was told, that the wasps make this kind of nests out of the grey splints, which stick to old pales and walls. A dark brown bee, with black *antennae*, and two black rings on the belly, and purple wings, flew

about

about the trees, and might perhaps be an inhabitant of these nests.

ANOTHER kind of wasps, which are larger than these, make their nests quite open. It consists merely of one cake, which has no covering, and is made of the boughs of trees. The cells are horizontal, and when the eggs or young *larvæ* ly in them, they have lids or coverings, that the rain may not come into them. But whither the old wasps retreat during storms, is a mystery to me, except they creep into the crevices of rocks. That side of the cake which is uppermost is covered with some oily particles, so that the rain cannot penetrate. The cells are hexagonal, from five to seven lines deep, and two lines in diameter. Mr. *Bartram* observed, that these nests are built of two sorts of materials, viz. the splints which are found upon old pales, or fences, and which the wind separates from them; for the wasps have often been observed to sit on such old wood, and to gnaw away these splints; the sides, and the lid or cover of the cells are made of an animal substance, or glutinous matter, thrown up by the wasps, or prepared in their mouths; for when this substance is thrown into the fire, it does not burn, but is only singed, like hair or horn. But the bottom of the nest being put into the fire, burns like linen or half-rotten wood, and leaves a smell of burnt wood. The wasps, whose nests I have now described, have three elevated black shining points on the forehead*, and a pentagonal

* These three points are common to most insects, and ought therefore not to be made characteristics of any particular species.

New Jersey, Raccoon.

black spot on the thorax. Towards the end of autumn these wasps creep into the cavities of mountains, where they ly torpid during winter. In spring, when the sun begins to operate, they come out during day-time, but return towards night, when it grows cold. I saw them early in spring during sunshine, in and about some cavities in the mountains. I was told of another species of wasps, which make their nests under ground.

GYRINUS natator (Americanus), or the *Whirl-beetles*. These were found dancing in great numbers on the surface of the waters.

Ap. 14th. THIS morning I went down to *Chester*; in several places on the road are saw-mills; but those which I saw to-day had no more than one saw. I likewise perceived that the woods and forests of these parts had been very roughly treated. It is customary here, when they erect saw-mills, wind-mills, or iron-works, to lead the water a good way lower, in case the ground near a fall in the river is not convenient for building upon.

Ap. 16th. THIS morning I returned to *Raccoon*. This country has several kinds of *Swallows*, viz. such as live in barns, in chimneys, and under ground; there are likewise martens.

THE *Barn Swallows*, or *House Swallows*, are those with a furcated tail. They are *Linnaeus's Hirundo rustica*. I found them in all the parts of *North America* which I travelled over. They

They are called *Stemmata*, and are a kind of eyes which serve the insects for looking at distant objects, as the compound eyes do for objects near at hand. F.

April 1749.

correspond very nearly to the *European House-Swallow* in regard to their colour, however, there seems to be a small difference in the note. I took no notice this year when they arrived: but the following year, 1750, I observed them for the first time, on the 10th of *April* (new style); the next day in the morning, I saw great numbers of them sitting on posts and planks, and they were as wet as if they had been just come out of the sea*. They build their nests in

* It has been a subject of contest among naturalists, to determine the winter retreat of *Swallows*. Some think, they go to warmer climates when they disappear in the Northern countries: others say, they creep into hollow trees, and holes in clefts of rocks, and ly there all the winter in a torpid state: and others affirm, that they take their retreat into water, and revive again in spring. The two first opinions have been proved, and it seems have found credit; the last have been treated as ridiculous, and almost as an old woman's tale. Natural history, as all the other histories, depends not always upon the intrinsic degree of probability, but upon facts founded on the testimony of people of noted veracity.—*Swallows* are seldom seen sinking down into the water; *Swallows* have not such organs as frogs or lizards, which are torpid during winter, *ergo*, *Swallows* live not, and cannot live under water.—This way of arguing, I believe, would carry us, in a great many cases, too far; for tho' it is not clear to every one, it may however be true; and lizards and frogs are animals of a class widely different from that of birds, and must therefore of course have a different structure; hence it is they are classed separately. The bear and the marmot are in winter in a torpid state, and have however not such organs as lizards and frogs; and no body doubts of their being, during some time, in the most rigid climates in a torpid state; for the *Alpine* nations hunt the marmots frequently, by digging their holes up, and find them so torpid, that they cut their throats, without their reviving or giving the least sign of life during the operation; but when the torpid marmot is brought into a warm room and placed before the fire, it revives from its lethargy. The question must therefore be decided by facts; nor are they wanting here: Dr. *Wallerius*, the celebrated *Swedish* chemist, wrote in 1748, *September* the 6th O. S. to the late Mr. *Klein*, secretary to the city of *Danzick*: "That he has seen, more than once, *Swallows* assembling on a reed, till they were all immersed and went to the bottom; this being preceded by a dirge of a quarter of an hour's

houses, and under the roofs on the outside; I likewise found their nests built on mountains

hour's length. He attests likewise, that he had seen a *Swallow* caught during winter out of a lake with a net, drawn, as is common in Northern countries, under the ice: this bird was brought into a warm room, revived, fluttered about, and soon after died."

Mr. *Klein* applied to many *Fermiers généraux* of the King of *Prussia's* domains, who had great lakes in their districts, the fishery in them being a part of the revenue; in winter the fishery thereon is the most considerable under the ice, with nets spreading more than 200 or 300 fathoms, and they are often wound by screws and engines, on account of their weight. All the people questioned made affidavits upon oath before the magistrates. *First*, The mother of the Countess *Lehndorf* said, that she had seen a bundle of *Swallows* brought from the *Frisch-Huff* (a lake communicating with the *Baltic* at *Pillau*) which when brought into a moderately warm room, revived and fluttered about. *Secondly*, Count *Schlieten* gave an instrument on stamped paper, importing, that by fishing on the lake belonging to his estate of *Gerdauen* in winter, he saw several *Swallows* caught in the net, one of which he took up with his hand, brought it into a warm room, where it lay about an hour, when it began to stir, and half an hour after it flew about in the room. *Thirdly*, Fermier general (*Am'man*) *Witkowski* made affidavit, that in the year 1740, three *Swallows* were brought up with the net in the great pond at *Didtacken*; in the year 1741, he got two *Swallows* from another part of the pond, and took them home, (they all being caught in his presence); after an hour's space they revived all in a warm room, fluttered about, and died three hours after. *4thly*, *Amtman Bönke* says, that having had the estate *Kleskow* in farm, he had seen nine *Swallows* brought up in the net from under the ice, all which he took into a warm room, where he distinctly observed how they gradually revived; but a few hours after they all died. Another time his people got likewise some *Swallows* in a net, but he ordered them again to be thrown into the water. *5thly*, *Andrew Ruita*, a master fisherman, at *Oleisko*, made affidavit, 1747, that 22 years ago, two *Swallows* were taken up, by him, in a net, under the ice, and being brought into a warm room, they flew about. *6thly*, *Jacob Kosiulo*, a master fisherman, at *Stradawen*, made affidavit, that in 1736, he brought up in winter, in a net, from under the ice of the lake at *Rafki*, a seemingly dead *Swallow*, which revived in half an hour's time, in a warm room, and he saw, a quarter of an hour after, the bird grow weaker, and soon after dying. *7thly*, I can reckon myself among the eye-witnesses of this paradoxon of natural history. In the year 1735, being a little boy, I saw several *Swallows* brought in winter by fishermen,

from

and rocks whose top projected beyond the bottom; they build too under the corners of per-

from the river *Vistula*, to my father's house, where two of them were brought into a warm room, revived, and flew about. I saw them several times settling on the warm stove, (which the *North-ern* nations have in their rooms) and I recollect well that the same forenoon they died, and I had them, when dead, in my hand.

In the year 1754, after the death of my uncle *Godfrey Wolf*, captain in the *Polish* regiment of foot-guards; being myself one of his heirs, I administered for my co-heirs, several estates called the *Starosty*, of *Dirschau*, in *Polish Prussia*, which my late uncle farmed under the king. In *January* the lake of *Lybschau*, belonging to these estates, being covered with ice, I ordered the fishermen to fish therein, and in my presence several *Swallows* were taken; which the fishermen threw in again; but one I took up myself, brought it home, which was five miles from thence, and it revived, but died about an hour after its reviving. These are facts, attested by people of the highest quality, by some in public offices, and by others, who, though of a low rank, however made these affidavits upon oath. It is impossible to suppose indiscriminately that they were prompted by views of interest, to assert as a fact, a thing which had no truth in it. It is therefore highly probable, or rather incontestably true, that *Swallows* retire in the *Northern* countries during winter, into the water, and stay there in a torpid state, till the return of warmth revives them again in spring. The question therefore I believe ought for the future to be thus stated: The swallows in *Spain*, *Italy*, *France*, and perhaps some from *England*, remove to warmer climates; some *English* ones, and some in *Germany* and other mild countries, retire into clefts and holes in rocks, and remain there in a torpid state. In the colder northern countries the *Swallows* immerse in the sea, in lakes, and rivers, and remain in a torpid state, under ice, during winter. There are still some objections to this latter assertion, which we must remove. It is said, Why do not rapacious fish, and aquatic quadrupeds and birds, devour these *Swallows*? The answer is obvious. *Swallows* chuse only such places in the water for their winter retreat, as are near reeds and rushes; so that sinking down there between them and their roots, they are by them secured against the rapaciousness of their enemies. But others object, Why are not these birds caught in such waters as are continually harrassed by nets? I believe the same answer which has been made to the first objection, will serve for this likewise. Fishermen take care to keep off with their nets from places filled with reeds and rushes, for fear of entangling and tearing their nets; and thus the situation of *Swallows* under water, is the reason that they are seldom disturbed in their silent winter-retreats.

What

pendicular rocks; and this shews where the *Swallows* made their nests, before the *Europeans* settled and built houses here: for it is well known that the huts of the *Indians* could not serve the purpose of the *Swallows*. A very creditable lady and her children told me the following story, assuring me that they were eye-witnesses to it. A couple of *Swallows* built their nest in the stable belonging to the lady; the female *Swallow* sat upon the nest, laid eggs in it, and was about to brood them; some days after, the people saw the female still sitting on the eggs: but the male flying about the nest, and sometimes settling on a nail, was heard to utter

What confirms this opinion still more is, that *Swallows* were never caught in *Prussia*, according to the above-mentioned affidavits, but with those parts of the net which passed near to the reeds and rushes; and sometimes the *Swallows* were yet fastened with their feet to a reed, when they were drawn up by the net. As to the argument taken from their being so long under water without corruption, I believe, there is a real difference between animals suffocated in water, and animals being torpid therein. We have examples of things being a long time under water; to which we may add the intense cold of these northern regions, which preserves them. Who would have thought it, that snails and polypes may be dissected, and could reproduce the parts severed from their body, if it was not a fact? Natural history ought to be studied as a collection of facts; not as the history of our guesses or opinions. Nature varies in an infinite manner; and Providence has diversified the instinct of animals, and their œconomy, and adapted it to the various seasons and climates. This long digression I thought necessary and excusable; and the more so, as the ingenious great friends to the cause of Natural History, the late Mr. *Collinson* and Mr. *Pennant*, have both asserted the impossibility and improbability of this immersion. I revere the memory and the ashes of the one, and think the friendship of the other an honour to me; but am assured, that both prefer truth to their private opinion; and can bear a modest opposition, when it is proposed with candour, with a view to promote truth, and with sentiments of respect and gratitude, as it is done by me, in the present case. F.

a very plaintive note, which betrayed his uneasiness: on a nearer examination the cause appeared; for the female was found dead in the nest. The male then went to sit upon the eggs, but after being about two hours on them, and thinking the business too troublesome for him, he went out, and returned in the afternoon with another female, which sat upon the eggs, and afterwards fed the young ones, till they were able to provide for themselves. The people differed here in their opinions about the abode of *Swallows* in winter: most of the *Swedes* thought that they lay at the bottom of the sea; some, with the *English* and the *French* in *Canada*, thought that they migrate to the southward in autumn, and return in spring. I have likewise been credibly informed in *Albany*, that they have been found sleeping in deep holes and clefts of rocks, during winter.

THE *Chimney Swallows* are the second species, and they derive their name from building their nests in chimneys, which are not made use of in summer: sometimes when the fire is not very great, they do not mind the smoke, and remain in the chimney. I did not see them this year till late in *May*, but in the ensuing year, 1750, they arrived on the 3d of *May*, for they appear much later than the other *Swallows*. It is remarkable that each feather in their tail ends in a stiff sharp point, like the end of an awl; they apply the tail to the side of the wall in the chimneys, hold themselves with their feet, and the stiff tail serves to keep them up: they make a great thundering noise all the day long, by flying

flying up and down in the chimneys; and as they build their nests in chimneys only, and it is well known that the *Indians* have not so much as a hearth made of masonry, much less a chimney, but make their fires on the ground in their huts, it is an obvious question, Where did these *Swallows* build their nests before the *Europeans* came, and made houses with chimneys? It is probable that they formerly made them in great hollow trees. This opinion was adopted by Mr. *Bartram*, and many others here. *Catesby* has described the *Chimney Swallow* and figured it *, and Dr. *Linnæus* calls it *Hirundo Pelasgia*.

THE *Ground Swallows* or *Sand Martins*, (*Linnæus's Hirundo riparia*) are to be met with every where in *America*; they make their nests in the ground on the steep shores of rivers and lakes.

THE *Purple Martins* have likewise been described and drawn in their natural colours by *Catesby* †. Dr. *Linnæus* likewise calls them *Hirundo purpurea*. They are less common here than the former species; I have seen in several places little houses made of boards, and fixed on the outside of the walls, on purpose that these *Martins* may make their nests in them; for the people are very desirous of having them near their houses, because they both drive away hawks and crows as soon as they see them, and alarm the poultry, by their anxious note, of

* *Hirundo, caudâ aculeatâ, Americana.* Catesb. Carol. vol. iii. t. 8.

† *Hirundo purpurea.* Nat. Hist. of Carol. vol. i. t. 51.

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the approach of their enemies. The chickens are likewise used to run under shelter, as soon as they are warned by the *Martins*.

Ap. 17th. The *Dirca palustris*, or *Moose-wood*, is a little shrub which grows on the rising ground adjoining to the swamps and marshes, and was now in full blossom. The *English* in *Albany* call it *Leather-wood*, because its bark is as tough as leather. The *French* in *Canada* call it *Bois de Plomb*, or *Leaden-wood*, because the wood itself is as soft and as tough as lead. The bark of this shrub was made use of for ropes, baskets, &c. by the *Indians*, whilst they lived among the *Sweedes*. And it is really very fit for that purpose, on account of its remarkable strength and toughness, which is equal to that of the *Lime-tree* bark. The *English* and the *Dutch* in many parts of *North America*, and the *French* in *Canada*, employ this bark in all cases where we make use of *Lime-tree* bark in *Europe*. The tree itself is very tough, and you cannot easily separate its branches without the help of a knife: some people employ the twigs for rods.

Ap. 20th. This day I found the *Strawberries* in flower, for the first time, this year: the fruit is commonly larger than that in *Sweden*; but it seems to be less sweet and agreeable.

The annual harvest, I am told, is always of such a nature, that it affords plenty of bread for the inhabitants, though it turns out to greater advantage in some years than it does in others. A venerable septuagenary *Suede*, called *Aoke Helm*, assured me, that in his time no absolutely barren crop had been met with, but that the people

people had always had pretty plentiful crops. It is likewise to be observed, that the people eat their bread of maize, rye, or wheat, quite pure and free from the inferior kinds of corn, and clear of husks, stalks, or other impurities. Many aged *Swedes* and *Englishmen* confirmed this account, and said, that they could not remember any crop so bad as to make the people suffer in the least, much less that any body was starved to death, whilst they were in *America*. Sometimes the price of corn rose higher in one year than in another, on account of a great drought or bad weather, but still there was always corn sufficient for the consumption of the inhabitants. Nor is it likely that any great famine can happen in this country, unless it please God to afflict it with extraordinary punishments. The weather is well known, from more than sixty years experience. Here are no cold nights which hurt the germ. The wet is of short continuance, and the drought is seldom or never of long duration. But the chief thing is the great variety of corn: The people sow the different kinds, at different times and seasons, and though one crop turn out bad, yet another succeeds. The summer is so long, that of some species of corn they may get three crops. There is hardly a month from *May* to *October* or *November*, inclusive, in which the people do not reap some kind of corn, or gather some sort of fruit. It would indeed be a very great misfortune if a bad crop should happen; for here, as in many other places, they lay up no stores, and

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are contented that there is plenty of food for the present exigencies.

THE Peach-trees were now every where in blossom; their leaves were not yet come out of the buds, and therefore the flowers shewed to greater advantage; their beautiful pale red colour had a very fine effect; and they sat so close that the branches were entirely clad with them. The other fruit-trees were not yet in flower; however the apple-blossoms began to appear.

THE *English* and the *Swedes* of *America* give the name of *Currants* * to a shrub which grows in wet ground, and near swamps, and which was now in blossom; its flowers are white, have a very agreeable fragancy, and grow in oblong bunches; the fruit is very good eating, when it is ripe; the *style* (*Stylus*) is thread-shaped (*fili-formis*), and shorter than the *Stamina*; it is divided in the middle, into five parts, or *Stigmata*. Dr. *Linnaeus* calls it *Crataegus* †, and Dr. *Gronovius* calls it a *Mespilus* ‡.

Ap. 22d. THE *Swedes* give the name of *Whippoorwill*, and the *English* that of *Whip-poor-will*, to a kind of nocturnal bird, whose voice is heard in *North America*, almost throughout the whole night. *Catesby* and *Edwards* both have described and figured it §. Dr. *Linnaeus* calls it a variety of the *Caprimulgus Europæus*, or Goat-

* It must be carefully distinguished from what is called *Currants* in England, which is the *Ribes rubrum*. F.

† *Crataegus tomentosa*, Linn. Spec. Pl. p. 682.

‡ *Mespilus inermis*, foliis ovato-oblongis, serratis, subtus tomentosis. Gronov. Pl. Virgin. 55.

§ *Caprimulgus minor Americanus*. Catesb. Nat. Hist. of Carolina, Vol. iii. t. 16. Edwards's Nat. Hist. of Birds, t. 63.

sucker: its shape, colour, size, and other qualities, make it difficult to distinguish them from each other. But the peculiar note of the *American* one distinguishes it from the *European* one, and from all other birds: it is not found here during winter, but returns with the beginning of summer. I heard it to-day, for the first time, and many other people said, that they had not heard it before this summer; its *English* and *Swedish* name is taken from its note; but, accurately speaking, it does not call *Whipperiwill*, nor *Whip-poor-will*, but rather *Whipperiwip*, so that the first and last syllables are accented, and the intermediate ones but slightly pronounced. The *English* change the call of this bird into *Whip-poor-will*, that it may have some kind of signification: it is neither heard nor seen in day-time; but soon after sun-set it begins to call, and continues for a good while, as the cuckow does in *Europe*. After it has continued calling in a place for some time, it removes to another, and begins again: it usually comes several times in a night, and settles close to the houses; I have seen it coming late in the evening, and settling on the steps of the house in order to sing its song; it is very shy, and when a person stood still, it would settle close by him, and begin to call. It came to the houses in order to get its food, which consists of insects; and those always abound near the houses at night; when it sat and called its *whipperiwhip*, and saw an insect passing, it flew up and caught it, and settled again. Sometimes you hear four or five, or more, near each other, calling as it were for a wager, and raising a great noise

noise in the woods. They were seldom heard in towns, being either extirpated there, or frightened away, by frequent shooting. They do not like to sit on trees, but are commonly on the ground, or very low in bushes, or on the lower poles of the enclosures. They always fly near the ground: they continue their calling at night till it grows quite dark; they are silent till the dawn of day comes on, and then they call till the sun rises. The sun seems to stop their mouths, or dazzle their eyes, so as to make them sit still. I have never heard them call in the midst of night, though I hearkened very attentively on purpose to hear it; and many others have done the same. I am told they make no nest, but lay two eggs in the open fields. My servant shot at one which sat on a bush near the house, and though he did not hit it, yet it fell down through fear, and lay for some time as if dead; but recovered afterwards. It never attempted to bite when it was held in the hands, only endeavouring to get loose by stirring itself about. Above, and close under the eyes, were several black, long, and stiff bristles, as in other nocturnal birds. The *Europeans* eat it. Mr. *Catesby* says, the *Indians* affirm, that they never saw these birds, or heard of them, before a certain great battle, in which the *Europeans* killed a great number of *Indians*. Therefore, they suppose that these birds, which are restless, and utter their plaintive note at night, are the souls of their ancestors who died in battle.

Ap. 24th. To-DAY the *Cherry-trees* began to shew their blossoms; they had already pretty large leaves.

THE *Apple-trees* likewise began to blossom; however the *Cherry-trees* were more forward: They likewise got a greenish hue from their leaves.

THE *Mulberry-trees* * were yet quite naked; and I was sorry to find that this tree is one of the latest in getting leaves, and one of the first which gets fruit.

Ap. 26th. THIS morning I travelled to Penn's Neck. The *Tulip-trees*, especially the tall ones, looked quite green, being covered with their leaves; this tree is therefore one of the earliest which get leaves.

To-DAY I saw the flowers of the *Sassafras-tree*, (*Laurus Sassafras*.) The leaves were not yet come out. The flowers have a fine smell.

THE *Lupinus perennis* is abundant in the woods, and grows equally in good soil and in poor. I often found it thriving on very poor sandy fields, and on heaths, where no other plants will grow. Its flowers, which commonly appear in the middle of May, make a fine shew by their purple hue. I was told, that the cattle eat these flowers very greedily; but I was sorry to find very often that they were not so fond of it, as it is represented, especially when they had any thing else to eat; and they seldom touched it, notwithstanding its fine green colour, and its softness: The horses eat the flowers,

* *Morus rubra*.

but leave the stalks and leaves. If the cattle eat this plant in spring, necessity and hunger give it a relish. This country does not afford any green pastures like the *Swedish* ones; the woods are the places where the cattle must collect their food. The ground in the woods is chiefly flat, or with very little risings. The trees stand far asunder; but the ground between them is not covered with green sods; for there are but few kinds of grasses in the woods, and they stand single and scattered. The soil is very loose, partly owing to the dead leaves which cover the ground during a great part of the year. Thus the cattle find very little grass in the woods, and are forced to be satisfied with all kinds of plants which come in their way, whether they be good or bad food. I saw for some time this spring, that the cattle bit off the tops and shoots of young trees, and fed upon them; for no plants were yet come up, and they stand in general but very thin, and scattered here and there, as I have just mentioned. Hence you may easily imagine that hunger compels the cattle to eat plants, which they would not touch were they better provided for. However, I am of opinion, that it would be worth while to make use of this *Lupine* to mend dry sandy heaths, and, I believe, it would not be absolutely impossible to find out the means of making it agreeable to the cattle.

THE *Oaks* here have similar qualities with the *European* ones. They keep their dead leaves almost during the whole winter, and are very backward in getting fresh ones; they had no

leaves as yet, and were but just beginning to shew a few.

THE *Humming-bird*, which the *Swedes* call *King's-bird**, and which I have mentioned in a former volume, appeared hereabouts to-day, for the first time this spring.

NUMBERS of *Oil beetles*, (*Meloe Proscarabæus*) sat on the leaves of white *Hellebore*, (*Veratrum album*) and feasted on them. I considered them a great while, and they devoured a leaf in a few minutes. Some of them had already eaten so much that they could hardly creep. Thus this plant, which is almost certain death to other animals, is their dainty food.

THE *Fire-flies* appeared at night, for the first time this year, and flew about between the trees, in the woods. It seemed, in the dark, as if sparks of fire flew up and down. I will give a more particular account of them in another place.

TOWARDS night I went to *Raccoon*.

May 1st. THE last night was so cold, that the ground at sun-rising was as white as snow, from the hoary-frost. The *Swedish* thermometer was a degree and a half below the freezing point. We observed no ice in the rivers or waters of any depth; but upon such only as were about three inches deep, the ice lay to the thickness of one third part of a *line*†. The evening before, the wind was south, but the night was calm. The apple-trees and cherry-

* *Kungsfogel*.

† The tenth part of an inch.

trees were in full blossom. The peach-trees were almost out of flower. Most of the forest-trees had already got new and tender leaves, and most of them were in flower, as almost all kinds of oaks, the dog-wood, (*Cornus Florida*), hiccory, wild prunes, sassafras, horn-beam, beeches, &c.

THE plants which were found damaged by the frost, were the following. 1. The *Hiccory*. Most of the young trees of this kind had their leaves killed by the frost, so that they looked quite black in the afternoon; the leaves were consumed by frost every where in the fields, near the marshes, and in the woods. 2. The *black Oak*. Several of these trees had their leaves damaged by the frost. 3. The *white Oak*. Some very young trees of this kind had lost their leaves by the frost. 4. The blossoms of the *Cherry-trees* were hurt in several places. 5. The flowers of the *English Walnut-tree* were entirely spoiled by the frost. 6. The *Rhus glabra*. Some of these trees had already got leaves, and they were killed by the cold. 7. The *Rhus radicans*; the tender young trees of this kind suffered from the frost, and had their leaves partly killed. 8. The *Thalictra*, or *Meadow Rue*, had both their flowers and leaves hurt by the frost. 9. The *Podophyllum peltatum*. Of this plant there was not above one in five hundred hurt by the frost. 10. The *Ferns*. A number of them, which were lately come up, were destroyed. I must add several plants which were likewise hurt, but which I could not distinguish, on account of their smallness.

I WENT to several places this day.

THE *Bartisia coccinea* grew in great abundance on several low meadows. Its flower-buds were already tinged with their precious scarlet, and adorned the meadows. It is not yet applied to any use, but that of delighting the sight.

ONE of the Swedes here had planted an *English* walnut-tree (*Juglans regia*) in his garden, and it was now about three yards high ; it was in full blossom, and had already great leaves, whereas the black walnut-trees, which grow spontaneously in every part of this country, had not yet any leaves, or flowers. The last night's frost had killed all the leaves of the *European* kind. Dr. *Franklin* told me afterwards, that there had been some *English* walnut-trees in *Philadelphia*, which came on very well ; but that they were killed by the frost.

I LOOKED about me for the trees which had not yet got fresh leaves, and I found the following ones :

Juglans nigra, or the *Black Walnut-tree*.

Fraxinus excelsior, or the *Ash*.

Acer Negundo, called the *White Ash* here.

Nyssa aquatica, the *Tupelo-tree*.

Diospyros Virginiana, or the *Persimon*.

Vitis Labrusca, or the *Fox-grapes* ; and

Rhus glabra, or the *Sumach*.

THE trees whose leaves were coming out, were the following :

Morus rubra, the *Mulberry-tree*.

Fagus Castanea, the *Chestnut-tree*.

Platanus occidentalis, or the *Water-beech*.

Laurus Sassafras, the *Sassafras-tree*.

Juglans alba, the *Hicory*. Some trees of this

this kind had already large leaves, but others had none at all; the same difference, I believe, exists likewise among the other species of hiccory.

THE *Virginian Cherry-tree* grows here and there, in the woods and glades: its leaves were already pretty large; but the flowers were not yet entirely open.

THE *Sassafras-tree* was now every where in flower; but its leaves were not yet quite disclosed.

THE *Liquidambar Styraciflua* or *Sweet Gum-tree*, grows in the woods, especially in wet soil, in and near purling rivulets: its leaves were now already sprouting out at its summit. This tree grows to a great thickness, and its height rivals that of the tallest firs and oaks; as it grows higher, the lower branches die and drop, and leave the stem at last quite smooth and strait, with a great crown at the very summit; the seeds are contained in round, dentated cones, which drop in autumn; and as the tree is very tall, so the high winds carry the seeds away to a great distance. I have already given an account of the use of this tree in the first volume, to which I must add the following account.

THE wood can be made very smooth, because its veins are extremely fine: but it is not hard; you can carve letters on it with a knife, which will seem to be engraved. Mr. *Lewis Evans* told me, from his own experience, that no wood in this country was more fit for making moulds for casting brass in, than this. I enquired of Mr. *Bartram*, "Whether he had found the resin on this tree, which is so much praised in physic?" He told me, "That a very odorife-

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rous rosin always flows out of any cut or wound, which is made in the tree; but that the quantity here was too inconsiderable to recompense the labour of collecting it." This odoriferous rosin or gum first gave rise to the *English* name. The further you go to the *South*, the greater quantity of gum does the tree yield, so that it is easy to collect it. Mr. *Bartram* was of opinion, that this tree was properly calculated for the climate of *Carolina*, and that it was brought by several ways so far North as *New York*. In the southern countries the heat of the Sun fills the tree with gum, but in the northern ones it does not.

May 2d. THIS morning I travelled down to *Salem*, in order to see the country.

THE *Sassafras-tree* stood single in the woods, and along the fences, round the fields: it was now distinguishable at a distance for its fine flowers, which being now quite open, made it look quite yellow. The leaves were not yet come out.

In some meadows the grass was already grown up pretty high: but it is to be observed, that these meadows were marshy, and that no cattle had been on them this year. These meadows are mown twice a year, *viz.* in *May*, and the end of *August*, or beginning of *September*, old style. I saw some meadows of this kind to-day, in which I saw grass which was now almost fit to be mown; and many meadows in *Sweden* have not such grass at the proper time of mowing, as these had now; these meadows lay in marshes and vallies, where the Sun had very great power: the grass consisted merely of *Cyprus-grass* or *Carex*.

THE wild *Prune-trees* were now every where in flower; they grow here and there in the woods, but commonly near marshes and in wet ground: they are distinguishable by their white flowers: the fruit when ripe is eatable.

THE *Cornus Florida*, or *Dogwood*, grows in the forests, on hills, on plains, in vallies, in marshes, and near rivulets. I cannot therefore say which is its native soil; however, it seems that in a low but not a wet soil it succeeds best; it was now adorned with its great snowy *Involucra*, which render it conspicuous even at a distance. At this time it is a pleasure to travel through the woods, so much are they beautified by the blossoms of this tree. The flowers which are within the *Involucra* began to open to-day. The tree does not grow to any considerable height or thickness, but is about the size of our *Mountain Ash* (*Sorbus aucuparia*). There are three species of this tree in the woods; one with great white *Involucra*, another with small white ones, and a third with reddish ones.

THE woods were now full of birds: I saw the lesser species every where hopping on the ground, or creeping in bushes, without any great degree of shiness; it is therefore very easy for all kind of snakes to approach and bite them. I believe that the rattlesnake has nothing to do but to ly still, and without waiting long, some little bird or other will pass by or run directly upon her, giving her an opportunity of catching it, without any enchantment.

SALEM is a little trading town, situated at some distance from the river *Delaware*. The houses

houses do not stand far asunder, and are partly stone, and partly wood. A rivulet passes by the town, and falls into the *Delaware*. The inhabitants live by their several trades as well as they can. In the neighbourhood of *Salem* are some very low and swampy meadows; and therefore it is reckoned a very unwholesome place. Experience has shewn, that those who came hither from other places to settle, got a very pale and sickly look, though they arrived in perfect health, and with a very lively colour. The town is very easily distinguished about this time, by the disagreeable stench which arises from the swamps. The vapours of the putrid water are carried to those inhabitants which live next to the marshes; and enter the body along with the air, and through the pores, and thus are hurtful to health. At the end of every summer, the intermitting fevers are very frequent. I knew a young couple, who came along with me from *England* to *America*: soon after their arrival at *Philadelphia*, they went to *Salem*, in perfect health; but a few weeks after they fell sick, and before the winter was half over they were both dead.

MANY of the inhabitants plant *Saffron*; but it is not so good and so strong as the *English* and *French Saffron*. Perhaps it grows better by being laid up for some years, as tobacco does.

THE *Gossypium herbaceum*, or Cotton plant, is an annual plant; and several of the inhabitants of *Salem* had begun to sow it. Some had the seeds from *Carolina*, where they have great plantations of cotton; but others got it out of some cotton

cotton which they had bought. They said, it was difficult, at first, to get ripe seeds from the plants which were sown here; for the summer in *Carolina*, from whence their first seed came, is both longer and hotter than it is here. But after the plants have been more used to the climate, and hastened more than they were formerly, the seeds are ripe in due time.

AT night I returned to *Raccoon*.

May 4th. CRAB-TREES are a species of wild apple-trees, which grow in the woods and glades, but especially on little hillocks, near rivers*. In *New Jersey* the tree is rather scarce; but in *Pennsylvania* is plentiful. Some people had planted a single tree of this kind near their farms, on account of the fine smells which its flowers afford. It had begun to open some of its flowers about a day or two ago; however, most of them were not yet open. They are exactly like the blossoms of the common apple-trees, except that the colour is a little more reddish in the *Crab-trees*; though some kinds of the cultivated trees have flowers which are very near as red: but the smell distinguishes them plainly; for the wild trees have a very pleasant smell, somewhat like the rasp-berry. The apples, or crabs, are small, sour, and unfit for any thing but to make vinegar of. They ly under the trees all the winter, and acquire a yellow colour. They seldom begin to rot before spring comes on.

* *Pyrus coronaria*. Linn. Sp. Plant. *Malus sylvestris, floribus odoratis*. Gronov. Fl. Virginica. p. 55.

I CANNOT omit an observation here. The *Crab-trees* opened their flowers only yesterday and to-day; whereas, the cultivated apple-trees, which are brought from *Europe*, had already lost their flowers. The wild cherry-trees did not flower before the 12th of *May*; on the other hand, the cultivated or *European* ones, had already opened their blossoms on the 24th of *April*. The black walnut-trees of this country had neither leaves nor flowers, when the *European* kind has large leaves and blossoms. From hence it appears, that trees brought over from *Europe*, of the same kind with the wild trees of *America*, flower much sooner than the latter. I cannot say what is the reason of this forwardness of the *European* trees in this country, unless they bring forth their blossoms as soon as they get a certain degree of warmth, which they have in their native country. It seems, the *European* trees do not expect, after a considerable degree of warmth, any such cold nights as will kill their flowers; for, in the cold countries, there seldom happen any hot days succeeded by such cold nights as will hurt the flowers considerably. On the contrary, the wild trees in this country are directed by experience, (if I may so speak) not to trust to the first warmth; but they wait for a greater heat, when they are already safe from cold nights. Therefore, it happens often that the flowers of the *European* trees are killed by the frosts here; but the native trees are seldom hurt, though they be of the same kind with the *European* ones. This is a manifest proof of the wisdom of the Creator.

May 5th. EARLY this morning I went to *Rapaapo*, which is a great village, whose farms ly all scattered. It was inhabited merely by *Swedes*, and not a single *Englishman*, or people of any other nation, lived in it: therefore they have preserved their native *Swedish* tongue, and mixed but few *English* words with it. The intention of my journey was partly to see the place, and to collect plants and other natural curiosities there; and partly to find the places where the *White Cedar*, or *Cupressus thyoides*, grows.

THE *Mayflowers*, as the *Swedes* call them, were plentiful in the woods where-ever I went to-day; especially on a dry soil, or one that is somewhat moist. The *Swedes* have given them this name because they are in full blossom in *May*. Some of the *Swedes* and the *Dutch* call them *Pinxter-bloem*, (*Whitsunday flowers*), as they really are in blossom about *Whitsuntide*. The *English* call them *Wild Honeysuckles*; and at a distance they have some similarity to the *Honeysuckle*, or *Lonicera*. Dr. *Linnaeus*, and other botanists, call it an *Azalea* *. Its flowers were now open, and added a new ornament to the woods, being little inferior to the flowers of the honeysuckle and *Hedysarum*. They sit in a circle round the stem's extremity, and have either a dark red or a lively red colour; but, by standing for some time, the sun bleaches them, and at last they get a whitish hue. I

* *Azalea nudiflora*. Linn. Spec. Plant, p. 214. *Azalea ramis infra flores nudis*. Gron. Virg. 21.

know not why *Colden* calls them yellow *. The height of the bush is not always alike. Some were as tall as a full grown man, and taller ; others were but low, and some were not above a palm from the ground ; yet they were all full of flowers. The people have not yet found that this plant may be applied to any use ; they only gather the flowers, and put them in pots, because they are very shewy. They have some smell ; but I cannot say it is very pleasant. However, the beauty of the colour entitles them to a place in every flower-garden.

TO-DAY I saw the first ear of this year's rye. In *Sweden*, rye begins to shew its ears about *Ericmas*, that is, about the 18th of *May*, old stile †. But in *New Sweden*, the people said, they always saw the ears of rye in *April*, old stile ; whether the spring begins late or early. However, in some years the ears come early, and in others late, in *April*. This spring was reckoned one of the late ones.

BULLFROGS ‡ are a large species of frogs, which I had an opportunity of hearing and seeing to-day. As I was riding out, I heard a roaring before me ; and I thought it was a bull in the bushes, on the other side of the dyke, though the sound was rather more hoarse than that of a bull. I was however afraid, that a bad goring bull might be near me, though I

* *Ixalea crocea*, foliis ovatis, integris, alternis, flore luteo, piloso, præcoci. Cold. Eber. 25.

† Accordingly about the 29th of *May*, new stile.

‡ *Rana beans*. Linn. Syst. I. p. 358. *Rana maxima*, *Americana*, *aquatica*. Catelb. Carol. II. 72.

did not see him ; and I continued to think so till some hours after, when I talked with some *Swedes* about the *Bullfrogs*, and, by their account, I immediately found that I had heard their voice ; for the *Swedes* told me, that there were numbers of them in the dyke. I afterwards hunted for them. Of all the frogs in this country, this is doubtless the greatest. I am told, that towards autumn, as soon as the air begins to grow a little cool, they hide themselves under the mud, which lies at the bottom of ponds and stagnant waters, and ly there torpid during winter. As soon as the weather grows mild, towards summer, they begin to get out of their holes, and croak. If the spring, that is, if the mild weather, begins early, they appear about the end of *March*, old stile ; but if it happens late, they tarry under water till late in *April*. Their places of abode are ponds, and bogs with stagnant water ; they are never in any flowing water. When many of them croak together, they make an enormous noise. Their croak exactly resembles the roaring of an ox or bull, which is somewhat hoarse. They croak so loud, that two people talking by the side of a pond cannot understand each other. They croak all together ; then stop a little, and begin again. It seems as if they had a captain among them : for when he begins to croak, all the others follow ; and when he stops, the others are all silent. When this captain gives the signal for stopping, you hear a note like *poop* coming from him. In day-time they seldom make any great noise, unless the sky is covered.

vered. But the night is their croaking time; and, when all is calm, you may hear them, though you are near a mile and a half off. When they croak, they commonly are near the surface of the water, under the bushes, and have their heads out of the water. Therefore, by going slowly, one may get close up to them before they go away. As soon as they are quite under water, they think themselves safe, though the water be very shallow.

SOMETIMES they sit at a good distance from the pond; but as soon as they suspect any danger, they hasten with great leaps into the water. They are very expert at hopping. A full-grown *Bullfrog* takes near three yards at one hop. I have often been told the following story by the old *Swedes*, which happened here, at the time when the *Indians* lived with the *Swedes*. It is well known, that the *Indians* are excellent runners; I have seen them, at Governor *Johnson's*, equal the best horse in its swiftest course, and almost pass by it. Therefore, in order to try how well the bull-frogs could leap, some of the *Swedes* laid a wager with a young *Indian*, that he could not overtake the frog, provided it had two leaps before hand. They carried a bull-frog, which they had caught in a pond, upon a field, and burnt his back-side; the fire, and the *Indian*, who endeavoured to be closely up with the frog, had such an effect upon the animal, that it made its long hops across the field, as fast as it could. The *Indian* began to pursue the frog with all his might at the proper time: the noise he made in running frightened the poor frog;

frog; probably it was afraid of being tortured with fire again, and therefore it redoubled its leaps, and by that means it reached the pond before the *Indian* could over-take it.

In some years they are more numerous than in others: nobody could tell, whether the snakes had ever ventured to eat them, though they eat all the lesser kinds of frogs. The women are no friends to these frogs, because they kill and eat young ducklings and goslings: sometimes they carry off chickens that come too near the ponds. I have not observed that they bite when they are held in the hands, though they have little teeth; when they are beaten, they cry out almost like children. I was told that some eat the thighs of the hind legs, and that they are very palatable.

A TREE which grows in the swamps here, and in other parts of *America*, goes by the name of *White Juniper-tree*. Its stem indeed looks like one of our old tall and strait juniper-trees in *Sweden*: but the leaves are different, and the wood is white. The *English* call it *White Cedar*, because the boards which are made of the wood are like those made of cedar. But neither of these names are just, for the tree is of the cypress kind *. It always grows in wet ground or swamps: it is therefore difficult to come to them, because the ground between the little hillocks is full of water. The trees stand both on the hillocks and in the water: they grow very

* *Cupressus thyoides*. Linn. Spec. Pl. p. 1422. *Cupressus Americana*, fructu minimo. *Miller's Gard. Dictionary*.

close together, and have strait, thick, and tall stems; but they were greatly reduced in number to what they have been before. In such places where they are left to grow up, they grow as tall and as thick as the tallest fir-trees; they preserve their green leaves both in winter and summer; the tall ones have no branches on the lower part of the stem.

THE marshes where these trees grow are called *Cedar Swamps*. These cedar swamps are numerous in *New Jersey*, and likewise in some parts of *Pennsylvania* and *New York*. The most northerly place, where it has been hitherto found, is near *Goshen* in *New York*, under forty-one degrees and twenty-five minutes of north latitude, as I am informed by Dr. *Colden*. For to the North of *Goshen*, it has not been found in the woods. The white cedar is one of the trees which resist the most to putrefaction; and when it is put above ground, it will last longer than under ground: therefore it is employed for many purposes; it makes good fences, and posts which are to be put into the ground; but in this point, the red cedar is still preferable to the white; it likewise makes good canoes. The young trees are employed for hoops round barrels, tuns, &c. because they are thin and pliable; the thick and tall trees afford timber, and wood for cooper's work. The houses which are built of it, surpass in duration those which are built of *American oak*. Many of the houses in *Rapaapo* were made of this white cedar wood; but the chief thing which the white cedar affords is the best kind of shingles. The white

cedar shingles are preferred to all others for several reasons; first, they are more durable than any others made of *American* wood, the red cedar shingles excepted; secondly, they are very light, so that no strong beams are requisite to support the roof. For the same reason it is unnecessary to build thick walls, because they are not pressed by heavy roofs. When fires break out, it is less dangerous to go under or along the roofs, because the shingles being very light can do little hurt by falling; they suck the water, being somewhat spongy, so that the roofs can easily be wetted in case of a fire: however, their fatness occasions that the water does not hurt them, but evaporates easily. When they burn and are carried about by the wind, they have commonly what is called a dead coal, which does not easily set fire where it alights. The roofs made of these shingles can easily be cut through, if required, because they are thin, and not very hard; for these qualities the people in the country, and in the towns, are very desirous of having their houses covered with white cedar shingles, if the wood can be got. Therefore all churches, and the houses of the more substantial inhabitants of the towns, have shingle roofs. In many parts of *New York* province, where the white cedar does not grow, the people, however, have their houses roofed with cedar shingles, which they get from other parts. To that purpose great quantities of shingles are annually exported from *Eggharbour* and other parts of *New Jersey*, to the town of *New York*, from whence they are distributed throughout the province.

province. A quantity of white cedar wood is likewise exported every year to the *West Indies*, for shingles, pipe-staves, &c. Thus the inhabitants are very busy here, not only to lessen the number of these trees; but even to extirpate them entirely. They are here (and in many other places) in regard to wood, bent only upon their own present advantage, utterly regardless of posterity. By this means many cedar swamps are already quite destitute of cedars; having only young shoots left; and I plainly observed, by counting the circles round the stem, that they do not grow up very quickly, but require a great deal of time before they can be cut for timber. It is well known that a tree gets only one circle every year; a stem, eighteen inches in diameter had one hundred and eight circles round the thicker end: another, seventeen inches in diameter, had a hundred and sixteen; and another, two feet in diameter, had one hundred and forty-two circles upon it. Thus near eighty years growth is required, before a white cedar raised from seed can be used for timber. Among the advantages which the white cedar shingles have over others, the people reckon their lightness. But this good and useful quality may in future times turn out very disadvantageous to *Philadelphia*; and other places where the houses are roofed with cedar shingles: for as the roofs made of these shingles are very light, and bear but a trifling weight on the walls, so the people have made the walls but very thin. I measured the thickness of the walls of several houses here, of three stories high (cellar and garret not included),

ed), and found most of them nine inches and a half, and some ten inches thick ; therefore it is by no means surprising, that violent hurricanes sometimes make the brick gable-ends to vibrate apparently, especially on such houses as have a very open situation. And since the cedar trees will soon be wanting in this country, and the present roofs when rotten must be supplied with heavier ones, of tiles, or of other wood, it is more than probable, that the thin walls will not be able to bear such an additional weight, and will either break, or require to be supported by props : or else the whole house must be pulled down and rebuilt with thicker walls. This observation has already been made by others. Some of the people here make use of the chips of white cedar instead of tea, assuring me that they preferred it in regard to its wholesomeness to all foreign tea. All the inhabitants here were of opinion, that the water in the cedar swamps is wholesomer than any other drink ; it creates a great appetite, which they endeavoured to prove by several examples. They ascribed this quality to the water itself, which is filled with the rosin of the trees, and to the exhalations which came from the trees, and can easily be smelled. The people likewise thought that the yellowish colour of the water, which stands between the cedar trees, was owing to the rosin, which comes out of the roots of these trees. They likewise all agreed, that this water is always very cold in the hottest season, which may be partly owing to the continual shade it is in. I knew several people who were resolved to go to these cedar swamps,

swamps, and use the waters for the recovery of their appetite. Mr. *Bartram* planted a white cedar in a dry soil, but it could not succeed there: he then put it into a swampy ground, where it got as it were new life, and came on very well; and though it was not taller than a man, yet it was full of cones. Another thing is very remarkable, with regard to the propagation of this tree: Mr. *Bartram* cut its branches in spring two years successively, and put them into the swampy soil, where they struck roots, and succeeded very well. I have seen them myself.

THE red *Juniper-tree* is another tree which I have mentioned very frequently in the course of my account. The *Swedes* have given it the name of red Juniper, because the wood is very red and fine within. The *English* call it red Cedar, and the *French* *Cedre rouge*. However, the *Swedish* name is the most proper, as the tree belongs to the *Junipers* *. At its first growth it has a deal of similarity to the *Swedish Juniper* †, but after it is grown up it gets quite different leaves. The berry exactly resembles that of the *Swedish Juniper*, in regard to its colour and shape; however, they are not so big, though the red Cedar grows very tall. At *Raccoon* these trees stood single, and were not very tall. But at other places I have seen them standing together in clusters; they like the same ground as the common *Swedish Juniper*, especially on the rising banks of rivers, and on

* *Juniperus Virginiana*. Lin. Spec. pl. p. 114.

† *Juniperus communis*. Linn. Spec. pl. p. 1470.

other rising grounds, in a dry, and frequently in a poor soil. I have seen them growing in abundance, as thick and tall as the tallest fir-trees, on poor dry and sandy heaths. Towards *Canada*, or in the most northerly places, where I have seen them, they commonly choose the steep sides of the mountains, and there they grow promiscuously with the common *Juniper*. The most northerly places where I have found them wild in the woods, is in *Canada*, eighteen *French* miles to the southward of the *Fort Saint Jean*, or *St. John*, in about $44^{\circ} 35'$ North Latitude. I have likewise seen it growing very well in a garden, on the island of *Magdalene* *, belonging to the then governor of *Montreal*, *Monsieur le Baron de Longueuil*. But it had been got at more southerly places, and was transplanted here. Of all the woods in this country, this is without exception the most durable, and withstands putrefaction longer than any other; it is therefore employed in all such cases where it is most liable to rot, especially for all kinds of posts which are to be put into the ground. Some people say, that if an iron be put into the ground along with a pole of cedar, the iron would be half-corroded by rust in the same time that the wood would be rotten. In many places both the fences, and the posts belonging to them, are made of red cedar. The best canoes, consisting of a single piece of wood, are made of red cedar; for they last longer than any others, and are very light. In *New York* I have seen pretty large yachts built of red cedar. Several yachts which go

* An island in the river *St. Lawrence*, close by the town of *Montreal* in *Canada*.

from *New York* to *Albany*, up the river *Hudson*, are built in a different manner, as I have mentioned in the first volume *. In *Philadelphia* they cannot make any yachts or other boats of red cedar, because the quantity and the size of the trees will not allow of it. For the same reason they do not roof their houses with red cedar shingles; but in such places where it is plentiful, it makes excellent good roofs. The heart of this cedar is of a fine red colour, and whatever is made of it looks very fine, and has a very agreeable and wholesome smell. But the colour fades by degrees, or else the wood would be exceedingly proper for cabinet work. I saw a parlour in the country seat of Mr. *Norris*, one of the Members of the *Pennsylvanian* House of Assembly, wainscotted many years ago with boards of red cedar. Mr. *Norris* assured me that the cedar looked exceedingly well in the beginning, but it was quite faded when I saw it, and the boards looked very shabby, especially the boards near the window had entirely lost their colour; so that Mr. *Norris* had been obliged to put mahogany in their stead: however, I was told, that the wood will keep its colour if a thin varnish is put upon it whilst it is fresh, and just after it has been planed, and if care is taken that the wood is not afterwards rubbed or hurt. At least it makes the wood keep its colour much longer than commonly.

* The lower part of the yachts, which is continually under water, is made of black oak; the upper part is built of red cedar, because it is sometimes above and sometimes in the water.

Since it has a very pleasant smell when fresh, some people put the shavings and chips of it among their linen, to secure it against being worm-eaten. Some likewise get bureaus, &c. made of red cedar, with the same view. But it is only useful for this purpose as long as it is fresh, for it loses its smell after some time, and is then no longer good for keeping off insects. It is sometimes sent to *England*, as timber, and sells very well. In many places round *Philadelphia*, in the seats of the gentry, there was commonly an avenue, with a row of these trees planted on both sides, leading from the high road to the house. The lower branches were cut, and only a fine crown left. In winter, when most other trees have lost their leaves, this looks very fine. This tree has likewise a very slow growth; for a stem, thirteen inches and a quarter in diameter, had one hundred and eighty-eight rings, or annual circles; and another, eighteen inches in diameter, had at least two hundred and fifty, for a great number of the rings were so fine that they could not be counted. This tree is propagated in the same manner as the common Juniper-tree is in *Sweden*, viz. chiefly by birds, which eat the berries and emit the seeds entire.

In the evening I returned to *Raccoon*.

May 6th. THE Mulberry-trees (*Morus rubra*) about this time began to blossom, but their leaves were yet very small. The people divided them into male and female trees or flowers; and said that those which never bore any fruit were males, and those which did, females.

SMILAX laurifolia was superabundant in all the swamps near this place. Its leaves were now beginning to come out, for it sheds them all every winter; it climbs up along trees and shrubs, and runs across from one tree or bush to another: by this means it shuts up the passage between the trees, fastening itself every where with its cirrhi or tendrils, and even on people, so it is with the utmost difficulty one must force a passage in the swamps and woods, where it is plentiful; the stalk towards the bottom is full of long spines, which are as strong as the spines of a rose-bush, and catch hold of the clothes, and tear them: this troublesome plant may sometimes bring you into imminent danger, when botanizing or going into the woods, for, not to mention that the cloaths must be absolutely ruined by its numberless spines, it occasions a deep shade in the woods, by crossing from tree to tree so often; this forces you to stoop, and even to creep on all fours through the little passages which are left close to the ground, and then you cannot be careful enough to prevent a snake (of which there are numbers here) from darting into your face. The stalk of the plant has the same colour as the young rose-bushes. It is quite green and smooth between the spines; so that a stranger would take it to be a kind of thorn-bush, in winter, when it is destitute of leaves.

May 8th. THE trees hereabouts were now stocked with innumerable *Caterpillars*; one kind especially was observable, which is worse than all the others. They immediately formed

great

great white webs, between the branches of the trees, so that they were perceptible, even at a distance; in each of these webs were thousands of *Caterpillars*, which crept out of them afterwards, and spread chiefly upon the apple-trees. They consumed the leaves, and often left not one on a whole branch. I was told, that some years ago they did so much damage, that the apple-trees and peach-trees hardly bore any fruit at all; because they had consumed all the leaves, and exposed the naked trees to the intense heat of the sun, by which means several of the trees died. The people took the following method of killing these *Caterpillars*: They fixed some straw or flax on a pole, set it on fire, and held it under the web or nests; by which a part was burnt, and a part fell to the ground. However, numbers of the *Caterpillars* crept up the trees again, which could have been prevented, if they had been trod upon, or killed any other way. I called chickens to such places where they crept on the ground in numbers; but they would not eat them. Nor did the wild birds like them; for the trees were full of these webs, though whole flights of little birds had their nests in the gardens and orchards.

May 18th. THOUGH it was already pretty late in May, yet the nights were very dark here. About an hour after sun-set, it was so dark, that it was impossible to read in a book, though the type was ever so large. About ten o'clock, on a clear night, the dark was so much increased, that it looked like one of the darkest star-light nights in autumn, in Sweden. It likewise

seemed to me, that though the nights were clear, yet the stars did not give so great a light as they do in *Sweden*. And as, about this time, the nights are commonly dark, and the sky covered with clouds; I could compare them only to dark and cloudy *Swedish* winter nights. It was therefore, at this time of the year, very difficult to travel in such cloudy nights; for neither man nor horse could find their way. The nights, in general, seem very disagreeable to me, in comparison to the light and glorious summer nights of *Sweden*. Ignorance sometimes makes us think slightly of our country. If other countries have their advantages, *Sweden* is not destitute of matter to boast of on this head: it likewise has its peculiar advantages; and upon weighing the advantages and inconveniencies of different places, *Sweden* will be found to be not inferior to any of them.

I WILL briefly mention in what points I think *Sweden* is preferable to this part of *America*; and why I prefer *Old Sweden* to *New Sweden*.

THE nights are very dark here all the summer; and in winter, they are quite as dark, if not darker, than the winter nights in *Sweden*; for here is no kind of *Aurora Borealis*, and the stars give a very faint light. It is very remarkable if an *Aurora Borealis* appears once or twice a year. The winters here bring no snow, to make the nights clear, and to make travelling more safe and easy. The cold is, however, frequently as intense as in *Old Sweden*. The snow which falls lies only a few days, and always goes off with a great deal of wet. The

Rattle-snakes, Horned-snakes, red-bellied, green, and other poisonous *Snakes*, against whose bite there is frequently no remedy, are in great plenty here. To these I must add the woodlice, with which the forests are so pestered, that it is impossible to pass through a bush without having a whole army of them on your cloaths, or to sit down, though the place be ever so pleasant. The weather is so inconstant here, that when a day is most excessively hot, the next is often sensibly cold. This sudden change often happens in one day; and few people can suffer these changes, without impairing their health. The heat in summer is excessive, and the cold in winter often very piercing, but may be guarded against. But when the great heat endures long, there is hardly any remedy for it. It has frequently happened, that people who walked into the fields, dropped down dead, on account of the violence of the heat. Several distempers prevail here; and they increase every year. Nobody is left unattacked by the intermitting fever; and many people are forced to suffer it every year, together with other diseases. Pease cannot be sown, on account of the insects which consume them*. There are worms in the grains of rye, and numbers of them are in the cherry-trees. The *Caterpillars* often eat all the leaves from the trees, so that they cannot bear fruit in that year; and numbers die every year, both of fruit-trees and forest-trees. The grass in the mea-

* *Bruchus Pisi.*

dows is likewise consumed by a kind of worms, and other species cause the plumbs to drop, before they are half ripe. The oak here affords not near so good timber as the *European oak*. The houses are of no long duration. The meadows are poor, and what grass they have is bad. The pasture for cattle in the forests consists of such plants as they do not like, and which they are compelled to eat by necessity; for it is difficult to find a single grass in great forests, where the trees stand far asunder, notwithstanding the soil is excellent. For this reason, the cattle are forced, during almost the whole winter and part of the summer, to live upon the young shoots and branches of trees, which sometimes have no leaves: therefore, the cows give very little milk, and decrease in size every generation. The houses are extremely unfit for winter habitations. Hurricanes are frequent, which overthrow trees, carry away roofs, and sometimes houses, and do a great deal of damage. Some of these inconveniencies might be remedied by art; but others will either admit of no alteration, or they will at least cost vast trouble. Thus every country has its advantages, and its defects: happy is he who can content himself with his own.

THE rye grows very ill in most of the fields, which is chiefly owing to the carelessness in agriculture, and to the poorness of the fields, which are seldom or never manured. After the inhabitants have converted a tract of land into fields, which had been a forest for many centuries together, and which consequently had a

very fine soil, they use it as such, as long as it will bear any corn; and when it ceases to bear any, they turn it into pastures for the cattle, and take new corn-fields in another place, where a fine soil can be met with; and where it has never been made use of for this purpose. This kind of agriculture will do for some time; but it will afterwards have bad consequences, as every one may clearly see. A few of the inhabitants, however, treated their fields a little better: the *English* in general have carried agriculture to a higher degree of perfection than any other nation. But the depth and riches of the soil, which those found here who came over from *England*, (as they were preparing land for ploughing which had been covered with woods from times immemorial) missed them, and made them careless husbandmen. It is well known, that the *Indians* lived in this country for several centuries before the *Euro-peans* came into it; but it is likewise known, that they lived chiefly by hunting and fishing, and had hardly any fields. They planted maize, and some species of beans and gourds; and at the same time it is certain, that a plantation of such vegetables as serve an *Indian* family during one year, take up no more ground than a farmer in our country takes to plant cabbage for his family upon; at least, a farmer's cabbage and turnip ground, taken together, is always as extensive, if not more so, than the corn-fields and kitchen-gardens of an *Indian* family. Therefore, the *Indians* could hardly subsist for one month upon the produce of their gardens

and

and fields. Commonly, the little villages of *Indians* are about twelve or eighteen miles distant from each other. From hence one may judge, how little ground was formerly employed for corn fields; and the rest was overgrown with thick and tall trees. And though they cleared (as is yet usual) new ground, as soon as the old one had quite lost its fertility; yet such little pieces as they made use of were very inconsiderable, when compared to the vast forests which remained. Thus the upper fertile soil increased considerably, for centuries together; and the *Europeans* coming to *America* found a rich and fine soil before them, lying as loose between the trees as the best bed in a garden. They had nothing to do but to cut down the wood, put it up in heaps, and to clear the dead leaves away. They could then immediately proceed to ploughing, which in such loose ground is very easy; and having sown their corn, they got a most plentiful harvest. This easy method of getting a rich crop has spoiled the *English* and other *European* inhabitants, and induced them to adopt the same method of agriculture which the *Indians* make use of; that is, to sow uncultivated grounds, as long as they will produce a crop without manuring, but to turn them into pastures as soon as they can bear no more, and to take in hand new spots of ground, covered since time immemorial with woods, which have been spared by the fire or the hatchet ever since the creation. This is likewise the reason why agriculture, and the knowledge of this useful branch, is so imperfect here, that one

can learn nothing in a great tract of land, neither of the *English*, nor of the *Swedes*, *Germans*, *Dutch*, and *French*; except that, from their gross mistakes and carelessness for futurity, one finds opportunities every day of making all sorts of observations, and of growing wise at the expence of other people. In a word, the corn-fields, the meadows, the forests, the cattle, &c. are treated with great carelessness by the inhabitants. We can hardly be more lavish of our woods in *Sweden* and *Finland* than they are here; their eyes are fixed upon the present gain, and they are blind to futurity. Every day their cattle are harrassed by labour, and each generation decreases in goodness and size, by being kept short of food, as I have before mentioned. On my travels in this country I observed several plants, which the horses and cows preferred to all others. They were wild in this country, and likewise grew well on the driest and poorest ground, where no other plants would succeed. But the inhabitants did not know how to turn this to their advantage; owing to the little account made of Natural History, that science being here (as in other parts of the world) looked upon as a mere trifle, and the pastime of fools. I am certain, and my certainty is founded upon experience, that by mean of these plants, in the space of a few years, I have been able to turn the poorest ground, which would hardly afford food for a cow, into the richest and most fertile meadow, where great flocks of cattle have found superfluous food, and are grown fat upon. I own, that these useful plants were

not to be found on the grounds of every planter ; but with a small share of natural knowledge, a man would easily collect them in the places where they were to be got. I was astonished, when I heard the country people complaining of the badness of the pastures ; but I likewise perceived their negligence, and often saw excellent plants growing on their own grounds, which only required a little more attention and assistance from their unexperienced owners. I found every where the wisdom and goodness of the Creator ; but too seldom saw any acknowledgment, or adequate estimation of it, among men.

*O fortunatos nimium sua si bona norint
Agricolas !* VIRG. Georgic.

I HAVE been led to these reflections, which may perhaps seem foreign to my purpose, by the bad and neglected state of agriculture in every part of this continent. I likewise intended to shew the reason why this journal is so thinly stocked with œconomical advantages in the several branches of husbandry. I do not however deny, that I have sometimes found one or two skilful œconomists, but they were very scarce.

BIRDS of prey which pursue the poultry are found in abundance here, and if possible more plentiful than in *Sweden*. They enjoy great liberty here, as there are still great forests in many places, from whence they can come un-awares upon chickens and ducks. To the birds of prey it is quite indifferent whether the woods consist of good or bad trees, provided they are in shade. At night the owls, which are very

numerous, endanger the safety of the tame fowls. They live chiefly in marshes, give a disagreeable shriek at night, and attack the chickens, which commonly roost at night in the apple-trees, peach-trees, and cherry trees, in the garden. But since they are very busy in clearing this country of woods, as we are in *Sweden* and *Finland*, it may be of use for exposing the birds of prey, more than they are now, and for depriving them of the opportunities of doing mischief with so much ease.

THE thick forests of *America* contain numbers of stags; they do not seem to be a different species from the *European* stags. An *Englishman* was possessed of a tame hind. It is observable that though these creatures are very shy when wild in the woods and cedar swamps, which are very much frequented by them, yet they can be tamed to such a degree, if taken young, that they will come of their own accord to seek for food: This hind was caught when it was but very little; the colour of the whole body was a dirty reddish brown, the belly and the under side of the tail excepted, which were white; the ears were grey; the head, towards the snout, was very narrow, but upon the whole the creature looked very fine. The hair lay close together, and was quite short; the tail reached almost to the bend of the knee, near which, on the inside of each hind-foot, was a knob or callus. The possessor of the hind said, that he had tamed several stags, by catching them whilst they were very young. It was now big with young ones. It had a little bell hung about its neck, that by walking

the woods, the people might know it to be tame, and take care not to shoot it. It was at liberty to go where it pleased, and to keep it confined would have been a pretty hard task, as it could leap over the highest enclosures. Sometimes it went far into the woods, and frequently staid away a night or two, but afterwards returned home like other cattle. When it went into the woods, it was often accompanied by wild stags, and decoyed them even into the very houses, especially in rutting time, giving its master numerous opportunities of shooting the wild stags, almost at his door. Its scent was excellent, and when it was turned towards the wind, I often saw it rising and looking towards that part, though I did not see any people on the road, but they commonly appeared about an hour after. As soon as the wild stags have the scent of a man, they make off. In winter the man fed the hind with corn and hay; but in summer it went out into the woods and meadows, seeking its own food, eating both grass and other plants: it was now kept in a meadow; it did chiefly eat clover, the leaves of hiccory, of the *Andromeda paniculata*, and the *Geranium maculatum*. It was likewise contented with the leaves of the common plantane, or *Plantago*, grasses, and several other plants. The possessor of this hind sold stags to people in *Philadelphia*, who sent them as curiosities to other places. He got twenty-five, thirty, and forty shillings a-piece for them. In the long and severe winter, which commenced here upon the tenth of *December*, 1740, and continued to the thir-

teenth

teenth of *March*, old stile, during the course of which there fell a great quantity of snow, the stags were found dead in the snow, but chiefly higher up the country, where the snow was deeper. Nobody could determine whether their death was the consequence of the great quantity and depth of snow, which hindered their getting out, or whether the frost had been too severe, and of too long duration, or whether they were short of food. The old people likewise relate, that vast numbers of stags came down in the year 1705, when there was a heavy fall of snow, near a yard deep, and that they were afterwards found dead in the woods, in great numbers, because the snow was deeper than they could pass through. Numbers of Birds were likewise found dead at that time. In that same winter, a stag came to *Matsong* into the stables, and eat hay together with the cattle. It was so pinched by hunger, that it grew tame immediately, and did not run away from people. It afterwards continued in the house, as another tame creature. All aged persons asserted, that formerly this country abounded more with stags than it does at present. It was formerly not uncommon to see thirty or forty of them in a flock together. The reason of their decrease is chiefly owing to the increase of population, the destruction of the woods, and the number of people who kill and frighten the stags at present. However, high up in the country, in great forests and desarts, there are yet great numbers of them. Among their enemies is the *Lynx* of this country, which is the same with

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the *Swedish* one *. They climb up the trees, and when the stags pass by, they dart down upon him, get fast hold, bite, and suck the blood, and never give over till they have killed it.

I saw several holes in the ground, both on hills and on fields, and fallow grounds; they were round, and commonly about an inch wide; they went almost perpendicularly into the earth, and were made by dung-beetles, or by great worms, which are made use of for angling. The dung beetles had dug very deep into the ground, thro' horse-dung, tho' it lay on the hardest road, so that a great heap of earth lay near it. These holes were afterwards occupied by other insects, especially grasshoppers, (*Grylli*) and *Cicadæ*; for by digging these holes up, I commonly found one or more young ones of these insects, which had not yet got their perfect size.

May 19th. This morning I left *Raccoon*, a parish in the country called *New Sweden*, and which is yet chiefly inhabited by *Swedes*, in order to proceed in my travels to the North. I first intended to set out with the beginning of *April*, but for several reasons this was not adviseable. No leaves were come out at that time, and hardly any flowers appeared. I did not know what flowers grew here in spring; for the

* *Warglo*; *Felis Lynx* Linn. The *Swedes* mention two kinds of lynx, the one is called the *Warglo*, or wolf-lynx, and the other the *Kattlo*, or cat-lynx. The *Germans* make the same distinction, and call the former *Wolf-luchs*, and the latter *Katz-luchs*: the former is the biggest, of a brownish red, mixed with grey and white, on its back, and white towards the belly, with brownish spots; the latter is smaller, and has a coat which is more white, and with more spots. F.

autumnal plants are different from the vernal ones. The *Sweedes* had this winter told me the oeconomic and medical uses of many plants, to which they gave names unknown to me: they could not then shew me those plants on account of the season, and by their deficient and erroneous descriptions, I was not able to guess what plants they meant. By going away so early as the beginning of *April*, I would have remained in uncertainty in regard to these things. It was therefore fit, that I should spend a part of the spring at *Raccoon*, especially as I had still time enough left for my tour to the North.

On the road we saw a *Black Snake*, which we killed, and found just five feet long. *Catesby* has described it and its qualities, and also drawn it*. The full-grown *Black Snakes* are commonly about five feet long, but very slender; the thickest I ever saw was in the broadest part hardly three inches thick; the back is black, shining, and smooth; the chin white and smooth; the belly whitish turning into blue, shining, and very smooth; I believe there are some varieties of this snake. One which was nineteen inches long, had an hundred and eighty-six scales on the belly, (*Scuta Abdominalia*) and ninety-two half scales on the tail (*Squamæ subcaudales*), which I found to be true, by a repeated counting of the scales. Another, which was seventeen inches and a half in length, had a hundred and eighty-four scales on the

* *Anguis niger*. See *Catesby's Nat. Hist. of Carol.* ii. t. 48.

belly, and only sixty-four half scales on the tail; this I likewise assured myself of, by counting the scales over again. It is possible that the end of this last snake's tail was cut off, and the wound healed up again †.

THE country abounds with Black Snakes. They are among the first that come out in spring, and often appear very early if warm weather happens; but if it grows cold again after that, they are quite frozen, and lie stiff and torpid on the ground or on the ice; when taken in this state and put before a fire, they revive in less than an hour's time. It has sometimes happened, when the beginning of *January* is very warm, that they come out of their winter habitations. They commonly appear about the end of *March*, old style.

THIS is the swiftest of all the snakes which are to be found here, for it moves so quick, that a dog can hardly catch it. It is therefore almost impossible for a man to escape it if pursued: but happily its bite is neither poisonous nor any way dangerous; many people have been

† It has been found by repeated experience, that the specific character, employed by Dr. *Linnaeus*, for the distinction of the species of snakes, taken from their *Scuta abdominalia* & *caudalia*, or their *Squamæ subcaudales*, varies greatly in snakes of the same species, so that often the difference amounts to ten or more: the whole number of the scuta sometimes helps to find out the species; care ought however to be taken, that the snake may not by any accident have lost its tail, and that it be growing again; in which case, it is impossible to make use of this character. The character is not quite so good and decisive, as may be wished, but neither are the marks taken from colours, spots, stripes, &c. quite constant; and so it is better to make use of an imperfect character, than none at all. Time, and greater acquaintance with this class of animals may perhaps clear up their natural characters. F.

bit by it in the woods, and have scarce felt any more inconvenience than if they had been wounded by a knife; the wounded place only remains painful for some time. The Black Snakes seldom do any harm, except in spring, when they copulate; at which time, if disturbed, they will attack the person that disturbs them. I am acquainted with several people, who have on such an occasion run so hard as to be quite out of breath, in endeavouring to escape the snake, which moved with the swiftness of an arrow after them. If a person thus pursued can muster up courage enough to oppose the snake with a stick or any thing else, when it is either passed by him, or when he steps aside to avoid it, it will turn back again, and seek a refuge in its swiftness. I have been assured by several, that when it overtakes a person, who has tried to escape it, and who has not courage enough to oppose it, it winds round his feet, so as to make him fall down; it then bites him several times in the leg, or whatever part it can get hold of, and goes off again. I shall mention two circumstances, which confirm what I have said. During my stay in *New York*, Dr. *Colden* told me, that in the spring, 1748, he had several workmen at his country seat, and among them one lately arrived from *Europe*, who of course knew very little of the qualities of the Black Snake. The other workmen seeing a great Black Snake copulating with its female, engaged the new comer to go and kill it, which he intended to do with a little stick. But on approaching the place where the snakes lay, they perceived him, and the

the male in great wrath leaves his pleasure to pursue the fellow with amazing swiftness; the little expected such courage in the snake, and flinging away his stick, began to run as fast as he was able. The snake pursued him, overtook him, and twisting several times round his feet, threw him down, and frightened him almost out of his senses; he could not get rid of the snake, till he took a knife and cut it through in two or three places. The other workmen were rejoiced at this sight, and laughed at it, without offering to help their companion. Many people at *Albany* told me of an accident which happened to a young lady, who went out of town in summer, together with many other girls, attended by her negro. She sat down in the wood, in a place where the others were running about, and before she was aware, a Black Snake being disturbed in its amours, ran under her petticoats, and twisted round her waist so that she fell backwards in a swoon occasioned by her fright, or by the compression which the snake caused. The negro came up to her, and suspecting that a Black Snake might have hurt her, on making use of a remedy to bring his lady to herself again, he lifted up her cloaths, and really found the snake wound about her body as close as possible; the negro was not able to tear it away, and therefore cut it, and the girl came to herself again; but she conceived so great an aversion to the negro, that she could not bear the sight of him afterwards, and died of a consumption. At other times of the year this snake is more apt to run away, than to attack people. However I have heard it asserted frequently,

frequently, that even in summer when its time of copulation is past, it pursues people, especially children, if it finds that they are afraid and run from her. Several people likewise assured me from their own experience, that it may be provoked to pursue people, if they throw at it, and then run away. I cannot well doubt of this, as I have heard it said by numbers of creditable people; but though I wanted to try the experiment I could never succeed in provoking them.

Most of the people in this country ascribed to this snake a power of fascinating birds and squirrels, as I have described in several parts of my Journal. When the snake lies under a tree, and has fixed his eyes on a bird or squirrel above; it obliges them to come down, and to go directly into its mouth. I cannot account for this, for I never saw it done. However, I have a list of more than twenty persons, among which are some of the most creditable people, who have all unanimously, though living far distant from each other, asserted the same thing; they assured me upon their honour, that they have seen (at several times) these Black Snakes fascinating squirrels and birds which sat on the tops of trees, the snake lying at the foot of the tree, with its eyes fixed upon the bird or squirrel, which sits above it, and utters a doleful note; from which it is easy to conclude with certainty that it is about to be fascinated, though you cannot see it. The bird or squirrel runs up and down along the tree continuing its plaintive song, and always comes nearer the snake, whose eyes are unalterably fixed upon it. It should seem as if these

poor

poor creatures endeavoured to escape the snake, by hopping or running up the tree; but there appears to be a power which with-holds them: they are forced downwards, and each time that they turn back, they approach nearer their enemy, till they are at last forced to leap into its mouth, which stands wide open for that purpose. Numbers of squirrels and birds are continually running and hopping fearless in the woods on the ground, where the snakes lie in wait for them, and can easily give these poor creatures a mortal bite. Therefore it seems that this fascination might be thus interpreted, that the creature has first got a mortal wound from the snake, which is sure of her bite, and lies quiet, being assured that the wounded creature has been poisoned with the bite, or at least feels pain from the violence of the bite, and that it will at last be obliged to come down into its mouth. The plaintive note is perhaps occasioned by the acuteness of the pain which the wound gives the creature. But to this it may be objected, that the bite of the Black Snake is not poisonous; it may further be objected, that if the snake could come near enough to a bird or squirrel to give it a mortal bite, it might as easily keep hold of it, or, as it sometimes does with poultry, twist round and strangle or stifle it. But the chief objection which lies against this interpretation, is the following account, which I received from the most creditable people, who have assured me of it. The squirrel being upon the point of running into the snake's mouth, the spectators have not been able

able to let it come that pitch, but killed the snake, and as soon as it had got a mortal blow, the squirrel or bird destined for destruction, flew away, and left off their moanful note, as if they had broke loose from a net. Some say, that if they only touched the snake, so as to draw off its attention from the squirrel, it went off quickly, not stopping till it had got to a great distance. Why do the squirrels or birds go away so suddenly, and why no sooner? If they had been poisoned or bitten by the snake before, so as not to be able to get from the tree, and to be forced to approach the snake always more and more, they could however not get new strength by the snake being either killed or diverted. Therefore, it seems that they are only *enchanted*, whilst the snake has its eyes fixed on them. However, this looks odd and unaccountable, though many of the worthiest and most reputable people have related it, and though it is so universally believed here, that to doubt it would be to expose one's self to general laughter.

THE black snakes kill the smaller species of frogs, and eat them. If they get at eggs of poultry, or of other birds, they make holes in them, and suck the contents. When the hens are sitting on the eggs, they creep into the nest, wind round the birds, stifle them, and suck the eggs. Mr. *Bartram* asserted, that he had often seen this snake creep up into the tallest trees, after bird's eggs, or young birds, always with the head foremost, when descending. A *Swede* told me, that a black snake had once got the head of one of his hens in its mouth, and was wound

several

several times round the body, when he came and killed the snake. The hen was afterwards as well as ever.

THIS snake is very greedy of milk, and it is difficult to keep it out, when it is once used to go into a cellar where milk is kept. It has been seen eating milk out of the same dish with children, without biting them, though they often gave it blows with the spoon upon the head, when it was over-greedy. I never heard it hissing. It can raise more than one half of its body from the ground, in order to look about her. It skins every year; and its skin is said to be a remedy against the cramp, if continually worn about the body.

THE rye was now beginning to flower.

I have often observed with astonishment, on my travels, the great difference between the plants and the soil, on the two opposite banks of brooks. Sometimes a brook, which one can stride over, has plants on one bank widely different from those on the opposite bank. Therefore, whenever I came to a great brook or a river, I expected to find plants which I had not met with before. Their seeds are carried down with the stream from distant parts. The soil is likewise very often different on the different sides of a rivulet, being rich and fertile on the one, and dry, barren, and sandy on the other. But a great river can make still greater differences. Thus we see the great disparity between the province of *Pennsylvania*, and *New Jersey*, which are only divided by the river *Delaware*. In *Pennsylvania* the soil consists of a mould mixed with

with sand and clay, and is very rich and fertile: and in the woods which are higher in the country, the ground is mountainous and stony. On the other hand, in the province of *New Jersey*, the soil is poor and dry, and not very fertile, some parts excepted. You can hardly find a stone in *New Jersey*, and much less mountains. In *Pennsylvania* you scarce ever see a fir-tree, and in *New Jersey* are whole woods of it.

THIS evening I arrived at *Philadelphia*.

MAY 22d. THE locusts began to creep out of their holes in the ground last night, and continued to do so to-day. As soon as their wings were dry, they began their song, which is almost sufficient to make one deaf, when travelling through the woods. This year there was an immense number of them.

MAY 25th. THE tulip-tree (*Liriodendron tulipifera*) was now in full blossom. The flowers have a resemblance to tulips, and look very fine, and though they have not a very agreeable smell, yet the eye is pleased to see trees as tall as full-grown oaks, covered with tulip-like flowers.

ON the flowers of the tulip-tree was an olive-coloured *Chafer* (*Scarabæus*) without horns (*muticus*) the suture and borders of his wing-shells (*Elytræ*) were black, and his thighs brown. I cannot with certainty say whether they collected the pollen of the flower, or whether they coupled. Later in summer, I saw the same kind of beetles make deep holes into the ripe mulberries, either to eat them, or to lay their eggs in them. I likewise found them abundant in the

the leaves of the *Magnolia glauca*, or beaver-tree.

THE strawberries were now ripe on the hills.

THE country people already brought ripe cherries up to town; but they were only a few to satisfy curiosity, yet we may form a judgment of the climate from hence.

May 26th. A peculiar kind of storm called a *Travat*, or *Travado*, happened to-day. In the evening about ten o'clock, when the sky was quite clear, a thick, black cloud came rushing from the south-west, with a wind. The air was quite calm, and we could not feel any breeze. But the approach of this cloud was perceived from the strong rushing noise in the woods to the south-west, and which increased in proportion as the cloud came nearer. As soon as it was come up to us, it was attended by a violent gust of wind, which in its course threw down the weaker enclosures, carried them a good way along with it, and broke down several trees. It was then followed by a hard shower of rain, which put an end to the storm, and every thing was calm as before. These *travados* are frequent in summer, and have the quality of cooling the air. However, they often do a deal of damage. They are commonly attended by thunder and lightning; as soon as they are passed over, the sky is as clear as it was before.

May 28th. THE *Magnolia glauca* was now in full bloom. Its flowers have a very pleasant fragrantcy, which refreshes the travellers in the woods,

woods, especially towards the evening. The flowers of the wild vine afterwards supplied the place of those of the Magnolia. Several other flowers contribute likewise towards perfuming the ambient air.

THE *Kalmia angustifolia* was now every where in flower. It grows chiefly on sandy heaths, or on dry poor grounds, which few other plants will agree with; it is common in *Pensylvania*, but particularly in *New Jersey*, and the province of *New York*, it is scarce in *Canada*; its leaves stay the winter; the flowers are a real ornament to the woods; they grow in bunches like crowns, and are of a fine lively purple colour; at the bottom is a circle of deep purple, and within it a greyish or whitish colour. The flowers grow as aforesaid, in bunches, round the extremity of the stalk, and make it look like a decorated pyramid. The *English* at *New York* call this plant the *Dwarf Laurel*. Its qualities are the same with those of the *Kalmia latifolia* viz. that it kills sheep and other lesser animals, when they eat plentifully of it. I do not know whether it is noxious to the greater cattle. It is not of any known use, and only serves to attract the eye whilst in flower.

THE *Kalmia latifolia* was likewise in full blossom at present. It rivals the preceding one, in the beauty of its colour; yet though they are conspicuous in regard to the colours and shape of their flowers, they are no ways remarkable for smell, such as the *Magnolia* is; for they have little or no smell at all. So equally and justly does nature distribute her gifts; no

part of the creation has them all, each has its own, and none is absolutely without a share of them.

May 30th. THE Moravian Brethren, who arrived in great numbers from Europe at New York, in May, brought two converted Greenlanders with them. The Moravians who were already settled in America, immediately sent some of their brethren from Philadelphia to the new comers, in order to welcome them. Among these deputies were two North American Indians, who had been converted to their doctrine, and likewise two South American Indians, from Surinam. These three kinds of converted Indians accordingly met at New York. I had no opportunity of seeing them; but all those who had seen them, and whom I conversed with, thought that they had plainly perceived a similarity in their features and shape, the Greenlanders being only somewhat smaller. They concluded from hence, that all these three kinds of Americans were the posterity of one and the same descendant of Noah, or that they were perhaps yet more nearly related. How far their guesses are to be relied upon, I cannot determine.

RIPE cherries were now already pretty common, and consequently cheap.

YAMS are a species of roots, which are cultivated in the hottest parts of America, for eating as we do potatoes. It has not yet been attempted to plant them here, and they are brought from the West Indies in ships; therefore they are reckoned a rarity here, and as such I ate them at Dr. Franklin's to-day. They are white,

and taste like common potatoes, but not quite so agreeable; and I think it would not be worth while to plant them in *Sweden*, though they might bear the climate. The plant these roots belong to is the *Discaerea alata*.

The inhabitants make plenty of cheese. They are not reckoned so good as *English* cheese: however, some take them to be full as good when old; and so they seemed to me. A man from *Boston* in *New-England* told me, that they made very good cheese there: but they take care to keep the cattle from salt-water, especially those who live near the sea-coasts; for it has been found, that the cheese will not become so good when the cows graze near salt-water, as it will when they have fresh water. This, however, wants nearer examination, in my opinion.

May 31st. ABOUT noon I left *Philadelphia*, and went on board a small yacht, which sails continually up and down upon the river *Delaware*, between *Trenton* and *Philadelphia*. We sailed up the river with fair wind and weather. *Sturgeons* leaped often a fathom into the air. We saw them continuing this exercise all day, till we came to *Trenton*. The banks on the *Pennsylvanian* side were low; and those on the *New Jersey* side steep and sandy, but not very high. On both sides were perceived forests of tall trees, with *deciduous* leaves.

DURING the course of this month, the forenoon was always calm; but immediately after noon it began to blow gently, and sometimes pretty strongly. This morning was likewise fair;

fair; and in the afternoon it was cloudy, but did not rain.

We saw some small houses near the shore, in the woods; and, now and then, a good house built of stone. The river now decreased visibly in breadth. About three o'clock this afternoon we passed *Burlington*.

BURLINGTON, the chief town in the province of *New Jersey*, and the residence of the governor, is but a small town, about twenty miles from *Philadelphia*, on the eastern side of the *Delaware*. The houses were chiefly built of stone, though they stood far distant from each other. The town has a good situation, since ships of considerable burden can sail close up to it: but *Philadelphia* prevents its carrying on an extensive trade; for the proprietors of that place * have granted it great immunities, by which it is increased so as to swallow all the trade of the adjacent towns. The house of the governor at *Burlington* is but a small one: it is built of stone, close by the river side, and is the first building in the town as you come from *Philadelphia*. It is observed, that about the full moons, when the tides are highest, and the high water at *Cape Hinlopen* comes at nine o'clock in the morning, it will be at *Chester*, on the river *Delaware*, about ten minutes after one o'clock; at *Philadelphia*, about ten minutes after two o'clock; and at *Burlington*, about ten minutes after three o'clock; for the tide in the river *Delaware* comes quite up to *Trenton*.

* *William Penn*, Esq. and his heirs after him.

THE banks of the river were now chiefly high and steep on the side of *New Jersey*, consisting of a pale brick-coloured soil. On the *Pennsylvanian* side, they were gently sloping, and consisted of a blackish rich mould, mixed with particles of Glimmer (*Mica*). On the *New Jersey* side appeared some firs; but seldom on the other, except in a few places where they were accidentally brought over from *New Jersey*.

TOWARDS night, after the tide had begun to ebb and the wind was quite subsided, we could not proceed, but dropped our anchor about seven miles from *Trenton*, and passed the night there. The woods were full of *Fireflies*, (*Lampyrus*) which flew like sparks of fire between the trees, and sometimes across the river. In the marshes, the *Bullfrogs* now and then began their hideous roaring; and more than a hundred of them roared together. The *Whip-poor-will*, or *Goat-sucker*, was likewise heard every where.

June 1st. WE continued our voyage this morning, after the rain was over. The river *Delaware* was very narrow here, and the banks the same as we found them yesterday, after we had passed *Burlington*. About eight o'clock in the morning we arrived at *Trenton*.

June 2d. THIS morning we left *Trenton*, and proceeded towards *New York*. The country I have described before. The fields were sown with wheat, rye, maize, oats, hemp, and flax. In several places, we saw very large pieces of ground with hemp.

WE saw abundance of chestnut-trees in the woods. They often stood in excessive poor ground, which was neither too dry nor too wet.

TULIP-TREES did not appear on the road; but the people said there were some in the woods.

THE *Beaver-tree* (*Magnolia glauca*) grows in the swamps. It was now in flower, and the fragrant of its blossoms had so perfumed the air, that one could enjoy it before one approached the swamps; and this fine smell likewise shewed that a beaver tree was near us, though we often happened not to see it.

THE *Phlox Glaberrima* grows abundantly in the woods, and cuts a fine figure with its red flowers. It grows in such soil here as in *Europe* is occupied by the *Lychnis viscaria* and *Lychnis dioica*, or read Catchfly and Campion. The *Phlox maculata* grows abundantly in wet ground, and has fine red and odoriferous flowers. It grows on low meadows, where in *Europe* the Meadow-pinks, or *Lychnis flos cuculi*, would be met with. By adding to these flowers the *Bartisia coccinea*, the *Lobelia cardinalis*, and the *Monarda didyma*, which grow wild in this country, they are undoubtedly altogether adorned with the finest red imaginable.

THE *Sassafras-tree* was abundant in the woods, and near the inclosures.

THE houses which we passed by were most of them wooden. In one place, I saw the people building a house with walls of mere clay, which is likewise employed in making ovens for baking.

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BUCKWHEAT was already coming up in several places. We saw single plants of it all day in the woods, and in the fields, but always by the side of the road; from whence it may be concluded, that they spring up from lost and scattered seeds.

LATE this evening we arrived at *New Brunswick*.

June the 3d. AT noon we went on board a yacht bound for *New York*, and sailed down the river, which had at first pretty high and steep banks, of red sand-stone, on each side, which I have mentioned before. Now and then there was a farm-house on the high shore. As we came lower down, we saw on both sides great fields and meadows, close up to the water. We could not sail at random with the yacht; for the river was often shallow in some places, and sometimes in the very middle. For that purpose, the course which we were to take was marked out by branches with leaves on them. At last we got into the sea, which bounded our prospect on the south; but on the other side, we were continually in sight of land at some distance. On coming to the mouth of the river, we had a choice of two roads to *New York*; viz. either within the *Staten Island*, or without it. The inhabitants are determined in their choice by the weather; for when it is stormy and cloudy, or dark, they do not venture to sail without, where the sea itself communicates. We took that course now, it being very pleasant weather; and though we struck on the sands
once

once or twice, yet we got loose again, and arrived at *New York* about nine o'clock.

June 4th. I FOUND vines in several gardens, got from the old countries. They bear annually a quantity of excellent grapes. When the winters are very severe, they are killed by the frost, and die quite to the ground; but the next spring new shoots spring up from the root.

STRAWBERRIES were now sold in abundance about the town every day. An *Englishman* from *Jamaica* asserted, that in that island there were no strawberries. The snakes are very fond of strawberries. Those which they had here were so good as the *Swedish* and *Finland* ones.

RED CLOVER was sown in several places on the hills without the town. The country people were now employed in mowing the meadows. Some were already mown; and the dry clover was put under cover, in order to be carried away the first opportunity.

CHERRY-TREES were planted in great quantities before the farm-houses, and along the high-roads, from *Philadelphia* to *New Brunswick*; but behind that place they became more scarce. On coming to *Staten Island*, in the province of *New York*, I found them very common again, near the gardens. Here are not so many varieties of cherries as there are in *Pensylvania*. I seldom saw any of the black sweet cherries* at *New York*; but commonly the four red ones. All travellers are allowed to pluck ripe fruit as they pass by. Between *New Brunswick* and

* Commonly called *Black-heart Cherries*.

Staten Island, are a few cherry-gardens; but proportionerly more orchards, with apple-trees. ~~on June 6th,~~ SEVERAL gentlemen and merchants, between fifty and sixty years of age, asserted, that during their life they had plainly found several kinds of fish decrease in number every year; and that they could not get near so many fish now as they could formerly.

RUM, a brandy prepared from the sugar-canes, and in great use with all the *English North American* colonies, is reckoned much wholesomer than brandy, made from wine or corn †. In confirmation of this opinion, they say, that if you put a piece of fresh meat into rum, and another into brandy, and leave them there for some months; that in the rum will keep as it was, but that in the brandy will be quite eaten, and full of holes. But this experiment does not seem a very accurate one to me. Major *Roderfort* told me, that being upon the *Canada* expedition, he had observed, that such of his men as drank brandy for some time died of it; but those who drank rum were not hurt, though they got drunk with it every day, and oftener than the others.

† That rum is among the spirituous liquors less noxious than any one of the rest, is chiefly owing to the balsamic quality it gets from the sugar, which corrects the styptic quality all kinds of brandy and spirituous liquors have. The older the rum is, and the longer it has been kept in a great cask, the more is its stypticity corrected. All which has been lately proved by the clearest experiments, explained and deduced from the most indisputable principles of chemistry, in a pamphlet written by that able chemist Mr. *Diss*. F.

LONG-

LONG-ISLAND is the name of an island opposite the town of *New York*, in the Sea. The northern part of the island is much more fertile than the southern. Formerly there lived a number of *Indians* on this island; and there are yet some, which however decrease in number every year, because they leave the island. The soil of the southern part of the island is very poor; but this deficiency is made up by a vast quantity of oysters, lobsters, crabs, several kinds of fish, and numbers of water fowl, all which are there far more abundant than on the northern shores of the island. Therefore the *Indians* formerly chose the southern part to live in, because they subsisted on oysters, and other productions of the sea. When the tide is out, it is very easy to fill a whole cart with oysters, which have been driven on shore by one flood. The Island is strewed with oyster-shells and other shells, which the *Indians* left there; these shells serve now for good manure for the fields. The southern part of the island is turned into meadows, and the northern part into fields. The winter is more constant on the northern part, and the snow in spring lies longer there than on the southern part. The people are very fertile here, and commonly tall and strong.

June 10th. At noon we left *New York*, and and sailed up the river *Hudson*, in a yacht bound for *Albany*. All this afternoon we saw a whole fleet of little boats returning from *New York*, whither they had brought provisions and other goods for sale, which on account of the extensive commerce of this town, and the great number

number of its inhabitants, go off very well. The river *Hudson* runs from North to South here, except some high pieces of land which sometimes project far into it, and alter its direction; its breadth at the mouth is reckoned about a mile and a quarter. Some porpoises played and tumbled in the river. The eastern shore, or the *New York* side, was at first very steep and high; but the western was very sloping and covered with woods. There appeared farm-houses on both sides, surrounded with corn fields. The ground of which the steep shores consisted was of a pale brick colour, and some little rocks of a grey sand-stone were seen here and there. About ten or twelve miles from *New York*, the western shore appears quite different from what it was before; it consists of steep mountains with perpendicular sides towards the river, and they are exactly like the steep sides of the mountains of *Hall* and *Hunneburg* in *West Gothland*. Sometimes a rock projects like the salient angle of a bastion: the tops of these mountains are covered with oaks, and other wood; a number of stones of all sizes lay along the shore, having rolled down from the mountains.

These high and steep mountains continue for some *English* miles on the western shore; but on the eastern side the land is high, and sometimes diversified with hills and valleys, which are commonly covered with deciduous trees, amongst which there appears a farm now and then in a glade. The hills are covered with stones in some places. About twelve miles from

New

New York we saw *Sturgeons** (*Acipenser sturio*), leaping up out of the water, and on the whole passage we met with porpoises in the river. As we proceeded we found the eastern banks of the river very much cultivated; and a number of pretty farms, surrounded with orchards and fine corn-fields, presented themselves to our view. About twenty-two miles from *New York*, the high mountains which I have before mentioned left us, and made as it were a high ridge here from east to west quite across the country. This altered the face of the country on the western shore of the river: from mountainous, it became interspersed with little vallies and round hillocks, which were scarce inhabited at all; but the eastern shore continued to afford us a delightful prospect. After sailing a little while in the night, we cast our anchor and lay here till the morning, especially as the tide was ebbing with great force.

June 11th. This morning we continued our voyage up the river, with the tide and a faint breeze. We now passed the *Highland* mountains, which were to the East of us; they consist of a grey sand-stone, are very high and pretty steep, and covered with deciduous trees, and likewise with firs and red cedars. The western shore was full of rocks, which however did not come up to the height of the mountains on the opposite shore; the tops of these eastern mountains were cut off from our sight by a thick

* The *New-York* Sturgeons which I saw this year brought over, had short blunt noses, in which particular they are different from the *English* ones, which have long noses. F.

fog which surrounded them. The country was unfit for cultivation, being so full of rocks, and accordingly we saw no farms. The distance from these mountains to New York is computed at thirty-six *English* miles.

A thick fog now rose up from the high mountains. For the space of some *English* miles, we had hills and rocks on the western banks of the river; and a change of lesser and greater mountains and vallies covered with young firs, red cedars, and oaks, on the eastern side. The hills close to the river side are commonly low, but their height increases as they are further from the river. Afterwards we saw, for some miles together, nothing but high round mountains and vallies, both covered with woods; the vallies are in reality nothing but low rocks, and stand perpendicular towards the river in many places. The breadth of the river is sometimes two or three musket-shot, but commonly not above one; every now and then we saw several kinds of fish leaping out of the water. The wind vanished away about ten o'clock in the morning, and forced us to get forwards with our oars, the tide being almost spent.

THE water in the river has here no more a brackish taste; yet I was told that the tide, especially when the wind is South, sometimes carries the salt water up higher with it. The colour of the water was likewise altered, for it appeared darker here than before. To account for the first origin of rivers is very difficult, if not wholly impossible; some rivers may have come from a great reservoir of water, which
being

being considerably encreased by heavy falls of rain or other circumstances, passed its old bounds and flowed to the lower countries, through the places where it met with the least opposition. This is perhaps the reason why some rivers run in so many bendings equally through fields of soft earth, as likewise there, where mountains, rocks, and stones, divert their passage. However it seems that some rivers derive their first origin from the creation itself, and that Providence then pointed out their course; for their existence can, in all probability, not be owing to the accidental eruption of water alone. Among these rivers we may rank the river *Hudson*: I was surprised on seeing its course, and the variety of its shores. It takes its rise a good way above *Albany*, and descends to *New York*, in a direct line from North to South, which is a distance of about a hundred and sixty *English* miles, and perhaps more; for the little bendings which it makes are of no signification. In many places between *New York* and *Albany*, are ridges of high mountains running West and East. But it is remarkable that they go on undisturbed till they come to the river *Hudson*, which cuts directly across them, and frequently their sides stand perpendicular towards the river. There is an opening left in the chain of mountains, as broad as the river commonly is, for it to pass through, and the mountains go on as before, on the other side, in the same direction. It is likewise remarkable, that the river in such places where it passes through the mountains is as deep, and often deeper then in the other places.

The perpendicular rocks on the sides of the river are surprising, and it appears that if no passages had been opened by Providence, for the river to pass through, the mountains in the upper part of the country would have been inundated, since these mountains, like so many dykes, would have hindered the water from going on. *Quere*, Why does this river go on in a direct line for so considerable a distance? Why do the many passages, through which the river flows across the mountains, ly under the same meridian? Why are waterfalls near some of these passages, or at least shallow water with a rocky ground?

WE now perceived excessive high and steep mountains on both sides of the river, which echoed back each sound we uttered. Yet notwithstanding they were so high and steep, they were covered with small trees.

THE *Blue Mountains*, which reared their towering tops above all the other mountains, were now seen before us, towards *North*, but at a great distance.

THE country began here to look more cultivated, and less mountainous.

THE last of the high western mountains is called *Butterhill*, after which the country between the mountains grows more spacious. The farms became very numerous, and we had a prospect of many corn-fields, between the hills: before we passed these hills we had the wind in our face, and we could only get forward by tacking, which went very slow, as the river was hardly a musket-shot in breadth. Afterwards we cast anchor, because we had both wind and tide against us.

WHILST we waited for the return of tide and the change of wind, we went on shore.

THE Sassafras-tree (*Laurus Sassafras*) and the chestnut-tree grows here in great abundance. I found the tulip-tree (*Liriodendron tulipifera*) in some parts of the wood, as likewise the *Kalmia latifolia*, which was now in full blossom; though the flowers were already withering.

SOME time after noon the wind arose from South-west, which being a fair wind, we weighed anchor, and continued our voyage. The place where we lay at anchor, was just the end of those steep and amazing high mountains: their height is very amazing; they consist of grey rock stone, and close to them, on the shores lay a vast number of little stones. As soon as we had passed these mountains, the country became clearer of mountains, and higher. The river likewise encreased in breadth, so as to be near an *English* mile broad. After sailing for some time, we found no more mountains along the river; but on the eastern side goes a high chain of mountains to the north-east, whose sides are covered with woods, up to one half of their height. The summits however are quite barren; for I suppose that nothing would grow there, on account of the great degree of heat*, dryness, and the violence of the wind, to which that part is exposed. The eastern side of the

* Mr. Kalm was certainly mistaken, by thinking the summits of these mountains without wood, on account of the great degree of heat: for it is a general notion, founded on experience, that the sun operates not so much on the tops of mountains, as in plains or vallies, and the cold often hinders the increase of wood on the summits of high mountains. F.

river is much more cultivated than the western, where we seldom saw a house, the land being covered with woods, though it is in general very level. About fifty-six *English* miles from *New York* the country is not very high; yet it is every where covered with woods, except some new farms which were scattered here and there. The high mountains which we left in the afternoon, now appeared above the woods and the country. These mountains, which were called the *Highlands*, did not project more North than the other, in the place where we anchored. Their sides (not those towards the river) were seldom perpendicular, but sloping, so that one could climb up to the top, tho' not without difficulty.

On several high grounds near the river, the people burnt lime. The master of the yacht told me, that they break a fine blueish grey lime-stone in the high grounds, along both sides of the river, for the space of some *English* miles, and burn lime of it. But at some miles distance there is no more lime-stone, and they find also none on the banks till they come to *Albany*.

We passed by a little neck of land, which projected on the western side in the river, and was called *Dance*. The name of this place is said to derive its origin from a festival which the *Dutch* celebrated here in former times, and at which they danced and diverted themselves; but once there came a number of *Indians*, who killed them all.

We cast anchor late at night, because the wind ceased and the tide was ebbing. The depth of the river is twelve fathoms here.

THE

THE fire-flies passed the river in numbers, at night, and sometimes settled upon the rigging.

June 12th. THIS morning we proceeded with the tide, but against the wind. The river was here a musket-shot broad. The country in general is low on both sides, consisting of low rocks, and stony fields, which are however covered with woods. It is so rocky, stony, and poor, that nobody can settle in it, or inhabit it, there being no spot of ground fit for a corn-field. The country continued to have the same appearance for the space of some miles, and we never perceived one settlement. At eleven o'clock this morning we came to a little island, which lies in the middle of the river, and is said to be half-way between *New York* and *Albany*. The shores are still low, stony, and rocky, as before. But at a greater distance we saw high mountains, covered with woods, chiefly on the western shore, raising their tops above the rest of the country: and still further off, the *Blue Mountains* rose up above them. Towards noon it was quite calm, and we went on very slow. Here the land is well cultivated, especially on the eastern shore, and full of great corn-fields; yet the soil seemed sandy. Several villages lay on the eastern side, and one of them, called *Straßburg*, was inhabited by a number of *Germans*. To the West we saw several cultivated places. The *Blue Mountains* are very plainly to be seen here. They appear through the clouds, and tower above all

other mountains. The river is full an *English* mile broad opposite *Strasburg*.

THEY make use of a yellow *Agaricus*, or mushroom, which grows on maple-trees, for tinder; that which is found on the red-flowering maple (*Acer rubrum*) is reckoned the best, and next in goodness is that of the *Sugar-maple* (*Acer saccharinum*), which is sometimes reckoned as good as the former.

RHINBECK is a place at some distance from *Strasburgh*, further off from the river. It is inhabited by many *Germans*, who have a church there.

AT two in the afternoon it began again to blow from the south, which enabled us to proceed. The country on the eastern side is high, and consists of a well cultivated soil. We had fine corn-fields, pretty farms, and good orchards, in view. The western shore is likewise somewhat high, but still covered with woods, and we now and then, though seldom, saw one or two little settlements. The river is above an *English* mile broad in most places, and comes in a strait line from the North, so that we could not sometimes follow it with our eye.

June 13th. THE wind favoured our voyage during the whole night, so that I had no opportunity of observing the nature of the country. This morning at five o'clock we were but nine *English* miles from *Albany*. The country on both sides the river is low, and covered with woods, excepting a few little scattered settlements. Under the higher shores of the river

are wet meadows, covered with sword-grass (*Carex*), and they formed several little islands. We saw no mountains; and hastened towards *Albany*. The land on both sides of the river is chiefly low, and more carefully cultivated as we came nearer to *Albany*.

As to the houses, which we saw, some were of wood, others of stone. The river is seldom above a musket-shot broad, and in several parts of it are sands, which require great experience for governing the yachts. At eight o'clock in the morning we arrived at *Albany*.

ALL the yachts which ply between *Albany* and *New York*, belong to *Albany*. They go up and down the river *Hudson*, as long as it is open and free from ice. They bring from *Albany* boards or planks, and all sorts of timber, flour, pease, and furs; which they get from the *Indians*, or which are smuggled from the *French*. They come home almost empty, and only bring a few merchandizes with them; among which rum is the chief. This last is absolutely necessary to the inhabitants of *Albany*; they cheat the *Indians* in the fur trade with it; for when the *Indians* are drunk, they will leave it to the *Albanians* to fix the price of the furs. The yachts are pretty large, and have a good cabin, in which the passengers can be very commodiously lodged. They are commonly built of red Cedar, or of white Oak. Frequently, the bottom consists of white oak, and the sides of red cedar, because the latter withstands putrefaction much longer than the former. The red cedar is likewise apt to split, when it is struck against

any thing, and the river *Hudson* is in many parts full of sands and rocks, against which the keel of the yacht sometimes hits; therefore they choose white oak for the bottom, as being the softer wood, and not splitting so easily: and the bottom being continually under water, is not so much exposed to putrefaction, and holds out longer.

THE *Canoes* which the yachts have along with them are made of a single piece of wood, hollowed out; they are sharp on both ends, frequently three or four fathoms long, and as broad as the thickness of the wood will allow. The people in it do not row sitting, but commonly a fellow stands at each end, with a short oar in his hand, with which he governs and brings the canoe forwards. Those which are made here at *Albany*, are commonly of the *white Pine*; they can do service for eight or twelve years, especially if they be tarred and painted. At *Albany* they make them of the white pine, since there is no other wood fit for them; at *New York* they are made of the tulip-tree, and in other parts they are made of red or white cedars: but both these trees are so small, in the neighbourhood of *Albany*, that they are unfit for canoes; there are no seats in the canoes, for if they had any, they would be more liable to be overfet, as one could not keep the equilibrium so well.

BATTOES * are another kind of boats, which are much in use in *Albany*: they are made of

* From the *French Bateaux (Boats)*.

boards of white pine; the bottom is flat, that they may row the better in shallow water; they are sharp at both ends, and somewhat higher towards the end than in the middle. They have seats in them, and are rowed as common boats. They are long, yet not all alike, commonly three, and sometimes four fathoms long. The height from the bottom to the top of the board (for the sides stand almost perpendicular) is from twenty inches to two feet, and the breadth in the middle about a yard and six inches. They are chiefly made use of for carrying goods, by means of the rivers, to the *Indians*; that is, when those rivers are open enough for the battoes to pass through, and when they need not be carried by land a great way. The boats made of the bark of trees, break easily by knocking against a stone, and the canoes cannot carry a great cargo, and are easily overset; the battoes are therefore preferable to them both. I saw no boats here like those in *Sweden*, and other parts of *Europe*.

THE frost does frequently a great deal of damage at *Albany*. There is hardly a month in summer during which a frost does not happen. The spring comes very late, and in *April* and *May* are numerous cold nights, which frequently kill the flowers of trees and kitchen-herbs. It was feared that the blossoms of the apple-trees had been so severely damaged by the frost, last *May*, that next autumn there would be but very few apples. The oak-blossoms are very often killed by the frost in the woods. The autumn here is of long continuance, with warm

days and nights. However, the cold nights commonly commence towards the end of *September*, and are frequent in *October*. The people are forced to keep their cattle in stables, from the middle of *November*, till *March* or *April*, and must find them hay during that time*.

DURING summer, the wind blows commonly from the South, and brings a great drought along with it. Sometimes it rains a little, and as soon as it has rained the wind veers to North-west, blowing for several days from that point, and then returning to the South. I have had frequent opportunities of seeing this change of wind happen very exactly, both this year and the following.

June 15th. THE enclosures were made of boards of fir-wood, of which there is abundance in the extensive woods, and many saw-mills to cut it into boards.

THE several sorts of apple-trees grow very well here, and bear as fine fruit as in any other part of *North America*. Each farm has a large orchard. They have some apples here, which are very large, and very palatable; they are sent to *New York*, and other places as a rarity. They make excellent cyder, in autumn, in the country round *Albany*.

ALL the kinds of cherry-trees, which have been planted here, succeed very well.

PEAR-TREES do not succeed here. This was complained of in many other parts of *North America*. But I fear that they do not take

* The reader must reckon all this according to the old stile.

sufficient

sufficient care in the management and planting of them ; for I have seen fine pears in several parts of *North America*.

PEACH-TREES have often been planted here, and never would succeed well. This was attributed to a worm which lives in the ground, and eats through the root, so that the tree dies. Perhaps the severity of the winter contributes much to it.

THEY plant no other fruit-trees at *Albany* besides these I have mentioned.

THEY sow as much hemp and flax here, as they want for home consumption.

THEY sow maize in great abundance : A loose soil is reckoned the best for this purpose ; for it will not grow in clay : From half a bushel they reap a hundred bushels. They reckon maize a very good kind of corn, because the shoots recovers after being hurt by the frost. They have had examples here of the shoots dying twice in spring, to the very ground, and yet they shot up again afterwards, and afforded an excellent crop. Maize has likewise the advantage of standing much longer against a drought, than wheat. The larger sort of maize which is commonly sown here, ripens in *September*.

THEY sow wheat in the neighbourhood of *Albany*, with great advantage. From one bushel they get twelve sometimes ; if the soil be good, they get twenty bushels. If their crop amounts only to ten bushels from one, they think it very trifling. The inhabitants of the country round *Albany*, are *Dutch* and *Germans*. The *Germans* live in several great villages, and sow great quantities

ties of wheat, which is brought to *Albany*; and from thence they send many yachts laden with flour to *New York*. The wheat-flour from *Albany* is reckoned the best in all *North America*, except that from *Sopus* or *King's Town*, a place between *Albany* and *New York*. All the bread in *Albany* is made of wheat. At *New York* they pay the *Albany* flour with several shillings more per hundred weight, than that from other places.

RYE is likewise sown here, but not so generally as wheat.

THEY do not sow much barley here, because they do not reckon the profits very great. Wheat is so plentiful that they make malt of it. In the neighbourhood of *New York*, I saw great fields sown with barley.

THEY do not sow more oats than are necessary for their horses.

THE *Dutch* and *Germans*, who live hereabouts, sow pease in great abundance; they succeed very well, and are annually carried to *New York*, in great quantities. They have been free from insects for a considerable time. But of late years the same beetles which destroy the pease in *Pensylvania*, *New Jersey*, and the lower parts of the province of *New York*, have likewise appeared abundant among the pease here. It is a real loss to this town, and to the other parts of *North America*, which used to get pease from hence for their own consumption, and that of their sailors. It had been found that if they procured good pease from *Albany*, and sowed them near *King's Town*, or the lower part of the province of *New York*, they succeeded very well

well the first year, but were so full of worms the second, and following years, that nobody could or would eat them. Some people put ashes into the pot, among the pease, when they will not boil, or soften well; but whether this is wholesome and agreeable to the palate, I do not know.

POTATOES are generally planted. Some people preferred ashes to sand for keeping them in during winter.

THE *Bermuda Potatoes* (*Convolvulus Batatas*) have likewise been planted here, and succeed pretty well. The greatest difficulty is to keep them during winter; for they generally rot in that season.

THE *Humming-bird* (*Trochilus Colubris*) comes to this place sometimes; but it is rather a scarce bird.

THE shingles with which the houses are covered are made of the White Pine, which is reckoned as good and as durable, and sometimes better, than the White Cedar (*Cupressus thyoides*). The White Pine is found abundant here, in such places where common pines grow in *Europe*. I have never seen them in the lower parts of the province of *New York*, nor in *New Jersey* and *Pennsylvania*. They saw a vast quantity of deal from the White Pine on this side of *Albany*, which are brought down to *New York*, and from thence exported.

THE woods abound with vines, which likewise grow on the steep banks of the river in surprising quantities. They climbed to the tops of trees on the bank, and bent them by their weight.

weight. But where they found no trees, they hung down along the steep shores, and covered them entirely. The grapes are eaten after the frost has attacked them; for they are too sour before. They are not much used any other way.

THE vast woods and uninhabited grounds, between *Albany* and *Canada*, contain immense swarms of gnats, which annoy the travellers. To be in some measures secured against these insects, some besmear their face with butter or grease; for the gnats do not like to settle on greasy places. The great heat makes boots very uneasy; but to prevent the gnats from stinging the legs, they wrap some paper round them, under the stockings. Some travellers wear caps which cover the whole face, and have some gauze before the eyes. At night they lie in tents, if they can carry any with them; and make a great fire at the entrance, by the smoke of which the gnats are driven away.

THE porpeffes seldom go higher up the river *Hudson* than the salt water goes; after that, the sturgeons fill their place. It has however sometimes happened, that porpeffes have gone quite up to *Albany*.

THE fireflies (*Lampyris*) which are the same that are so common in *Pensylvania* during summer, are here seen in abundance every night. They fly up and down in the streets of this town. They come into the houses, if the doors and windows are open.

SEVERAL of the *Pensylvanian* trees are not to be met with in these woods; viz.

Magnolia

Magnolia glauca, the Beaver-tree.
Nyssa aquatica, the Tupelo-tree.
Liquidambar styraciflua, the Sweet-gum tree.
Diospyros Virginiana, the Persimon.
Liriodendron tulipifera, the Tulip-tree.
Juglans nigra, the black Walnut-tree,
Quercus —, the Swamp Oak.
Cercis Canadensis, the Sallad-tree.
Robinia pseudacacia, the Locust-tree.
Gleditsia triacanthos, the Honey-locust tree.
Annona muricata, the Papaw-tree.
Celtis occidentalis, the Nettle-tree. And a

number of shrubs, which are never found here.
 THE more northerly situation of the place, the height of the *Blue Mountains*, and the course of the rivers, which flow here southward into the sea, and accordingly carry the seeds of plants from north to south, and not the contrary way, are chiefly the causes that several plants which grow in *Pennsylvania* cannot be found here.

THIS afternoon I went to see an island which lies in the middle of the river, about a mile below the town. This island is an *English* mile long, and not above a quarter of a mile broad. It is almost entirely turned into corn fields; and is inhabited by a single planter, who, besides possessing this island, is the owner of two more. Here we saw no woods, except a few trees which were left round the island on the shore, and formed as it were a tall and great hedge. The Red Maple (*Acer rubrum*) grows in abundance in several places. Its leaves are white or silvery on the under sides, and, when agitated

by the wind, they make the tree appear as if it was full of white flowers. The Water-beech (*Platanus occidentalis*) grows to a great height, and is one of the most shady trees here. The Water-poplar* is the most common tree hereabouts, grows exceedingly well on the shores of the river, and is as tall as the tallest of our aspens. In summer it affords the best shade for men and cattle against the scorching heat. On the banks of rivers and lakes it is one of the most useful trees, because it holds the soil by its extensive branched roots, and prevents the water from washing it away. The Water-beech and the Elm-tree (*Ulmus*) serve the same purpose. The wild Prune-trees were plentiful here, and were full of unripe fruit. Its wood is not made use of; but its fruit is eaten. Sumach (*Rhus glabra*) is plentiful here; as also the wild vines, which climb up the trees, and creep along the high shores of the river. I was told, that the grapes ripen very late, though they were already pretty large.

THE American Elm-tree (*Ulmus Americana*) formed several high hedges. The soil of this island is a rich mould, mixed with sand, which is chiefly employed in maize plantations. There were likewise large fields of potatoes. The whole island was leased for one hundred pounds of New York currency. The person who had taken the lease, again let some greater and some smaller lots of ground, to the inhabitants of

* *Populus glandulis variis basi foliorum adnatis, foliis cordato-deltoidibus, acuminatis, serrato-angulosis, utrinque glabris.*—An *Populus heterophylla* Linnæi?

Albany, for making kitchen-gardens of; and by that means reimbursed himself. Portulack (*Portulaca oleracea*) grows spontaneously here in great abundance, and looks very well.

June 20th. THE tide in the river *Hudson* goes about eight or ten *English* miles above *Albany*, and consequently runs one hundred and fifty-six *English* miles from the sea. In spring when the snow melts, there is hardly any flowing near this town; for the great quantity of water which comes from the mountains during that season, occasions a continual ebbing. This likewise happens after heavy rains.

THE cold is generally reckoned very severe here. The ice in the river *Hudson* is commonly three or four feet thick. On the 3d of *April* some of the inhabitants crossed the river with six pair of horses. The ice commonly dissolves about the end of *March*, or beginning of *April*. Great pieces of ice come down about that time, which sometimes carry with them the houses that stand close to the shore. The water is very high at that time in the river, because the ice stops sometimes, and sticks in places where the river is narrow. The water has been often observed to rise three fathom higher than it commonly is in summer. The ground is frozen here in winter to the depth of three, four, or five feet. On the 16th of *November* the yachts are put up, and about the beginning or middle of *April* they are in motion again.

THE water of several wells in this town was very cool about this time; but had a kind of acid taste, which was not very agreeable. On a nearer

nearer examination, I found an abundance of little insects in it, which were probably *Monoculi*. Their length was different; some were a geometrical line and an half, others two, and others four lines long. They were very narrow, and of a pale colour. The head was blacker and thicker than the other parts of the body, and about the size of a pin's head. The tail was divided into two branches, and each branch terminated in a little black globule. When these insects swim, they proceed in crooked or undulated lines, almost like *Tadpoles*. I poured some of this water into a bowl, and put near a fourth part of rum to it. The *Monoculi*, instead of being affected with it, swam about as briskly as they had done in the water. This shews, that if one makes punch with this water, it must be very strong to kill the *Monoculi*. I think this water is not very wholesome for people who are not used to it, though the inhabitants of *Albany*, who drink it every day, say, they do not feel the least inconvenience from it. I have been several times obliged to drink water here, in which I have plainly seen *Monoculi* swimming; but I generally felt the next day somewhat like a pea in my throat, or as if I had a swelling there; and this continued for above a week. I felt such swellings this year, both at *Albany* and in other parts. My servant, *Yung-stroem*, likewise got a great pain in his breast, and a sensation as from a swelling, after drinking water with *Monoculi* in it: but whether these insects occasioned it, or whether it came from some other cause, I cannot ascertain. However, I have
always

always endeavoured, as much as possible, to do without such water as had *Monoculi* in it. I have found *Monoculi* in very cold water, taken from the deepest wells, in different parts of this country. Perhaps many of our diseases arise from waters of this kind, which we do not sufficiently examine. I have frequently observed abundance of minute insects in water, which has been remarkable for its clearness. Almost each house in *Albany* has its well, the water of which is applied to common use; but for tea, brewing, and washing, they commonly take the water of the river *Hudson*, which flows close by the town. This water is generally quite muddy, and very warm in summer; and, on that account, it is kept in cellars, in order that the slime may subside, and that the water may cool a little.

WE lodged with a gunsmith, who told us, that the best charcoals for the forge were made of the *Black Pine*. The next in goodness, in his opinion, were charcoals made of the *Beech-tree*.

THE best and dearest stocks for his muskets were made of the wood of the wild *Cherry-tree*; and next to these he valued those of the *Red Maple* most. They scarce make use of any other wood for this purpose. The black *Walnut-tree* affords excellent wood for stocks; but it does not grow in the neighbourhood of *Albany*.

June 21st. NEXT to the town of *New York*, *Albany* is the principal town, or at least the most wealthy, in the province of *New York*.

It is situated on the declivity of a hill, close to the western shore of the river *Hudson*, about one hundred and forty-six *English* miles from *New York*. The town extends along the river, which flows here from N. N. E. to S. S. W. The high mountains in the west, above the town, bound the prospect on that side. There are two churches in *Albany*, an *English* one and a *Dutch* one. The *Dutch* church stands at some distance from the river, on the east side of the market. It is built of stone; and in the middle it has a small steeple, with a bell. It has but one minister, who preaches twice every *Sunday*. The *English* church is situated on the hill, at the west end of the market, directly under the fort. It is likewise built of stone, but has no steeple. There was no service at this church at this time, because they had no minister; and all the people understood *Dutch*, the garrison excepted. The minister of this church has a settled income of one hundred pounds sterling, which he gets from *England*. The town-hall lies to the southward of the *Dutch* church, close by the river side. It is a fine building of stone, three stories high. It has a small tower or steeple, with a bell, and a gilt ball and vane at the top of it.

The houses in this town are very neat, and partly built with stones covered with shingles of the *White Pine*. Some are slated with tiles from *Holland*, because the clay of this neighbourhood is not reckoned fit for tiles. Most of the houses are built in the old way, with the gable-end towards the street; a few excepted,

which were lately built in the manner now used. A great number of houses were built like those of *New Brunswick*, which I have described; the gable-end being built, towards the street, of bricks, and all the other walls of planks. The outside of the houses is never covered with lime or mortar, nor have I seen it practised in any *North American* towns which I have visited; and the walls do not seem to be damaged by the air. The gutters on the roofs reach almost to the middle of the street. This preserves the walls from being damaged by the rain; but is extremely disagreeable in rainy weather for the people in the streets, there being hardly any means of avoiding the water from the gutters. The street-doors are generally in the middle of the houses; and on both sides are seats, on which, during fair weather, the people spend almost the whole day, especially on those which are in the shadow of the houses. In the evening these seats are covered with people of both sexes; but this is rather troublesome, as those who pass by are obliged to greet every body, unless they will shock the politeness of the inhabitants of this town. The streets are broad, and some of them are paved; in some parts they are lined with trees; the long streets are almost parallel to the river, and the others intersect them at right angles. The street which goes between the two churches, is five times broader than the others, and serves as a market-place. The streets upon the whole are very dirty, because the people leave their cattle in them, during the summer nights.

There are two market-places in the town, to which the country people resort twice a week.

THE fort lies higher than any other building, on a high steep hill on the west side of the town. It is a great building of stone, surrounded with high and thick walls; its situation is very bad, as it can only serve to keep off plundering parties, without being able to sustain a siege. There are numerous high hills to the west of the fort, which command it, and from whence one may see all that is done within it. There is commonly an officer and a number of soldiers quartered in it. They say the fort contains a spring of water.

THE situation of *Albany* is very advantageous in regard to trade. The river *Hudson*, which flows close by it, is from twelve to twenty feet deep. There is not yet any quay made for the better lading of the yachts, because the people feared it would suffer greatly, or be entirely carried away in spring by the ice, which then comes down the river; the vessels which are in use here, may come pretty near the shore in order to be laden, and heavy goods are brought to them upon canoes tied together. *Albany* carries on a considerable commerce with *New York*, chiefly in furs, boards, wheat, flour, pease, several kinds of timber, &c. There is not a place in all the *British* colonies, the *Hudson's Bay* settlements excepted, where such quantities of furs and skins are bought of the *Indians* as at *Albany*. Most of the merchants in this town send a clerk or agent to *Oswego*, an *English* trading town upon the lake *Ontario*, to which the *Indians* resort with

with their furs. I intend to give a more minute account of this place in my Journal for the year 1750. The merchants from *Albany* spend the whole summer at *Oswego*, and trade with many tribes of *Indians* who come to them with their goods. Many people have assured me, that the *Indians* are frequently cheated in disposing of their goods, especially when they are in liquor, and that sometimes they do not get one half of the value of their goods. I have been a witness to several transactions of this kind. The merchants of *Albany* glory in these tricks, and are highly pleased when they have given a poor *Indian* a greater portion of brandy than he can bear, and when they can after that get all his goods for mere trifles. The *Indians* often find, when they are sober again, that they have been cheated, they grumble somewhat, but are soon satisfied when they reflect that they have for once drank as much as they are able, of a liquor which they value beyond any thing else in the whole world, and they are quite insensible to their loss if they again get a draught of this nectar. Besides this trade at *Oswego*, a number of *Indians* come to *Albany* from several parts, especially from *Canada*; but from this latter place, they hardly bring any thing but beaver-skins. There is a great penalty in *Canada* for carrying furs to the *English*, that trade belonging to the *French West India Company*; notwithstanding which the *French* merchants in *Canada* carry on a considerable smuggling trade. They send their furs, by means of the *Indians*,

to their correspondents at *Albany*, who purchase it at the price which they have fixed upon with the *French* merchants. The *Indians* take in return several kinds of cloth, and other goods, which may be got here at a lower rate than those which are sent to *Canada* from *France*.

THE greater part of the merchants at *Albany* have extensive estates in the country, and a great deal of wood. If their estates have a little brook, they do not fail to erect a saw-mill upon it for sawing boards and planks, with which commodity many yachts go during the whole summer to *New York*, having scarce any other lading than boards.

MANY people at *Albany* make the *wampum* of the *Indians*, which is their ornament and their money, by grinding some kinds of shells and muscles; this is a considerable profit to the inhabitants. I shall speak of this kind of money in the sequel. The extensive trade which the inhabitants of *Albany* carry on, and their sparing manner of life, in the *Dutch* way, contribute to the considerable wealth which many of them acquire.

THE inhabitants of *Albany* and its environs are almost all *Dutchmen*. They speak *Dutch*, have *Dutch* preachers, and divine service is performed in that language: their manners are likewise quite *Dutch*; their dress is however like that of the *English*. It is well known that the first *Europeans* who settled in the province of *New York* were *Dutchmen*. During the time that they were the masters of

this province, they possessed themselves of *New Sweden* *, of which they were jealous. However the pleasure of possessing this conquered land and their own, was but of short duration; for towards the end of 1664, Sir *Robert Carre*, by order of King *Charles* the second, went to *New York*, then *New Amsterdam*, and took it. Soon after Colonel *Nichols* went to *Albany*, which then bore the name of *Fort Orange*, and upon taking it, named it *Albany*, from the Duke of *York's* Scotch title. The *Dutch* inhabitants were allowed either to continue where they were, and, under the protection of the *English*, to enjoy all their former privileges, or to leave the country. The greater part of them chose to stay, and from them the *Dutchmen* are descended, who now live in the province of *New York*, and who possess the greatest and best estates in that province.

THE avarice and selfishness of the inhabitants of *Albany* are very well known throughout all *North America*, by the *English*, by the *French*, and even by the *Dutch*, in the lower part of *New York* province. If a Jew, who understands the art of getting forward perfectly well, should settle amongst them, they would not fail to ruin him. For this reason nobody comes to this place without the most pressing necessity; and therefore I was asked in several places, what induced me to go to it, two years one after another. I likewise found that the

* *New Jersey* and part of *Pennsylvania* were formerly comprised under this name.

judgment, which people formed of them, was not without foundation. For though they seldom see any strangers, (except those who go from the *British* colonies to *Canada* and back again) and one might therefore expect to find victuals and accommodation for travellers cheaper than in places where travellers always resort to, yet I experienced the contrary. I was here obliged to pay for every thing twice, thrice, and four times as dear as in any part of *North America* which I have passed through. If I wanted their assistance, I was obliged to pay them very well for it, and when I wanted to purchase any thing, or to be helped in some case or other, I could presently see what kind of blood ran into their veins; for they either fixed exorbitant prices for their services, or were very backward to assist me. Such was this people in general. However, there were some amongst them who equalled any in *North America*, or any where else, in politeness, equity, goodness, and readiness to serve and to oblige; but their number fell far short of that of the former. If I may be allowed to declare my conjectures, the origin of the inhabitants of *Albany* and its neighbourhood seems to me to be as follows. Whilst the *Dutch* possessed this country, and intended to people it, the government took up a pack of vagabonds, of which they intended to clear the country, and sent them along with a number of other settlers to this province. The vagabonds were sent far from the other colonists, upon the borders towards the *Indians* and other enemies, and a few honest families

were

were persuaded to go with them, in order to keep them in bounds. I cannot any other way account for the difference between the inhabitants of *Albany*, and the other descendants of so respectable a nation as the *Dutch*, who are settled in the lower part of *New York* province. The latter are civil, obliging, just in the prices, and sincere; and though they are not ceremonious, yet they are well meaning and honest, and their promises are to be relied on.

THE behaviour of the inhabitants of *Albany*, during the war between *England* and *France*, which was ended with the peace of *Aix la Chapelle*, has, among several other causes, contributed to make them the object of hatred in all the *British* colonies, but more especially in *New England*. For at the beginning of that war, when the *Indians* of both parties had received orders to commence hostilities, the *French* engaged theirs to attack the inhabitants of *New England*; which they faithfully executed, killing every body they met with, and carrying off whatever they found. During this time the people of *Albany* remained neutral, and carried on a great trade with the very *Indians* who murdered the inhabitants of *New England*. The plate, such as silver spoons, bowls, cups, &c. of which the *Indians* robbed the houses in *New England*, was carried to *Albany*, for sale. The people of that town bought up these silver vessels, though the names of the owners were graven on many of them, and encouraged the *Indians* to get more of them, promising to pay them well, and whatever they would demand.

mand. This was afterwards interpreted by the inhabitants of *New England*, as if the *Albani-ans* encouraged the *Indians* to kill more of the people, who were in a manner their brothers, and who were subjects of the same crown. Upon the first news of this behaviour, which the *Indians* themselves spread in *New England*, the inhabitants of the latter province were greatly incensed, and threatened, that the first step they would take in another war, would be to burn *Albany*, and the adjacent parts. In the present war it would sufficiently appear how backward the other *British* provinces in *America* are in assisting *Albany*, and the neighbouring places, in case of an attack from the *French* or *Indians* *. The hatred which the *English* bear against the people, at *Albany*, is very great, but that of the *Albani-ans* against the *English* is carried to a ten times higher degree. This hatred has subsisted ever since the time when the *English* conquered this country, and is not yet extinguished, tho' they could never have got such advantages under the *Dutch* government, as they have obtained under that of the *English*. For, in a manner, their privileges are greater than those of *Englishmen*.

THE inhabitants of *Albany* are much more sparing than the *English*. The meat which is served up is often insufficient to satisfy the stomach, and the bowl does not circulate so freely as amongst the *English*. The women are

* Mr. *Kalm* published this third volume just during the time of the last war. F.

perfectly well acquainted with œconomy ; they rise early, go to sleep very late, and are almost over-nice and cleanly, in regard to the floor, which is frequently scoured several times in the week. The servants in the town are chiefly negroes. Some of the inhabitants wear their own hair, but it is very short, without a bag or queue, which are looked upon as the characteristics of *Frenchmen* ; and as I wore my hair in a bag the first day I came here from *Canada*, I was surrounded with children, who called me *Frenchman*, and some of the boldest offered to pull at my *French* dress.

THEIR meat, and manner of dressing it, is very different from that of the *English*. Their breakfast is tea, commonly without milk. About thirty or forty years ago, tea was unknown to them, and they breakfasted either upon bread and butter, or bread and milk. They never put sugar into the cup, but take a small bit of it into their mouths whilst they drink. Along with the tea they eat bread and butter, with slices of hung beef. Coffee is not usual here ; they breakfast generally about seven. Their dinner is butter-milk and bread, to which they sometimes add sugar, then it is a delicious dish for them ; or fresh milk and bread ; or boiled or roasted flesh. They sometimes make use of butter-milk instead of fresh milk, to boil a thin kind of porridge with, which tastes very sour, but not disagreeable in hot weather. To each dinner they have a great sallad, prepared with abundance of vinegar, and very little or no oil. They frequently eat butter-milk, bread, and

and sallad, one mouthful after another. Their supper is generally bread and butter, and milk and bread. They sometimes eat cheese at breakfast, and at dinner; it is not in slices, but scraped or rasped, so as to resemble coarse flour, which they pretend adds to the good taste of cheese. They commonly drink very small beer, or pure water.

THE governor of *New York* often confers at *Albany* with the *Indians* of the Five Nations, or the *Iroquese*, (*Mohawks*, *Senecas*, *Cayugaws*, *Onondagoes*, and *Onidoes*) especially when they intend either to make war upon, or to continue a war against the *French*. Sometimes their deliberations likewise turn upon their conversion to the christian religion, and it appears by the answer of one of the *Indian* chiefs, or *Sachems*, to governor *Hunter*, at a conference in this town, that the *English* do not pay so much attention to a work of so much consequence as the *French* do, and that they do not send such able men to instruct the *Indians* as they ought to do *.

* Mr. *Kalm* is, I believe, not right informed. The *French* ecclesiastics have allured some few wretched *Indians* to their religion and interest, and settled them in small villages; but by the accounts of their behaviour in the several wars of the *French* and *English*, they were always guilty of the greatest cruelties and brutalities; and more so than their heathen countrymen; and therefore it seems that they have been rather perverted than converted. On the other hand, the *English* have translated the Bible into the language of the *Virginian Indians*, and converted many of them to the true knowledge of God; and at this present time, the *Indian* charity schools, and missions, conducted by the Rev. Mr. *Eleazar Wheelock*, have brought numbers of the *Indians* to the knowledge of the true God. The society for propagating the gospel in foreign parts, sends every year many missionaries, at their own expence, among the *Indians*. And the *Moravian Brethren* are also very active in the conversion of *Gentiles*; so that if Mr. *Kalm* had

For

For after governor *Hunter* had presented these *Indians*, by order of *Queen Anne*, with many clothes, and other presents, of which they were fond, he intended to convince them still more of her Majesty's good-will, and care for them, by adding, that their good mother, the *Queen*, had not only generously provided them with fine clothes for their bodies, but likewise intended to adorn their souls, by the preaching of the gospel; and that to this purpose some ministers should be sent to them to instruct them. The governor had scarce ended, when one of the oldest *Sachems* got up, and answered, that in the name of all the *Indians*, he thanked their gracious good queen and mother for the fine cloaths she had sent them; but that in regard to the ministers, they had already had some among them, (whom he likewise named) who instead of preaching the holy gospel to them, had taught them to drink to excess, to cheat, and to quarrel among themselves. He then entreated the governor to take from them these preachers, and a number of *Europeans* who resided amongst them; for before they were come among them, the *Indians* had been an honest, sober, and innocent people, but most of them became rogues now. That they had formerly had the fear of God, but that they hardly believed his existence at present. That if he (the governor) would do them any favour, he should send two or three blacksmiths amongst them, to teach them to forge iron, in which they were unexperienced.

considered all these circumstances, he would have judged otherwise of the zeal of the *British* nation, in propagating the gospel among the *Indians*. F.

The governor could not forbear laughing at this extraordinary speech. I think the words of St. *Paul* not wholly unapplicable on this occasion : *For the name of God is blasphemed amongst the Gentiles, through you* †.

June 21st. About five o'clock in the afternoon we left *Albany*, and proceeded towards *Canada*. We had two men with us, who were to accompany us to the first *French* place, which is *Fort St. Frederick*, or as the *English* call it, *Crown Point*. For this service each of them was to receive five pounds of *New York* currency, besides which I was to provide them with victuals. This is the common price here, and he that does not choose to conform to it, is obliged to travel alone. We were forced to take up with a canoe *, as we could get neither battoes, nor boats of bark ; and as there was a good road along the west side of the river *Hudson*, we left the men to row forwards, in the canoe, and we went along it on the shore, that we might be better able to examine it, and its curiosities, with greater accuracy. It is very incommodious to row in these canoes ; for one stands at each end and pushes the boat forwards. They commonly keep close to the shore, that they may be able to reach the ground easily. Thus the rowers are forced to stand upright, whilst they row in a canoe. We kept along the shore all the evening, towards the river, it consisted of great hills, and next to the water grew the trees, which I have above mentioned, and which likewise are to be met

† Romans ii. 24.

* See the description of it. p. 84.

with on the shores of the isle, in the river, situate below *Albany*. The easterly shore of the river is uncultivated, woody, and hilly; but the western is flat, cultivated, and chiefly turned into corn-fields, which had no drains, though they wanted them in some places. It appeared very plainly here, that the river had formerly been broader. For there is a sloping bank on the corn-fields, at about thirty yards distance from the river, with which it always runs parallel. From this it sufficiently appears, that the rising ground formerly was the shore of the river, and the corn-fields its bed. As a further proof, it may be added, that the same shells which abound on the present shore of the river, and are not applied to any use by the inhabitants, ly plentifully scattered on these fields. I cannot say whether this change was occasioned by the diminishing of the water in the river, or by its washing some earth down the river, and carrying it to its sides or by the river's cutting deeper in on the sides.

ALL the grounds were ploughed very even, as is usual in the *Swedish* province of *Upland*. Some were sown with *yellow*, and others with *white Wheat*. Now and then we saw great fields of flax, which was now beginning to flower. In some parts it grows very well, and in others it was but indifferent. The excessive drought which had continued throughout this spring, had parched all the grass and plants on hills and high grounds, leaving no other green plant than the common *Mullein* (*Verbascum Thapsus* Linn.) which I saw in several places, on the driest and highest hills, growing in spite

of the parching heat of the sun, and though the pastures and meadows were excessively poor, and afforded scarce any food at all, yet the cattle never touched the *Mullein*. Now and then I found fields with pease; but the *Charlock* (*Sinapis arvensis* Linn.) kept them quite under. The soil in most of these fields is a fine mould, which goes pretty deep.

THE wild vines cover all the hills along the rivers, on which no other plants grow, and on those which are covered with trees, they climb to the tops of them, and wholly cover them, making them bend down with their weight. They had already large grapes; we saw them abundant all this day, and during all the time that we kept to the river *Hudson*, on the hills, along the shores, and on some little islands in the river.

THE *white-backed Maize-thieves* appeared now and then, flying amongst the bushes: their note is fine, and they are not so large as the black maize-thieves, (*Oriolus Phœniceus*). We saw them near *New York*, for the first time.

We found a *Water-beech* tree (*Platanus occidentalis*) cut down near the road, measuring about five feet in diameter.

THIS day, and for some days afterwards, we met with islands in the river. The larger ones were cultivated, and turned into corn-fields and meadows.

WE walked about five *English* miles along the river to-day, and found the ground, during that time, very uniform, and consisting of pure earth. The Red Maple, the Water-beech, the Water-

asp, the wild Prune-tree, the Sumach, the Elm, the wild Vines, and some species of *Willows*, were the trees which we met with on the rising shores of the river, where some *Asparagus* (*Asparagus officinalis*) grew wild.

We passed the night about six miles from Albany, in a countryman's cottage. On the west side of the river we saw several houses, one after another, inhabited by the descendants of the first Dutch settlers, who lived by cultivating their grounds. About half an *English* mile beyond our lodgings, was the place where the tide stops in the river *Hudson*, there being only small and shallow streams above it. At that place they catch a good many sorts of fish in the river.

The barns were generally built in the Dutch way, as I have before described; for in the middle was the threshing-floor, above it a place for the hay and straw, and on each side stables for horses, cows, and other animals. The barn itself was very large. Sometimes the buildings in the court-yard consist only of a room, and a garret above it, together with a barn upon the above plan.

June 22d. This morning I followed one of our guides to the water-fall near *Cohoes*, in the river *Mohawk*, before it falls into the river *Hudson*. This fall is about three *English* miles from the place where I passed the night. The country till the fall is a plain, and only hilly about the fall itself. The wood is cleared in most places, and the ground cultivated, and interspersed with farm-houses.

THE *Cohoes Fall* is one of the greatest in *North America*. It is in the river *Mohawk*, before it unites with the river *Hudson*. Above and below the fall, the sides and the bottom of the river consist of hard rock. The river is three hundred yards broad here. At the fall there is a rock crossways in the river, running every where equally high, and crossing in a strait line with the side which forms the fall. It represents, as it were, a wall towards the lower side, which is not quite perpendicular, wanting about four yards. The height of this wall, over which the water rolls, appeared to me about twenty or twenty-four yards. I had marked this height in my pocket-book; and afterwards found it agreed pretty well with the account which that ingenious engineer, Mr. *Lewis Evans*, communicated to me at *Philadelphia*. He said, that he had geometrically measured the breadth and height of the fall, and found it nine hundred *English* feet broad, and seventy-five feet high. The representation of this fall, which is here joined, has been made by Mr. *Evans*. There was very little water in the river at present, and it only ran over the fall in a few places. In such places where the water had rolled down before, it had cut deep holes below into the rock, sometimes to the depth of two or three fathoms. The bed of the river, below the fall, was of rock, and quite dry, there being only a channel in the middle fourteen feet broad, and a fathom or somewhat more deep, through which the water passed which came over the fall. We saw a number of holes in the rock,

below

below the fall, which bore a perfect resemblance to those in *Sweden* which we call *Giants Pots*, or *Mountain Kettles*. They differed in size; there being large deep ones, and small shallow ones. We had clear uninterrupted sun-shine, not a cloud above the horizon and no wind at all. However, close to this fall, where the water was in such a small quantity, there was a continual drizzling rain, occasioned by the vapours which rose from the water during its fall, and were carried about by the wind. Therefore, in coming within a musket-shot of the fall, against the wind, our cloths were wetted at once, as from a rain. The whirl-pools, which were in the water below the fall, contained several kinds of fish; and they were caught by some people, who amused themselves with angling. The rocks hereabouts consist of the same black stone which forms the hills about *Albany*. When exposed to the air, it is apt to shiver into horizontal flakes, as slate does.

At noon we continued our journey to *Canada* in the canoe, which was pretty long, and made out of a white pine. Somewhat beyond the farm where we lay at night, the river became so shallow that the men could reach the ground every where with their oars; it being in some parts not above two feet and sometimes but one foot deep. The shore and bed of the river consisted of sand and pebbles. The river was very rapid, and against us; so that our rowers found it very hard work to get forward against the stream. The hills along the shore consisted merely of soil; and were

very high and steep in some parts. The breadth of the river was generally near two musket-shot.

STURGEONS abound in the river *Hudson*. We saw them for several days together leap high up into the air, especially in the evening; our guides, and the people who lived hereabouts, asserted that they never see any sturgeons in winter time, because these fish go into the sea late in autumn, but come up again in spring and stay in the river all the summer. They are said to prefer the shallowest places in the river, which agreed pretty well with our observations; for we never saw them leap out of the water but in shallows. Their food is said to be several kinds of *confervæ*, which grow in plenty in some places at the bottom of the river; for these weeds are found in their bellies when they are opened. The *Dutch* who are settled here, and the *Indians*, fish for sturgeons, and every night of our voyage upon this river, we observed several boats with people who struck them with harpoons. The torches which they employed were made of that kind of pine, which they call the black pine here. The nights were exceedingly dark, though they were now shortest, and though we were in a country so much to the South of *Sweden*. The banks of the river lay covered with dead sturgeons, which had been wounded with the harpoon, but escaped, and died afterwards; they occasioned an insupportable stench during the excessive heat of the weather.

As we went further up the river we saw an *Indian* woman and her boy sitting in a boat of bark, and an *Indian* wading through the river, with

with a great cap of bark on his head. Near them was an island on which there were a number of *Indians* at present, on account of the sturgeon fishery. We went to their huts to try if we could get one of them to accompany us to *Fort St. Frederick*. On our arrival we found that all the men were gone into the woods a hunting, and we were forced to engage their boys to go and look for them. They demanded bread for payment, and we gave them twenty little round loaves; for as they found that it was of great importance to us to speak with the *Indians*, they raised difficulties, and would not go till we gave them what they wanted. The island belonged to the *Dutch*, who had turned it into corn-fields. But at present they had leased it to the *Indians*, who planted their maize and several kinds of mellons on it. They built their huts or *wigwams* on this island, on a very simple plan. Four posts were put into the ground perpendicularly, over which they had placed poles, and made a roof of bark upon them. They had either no walls at all, or they consisted of branches with leaves, which were fixed to the poles. Their beds consisted of deer-skins which were spread on the ground. Their utensils were a couple of small kettles, and two ladles, and a bucket or two of bark, made so close as to keep water. The sturgeons were cut into long slices, and hung up in the sun-shine to dry, and to be ready against winter. The *Indian* women were sitting at their work on the hill, upon deer-skins. They never make use of chairs, but sit on the ground: however they do not sit

cross-

cross-legged, as the *Turks* do, but between their feet, which, though they be turned backwards, are not crossed, but bent outwards. The women wear no head-dress, and have black hair. They have a short blue petticoat, which reaches to their knees, and the brim of which is bordered with red or other ribbands. They wear their shifts over their petticoats. They have large ear-rings; and their hair is tied behind, and wrapped in ribbands. Their *Wampum*, or Pearls, and their money, which is made of shells, are tied round the neck, and hang down on the breast. This is their whole dress. They were now making several kinds of work of skins, to which they sowed the quills of the *American Porcupines*, having dyed them black or red, or or left them in their original colour.

TOWARDS evening, we went from hence to a farm close to the river, where we found only one man, looking after the maize and the fields; the chief of the men not being then returned from the war.

THE little brooks here contain Crawfish, which are exactly the same with ours*, with this difference only, that they are somewhat less; however, the *Dutch* inhabitants will not eat them.

June 23d. WE waited a good while for the *Indians*, who had promised to come home, in order to shew us the way to *Fort St. Ann*, and to assist us in making a boat of bark, to continue our voyage. About eight o'clock three of the

* *Cancer Asiacus* Linn.

men arrived. Their hair was black, and cut short; they wore rough pieces of woollen cloth, of a bright green colour, on their shoulders, a shirt which covers their thighs, and pieces of cloth, or skins, which they wrap round the legs and part of the thighs. They had neither hats, caps, nor breeches. Two of them had painted the upper part of their foreheads, and their cheeks, with vermilion. Round their neck was a ribband, from which hung a bag down to the breast, containing their knives. They promised to accompany us for thirty shillings; but soon after changed their minds, and went with an *Englishman*, who gave them more. Thus we were obliged to make this journey without these guides, who were, however, honest enough to return us fifteen shillings, which we had paid them before-hand.

OUR last night's lodging was about ten *English* miles from *Albany*. During the last war, which was just ended, the inhabitants had retreated from thence to *Albany*, because the *French Indians* had taken or killed all the people they met with, set the houses on fire, and cut down the trees. Therefore, when the inhabitants returned, they found no houses, and were forced to ly under a few boards which were huddled together.

THE river was almost a musket-shot broad, and the ground on both sides cultivated. The hills near the river were steep, and the earth of a pale colour.

THE *American Elder* (*Sambucus occidentalis*)

lis *) grows in incredible quantities along those hills, which appear quite white, from the abundance of flowers on the Elder.

ALL this day along, we had one current after another, full of stones, which were great obstacles to our getting forward. The water in the river was very clear, and generally shallow, being only from two to four feet deep, running very violently against us in most places. The shore was covered with pebbles, and a grey sand. The hills consisted of earth, were high, and stood perpendicular towards the river, which was near two musket-shot broad. Sometimes the land was cultivated, and sometimes it was covered with woods.

THE hills near the river abound with red and white clover. We found both these kinds plentiful in the woods. It is therefore difficult to determine whether they were brought over by the *Europeans*, as some people think; or whether they were originally in *America*, which the *Indians* deny.

WE found Purslane (*Portulaca oleracea*) growing plentifully in a sandy soil. In gardens it was one of the worst weeds.

WE found people returning every where to their habitations, which they had been forced to leave during the war.

THE farms were commonly built close to the river, on the hills. Each house has a little kitchen-garden, and a still lesser orchard. Some farms, however, had large gardens. The

* *Sambucus Canadensis* Linn.

kitchen-gardens afford several kinds of gourds, water-melons, and kidney-beans. The orchards are full of apple-trees. This year the trees had few or no apples, on account of the frosty nights which had happened in *May*, and the drought which had continued throughout this summer.

THE houses hereabouts are generally built of beams of wood, and of unburnt bricks dried by the sun and the air. The beams are first erected, and upon them a gable with two walls, and the spars. The wall on the gable is made of boards. The roof is covered with shingles of fir. They make the walls of unburnt bricks, between the beams, to keep the rooms warmer; and that they might not easily be destroyed by rain and air, they are covered with boards on the outside. The cellar is below the house.

THE farms are either built close to the river-side, or on the high grounds; and around them are large fields with maize.

WE saw great numbers of *Musk-Rats* (*Castor Zibethicus* Linn.) on the shores of the river, where they had many holes, some on a level with the surface of the water. These holes were large enough to admit a kitten. Before and in the entrance to the holes, lay a quantity of empty shells, the animals of which had been eaten by the *Musk-Rats* *. They are caught in traps placed along the water-side, and baited with some maize or apples.

* This appears to be a new observation, as *Linnaeus*, *De Boffen*, and *Sarrafin* pretend, they only feed on the *Acerus*, or Reeds, and other roots.

THE *Sassafras*-trees abound here, but never grow to any considerable height.

CHESNUT-TREES appear now and then.

THE *Cockspur Hawthorn* (*Crataegus Crus Galli* Linn.) grows in the poorest soil, and has very long spines; which shews, that it may be very advantageously planted in hedges, especially in a poor soil.

THIS night we lodged with a farmer, who had returned to his farm after the war was over. All his buildings, except the great barn, were burnt.

June 24th. THE farm where we passed the night was the last in the province of *New York*, towards *Canada*, which had been left standing, and which was now inhabited. Further on, we met still with inhabitants: but they had no houses, and lived in huts of boards; the houses being burnt during the war.

As we continued our journey, we observed the country on both sides of the river to be generally flat, but sometimes hilly; and large tracts of it are covered with woods of fir-trees. Now and then we found some parts turned into corn-fields and meadows; however, the greater part was covered with woods. Ever since we left *Albany*, almost half-way to *Saratoga*, the river runs very rapid; and it cost us a deal of pains to get upwards. But afterwards it becomes very deep, for the space of several miles; and the water moves very slowly. The shores are very steep, though they are not very high. The river is two musket-shot broad. In the afternoon it changed its direction; for hitherto

its

its direction was from North to South, but now it came from N. N. E. to S. S. W. and sometimes from N. E. to S. W.

ANT-HILLS are very scarce in *America*; and I do not remember seeing a single one before I came to the *Cohoes Fall*. We observed a few in the woods to-day. The Ants were the same with our common red ones (*Formica rufa* Linn.) The Ant-hills consist chiefly of the slate-like mouldered stone which abounds here, there being nothing else for them.

CHESNUT-TREES grew scattered in the woods. We are told, that Mulberry-trees (*Morus rubra* Linn.) likewise grow wild here, but rather scarce; and this is the most northerly place where they grow in *America*; at least, they have not been observed further to the north. We met with wild parsneps every day; but commonly in such places where the land was, or had been, cultivated. Hemp grows spontaneously, and in great abundance, near old plantations.

THE woods abound with *Woodlice*, which were extremely troublesome to us.

THE *Thuya occidentalis* Linn. appeared along the shores of the river. I had not seen it there before.

THE trees which grow along the shores, and on the adjacent hills, within our sight to-day, are elms, birches, white firs, alders, dog-trees, lime-trees, red willows, and chesnut-trees. The *American Elder*, (*Sambucus Canadensis* Linn.) and the wild vines, only appear in places where the ground has been somewhat cultivated, as if they

they were desirous of being the companions of men. The lime-trees and white walnut-trees are the most numerous. The horn-beams, with inflated cones, (*Carpinus Ostrya* Linn.) appeared now and then; but the water-beech and water-poplar never came within sight any more.

WE frequently saw ground-squirrels and black squirrels in the woods.

AT a little distance from *Saratoga*, we met two *Indians* in their boats of bark, which could scarce contain more than one person.

NEAR *Saratoga* the river becomes shallow and rapid again. The ground is here turned into corn-fields and meadows, but on account of the war, it was not made use of.

SARATOGA has been a fort built of wood by the *English*, to stop the attacks of the *French Indians* upon the *English* inhabitants in these parts, and to serve as a rampart to *Albany*. It is situated on a hill, on the east-side of the river *Hudson*, and is built of thick posts driven into the ground, close to each other, in the manner of palisades, forming a square, the length of whose sides was within the reach of a musket-shot. At each corner are the houses of the officers, and within the palisades are the barracks, all of timber. This fort has been kept in order and was garrisoned till the last war, when the *English* themselves in 1747 set fire to it, not being able to defend themselves in it against the attacks of the *French* and their *Indians*; for as soon as a party of them went out of the fort, some of these enemies lay concealed, and

and either took them all prisoners, or shot them.

I SHALL only mention one, out of many artful tricks which were played here, and which both the *English* and *French* who were present here at that time told me repeatedly. A party of *French*, with their *Indians*, concealed themselves one night in a thicket near the fort. In the morning some of their *Indians*, as they had previously resolved, went to have a nearer view of the fort. The *English* fired upon them, as soon as they saw them at a distance; the *Indians* pretended to be wounded, fell down, got up again, ran a little way, and dropped again. Above half the garrison rushed out to take them prisoners; but as soon as they were come up with them, the *French* and the remaining *Indians* came out of the bushes, betwixt the fortrefs and the *English*, surrounded them, and took them prisoners. Those who remained in the fort had hardly time to shut the gates, nor could they fire upon the enemy, because they equally exposed their countrymen to danger, and they were vexed to see their enemies take and carry them off in their fight, and under their cannon. Such *French* artifices as these made the *English* weary of their ill-planned fort. We saw some of the palisades still in the ground. There was an island in the river, near *Saratoga*, much better situated for a fortification. The country is flat on both sides of the river near *Saratoga*, and its soil good. The wood round about was generally cut down. The shores of the river are high, steep, and consist of earth.

earth. We saw some hills in the north, beyond the distant forest. The inhabitants are *Dutch*, and bear an inveterate hatred to all *Englishmen*.

WE lay over night in a little hut of boards erected by the people who were come to live here.

June 25th. SEVERAL saw-mills were built here before the war, which were very profitable to the inhabitants, on account of the abundance of wood which grows here.

THE boards were easily brought to *Albany*, and from thence to *New York*, in rafts every spring with the high water; but all the mills were burnt at present.

THIS morning we proceeded up the river, but after we had advanced about an *English* mile, we fell in with a water-fall, which cost us a deal of pains before we could get our canoe over it. The water was very deep just below the fall, owing to its hollowing the rock out by the fall. In every place where we met with rocks in the river, we found the water very deep, from two to four fathoms and upwards; because by finding a resistance it had worked a deeper channel into the ground. Above the fall, the river is very deep again, the water slides along silently, and increases suddenly near the shores. On both sides, till you come to *Fort Nicholson*, the shore is covered with tall trees. After rowing several miles, we passed another water-fall, which is longer and more dangerous than the preceding one.

GIANTS-

GIANTS-POTS *, which I have described in the memoirs of the Royal *Swedish* Academy of Sciences, are abundant near the fall of the rock which extends across the river. The rock was almost dry at present, the river containing very little water at this season of the year. Some of the giants-pots were round, but in general they were oblong. At the bottom of most of them lay either stones or grit, in abundance. Some were fifteen inches in diameter, but some were less. Their depth was likewise different, and some that I observed were above two foot deep. It is plain that they owed their origin to the whirling of the water round a pebble, which by that means was put in motion, together with the sand.

WE intended to have gone quite up to Fort *Nicholson* in the canoe, which would have been a great convenience to us; but we found it impossible to get over the upper fall, the canoe being heavy, and scarce any water in the river, except in one place where it flowed over the rock, and where it was impossible to get up, on account of the steepness, and the violence of the fall. We were accordingly obliged to leave our canoe here, and to carry our baggage through unfrequented woods to Fort *Anne*, on the river *Woodcreek*, which is a space from forty-three to fifty *English* miles, during which we were quite spent, through the excess of heat. Sometimes we had no other way of crossing deep rivers, than by cutting down tall trees, which stood on

* This is the literal meaning of the *Swedish* word *jatte grytor*.

their banks, and throwing them across the water. All the land we passed over this afternoon was almost level, without hills and stones, and entirely covered with a tall and thick forest, in which we continually met with trees which were fallen down, because no one made the least use of the woods. We passed the next night in the midst of the forest, plagued with muskitoes, gnats, and wood-lice, and in fear of all kinds of snakes.

June 26th. EARLY this morning we continued our journey through the wood, along the river *Hudson*. There was an old path leading to Fort *Nicholson*, but it was so overgrown with grass, that we discovered it with great difficulty. In some places we found plenty of raspberries.

FORT *Nicholson* is the place on the eastern shore of the river *Hudson*, where a wooden fortification formerly stood. We arrived here some time before noon, and rested a while. Colonel *Lydius* resided here till the beginning of the last war, chiefly with a view of carrying on a greater trade with the *French Indians*; but during the war, they burnt his house, and took his son prisoner. The fort was situated on a plain, but at present the place is all overgrown with a thicket. It was built in the year 1709, during the war which Queen *Anne* carried on against the *French*, and it was named after the brave *English* general *Nicholson*. It was not so much a fort, as a magazine to Fort *Anne*. In the year 1711, when the *English* naval attempt upon *Canada* miscarried, the *English* themselves

set fire to this place. The soil hereabouts seems to be pretty fertile. The river *Hudson* passed close by here.

In the afternoon we continued our journey. We had hitherto followed the eastern shore of the river *Hudson*, and gone almost due North; but now we left it, and went E. N. E. or N. E. across the woods, in order to come to the upper end of the river *Woodcreek*, which flows to Fort St. *Frederick*, where we might go in a boat from the former place. The ground we passed over this afternoon was generally flat, and somewhat low. Sometimes we saw a little hill, but neither mountains nor stones, and the country was every where covered with tall and thick forests. The trees stood close, and afforded a fine shade; but the pleasure which we enjoyed from it was lessened by the incredible quantity of gnats which filled the woods. We found several plants here, but they were far from each other, (as in our woods where the cattle have destroyed them) though no cattle ever came here. The ground was every where thick covered with leaves of the last autumn. In some places we found the ground overgrown with great quantities of moss. The soil was generally very good, consisting of a deep mould, in which the plants thrive very well. Therefore it seems that it would answer very well if it were cultivated: however, flowing waters were very scarce hereabouts; and if the woods were cleared, how great would be the effects of the parching heat of the sun, which might then act with its full force!

WE lodged this night near a brook, in order to be sufficiently supplied with water, which was not every where at hand during this season. The muskitoes, punchins, or gnats, and the woodlice, were very troublesome. Our fear of snakes, and of the *Indians*, rendered this night's rest very precarious and unsecure.

PUNCHINS, as the *Dutch* call them, are the little gnats. (*Culex pulicaris* Linn.) which abound here. They are very minute, and their wings grey, with black spots. They are ten times worse than the larger ones, (*Culex pipiens* Linn.) or muskitoes; for their size renders them next to imperceptible; they are every where careless of their lives, suck their fill of blood, and cause a burning pain.

WE heard several great trees fall of themselves in the night, though it was so calm, that not a leaf stirred. They made a dreadful cracking.

June 27th. WE continued our journey in the morning. We found the country like that which we passed over yesterday, except meeting with a few hills. Early this morning we plainly heard a fall in the river *Hudson*.

In every part of the forest we found trees thrown down either by storms, or age; but none were cut down, there being no inhabitants; and though the wood is very fine, yet nobody makes use of it. We found it very difficult to get over such trees, because they had stopped up almost all the passages, and close to them was the chief residence of rattle-snakes, during the intenseness of the heat.

ABOUT two o'clock this afternoon we arrived at Fort *Anne*. It lies upon the river *Woodcreek*, which is here at its origin no bigger than a little brook. We stayed here all this day, and next, in order to make a new boat of bark, because there was no possibility to go down the river to Fort St. *Frederick*, without it. We arrived in time, for one of our guides fell ill this morning, and could not have gone any further with his burthen. If he had been worse, we should have been obliged to stop on his account, which would have put us under great difficulties, as our provisions would soon have been exhausted, and from the desert place where we were, we could not have arrived at any inhabited place in less than three or four days. Happily we reached the wish'd-for place, and the sick man had time to rest and recover.

ABOUT Fort *Anne* we found a number of mice, of the common kind. They were probably the offspring of those which were brought to the fort in the soldier's provisions, at the time when it was kept in a state of defence.

WE met with some apple and plumb-trees, which were certainly planted when the fort was in a good condition.

June 28th. THE *American Elm*, (*Ulmus Americana Linn.*) grows in abundance, in the forests hereabouts. There are two kinds of it. One was called the *White Elm*, on account of the inside of the tree being white. It was more plentiful than the other species, which was called the *Red Elm*, because the colour of the wood was reddish. Of the bark of the former

the boats made use of here are commonly made, it being tougher than the bark of any other tree. With the bark of hickory, which is employed as balt, they sew the elm-bark together, and with the bark of the red elm they join the ends of the boat so close as to keep the water out. They beat the bark between two stones; or for want of them, between two pieces of wood.

THE making of the boat took up half yesterday, and all this day. To make such a boat, they pick out a thick tall elm, with a smooth bark, and with as few branches as possible. This tree is cut down, and great care is taken to prevent the bark from being hurt by falling against other trees, or against the ground. With this view some people do not fell the trees, but climb to the top of them, split the bark, and strip it off, which was the method our carpenter took. The bark is split on one side, in a strait line along the tree, as long as the boat is intended to be; at the same time, the bark is carefully cut from the stem a little way on both sides of the slit, that it may more easily separate; the bark is then peeled off very carefully, and particular care is taken not to make any holes into it; this is easy when the sap is in the trees, and at other seasons the tree is heated by the fire, for that purpose. The bark thus stripped off is spread on the ground, in a smooth place, turning the inside downwards, and the rough outside upwards, and to stretch it better, some logs of wood or stones are carefully put on it, which press it down. Then the sides of the bark are gently bent upwards, in order to form the sides of

of the boat; some sticks are then fixed into the ground, at the distance of three or four feet from each other, in the curve line, in which the sides of the boat are intended to be, supporting the bark intended for the sides; the sides of the bark are then bent in the form which the boat is to have, and according to that the sticks are either put nearer or further off. The ribs of the boat are made of thick branches of hiccory, they being tough and pliable. They are cut into several flat pieces, about an inch thick, and bent into the form which the ribs require, according to their places in the broader or narrower part of the boat. Being thus bent, they are put across the boat, upon the back, or its bottom, pretty close, about a span, or ten inches from each other. The upper edge on each side of the boat is made of two thin poles, of the length of the boat, which are put close together, on the side of the boat, being flat, where they are to be joined. The edge of the bark is put between these two poles, and sewed up with threads of bast, of the mouse-wood, or other tough bark, or with roots. But before it is thus sewed up, the ends of the ribs are likewise put between the two poles on each side, taking care to keep them at some distance from each other. After that is done, the poles are sewed together, and being bent properly, both their ends join at each end of the boat, where they are tied together with ropes. To prevent the widening of the boat at the top, three or four transverse bands are put across it, from one edge to the other, at the distance of thirty or forty inches from each other.

other. These bands are commonly made of hickory, on account of its toughness and flexibility, and have a good length. Their extremities are put through the bark on both sides, just below the poles, which make the edges; they are bent up above those poles, and twisted round the middle part of the bands, where they are carefully tied by ropes. As the bark at the two ends of the boat cannot be put so close together as to keep the water out, the crevices are stopped up with the crushed or pounded bark of the red elm, which in that state looks like oakum. Some pieces of bark are put upon the ribs in the boat, without which the foot would easily pierce the thin and weak bark below, which forms the bottom of the boat, for the better security of which, some thin boards are commonly laid at the bottom, which may be trod upon with more safety. The side of the bark which has been upon the wood, thus becomes the outside of the boat, because it is smooth and slippery, and cuts the water with less difficulty than the other. The building of these boats is not always quick; for sometimes it happens that after peeling the bark off an elm, and carefully examining it, it is found pierced with holes and splits, or it is too thin to venture one's life in. In such a case another elm must be looked out; and it sometimes happens that several elms must be stripped of their bark, before one is found fit for a boat. That which we made was big enough to bear four persons, with our baggage, which weighed somewhat more than a man.

ALL

All possible precautions must be taken in rowing on the rivers and lakes of these parts with a boat of bark. For as the rivers, and even the lakes, contain numbers of broken trees, which are commonly hidden under the water, the boat may easily run against a sharp branch, which would tear half the boat away, if one rowed on very fast, exposing the people in it to great danger, where the water is very deep, especially if such a branch held the boat.

To get into such a dangerous vessel, must be done with great care, and for the greater safety, without shoes. For with the shoes on, and still more with a sudden leap into the boat, the heels may easily pierce through the bottom of the boat, which might sometimes be attended with very disagreeable circumstances, especially when the boat is so near a rock, and close to that a sudden depth of water; and such places are common in the lakes and rivers here.

I never saw the muskitoes (*Culex pipiens*) more plentiful in any part of *America* than they are here. They were so eager for our blood, that we could not rest all the night, though we had surrounded ourselves with fire.

WOOD-LICE (*Acarus Americanus* Linn.) abound here, and are more plentiful than on any part of the journey. Scarcely any one of us sat down but a whole army of them crept upon his clothes. They caused us as much inconvenience as the gnats, during the last night, and the short time we stayed here. Their bite is very disagreeable, and they would prove very dangerous, if any one of them should creep into a man's

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ear, from whence it is difficult to extract them. There are examples of people whose ears were swelled to the size of the fist, on account of one of these insects creeping into them, and biting them.

THE *Whipperiwill*, or *Whip-poor-Will*, cried all night on every side. The *Fire-flies* flew in numbers through the woods at night.

FORT *Anne* derives its name from Queen *Anne*; for in her time it served as a fortification against the *French*. It lies on the western side of the river *Woodcreek*, which is here as inconsiderable as a brook, of a fathom's breadth, and may be waded through in any part, during this season. The fort is built in the same manner as the forts *Saratoga* and *Nicholson*, that is to say, of palisades, within which the soldiers were quartered, and at the corners of which were the lodgings of the officers. The whole consisted of wood, because it was erected only with a view to resist irregular troops. It is built on a little rising ground which runs obliquely to the river *Woodcreek*. The country round about it is partly flat, partly hilly, and partly marshy, but it consists merely of earth, and no stones are to be met with, though ever so carefully sought for. General *Nicholson* built this fort in the year 1709; but at the conclusion of the war, then carrying on against the *French*, it shared the same fate with *Saratoga* and Fort *Nicholson*, being burnt by the *English* in 1711. This happened with the following circumstance: In 1711 the *English* resolved to attack *Canada* by land and by sea, at the same time. A powerful fleet sailed up the river *St. Lawrence* to besiege

besiege *Quebec*, and General *Nicholson*, who was the greatest promoter of this expedition, headed a numerous army to this place by land, to attack *Montreal*, at the same time from hence; but a great part of the *English* fleet was shipwrecked in the river *St. Lawrence*, and obliged to return to *New England*. The news of this misfortune was immediately communicated to General *Nicholson*, who was advised to retreat. Captain *Butler* who commanded Fort *Mohawk*, during my stay in *America*, told me that he had been at Fort *Anne* in 1711, and that General *Nicholson* was about to leave it, and to go down the river *Woodcreek*, in boats ready for that purpose, when he received the accounts of the disaster which befell the fleet. He was so enraged, that he endeavoured to tear his wig, but it being too strong for him, he flung it to the ground, and trampled on it, crying out *Roguery, treachery*. He then set fire to the fort, and returned. We saw the remains of the burnt palisades in the ground; and I asked my guides, Why the *English* had been at so great an expence in erecting the fort, and why they afterwards burnt it without any previous consideration? They replied, that it was done to get money from the government once more, for the rebuilding of the fort, which money coming into some people's hands, they would appropriate a great part of it to themselves, and erect again a wretched, inconsiderable fort. They further told me, that some of the richest people in *Albany* had promoted their poor relations to the places for supplying the army with bread, &c. with a view to patch up their broken fortunes;

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and

and that they had acquired such fortunes as rendered them equal to the richest inhabitants of *Albany*.

THE heat was excessive to-day, especially in the afternoon, when it was quite calm. We were on the very spot where Fort *Anne* formerly stood; it was a little place free from trees, but surrounded with them on every side, where the sun had full liberty to heat the air. After noon it grew as warm as in a hot bath*, and I never felt a greater heat. I found a difficulty of breathing, and it seemed to me as if my lungs could not draw in a sufficient quantity of air. I was more eased when I went down into the vallies, and especially along the *Wood-creek*. I tried to fan the air to me with my hat, but it only encreased the difficulty of breathing, and I received

* In *Sweden* and in *Russia* it is usual for people of all ranks to bathe every week at least one time; this is done in a stove heated by an oven, to a surprising degree, and which is enough to stifle people who are not used to it: for commonly the heat is encreased by the hot steam, caused by throwing red hot stones into water. In these baths, in *Russia*, the lower sort of people, men and women, bathe promiscuously, as the *Romans* did, and from whom, as *Plutarch* observes, in his Life of *Cato*, the *Greeks* adopted this indelicate and indecent custom, and which spread so much, that the Emperor *Adrian*, and *Marcus Antoninus* were obliged to make laws against it, but neither were they long observed, for we find soon the Council of *Laodicea* obliged to prescribe a canon against this brutal custom, and notwithstanding this we find soon after that not only persons of all ranks, but even clergymen and monks bathed promiscuously with women, in the same baths; and from thence, it is probable, this custom passed among the *Russians*, when christianity took place among them. Near the bath, in *Russia*, is commonly a pond, where the people plunge in, when quite hot, and in winter they wester in the snow; and *Saturdays* it is common to see before the bath naked men and women, each having a bundle of rods in their hands, with which they gently beat one another, when in the bath. F.

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the greatest relief when I went to the water, and in a shady place frequently sprinkled some water in the air. My companions were all very much weakened, but they did not find such difficulty in breathing, as I had done; however towards evening the air became somewhat cooler.

June 29th. HAVING completed our boat, after a great deal of trouble, we continued our journey this morning. Our provisions, which were much diminished, obliged us to make great haste; for by being obliged to carry every thing on our backs, through the woods to Fort Anne, we could not take a great quantity of provisions with us, having several other very necessary things with us; and we did always eat very heartily. As there was very little water in the river, and several trees were fallen across it, which frequently stopped the boat, I left the men in the boat, and went along the shore with *Xungstroem*. The ground on both sides of the river was so low, that it must be under water in spring and autumn. The shores were covered with several sorts of trees, which stood at moderate distances from each other, and a great deal of grass grew between them. The trees afforded a fine shade, very necessary and agreeable in this hot season; but the pleasure it gave was considerably lessened by the numbers of gnats which we met with. The soil was extremely rich.

As we came lower down the river, the dykes, which the beavers had made in it, produced new difficulties. These laborious animals had carried together all sorts of boughs and branches, and placed them across the river, putting mud
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and clay in betwixt them, to stop the water. They had bit off the ends of the branches as neatly as if they had been chopped off with a hatchet. The grafs about these places was trod down by them, and in the neighbourhood of the dykes we sometimes met with paths in the grafs, where the beavers probably carried trees along. We found a row of dykes before us, which stopped us a considerable while, as we could not get forwards with the boat, till we had cut through them.

As soon as the river was more open, we got into the boat again, and continued our journey in it. The breadth of the river, however, did not exceed eight or nine yards; and frequently it was not above three or four yards broad, and generally so shallow, that our boat got on with difficulty. Sometimes it acquired such a sudden depth, that we could not reach the ground with sticks of seven feet long. The stream was very rapid in some places, and very slow in others. The banks were low at first, but afterwards remarkable high and steep, and now and then a rock projected into the water, which always caused a great depth in such places. The rocks consisted here of a grey quartz, mixed with grey lime-stone, lying in strata. The water in the river was very clear and transparent, and we saw several little paths leading to it from the woods, said to be made by beavers, and other animals, which resorted here to drink. After going a little more than three *English* miles, we came to a place, where a fire was yet burning, and then we little thought that we had narrowly escaped death

death last night, as we heard this evening. Now and then we met with several trees lying across the river, and some dykes of beavers, which were troublesome to us.

TOWARDS night we met with a *French* serjeant and six *French* soldiers, who were sent by the commander of Fort *St. Frederick* to accompany three *Englishmen* to *Saratoga*, and to defend them in case of necessity, against six *French Indians*, who were gone to be revenged on the *English*, for killing the brother of one of them in the last war. The peace was already concluded at that time, but as it had not yet been proclaimed in *Canada*, the *Indians* thought they could take this step; therefore they silently got away, contrary to the order of the Governor of *Montreal*, and went towards the *English* plantations. We here had occasion to admire the care of Providence for us, in escaping these barbarians. We found the grass trod down all the day long, but had no thoughts of danger, as we believed every thing was quiet and peaceable. We were afterwards informed, that these *Indians* had trod the grass down, and passed the last night in the place where we found the burning brands in the morning. The usual road which they were to take, was by Fort *Anne*, but to shorten their journey they had gone an unfrequented road. If they had gone on towards Fort *Anne*, they would have met us without doubt, and looking upon us all as *Englishmen*, for whose blood they were gone out, they could easily have surprised and shot us all, and by that means have been rid of the trouble of going any further to satisfy their

their cruelty. We were greatly struck when the *Frenchmen* told us, how near death we had been to-day. We passed the night here, and though the *French* repeatedly advised and desired me not to venture any further with my company, but to follow them to the first *English* settlement, and then back to Fort *St. Frederic*, yet I resolved, with the protection of the Almighty, to continue my journey the next day.

WE saw immense numbers of those wild pigeons flying in the woods, which sometimes come in incredible flocks to the southern *English* colonies, most of the inhabitants not knowing where they come from. They have their nests in the trees here; and almost all the night make a great noise and cooing in the trees, where they roost. The *Frenchmen* shot a great number of them, and gave us some, in which we found great quantity of the seeds of the elm, which evidently demonstrated the care of Providence in supplying them with food; for in *May* the seeds of the red maple, which abounds here, are ripe, and drop from the trees, and are eaten by the pigeons during that time: afterwards, the seeds of the elm ripen, which then become their food, till other seeds ripen for them. Their flesh is the most palatable of any bird's flesh I ever tasted.

ALMOST every night, we heard some trees crack and fall, whilst we lay here in the woods, though the air was so calm that not a leaf stirred. The reason of this breaking I am totally unacquainted with. Perhaps the dew loosens the roots of trees at night; or, perhaps there

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are too many branches on one side of the tree. It may be, that the above-mentioned wild pigeons settle in such quantities on one tree as to weigh it down; or perhaps the tree begins to bend more and more to one side, from its center of gravity, making the weight always greater for the roots to support, till it comes to the point, when it can no longer be kept upright, which may as well happen in the midst of a calm night as at any other time. When the wind blows hard, it is reckoned very dangerous to sleep or walk in the woods, on account of the many trees which fall in them; and even when it is very calm, there is some danger in passing under very great and old trees. I was told, in several parts *America*, that the storms or hurricanes sometimes only pass over a small part of the woods, and tear down the trees in it; and I have had opportunities of confirming the truth of this observation, by finding places in the forests, where almost all the trees were thrown down, and lay all in one direction.

TEA is differently esteemed by different people; and I think we would be as well, and our purses much better, if we were both without tea and coffee. However, I must be impartial, and mention in praise of tea, that if it be useful, it must certainly be so in summer, on such journeys as mine, through a desert country, where one cannot carry wine or other liquors, and where the water is generally unfit for use, as being full of insects. In such cases, it is very relishing when boiled, and tea is drunk with it; and

and I cannot sufficiently describe the fine taste it has in such circumstances. It relieves a weary traveller more than can be imagined, as I have myself experienced, together with a great many others who have travelled through the desert forests of *America*; on such journeys, tea is found to be almost as necessary as victuals*.

June 30th. THIS morning we left our boat to the *Frenchmen*, who made use of it to carry their provisions; for we could not make any further use of it, on account of the number of trees which the *French* had thrown across the river during the last war, to prevent the attacks of the *English* upon *Canada*. The *Frenchmen* gave us leave to make use of one of their boats, which they had left behind them, about six miles from the place where we passed the last night. Thus we continued our journey on foot, along the river; and found the country flat, with some little vales here and there. It was every where covered with tall trees, of the deciduous kind; among which the beech, the elm, the *American* lime-tree, and the sugar-maple, were the most numerous. The trees stand at some distance from each other; and the soil in which they grow is extremely rich.

AFTER we had walked about a *Swedish* mile, or six *English* miles, we came to the place where the six *Frenchmen* had left their bark boats, of

* On my travels through the desert plains, beyond the river *Volga*, I have had several opportunities of making the same observations on Tea; and every traveller, in the same circumstances, will readily allow them to be very just. F.

which we took one, and rowed down the river, which was now between nineteen and twenty yards broad. The ground on both sides was very smooth, and not very high. Sometimes we found a hill consisting of grey quartz; mixed with small fine grains of grey spar. We likewise observed black stripes in it; but they were so small, that I could not determine whether they were of glimmer, or of another kind of stone. The hills were frequently divided into strata, lying one above another, of the thickness of five inches. The strata went from north to south; and were not quite horizontal, but dipping to the north. As we went further on, we saw high and steep hills on the river-side, partly covered with trees; but in other parts, the banks consist of a swampy turf ground, which gave way when it was walked upon, and had some similarity to the sides of our marshes, which my countrymen are now about to drain. In those parts where the ground was low and flat, we did not see any stones either on the ground, or on the softer shore; and both sides of the river when they were not hilly, were covered with tall elms, *American* lime-trees, sugar-maples, beeches, hiccory-trees, some water-beeches, and white walnut-trees.

ON our left we saw an old fortification of stones laid above one another; but nobody could tell me whether the *Indians* or the *Europeans* had built it.

WE had rowed very fast all the afternoon, in order to get forward; and we thought that

we

we were upon the true road, but found ourselves greatly mistaken : for towards night we observed, that the reeds in the river bent towards us, which was a mark that the river likewise flowed towards us ; whereas, if we had been on the true river, it should have gone with us. We likewise observed, from the trees which lay across the river, that nobody had lately passed that way, though we should have seen the steps of the *Frenchmen* in the grass along the shore, when they brought their boat over these trees. At last, we plainly saw that the river flowed against us, by several pieces of wood which floated slowly towards us ; and we were convinced, that we had gone twelve *English* miles, and upwards, upon a wrong river, which obliged us to return, and to row till very late at night. We sometimes thought, through fear, that the *Indians*, who were gone to murder some *English*, would unavoidably meet with us. Though we rowed very fast, yet we were not able to-day to get half-way back to the place where we first left the true river.

THE most odoriferous effluvia sometimes came from the banks of the river, towards night, but we could not determine what flowers diffused them. However, we supposed they chiefly arose from the *Asclepias Syriaca*, and the *Apocynum androsaemifolium*.

THE *Musk Rats* could likewise be smelted at night. They had many holes in the shores, even with the surface of the water.

WE passed the night in an island, where we

could not sleep on account of the gnats. We did not venture to make a fire, for fear the *Indians* should find us out, and kill us. We heard several of their dogs barking in the woods, at a great distance from us, which added to our uneasiness.

METEOROLOGICAL OBSERVATIONS.

ADVERTISEMENT.

IN the first column of these Tables, the reader will find the days of the month ; in the second, the time or hour of the day when the observations were made ; in the third, the rising and falling of the thermometer ; in the fourth, the wind ; and in the fifth, the weather in general, such as rainy, fair, cloudy, &c.

THE thermometer which I have made use of is that of Mr. *Celsius*, or the *Swedish* thermometer so called, as I have already pointed out in the Preface. To distinguish the degrees above freezing-point from those below it, I have expressed the freezing-point itself by 00, and prefixed 0 to every degree below it. The numbers, therefore, which have no 0 before them, signify the upper degrees. Some examples will make

make this still more intelligible. On the 17th of *December* it is remarked, that the thermometer, at eight o'clock in the morning, was at 02.5. It was therefore at 2 degrees and $\frac{5}{10}$, or half a degree, below the freezing-point; but at two in the afternoon, it was at 00.0, or exactly upon the freezing-point. If it had been 00.3, it would have signified that the thermometer was fallen $\frac{3}{10}$ of a degree below the freezing-point; but 0.3 would signify, that it was risen $\frac{3}{10}$ of a degree above the freezing-point. Thus likewise 03.0. is three degrees below the freezing-point; and 4.0. four degrees above it.

The numbers in the columns of the winds signify as follows: 0, is a calm; 1, a gentle breeze; 2, a fresh gale; 3, a strong gale; and 4, a violent storm or hurricane. When, in some of the last tables, the winds are only marked once a day, it signifies that they have not changed that day. Thus, on the 21st of *December*, stands N. 0 fair. This shews that the weather-cocks have turned to the north all day; but that no wind has been felt, and the sky has been clear all the day long.

BEFORE I went to *Canada*, in summer 1749, I desired Mr. *John Bartram* to make some meteorological observations in *Pensylvania*, during my absence, in order to ascertain the summer-heat of that province. For that purpose, I left him a thermometer, and instructed him in the proper use of it; and he was so kind as to write down his observations at his farm, about four *English* miles to the south of *Philadelphia*. He

is very excusable for not putting down the hour, the degree of wind, &c. for being employed in business of greater consequence, that of cultivating his grounds, he could not allow much time for this. What he has done is, however, sufficient to give an idea of the *Pennsylvanian* summer.

to give him credit for the same.

So, since the 10th of July, the temperature has been 80° Fahrenheit.

Multiply Celsius by 1.8
divide the product by 5
if the result is odd 32

the result is the temperature in Fahrenheit.

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August

August 1748.

149

D.	H.	Ther.	Wind.	The Weather in general.
1	5 m	20.0	E S E 2	Fair.
2	a	24.5	E 2	
2	5 m	22.0	E 2	
2	a	24.5	E 2	
3	5 m	22.0	E 1	
2	a	25.5	S S W 1	Cloudy with some rain.
4	5 m	22.0	S 1	Alternately fair, cloudy and rainy all day.
1	a	21.0	S 1	
5	5 m	17.0	S S W 1	Chiefly rainy.
6	7 m	17.0	S 2	Cloudy.
2	a	19.0	S 2	Somewhat cloudy, but chiefly fair.
7	5 m	15.5	S S W 2	Alternately fair and cloudy.
8	5 m	18.0	S S W 0	Fair all day.
3	a	19.0	S S W 0	
9	6 m	17.5	W N W 0	
4	a	21.0	W N W 1	
10	6 m	18.5	E 1	Fair.
3	a	20.5	E 1	
11	6 m	47.0	E N E 1	Somewhat cloudy.
1	a	18.5	S W 1	Fair.
4	a	22.0	S W 1	
6	a	22.0	W 3	
12	6 m	16.0	N W 1	Cloudy with some drizzling rain at ten.
4	a	19.0	N W 1	Cloudy, fair, some drizzling rain altern.
13	6 m	17.0	W N W 2	Cloudy with some rain; foggy, sometimes fair.
2	a	18.5	W N W 2	
14	5 m	18.0	W S W 0	Somewhat cloudy, fair from 11 m. to 3 a.
4	a	20.0	W S W 0	Cloudy.
15	5 m	18.0	W S W 0	Cloudy; sometimes fair; at ten o'clock fell a thin fog.
2	a	19.5	N E 2	
16	6 m	18.3	N N E 2	Somewhat cloudy; some time fair.
2	a	18.5		Dark; rainy at night.
17	6 m	18.5	E N E 2	Dark, with some drizzling rain.
2	a	19.5		Drizzling rain all the afternoon.
18	6 m	19.0	E 2	Drizzling rain all the day.
2	a	20.5		
19	6 m	19.5		Cloudy.
2	a	20.0		Scattered clouds.
20	6 m	19.5		Fair.
2	a	21.5		Scattered clouds: sometimes rain.
21	6 m	20.8	E 1	Somewhat cloudy, fair at nine.
2	a	21.3		Thin clouds.

D.	H.	Ther.	Wind.	The Weather in general.
22	5 m	21.0		Fair; about twelve it became cloudy.
	1 a	23.5	E S E 1	Cloudy.
23	5 m	22.2		Scattered clouds.
	7		S E 2	
	2 a	24.2		Scattered clouds, dark towards eve.
24	5 m	23.5	W S W 2	Violent rain.
	6		W 2	
	7		W N W 1	About seven it cleared up.
	9		N W 1	
	2 a			Scattered clouds.
25	6 m	24.5	W 1	Scattered clouds.
	10		W N W 3	
	2 a	23.5		
26	6 m	24.0	W 2	Fair. At night a great halo appeared round the sun.
	2 a	24.5	S W 2	Dark. A strong redness at sun-setting.
			W S W 1	Cloudy. At ten it began to rain, and it rained all day.
27	6 m	24.5	S E 2	
	11		E 3	
	1 a		N E 4	Rain.
	4	21.5	N 1	Scattered clouds.
28	7 m	23.0		
	2 a	23.5	S W 1	(lightning,
29	6 m		S W 3	Towards evening drizzling rain and
	2 a	25.5	N W 2	Scattered clouds; air very cool.
30	6 m	23.5		
	2 a	21.5	S W 1	Fair, in the morning it began to grow
31	6 m	22.2		cloudy; at night lightning, hard rain, and some thunder.

September

September 1748.

151

D	H.	Ther.	Wind.	The Weather in general.
1	7 m	20.0	N W 2	Scattered clouds.
	2 a	21.5		Clouds passing by. Rain and strong winds all the afternoon.
2	6 m	19.0	N W 1	Scattered clouds all day.
	2 a	20.5	N W 0	At night a great halo round the moon.
3	6 m	21.5	W S W 0	Scattered clouds.
	2 a	23.0	S 1	It became more cloudy. In the evening appeared a great halo round the sun.
4	6 m	23.3	E 1	Scattered clouds.
	12 n	27.5	E S E 1	
	2 a	24.0		
5	6 m	24.5	S E 3	Scattered clouds.
	12 n	26.5		
6	6 m	27.0	S E 2	Scattered clouds.
	1 a	28.5		At night a great halo round the moon, and the sky very red.
7	6 m	27.5	E 3	Dark sometimes. The sun shone through the clouds.
8	12 n	28.5	N E 2	Scattered clouds.
8	6 m	26.0	N N E 2	Scattered clouds all day.
	1 a	26.5		
9	6 m	24.5	N 1	Scattered clouds all day.
	1 a	24.5		
10	5 m	24.0	N N W 1	Fair.
	1 a	24.5		
11	6 m	23.2	W N W 1	Fair.
	2 a	25.0		At night a halo round the moon.
12	6 m	24.0	A-Calm.	Fair, and very hot.
	1 a	26.0		
13	5 m	25.5	S E 1	Fair.
	1 a	26.5		
14	6 m	25.5	S E 1	Fair; but a cool wind all the morning.
	1 a	26.5		
15	5 m	23.0	S E 1	Scattered clouds.
	1 a	27.5		It grew more cloudy. In the evening and ensuing night, violent rain and winds.
16	5 m	21.5	N N E 1	It rained hard all day.
	2 a	21.5		
17	5 m	25.5	N W 1	Cloudy.
	1 a	21.0		Scattered clouds.

D.	H.	Ther.	Wind.	The Weather in general.
18	6 m	13.0	Calm.	Fair.
19	6 m	24.5	N N E 1	Fair all day.
20	6 m	14.0	N E 1	Scattered clouds.
21	6 m	11.0	N E 0	Scattered clouds.
22	7 m	23.0	N E 1	Fair.
23	6 m	11.0	N N E 1	Fair.
24	6 m	14.0	N E 1	Fair.
25	6 m	18.0	N W 1	Dark. At 8, scattered clouds.
26	6 m	15.5	N N E 1	Fair.
27	6 m	17.0	N E 1	Cloudy. Fair at 8, and all the morning.
28	6 m	14.0	N E 1	Fair and cloudy alternately.
29	7 m	15.5	N E 1	Cloudy.
30	7 m	16.0	N E 0	Alternately fair and cloudy.

C. E. Eder

October 1748.

153

D.	H.	Ther.	Wind.	The Weather in general.
1	6 n	19.0	S 1	Fair. Scattered clouds at 8.
2	2 a	18.5		Scattered clouds. Dark towards night.
2	6 m	18.5	S W 0	Cloudy.
3	6 m	15.0	N W 1	Cloudy.
3	1 a	18.0		Scattered clouds. Late at night a great halo round the moon.
4	7 m	6.0	N W 1	Fair.
4	1 a	16.0		
5	7 m	2.0	N 1	Fair.
6	7 m	2.0	N E 1	Fair.
6	1 a	18.0		At night a great halo round the moon.
7	6 m	7.0	E N E 1	Cloudy. Fair at 9, and all day.
8	6 m	14.0	E N E 1	Cloudy. Scattered clouds at 8.
9	6 m	18.0	S S E 1	Rain all the morning.
9	3 a	23.0		Cloudy.
10	6 m	20.0	S W 0	Fog, and a drizzling rain.
10	2 a	23.0		Fair.
11	7 m	20.0	S W 1	Fog, which fell down. Fair at 8.
11	2 a	26.0		Fair.
12	6 m	8.0	W N W 1	Fair all day.
12	8 a		W 1	
12	2 a	20.0	W S W 1	
13	6 m	2.0	W N W 1	In the morning, hoary frost on the plants.
13	2 a	17.0	W S W 0	Fair all day.
14	6 m	5.0	S S W 0	Fair.
14	2 a	21.0		
15	6 m	4.5	S S E 0	Fair.
15	2 a	24.0		
16	6 m	11.0	E N E 0	Cloudy.
17	6 m	8.0	N E 1	Cloudy.
17	2 a	18.0		Cloudy. Violent rain all night.
18	6 m	12.0	N W 0	Cloudy.
18	5 a	4.0	S W 0	
19	6 m	00.0	W S W 1	Scattered clouds.
19	2 a	9.0		
20	5 m	01.0	W N W 1	Fair.
20	2 a	9.0		
21	7 m	00.0	W 0	In the morning ice on standing water.
21	1 a	15.0		white hoary frost on the ground;
22	6 m	00.0	W 0	fair all day.

October 1748.

D	H.	Ther.	Wind.	The Weather in general.
23	6 m	4.5	N N E 1	Fair.
	1 a	16.0		
24	6 m	4.5	N o	Fair.
	2 a	18.0		
25	6 m	4.5	S W 1	Fair. Air very much condensed in the afternoon.
26	6 m	4.0	S W o	Fair.
	3 a	19.0		
27	6 m	1.0	S W o	Fair.
	3 a	17.0		
28	6 m	9.0	E 2	Heavy rain all day.
29	6 m	14.0	W 1	Fair.
	1 a	20.0		At night I saw a meteor, commonly called the shooting of a star, going far from N. W. to S. E.
30	6 m	3.0	N W 1	Fair.
31	7 m	4.0	W 1	Fair.
	1 a	18.0		

November

November 1748.

155

D.	H.	Ther.	Wind.	The Weather in general.
1	7 m	3.0	S 1	Fair.
2	6 m	4.0	N 0	Fair.
	3 a	18.0		
3	7 m	7.0	N W 1	Fair.
	1 a	14.0	S E 0	
4	7 m	1.0	S W 0	In the morning the fields were covered with white frost.
	12 n	19.0		A fair day.
5	7 m	4.0	S W 1	Fair.
	1 a	17.0		
6	7 m	4.5	N E 1	Fair.
	1 a	12.0		Towards evening somewhat cloudy.
7	7 m	7.0	E N E 1	Cloudy.
	4 a	11.5		
8	7 m	11.5	E N E 2	Drizzling rain.
	1 a	18.0	E S E 3	Heavy rain.
9	7 m	17.0	S E 1	Drizzling rain.
	9 m	15.0	S S W 1	At eight it cleared up.
	1 a	17.0		Scattered clouds.
10	7 m	6.0	S S W 2	Fair.
	1 a	13.0	W N W 2	
11	7 m	4.0	W S W 1	Cloudy.
	1 a	12.0		Scattered clouds.
12	6 m	03.0	S W 1	Fair.
	2 a	11.5	N W 2	Cloudy.
	4	5.0		
13	7 m	00.0	N N E 1	This morning ice on the water.
	2 a	5.5		Fair.
14	7 m	0.5	N 3	Fair.
	1 a	8.0	N 2	
15	7 m	3.0	S 2	A strong red aurora.
	1 a	8.0		Cloudy and continual drizzling rain.
16	7 m	4.5	W 1	Fair.
17	7 m	01.0	W 1	Fair and cloudy alternately.
	1 a	8.0		Sometimes drizzling rain.
18	7 m	4.0	S 1	Fair.
	3 a	6.5	N W 2	
19	7 m	03.0	W 0	Fair.
	2 a	11.5		
20	7 m	01.0	N N E 1	Fair.
	2 a		S 1	

156

November 1748.

D.	H.	Ther.	Wind.	The Weather in general.
21	7 m	15.6	S W 2	Fair.
	1 a	19.6		
22	7 m	20.6	E 1	Rain all day.
	2 a	10.0		
23	8 m	16.0	S 1	Cloudy, foggy, and rain now and then.
	3 a		S W 4	
24	7 m	00.0	W N W 3	Fair. [to-day
25	7 m		N W 0	It was very cold last night, and fair
26			N W 0	Alternately fair and somewhat cloudy, and always pretty cold.
27				Fair; scattered clouds: pretty warm in the air.
28				Cloudy, foggy, and quite calm.
29				Somewhat cloudy.
30			N 1	Fair, and a little cold.

December

December 1748.

157

D.	H.	Ther.	Wind.	The Weather in general.
1			N 1	Fair.
2			WSW 1	Fair, and cold; a great halo round the moon at night.
3			WSW 1	A pretty red aurora, however a fair day.
4	7 m	6.0	SSW 0	Fair.
	3 a	18.0		
5	7 m	5.5	NNE 1	
	4 a	9.5		
6	7 m	6.5	SSW 1	Cloudy.
	3 a	14.0		Somewhat fairer: hard rain in the next night.
7	7 m	13.5	SW 1	Cloudy.
	2 a	19.0		Fair.
8	7 m	5.0	S 1	Cloudy.
	2 a	13.5		Rain and wind next night; thick, but scattered clouds.
9	7 m	12.0	SW 2	
	2 a	10.0	WNW 2	
10			WNW 2	Scattered clouds.
11	7 m	2.0	SSW 1	Fair.
	2 a	12.5		
12	7 m	0.5	NE 1	Cloudy, rain, and fog all day from nine o'clock.
	2 a	10.5		
13	8 m	7.5	SW 0	Foggy, and cloudy.
	2 a	10.0		Next night a strong N. W. wind.
14	8 m	1.0	NW 2	Scattered clouds.
	2 a	2.0		
15	8 m	07.0	WNW 1	Fair and cloudy alternately.
	2 a	01.0		
16	8 m	01.0	W 1	Fair.
	2 a	1.5		
17	8 m	02.5	NW 1	Cloudy, some snow, the first this winter.
	2 a	00.0		
18	8 m	03.0	W 1	Fair.
	2 a	4.0		
19	8 m	1.0	W 1	Cloudy.
	2 a	8.0		Fair.
20	8 m	01.5	WSW 2	Scattered clouds: about six at night were quite red stripes on the sky, to the North.
	2 a	7.5	WSW 1	
21	8 m	07.0	No	Fair.
	2 a	2.0		

158

December 1748.

D.	H.	Ther.	Wind.	The Weather in general.
22	8 m	04.5	S E 0	Fair.
2	a	13.0		It grew cloudy in the afternoon.
23	8 m	13.0	S S W 0	Heavy rain.
2	a	18.0		Foggy and cloudy.
24	8 m	13.0	W S W 0	Thick fog.
2	a	17.0	S W 1	Fair; but late in the evening a hard shower of rain.
25	8 m	18.0	S 3	Last night was a storm, rain, thunder, and lightning.
2	a	18.5	S S E 2	Heavy rain all day.
26	8 m	3.0	W 3	Last night a violent storm from W. and S. and heavy rain. The morning was cloudy, and some snow fell.
2	a	3.5	W N W 3	Clears up.
27	8 m	04.0	W N W 3	Fair.
28	8 m	07.0	W 0	Fair.
2	a	8.0		
29	8 m	3.0	N N E 1	Somewhat cloudy, and intermittent showers.
2	a	13.0		
30	8 m	8.0	— 0	Cloudy and foggy all day.
2	a	10.0	N N E 1	
31	8 m	6.0	— 0	Fair.
2	a	4.0	W 3	At night a halo round the moon.
			N W 1	

January

January 1749.

159

D.	H.	Ther.	Wind.	The Weather in general.	H.	O.
1	7 $\frac{1}{2}$ m	07.0	N W 0	Fair.	0 32	2.40 m 8.22
2	a	04.0	— 0		0.21	2.2
2	7 $\frac{1}{2}$ m	04.5	W N W 1	Alternately fair and cloudy.	0.21	2.2
2	a	5.5	— 1		0.21	2.2
3	7 $\frac{1}{2}$ m	2.0	N W 1	Cloudy.	0.21	2.2
2	a	2.0	— 1		0.21	2.2
4	7 $\frac{1}{2}$ m	02.0	W 1	Fair.	0.21	2.2
2	a	11.0	— 1		0.21	2.2
5	7 $\frac{1}{2}$ m	03.0	W 0	Fair.		
6	7 $\frac{1}{2}$ m	03.0	W 0	Fair, but darkened towards night, with some snow.	0.21	2.2
2	a	14.5	— 0		0.21	2.2
5	a	14.5	N W 3			
7	7 $\frac{1}{2}$ m	01.0	W N W 1	Somewhat cloudy.		
2	a	3.0	— 1			
8	7 $\frac{1}{2}$ m	04.0	W N W 1	Fair.		
2	a	8.0	— 1			
9	7 $\frac{1}{2}$ m	03.0	W N W 1	Aurora, cloudy, heavy rains at night.		
2	a	8.0	— 1			
10	7 $\frac{1}{2}$ m	15.0	S 2	Cloudy, and showers, some snow at night; at 9 morn. W. S. W. 3;		
2	a	2.0	W 4	at 11. m. S. W. 4; at 2 aft. W. 4.		
4	a					
11	7 $\frac{1}{2}$ m	03.0	W N W 3	Cloudy.		
2	a	04.0	— 3			
12	7 $\frac{1}{2}$ m	04.0	W N W 3	Fair.		
2	a	01.5	N N W 2			
13	7 $\frac{1}{2}$ m	07.5	W N W 2	Fair.		
1	a	03.0	— 2	Cloudy.		
14	7 $\frac{1}{2}$ m	05.5	W N W 1	Cloudy, and snows all day; it lay above two inches thick.		
1	a	02.0	— 1			
15	7 m	07.0	W N W 0	Fair.		
2	a	3.0	— 0			
16	7 m	08.9	N W 3	All the last night W N W 4.		
8 m		09.0		Fair all day.		
2	a	08.0	— 1			
17	7 m	011.0	N N E 0	Cloudy; snows all day, and the ensuing night.		
7	a	09.0	— 0			
18	7 m	012.0	N W 1	Cloudy, and snows in the morning, fair all the afternoon, and the thermometer at 011.0: snow lay five inches deep.		
10 m		011.0	— 1			
19	7 m	015.5	W 1	Fair.		
1	a	010.5	— 1			

D.	H.	Ther.	Wind.	The Weather in general.
20	7 m	012.5	W I	Fair.
	2 a	07.0		
21	7 m	022.0	WNW o	Fair.
	2 a	03.0	W I	
22	7 m	05.0	W I	Fair.
	2 a	01.0	W I	Cloudy.
23	7 m	010.0	WNW i	Fair; a great halo round the moon at night.
	7 a	3.0	— I	
24	7 m	01.0	NNE o	Cloudy, snows all day.
	2 a	4.0	NE o	
25	7 m	00.0	WNW o	Fair.
	2 a	4.0	W o	
26	7 m	013.0	WNW i	Fair.
	2 a	1.0	— I	Cloudy; at three in the afternoon began to snow.
27	7 m	07.0	W I	Fair; halo round the moon at night.
	2 a	00.0	— I	
28	7 m	01.0	WNW i	Cloudy; snows almost all day.
	3 a	4.0	— I	
29	7 m	05.0	NNE i	Fair.
	3 a	03.0	— I	
30	7 m	013.0	WNW i	Fair; halo round the moon at night.
	3 a	4.0	— I	
31	7 m	04.0	WNW i	Fair; halo round the moon at night.
	3 a	8.0	— I	

February

D.	H.	Ther.	Wind.	The Weather in general.
1	7 m	03.0	WNW 1	Fair; a halo round the moon at night.
	1 a	11.0	W 1	
2	7 m	5.0	WNW 0	Fair.
	2 a	6.0	W 0	
3	7 m	00.0	W 0	Fair.
	2 a	19.5	— 0	
4	7 m	5.5	W 0	Cloudy; at ten at night wind NNE 3.
	2 a	11.0	4 a. NNE 2	fnow.
5	7 m	06.0	NNW 2	Fair.
	1 a	03.0	NW 2	
6	7 m	010.5	NW 0	A craking noise was heard in all houses
	2 a	3.0	WSW 1	the night before. Aurora.—Fair
				all day,—at 7 in the morn. NW 1
				—at 9, WNW 1—at 11, W 1
				—at 2 in the afternoon, WSW 1.
7	7 m	01.0	NNE 1	Cloudy—fair—at 7 in the morn. NN
	2 a	1.0	NW 1	E 1—at 9, N 1—at 10, WNW
				1—at 12, NW 1.
8	7 m	09.0	NW 0	Fair.
	2 a	7.0	W 1	
9	7 m	03.0	W 1	Fair.
	3 a	16.0	— 1	
10	7 m	7.0	W 1	Pretty clear; a violent storm with rain
	1 a	11.0	SSW 4	all the ensuing night.
11	7 m	9.0	SSW 2	Fair; rain towards night; at night a
	1 a	11.0		light fimilar to an Aurora Borealis
				in S W.
12	7 m	4.0	SSW 3	Fair; about nine at night a faint Au-
	1 a	10.0		rorra Borealis in S W.
13	7 m	2.0	WNW 2	Cloudy.
	3 a	5.0	NW 2	Fair.
14	7 m	06.0	NW 1	Fair.
	3 a	02.5	WNW 2	Flying clouds.
15	6 ³ / ₄ m	010.5	NW 1	Fair; at eight in the evening an Au-
	2 a	03.0	WNW 0	rorra Borealis.
16	6 ³ / ₄ m	013.0	WNW 0	Fair.
	2 a	00.0	NW 1	
17	6 ³ / ₄ m	02.0	WNW 1	Cloudy and snow; wind all the after-
	2 a	00.0	W 1	noon long.
18	6 ³ / ₄ m	2.0	WNW 1	Cloudy.
	2 a	00.0		

D.	H.	Ther.	Wind.	The Weather in general.
19	6 $\frac{1}{2}$ m 2 a	03.0 01.0	N N E 2	Cloudy; rain all day, mixed with snow and hail.
20	6 $\frac{1}{2}$ m 2 a	1.5 4.5	N W 1	Cloudy.
21	6 $\frac{1}{2}$ m 4 a	00.8 4.0	N W 0 N N E 1	Cloudy; at 5 in the morn. we heard a waterfall near a mill, about a mile S of us, making a stronger noise than common, tho' the air was very calm — at 10 began a rain which continued the whole day.
22	6 $\frac{1}{2}$ m 2 a	3.0 3.5	W N W 2	Fair.
23	6 $\frac{1}{2}$ m 4 a	06.0 4.0	W 2	Fair. Some clouds gathered round the sun.
24	6 $\frac{1}{2}$ m 3 a	4.0 10.0	S S W 1 W 1	Cloudy.
25	6 m 2 a	3.0 1	W N W 0	Alternately fair and cloudy.
26	6 m 3 a	012.0 02.0	N N W 1	Fair; cloudy at night; at eight in the evening was a halo round the moon, and the clouds in the S. quite red.
27	6 m 3 a	04.0 01.0	N 2	Cloudy, and snow in the morning; but fair at 4 in the afternoon.
28	6 m 3 a	04.5 03.5	N W 4 W N W 4	Flying clouds.

March

March 1749.

163

D.	H.	Ther.	Wind.	The Weather in general.
1	6 m	09.0	W N W 2	Fair. A great halo round the moon at night.
	3 a	01.5		
2	6 m	06.0	N W 2	Fair. A faint halo round the moon at night.
	4 a	2.5		
3	6 m	04.0	N W 1	Fair. Cloudy afternoon. About 8 at night the clouds in S. W. were quite red. At 9 it began to snow.
	2 a	6.5	S 1	
4	6 m	0.5	E S E 1	Cloudy. Heavy rain at night.
	2 a	7.0	S 1	
5	6 m	4.0	W 1	Alternately fair and cloudy. The next night calm.
	2 a	11.0	W 3	
6	6 m	4.0	W 2	Fair.
	2 a	00.0	W S W 1	Alternately fair and cloudy in the morning. In the afternoon cloudy, with intermittent rain and thunder.
7	6 m	8.0		
	2 a	8.0		
8	6 m	2.0	W N W 0	Fair. About 8 at night we saw what is called a snow-fire to the S. W.
	3 a	20.0	W S W 2	
9	6 m	5.0	N 1	Fair.
	3 a	13.5		Cloudy. Snow-fire in S. W. about 8 at night.
10	6 1/2 m	5.0	S S E 1	Cloudy. Snow and rain all day, and next night.
	2 a	6.5	S E 1	
11	6 m	9.0	S S E 1	Cloudy and heavy rain in the morning. Clears up in the afternoon.
	3 a	14.0	W 1	
12	6 m	9.0	N N W 0	Cloudy in the morning. Clears up at 10. Towards night cloudy, with rain.
	3 a	15.0	E N E 0	
13	6 m	9.5	N N E 2	Cloudy, with heavy rain. Fair at 4 in the afternoon.
	2 a	8.0	10 m. N 3	
14	6 m	4.0	W N W 2	Fair.
	2 a	10.0		
15	3 m	00.0	W S W 0	Fair. Cloudy towards night.
	3 a	13.0	W 2	
16	6 m	2.5	N N E 3	Snow violently blown about all day.
	3 a	01.0		
17	6 m	01.0	N W 2	Cloudy. Clears up at 8 in the morning.
	3 a	5.0		
18	6 m	02.0	W S W 0	Fair. The fields were now covered with snow.
	3 a	4.0	W 2	
19	6 m	02.0	W N W 1	Fair.
	3 a	6.0	N W 2	

M 2

D.	H.	Ther.	Wind.	The Weather in general.
20	6 m	05.5	W 0	Fair. Cloudy towards night.
	3 a	11.5	SW 1	Cloudy.
21	6 m	12.0	SSE 0	Cloudy. Intermittent showers.
	3 a	14.5		
22	6 m	10.0	SSE 0	Cloudy.
	3 a	19.5		
23	6 m	15.0	SSE 1	Heavy rain.
	3 a	19.0		
24	6 m	8.0	SW 1	Fair.
	3 a	15.0		
25	6 m	6.5	WNW 3	Fair.
	3 a	11.0		Flying clouds.
26	6 m	00.0	WNW 2	Fair.
	5 a	11.0	SW 2	Flying clouds. About 8 at night a snow-fire on the horizon in S. W.
27	6 m	3.0	WNW 1	Fair.
	3 a	9.0		
28	6 m	3.0	S 1	Rain all the day, and the next night.
	3 a	12.0	11a. NNW 3	
29	6 m	1.0	NNW 2	Fair.
	2 a	6.0		
30	6 m	03.0	E 1	Fair. Cloudy at noon: begins to snow,
	2 a	4.0	SE 1	which continues till night, when it turned into rain.
31	6 m	5.0	N 1	Cloudy.
	3 a	14.0		

April

April 1749.

165

D.	H.	Ther.	Wind.	The Weather in general.
1	6 m	5.5	N N E 1	Rain in the morning,—afternoon,—and in the night.
	3 a	3.5	E 1	Snow, with much thunder and lightning.
2	6 m	0.5	N N E 1	Snow almost the whole day.
	3 a	0.5		
3	6 m	02.0	N W 1	Fair.
	3 a	9.0		
4	6 m	02.0	W 1	Fair.
	3 a	16.0		
5	6 m	00.5	N 1	Fair.
	3 a	19.0	S W 1	Sun very red at setting.
6	6 m	4.0	S W 1	Fair.
	3 a	23.0		
7	6 m	13.0	S 2	Fair. Cloudy afternoon
	3 a	24.0		About 7 in the evening it began to rain, and continued till late at night.
8	7 m	9.0	N W 3	Flying clouds.
	3 a	13.0		
9	6 m	1.0	N 1	Alternately fair and cloudy. Snows in the evening, and at night.
	3 a	7.0		
10	7 m	2.5	N E 1	Cloudy. Began to rain at ten, and continued all day till night.
	3 a	6.5		
11	6 m	5.0	N E 1	Rain almost the whole day.
	3 a	9.0		
12	6 m	2.0	W N W 2	Fair. Afternoon cloudy, with hail and rain.
	2 a	13.0		
13	6 m		N W 2	Fair.
	2 a		S W 1	Cloudy.
14	6 m		E 1	Cloudy; fair at eight. Cloudy towards night.
	2 a			
15	6 m		E 1	Almost quite fair.
	2 a			
16	6 m	6.5	W N W 2	Fair.
	2 a	13.5	— 1	
17	6 m	7.0	S 1	Alternately fair and cloudy.
	3 a	16.0	S W 1	Rain.
18	7 m	6.0	N 0	Fair.
	3 a	18.0	N W 3	
19	5½ m	2.0	N N W 0	Fair.
	3 a	20.0	W 2	

M 3

20

D.	H.	Ther.	Wind.	The Weather in general.
20	6 m 3 a	22.0	S W 0	A hoar frost this morning. Fair and very hot all day.
21			S W 1	Fair; with hot vapours raised by the sun.
22	5 m 3 a	13.0 23.0	S 0	Almost fair.
23	5 $\frac{1}{2}$ m 3 a	11.0 25.5	W 1	Fair.
24	6 m 3 a	12.0 22.0	S 1	Cloudy, intermittent drizzl. showers.
25	6 m 3 a	18.0 24.0	S 0	Rain the preceding night, and now and then this day. At night thunder and lightning.
26	6 m 3 a	28.0 30.0	W 1	Fair.
27	6 m 3 a	17.0 25.0	W 2	Fair.
28	6 m 3 a	7.0 24.0	W 0	Fair.
29	6 m 3 a	7.0 17.0	N 2 E 2	Fair.
30	5 m 3 a	3.0 15.5	E 1 S 1	Flying clouds.

May

May 1749.

167

D.	H.	Ther.	Wind.	The Weather in general.
1	4 m	01.5	S 0	Hoar frost this morning,—fair.
	3 a	18.5	S W 1	
2	5 m	1.0	W 1	Fair.
	3 a	23.0		
3	5½ m	4.0	W 1	Fair.
	3 a	27.5		
4	5 m	16.0	W 1	Fair.
5	5 m	13.0	S 3	Flying clouds.
	3 a	27.0		
6	5 m	14.5	N 0	Fair.
7	5 m	13.0	N 0	Somewhat cloudy.
8	5 m	4.0	N 0	Fair.
9	6 m	14.0	S 1	Rain almost the whole day.
	3 a	14.0		
10	6 m	13.0	S S W 0	Intermittent showers.
	3 a	16.0		
11	6 m	12.0	W S W 0	Fair.
	3 a	28.0		
12	6 m	13.0	W N W 2	Fair.
	3 a	20.0		
13	5 m	9.0	N W 1	Fair.
	3 a	18.5		
14	5 m	00.5	N W 0	Fair.
15	5 m	9.0	S S W 2	Cloudy.
	3 a	20.0		Rain.
16	5 m	17.0		Cloudy.
	4 a	23.0		
17	5 m	20.0	S 1	Rains intermittently all day; and lightens very much at night.
	3 a	24.0		
18	5 m	13.0		Fair.
19	5 m	17.0	W 2	Fair.
20	5 m	19.0	W 1	Fair.
	3 a	24.0		
21	6 m	20.0		Fair.
22			S W 1	Fair. Very hot.
23	5 m	17.0	S W 1	Fair.
	3 a	33.5		
24	12 m	32.0	S W 1	Fair.
25	8 m	23.0	S W 1	Fair, and very warm.
	2 a	28.0		

M 4

26

D.	H.	Ther.	Wind.	The Weather in general.
26	8 m	21.0	W N W 2	Flying clouds; at night thick clouds, with storm and rain.
	3 a	25.0		
27	7 m	17.0	W 2	Thick, scattered clouds.
	2 a	25.0		Pretty cool.
28	7 m	15.0	W 1	Flying clouds.
	2 a	25.0		
29	7 m	16.0	W 2	Flying clouds.
	2 a	25.0		
30	5 m	13.0	W N W 1	Fair.
	— a	25.0	W 1	Cloudy.
31	5 m	13.0	S W 1	Somewhat cloudy.
	1 a	27.0		Fair.

June

June 1749.

169

D.	H.	Ther.	Wind.	The Weather in general.
1	5 m	23.0	S W 1	Rain the preceding night.
2			S E 1	Morning cloudy,—clears up at ten,— flying clouds.
3	7 m	24.0	S W 1	Flying clouds; afternoon, thunder- clouds, with rain from the N. W.
4	3 a	26.0	N W 1	Flying clouds.
5	5½ m	15.5	S 1	Fair.
	3 a	22.0		
6	5 m	18.5	S W 1	Alternately fair and cloudy.
	3 a	23.0		
7	All d	20.0		Cloudy and rainy.
8	6 m	15.5	N W 0	Cloudy.
	3 a	23.0	— 1	Flying clouds.
9	5 m	13.0		Fair.
10	5 m	11.0	S W 1	Fair.
	3 a	22.5		
11	7 m	20.0	N 1	Flying clouds.
	2 a	33.0	S W 1	Thunder-storm, with rain.
12	6 m	23.0	N 0	Fair.
	3 a	32.0	S 2	Somewhat cloudy.
13	5 m	19.0	S E 2	Almost fair.
	3 a	27.0		
14	6 m	26.0	S 1	Fair.
	3 a	25.0		Thunder-clouds, with rain.
15	6 m	18.0	N 0	Fair.
	3 a	26.5		
16	6 m	20.0	N N E 1	Fair.
	2 a	28.0		
17	5½ m	18.0	N 0	Fair.
	3 a	27.5		
18	5 m	21.0	E S E 1	Fair.
	3 a	32.0	N E 1	Thunder, with heavy showers.
19	6 m	20.0	N N W 1	Fair.
	3 a	27.0		
20	5 m	18.0	S 1	Fair.
	3 a	26.0		Cloudy.
21	5 m	23.0	S W 0	Cloudy, with some showers.
22	5 m	9.0	W 1	Fair.
23	6 m	17.0	S 1	Fair.
	— a		N W 1	Cloudy.
24	6 m	20.5	S 1	Cloudy, afterwards fair.
	— a		S W 1	Thunder and rain.

170

June 1749.

D.	H.	Ther.	Wind.	The Weather in gen
25	5 m	23.0	S 1	Fair.
	2 a	32.0		
26	5 m	12.0	N 1	Fair.
27	6 m	11.0		Fair.
28	6 m	18.0	S 1	Fair.
	1 a	35.0		
29	7 m	6.0		Fair.
30	5 m	11.0	S 1	Fair.
	13 a	31.0	W 1	

July 1749.

171

D.	H.	Ther.	Wind.	The Weather in general.
1			N 3	Flying clouds.
2	5 m	7.5	N 2	Fair.
3	8 m	26.0	N 1	Fair.
4	2 a	28.0	— 1	Thunder-storm, and rain at night.
5	6 m	20.0	S 1	Cloudy; intermittent showers in the afternoon.
6	— a		N 2	Fair.
7	4 a	26.0	W 1	Cloudy; rain at night.
8	5 1/2 m	18.0	— 1	Rain all the preceding night; fair in day-time.
9	7 1/2 m	17.0	S W 0	Fair.
10	8 m	16.0	N 0	Alternately fair and cloudy. A halo round the sun, in the forenoon.
11	7 m	21.0	S W 0	Rain the preceding night. In day time cloudy, with some showers.
12	3 a	22.0	S W 0	Fair; sometimes flying clouds and showers.
13	4 1/2 m	18.0	— 1	Fair.
14	3 a	24.5	S S E 1	Fair.
15	5 m	17.0	— 1	Fair.
16	2 a	26.0	W 1	Fair.
17	5 m	22.0	S S W 1	Fair.
18	6 m	20.0	— 1	Fair.
19	3 a	33.0	W S W 1	Fair.
20	5 m	21.0	— 1	Fair.
21	2 a	28.0	N N E 1	Fair.
22	5 m	26.0	— 1	Fair; sometimes cloudy.
23	3 a	28.0	S 0	Fair.
24	5 m	14.0	S S E 1	Fair.
25	10 m	19.0	S 1	Cloudy.
26	3 a	24.0	— 1	Fair.
27	5 m	15.0	N N E 0	Fair.
28	2 a	25.0	— 0	Cloudy; rain.
29	5 m	19.0	S S W 1	Pretty fair.
30	— a		S 1	Fair.
31	5 m	19.0	— 1	Cloudy; some rain.
32	3 a	24.0	S 0	Fair.
33	3 a	27.0	— 0	Flying clouds.
34	5 m	16.0	S W 2	Fair.
35	3 a	27.0	S W 2	Fair.
36	5 m	19.0	S S W 1	Alternately fair and cloudy.
37	3 a	28.5	— 1	

D.	H.	Ther.	Wind.	The Weather in general.
24	6 m	20.0	S W I	Fair.
	3 a	29.0	— I	
25	5 m	20.0	W S W o	Fair.
	3 a	29.5	— o	
26	5 m	21.0	S o	Fair.
	3 a	30.0	— I	
27	5 m	22.0	W I	Cloudy; intermittent showers.
	3 a	21.5	— I	
28	6 m	17.0	W I	Fair.
	3 a	27.0	— I	
29	6 m	16.0	N W $\frac{1}{2}$	Fair; flying clouds at night, and showers.
	2 a	24.0	— I	
30	6 m	14.0	W N W I	Fair.
	a	26.0	— I	
31	6 m	16.0	E I	Cloudy; rain almost all day.
	3 a	22.0	— I	

August

August 1749.

173

D. H. Ther. Wind. The Weather in general.

1	6	m	22.0	NE 1	Cloudy. Some showers.
3	a	28.0	— 1		
2	4½	m	16.0	NE 1	Fair.
	a		SE 1	Cloudy. Fair towards night.	
3	5	m	13.0	SW 2	Fair.
4	m		NE 2	Cloudy. Some showers.	
	2	a	21.0	— 2	
5	m		NE 1	Fair.	
	a		SW 1		
6	5	m	16.0	NE 3	Heavy rain all day.
	3	a	16.0	— 3	Some thunder.
7	6	m	13.0	ESE 1	Cloudy. Frequent showers.
	3	a	16.0	— 1	
8	6	m	16.0	SW 1	Cloudy. Some showers.
	3	a	27.0	— 1	
9	6	m	14.0	SW 1	Flying clouds.
	1	a	20.0	— 1	Rain at night.
10	6	m	14.0	SW 1	Flying clouds.
	3	a	24.0	— 1	
11	6	m	15.5	W 1	Cloudy.
12	6	m	14.0	W 1	Flying clouds.
	2	a	25.0	— 1	
13	7	m	15.5	NW 1	Fair.
	2	a	30.0	— 1	
14	6	m	16.0	NE 2	Fair.
	2	a	26.0	— 2	
15	6	m	14.0	NE 1	Fair.
	2	a	28.0	— 1	
16	5	m	14.0	SE 1	Fair. At night thunder and rain.
	3	a	26.0	— 1	
17	5	m	14.5	S 0	Flying clouds.
	3	a	27.0	— 0	
18	5	m	16.0	W 1	Thunder and rain in the morning. At
	3	a	29.0	— 1	ten in the morning flying clouds.
19	6	m	17.0	W 1	Fair.
	3	a	30.0	— 1	
20	5	m	16.5	SW 0	Fair.
	3	a	28.0	— 0	
21	5	m	17.0	SW 1	Fair.
	2	a	29.0	— 1	
	5	a	27.0	— 1	
22	5	m	19.0	NE 2	Rain all day.
	3	a	17.5		

23

D.	H.	Ther.	Wind.	The Weather in general.
23	5 m	16.5	S W 3	Rain early in the morning. At 10 m.
	2 a	22.5	— 3	flying clouds.
24	6 m	13.5	S W 2	Flying clouds.
	2 a	22.0	— 2	
25	5 m	7.0	S W 2	Fair.
	4 a	20.5	— 2	
26	5 m	13.0	N E 1	Alternately fair and cloudy.
	3 a	18.0	— 1	Much rain this afternoon.
27	5 m	10.5	S W 1	Flying clouds.
	2 a	23.0	— 1	
28	5 m	10.0	S W 1	Fair.
	2 a	20.0	— 1	
29	5 m	13.0	N E 2	Fair.
30	5½ m	11.0	N E 2	Fair.
31	6 m	13.6	S 1	Fair and cloudy alternately.
	3 a	18.5	— 1	Intermittent showers.

August

September 1749.

175

D.	H.	Ther.	Wind.	The Weather in general.
1	5 $\frac{1}{2}$ m	14.5	NNW 1	Fair.
	3 a	30.0	— 1	
2	5 $\frac{1}{2}$ m	9.0	N 1	Fair.
	2 a	18.0	SSW 1	
3	5 $\frac{1}{2}$ m	7.5	S 1	Somewhat cloudy. Now and then fair.
	2 a	20.0	— 1	
4	6 m	14.0	S 1	Now and then a shower; and in the intervals fair.
	2 a	17.5	— 1	
5	6 m	14.0	NE 2	Fog. Rain all day. Now and then thund.
6	10 $\frac{1}{2}$ m	15.0	NE 2	Fog, and drizzling rain all day.
	10 $\frac{1}{2}$ a	15.0	— 2	
7	7 m	17.0	SW 1	Fog and rain.
	3 a	22.0	— 1	Fair.
8	5 $\frac{1}{2}$ m	15.0	SSW 1	Fair.
	4 a	28.0	— 1	
9	5 m	17.5	ENE 2	Fair.
	3 a	25.0	— 2	
10	5 $\frac{1}{2}$ m	16.0	NE 2	Fair.
	3 a	26.0	— 2	
11	5 $\frac{1}{2}$ m	15.0	ENE 0	Fair.
	3 a	25.0	— 0	
12	7 m	14.5	NNE 1	Fair.
	a		SW 1	
13	5 $\frac{1}{2}$ m	14.0	NE 1	Fair.
	1 $\frac{1}{2}$ a	24.5	— 1	
14	5 m	15.0	NE 2	Fair.
	1 a	22.5	— 2	
15	5 $\frac{1}{2}$ m	16.0	NNE 3	Fair. Forenoon, a halo round the sun.
	2 a	19.0	— 3	
16	5 $\frac{1}{2}$ m	8.5	NNE 1	Fair.
	3 a	20.5	— 1	
17	5 m	12.0	SW 0	Fair.
18	6 m	17.0	SW 1	Fair.
	3 a	27.0	— 1	
19	6 m	14.0	SW 1	Fair.
	3 a	26.0	— 1	
20	6 m	19.0	SW 1	Fair.
	3 a	26.0	— 1	Cloudy. Rain towards night.
21	6 m	15.0		Fair.
	3 a	19.5		
22	6 m	13.0	E 0	Somewhat cloudy.
	3 a	22.0	— 0	

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September 1749.

D.	H.	Ther.	Wind.	The Weather in general.
23	6 m	14.0	S W 0	Fair.
24	6 m	18.0	S W 2	Fair. Rain at noon.
	2 a	26.0	— 2	Flying clouds in the afternoon.
25	7 m	16.0	W 1	Alternately clear and cloudy.
	2 a	17.0	— 1	
26	8 m	12.5	N E 1	Fair.
	3 a	11.5	— 1	Cloudy and rainy.
27	6 m	9.3	N 1	Rainy all day.
	3 a	14.0	— 1	
28	6 m	8.0	S W 1	Heavy rain all day.
	3 a	14.0	— 1	
29	6 m	8.0	S 1	Fog.
	1 a	13.0	— 1	Flying clouds.
30	8 m	14.0	S W 2	Drizzling rain.
	2 a	18.0	— 2	Somewhat clear.

October 1749.

D.	H.	Ther.	Wind.	The Weather in general.
1	7 $\frac{1}{2}$ m	9.0	N W 1	Rain.
	n		— 1	Somewhat fair.
2	7 m	2.0	W 1	Hoar frost this morning. Fair all day.
3	6 m	3.5	S W 1	Fair.
	1 a	12.0	— 1	
4	6 m	11.0	S 1	Rain.
5	6 m	10.5	N E 1	Cloudy.
	a	11.0	— 1	
6	6 $\frac{1}{2}$ m	10.0	E N E 1	Rain all day.
	3 a	12.0	— 1	
7	6 $\frac{1}{2}$ m	10.0	E N E 1	Flying clouds.
	2 a	14.0		
8	6 $\frac{1}{2}$ m	7.0	S 1	Fair.
	3 a	18.0	S 1	

METEORO.

METEOROLOGICAL OBSERVATIONS,

Made by Mr. JOHN BARTRAM, near *Philadelphia*,
During my Absence, in the Summer of the Year 1749.

June 1749.

D.	Ther.	Ther.	Wind.	The Weather in general.
	Morn	Aft.		
1	22	25	W	Cloudy.
2	20	27	W	Cloudy.
3	23	28	W	Showers.
4	22	28	W	Fair.
5	18	25	W	Fair.
6	18	25	W	Cloudy.
7	22	22	N E	Cloudy.
8		21	N E	
9		21	N	
10	14	22	E	
11	22	23	E	
12	25	25	E	
13	23	25	E	
14	25	27	E 3	
15	24	28	E	Fair.
16	22	26	E	
17	23	27	E	
18	25	27	E	
19	23	24	N W	
20	17	26	W	
21	24	26	W	
22	18	27	W	
23	15	29	W	
24	22	30	W	
25	22	31	W	
26	23	30	N	
27	19	32	W	
28	24	36	W	
29	25	37	W	
30	25	36	N	

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July 1749.

D	Ther.	Ther.	Wind.	The Weather in general.
	Morn.	Aft.		
1	21	30	W	
2	18	27	N W	
3	26	28	S W	Heavy showers.
4	24	36	N W	
5	22	32	W	
6	22	34	N W	Rain.
7	20	35	W	Hard showers.
8	20	35	N E	Rain.
9	20	29	N	Fair.
10	16	29	N	Fair.
11	17	33	N W	Fair.
12	20	35	W	Fair. Rain at night.
13	22	33	W	Fair.
14	26	30	W	Hard showers.
15	20	29	N	Fair.
16	21	30	E	Rain.
17	29	29	N E	Cloudy.
18	18	19	N E	Rain.
19	18	33	W	Fair.
20	19	33	W	Fair.
21	22	31	W	Fair.
22	23	23	W	Heavy showers.
23	23	25	W	Heavy showers.
24	20	36	W	Fair.
25	27	36	W	
26	28	32	W	
27	24	30	W	Fair.
28	19	27	W	Fair.
29	23	30	W	Rain.
30	30	34		
31	21	34		

August

August 1749.

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D.	Ther.	Ther	Wind.	The Weather in general.
	Morn	Aft.		
1				
2	18	32		
3	17	30		
4	18	33		
5	22	39	W	
6	18	37	N 2	
7	17	27	W	
8	14	25	NW	
9	12	24	NW	
10	13	24	NW	
11	11	25	NW	
12	14 $\frac{1}{2}$	30	NW	
13	18	31	NW	
14	18	30	W	
15	15	30	W	Rain.
16	23	33	N	
17	14	34	NW	
18	18	37	W	
19	18	25	SW	
20	20	26	NE	Rain.
21	20	25	NW	
22	23	34	NW	
23	17	34	W	
24	18	30	W	
25	20	32	NW by W	
26	10	24	NW	Fair.
27	12	20	NW	Fair.
28	13	23	NW	Fair.
29	22	24	W	Fair.
30	17	25	E	
31	20	29	E	

N 2

September

180

September 1749.

D.	Ther.	Ther.	Wind.	The Weather in general.
	Morn	Aft.		
1	19	30	E	Hard showery.
2	18	20	E	Rain.
3	19	23	E	Rain.
4	22	25	E	Foggy.
5	23	21	N E	Cloudy.
6	23	37	N E	Cloudy.
7	24	34	N E	Cloudy.
8	24	32	N E	Cloudy.
9	23	33	N E	Rain.
10	23	32	W	Rain.
11	19	25	N E	
12	13	25	N E	
13	12	20	N E	
14	12	33	N E	
15	13	27	N E	
16	20	26	N E	
17	17	27	E	
18	16	34	S E	
19	12	30	S W	
20	17	26		
21	17	25	W	
22	15	30	E	
23	20	29	E	
24	21	29	W	
25	23	28	W 3	
26	20	15	E by N	Thunder-storm.
27	15	19	N W	
28	10	20	N W	
29				
30	6	26	W	

October 1749.

D.	Ther.	Ther.	Wind.	D.	Ther.	Ther.	Wind.
	M.	Aft.			M.	Aft.	
1	13	25	W	5	17	30	E
2	14	29	N W	6	18	30	E
3	8	15	N	7	16	21	N W
4	13	29	W	8	11	22	N W

Between Forts Anne and St. Frederic. 181

July 1st. 1749. At day break we got up, and rowed a good while before we got to the place where we left the true road. The country which we passed was the poorest and most disagreeable imaginable. We saw nothing but a row of amazing high mountains covered with woods, steep and dirty on their sides; so that we found it difficult to get to a dry place, in order to land and boil our dinner. In many places the ground, which was very smooth, was under water, and looked like the sides of our *Swedish* morasses which are intended to be drained; for this reason the *Dutch* in *Albany* call these parts the *Drowned Lands* *. Some of the mountains run from S. S. W. to N. N. E. and when they come to the river, they form perpendicular shores, and are full of stones of different magnitudes. The river runs for the distance of some miles together from south to north.

THE wind blew north all day, and made it very hard work for us to get forwards, though we all rowed as hard as we could, for all our provisions were eaten to-day at breakfast. The river was frequently an *English* mile and more broad, then it became narrow again, and so on alternately; but upon the whole it kept a good breadth, and was surrounded on both sides by high mountains.

ABOUT six o'clock in the evening, we arrived at a point of land, about twelve *English* miles from Fort St. Frederic. Behind this point the river is converted into a spacious bay; and as the wind still kept blowing pretty strong from the north, it was impossible for us to get forward,

* *De verdronkene landen.*

since we were extremely weak. We were therefore obliged to pass the night here, in spite of the *remonstrances* of our hungry stomachs.

It is to be attributed to the peculiar grace of God towards us that we met the above mentioned *Frenchmen* on our journey, and that they gave us leave to take one of their bark boats. It seldom happens once in three years, that the *French* go this road to *Albany*; for they commonly pass over the lake *St. Sacrament*, or, as the *English* call it, lake *George*, which is the nearer and better road, and every body wondered why they took this troublesome one. If we had not got their large strong boat, and been obliged to keep that which we had made, we would in all probability have been very ill off; for to venture upon the great bay during the least wind with so wretched a vessel, would have been a great piece of temerity, and we should have been in danger of being starved if we had waited for a calm. For being without fire-arms, and these deserts having but few quadrupeds, we must have subsisted upon frogs and snakes, which, (especially the latter) abound in these parts. I can never think of this journey, without reverently acknowledging the peculiar care and providence of the merciful Creator.

July 2d. EARLY this morning we set out on our journey again, it being moon-shine and calm, and we feared lest the wind should change and become unfavourable to us if we stopped any longer. We all rowed as hard as possible, and happily arrived about eight in the morning at Fort *St. Frederic*, which the *English* call

Crown

Crown Point. Monsieur *Lusignan*, the governor, received us very politely. He was about fifty-years old, well acquainted with polite literature, and had made several journies into this country, by which he had acquired an exact knowledge of several things relative to its state.

I WAS informed that during the whole of this summer, a continual drought had been here, and that they had not had any rain since last spring. The excessive heat had retarded the growth of plants; and on all dry hills the grass, and a vast number of plants, were quite dried up; the small trees, which grew near rocks, heated by the sun, had withered leaves, and the corn in the fields bore a very wretched aspect. The wheat had not yet eared, nor were the pease in blossoms. The ground was full of wide and deep cracks, in which the little snakes retired and hid themselves when pursued, as into an impregnable asylum.

THE country hereabout, it is said, contains vast forests of firs, of the white, black, and red kind, which had been formerly still more extensive. One of the chief reasons of their decrease are, the numerous fires which happen every year in the woods, through the carelessness of the *Indians*, who frequently make great fires when they are hunting, which spread over the fir woods when every thing is dry.

GREAT efforts are made here for the advancement of *Natural History*, and there are few places in the world where such good regulations are made for this useful purpose, all which is chiefly owing to the care and zeal of a single person.

person. From hence it appears, how well a useful science is received and set off, when the leading men of a country are its patrons. The governor of the fort was pleased to shew me a long paper, which the then governor-general of *Canada*, the Marquis *la Galissonniere*, had sent him. It was the same marquis, who, some years after, as a *French* admiral, engaged the *English* fleet under admiral *Byng*, the consequence of which was the conquest of *Minorca*. In this writing, a number of trees and plants are mentioned, which grow in *North-America*, and deserve to be collected and cultivated on account of their useful qualities. Some of them are described, among which is the *Polygala Senega*, or *Rattle-snake-root*; and with several of them the places where they grow are mentioned. It is further requested that all kinds of seeds and roots be gathered here; and, to assist such an undertaking, a method of preserving the gathered seeds and roots is prescribed, so that they may grow, and be sent to *Paris*. Specimens of all kinds of minerals are required; and all the places in the *French* settlements are mentioned, where any useful or remarkable stone, earth, or ore has been found. There is likewise a manner of making observations and collections of curiosities in the animal kingdom. To these requests it is added, to enquire and get information, in every possible manner, to what purpose and in what manner the *Indians* employ certain plants and other productions of nature, as medicines, or in any other case. This useful paper was drawn up by order of the marquis

la Galissonniere, by M. Gaultier, the royal physician at *Quebec*, and afterwards corrected and improved by the marquis's own hand. He had several copies made of it, which he sent to all the officers in the forts, and likewise to other learned men who travelled in the country. At the end of the writing is an injunction to the officers, to let the governor-general know which of the common soldiers had used the greatest diligence in the discovery and collection of plants and other natural curiosities, that he might be able to promote them, when an opportunity occurred, to places adapted to their respective capacities, or to reward them in any other manner. I found that the people of distinction, in general here, had a much greater taste for natural history and other parts of literature than in the *English* colonies, where it was every body's sole care and employment to scrape a fortune together, and where the sciences were held in universal contempt.* It was still complained

* It seems Mr. Kalm has forgotten his own assertions in the former part of this work. Dr. Colden, Dr. Franklin, and Mr. Bartram, have been the great promoters and investigators of nature in this country; and how would the inhabitants of *Old England* have gotten the fine collections of *North-American* trees, shrubs, and plants, which grow at present almost in every garden, and are as if it were naturalized in *Old England*, had they not been assisted by their friends, and by the curious in *North-America*. One need only cast an eye on Dr. *Linnaeus's* new edition of his *Systema*, and the repeated mention of Dr. *Garden*, in order to be convinced that the *English* in *America* have contributed a greater share towards promoting natural history than any nation under heaven, and certainly more than the *French*, though their learned men are often handsomely pensioned by their great *Monarque*: on the other hand the *English* study that branch of knowledge, from the sole motive of its utility, and the pleasure it affords to a thinking being, without any of those mercenary

complained of here, that those who studied natural history, did not sufficiently enquire into the medicinal use of the plants of *Canada*.

THE *French*, who are born in *France*, are said to enjoy a better health in *Canada* than in their native country, and to attain to a greater age than the *French* born in *Canada*. I was likewise assured that the *European Frenchmen* can do more work, and perform more journies in winter, without prejudice to their health, than those born in this country. The intermitting fever which attacks the *Europeans* on their arrival in *Pensylvania*, and which as it were makes the climate familiar to them, is not known here, and the people are as well after their arrival as before. The *English* have frequently observed, that those who are born in *America* of *European* parents, can never bear sea-voyages, and go to the different parts of *South-America*, as well as those born in *Europe*. The *French* born in *Canada* have the same constitutions; and when any of them go to the *West-India* islands, such as *Martinique*, *Domingo*, &c. and make some stay there, they commonly fall sick and die soon after: those who fall ill there seldom recover, unless they are brought back to *Canada*. On

mercenary views held forth to the learned of other countries. And as to the other parts of literature, the *English* in *America* are undoubtedly superior to the *French* in *Canada*, witness the many useful institutions, colleges, and schools founded in the *English* colonies in *North-America*, and so many very considerable libraries now erecting in this country, which contain such a choice of useful and curious books, as were very little known in *Canada* before it fell into the hands of the *English*; not to mention the productions of original genius written by *American* born. P.

the

the contrary, those who go from *France* to those islands can more easily bear the climate, and attain a great age there, which I heard confirmed in many parts of *Canada*.

July 5th. WHILST we were at dinner, we several times heard a repeated disagreeable outcry, at some distance from the fort, in the river *Woodcreek*: Mr. *Lusignan*, the governor, told us this cry was no good omen, because he could conclude from it that the *Indians*, whom we escaped near *Fort Anne*, had completed their design of revenging the death of one of their brethren upon the *English*, and that their shouts shewed that they had killed an *Englishman*. As soon as I came to the window, I saw their boat, with a long pole at one end, on the extremity of which they had put a bloody skull. As soon as they were landed, we heard that they, being six in number, had continued their journey (from the place where we had marks of their passing the night), till they had got within the *English* boundaries, where they found a man and his son employed in mowing the corn. They crept on towards this man, and shot him dead upon the spot. This happened near the very village, where the *English*, two years before, killed the brother of one of these *Indians*, who were then gone out to attack them. According to their custom they cut off the skull of the dead man, and took it with them, together with his clothes and his son, who was about nine years old. As soon as they came within a mile of *Fort St. Frederic*, they put the skull on a pole, in the fore part of the boat, and shouted

as

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as a sign of their success. They were dressed in shirts, as usual, but some of them had put on the dead man's clothes; one his coat, the other his breeches, another his hat, &c. Their faces were painted with vermillion, with which their shirts were marked across the shoulders. Most of them had great rings in their ears, which seemed to be a great inconvenience to them, as they were obliged to hold them when they leaped, or did any thing which required a violent motion. Some of them had girdles of the skins of *Rattle-snakes*, with the rattles on them; the son of the murdered man had nothing but his shirt, breeches and cap, and the *Indians* had marked his shoulders with red. When they got on shore, they took hold of the pole on which the skull was put, and danced and sung at the same time. Their view in taking the boy, was to carry him to their habitations, to educate him instead of their dead brother, and afterwards to marry him to one of their relations. Notwithstanding they had perpetrated this act of violence in time of peace, contrary to the command of the governor in *Montreal*, and to the advice of the governor of *St. Frederic*, yet the latter could not at present deny them provisions, and whatever they wanted for their journey, because he did not think it adviseable to exasperate them; but when they came to *Montreal*, the governor called them to account for this action, and took the boy from them, whom he afterwards sent to his relations: Mr. *Lusignan* asked them, what they would have done to me and my companions, if they had met us in the desert? They replied,

replied, that as it was their chief intention to take their revenge on the *Englishmen* in the village where their brother was killed, they would have let us alone; but it much depended on the humour they were in, just at the time when we first came to their fight. However, the commander and all the *Frenchmen* said, that what had happened to me was infinitely safer and better.

SOME years ago a skeleton of an amazing great animal had been found in that part of *Canada* where the *Illinois* live. One of the lieutenants in the fort assured me, that he had seen it. The *Indians*, who were there, had found it in a swamp. They were surprised at the sight of it, and when they were asked, what they thought it was? They answered, that it must be the skeleton of the chief or father of all the beavers. It was of a prodigious bulk, and had thick white teeth, about ten inches long. It was looked upon as the skeleton of an elephant. The lieutenant assured me that the figure of the whole snout was yet to be seen, though it was half mouldered. He added, that he had not observed, that any of the bones were taken away, but thought the skeleton lay quite perfect there. I have heard people talk of this monstrous skeleton in several other parts of *Canada* *.

BEARS are plentiful hereabouts, and they kept a young one, about three months old, at the fort.

* The country of the *Illinois* is on the river *Ohio*, near the place where the *English* have found some bones supposed to belong to elephants.

He had perfectly the same shape, and qualities, as our common bears in *Europe*, except the ears, which seemed to be longer in proportion, and the hairs which were stiffer; his colour was deep brown, almost black. He played and wrestled every day with one of the dogs. A vast number of bear-skins are annually exported to *France* from *Canada*. The *Indians* prepare an oil from bear's grease, with which in summer they daub their face, hands, and all naked parts of their body, to secure them from the bite of the gnats. With this oil they likewise frequently smear the body, when they are excessively cold, tired with labour, hurt, and in other cases. They believe it softens the skin, and makes the body pliant, and is very serviceable to old age.

THE common *Dandelion* (*Leontodon Taraxacum* Linn.) grows in abundance on the pastures and roads between the fields, and was now in flower. In spring, when the young leaves begin to come up, the *French* dig up the plants, take their roots *, wash them, cut them, and prepare them as a common salad; but they have a bitter taste. It is not usual here to make use of the leaves for eating.

July 6th. THE soldiers, which had been paid off after the war, had built houses round the fort, on the grounds allotted to them; but most of these habitations were no more than wretched

* In *France* the young blanched leaves, which scarce peep out of molehills, and have yet a yellow colour, are universally eaten as a salad, under the name of *Pissenlit*. F.

cottages,

cottages, no better than those in the most wretched places of *Sweden*; with that difference, however, that their inhabitants here were rarely oppressed by hunger, and could eat good and pure wheat bread. The huts which they had erected consisted of boards, standing perpendicularly close to each other. The roofs were of wood too. The crevices were stopped up with clay, to keep the room warm. The floor was commonly clay, or a black lime-stone, which is common here. The hearth was built of the same stone, except the place where the fire was to ly, which was made of grey sand-stones, which for the greatest part consist of particles of quartz. In some hearths, the stones quite close to the fire-place were lime-stones; however, I was assured that there was no danger of fire, especially if the stones, which were most exposed to the heat, were of a large size. They had no glass in their windows.

July 8th. THE *Galium tinctorium* is called *Tisavojaune rouge* by the *French* throughout all *Canada*, and abounds in the woods round this place, growing in a moist but fine soil. The roots of this plant are employed by the *Indians* in dying the quills of the *American* porcupines red, which they put into several pieces of their work; and air, sun, or water, seldom change this colour. The *French* women in *Canada* sometimes dye their clothes red with these roots, which are but small, like those of *Galium luteum*, or yellow bedstraw.

THE horses are left out of doors during the winter, and find their food in the woods, living upon

upon nothing but dry plants, which are very abundant ; however they do not fall off by this food, but look very fine and plump in spring.

July 9th. THE skeleton of a whale was found some *French* miles from *Quebec*, and one *French* mile from the river *St. Laurence*, in a place where no flowing water comes to at present. This skeleton has been of a very considerable size, and the governor of the fort said, he had spoke with several people who had seen it.

July 10th. THE boats which are here made use of are of three kinds. 1. *Bark-boats*, made of the bark of trees, and of ribs of wood. 2. *Canoes*, consisting of a single piece of wood, hollowed out, which I have already described before. They are here made of the white fir, and of different sizes. They are not brought forward by rowing, but by paddling ; by which method not half the strength can be applied ; which is made use of in rowing ; and a single man might, I think, row as fast as two of them could paddle. 3. The third kind of boats are *Batcaux*. They are always made very large here, and employed for large cargoes. They are flat-bottomed, and the bottom is made of the red, but more commonly of the white oak, which resists better, when it runs against a stone, than other wood. The sides are made of the white fir, because oak would make the *Bateau* too heavy. They make plenty of tar and pitch here.

THE soldiery enjoy such advantages here, as they are not allowed in every part of the world.

Those

Those who formed the garrison of this place had a very plentiful allowance from their government. They get every day a pound and a half of wheat bread. They likewise get pease, bacon, and salt meat in plenty. Sometimes they kill oxen and other cattle, the flesh of which is distributed among the soldiers. All the officers kept cows, at the expence of the king, and the milk they gave was more than sufficient to supply them. The soldiers had each a small garden without the fort, which they were allowed to attend, and plant in it whatever they liked, and some of them had built summer-houses in them, and planted all kind of pot-herbs. The governor told me, that it was a general custom to allow the soldiers a spot of ground for kitchen-gardens, at such of the *French* forts hereabouts as were not situated near great towns, from whence they could be supplied with greens. In time of peace the soldiers have very little trouble with being upon guard at the fort; and as the lake close by is full of fish, and the woods abound with birds and animals, those amongst them who choose to be diligent may live extremely well, and very grand in regard to food. Each soldier got a new coat every two years; but annually, a waistcoat, cap, hat, breeches, cravat, two pair of stockings, two pair of shoes, and as much wood as he had occasion for in winter. They likewise got five *sols* * a piece every day; which is augmented to thirty *sols* when they have any

* A *sol* in *France* is about the value of one half-penny sterling.

particular labour for the king. When this is considered, it is not surprising to find the men are very fresh, well fed, strong and lively here. When a soldier falls sick he is brought to the hospital, where the king provides him with a bed, food, medicines, and people to take care of and serve him. When some of them asked leave to be absent for a day or two, to go abroad, it was generally granted them, if circumstances would permit, and they enjoyed as usual their share of provisions and money, but were obliged to get some of their comrades to mount the guard for them as often as it came to their turns, for which they gave them an equivalent. The governor and officers were duly honoured by the soldiers; however, the soldiers and officers often spoke together as comrades, without any ceremonies, and with a very becoming freedom. The soldiers who are sent hither from *France*, commonly serve till they are forty or fifty years old, after which they are dismissed and allowed to settle upon, and cultivate a piece of ground. But if they have agreed on their arrival to serve no longer than a certain number of years, they are dismissed at the expiration of their term. Those who are born here commonly agree to serve the crown during six, eight, or ten years; after which they are dismissed, and set up for farmers in the country. The king presents each dismissed soldier with a piece of land, being commonly 40 *arpents* * long, and but three broad,

* An *Arpent* in *France* contains 100 *French* perches, and each of those 22 *French* feet; then the *French* foot being to the *English*

broad, if the soil be of equal goodness throughout; but they get somewhat more, if it be a worse ground †. As soon as a soldier settles to cultivate such a piece of land, he is at first assisted by the king, who supplies himself, his wife, and children, with provisions, during the three or four first years. The king likewise gives him a cow, and the most necessary instruments for agriculture. Some soldiers are sent to assist him in building a house, for which the king pays them. These are great helps to a poor man, who begins to keep house, and it seems that in a country where the troops are so highly distinguished by the royal favour, the king cannot be at a loss for soldiers. For the better cultivation and population of *Canada*, a plan has been proposed some years ago, for sending 300 men over from *France* every year, by which means the old soldiers may always be dismissed, marry, and settle in the country. The land which was allotted to the soldiers about this place, was very good, consisting throughout of a deep mould, mixed with clay.

July the 11th. THE harrows which they make use of here are made entirely of wood, and of a triangular form. The ploughs seemed to

as 1440 to 1352, an arpent is about 2346 *English* feet, and 8 inches long. See *Ordonnances de Louis XIV. sur le fait des Eaux & Forêts*. Paris, 1687. p. 112. F.

† Mr. *Kalm* says, in his original, that the length of an *arpent* was so determined, that they reckoned 84 of them in a *French lieue* or league; but as this does by no means agree with the statute arpent of *France*, which by order of king *Louis XIV.* was fixed at 2200 feet, *Paris* measure, (See the preceding note) we thought proper to leave it out of the text. F.

be less convenient. The wheels upon which the plough-beam is placed, are as thick as the wheels of a cart, and all the wood-work is so clumsily made that it requires a horse to draw the plough along a smooth field.

ROCK-STONES of different sorts lay scattered on the fields. Some were from three to five feet high, and about three feet broad. They were pretty much alike in regard to the kind of the stone, however, I observed three different species in them.

1. SOME consisted of a quartz, whose colour resembled sugar-candy, and which was mixed with a black small-grained glimmer, a black horn-stone, and a few minute grains of a brown spar. The quartz was most abundant in the mixture; the glimmer was likewise in great quantity, but the spar was inconsiderable. The several kinds of stones were well mixed, and though the eye could distinguish them, yet no instrument could separate them. The stone was very hard and compact, and the grains of quartz looked very fine.

2. SOME pieces consisted of grey particles of quartz, black glimmer, and horn-stone, together with a few particles of spar, which made a very close, hard, and compact mixture, only differing from the former in colour.

3. A few of the stones consisted of a mixture of white quartz and black glimmer, to which some red grains of quartz were added. The spar (quartz) was most predominant in this mixture, and the glimmer appeared in large flakes. This stone was not so well mixed as the former,

and was by far not so hard and so compact, being easily pounded.

THE mountains on which Fort St. Frederic is built, as likewise those on which the above kinds of stone are found, consisted generally of a deep black lime-stone, lying in lamellæ as slates do, and it might be called a kind of slates, which can be turned into quicklime by fire*. This lime-stone is quite black in the inside, and, when broken, appears to be of an exceeding fine texture. There are some grains of a dark spar scattered in it, which, together with some other inequalities, form veins in it. The strata which ly uppermost in the mountains consist of a grey lime-stone, which is seemingly no more than a variety of the preceding. The black lime-stone is constantly found filled with petrifications of all kinds, and chiefly the following.

Pectinites, or petrified *Ostrea Pectines*. These petrified shells were more abundant than any others that have been found here, and sometimes whole strata are met with, consisting merely of a quantity of shells of this sort, grown together. They are generally small, never exceeding an inch and a half in length. They are found in two different states of petrification; one shews always the impressions of the elevated and hal-low surfaces of the shells, without any vestige of the shells themselves. In the other appears the real shell sticking in the stone, and by its

* *Marmor scistosum*, Linn. Syst. III. p. 40. *Marmor unicolor nigrum*. Wall. Min. pag. 61. n. 2. *Lime-slates, scistus calcareus*. Forst. Introd. to Min. p. 9. F.

light colour is easily distinguishable from the stone. Both these kinds are plentiful in the stone; however, the impressions are more in number than the real shells. Some of the shells are very elevated, especially in the middle, where they form as it were a hump; others again are depressed in the middle; but in most of them the outward surface is remarkably elevated. The furrows always run longitudinally, or from the top, diverging to the margin.

Petrified Cornua Ammonis. These are likewise frequently found, but not equal to the former in number: like the *pectinitæ*, they are found really petrified, and in impressions; amongst them were some petrified snails. Some of these *Cornua Ammonis* were remarkable big, and I do not remember seeing their equals, for they measured above two feet in diameter.

DIFFERENT kinds of corals could be plainly seen in, and separated from, the stone in which they lay. Some were white and ramose, or *Lithophytes*; others were starry corals, or *Madrepores*; the latter were rather scarce.

I MUST give the name of *Stone-balls* to a kind of stones foreign to me; which are found in great plenty in some of the rock-stones. They were globular, one half of them projecting generally above the rock, and the other remaining in it. They consist of nearly parallel fibres, which arise from the bottom as from a center, and spread over the surface of the ball and have a grey colour. The outside of the balls is smooth, but has a number of small pores, which externally appear to be covered with a pale grey crust.

crust. They are from an inch to an inch and a half in diameter.

AMONGST some other kinds of sand, which are found on the shores of lake *Champlain*, two were very peculiar, and commonly lay in the same place; and one was black, and the other reddish brown, or granite coloured.

THE black sand always lies uppermost, consists of very fine grains, which, when examined by a microscope, appear to have a dark blue colour, like that of a smooth iron, not attacked by rust. Some grains are roundish, but most of them angular, with shining surfaces; and they sparkle when the sun shines. All the grains of this sand without exception are attracted by the magnet. Amongst these black or deep blue grains, they meet with a few grains of a red or garnet-coloured sand, which is the same with the red sand which lies immediately under it, and which I shall now describe. This red or garnet-coloured sand is very fine, but not so fine as the black sand. Its grains not only participate of the colour of garnets, but they are really nothing but pounded garnets. Some grains are round, others angulated; all shine and are semipellucid; but the magnet has no effect on them, and they do not sparkle so much in sunshine. This red sand is seldom found very pure, it being commonly mixed with a white sand, consisting of particles of quartz. The black and red sand is not found in every part of the shore, but only in a few places, in the order before mentioned. The uppermost or black sand lay about a quarter of an inch deep; when it was

carefully taken off, the sand under it became of a deeper red the deeper it lay, and its depth was commonly greater than that of the former. When this was carefully taken away, the white sand of quartz appeared mixed very much at top with the red sand, but growing purer the deeper it lay. This white sand was above four inches deep, had round grains, which made it entirely like a pearl sand. Below this was a pale grey angulated quartz sand. In some places the garnet-coloured sand lay uppermost, and this grey angulated one immediately under it, without a grain of either the black or the white sand.

I CANNOT determine the origin of the black or steel-coloured sand, for it was not known here whether there were iron mines in the neighbourhood or not. But I am rather inclined to believe they may be found in these parts, as they are common in different parts of *Canada*, and as this sand is found on the shores of almost all the lakes, and rivers in *Canada*, though not in equal quantities. The red or garnet-coloured sand has its origin hereabouts; for though the rocks near Fort *St. Frederic* contained no garnets, yet there are stones of different sizes on the shores, quite different from the stones which form those rocks; these stones are very full of grains of garnets, and when pounded there is no perceptible difference between them and the red sand. In the more northerly parts of *Canada*, or below *Quebec*, the mountains themselves contain a great number of garnets. The garnet-coloured sand is very common on the shores of the

the river *St. Laurence*. I shall leave out several observations which I made upon the minerals hereabouts, as uninteresting to most of my readers.

THE *Apocynum androsæmifolium* grows in abundance on hills covered with trees, and is in full flower about this time; the *French* call it *Herbe à la puce*. When the stalk is cut or tore, a white milky juice comes out. The *French* attribute the same qualities to this plant, which the poison-tree, or *Rhus vermix*, has in the *English* colonies; that its poison is noxious to some persons, and harmless to others. The milky juice when spread upon the hands and body, has no bad effect on some persons; whereas others cannot come near it without being blistered. I saw a soldier whose hands were blistered all over, merely by plucking the plant, in order to shew it me; and it is said its exhalations affect some people, when they come within reach of them. It is generally allowed here, that the lactescent juice of this plant, when spread on any part of the human body not only swells the part, but frequently corrodes the skin; at least there are few examples of persons on whom it had no effect. As for my part, it has never hurt me, though in presence of several people I touched the plant, and rubbed my hands with the juice till they were white all over, and I have often rubbed the plant in my hands till it was quite crushed, without feeling the least inconvenience, or change on my hand. The cattle never touch this plant.

July 12th. BURDOCK, or *Arctium Lappa*, grows in several places about the fort; and the governor told me, that its tender shoots are eaten in spring as raddishes, after the exterior peel is taken off.

THE *Sison Canadense* abounds in the woods of all North-America. The French call it *cerfeuil sauvage*, and make use of it in spring, in green soups, like chervil. It is universally praised here as a wholesome, antiscorbutic plant, and as one of the best which can be had here in spring.

THE *Asclepias Syriaca*, or, as the French call it, *le Cotonier*, grows abundant in the country, on the sides of hills which lie near rivers and other situations, as well in a dry and open place in the woods, as in a rich, loose soil. When the stalk is cut or broken it emits a lactescent juice, and for this reason the plant is reckoned in some degree poisonous. The French in Canada nevertheless use its tender shoots in spring, preparing them like asparagus; and the use of them is not attended with any bad consequences, as the slender shoots have not yet had time to suck up any thing poisonous. Its flowers are very odoriferous, and, when in season, they fill the woods with their fragrant exhalations, and make it agreeable to travel in them, especially in the evening. The French in Canada make a sugar of the flowers, which for that purpose are gathered in the morning, when they are covered all over with dew. This dew is expressed, and by boiling yields a very good brown, palatable sugar. The pods of this plant, when ripe, contain a kind of wool, which encloses the seed,

and

and resembles cotton, from whence the plant has got its *French* name. The poor collect it, and fill their beds, especially their children's, with it instead of feathers. This plant flowers in *Canada* at the end of *June*, and beginning of *July*, and the seeds are ripe in the middle of *September*. The horses never eat of this plant.

July 16th. This morning I crossed lake *Champlain* to the high mountain on its western side, in order to examine the plants and other curiosities there. From the top of the rocks, at a little distance from fort *St. Frederic*, a row of very high mountains appear on the western shore of lake *Champlain*, extending from south to north; and on the eastern side of this lake is another chain of high mountains, running in the same direction. Those on the eastern side are not close to the lake, being about ten or twelve miles from it; and the country between it and them is low and flat, and covered with woods, which likewise clothe the mountains, except in such places, as the fires, which destroy the forests here, have reached them and burnt them down. These mountains have generally steep sides, but sometimes they are found gradually sloping. We crossed the lake in a canoe, which could only contain three persons, and as soon as we landed we walked from the shore to the top of the mountains. Their sides are very steep, and covered with a mould, and some great rock-stones lay on them. All the mountains are covered with trees; but in some places the forests have been destroyed by fire. After a great deal of trouble, we reached the top

of one of the mountains, which was covered with a dusty mould. It was none of the highest; and some of those which were at a greater distance were much higher, but we had no time to go to them; for the wind encreased, and our boat was but a little one. We found no curious plants, or any thing remarkable here.

WHEN we returned to the shore we found the wind risen to such a height, that we did not venture to cross the lake in our boat, and for that reason I left the fellow to bring it back, as soon as the wind subsided, and walked round the bay, which was a walk of about seven *English* miles. I was followed by my servant, and, for want of a road, we kept close to the shore, where we passed over mountains and sharp stones; through thick forests and deep marshes, all which were known to be inhabited by numberless rattle-snakes, of which we happily saw none at all. The shore is very full of stones in some places, and covered with large angulated rock-stones, which are sometimes roundish, and their edges as it were worn off. Now and then we met with a small sandy spot covered with grey, but chiefly with the fine red sand which I have before-mentioned; and the black iron sand likewise occurred sometimes. We found stones of a red glimmer of a fine texture, on the mountains. Sometimes these mountains with the trees on them stood perpendicular with the water-side, but in some places the shore was marshy.

I saw a number of petrified *Cornua Ammonis* in one place, near the shore, among a number of stones

stones and rocks. The rocks consist of a grey lime-stone, which is a variety of the black one, and lies in a strata, as that does. Some of them contain a number of petrifications with, and without shells; and in one place we found prodigious large *Cornua Ammonis*, about twenty inches in breadth. In some places the water had wore off the stone, but could not have the same effect on the petrifications, which lay elevated above, and in a manner glued on the stones.

THE mountains near the shore are amazingly high and large, consisting of a compact grey rock-stone, which does not ly in strata as the lime-stone, and the chief of whose constituent parts are a grey quartz, and a dark glimmer. This rock-stone reached down to the water, in places where the mountains stood close to the shore; but where they were at some distance from it, they were supplied by strata of grey and black lime-stone, which reached to the water-side, and which I never have seen covered with the grey rocks.

THE *Zizania aquatica* grows in mud, and in the most rapid parts of brooks, and is in full bloom about this time.

July 17th. THE distempers which rage among the *Indians* are *rheumatisms* and *pleurishes*, which arise from their being obliged frequently to ly in moist parts of the woods at night; from the sudden changes of heat and cold, to which the air is exposed here; and from their being frequently loaded with too great a quantity of strong liquor, in which case they commonly ly down

down naked in the open air, without any regard to the season, or the weather. These distempers, especially the pleurifies, are likewise very common among the *French* here; and the governor told me he had once a very violent fit of the latter, and that Dr. *Sarrafin* had cured him in the following manner, which has been found to succeed best here. He gave him sudorifics, which were to operate between eight and ten hours; he was then bled, and the sudorifics repeated; he was bled again, and that effectually cured him.

Dr. *Sarrafin* was the royal physician at *Quebec*, and a correspondent of the royal academy of sciences at *Paris*. He was possessed of great knowledge in the practice of physic, anatomy, and other sciences, and very agreeable in his behaviour. He died at *Quebec* of a malignant fever, which had been brought to that place by a ship, and with which he was infected at an hospital, where he visited the sick. He left a son, who likewise studied physic, and went to *France* to make himself more perfect in the practical part of it, but he died there.

THE intermitting fevers sometimes come amongst the people here, and the venereal disease is common here. The *Indians* are likewise infected with it; and many of them have had it, and some still have it; but they likewise are perfectly possessed of the art of curing it. There are examples of *Frenchmen* and *Indians*, infected all over the body with this disease, who have been radically and perfectly cured by the *Indians*, within five or six months. The *French* have

not been able to find this remedy out; though they know that the *Indians* employ no mercury, but that their chief remedies are roots which are unknown to the *French*. I have afterwards heard what these plants were, and given an account of them at large to the royal *Swedish* academy of sciences *.

WE are very well acquainted in *Sweden* with the pain caused by the *Tænia*, or a kind of worms. They are less abundant in the *British* *North-American* colonies; but in *Canada* they are very frequent. Some of these worms, which have been evacuated by a person, have been several yards long. It is not known, whether the *Indians* are afflicted with them or not. No particular remedies against them are known here, and no one can give an account from whence they come, though the eating of some fruits contributes, as is conjectured, to create them.

July 19th. FORT St. Frederic is a fortification, on the southern extremity of lake *Champlain*, situated on a neck of land, between that lake and the river, which arises from the union of the river *Woodcreek*, and lake *St. Sacrement*. The breadth of this river is here about a good musket-shot. The *English* call this fortress *Crown Point*, but its *French* name is derived from the *French* secretary of state, *Frederic Maurepas*, in whose hands the direction and management of the *French* court of admiralty was at the

* See the Memoirs of that Academy, for the year 1750. page 284.

The *Stillingia Sylvatica* is probably one of these roots. F.

time of the erection of this fort : for it is to be observed, that the government of *Canada* is subject to the court of admiralty in *France*, and the governor-general is always chosen out of that court. As most of the places in *Canada* bear the names of saints, custom has made it necessary to prefix the word *Saint* to the name of the fortresses. The fort is built on a rock, consisting of black lime-slates, as aforesaid ; it is nearly quadrangular, has high and thick walls, made of the same lime-stone, of which there is a quarry about half a mile from the fort. On the eastern part of the fort is a high tower, which is proof against bombshells, provided with very thick and substantial walls, and well stored with cannon from the bottom almost to the very top ; and the governor lives in the tower. In the terre-plein of the fort is a well built little church, and houses of stone for the officers and soldiers. There are sharp rocks on all sides towards the land, beyond a cannon-shot from the fort, but among them are some which are as high as the walls of the fort, and very near them.

THE soil about fort *St. Frederic* is said to be very fertile, on both sides of the river ; and before the last war a great many *French* families, especially old soldiers, have settled there ; but the king obliged them to go into *Canada*, or to settle close to the fort, and to lie in it at night. A great number of them returned at this time, and it was thought that about forty or fifty families would go to settle here this autumn. Within one or two musket-shots to the east of the fort, is a wind-mill built of stone, with very thick walls,

walls, and most of the flour which is wanted to supply the fort is ground here. This wind-mill is so contrived as to serve the purpose of a redoubt, and at the top of it are five or six small pieces of cannon. During the last war there was a number of soldiers quartered in this mill, because they could from thence look a great way up the river, and observe whether the *English* boats approached; which could not be done from the fort itself, and which was a matter of great consequence, as the *English* might (if this guard had not been placed here) have gone in their little boats close under the western shore of the river, and then the hills would have prevented their being seen from the fort. Therefore the fort ought to have been built on the spot where the mill stands, and all those who come to see it are immediately struck with the absurdity of its situation. If it had been erected in the place of the mill, it would have commanded the river, and prevented the approach of the enemy; and a small ditch cut through the loose lime-stone, from the river (which comes out of the lake St. Sacrement) to lake Champlain, would have surrounded the fort with flowing water, because it would have been situated on the extremity of the neck of land. In that case the fort would always have been sufficiently supplied with fresh water, and at a distance from the high rocks which surrounded it in its present situation. We prepared to-day to leave this place, having waited during some days for the arrival of the yacht, which plies constantly all summer between the forts St. John and St. Frederic: during our stay

here, we had received many favours. The governor of the fort, Mr. *Lusignan*, a man of learning and of great politeness, heaped obligations upon us, and treated us with as much civility as if we had been his relations. I had the honour of eating at his table during my stay here, and my servant was allowed to eat with his. We had our rooms, &c. to ourselves, and at our departure the governor supplied us with ample provisions for our journey to fort *St. John*. In short, he did us more favours than we could have expected from our own countrymen, and the officers were likewise particularly obliging to us.

ABOUT eleven o'clock in the morning we set out, with a fair wind. On both sides of the lake are high chains of mountains; with the difference which I have before observed, that on the eastern shore is a low piece of ground covered with a forest, extending between twelve and eighteen *English* miles, after which the mountains begin; and the country behind them belongs to *New England*. This chain consists of high mountains, which are to be considered as the boundaries between the *French* and *English* possessions in these parts of *North America*. On the western shore of the lake, the mountains reach quite to the water side. The lake at first is but a *French* mile broad, but always encreases afterwards. The country is inhabited within a *French* mile of the fort, but after that, it is covered with a thick forest. At the distance of about ten *French* miles from fort *St. Frederic*, the lake is four such miles broad, and we perceive

ceive some islands in it. The captain of the yacht said there were about sixty islands in that lake, of which some were of a considerable size. He assured me that the lake was in most parts so deep, that a line of two hundred yards could not fathom it; and close to the shore, where a chain of mountains generally runs across the country, it frequently has a depth of eighty fathoms. Fourteen *French* miles from fort *St. Frederic* we saw four large islands in the lake, which is here about six *French* miles broad. This day the sky was cloudy, and the clouds, which were very low, seemed to surround several high mountains, near the lake, with a fog; and from many mountains the fog rose as the smoke of a charcoal-kiln. Now and then we saw a little river which fell into the lake: the country behind the high mountains, on the western side of the lake, is, as I am told, covered for many miles together with a tall forest, intersected by many rivers and brooks, with marshes and small lakes, and very fit to be inhabited. The shores are sometimes rocky, and sometimes sandy here. Towards night the mountains decreased gradually; the lake is very clear, and we observed neither rocks nor shallows in it. Late at night the wind abated, and we anchored close to the shore, and spent one night here.

July 20th. THIS morning we proceeded with a fair wind. The place where we passed the night, was above half way to fort *St. John*; for the distance of that place from fort *St. Frederic*, across lake *Champlain* is computed to be forty-one *French* miles; that lake is here about six

English miles in breadth. The mountains were now out of sight, and the country low, plain, and covered with trees. The shores were sandy, and the lake appeared now from four to six miles broad. It was really broader, but the islands made it appear narrower.

We often saw *Indians* in bark-boats close to the shore, which was however not inhabited; for the *Indians* came here only to catch sturgeons, wherewith this lake abounds, and which we often saw leaping up in the air. These *Indians* lead a very singular life: At one time of the year they live upon the small store of maize, beans, and melons, which they have planted; during another period, or about this time, their food is fish, without bread or any other meat; and another season they eat nothing but stags, roes, beavers, &c. which they shoot in the woods, and rivers. They, however, enjoy long life, perfect health, and are more able to undergo hardships than other people. They sing and dance, are joyful, and always content; and would not, for a great deal, exchange their manner of life for that which is preferred in *Europe*.

WHEN we were yet ten *French* miles from fort *St. John*, we saw some houses on the western side of the lake, in which the *French* had lived before the last war, and which they then abandoned, as it was by no means safe: they now returned to them again. These were the first houses and settlements which we saw after we had left those about fort *St. Frederic*.

THERE formerly was a wooden fort, or redoubt, on the eastern side of the lake, near the

water-

water-side; and the place where it stood was shewn me, which at present is quite overgrown with trees. The *French* built it to prevent the incursions of the *Indians* over this lake; and I was assured that many *Frenchmen* had been slain in these places. At the same time they told me, that they reckon four women to one man in *Canada*, because annually several *Frenchmen* are killed on their expeditions, which they undertake for the sake of trading with the *Indians*.

A WIND-MILL, built of stone, stands on the east side of the lake on a projecting piece of ground. Some *Frenchmen* have lived near it; but they left it when the war broke out, and are not yet come back to it. From this mill to fort *St. John* they reckon eight *French* miles. The *English*, with their *Indians*, have burnt the houses here several times, but the mill remained unhurt.

THE yacht which we went in to *St. John* was the first that was built here, and employed on lake *Champlain*, for formerly they made use of *bateaux* to send provisions over the lake. The captain of the yacht was a *Frenchman*, born in this country; he had built it, and taken the soundings of the lake, in order to find out the true road between fort *St. John* and fort *St. Frederic*. Opposite the wind-mill the lake is about three fathoms deep, but it grows more and more shallow the nearer it comes to fort *St. John*.

WE now perceived houses on the shore again. The captain had otter-skins in the cabin, which were perfectly the same, in colour and species,

with the *European* ones. *Otters* are said to be very abundant in *Canada*.

Seal-skins are here made use of to cover boxes and trunks, and they often make portmantles of them in *Canada*. The common people had their tobacco-pouches made of the same skins. The seals here are entirely the same with the *Swedish* or *European* one, which are grey with black spots. They are said to be plentiful in the mouth of the river *St. Laurence*, below *Quebec*, and go up that river as far as its water is salt. They have not been found in any of the great lakes of *Canada*. The *French* call them *Loups marins**.

THE *French*, in their colonies, spend much more time in prayer and external worship, than the *English* and *Dutch* settlers in the *British* colonies. The latter have neither morning nor evening prayer in their ships and yachts, and no difference is made between Sunday and other days. They never, or very seldom, say grace at dinner. On the contrary, the *French* here have prayers every morning and night on board their shipping, and on Sundays they pray more than commonly: they regularly say grace at their meals; and every one of them says prayers in private as soon as he gets up. At Fort *St. Frederic* all the soldiers assembled together for morning and evening prayers. The only fault was, that most of the prayers were read in *Latin*, which a great part of the people do not understand. Below the abovementioned wind-

* Sea Wolves,

mill, the breadth of the lake is about a musket-shot, and it looks more like a river than a lake. The country on both sides is low and flat, and covered with woods. We saw at first a few scattered cottages along the shore; but a little further, the country is inhabited without interruption. The lake is here from six to ten foot deep, and forms several islands. During the whole course of this voyage, the situation of the lake was always directly from S. S. W. to N. N. E.

In some parts of *Canada* are great tracts of land belonging to single persons; from these lands, pieces, of forty *Arpens* long, and four wide, are allotted to each discharged soldier who intends to settle here; but after his household is established, he is obliged to pay the owner of the lands six *French Francs* annually.

THE lake was now so shallow in several places, that we were obliged to trace the way for the yacht, by sounding the depth with branches of trees. In other places opposite, it was sometimes two fathom deep.

In the evening, about sun-set, we arrived at Fort *St. Jean*, or *St. John*, having had a continual change of rain, sun-shine, wind, and calm, all the afternoon.

July 21st. *St. John* is a wooden fort, which the *French* built in 1748, on the western shore of the mouth of lake *Champlain*, close to the water-side. It was intended to cover the country round about it, which they were then going to people, and to serve as a magazine for provisions and ammunition, wick were usually sent from

Montreal to Fort *St. Frederic*; because they may go in yachts from hence to the last mentioned place; which is impossible lower down, as about two gun-shot further, there is a shallow full of stones, and very rapid water in the river, over which they can only pass in *bateaux*, or flat vessels. Formerly Fort *Chamblan*, which lies four *French* miles lower, was the magazine of provisions; but as they were forced first to send them hither in *bateaux*, and then from hence in yachts, and the road to Fort *Chamblan* from *Montreal* being by land, and much round about, this fort was erected. It has a low situation, and lies in a sandy soil, and the country about it is likewise low, flat, and covered with woods. The fort is quadrangular, and includes the space of one *arpent* square. In each of the two corners which look towards the lake is a wooden building, four stories high, the lower part of which is of stone to the height of about a fathom and a half. In these buildings which are polygonal, are holes for cannon and lesser fire-arms. In each of the two other corners towards the country, is only a little wooden house, two stories high. These buildings are intended for the habitations of the soldiers, and for the better defence of the place; between these houses there are poles, two fathoms and a half high, sharpened at the top, and driven into the ground close to one another. They are made of the *Thuya* tree, which is here reckoned the best wood for keeping from petrification, and is much preferable to fir in that point. Lower down the palisades were double, one row within the other.

other. For the convenience of the soldiers, a broad elevated pavement, of more than two yards in height, is made in the inside of the fort all along the palisades, with a balustrade. On this pavement the soldiers stand and fire through the holes upon the enemy, without being exposed to their fire. In the last year, 1748, two hundred men were in garison here; but at this time there were only a governor, a commissary, a baker, and six soldiers to take care of the fort and buildings, and to superintend the provisions which are carried to this place. The person who now commanded at the fort, was the Chevalier *de Ganues*, a very agreeable gentleman, and brother-in-law to Mr. *Lusignan*, the governor of Fort St. Frederic. The ground about the fort, on both sides the water, is rich and has a very good soil; but it is still without inhabitants, though it is talked of, that it would get some as soon as possible.

THE French in all Canada call the gnats *Marangoins*, which name, it is said, they have borrowed from the *Indians*. These insects are in such prodigious numbers in the woods round Fort St. John, that it would be more properly called Fort *de Marangoins*. The marshes and the low situation of the country, together with the extent of the woods, contribute greatly to their multiplying so much; and when the woods are cut down, the water drained, and the country cultivated, they probably will decrease in number, and vanish at last, as they have done in other places.

THE *Rattle Snake*, according to the unanimous accounts of the *French*, is never seen in this neighbourhood, nor further north near *Montreal* and *Quebec*; and the mountains which surround Fort *St. Frederic*, are the most northerly part on this side, where they have been seen. Of all the snakes which are found in *Canada* to the north of these mountains, none is poisonous enough to do any great harm to a man; and all without exception run away when they see a man. My remarks on the nature and properties of the rattle-snake, I have communicated to the royal *Swedish* academy of sciences*, and thither I refer my readers.

July 22d. THIS evening some people arrived with horses from *Prairie*, in order to fetch us. The governor had sent for them at my desire, because there were not yet any horses near Fort *St. John*, the place being only a year old, and the people had not had time to settle near it. Those who led the horses, brought letters to the governor from the governor-general of *Canada*, the Marquis *la Galissoniere*, dated at *Quebec* the fifteenth of this month, and from the vice-governor of *Montreal*, the Baron *de Longueuil*, dated the twenty-first of the same month. They mentioned that I had been particularly recommended by the *French* court, and that the governor should supply me with every thing I wanted, and forward my journey; and at the same time the governor received two little casks of wine for me, which they thought would

* See their Memoirs for the year 1752.

relieve me on my journey. At night we drank the kings of *France* and *Sweden's* health, under a salute from the cannon of the fort, and the health of the governor-general and others.

July 23d. This morning we set out on our journey to *Prairie*, from whence we intended to proceed to *Montreal*; the distance of *Prairie* from fort St. John, by land, is reckoned six *French* miles, and from thence to *Montreal* two *lieues* (leagues) and a half, by the river St. Lawrence. At first we kept along the shore, so that we had on our right the *Riviere de St. John* (St. John's river.) This is the name of the mouth of the lake *Champlain*, which falls into the river St. Lawrence, and is sometimes called *Riviere de Champlain* (*Champlain river*.) After we had travelled about a *French* mile, we turned to the left from the shore. The country was always low, woody, and pretty wet, though it was in the midst of summer; so that we found it difficult to get forward. But it is to be observed that fort St. John was only built last summer, when this road was first made, and consequently it could not yet have acquired a proper degree of solidity. Two hundred and sixty men were three months at work, in making this road; for which they were fed at the expence of the government, and each received thirty sols every day; and I was told that they would again resume the work next autumn. The country hereabouts is low and woody, and of course the residence of millions of gnats and flies, which were very troublesome to us. After we had gone about three *French* miles, we came

out

out of the woods, and the ground seemed to have been formerly a marsh, which was now dried up. From hence we had a pretty good prospect on all sides. On our right hand at a great distance we saw two high mountains, rising remarkably above the rest; and they were not far from fort *Champlain*. We could likewise from hence see the high mountain which lies near *Montreal*; and our road went on nearly in a straight line. Soon after, we got again upon wet and low grounds, and after that into a wood which consisted chiefly of the fir with leaves which have a silvery underfide *. We found the soil which we passed over to day, very fine and rich, and when the woods are cleared and the ground cultivated, it will probably prove very fertile. There are no rocks, and hardly any stones near the road.

ABOUT four *French* miles from fort St. *John*, the country makes quite another appearance. It is all cultivated, and a continual variety of fields with excellent wheat, pease, and oats, presented itself to our view; but we saw no other kinds of corn. The farms stood scattered, and each of them was surrounded by its corn fields, and meadows; the houses are built of wood and very small. Instead of moss, which cannot be got here, they employ clay for stopping up the crevices in the walls. The roofs are made very much sloping, and covered with straw. The soil is good, flat, and divided by several rivulets; and only in a few places there are some

* *Abies foliis subtus argenteis.*

little hills. The prospect is very fine from this part of the road, and as far as I could see the country, it was cultivated; all the fields were covered with corn, and they generally use summer-wheat here. The ground is still very fertile, so that there is no occasion for leaving it to ly as fallow. The forests are pretty much cleared, and it is to be feared that there will be a time, when wood will become very scarce. Such was the appearance of the country quite up to *Prairie*, and the river St. *Lawrence*, which last we had now always in sight; and, in a word, this country was, in my opinion the finest of *North-America*, which I had hitherto seen.

ABOUT dinner-time we arrived at *Prairie*, which is situated on a little rising-ground near the river St. *Lawrence*. We staid here this day, because I intended to visit the places in this neighbourhood, before I went on.

Prairie de la Magdelene is a small village on the eastern side of the river St. *Lawrence*, about two *French* miles and a half from *Montreal*, which place lies N. W. from hence, on the other side of the river. All the country round *Prairie* is quite flat, and has hardly any risings. On all sides are large corn-fields, meadows, and pastures. On the western side, the river St. *Lawrence* passes by, and has here a breadth of a *French* mile and a half, if not more. Most of the houses in *Prairie* are built of timber, with sloping wooden roofs, and the crevices in the walls are stopped up with clay. There are some little buildings of stone, chiefly of the black lime-stone, or of pieces of rock-stone, in which

which latter the enchasement of the doors and windows was made of the black lime-stone. In the midst of the village is a pretty church of stone, with a steeple at the west end of it, furnished with bells. Before the door is a cross, together with ladders, tongs, hammers, nails, &c. which are to represent all the instruments made use of at the crucifixion of our Saviour, and perhaps many others besides them. The village is surrounded with palisades, from four yards to five high, put up formerly as a barrier against the incursions of the *Indians*. Without these palisades are several little kitchen and pleasure gardens, but very few fruit-trees in them. The rising-grounds along the river are very inconsiderable here. In this place there was a priest, and a captain, who assumed the name of governor. The corn-fields round the place are extensive, and sown with summer-wheat; but rye, barley and maize are never seen. To the south-west of this place is a great fall in the river St. *Lawrence*, and the noise which it causes, may be plainly heard here. When the water in spring encreases in the river, on account of the ice which then begins to dissolve, it sometimes happens to rise so high as to overflow a great part of the fields, and, instead of fertilizing them as the river *Nile* fertilizes the *Egyptian* fields by its inundations, it does them much damage, by carrying a number of grasses and plants on them, the seeds of which spread the worst kind of weeds, and ruin the fields. These inundations oblige the people to take their cattle a great way off, because the water covers

covers a great tract of land; but happily it never stays on it above two or three days. The cause of these inundations is generally owing to the stopping of ice in some part of the river.

THE *Zizania aquatica*, or *Folle Avoine* grows plentiful in the rivulet, or brook, which flows somewhat below *Prairie*.

July 21th. THIS morning I went from *Prairie* in a bateau to *Montreal*, upon the river *St. Lawrence*. The river is very rapid, but not very deep near *Prairie*, so that the yacht cannot go higher than *Montreal*, except in spring with the high water, when they can come up to *Prairie*, but no further. The town of *Montreal* may be seen at *Prairie*, and all the way down to it. On our arrival there we found a crowd of people at that gate of the town, where we were to pass through. They were very desirous of seeing us, because they were informed that some *Swedes* were to come to town; people of whom they had heard something, but whom they had never seen; and we are assured by every body, that we were the first *Swedes* that ever came to *Montreal*. As soon as we were landed, the governor of the town sent a captain to me, who desired I would follow him to the governor's house, where he introduced me to him. The Baron *Longueuil* was as yet vice-governor, but he daily expected his promotion from *France*. He received me more civilly and generously than I can well describe, and shewed me letters from the governor-general at *Quebec*, the Marquis *de la Galissoniere*, which mentioned that he had received orders from the *French* court to supply me with whatever I should

should want, as I was to travel in this country at the expence of his most Christian majesty. In short governor *Longueuil* loaded me with greater favours than I could expect or even imagine, both during my present stay and on my return from *Quebec*.

THE difference between the manners and customs of the *French* in *Montreal* and *Canada*, and those of the *English* in the *American* colonies, is as great as that between the manners of those two nations in *Europe*. The women in general are handsome here; they are well bred, and virtuous, with an innocent and becoming freedom. They dress out very fine on Sundays; and though on the other days they do not take much pains with other parts of their dress, yet they are very fond of adorning their heads, the hair of which is always curled and powdered, and ornamented with glittering bodkins and aigrettes. Every day but Sunday, they wear a little neat jacket, and a short petticoat which hardly reaches half the leg, and in this particular they seem to imitate the *Indian* women. The heels of their shoes are high, and very narrow, and it is surprizing how they walk on them. In their knowledge of œconomy, they greatly surpass the *English* women in the plantations, who indeed have taken the liberty of throwing all the burthen of house-keeping upon their husbands, and sit in their chairs all day with folded arms *. The women in *Canada* on

* It seems, that for the future, the fair sex in the *English* colonies in *North-America*, will no longer deserve the reproaches Mr.

Kalm

on the contrary do not spare themselves, especially among the common people, where they are always in the fields, meadows, stables, &c. and do not dislike any work whatsoever. However, they seem rather remiss in regard to the cleaning of the utensils, and apartments; for sometimes the floors, both in the town and country, were hardly cleaned once in six months, which is a disagreeable sight to one who comes from amongst the *Dutch* and *English*, where the constant scouring and scrubbing of the floors, is reckoned as important as the exercise of religion itself. To prevent the thick dust, which is thus left on the floor, from being noxious to the health, the women wet it several times a day, which renders it more consistent; repeating the asperion as often as the dust is dry and rises again. Upon the whole, however, they are not averse to the taking a part in all the business of housekeeping; and I have with pleasure seen the daughters of the better sort of people, and of the governor himself, not too finely dressed, and going into kitchens and cellars, to look that every thing be done as it ought.

THE men are extremely civil, and take their hats off to every person indifferently whom they meet in the streets. It is customary to return a visit the day after you have received one; though one should have some scores to pay in one day.

Kalm stigmatizes them with repeatedly, since it is generally reported, that the ladies of late have vied one with another, in providing their families with linen, stockings, and home-spun cloth of their own making, and that a general spirit of industry prevails among them at this present time. F.

VOL. II.

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I HAVE

I HAVE been told by some among the *French*, who had gone a beaver-hunting with the *Indians* to the northern parts of *Canada*, that the animals whose skins they endeavour to get, and which are there in great plenty, are beavers, wild-cats, or lynxes, and martens. These animals are the more valued, the farther they are caught to the north, for their skins have better hair, and look better than those which are taken more southward, and they became gradually better or worse, the more they are northward or southward.

White Partridges * is the name which the *French* in *Canada* give to a kind of birds, abounding during winter near *Hudson's Bay*, and which are undoubtedly our *Ptarmigans*, or *Snow-hens* (*Tetrao Lagopus*). They are very plentiful at the time of a great frost, and when a considerable quantity of snow happens to fall. They are described to me as having rough white feet, and being white all over, except three or four black feathers in the tail; and they are reckoned very fine eating. From *Edward's Natural History of Birds* (pag. 72.) it appears, that the ptarmigans are common about *Hudson's Bay* †.

Hares are likewise said to be plentiful near *Hudson's Bay*, and they are abundant even in *Canada*, where I have often seen, and found them perfectly corresponding with our *Swedish* hares. In summer they have a brownish grey, and in winter a snowy white colour, as with us *.

* *Perdrix blanches*.

† See *Br. Zool. Suppl.* plate XIII. f. 1. F.

* See a figure of this hare in its white state, in the *Suppl. to Br. Zool.* plate XLVII. f. 1. F.

MECHA-

MECHANICS, such as architecture, cabinet-work, turning, and the like, were not yet so forward here as they ought to be; and the *English*, in that particular, out-do the *French*. The chief cause of this is, that scarce any other people than dismissed soldiers come to settle here, who have not had any opportunity of learning a mechanical trade, but have sometimes accidentally, and through necessity, been obliged to it. There are however some who have a good notion of mechanics, and I saw a person here who made very good clocks and watches, though he had had but very little instruction.

July 27th. THE common house-flies have but been observed in this country about one hundred and fifty years ago, as I have been assured by several persons in this town, and in *Quebec*. All the *Indians* assert the same thing, and are of opinion that the common flies first came over here with the *Europeans* and their ships, which were stranded on this coast. I shall not dispute this; however, I know, that whilst I was in the desarts between *Saratoga* and *Crown Point*, or fort *St. Frederic*, and sat down to rest or to eat, a number of our common flies always came and settled on me. It is therefore dubious, whether they have not been longer in *America* than the term above-mentioned, or whether they have been imported from *Europe*. On the other hand, it may be urged that the flies were left in those desarts at the time when fort *Anne* was yet in a good condition, and when the *English* often travelled there and back again; not to mention that several *Europeans*, both before and

after that time, had travelled through those places, and carried the flies with them, which were attracted by their provisions.

Wild Cattle are abundant in the southern parts of *Canada*, and have been there since times immemorial. They are plentiful in those parts, particularly where the *Illinois Indians* live, which are nearly in the same latitude with *Philadelphia*; but further to the north they are seldom observed. I saw the skin of a wild ox to-day; it was as big as one of the largest ox hides in *Europe*, but had better hair. The hair is dark brown, like that on a brown bear-skin. That which is close to the skin is as soft as wool. This hide was not very thick; and in general they do not reckon them so valuable as bear-skins in *France*. In winter they are spread on the floors, to keep the feet warm. Some of these wild cattle, as I am told, have a long and fine wool, as good, if not better, than sheep wool. They make stockings, cloth, gloves, and other pieces of worsted work of it, which look as well as if they were made of the best sheep wool; and the *Indians* employ it for several uses. The flesh equals the best beef in goodness and fatness. Sometimes the hides are thick, and may be made use of as cow-hides are in *Europe*. The wild cattle in general are said to be stronger and bigger than *European* cattle, and of a brown red colour. Their horns are but short, though very thick close to the head. These, and several other qualities, which they have in common with, and in greater perfection than the tame cattle, have induced some to endeavour to tame them;

by which means they would obtain the advantages arising from their goodness of hair, and, on account of their great strength, be able to employ them successfully in agriculture. With this view some have repeatedly got young wild calves, and brought them up in *Quebec*, and other places, among the tame cattle; but they commonly died in three or four years time; and though they have seen people every day, yet they have always retained a natural ferocity. They have constantly been very shy, pricked up their ears at the sight of a man, and trembled, or run about; so that the art of taming them has not hitherto been found out. Some have been of opinion, that these cattle cannot well bear the cold; as they never go north of the place I mentioned, though the summers be very hot, even in those northern parts. They think that, when the country about the *Illinois* is better peopled, it will be more easy to tame these cattle, and that afterwards they might more easily be used to the northerly climates *. The *Indians* and *French* in *Canada* make use of the horns of these creature to put gun-powder in.

THE peace which was concluded between *France* and *England* was proclaimed this day. The soldiers were under arms; the artillery on the walls was fired off, and some salutes were given by the small fire-arms. All night some fire-works were exhibited, and the whole town

* But by this means they would lose that superiority which in their wild state they have over the tame cattle; as all the progenies of tamed animals degenerate from the excellence of their wild and free ancestors. F.

was illuminated. All the streets were crowded with people till late at night. The governor invited me to supper, and to partake of the joy of the inhabitants. There were present a number of officers, and persons of distinction; and the festival concluded with the greatest joy.

July 28th. THIS morning I accompanied the governor, baron *Longueuil*, and his family, to a little island called *Magdelene*, which is his own property. It lies in the river *St. Lawrence*, directly opposite to the town, on the eastern side. The governor had here a very neat house, though it was not very large, a fine extensive garden, and a court-yard. The river passes between the town and this island, and is very rapid. Near the town it is deep enough for yachts; but towards the island it grows more shallow, so that they are obliged to push the boats forwards with poles. There was a mill on the island, turned by the mere force of the stream, without an additional mill-dam.

THE smooth sumach, or *Rhus glabra*, grows in great plenty here. I have no where seen it so tall as in this place, where it had sometimes the height of eight yards, and a proportionable thickness.

Sassafras is planted here; for it is never found wild in these parts, fort *Anne* being the most northerly place where I have found it wild. Those shrubs which were on the island had been planted many years ago; however, they were but small shrubs, from two to three feet high, and scarce so much. The reason is, because the stem is killed every winter, almost
down

down to the very root, and must produce new shoots every spring, as I have found from my own observations here; and so it appeared to be near the forts *Anne*, *Nicholson*, and *Oswego*. It will therefore be in vain to attempt to plant *sassafras* in a very cold climate.

THE red Mulberry-trees (*Morus rubra*, Linn.) are likewise planted here. I saw four or five of them about five yards high, which the governor told me had been twenty years in this place, and were brought from more southerly parts, since they do not grow wild near *Montreal*. The most northerly place, where I have found it growing spontaneously, is about twenty *English* miles north of *Albany*, as I have been assured by the country people who live in that place, and who at the same time informed me, that it was very scarce in the woods. When I came to *Saratoga*, I enquired whether any of these mulberry-trees had been found in that neighbourhood? but every body told me, that they were never seen in those parts, but that the before-mentioned place, twenty miles above *Albany*, is the most northern one where they grow. Those mulberry-trees, which were planted on this island, succeed very well, though they are placed in a poor soil. Their foliage is large and thick, but they did not bear any fruits this year. However, I was informed that they can bear a considerable degree of cold.

THE *Water-beech* was planted here in a shady place, and was grown to a great height. All

the *French* hereabouts call it *Cotonier* *. It is never found wild near the river *St. Lawrence*; nor north of fort *St. Frederic*, where it is now very scarce.

THE red cedar is called *Cedre rouge* by the *French*, and it was likewise planted in the governor's garden, whether it had been brought from more southern parts, for it is not to be met with in the forests hereabouts. However, it came on very well here.

ABOUT half an hour after seven in the evening we left this pleasant island, and an hour after our return the baron *de Longueuil* received two agreeable pieces of news at once. The first was, that his son, who had been two years in *France*, was returned; and the second, that he had brought with him the royal patents for his father, by which he was appointed governor of *Montreal*, and the country belonging to it.

THEY make use of fans here, which are made of the tails of the wild turkeys. As soon as the birds are shot, their tails are spread like fans, and dried, by which means they keep their figure. The ladies and the men of distinction in town wear these fans, when they walk in the streets, during the intenseness of the heat.

ALL the grass on the meadows round *Montreal* consists chiefly of a species of *Meadow-grass*, or the *Poa capillaris*, Linn. †. This is a very flen-

* *Cotton-tree*. Mr. Kalm mentions before, that this name is given to the *Asclepias Syriaca*. F.

† Mr. Kalm describes it thus: *Poa culmo subcompresso panicula tenuissima, spiculis trifloris minimis, flosculis basi pubescentibus*.

der grass, which grows very close, and succeeds even on the driest hills. It is however not rich in foliage; and the slender stalk is chiefly used for hay. We have numerous kinds of grasses in *Sweden*, which make infinitely finer meadows than this.

July 30th. THE wild *Plumb-trees* grow in great abundance on the hills, along the rivulets about the town. They were so loaded with fruit, that the boughs were quite bent downwards by the weight. The fruit was not yet ripe, but when it comes to that perfection, it has a red colour and a fine taste, and preserves are sometimes made of it.

Black Currants (*Ribes nigrum*, Linn.) are plentiful in the same places, and its berries were ripe at this time. They are very small, and not by far so agreeable as those in *Sweden*.

Parsneps grow in great abundance on the rising banks of rivers, along the corn-fields, and in other places. This led me to think, that they were original natives of *America*, and not first brought over by the *Europeans*. But on my journey into the country of the *Iroquois*, where no *European* ever had a settlement, I never once saw it, though the soil was excellent; and from hence it appears plain enough, that it was transported hither from *Europe*, and is not originally an *American* plant; and therefore it is in vain sought for in any part of this continent, except among the *European* settlements.

August 1st. THE governor-general of *Canada* commonly resides at *Quebec*; but he frequently goes to *Montreal*, and generally spends

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the winter there. In summer they chiefly reside at *Quebec*, on account of the king's ships, which arrive there during that season, and bring him letters, which he must answer; besides other business which comes in about that time. During his residence in *Montreal* he lives in the castle, as it is called, which is a large house of stone, built by governor-general *Vaudreuil*, and still belonging to his family, who hire it to the king.

THEY have in *Canada* scarce any other but paper-currency. I hardly ever saw any coin, except *French* sols, consisting of brass, with a very small mixture of silver; they were quite thin by constant circulation, and were valued at a sol and a half. The bills are not printed, but written. Their origin is as follows. The *French* king having found it very dangerous to send money for the pay of the troops, and other purposes, over to *Canada*, on account of privateers, shipwrecks, and other accidents; he ordered that instead of it the intendant, or king's steward, at *Quebec*, or the commissary at *Montreal*, should write bills for the value of the sums which are due to the troops, and which they distribute to each soldier. On these bills is inscribed, that they bear the value of such or such a sum, till next *October*; and they are signed by the intendant, or the commissary; and in the interval they bear the value of money. In the month of *October*, at a certain stated time, every one brings the bills in his possession to the intendant at *Quebec*, or the commissary at *Montreal*, who exchanges them for bills of exchange upon *France*, which are

are paid there in lawful money, at the king's exchequer, as soon as they are presented. If the money is not yet wanted, the bill may be kept till next *October*, when it may be exchanged by one of those gentlemen, for a bill upon *France*. The paper money can only be delivered in *October*, and exchanged for bills upon *France*. They are of different values, and some do not exceed a *livre*, and perhaps some are still less. Towards autumn, when the merchants ships come in from *France*, the merchants endeavour to get as many bills as they can, and change them for bills upon the *French* treasury. These bills are partly printed, spaces being left for the name, sum, &c. But the first bill, or paper currency is all wrote, and is therefore subject to be counterfeited, which has sometimes been done; but the great punishments, which have been inflicted upon the authors of these forged bills, and which generally are capital, have deterred people from attempting it again; so that examples of this kind are very scarce at present. As there is a great want of small coin here, the buyers, or sellers, were frequently obliged to suffer a small loss, and could pay no intermediate prices between one *livre* and two*.

THEY commonly give one hundred and fifty *livres* a year to a faithful and diligent footman, and to a maid-servant of the same character one hundred *livres*. A journeyman to an artist

* The *sol* is the lowest coin in *Canada*, and is about the value of a penny in the *English* colonies. A *livre*, or *franc*, (for they are both the same) contains twenty *sols*; and three *livres*, or *francs*, make an *ecu*, or crown.

gets

gets three or four livres a day, and a common labouring man gets thirty or forty sols a day. The scarcity of labouring people occasions the wages to be so high; for almost every body finds it so easy to set up as a farmer in this uncultivated country, where he can live well, and at a small expence, that he does not care to serve and work for others.

Montreal is the second town in *Canada*, in regard to size and wealth; but it is the first on account of its fine situation, and mild climate. Somewhat above the town, the river *St. Lawrence* divides into several branches, and by that means forms several islands, and among which the isle of *Montreal* is the greatest. It is ten *French* miles long, and near four broad, in its broadest part. The town of *Montreal* is built on the eastern side of the island, and close to one of the most considerable branches of the river *St. Lawrence*; and thus it receives a very pleasant, and advantageous situation. The town has a quadrangular form, or rather it is a rectangular parallelogram, the long and eastern side of which extends along the great branch of the river. On the other side it is surrounded with excellent corn-fields, charming meadows, and delightful woods. It has got the name of *Montreal* from a great mountain, about half a mile westwards of the town, and lifting its head far above the woods. Monsieur *Cartier*, one of the first *Frenchmen* who surveyed *Canada* more accurately, called this mountain so, on his arrival in this island, in the year 1535, when he visited the mountain, and the *Indian* town *Hobelaga*

Isbelaga near it. The priests who, according to the Roman catholic way, would call every place in this country after some saint or other, calling *Montreal, Ville Marie*, but they have not been able to make this name general, for it has always kept its first name. It is pretty well fortified, and surrounded with a high and thick wall. On the east side it has the river *St. Lawrence*, and on all the other sides a deep ditch filled with water, which secures the inhabitants against all danger from the sudden incursions of the enemy's troops. However, it cannot long stand a regular siege, because it requires a great garrison, on account of its extent; and because it consists chiefly of wooden houses. Here are several churches, of which I shall only mention that belonging to the friars of the order of *St. Sulpitius*, that of the Jesuits, that of the *Franciscan* friars, that belonging to the nunnery, and that of the hospital; of which the first is however by far the finest, both in regard to its outward and inward ornaments, not only in this place, but in all *Canada*. The priests of the seminary of *St. Sulpitius* have a fine large house, where they live together. The college of the *Franciscan* friars is likewise spacious, and has good walls, but it is not so magnificent as the former. The college of the Jesuits is small, but well built. To each of these three buildings are annexed fine large gardens, for the amusement, health, and use of the communities to which they belong. Some of the houses in the town are built of stone, but most of them are of timber, though very neatly built. Each of the

better

better sort of houses has a door towards the street, with a seat on each side of it, for amusement and recreation in the morning and evening. The long streets are broad and strait, and divided at right angles by the short ones: some are paved, but most of them very uneven. The gates of the town are numerous; on the east side of the town towards the river are five, two great and three lesser ones; and on the other side are likewise several. The governor-general of *Canada*, when he is at *Montreal*, resides in the castle, which the government hires for that purpose of the family of *Vaudreuil*; but the governor of *Montreal* is obliged to buy or hire a house in town; though I was told, that the government contributed towards paying the rents.

IN the town is a *Nunnery*, and without its walls half a one; for though the last was quite ready, however, it had not yet been confirmed by the pope. In the first they do not receive every girl that offers herself; for their parents must pay about five hundred *ecus*, or crowns, for them. Some indeed are admitted for three hundred *ecus*, but they are obliged to serve those who pay more than they. No poor girls are taken in.

THE king has erected a hospital for sick soldiers here. The sick person there is provided with every thing he wants, and the king pays twelve sols every day for his stay, attendance, &c. The surgeons are paid by the king. When an officer is brought to this hospital, who is fallen sick in the service of the crown, he receives

ceives victuals and attendance gratis: but if he has got a sickness in the execution of his private concerns, and comes to be cured here, he must pay it out of his own purse. When there is room enough in the hospital, they likewise take in some of the sick inhabitants of the town and country. They have the medicines, and the attendance of the surgeons, gratis, but must pay twelve sols per day for meat, &c.

EVERY Friday is a market-day, when the country people come to the town with provisions, and those who want them must supply themselves on that day, because it is the only market-day in the whole week. On that day likewise a number of *Indians* come to town, to sell their goods, and buy others.

THE declination of the magnetic needle was here ten degrees and thirty-eight minutes, west. Mr. *Gillion*, one of the priests here, who had a particular taste for mathematicks and astronomy, had drawn a meridian in the garden of the seminary, which he said he had examined repeatedly by the sun and stars, and found to be very exact. I compared my compass with it, taking care that no iron was near it, and found its declination just the same as that which I have before mentioned.

ACCORDING to Monsieur *Gillion's* observations, the latitude of *Montreal* is forty-five degrees and twenty-seven minutes.

MONSIEUR *Pontarion*, another priest, had made thermometrical observations in *Montreal*, from the beginning of this year 1749. He made use of *Reaumur's* thermometer, which he placed sometimes in the window half open, and some-

times

times in one quite open, and accordingly it will seldom mark the greatest degree of cold in the air. However, I shall give a short abstract of his observations for the winter months. In *January* the greatest cold was on the 18th day of the month, when the *Reaumurian* thermometer was twenty-three degrees below the freezing point. The least degree of cold was on the 31st of the same month, when it was just at the freezing point, but most of the days of this month it was from twelve to fifteen degrees below the freezing point. In *February* the greatest cold was on the 19th, and 25th, when the thermometer was fourteen degrees below the freezing point; and the least was on the 3d day of that month, when it rose eight degrees above the freezing point; but it was generally eleven degrees below it. In *March* the greatest cold was on the 3d, when it was ten degrees below the freezing point, and on the 22d, 23d, and 24th, it was mildest, being fifteen degrees above it: in general it was four degrees below it. In *April* the greatest degree of cold happened on the 7th, the thermometer being five degrees below the freezing point; the 25th was the mildest day, it being twenty degrees above the freezing point; but in general it was twelve degrees above it. These are the contents chiefly of Monsieur *Pontarion's* observations during those months; but I found, by the manner he made his observations, that the cold had every day been from four to six degrees greater, than he had marked it. He had likewise marked in his journal, that the ice in the river *St. Lawrence* broke on the 3d of

April

April at *Montreal*, and only on the 20th day of that month at *Quebec*. On the 3d of *May* some trees began to flower at *Montreal*, and on the 12th the hoary frost was so great, that the trees were quite covered with it, as with snow. The ice in the river close to this town is every winter above a *French* foot thick, and sometimes it is two of such feet, as I was informed by all whom I consulted on that head.

SEVERAL of the friars here told me, that the summers were remarkably longer in *Canada*, since its cultivation, than they used to be before; it begins earlier, and ends later. The winters on the other hand are much shorter; but the friars were of opinion, that they were as hard as formerly, though they were not of the same duration; and likewise, that the summer at present was no hotter than it used to be. The coldest winds at *Montreal* are those from the north and north-west.

Aug. 2d. EARLY this morning we left *Montreal*, and went in a *bateau* on our journey to *Quebec*, in company with the second major of *Montreal*, M. de *Sermonville*. We fell down the river *St. Lawrence*, which was here pretty broad on our left; on the north-west side was the isle of *Montreal*, and on the right a number of other isles, and the shore. The isle of *Montreal* was closely inhabited along the river; and it was very plain, and the rising land near the shore consisted of pure mould, and was between three or four yards high. The woods were cut down along the river-side, for the distance of an *English* mile. The dwelling-houses were built

of wood, or stone, indiscriminately, and white-washed on the outside. The other buildings, such as barns, stables, &c. were all of wood. The ground next to the river was turned either into corn-fields, or meadows. Now and then we perceived churches on both sides of the river, the steeples of which were generally on that side of the church which looked towards the river, because they are not obliged here to put the steeples on the west end of the churches. Within six *French* miles of *Montreal* we saw several islands of different sizes on the river, and most of them were inhabited; and if some of them were without houses on them, they were sometimes turned into corn-fields, but generally into meadows. We saw no mountains, hills, rocks, or stones to-day, the country being flat throughout, and consisting of pure mould.

ALL the farms in *Canada* stand separate from each other, so that each farmer has his possessions entirely distinct from those of his neighbour. Each church, it is true, has a little village near it; but that consists chiefly of the parsonage, a school for the boys and girls of the place, and of the houses of tradesmen, but rarely of farm-houses; and if that was the case, yet their fields were separated. The farm-houses hereabouts are generally built all along the rising banks of the river, either close to the water or at some distance from it, and about three or four *arpens* from each other. To some farms are annexed small orchards: but they are in general without them; however, almost every farmer has a kitchen-garden.

I HAVE been told by all those who have made journeys to the southern parts of *Canada*, and to the river *Mississippi*, that the woods there abound with peach-trees, which bear excellent fruit, and that the *Indians* of those parts say, that those trees have been there since time immemorial.

THE farm-houses are generally built of stone, but sometimes of timber, and have three or four rooms. The windows are seldom of glass, but most frequently of paper. They have iron stoves in one of the rooms, and chimnies in the rest. The roofs are covered with boards. The crevices and chinks are filled up with clay. The other buildings are covered with straw.

THERE are several *Crosses* put up by the road side, which is parallel to the shores of the river. These crosses are very common in *Canada*, and are put up to excite devotion in the traveller. They are made of wood, five or six yards high, and proportionally broad. In that side which looks towards the road is a square hole, in which they place an image of our Saviour, the cross, or of the holy Virgin, with the child in her arms; and before that they put a piece of glass, to prevent its being spoiled by the weather. Those crosses, which are not far from churches, are very much adorned, and they put up about them all the instruments which they think the *Jews* employed in crucifying our Saviour, such as a hammer, tongs, nails, a flask of vinegar, and perhaps many more than were really made use of. A figure of the cock, which crowed when *St. Peter* denied our Lord, is commonly put at the top of the cross.

THE country on both sides was very delightful to-day, and the fine state of its cultivation added greatly to the beauty of the scene. It could really be called a village, beginning at *Montreal*, and ending at *Quebec*, which is a distance of more than one hundred and eighty miles; for the farm-houses are never above five arpens, and sometimes but three, asunder, a few places excepted. The prospect is exceedingly beautiful, when the river goes on for some miles together in a strait line, because it then shortens the distances between the houses, and makes them form exactly one continued village.

ALL the women in the country, without exception, wear caps of some kind or other. Their jackets are short, and so are their petticoats, which scarce reach down to the middle of their legs; and they have a silver cross hanging down on the breast. In general they are very laborious; however, I saw some, who, like the *English* women in the colonies, did nothing but prattle all the day. When they have any thing to do within doors, they (especially the girls) commonly sing songs, in which the words *Amour* and *Cœur* are very frequent. In the country it is usual, that when the husband receives a visit from persons of rank, and dines with them, his wife stands behind and serves him; but in the towns, the ladies are more distinguished, and would willingly assume an equal, if not a superior, power to their husbands. When they go out of doors they wear long cloaks, which cover all their other clothes, and are either grey, brown, or blue. The men some-

sometimes make use of them, when they are obliged to go in the rain. The women have the advantage of being in a *deshabille* under these cloaks, without any body's perceiving it.

We sometimes saw wind-mills near the farms. They were generally built of stone, with a roof of boards, which, together with its flyers, could be turned to the wind occasionally.

THE breadth of the river was not always equal to-day; in the narrowest place, it was about a quarter of an *English* mile broad; in other parts it was near two *English* miles. The shore was sometimes high and steep, and sometimes low, or sloping.

At three o'clock this afternoon we passed by the river, which falls into the river St. *Lawrence*, and comes from lake *Champlain*, in the middle of which latter is a large island. The yachts which go between *Montreal* and *Quebec*, go on the south-east side of this island, because it is deeper there; but the boats prefer the north-west side, because it is nearer, and yet deep enough for them. Besides this island there are several more hereabouts, which are all inhabited. Somewhat further, the country on both sides the river is uninhabited, till we come to the *Lac St. Pierre*; because it is so low, as to be quite overflowed at certain times of the year. To make up for this deficiency, the country, I am told, is as thickly inhabited further from the river, as we found it along the banks of the river.

Lac St. Pierre is a part of the river St. *Lawrence*, which is so broad that we could hardly

see

see any thing but sky and water before us, and I was every where told, that it is seven *French* miles long, and three broad. From the middle of this lake as it is called, you see a large high country in the west, which appears above the woods. In the lake are many places covered with a kind of rush, or *Scirpus palustris*, Linn. There are no houses in sight on either side of the lake, because the land is rather too low there; and in spring the water rises so high, that they may go with boats between the trees. However, at some distance from the shores, where the ground is higher, the farms are close together. We saw no islands in the lake this afternoon, but the next day we met with some.

LATE in the evening we left lake St. Pierre, and rowed up a little river called *Riviere de Loup*, in order to come to a house where we might pass the night. Having rowed about an *English* mile, we found the country inhabited on both sides of the river. Its shores are high; but the country in general is flat. We passed the night in a farm-house. The territory of *Montreal* extends to this place; but here begins the jurisdiction of the governor of *Trois Rivières*, to which place they reckon eight *French* miles from hence.

Aug. 3d. AT five o'clock in the morning we set out again, and first rowed down the little river till we came into the lake St. Pierre, which we went downwards. After we had gone a good way, we perceived a high chain of mountains in the north-west, which were very much elevated

elevated above the low, flat country. The north-west shore of lake St. Pierre was now in general very closely inhabited; but on the south-east side we saw no houses, and only a country covered with woods, which is sometimes said to be under water, but behind which there are, as I am told, a great number of farms. Towards the end of the lake, the river went into its proper bounds again, being not above a mile and a half broad, and afterwards it grows still narrower. From the end of Lake St. Pierre to *Trois Rivières*, they reckon three *French* miles, and about eleven o'clock in the morning we arrived at the latter place, where we attended divine service.

Trois Rivières is a little market town, which had the appearance of a large village; it is however reckoned among the three great towns of *Canada*, which are *Quebec*, *Montreal*, and *Trois Rivières*. It is said to ly in the middle between the two first, and thirty *French* miles distant from each. The town is built on the north side of the river St. *Lawrence*, on a flat, elevated sand, and its situation is very pleasant. On one side the river passes by, which is here an *English* mile and a half broad. On the other side, are fine corn-fields, though the soil is very much mixed with sand. In the town are two churches of stone, a nunnery, and a house for the friars of the order of St. *Francis*. This town is likewise the seat of the third governor in *Canada*, whose house is likewise of stone. Most of the other houses are of timber, a single story high, tolerably well built, and stand very much

much asunder; and the streets are crooked. The shore here consists of sand, and the rising grounds along it are pretty high. When the wind is very violent here, it raises the sand, and blows it about the streets, making it very troublesome to walk in them. The nuns, which are about twenty-two in number, are reckoned very ingenious in all kinds of needle-work. This town formerly flourished more than any other in *Canada*, for the *Indians* brought their goods to it from all sides; but since that time they go to *Montréal* and *Quebec*, and to the *English*, on account of their wars with the *Iroquese*, or Five Nations, and for several other reasons, so that this town is at present very much reduced by it. Its present inhabitants live chiefly by agriculture, though the neighbouring iron-works may serve in some measure to support them. About an *English* mile below the town, a great river falls into the river *St. Lawrence*, but first divides into three branches, so that it appears as if three rivers disembogued themselves there. This has given occasion to call the river and this town, *Trois Rivières* (*the Three Rivers*.)

The tide goes about a *French* mile above *Trois Rivières*, though it is so trifling as to be hardly observable. But about the equinoxes, and at the new moons and full moons in spring and autumn, the difference between the highest and lowest water is two feet. Accordingly the tide in this river goes very far up, for from the above-mentioned place to the

for they reckon about a hundred and fifty French miles.

Whilst my company were resting, I went on horseback to view the iron-work. The country which I passed through was pretty high, sandy, and generally flat. I saw neither stones nor mountains here.

THE iron-work, which is the only one in this country, lies three miles to the west of *Trois Rivières*. Here are two great forges, besides two lesser ones to each of the great ones, and under the same roof with them. The bellows were made of wood, and every thing else, as it is in Swedish forges. The melting ovens stand close to the forges, and are the same as ours. The ore is got two French miles and a half from the iron works, and is carried thither on sledges. It is a kind of moor ore *, which lies in veins, within six inches or a foot from the surface of the ground. Each vein is from six to eighteen inches deep, and below it is a white sand. The veins are surrounded with this sand on both sides, and covered at the top with a thin mould. The ore is pretty rich and lies in loose lumps in the veins, of the size of two fists, though there are a few which are near eighteen inches thick. These lumps are full of holes, which are filled with ochre. The ore is so soft that it may be crushed betwixt the fingers. They make use of a grey lime-stone, which is broke

* *Tophus Tubalcaini*, Linn. Syst. Nat. III. p. 187. n. 5. *Minera ferri subaquosa nigra cærulescens*. Wall. Mineral. p. 263. Germ. Ed. p. 340. n. 3. Iron ochres in the shape of crusts, are sometimes cavernous, as the *Bruss* ore. Forster's Mineral. p. 48.

in

in the neighbourhood, for promoting the fusibility of the ore; to that purpose they likewise employ a clay marle, which is found near this place. Charcoals are to be had in great abundance here, because all the country round this place is covered with woods, which have never been stirred. The charcoals from ever-green trees, that is, from the fir kind, are best for the forge, but those of deciduous trees are best for the smelting oven. The iron which is here made, was to me described as soft, pliable, and tough, and is said to have the quality of not being attacked by rust so easily as other iron; and in this point there appears a great difference between the *Spanish* iron and this in ship-building. This iron-work was first founded in 1737, by private persons, who afterwards ceded it to the king; they cast cannon and mortars here, of different sizes, iron stoves which are in use all over *Canada*, kettles, &c. not to mention the bars which are made here. They have likewise tried to make steel here, but cannot bring it to any great perfection, because they are unacquainted with the best manner of preparing it. Here are many officers and overseers, who have very good houses, built on purpose for them. It is agreed on all hands, that the revenues of the iron-work do not pay the expences which the king must every year be at in maintaining it. They lay the fault on the bad state of population, and say that the few inhabitants in the country have enough to do with agriculture, and that it therefore costs great trouble and large sums, to get a sufficient number of workmen.

But however plausible this may appear, yet it is surprising that the king should be a loser in carrying on this work; for the ore is easily broken, very near the iron-work, and very fusible. The iron is good, and can be very conveniently dispersed over the country. This is moreover the only iron-work in the country, from which every body must supply himself with iron tools, and what other iron he wants. But the officers and servants belonging to the iron-work, appear to be in very affluent circumstances. A river runs down from the iron-work, into the river *St. Lawrence*, by which all the iron can be sent in boats throughout the country at a low rate. In the evening I returned again to *Trois Rivières*.

Aug. 4th. AT the dawn of day we left this place and went on towards *Quebec*. We found the land on the north side of the river somewhat elevated, sandy, and closely inhabited along the water side. The south-east shore, we were told, is equally well inhabited; but the woods along that shore prevented our seeing the houses, which are built further up in the country, the land close to the river being so low as to be subject to annual inundations. Near *Trois Rivières*, the river grows somewhat narrow; but it enlarges again, as soon as you come a little below that place, and has the breadth of above two *English* miles.

As we went on, we saw several churches of stone, and often very well built ones. The shores of the river are closely inhabited for about three quarters of an *English* mile up the country;

country; but beyond that the woods and the wilderness encrease. All the rivulets falling into the river *St. Lawrence* are likewise well inhabited on both sides. I observed throughout *Canada*, that the cultivated lands ly only along the river *St. Lawrence*, and the other rivers in the country, the environs of towns excepted, round which the country is all cultivated and inhabited within the distance of twelve or eighteen *English* miles. The great islands in the river are likewise inhabited.

THE shores of the river now became higher, more oblique and steep, however they consisted chiefly of earth. Now and then some rivers, or great brooks, fall into the river *St. Lawrence*, among which one of the most considerable is the *Riviere Puante*, which unites to the south-east side with the river *St. Lawrence*, about two *French* miles below *Trois Rivières*, and has on its banks, a little way from its mouth, a town called *Becancourt*, which is wholly inhabited by *Abenakee Indians*, who have been converted to the *Roman catholic* religion; and have *Jesuits* among them. At a great distance, on the north-west side of the river, we saw a chain of very high mountains, running from north to south, elevated above the rest of the country, which is quite flat here without any remarkable hills.

HERE were several lime-kilns along the river; and the lime-stone employed in them is broke in the neighbouring high grounds. It is compact and grey, and the lime it yields is pretty white.

THE

THE fields here are generally sown with wheat, oats, maize, and pease. Gourds and water-melons are planted in abundance near the farms.

A Humming bird (*Trochillus Colubris*) flew among the bushes, in a place where we landed to-day. The French call it *Oiseau mouche*, and say it is pretty common in Canada; and I have seen it since several times at Quebec.

ABOUT five o'clock in the afternoon we were obliged to take our night's lodgings on shore, the wind blowing very strong against us, and being attended with rain. I found that the nearer we came to Quebec, the more open and free from woods was the country. The place where we passed the night is distant from Quebec twelve French miles.

THEY have a very peculiar method of catching fish near the shore here. They place hedges along the shore, made of twisted osiers, so close that no fish can get through them, and from one foot to a yard high, according to the different depth of the water. For this purpose they choose such places where the water runs off during the ebb, and leaves the hedges quite dry. Within this inclosure they place several wheels, or fish-traps, in the form of cylinders, but broader below. They are placed upright, and are about a yard high, and two feet and a half wide: on one side near the bottom is an entrance for the fishes, made of twigs, and sometimes of yarn made into a net. Opposite to this entrance, on the other side of the wheel, looking towards the lower part of the river, is another entrance,

entrance, like the first, and leading to a box of boards about four feet long, two deep, and two broad. Near each of the wheels is a hedge, leading obliquely to the long hedge, and making an acute angle with it. This latter hedge is made in order to lead the fish into the trap, and it is placed on that end of the long hedge which looks towards the upper part of the river; now when the tide comes up the river, the fish, and chiefly the eels, go up with it along the river side; when the water begins to ebb, the fish likewise go down the river, and meeting with the hedges, they swim along them, till they come through the wheels into the boxes of boards, at the top of which there is a hole with a cover, through which the fish could be taken out. This apparatus is chiefly made on account of the eels. In some places hereabouts they place nets instead of the hedges of twigs.

THE shores of the river now consisted no more of pure earth; but of a species of slate. They are very steep, and nearly perpendicular here, and the slates of which they consist are black, with a brown cast; and divisible into thin shivers, no thicker than the back of a knife. These slates moulder as soon as they are exposed to the open air, and the shore is covered with grains of small sand, which are nothing but particles of such mouldered slates. Some of the strata run horizontal, others obliquely, dipping to the south, and rising to the north, and sometimes the contrary way. Sometimes they form bendings like large semicircles: sometimes a perpendicular line cuts off the strata, to the depth

of two feet; and the slates on both sides of the line form a perpendicular and smooth wall. In some places hereabouts, they find amongst the slates a stratum about four inches thick of a grey, compact, but pretty soft lime-stone, of which the *Indians* for many centuries have made, and the *French* at present still make, tobacco-pipes *.

August 5th. THIS morning we continued our journey by rowing, the contrary wind hindering us from sailing. The appearance of the shores was the same as yesterday; they were high, pretty steep, and quite perpendicular; and consisted of the black slate before described. The country at the top was a plain without eminences, and closely inhabited along the river, for about the space of an *English* mile and a half inland. Here are no islands in this part of the river, but several stony places, perceptible at low water only, which have several times proved fatal to travellers. The breadth of the river varies; in some parts it was a little more than three quarters of a mile, in others half a mile, and in some above two miles. The inhabitants made use of the same method of catching eels along the shores here, as that which I have just before-mentioned. In many places they make use of nets made of osiers instead of the hedge.

* This lime-stone seems to be a marle, or rather a kind of stone-marle: for there is a whitish kind of it in the *Krim Tartary*, and near *Siwa* or *Thebes*, in *Greece*, which is employed by the *Turks* and *Tartars* for making heads of pipes, and that from the first place is called *K. ffikil*, and in the latter, *Sea-Scum*; it may be very easily cut, but grows harder in time. F.

BUGS (*Cimex lectularius*) abound in *Canada*; and I met with them in every place where I lodged, both in the towns and country, and the people know of no other remedy for them than patience.

THE Crickets (*Gryllus domesticus*) are also abundant in *Canada*, especially in the country, where these disagreeable guests lodge in the chimnies; nor are they uncommon in the towns. They stay here both summer and winter, and frequently cut clothes in pieces for pastime.

THE Cockroaches (*Blatta orientalis*) have never been found in the houses here.

THE shores of the river grow more sloping as you come nearer to *Quebec*. To the northward appears a high ridge of mountains. About two *French* miles and a half from *Quebec* the river becomes very narrow, the shores being within the reach of a musket-shot from each other. The country on both sides was sloping, hilly, covered with trees, and had many small rocks; the shore was stony. About four o'clock in the afternoon we happily arrived at *Quebec*. The city does not appear till one is close to it, the prospect being intercepted by a high mountain on the south side. However, a part of the fortifications appear at a good distance, being situate on the same mountain. As soon as the soldiers, who were with us, saw *Quebec*, they called out, that all those who had never been there before should be ducked, if they did not pay something to release themselves. This custom even the governor-general of *Canada* is obliged to

to submit to, on his first journey to *Montreal*. We did not care when we came in sight of this town to be exempted from this old custom, which is very advantageous to the rowers, as it enables them to spend a merry evening on their arrival at *Quebec*, after their troublesome labour.

IMMEDIATELY after my arrival, the officer who had accompanied me from *Montreal*, led me to the palace of the then vice-governor-general of *Canada*, the marquis *la Galissonniere*, a nobleman of uncommon qualities, who behaved towards me with extraordinary goodness, during the time he staid in this country. He had already ordered some apartments to be got ready for me, and took care to provide me with every thing I wanted; besides honouring me so far to invite me to his table, almost every day I was in town.

August 6th. *Quebec*, the chief city in *Canada*, lies on the western shore of the river *St. Lawrence*, close to the water's edge, on a neck of land, bounded by that river on the east side, and by the river *St. Charles* on the north side; the mountain, on which the town is built, rises still higher on the south side, and behind it begin great pastures; and the same mountain likewise extends a good way westward. The city is distinguished into the lower and the upper*. The lower lies on the river, eastward of the upper. The neck of land, I mentioned before, was formed by the dirt and filth, which had from time to time been accumulated there, and

* *La haute Ville et la basse Ville.*

by a rock which lay that way, not by any gradual diminution of the water. The upper city lies above the other, on a high hill, and takes up five or six times the space of the lower, though it is not quite so populous. The mountain, on which the upper city is situated, reaches above the houses of the lower city. Notwithstanding the latter are three or four stories high, and the view, from the palace, of the lower city (part of which is immediately under it) is enough to cause a swimming of the head. There is only one easy way of getting to the upper city, and there part of the mountain has been blown up. This road is very steep, notwithstanding it is made winding and serpentine. However, they go up and down it in carriages, and with waggons. All the other roads up the mountain are so steep, that it is very difficult to climb to the top of them. Most of the merchants live in the lower city, where the houses are built very close together. The streets in it are narrow, very rugged, and almost always wet. There is likewise a church, and a small market-place. The upper city is inhabited by people of quality, by several persons belonging to the different offices, by tradesmen, and others. In this part are the chief buildings of the town, among which the following are worthy particular notice.

I. THE *Palace* is situated on the west or steepest side of the mountain, just above the lower city. It is not properly a palace, but a large building of stone, two stories high, extending north and south. On the west side of it is a court-

a court-yard, surrounded partly with a wall, and partly with houses. On the east side, or towards the river, is a gallery as long as the whole building, and about two fathom broad, paved with smooth flags, and included on the out-sides by iron rails, from whence the city and the river exhibit a charming prospect. This gallery serves as a very agreeable walk after dinner, and those who come to speak with the governor-general wait here till he is at leisure. The palace is the lodging of the governor-general of *Canada*, and a number of soldiers mount the guard before it, both at the gate and in the court-yard; and when the governor, or the bishop, comes in or goes out, they must all appear in arms, and beat the drum. The governor-general has his own chapel where he hears prayers; however, he often goes to mass at the church of the *Recolets**, which is very near the palace.

II. *THE Churches* in this town are seven or eight in number, and all built of stone.

1. *THE Cathedral* church is on the right hand, coming from the lower to the upper city, somewhat beyond the bishop's house. The people were at present employed in ornamenting it. On its west side is a round steeple, with two divisions, in the lower of which are some bells. The pulpit, and some other parts within the church, are gilt. The seats are very fine.

2. *THE Jesuits* church is built in the form of a cross, and has a round steeple. This is the only church that has a clock, and I shall mention it more particularly below.

* A kind of *Franciscan* friars, called *Ordo Sti. Francisci strictioris observantiae*.

3. ^{2^d}THE *Recolets* church is opposite the gate of the palace, on the west side, looks well, and has a pretty high pointed steeple, with a division below for the bells.

4. THE church of the *Ursulines* has a round spire.

5. THE church of the hospital.

6. THE bishop's chapel.

7. THE church in the lower city was built in 1690, after the town had been delivered from the *English*, and is called *Notre Dame de la Victoire*. It has a small steeple in the middle of the roof, square at the bottom, and round at the top.

8. THE little chapel of the governor-general, may likewise be ranked amongst these churches.

III. THE bishop's house is the first, on the right hand, coming from the lower to the upper town. It is a fine large building, surrounded by an extensive court-yard and kitchen-garden on one side, and by a wall on the other.

IV. THE college of the *Jesuits*, which I will describe more particularly. It has a much more noble appearance, in regard to its size and architecture, than the palace itself, and would be proper for a palace if it had a more advantageous situation. It is about four times as large as the palace, and is the finest building in town. It stands on the north side of a market, on the south side of which is the cathedral.

V. THE house of the *Recolets* lies to the west, near the palace and directly over against it, and consists of a spacious building, with a large orchard, and kitchen-garden. The house is

two stories high. In each story is a narrow gallery with rooms and halls on one, or both sides.

VI. THE *Hôtel de Dieu*, where the sick are taken care of, shall be described in the sequel. The nuns, that serve the sick, are of the *Augustine* order.

VII. THE house of the clergy * is a large building, on the north-east side of the cathedral. Here is on one side a spacious court, and on the other towards the river, a great orchard, and kitchen-garden. Of all the buildings in the town none has so fine a prospect as that in the garden belonging to this house, which lies on the high shore, and looks a good way down the river. The Jesuits on the other hand have the worst, and hardly any prospect at all from their college, nor have the Recolets any fine views from their house. In this building all the clergy of *Quebec* lodge with their superior. They have large pieces of land in several parts of *Canada*, presented to them by the government, from which they derive a very plentiful income.

VIII. THE convent of the *Ursuline* nuns shall be mentioned in the sequel.

THESE are all the chief public buildings in the town, but to the north-west, just before the town, is

IX. THE house of the intendant, a public building, whose size makes it fit for a palace. It is covered with tin, and stands in a second lower town, situated southward upon the river

* *Le Séminaire.*

St. Charles. It has a large and fine garden on its north side. In this house all the deliberations concerning this province, are held; and the gentlemen who have the management of the police and the civil power meet here, and the intendant generally presides. In affairs of great consequence the governor-general is likewise here. On one side of this house is the store-house of the crown, and on the other the prison.

MOST of the houses in *Quebec* are built of stone, and in the upper city they are generally but one story high, the public buildings excepted. I saw a few wooden houses in the town, but they must not be rebuilt when decayed. The houses and churches in the city are not built of bricks, but the black lime-slates of which the mountain consists, whereon *Quebec* stands. When these lime-slates are broke at a good depth in the mountain, they look very compact at first, and appear to have no shivers, or *lamellæ*, at all; but after being exposed a while to the air, they separate into thin leaves. These slates are soft, and easily cut; and the city-walls, together with the garden-walls, consist chiefly of them. The roofs of the public buildings are covered with common slates, which are brought from *France*, because there are none in *Canada*.

THE slated roofs have for some years withstood the changes of air and weather, without suffering any damage. The private houses have roofs of boards, which are laid parallel to the spars, and sometimes to the eaves, or sometimes obliquely.

obliquely. The corners of houses are made of a grey small-grained lime-stone, which has a strong smell, like the *stink-stone* *, and the windows are generally enclased with it. This lime-stone is more useful in those places than the lime-slates, which always shiver in the air. The out-sides of the houses are generally white-washed. The windows are placed on the inner side of the walls; for they have sometimes double windows in winter. The middle roof has two, or at most three spars, covered with boards only. The rooms are warmed in winter by small iron stoves, which are removed in summer. The floors are very dirty in every house, and have all the appearance of being cleaned but once every year.

THE *Powder magazine* stands on the summit of the mountain, on which the city is built, and southward of the palace.

THE streets in the upper city have a sufficient breadth, but are very rugged, on account of the rock on which it lies; and this renders them very disagreeable and troublesome, both to foot-passengers and carriages. The black lime-slates basset out and project every where into sharp angles, which cut the shoes in pieces. The streets cross each other at all angles, and are very crooked.

THE many great orchards and kitchen-gardens, near the house of the Jesuits, and other public and private buildings, make the town

* *Nitrum suillum*. *Lynn*. Syst. III. p. 86. *Lapis suillus prismaticus* Waller. Mineral. p. 59. a. 1. *Stink-stone*, *Forster's* Introd. to Mineralogy. p. 40.

appear very large, though the number of houses it contains is not very considerable. Its extent from south to north is said to be about six hundred toises, and from the shore of the river along the lower town, to the western wall between three hundred and fifty and four hundred toises. It must be here observed, that this space is not yet wholly inhabited; for on the west and south side, along the town walls, are large pieces of land without any buildings on them, and destined to be built upon in future times, when the number of inhabitants will be increased in *Quebec*.

THE bishop, whose see is in the city, is the only bishop in *Canada*. His diocese extends to *Louisiana*, on the *Mexican* gulf southward, and to the south-seas westward.

No bishop, the pope excepted, ever had a more extensive diocese. But his spiritual flock is very inconsiderable at some distance from *Quebec*, and his sheep are often many hundred miles distant from each other.

Quebec is the only sea-port and trading town in all *Canada*, and from thence all the produce of the country is exported. The port is below the town in the river, which is there about a quarter of a *French* mile broad, twenty-five fathoms deep, and its ground is very good for anchoring. The ships are secured from all storms in this port; however, the north-east wind is the worst, because it can act more powerfully. When I arrived here, I reckoned thirteen great and small vessels, and they expected more to come in. But it is to be remarked,

marked, that no other ships than *French* ones can come into the port, though they may come from any place in *France*, and likewise from the *French* possessions in the *West-Indies*. All the foreign goods, which are found in *Montreal*, and other parts of *Canada*, must be taken from hence. The *French* merchants from *Montreal*, on their side, after making a six months stay among several *Indian* nations, in order to purchase skins of beasts and furs, return about the end of *August*, and go down to *Quebec* in *September* or *October*, in order to sell their goods there. The privilege of selling the imported goods, it is said, has vastly enriched the merchants of *Quebec*; but this is contradicted by others, who allow that there a few in affluent circumstances, but that the generality possess no more than is absolutely necessary for their bare subsistence, and that several are very much in debt, which they say is owing to their luxury and vanity. The merchants dress very finely, and are extravagant in their repasts; and their ladies are every day in full dress, and as much adorned as if they were to go to court.

THE town is surrounded on almost all sides by a high wall, and especially towards the land. It was not quite completed when I was there, and they were very busy in finishing it. It is built of the above-mentioned black lime-slate, and of a dark-grey sand-stone. For the corners of the gates they have employed a grey limestone. They have not made any walls towards the water side, but nature seems to have worked for them, by placing a rock there which it is impossible

impossible to ascend. All the rising land thereabouts is likewise so well planted with cannon, that it seems impossible for an enemy's ships or boats to come to the town without running into imminent danger of being sunk. On the land side the town is likewise guarded by high mountains ; so that nature and art have combined to fortify it.

Quebec was founded by its former governor, *Samuel de Champlain*, in the year 1608. We are informed by history, that its rise was very slow. In 1629, towards the end of *July*, it was taken by two *Englishmen*, *Lewis* and *Thomas Kerk*, by capitulation, and surrendered to them by the above-mentioned *de Champlain*. At that time, *Canada* and *Quebec* were wholly destitute of provisions ; so that they looked upon the *English* more as their deliverers than their enemies. The above-mentioned *Kerks*, were the brothers of the *English* admiral *David Kerk*, who lay with his fleet somewhat lower in the river. In the year 1632, the *French* got the town of *Quebec*, and all *Canada*, returned to them by the peace. It is remarkable, that the *French* were doubtful whether they should reclaim *Canada* from the *English*, or leave it to them. The greater part were of opinion, that to keep it would be of no advantage to *France*, because the country was cold ; and the expences far exceeded its produce ; and because *France* could not people so extensive a country, without weakening herself, as *Spain* had done before ; that it was better to keep the people in *France*, and employ them in all sorts of manufactures, which

which would oblige the other *European* powers who have colonies in *America* to bring their raw goods to *French* ports, and take *French* manufactures in return. Those on the other hand who had more extensive views, knew that the climate was not so rough as it had been represented. They likewise believed that that which caused the expences was a fault of the company, because they did not manage the country well. They would not have many people sent over at once, but little by little, so that *France* might not feel it. They hoped that this colony would in future times make *France* powerful, for its inhabitants would become more and more acquainted with the herring, whale, and cod fisheries, and likewise with the taking of seals; and that by this means *Canada* would become a school for training up seamen. They further mentioned the several sorts of furs, the conversion of the *Indians*, the ship-building, and the various uses of the extensive woods. And lastly, that it would be a considerable advantage to *France*, even though they should reap no other benefit, to hinder by this means the progress of the *English* in *America*, and of their increasing power, which would otherwise become insupportable to *France*; not to mention several other reasons. Time has shewn that these reasons were the result of mature judgment, and that they laid the foundation of the rise of *France*. It were to be wished that we had been of the same opinion in *Sweden*, at a time when we were actually in possession of *New Sweden*, the finest and best province in all *North America*, or when

we were yet in a condition to get the possession of it. Wisdom and foresight does not only look upon the present times, but even extends its views to futurity.

IN the year 1663, at the beginning of *February*, the great earthquake was felt in *Quebec* and a great part of *Canada*, and there are still some vestiges of its effects at that time; however, no lives were lost.

ON the 16th of *October* 1690, *Quebec* was besieged by the *English* general *William Phips*, who was obliged to retire a few days after, with great loss. The *English* have tried several times to repair their losses, but the river *St. Lawrence* has always been a very good defence for this country. An enemy, and one that is not acquainted with this river, cannot go upwards in it, without being ruined; for in the neighbourhood of *Quebec*, it abounds with hidden rocks, and has strong currents in some places, which oblige the ships to make many windings.

THE name of *Quebec* it is said is derived from a *Norman* word, on account of its situation on a neck or point of land. For when one comes up in the river by *l'Isle d'Orleans*, that part of the river *St. Lawrence* does not come in sight, which lies above the town, and it appears as if the river *St. Charles*, which lies just before, was a continuation of the *St. Lawrence*. But on advancing further the true course of the river comes within sight, and has at first a great similarity to the mouth of a river or a great bay. This has given occasion to a sailor, who saw it unexpectedly, to cry out in his provincial dialect,

Que bec *, that is, *what a point of land!* and from hence it is thought the city obtained its name. Others derive it from the *Algonkin* word *Quebego* or *Quebec*, signifying that which grows narrow, because the river becomes narrower as it comes nearer to the town.

THE river *St. Lawrence* is exactly a quarter of a *French* mile, or three quarters of an *English* mile broad at *Quebec*. The salt water never comes up to the town in it, and therefore the inhabitants can make use of the water in the river for their kitchens, &c. All accounts agree that notwithstanding the breadth of this river, and the violence of its course, especially during ebb, it is covered with ice during the whole winter, which is strong enough for walking, and a carriage may go over it. It is said to happen frequently that, when the river has been open in *May*, there are such cold nights in this month, that it freezes again, and will bear walking over. This is a clear proof of the intenseness of the frost here, especially when one considers that which I shall mention immediately after, about the ebbing and flowing of the tide in this river. The greatest breadth of the river at its mouth, is computed, to be twenty-six *French* miles or seventy-eight *English* miles, though the boundary between the sea, and the river cannot well be ascertained as the latter gradually loses itself in, and unites with the former. The greatest part of the water contained in the numerous lakes of *Canada*, four or

* Meaning *Quel bec*.

five of which are like large seas, is forced to disembogue into the sea by means of this river alone. The navigation up this river from the sea is rendered very dangerous by the strength of the current, and by the number of sand-banks, which often arise in places where they never were before. The *English* have experienced this formation of new sands once or twice, when they attempted to conquer *Canada*. Hence the *French* have good reasons to look upon the river as a barrier to *Canada**.

THE tide goes far beyond *Quebec* in the river *St. Lawrence*, as I have mentioned above. The difference between high and low water is generally between fifteen and sixteen feet, *French* measure; but with the new and full moon, and when the wind is likewise favourable, the difference is seventeen or eighteen feet, which is indeed very considerable.

August 7th. *Ginseng* is the current *French* name in *Canada*, of a plant, the root of which has a very great value in *China*†. It has been growing since immemorial in the *Chinese Tartary* and in *Corea*, where it is annually collected and brought to *China*. Father *Du Halde*

* The river *St. Lawrence* was no more a barrier to the victorious *British* fleets in the last war, nor were the fortifications of *Quebec* capable to withstand the gallant attacks of their land army, which disappointed the good *Frenchmen* in *Canada* of their too sanguine expectations; and, at present, they are rather happy at this change of fortune, which has made them subjects of the *British* sceptre, whose mild influence they at present enjoy. F.

† Botanists know this plant by the name of *Panax quinquefolium*, foliis ternatis quinatis LINN. Mat. Med. § 116. Sp. plant. p. 15. 12. Gronov. Fl. Virg. p. 147. See likewise *Catesby's Nat. Hist. of Carolina*, Vol. III. p. 16. t. 16. *Laffitau Gins.* 51. t. 1. Father *Charlevoix Hist. de la Nouvelle France*, Tom. IV. p. 308. fig. XIII. and Tom. V. p. 24.

says, it is the most precious, and the most useful of all the plants in eastern *Tartary*; and attracts, every year, a number of people into the deserts of that country. The *Mantechoux-Tartars* call it *Orhota*, that is the most noble, or the queen of plants. The *Tartars* and *Chinefe* praise it very much, and ascribe to it the power of curing several dangerous diseases, and that of restoring to the body new strength, and supplying the loss caused by the exertion of the mental, and corporeal faculties. An ounce of *Ginseng* bears the surprizing price of seven or eight ounces of silver at *Peking*. When the *French* botanists in *Canada* first saw a figure of it, they remembered to have seen a similar plant in this country. They were confirmed in their conjecture by considering that several settlements in *Canada*, ly under the same latitude with those parts of the *Chinefe Tartary*, and *China*, where the true *Ginseng* grows wild. They succeeded in their attempt, and found the same *Ginseng* wild and abundant in several parts of *North-America*, both in *French* and *English* plantations, in plain parts of the woods. It is fond of shade, and of a deep rich mould, and of land which is neither wet nor high. It is not every where very common, for sometimes one may search the woods for the space of several miles without finding a single plant of it; but in those spots where it grows it is always found in great abundance. It flowers in *May* and *June*, and its berries are ripe at the end of *August*. It bears transplanting very well, and will soon thrive in its new ground. Some people here, who have gathered the berries, and put them into their kitchen-gardens, told me that they

they lay one or two years in the ground without coming up. The *Iroquese*, or Five (Six) Nations, call the *Ginseng* roots *Garangtonging*, which it is said signifies *a child*, the roots bearing a faint resemblance to it: but others are opinion that they mean the thigh and leg by it, and the roots look pretty like it. The *French* use this root for curing the asthma, as a stomachic, and to promote fertility in women. The trade which is carried on with it here is very brisk; for they gather great quantities of it, and send them to *France*, from whence they are brought to *China*, and sold there to great advantage*. It is said the merchants in *France* met with amazing success in this trade at the first outset, but by continuing to send the *Ginseng* over to *China*, its price is fallen considerably there, and consequently in *France* and *Canada*; however, they still find their account in it. In the summer of 1748, a pound of *Ginseng* was sold for six Francs, or Livres, at *Quebec*; but its common price here is one hundred Sols, or five Livres. During my stay in *Canada*, all the merchants at *Quebec* and *Montreal* received orders from their correspondents in *France* to send over a quantity of *Ginseng*, there being an uncommon demand for it this summer. The roots were accordingly collected in *Canada* with all possible diligence; the *Indians* especially travelled about the country in order to collect as much as they could together, and to sell it to the

* Mr. Osbeck seems to doubt whether the *Europeans* reap any advantages from the *Ginseng* trade or not, because the *Chinese* do not value the *Canada* roots so much as those of the *Chinese-Tartary*; and therefore the former bear scarce half the price of the latter. See *Osbeck's Voyage to China*, Vol. I. p. 223. F.

merchants at *Montreal*. The *Indians* in the neighbourhood of this town were likewise so much taken up with this business, that the *French* farmers were not able during that time to hire a single *Indian*, as they commonly do, to help them in the harvest. Many people feared lest by continuing for several successive years, to collect these plants without leaving one or two in each place to propagate their species, there will soon be very few of them left; which I think is very likely to happen, for by all accounts they formerly grew in abundance round *Montreal*, but at present there is not a single plant of it to be found, so effectually have they been rooted out. This obliged the *Indians* this summer to go far within the *English* boundaries to collect these roots. After the *Indians* have sold the fresh roots to the merchants, the latter must take a great deal of pains with them. They are spread on the floor to dry, which commonly requires two months and upwards, according as the season is wet or dry. During that time they must be turned once or twice every day, lest they should putrify or moulden. *Ginseng* has never been found far north of *Montreal*. The superior of the clergy here, and several other people, assured me that the *Chinese* value the *Canada Ginseng* as much as the *Tartarian**; and that no one ever had been entirely acquainted with the *Chinese* method of preparing it. However it is thought amongst other prepa-

* This is directly opposite to Mr Oßbeck's assertion. See the preceding page, 272. note †. F.

rations they dip the roots in a decoction of the leaves of *Ginseng*. The roots prepared by the *Chinese* are almost transparent, and look like horn in the inside; and the roots which are fit for use, must be heavy and compact in the inside.

THE plant which throughout *Canada* bears the name of *Herba capillaris* is likewise one of those with which a great trade is carried on in *Canada*. The *English* in their plantations call it *Maiden-hair*; it grows in all their *North-American* colonies, which I travelled through, and likewise in the southern parts of *Canada*; but I never found it near *Quebec*. It grows in the woods in shady places and in a good soil *. Several people in *Albany* and *Canada*, assured me that its leaves were very much used instead of tea, in consumptions, coughs, and all kinds of pectoral diseases. This they have learnt from the *Indians*, who have made use of this plant for these purposes since times immemorial. This *American* maiden-hair is reckoned preferable in surgery to that which we have in *Europe* †; and therefore they send a great quantity of it to *France*, every year. The price is different, and regulated according to the goodness of the plant, the care in preparing it, and the quantity which is to be got. For if it be brought to *Quebec* in great abundance, the price

* It is the *Adiantum pedatum* of LINN. sp. pl. p. 1557. *Cornutus*, in his *Canadens. plant. historia*. p. 7. calls it *Adiantum Americanum*, and gives together with the description, a figure of it, p. 6.

† *Adiantum Capillus Veneris*. True Maiden-hair.

falls;

falls; and on the contrary it rises, when the quantity gathered is but small. Commonly the price at *Quebec* is between five and fifteen sols a pound. The *Indians* went into the woods about this time, and travelled far above *Mont-real* in quest of this plant.

THE *Kitchen herbs* succeed very well here. The white cabbage is very fine, but sometimes suffers greatly from worms. Onions (*Allium cepa*) are very much in use here, together with other species of leeks. They likewise plant several species of gourds, melons, fallads, wild succory or wild endive (*Cichorium Intybus*), several kinds of pease, beans, *French* beans, carrots, and cucumbers. They have plenty of red beets, horse-raddishes and common raddishes, thyme, and marjoram. Turneps are sown in abundance, and used chiefly in winter. Parsneps are sometimes eaten, though not very common. Few people took notice of potatoes; and neither the common (*Solanum tuberosum*) nor the *Bermuda* ones (*Convolvulus Batatas*) were planted in *Canada*. When the *French* here are asked why they do not plant potatoes, they answer that they cannot find any relish in them, and they laugh at the *English* who are so fond of them. Throughout all *North-America* the root cabbage * (*Brassica gongylodes* Linn.) is unknown to the *Swedes*, *English*, *Dutch*, *Irish*, *Germans*, and *French*. Those who have been

* This is a kind of cabbage, with large round eatable roots; which grow out above the ground wherein it differs from the turnep-cabbage (*Brassica Napobrassica*) whose root grows in the ground. Both are common in *Germany*, and the former likewise in *Italy*.

employed in sowing and planting kitchen herbs in *Canada*, and have had some experience in gardening, told me that they were obliged to send for fresh seeds from *France* every year, because they commonly lose their strength here in the third generation, and do not produce such plants as would equal the original ones in taste and goodness.

THE *Europeans* have never been able to find any characters, much less writings, or books, among the *Indians*, who have inhabited *North-America* since time immemorial, and seem to be all of one nation, and speak the same language. These *Indians* have therefore lived in the greatest ignorance and darkness, during some centuries, and are totally unacquainted with the state of their country before the arrival of the *Europeans*, and all their knowledge of it consists in vague traditions, and mere fables. It is not certain whether any other nations possessed *America*, before the present *Indian* inhabitants came into it, or whether any other nations visited this part of the globe before *Columbus* discovered it. It is equally unknown, whether the *Christian* religion was ever preached here in former times. I conversed with several *Jesuits*, who undertook long journies in this extensive country, and asked them, whether they had met with any marks that there had formerly been some *Christians* among the *Indians* which lived here? but they all answered, they had not found any. The *Indians* have ever been as ignorant of architecture and manual labour as of science and writing. In vain does one seek for well built towns and houses, artificial fortifications,

high

high towers and pillars, and such like, among them, which the old world can shew, from the most antient times. Their dwelling-places are wretched huts of bark, exposed on all sides to wind, and rain. All their masonry-work consists in placing a few grey rock-stones on the ground, round their fire-place, to prevent the firebrands from spreading too far in their hut, or rather to mark out the space intended for the fire-place in it. Travellers do not enjoy a tenth part of the pleasure in traversing these countries, which they must receive on their journies through our old countries, where they, almost every day, meet with some vestige or other of antiquity: now an antient celebrated town presents itself to view; here the remains of an old castle; there a field where, many centuries ago, the most powerful, and the most skilful generals, and the greatest kings, fought a bloody battle; now the native spot and residence of some great or learned man. In such places the mind is delighted in various ways, and represents all past occurrences in living colours to itself. We can enjoy none of these pleasures in *America*. The history of the country can be traced no further, than from the arrival of the *Europeans*; for every thing that happened before that period, is more like a fiction or a dream, than any thing that really happened. In later times there have, however, been found a few marks of antiquity, from which it may be conjectured, that *North-America* was formerly inhabited by a nation more versed in science, and more civilized, than that which the

the *Europeans* found on their arrival here; or that a great military expedition was undertaken to this continent, from these known parts of the world.

THIS is confirmed by an account which I received from Mr. *de Verandriere*, who has commanded the expedition to the south-sea in person, of which I shall presently give an account. I have heard it repeated by others, who have been eye-witnesses of every thing that happened on that occasion. Some years before I came into *Canada*, the then governor-general, *Chevalier de Beauharnois*, gave Mr. *de Verandrier* an order to go from *Canada*, with a number of people, on an expedition across *North-America* to the south-sea, in order to examine how far those two places are distant from each other, and to find out what advantages might accrue to *Canada*, or *Louisiana*, from a communication with that ocean. They set out on horseback from *Montreal*, and went as much due west as they could, on account of the lakes, rivers, and mountains, which fell in their way. As they came far into the country, beyond many nations, they sometimes met with large tracts of land free from wood, but covered with a kind of very tall grass, for the space of some days journey. Many of these fields were every where covered with furrows, as if they had been ploughed and sown formerly. It is to be observed, that the nations, which now inhabit *North-America*, could not cultivate the land in this manner, because they never made use of horses, oxen, ploughs, or any instruments of husbandry, nor had they ever seen a plough before

before the *Europeans* came to them. In two or three places, at a considerable distance from each other, our travellers met with impressions of the feet of grown people and children in a rock; but this seems to have been no more than a *Lusus Naturæ*. When they came far to the west, where, to the best of their knowledge, no *Frenchmen*, or *European*, had ever been, they found in one place in the woods, and again on a large plain, great pillars of stone, leaning upon each other. The pillars consisted of one single stone each, and the *Frenchmen* could not but suppose, that they had been erected by human hands. Sometimes they have found such stones laid upon one another, and, as it were, formed into a wall. In some of those places where they found such stones, they could not find any other sorts of stone. They have not been able to discover any characters, or writing, upon any of these stones, though they have made a very careful search after them. At last they met with a large stone, like a pillar, and in it a smaller stone was fixed, which was covered on both sides with unknown characters. This stone, which was about a foot of *French* measure in length, and between four or five inches broad, they broke loose, and carried to *Canada* with them, from whence it was sent to *France*, to the secretary of state, the count of *Maurepas*. What became of it afterwards is unknown to them, but they think it is yet preserved in his collection. Several of the *Jesuits*, who have seen and handled this stone in *Canada*, unanimously affirm, that the letters on it are the same with those which in the books,

containing accounts of *Tataria*, are called *Tatarian* characters *; and that, on comparing both together, they found them perfectly alike. Not-

* This account seems to be highly probable, for we find in *Marco Paolo* that *Kublai-Khan*, one of the successors of *Genghis-Khan*, after the conquest of the southern part of *China*, sent ships out to conquer the kingdom of *Japan*, or, as they call it, *Nipangri*, but in a terrible storm the whole fleet was cast away, and nothing was ever heard of the men in that fleet. It seems that some of these ships were cast to the shores, opposite the great *American* lakes, between forty and fifty degrees north latitude, and there probably erected these monuments, and were the ancestors of some nations who are called *Mozomlecks*, and have some degree of civilization. Another part of this fleet, it seems, reached the country opposite *Mexico*, and there founded the *Mexican* empire, which, according to their own records as preserved by the *Spaniards*, and in their painted annals in *Purchas's Pilgrimage*, are very recent; so that they can scarcely remember any more than seven princes before *Motexuma II.* who was reigning when the *Spaniards* arrived there, 1519, under *Fernando Cortez*; consequently the first of these princes, supposing each had a reign of thirty-three years and four months, and adding to it the sixteen years of *Motexuma*, began to reign in the year 1270, when *Kublai-Khan*, the conqueror of all *China* and of *Japan*, was on the throne, and in whose time happened, I believe, the first abortive expedition to *Japan*, which I mentioned above, and probably furnished *North-America* with civilized inhabitants. There is, if I am not mistaken, a great similarity between the figures of the *Mexican* idols, and those which are usual among the *Tartars*, who embrace the doctrines and religion of the *Dalai-Lama*, whose religion *Kublai-Khan* first introduced among the *Monguls*, or *Moguls*. The savage *Indians* of *North-America*, it seems, have another origin, and are probably descended from the *Yukagbiri*, and *Tchuckicbai*, inhabitants of the most easterly and northerly part of *Asia*, where, according to the accounts of the *Russians*, there is but a small traject to *America*. The ferocity of these nations, similar to that of the *Americans*, their way of painting, their fondness of inebriating liquors, (which the *Yukagbiri* prepare from poisonous and inebriating mushrooms, bought of the *Russians*) and many other things, shew them plainly to be of the same origin. The *Esquimaux* seems to be the same nation with the inhabitants of *Greenland*, the *Samoyedes*, and *Lapponians*. *South-America*, and especially *Peru*, is probably peopled from the great unknown south continent, which is very near *America*, civilized, and full of inhabitants of various colours; who therefore might very easily be cast on the *American* continent, in boats, or proas. F.

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withstanding the questions which the *French* on the south-sea expedition asked the people there concerning the time when, and by whom those pillars were erected? what their traditions and sentiments concerning them were? who had wrote the characters? what was meant by them? what kind of letters they were? in what language they were written? and other circumstances; yet they could never get the least explication, the *Indians* being as ignorant of all those things as the *French* themselves. All they could say was, that these stones had been in those places time immemorial. The places where the pillars stood were near nine hundred *French* miles westward of *Montreal*. The chief intention of this journey, viz. to come to the south-sea, and to examine its distance from *Canada*, was never attained on this occasion. For the people sent out for that purpose, were induced to take part in a war between some of the most distant *Indian* nations, in which some of the *French* were taken prisoners, and the rest obliged to return. Among the last and most westerly *Indians* they were with, they heard that the south-sea was but a few days journey off; that they (the *Indians*) often traded with the *Spaniards* on that coast, and sometimes likewise they went to *Hudson's Bay*, to trade with the *English*. Some of these *Indians* had houses, which were made of earth. Many nations had never seen any *Frenchmen*; they were commonly clad in skins, but many were quite naked.

ALL those who had made long journies in *Canada* to the south, but chiefly westward, agreed that

that there were many great plains destitute of trees, where the land was furrowed, as if it had been ploughed. In what manner this happened no one knows; for the corn-fields of a great village, or town, of the *Indians*, are scarce above four or six of our acres in extent; whereas those furrowed plains sometimes continue for several days journey, except now and then a small smooth spot, and here and there some rising grounds.

I COULD not hear of any more vestiges of antiquity in *Canada*, notwithstanding my careful enquiries after them. In the continuation of my journey, for the year 1750 *, I shall find an opportunity of speaking of two other remarkable curiosities. Our *Swedish* Mr. *George Westman*, A. M. has clearly and circumstantially shewn that our *Scandinavians*, chiefly the northern ones, long before *Columbus's* time, have undertaken voyages to *North-America*; see his dissertation on that subject, which he read at *Abo* in 1747, for obtaining his degree.

August 8th. THIS morning I visited the largest nunnery in *Quebec*. Men are prohibited from visiting under very heavy punishments; except in some rooms, divided by iron rails, where the men and women, that do not belong to the convent, stand without, and the nuns within the rails, and converse with each other. But to increase the many favours which the *French* nation heaped upon me, as a *Swede*, the governor-general got the bishop's leave for me to enter

* This part has not yet been published.

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the convent, and see its construction. The bishop alone has the power of granting this favour, but he does it very sparingly. The royal physician, and a surgeon, are however at liberty to go in as often as they think proper. Mr. *Gauthier*, a man of great knowledge in physic and botany, was at present the royal physician here, and accompanied me to the convent. We first saw the hospital, which I shall presently describe, and then entered the convent, which forms a part of the hospital. It is a great building of stone, three stories high, divided in the inside into long galleries, on both sides of which are cells, halls, and rooms. The cells of the nuns are in the highest story, on both sides of the gallery; they are but small; not painted in the inside, but hung with paper pictures of saints, and of our Saviour on the cross. A bed with curtains, and good bed-clothes, a little narrow desk, and a chair or two, is the whole furniture of a cell. They have no fires in winter, and the nuns are forced to ly in the cold cells. On the gallery is a stove, which is heated in winter, and as all the rooms are left open, some warmth can by this means come into them. In the middle story are rooms where they pass the day together. One of these is the room where they are at work; this is large, finely painted and adorned, and has an iron stove. Here they were at their needle-work, embroidering, gilding, and making flowers of silk, which bear a great similarity to the natural ones. In a word, they were all employed in such nice works, as were suitable to ladies of their rank in life. In another hall

hall they assembled to hold their juntos. Another apartment contains those who are indisposed; but such as are more dangerously ill have rooms to themselves. The novices, and new comers, are taught and instructed in another hall. Another is destined for their refectory, or dining-room, in which are tables on all sides; on one side of it is a small desk, on which is laid a *French* book, concerning the life of those saints who are mentioned in the New Testament. When they dine, all are silent; one of the eldest gets into the desk, and reads a part of the book before-mentioned; and when they are gone through it, they read some other religious book. During the meal, they sit on that side of the table which is turned towards the wall. Almost in every room is a gilt table, on which are placed candles, together with the picture of our Saviour on the cross, and of some saints: before these tables they say their prayers. On one side is the church, and near it a large gallery, divided from the church by rails, so that the nuns could only look into it. In this gallery they remain during divine service, and the clergyman is in the church, where the nuns reach him his sacerdotal clothes through a hole, for they are not allowed to go into the vestry, and to be in the same room with the priest. There are still several other rooms and halls here, the use of which I do not remember. The lowest story contains a kitchen, bake house, several butteries, &c. In the garrets they keep their corn, and dry their linen. In the middle story is a balcony on the outside, almost round the

the whole building, where the nuns are allowed to take air. The prospect from the convent is very fine on every side; the river, the fields, and the meadows out of town, appear there to great advantage. On one side of the convent is a large garden, in which the nuns are at liberty to walk about; it belongs to the convent, and is surrounded with a high wall. There is a quantity of all sorts of fruits in it. This convent, they say, contains about fifty nuns, most of them advanced in years, scarce any being under forty years of age. At this time there were two young ladies among them who were instructed in those things which belong to the knowledge of nuns. They are not allowed to become nuns immediately after their entrance, but must pass through a noviciate of two or three years, in order to try whether they will be constant. For, during that time, it is in their power to leave the convent, if a monastic life does not suit their inclinations. But as soon as they are received among the nuns, and have made their vows, they are obliged to continue their whole life in it: if they appear willing to change their mode of life, they are locked up in a room, from whence they can never get out. The nuns of this convent never go further from it than to the hospital, which lies near it, and even makes a part of it. They go there to attend the sick, and to take care of them. I was told by several people here, some of which were ladies, that none of the nuns went into a convent, till she had attained to an age in which she had small hopes of ever getting a husband. The nuns

nuns of all the three convents in *Quebec* looked very old, by which it seems that there is some foundation for this account.

THE hospital, as I have before-mentioned, makes a part of the convent. It consists of two large halls, and some rooms near the apothecary's shop. In the halls are two rows of beds on each side, within each other. The beds next to the wall are furnished with curtains, the outward ones are without them. In each bed are fine bed-clothes, with clean double sheets. As soon as a sick person has left his bed, it is made again, in order to keep the hospital in cleanliness and order. The beds are two or three yards distant, and near each is a small table. There are good iron stoves, and fine windows, in this hall. The nuns attend the sick people, and bring them meat, and other necessaries. Besides them there are some men who attend, and a surgeon. The royal physician is likewise obliged to come hither, once or twice every day, to look after every thing, and give prescriptions. They commonly receive sick soldiers into this hospital, who are very numerous in *July* and *August*, when the king's ships arrive, and in time of war. But at other times, when no great number of soldiers are sick, other people can take their places, as far as the number of empty beds will reach. The king finds every thing here that is requisite for the sick persons, viz. provisions, medicines, fuel, &c. Those who are very ill are put into separate rooms, in order that the noise in the great hall may not be troublesome to them.

THE civility of the inhabitants here is more refined than that of the *Dutch* and *English*, in the settlements belonging to *Great Britain*; but the latter, on the other hand, do not idle their time away in dressing, as the *French* do here. The ladies, especially, dress and powder their hair every day, and put their locks in papers every night; which idle custom was not introduced in the *English* settlements. The gentlemen wear generally their own hair; but some have wigs. People of rank are used to wear laced cloaths, and all the crown-officers wear swords. All the gentlemen, even those of rank, the governor-general excepted, when they go into town on a day that looks like rain, carry their cloaks on their left arm. Acquaintances of either sex, who have not seen each other for some time, on meeting again salute with mutual kisses.

CONCERNING the *Canada* plants, I can here add, that the further you go northward, the more you find the plants are the same with the *Swedish* ones: thus, on the north side of *Quebec*, a fourth part of the plants, if not more, are the same with the spontaneous plants in *Sweden*. A few plants and trees, which have a particular quality, or are applied to some particular use, shall, however, be mentioned in a few words, in the sequel.

THE *Rein-deer Moss* (*Lichen rangiferinus*) grows plentiful in the woods round *Quebec*, M. *Gaultier*, and several other gentlemen, told me, that the *French*, on their long journeys through the woods, on account of their fur trade

trade with the *Indians*, sometimes boil this moss, and drink the decoction, for want of better food, when their provisions are at an end; and they say it is very nutritive. Several *Frenchmen*, who have been in the *Terra Labrador*, where there are many rein-deer (which the *French* and *Indians* here call *Cariboux*) related, that all the land there is in most places covered with this rein-deer moss, so that the ground looks as white as snow.

August 10th. THIS day I dined with the Jesuits. A few days before, I paid my visit to them; and the next day their president, and another father Jesuit, called on me, to invite me to dine with them to-day. I attended divine service in their church, which is a part of their house. It is very fine within, though it has no seats; for every one is obliged to kneel down during the service. Above the church is a small steeple, with a clock. The building the Jesuits live in is magnificently built, and looks exceeding fine, both without and within; which gives it a similarity to a fine palace. It consists of stone, is three stories high, exclusive of the garret covered with slates, and built in a square form, like the new palace at *Stockholm*, including a large court. Its size is such, that three hundred families would find room enough in it; though at present there were not above twenty Jesuits in it. Sometimes there is a much greater number of them, especially when those return, who have been sent as missionaries into the country. There is a long walk along the sides of the square, in every story

story, on both sides of which are either cells, halls, or other apartments for the friars; and likewise their library, apothecary-shop, &c. Every thing is very well regulated, and the Jesuits are very well accommodated, here. On the outside is their college, which is on two sides surrounded with great orchards and kitchen-gardens, in which they have fine walks. A part of the trees here, are the remains of the forest which stood here when the *French* began to build this town. They have besides planted a number of fruit-trees; and the garden is stocked with all sorts of plants for the use of the kitchen. The Jesuits dine together in a great hall. There are tables placed all round it along the walls, and seats between the tables and the walls, but not on the other side. Near one wall is a pulpit, upon which one of the fathers gets during the meal, in order to read some religious book; but this day it was omitted, all the time being employed in conversation. They dine very well, and their dishes are as numerous as at the greatest feasts. In this spacious building you do not see a single woman; all are fathers, or brothers; the latter of which are young men, brought up to be Jesuits. They prepare the meal, and bring it upon table; for the common servants are not admitted.

BESIDES the bishop, there are three kinds of clergymen in *Canada*; viz. Jesuits, priests, and recolets. The Jesuits are, without doubt, the most considerable; therefore they commonly say here, by way of proverb, that a hatchet is sufficient to sketch out a recolet; a priest can-

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not be made without a chissel ; but a Jesuit absolutely requires the pencil* ; to shew how much one surpasses the others. The Jesuits are commonly very learned, studious, and are very civil and agreeable in company. In their whole deportment there is something pleasing ; it is no wonder therefore that they captivate the minds of the people. They seldom speak of religious matters ; and if it happens, they generally avoid disputes. They are very ready to do any one a service ; and when they see that their assistance is wanted, they hardly give one time to speak of it, falling to work immediately, to bring about what is required of them. Their conversation is very entertaining and learned, so that one cannot be tired of their company. Among all the Jesuits I have conversed with in *Canada*, I have not found one who was not possessed of these qualities in a very eminent degree. They have large possessions in this country, which the *French* king gave them. At *Montreal* they have likewise a fine church, and a little neat house, with a small but pretty garden within. They do not care to become preachers to a congregation in the town or country ; but leave these places, together with the emoluments arising from them, to the priests. All their business here is to convert the heathens ; and with that view their missionaries are scattered over every part of this country. Near every town and village, peopled by converted *Indians*, are one or two

* *Pour faire un recolet il faut une hachette, pour un prêtre un ciseau, mais pour un Jésuite il faut un pinceau.*

Jesuits, who take great care that they may not return to paganism, but live as christians ought to do. Thus there are Jesuits with the converted *Indians* in *Tadoussac*, *Lorette*, *Becancourt*, *St. François*, *Saut St. Louis*, and all over *Canada*. There are likewise Jesuit missionaries with those who are not converted; so that there is commonly a Jesuit in every village belonging to the *Indians*, whom he endeavours on all occasions to convert. In winter he goes on their great hunts, where he is frequently obliged to suffer all imaginable inconveniencies; such as walking in the snow all day; lying in the open air all winter; being out both in good and bad weather, the *Indians* not regarding any kind of weather: lying in the *Indian* huts, which often swarm with fleas and other vermin, &c. The Jesuits undergo all these hardships for the sake of converting the *Indians*, and likewise for political reasons. The Jesuits are of great use to their king; for they are frequently able to persuade the *Indians* to break their treaty with the *English*, to make war upon them, to bring their furs to the *French*, and not to permit the *English* to come amongst them. But there is some danger attending these attempts; for when the *Indians* are in liquor, they sometimes kill the missionaries who live with them; calling them spies, or excusing themselves by saying that the brandy had killed them. These are accordingly the chief occupations of the Jesuits here. They do not go to visit the sick in the town, they do not hear the confessions, and attend at no funerals. I have never seen them go in processions in re-

membrance of the Virgin *Mary*, and other saints. They seldom go into a house in order to get meat; and though they be invited, they do not like to stay, except they be on a journey. Every body sees, that they are, as it were, selected from the other people, on account of their superior genius and qualities. They are here reckoned a most cunning set of people, who generally succeed in their undertakings, and surpass all others in acuteness of understanding. I have therefore several times observed that they have enemies in *Canada*. They never receive any others into their society, but persons of very promising parts; so that there are no blockheads among them. On the other hand, the priests receive the best kind of people among their order they can meet with; and in the choice of monks, they are yet less careful. The Jesuits who live here, are all come from *France*; and many of them return thither again, after a stay of a few years here. Some (five or six of which are yet alive) who were born in *Canada*, went over to *France*, and were received among the Jesuits there; but none of them ever came back to *Canada*. I know not what political reason hindered them. During my stay in *Quebec*, one of the priests, with the bishop's leave, gave up his priesthood, and became a Jesuit. The other priests were very ill pleased with this, because it seemed as if he looked upon their condition as too mean for himself. Those congregations in the country that pay rents to the Jesuits, have, however, divine service performed by priests, who are appointed by the bishop; and

and the land-rent only belongs to the Jesuits. Neither the priests nor the Jesuits carry on any trade with furs and skins, leaving that entirely to the merchants.

THIS afternoon I visited the building called the *Seminary*, where all the priests live in common. They have a great house, built of stone, with walks in it, and rooms on each side. It is several stories high, and close to it is a fine garden, full of all sorts of fruit-trees and pot-herbs, and divided by walks. The prospect from hence is the finest in *Quebec*. The priests of the seminary are not much inferior to the Jesuits in civility; and therefore I spent my time very agreeably in their company.

THE priests are the second and most numerous class of the clergy in this country; for most of the churches, both in towns and villages (the *Indian* converts excepted) are served by priests. A few of them are likewise missionaries. In *Canada* are two *seminaries*; one in *Quebec*, the other in *Montreal*. The priests of the seminary in *Montreal* are of the order of *St. Sulpitius*, and supply only the congregation on the isle of *Montreal*, and the town of the same name. At all the other churches in *Canada*, the priests belonging to the *Quebec* seminary officiate. The former, or those of the order of *St. Sulpitius*, all come from *France*; and I was assured that they never suffer a native of *Canada* to come among them. In the seminary at *Quebec*, the natives of *Canada* make the greater part. In order to fit the children of this country for orders, there are schools at *Quebec*, and *St. Joachim*; where the youths are

taught *Latin*, and instructed in the knowledge of those things and sciences, which have a more immediate connexion with the business they are intended for. However, they are not very nice in their choice; and people of a middling capacity are often received among them. They do not seem to have made great progress in *Latin*; for notwithstanding the service is read in that language, and they read their *Latin* Breviary, and other books, every day, yet most of them found it very difficult to speak it. All the priests in the *Quebec* seminary are consecrated by the bishop. Both the seminaries have got great revenues from the king; that in *Quebec* has above thirty thousand livres. All the country on the west side of the river *St. Lawrence*, from the town of *Quebec* to bay *St. Paul*, belongs to this seminary, besides their other possessions in the country. They lease the land to the settlers for a certain rent, which, if it be annually paid according to their agreement, the children or heirs of the settlers may remain in an undisturbed possession of the lands. A piece of land, three *arpents* * broad, and thirty, forty, or fifty *arpents* long, pays annually an *ecu* †, and a couple of chickens, or some other additional trifle. In such places as have convenient waterfalls, they have built water-mills, or saw-mills, from which they annually get considerable sums. The seminary of *Montreal* possesses the whole ground on which that town stands, together with the whole isle of *Montreal*. I have been

* A French acre.

† A French coin, value about a crown English.

assured,

assured, that the ground-rent of the town and isle is computed at seventy thousand livres; besides what they get for saying masses, baptizing, holding confessions, attending at marriages and funerals, &c. All the revenues of ground-rent belong to the seminaries alone, and the priests in the country have no share in them. But as the seminary in *Montreal*, consisting only of sixteen priests, has greater revenues than it can expend, a large sum of money is annually sent over to *France*, to the chief seminary there. The land-rents belonging to the *Quebec* seminary are employed for the use of the priests in it, and for the maintenance of a number of young people, who are brought up to take orders. The priests who live in the country parishes, get the tythe from their congregation, together with the perquisites on visiting the sick, &c. In small congregations, the king gives the priests an additional sum. When a priest in the country grows old, and has done good services, he is sometimes allowed to come into the seminary in town. The seminaries are allowed to place the priests on their own estates; but the other places are in the gift of the bishop.

THE recolets are the third class of clergymen in *Canada*. They have a fine large dwelling-house here, and a fine church, where they officiate. Near it is a large and fine garden, which they cultivate with great application. In *Montreal*, and *Trois Rivières*, they are lodged almost in the same manner as here. They do not endeavour to choose cunning fellows amongst them, but take all they can get. They do not torment their brains with much learning; and

I have been assured, that after they have put on their monastic habit, they do not study to increase their knowledge, but forget even what little they knew before. At night they generally ly on mats, or some other hard matresses; however, I have sometimes seen good beds in the cells of some of them. They have no possessions here, having made vows of poverty, and live chiefly on the alms which people give them. To this purpose, the young monks, or brothers, go into the houses with a bag, and beg what they want. They have no congregations in the country, but sometimes they go among the *Indians* as missionaries. In each fort, which contains forty men, the king keeps one of these monks instead of a priest, who officiates there. The king gives him lodging, provisions, servants and all he wants, besides two hundred livres a year. Half of it he sends to the community he belongs to; the other half he reserves for his own use. On board the king's ships are generally no other priests than these friars, who are therefore looked upon as people belonging to the king. When one of the chief priests* in the country dies, and his place cannot immediately be filled up, they send one of these friars there, to officiate whilst the place is vacant. Part of these monks come over from *France*, and part are natives of *Canada*. There are no other monks in *Canada* besides these, except now and then one of the order of *St. Austin* or some other, who comes with one of the king's ships, but goes off with it again.

* *Pasteur*,

August 11th. THIS morning I took a walk out of town, with the royal physician M. *Gauthier*, in order to collect plants, and to see a nunnery at some distance from *Quebec*. This monastery, which is built very magnificently of stone, lies in a pleasant spot, surrounded with corn-fields, meadows, and woods, from whence *Quebec* and the river *St. Lawrence* may be seen; a hospital for poor old people, cripples, &c. makes part of the monastery, and is divided into two halls, one for men, the other for women. The nuns attend both sexes, with this difference however, that they only prepare the meal for the men and bring it in to them, give them physic, and take the cloth away when they have eaten, leaving the rest for male servants. But in the hall where the women are, they do all the work that is to be done. The regulation in the hospital was the same as in that at *Quebec*. To shew me a particular favour, the bishop, at the desire of the *Marquis la Galissonniere*, governor-general of *Canada*, granted me leave to see this nunnery likewise, where no man is allowed to enter, without his leave, which is an honour he seldom confers on any body. The abbess led us through all the apartments, accompanied by a great number of nuns. Most of the nuns here are of noble families and one was the daughter of a governor. Many of them are old, but there are likewise some very young ones among them, who looked very well. They seemed all to be more polite than those in the other nunnery. Their rooms are the same as in the last place, except some additional furniture

ture in their cells; the beds are hung with blue curtains; there are a couple of small bureaux, a table between them, and some pictures on the walls. There are however no stoves in any cell. But those halls and rooms, in which they are assembled together, and in which the sick ones ly, are supplied with an iron stove. The number of nuns is indeterminate here, and I saw a great number of them. Here are likewise some probationers preparing for their reception among the nuns. A number of little girls are sent hither by their parents, to be instructed by the nuns in the principles of the christian religion, and in all sorts of ladies work. The convent at a distance looks like a palace, and, as I am told, was founded by a bishop, who they say is buried in a part of the church.

WE botanized till dinner-time in the neighbouring meadows, and then returned to the convent to dine with a venerable old father recolet, who officiated here as a priest. The dishes were all prepared by nuns, and as numerous and various as on the tables of great men. There were likewise several sorts of wine, and many preserves. The revenues of this monastery are said to be considerable. At the top of the building is a small steeple with a bell. Considering the large tracts of land which the king has given in *Canada* to convents, *Jesuits*, priests, and several families of rank, it seems he has very little left for himself.

OUR common rasp-berries, are so plentiful here on the hills, near corn-fields, rivers, and brooks, that the branches look quite red on
account

account of the number of berries on them. They are ripe about this time, and eaten as a desert after dinner, both fresh and preserved.

THE *Mountain Ash*, or *Sorb-tree* * is pretty common in the woods hereabouts.

THEY reckon the north-east wind the most piercing of all, here. Many of the best people here, assured me, that this wind, when it is very violent in winter, pierces through walls of a moderate thickness, so that the whole wall on the inside of the house is covered with snow, or a thick hoar frost; and that a candle placed near a thinner wall is almost blown out by the wind which continually comes through. This wind damages the houses which are built of stone, and forces the owners to repair them very frequently on the north-east side. The north and north-east winds are likewise reckoned very cold here. In summer the north wind is generally attended with rain.

THE difference of climate between *Quebec* and *Montreal* is on all hands allowed to be very great. The wind and weather of *Montreal* are often entirely different from what they are at *Quebec*. The winter there is not near so cold as in the last place. Several sorts of fine pears will grow near *Montreal*; but are far from succeeding at *Quebec*, where the frost frequently kills them. *Quebec* has generally more rainy weather, spring begins later, and winter sooner than at *Montreal*, where all sorts of fruits ripen a week or two earlier than at *Quebec*.

* *Sorbus aucuparia*.

Aug. 12th. THIS afternoon I went out of town, to stay in the country for a couple of days, that I might have more leisure to examine the plants which grow in the woods here, and the state of the country. In order to proceed the better, the governor-general had sent for an *Indian* from *Lorette* to shew us the way, and teach us what use they make of the spontaneous plants hereabouts. This *Indian* was an *Englishman* by birth, taken by the *Indians* thirty years ago, when he was a boy, and adopted by them, according to their custom, instead of a relation of theirs killed by the enemy. Since that time he constantly stayed with them, became a *Roman Catholic* and married an *Indian* woman: he dresses like an *Indian*, speaks *English* and *French*, and many of the *Indian* languages. In the wars between the *French* and *English*, in this country, the *French Indians* have made many prisoners of both sexes in the *English* plantations, adopted them afterwards, and they married with people of the *Indian* nations. From hence the *Indian* blood in *Canada* is very much mixed with *European* blood, and a great part of the *Indians* now living, owe their origin to *Europe*. It is likewise remarkable, that a great part of the people they had taken during the war and incorporated with their nations, especially the young people, did not choose to return to their native country, though their parents and nearest relations came to them and endeavoured to persuade them to it, and though it was in their power to do it. The licentious life led by the *Indians*, pleased them better than that of their *European* relations ;

tions; they dressed like the *Indians*, and regulated all their affairs in their way. It is therefore difficult to distinguish them, except by their colour, which is somewhat whiter than that of the *Indians*. There are likewise examples of some *Frenchmen* going amongst the *Indians* and following their way of life. There is on the contrary scarce one instance of an *Indian's* adopting the *European* customs; but those who were taken prisoners in the war, have always endeavoured to come to their own people again, even after several years of captivity, and though they enjoyed all the privileges that were ever possessed by the *Europeans* in *America*.

THE lands, which we passed over, were every where laid out into corn-fields, meadows, or pastures. Almost all round us the prospect presented to our view farms and farm-houses, and excellent fields and meadows. Near the town the land is pretty flat, and intersected now and then by a clear rivulet. The roads are very good, broad, and lined with ditches on each side, in low grounds. Further from the town, the land rises higher and higher, and consists as it were of terraces, one above another. This rising ground is, however, pretty smooth, chiefly without stones, and covered with rich mould. Under that is the black lime-slate, which is so common hereabouts, and is divided into small shivers, and corroded by the air. Some of the strata were horizontal, others perpendicular; I have likewise found such perpendicular strata of lime-slates in other places, in the neighbourhood of *Quebec*. All the hills are cultivated;

and

and some are adorned with fine churches, houses, and corn-fields. The meadows are commonly in the vallies, though some were likewise on eminencies. Soon after we had a fine prospect from one of these hills. *Quebec* appeared very plain to the eastward, and the river *St. Lawrence* could likewise be seen; farther distant, on the south-east side of that river, appears a long chain of high mountains, running generally parallel to it, though many miles distant from it. To the west again, at some distance from the rising lands where we were, the hills changed into a long chain of very high mountains, lying very close to each other, and running parallel likewise to the river, that is nearly from south to north. These high mountains consist of a grey rock-stone, composed of several kinds of stone, which I shall mention in the sequel. These mountains seem to prove, that the lime-slates are of as ancient a date as the grey rock-stone, and not formed in later times; for the amazing large grey rocks ly on the top of the mountains, which consist of black lime-slates.

THE high meadows in *Canada* are excellent, and by far preferable to the meadows round *Philadelphia*, and in the other *English* colonies. The further I advanced northward here, the finer were the meadows, and the turf upon them was better and closer. Almost all the grass here is of two kinds, viz. a species of the *narrow leaved meadow-grass* *; for its spikes † con-

* *Poa angustifolia*. Linn.

† Spiculæ tri vel quadri-floræ minimæ; femina basi pubescentia.

tain

tain either three or four flowers; which are so exceedingly small, that the plant might easily be taken for a *bent grass* *; and its seeds have several small downy hairs at the bottom. The other plant, which grows in the meadows, is the *white clover* †. These two plants form the hay in the meadows; they stand close and thick together, and the meadow-grass (*poa*) is pretty tall, but has very thin stalks. At the root of the meadow-grass, the ground was quite covered with clover, so that one cannot wish for finer meadows, than are found here. Almost all the meadows have been formerly corn-fields, as appears from the furrows on the ground, which still remained. They can be mown but once every summer, as spring commences very late.

THEY were now busied with making hay, and getting it in, and I was told, they had begun about a week ago. They have hay-stacks near most of their meadows, and on the wet ones they make use of conic hay-stacks. Their meadows are commonly without enclosures, the cattle being in the pastures on the other side of the woods, and having cowherds to take care of them where they are necessary.

THE corn-fields are pretty large. I saw no drains any where, though they seemed to be wanting in some places. They are divided into ridges, of the breadth of two or three yards broad, between the furrows. The perpendicular height of the middle of the ridge, from

* *Agrostis*. Linn.

† *Trifolium repens*. Linn. *Trifolium pratense album*. C. B.

the level to the ground, is near one foot. All their corn is summer-corn; for as the cold in winter destroys the corn which lies in the ground, they never sow in autumn. I found white wheat most commonly in the fields. They have likewise large fields with pease, oats, in some places summer-rye, and now and then barley. Near almost every farm I met with cabbages, pumpions, and melons. The fields are not always sown, but ly fallow every two years. The fallow-fields are not ploughed in summer, so the weeds grow without restraint in them, and the cattle are allowed to go on them all summer *.

THE houses in the country are built promiscuously of stone, or wood. To those of stone they do not employ bricks, as there is not yet any considerable quantity of bricks made here. They therefore take what stones they can find in the neighbourhood, especially the black lime-stones. These are quite compact when broke, but shiver when exposed to the air; however, this is of little consequence, as the stones stick fast in the wall, and do not fall asunder. For want of it, they sometimes make their buildings of lime-stone, or sand-stone, and sometimes of grey rock-stone. The walls of such houses are commonly two feet thick, and seldom thinner. The people here can have lime every where in this neighbourhood. The greater part of the

* Here follows, in the original, an account of the enclosures made use of near *Quebec*, which is intended only for the *Swedes*, but not for a nation that has made such progress in agriculture and husbandry as the *English*. F.

houses

houses in the country, are built of wood, and sometimes plaistered over on the outside. The chinks in the walls are filled with clay, instead of moss. The houses are seldom above one story high. In every room is either a chimney or stove, or both together. The stoves have the form of an oblong square; some are intirely of iron, about two feet and a half long, one foot and a half, or two feet, high, and near a foot and a half broad; these iron stoves are all cast at the iron-works at *Trois Rivières*. Some are made of bricks, or stones, not much larger than the iron stoves, but covered at top with an iron plate. The smoke from the stoves is conveyed up the chimney, by an iron pipe. In summer the stoves are removed.

THIS evening we arrived at *Lorette*, where we lodged with the Jesuits.

Aug. 13th. In the morning we continued our journey through the woods to the high mountains, in order to see what scarce plants and curiosities we could get there. The ground was flat at first, and covered with a thick wood all round, except in marshy places. Near half the plants, which are to be met with here, grow in the woods and morasses of *Sweden*.

WE saw wild Cherry-trees here, of two kinds, which are probably mere varieties, though they differ in several respects. Both are pretty common in *Canada*, and both have red berries. One kind, which is called *Cerisier* by the *French*, tastes like our *Alpine* cherries, and their acid contracts the mouth, and cheeks. The berries

of the other sort have an agreeable sourness, and a pleasant taste *.

THE three-leaved Hellebore † grows in great plenty in the woods, and in many places it covers the ground by itself. However, it commonly chooses mossy places, that are not very wet; and the wood-sorrel ‡, with the *Mountain Enchanter's Night-shade* ||, are its companions. Its seeds were not yet ripe, and most of the stalks had no seeds at all. This plant is called *Tiffavoyanne jaune* by the *French*, all over *Canada*. Its leaves and stalks are used by the *Indians*, for giving a fine yellow colour to several kinds of work, which they make of prepared skins. The *French*, who have learned this from them, dye wool and other things yellow with this plant.

WE climbed with a great deal of difficulty to the top of one of the highest mountains here, and I was vexed to find nothing at its summit, but what I had seen in other parts of *Canada* before. We had not even the pleasure of a prospect, because the trees, with which the mountain is covered, obstructed it. The trees that grow here are a kind of horn-beam, or *Carpinus Ostrya*, *Linn.* the *American elm*, the red maple, the sugar-maple, that kind of maple which cures scorched wounds (which I have not yet described), the beech, the common birch-tree, the

* The kind called *Cerifer* by the *French*, I described thus in my journal: *Cerasus foliis ovatis serratis, serraturis profundis fere subulatis, fructu racemoso.* The other thus: *Cerasus foliis lanceolatis, crenato-serratis, acutis, fructu fere solitario.*

† *Helleborus trifolius.*

‡ *Oxalis Acetosilla*, *Linn.*

|| *Circæa Alpina*, *Linn.*

sugar-birch †, the forb-tree, the *Canada* pine, called *Perusse*, the mealy-tree with dentated leaves *, the ash, the cherry-tree, (*Certifier*) just before described, and the berry-bearing yew.

THE Gnats in this wood were more numerous than we could have wished. Cold water they reckon the best remedy against the bite, when the wounded places are washed with it immediately after.

AT night we returned to *Lorette*, having accurately examined the plants of note we met with to-day.

August 14th. *Lorette* is a village three *French* miles to the westward of *Quebec*. Inhabited chiefly by *Indians* of the *Huron* nation, converted to the Roman catholic religion. The village lies near a little river, which falls over a rock there, with a great noise, and turns a saw-mill, and a flour-mill. When the Jesuit, who is now with them, arrived among them, they lived in their usual huts, which are made like those of the *Laplanders*. They have since laid aside this custom, and built all their houses after the *French* fashion. In each house are two rooms, viz. their bed-room, and the kitchen on the outside before it. In the room is a small oven of stone, covered at top with an iron plate. Their beds are near the wall, and they put no other clothes on them than those which they are dressed in. Their other furniture and utensils

† *Betula Nigra*, Linn.

* *Viburnum dentatum*, Linn.

look equally wretched. Here is a fine little church, with a steeple and bell. The steeple is raised pretty high, and covered with white tin plates. They pretend, that there is some similitude between this church in its figure and disposition, and the *Santa Casa*, at *Loretto* in *Italy*, from whence this village has got its name. Close to the church is a house built of stone, for the clergymen, who are two Jesuits, that constantly live here. The divine service is as regularly attended here as in any other Roman catholic church; and I was pleased with seeing the alacrity of the *Indians*, especially of the women, and hearing their good voices, when they sing all sorts of hymns in their own language. The *Indians* dress chiefly like the other adjacent *Indian* nations; the men, however, like to wear waistcoats, or jackets, like the *French*. The women keep exactly to the *Indian* dress. It is certain, that these *Indians* and their ancestors, long since, on being converted to the Christian religion, have made a vow to God, never to drink strong liquors. This vow they have kept pretty inviolable hitherto, so that one seldom sees one of them drunk, though brandy and other strong liquors are goods which other *Indians* would sooner be killed for than part with them.

THESE *Indians* have made the *French* their patterns in several things, besides the houses. They all plant maize; and some have small fields of wheat and rye. Many of them keep cows. They plant our common sun-flower *

* *Helianthus annuus*.

in their maize-fields, and mix the seeds of it into their *sagamite*, or maize-soup. The maize which they plant here is of the small sort, which ripens sooner than the other: its grains are smaller, but give more and better flour in proportion. It commonly ripens here at the middle, sometimes however at the end, of *August*.

THE *Swedish* winter-wheat, and winter-rye, has been tried in *Canada*, to see how well it would succeed; for they employ nothing but summer-corn here, it having been found that the *French* wheat and rye dies here in winter, if it be sown in autumn. Dr. *Sarrazin* has therefore (as I was told by the eldest of the two Jesuits here) got a small quantity of wheat and rye, of the winter-corn sort, from *Sweden*. It was sown in autumn, not hurt by the winter, and bore fine corn. The ears were not so large as those of the *Canada* corn, but weighed near twice as much, and gave a greater quantity of finer flour than that summer-corn. Nobody could tell me, why the experiments have not been continued. They cannot, I am told, bake such white bread here of the summer-corn, as they can in *France* of their winter-wheat. Many people have assured me, that all the summer-corn now employed here came from *Sweden*, or *Norway*: for the *French*, on their arrival, found the winters in *Canada* too severe for the *French* winter-corn, and their summer-corn did not always ripen, on account of the shortness of summer. Therefore they began to look upon *Canada* as little better than an useless country, where nobody could live; till they fell upon

the expedient of getting their summer-corn from the most northern parts of *Europe*, which has succeeded very well.

THIS day I returned to *Quebec*, making botanical observations by the way.

August 15th. THE new governor-general of all *Canada*, the marquis *de la Jonquiere*, arrived last night in the river before *Quebec*; but it being late, he reserved his public entrance for to-day. He had left *France* on the second of *June*, but could not reach *Quebec* before this time, on account of the difficulty which great ships find in passing the sands in the river *St. Lawrence*. The ships cannot venture to go up without a fair wind, being forced to run in many bendings, and frequently in a very narrow channel. To-day was another great feast, on account of the Ascension of the Virgin *Mary*, which is very highly celebrated in Roman catholic countries. This day was accordingly doubly remarkable, both on account of the holiday, and of the arrival of the new governor-general, who is always received with great pomp, as he represents a vice-roy here.

ABOUT eight o'clock the chief people in town assembled at the house of Mr. *de Vaudreuil*, who had lately been nominated governor of *Trois Rivières*, and lived in the lower town, and whose father had likewise been governor-general of *Canada*. Thither came likewise the marquis *de la Galissonniere*, who had till now been governor-general, and was to sail for *France* with the first opportunity. He was accompanied by the people belonging to the government. I was likewise

wife invited to see this festivity. At half an hour after eight the new governor-general went from the ship into a barge, covered with red cloth, upon which a signal with cannons was given from the ramparts, for all the bells in the town to be set a-ringing. All the people of distinction went down to the shore to salute the governor, who, on alighting from the barge, was received by the marquis *la Galissonniere*. After they had saluted each other, the commandant of the town addressed the new governor-general in a very elegant speech, which he answered very concisely; after which all the cannon on the ramparts gave a general salute. The whole street, up to the cathedral, was lined with men in arms, chiefly drawn out from among the burgheſſes. The governor-general then walked towards the cathedral, dressed in a ſuit of red, with abundance of gold lace. His ſervants went before him in green, carrying fire-arms on their ſhoulders. On his arrival at the cathedral he was received by the biſhop of *Canada*, and the whole clergy aſſembled. The biſhop was arrayed in his pontifical robes, and had a long gilt tiara on his head, and a great crozier of maſſy ſilver in his hand. After the biſhop had addreſſed a ſhort ſpeech to the governor-general, a prieſt brought a ſilver crucifix on a long ſtick, (two prieſts with lighted tapers in their hands, going on each ſide of it) to be kiſſed by the governor. The biſhop and the prieſts then went through the long walk up to the choir. The ſervants of the governor-general followed with their hats on, and arms on their ſhoulders. At

laſt

last came the governor-general and his suite, and after them a croud of people. At the beginning of the choir the governor-general, and the general *de la Galiffonniere*, stooped before a chair covered with red cloth, and stood there during the whole time of the celebration of the mass, which was celebrated by the bishop himself. From the church he went to the palace, when the gentlemen of note in the town afterwards went to pay their respects to him. The religious of the different orders, with their respective superiors, likewise came to him, to testify their joy on account of his happy arrival. Among the numbers that came to visit him, none staid to dine but those that were invited before-hand, among which I had the honour to be. The entertainment lasted very long, and was as elegant as the occasion required.

THE governor-general, marquis *de la Jonquiere*, was very tall, and, at that time, something above sixty years old. He had fought a desperate naval battle with the *English* in the last war, but had been obliged to surrender, the *English* being, as it was told, vastly superior in the number of ships and men. On this occasion he was wounded by a ball, which entered one side of his shoulder, and came out at the other. He was very complaisant, but knew how to preserve his dignity, when he distributed favours.

MANY of the gentlemen, present at this entertainment, asserted that the following expedient had been successfully employed to keep wine, beer, or water, cool during summer. The wine, or other liquor, is bottled; the bottles

are well corked, hung up in the air, and wrapped in wet clouts. This cools the wine in the bottles, notwithstanding it was quite warm before. After a little while the clouts are again made wet, with the coldest water that is to be had, and this is always continued. The wine, or other liquor, in the bottles is then always colder than the water with which the clouts are made wet. And though the bottles should be hung up in the sunshine, the above way of proceeding will always have the same effect*.

August 16th. THE occidental *Arbor vitæ* † is a tree which grows very plentiful in *Canada*, but not much farther south. The most southerly place I have seen it in, is a place a little on the south side of *Saratoga*, in the province of *New-York*, and likewise near *Cassés*, in the same province, which places are in forty-two degrees and ten minutes north latitude.

Mr. *Bartram*, however, informed me, that he had found a single tree of this kind in *Virginia*, near the falls in the river *James*. Doctor *Colden* likewise asserted, that he had seen it in many places round his seat *Coldingham*, which lies between *New-York*, and *Albany*, about

* It has been observed by several experiments, that any liquor dipt into another liquor, and then exposed to the air for evaporation, will get a remarkable degree of cold; the quicker the evaporation succeeds, after repeated dippings, the greater is the cold. Therefore spirit of wine evaporating quicker than water, cools more than water: and spirit of sal ammoniac, made by quicklime, being still more volatile than spirit of wine, its cooling quality is still greater. The evaporation succeeds better by moving the vessel containing the liquor, by exposing it to the air, and by blowing upon it, or using a pair of bellows. See *de Mairan, Dissertation sur le Glace, Prof. Richman in Nov. Comment. Petrop, ad an. 1747, & 1748. p. 284.* and Dr. *Cullen in the Edinburgh physical and literary Essays and Observations. Vol. II. p. 145. F.*

† *Tbujæ occidentalis*, Linn.

forty-one degrees thirty minutes north latitude. The *French*, all over *Canada*, call it *Cedre blanc*. The *English* and *Dutch* in *Albany* likewise call it the white Cedar. The *English* in *Virginia*, have called a *Thuya*, which grows with them, a *Juniper*.

THE places and soil where it grows best, are not always alike, however it generally succeeds in such ground where its roots have sufficient moisture. It seems to prefer swamps, marshes, and other wet places to all others, and there it grows pretty tall. Stony hills, and places where a number of stones ly together, covered with several kinds of mosses*, seemed to be the next in order where it grows. When the sea shores were hilly and covered with mossy stones, the *Thuya* seldom failed to grow on them. It is likewise seen now and then on the hills near rivers, and other high grounds, which are covered with a dust like earth or mould; but it is to be observed that such places commonly carry a sourish water with them, or receive moisture from the upper countries. I have however seen it growing in some pretty dry places; but there it never comes to any considerable size. It is pretty frequent in the clefts of mountains, but cannot grow to any remarkable height or thickness. The tallest trees I have found in the woods in *Canada*, were about thirty or thirty-six feet high. A tree of exactly ten inches diameter had ninety-two rings round the stem†; another

* *Lichen, Bryum, Hypnum.*

† Of these rings or circles, it is well known all trees get but one every year, so that they serve to ascertain the age of the tree, and the quickness, or slowness of its growth. F.

of one foot and two inches in diameter had one hundred and forty-two rings*.

THE inhabitants of *Canada* generally make use of this tree in the following cases. It being reckoned the most durable wood in *Canada*, and which best withstands putrefaction, so as to remain undamaged for above a man's age, enclosures of all kinds are scarce made of any other than this wood. All the posts which are driven into the ground, are made of the *Thuya* wood. The palisades round the forts in *Canada* are likewise made of the same wood. The planks in the houses are made of it; and the thin narrow pieces of wood which form both the ribs and the bottom of the bark boats, commonly made use of here, are taken from this wood, because it is pliant enough for the purpose, especially whilst it is fresh, and likewise because it is very light. The *Thuya* wood is reckoned one of the best for the use of lime-kilns. Its branches are used all over *Canada* for besoms; and the twigs and leaves of it being naturally bent together, seem to be very proper for the purpose. The *Indians* make such besoms and bring them to the towns for sale, nor do I remember having seen any besoms of any other wood. The fresh branches have a peculiar, agreeable scent, which is pretty strongly smelled in houses where they make use of besoms of this kind.

THIS *Thuya* is made use of for several medicinal purposes. The commandant of Fort *St.*

* The bark is not included, when I speak of the diameters of these trees.

Frederic, M. de Lufignan, could never sufficiently praise its excellence for rheumatic pains. He told me he had often seen it tried, with remarkable good success, upon several persons, in the following manner. The fresh leaves are pounded in a mortar, and mixed with hog's grease, or any other grease. This is boiled together till it becomes a salve, which is spread on linen, and applied to the part where the pain is. The salve gives certain relief in a short time. Against violent pains, which move up and down in the thighs, and sometimes spread all over the body, they recommend the following remedy. Take of the leaves of a kind of *Polypody** four-fifths, and of the cones of the *Thuya* one-fifth, both reduced to a coarse powder by themselves, and mixed together afterwards. Then pour milk-warm water on it, so as to make a poultice, which spread on linen, and wrap it round the body: but as the poultice burns like fire, they commonly lay a cloth between it and the body, otherwise it would burn and scorch the skin. I have heard this remedy praised beyond measure, by people who said they had experienced its good effects. An *Iroquesè Indian* told me, that a decoction of *Thuya* leaves was used as a remedy for the cough. In the neighbourhood of *Saratoga*, they use this decoction in the intermitting fevers.

THE *Thuya* tree keeps its leaves, and is green all winter. Its seeds are ripe towards the end

* *Polypodium fronde pinnata, pinnis alternis ad basin superne appendiculatis.*

of *September*, old style. The fourth of *October* of this year, 1749, some of the cones, especially those which stood much exposed to the heat of the sun, had already dropt their seeds, and all the other cones were opening in order to shed them. This tree has, in common with many other *American* trees, the quality of growing plentiful in marshes and thick woods, which may be with certainty called its native places. However, there is scarce a single *Thuya* tree in those places which bears seeds; if, on the other hand, a tree accidentally stands on the outside of a wood, on the sea shore, or in a field, where the air can freely come at it, it is always full of seeds. I have found this to be the case with the *Thuya*, on innumerable occasions. It is the same likewise with the sugar-maple, the maple which is good for healing scorched wounds, the white fir-tree, the pine called *Perusse*, the mulberry-tree and several others.

August 17th. This day I went to see the nunnery of the *Ursulines*, which is disposed nearly in the same way as the two other nunneries. It lies in the town and has a very fine church. The nuns are renowned for their piety, and they go less abroad than any others. The men are likewise not allowed to go into this monastery, except by the special licence of the bishop. At the desire of the marquis *de la Galissonniere* the bishop granted me leave to visit this monastery together with the royal physician Mr. *Gauthier*. On our arrival we were received by the abbess, who was attended by a great number of nuns, for the most part old ones.

We saw the church; and, it being *Sunday*, we found some nuns on every side of it kneeling by themselves and saying prayers. As soon as we came into the church, the abbess and the nuns with her dropt on their knees, and so did M. *Gauthier* and myself. We then went to an apartment or small chapel dedicated to the *Virgin Mary*, at the entrance of which, they all fell on their knees again. We afterwards saw the kitchen, the dining hall, and the apartment they work in, which is large and fine. They do all sorts of neat work there, gild pictures, make artificial flowers, &c. The dining hall is disposed in the same manner as in the other two monasteries. Under the tables are small drawers for each nun to keep her napkin, knife and fork, and other things in. Their cells are small, and each nun has one to herself. The walls are not painted; a little bed, a table with a drawer, and a crucifix, and pictures of saints on it, and a chair, constitute the whole furniture of a cell. We were then led into a room full of young ladies about twelve years old and below that age, sent thither by their parents to be instructed in reading, and in matters of religion. They are allowed to go to visit their relations once a day, but must not stay away long. When they have learnt reading, and have received instructions in religion, they return to their parents again. Near the monastery, is a fine garden, which is surrounded with a high wall. It belongs to this institution, and is stocked with all sorts of kitchen-herbs and fruit-trees. When the nuns are at work,

work, or during dinner, every thing is silent in the rooms, unless some one of them reads to the others; but after dinner, they have leave to take a walk for an hour in or two in the garden, or to divert themselves within-doors. After we had seen every thing remarkable here, we took our leave, and departed.

ABOUT a quarter of a *Swedish* mile to the west of *Quebec*, is a well of mineral waters, which carries a deal of iron ochre with it, and has a pretty strong taste. *M. Gauthier* said, that he had prescribed it with success in costive cases and the like diseases.

I HAVE been assured, that there are no snakes in the woods and fields round *Quebec*, whose bite is poisonous; so that one can safely walk in the grass. I have never found any that endeavoured to bite, and all were very fearful. In the south parts of *Canada*, it is not adviseable to be off one's guard.

A VERY small species of black ants * live in ant-hills, in high grounds, in woods; they look exactly like our *Swedish* ants, but are much less.

Aug. 21st. To-day there were some people of three *Indian* nations in this country with the governor-general, viz. *Hurons*, *Mickmacks*, and *Anies* †; the last of which are a nation of *Iroquese*, and allies of the *English*, and were taken prisoners in the last war.

* *Formica nigra*. Linn.

† Probably *Onides*.

THE *Hurons* are some of the same *Indians* with those who live at *Lorette*, and have received the christian religion. They are tall, robust people, well shaped, and of a copper-colour. They have short black hair, which is shaved on the forehead, from one ear to the other. None of them wear hats or caps. Some have ear-rings, others not. Many of them have the face painted all over with vermillion; others have only strokes of it on the forehead, and near the ears; and some paint their hair with vermillion. Red is the colour they chiefly make use of in painting themselves; but I have likewise seen some, who had daubed their face with a black colour. Many of them have figures in the face, and on the whole body, which are stained into the skin, so as to be indelible. The manner of making them shall be described in the sequel. These figures are commonly black; some have a snake painted in each cheek, some have several crosses, some an arrow, others the sun, or any thing else their imagination leads them to. They have such figures likewise on the breast, thighs, and other parts of the body; but some have no figures at all. They wear a shirt, which is either white or checked, and a shaggy piece of cloth, which is either blue or white, with a blue or red stripe below. This they always carry over their shoulders, or let it hang down, in which case they wrap it round their middle. Round their neck, they have a string of violet wampums, with little white wampums between them. These wampums are small, of the figure of oblong pearls, and made of

of the shells which the *English* call clams *. At the end of the wampum strings, many of the *Indians* wear a large *French* silver coin, with the king's effigy, on their breasts. Others have a large shell on the breast, of a fine white colour, which they value very high, and is very dear; others, again, have no ornament at all round the neck. They all have their breasts uncovered. Before them hangs their tobacco-pouch, made of the skin of an animal, and the hairy side turned outwards. Their shoes are made of skins, and bear a great resemblance to the shoes without heels, which the women in *Finland* make use of. Instead of stockings, they wrap the legs in pieces of blue cloth, as I have seen the *Russian* boors do.

THE *Mickmacks* are dressed like the *Hurons*, but distinguish themselves by their long strait hair, of a jetty-black colour. Almost all the *Indians* have black strait hair; however, I have met with a few, whose hair was pretty much curled. But it is to be observed, that it is difficult to judge of the true complexion of the *Canada Indians*, their blood being mixed with the *Europeans*, either by the adopted prisoners of both sexes, or by the *Frenchmen*, who travel in the country, and often contribute their share towards the encrease of the *Indian* families, their women not being very shy. The *Mickmacks* are commonly not so tall as the *Hurons*. I have not seen any *Indians* whose hair was as long and strait as theirs. Their language is different from

* *Venus mercenaria*. Linn.

that of the *Hurons*; therefore there is an interpreter here for them on purpose.

THE *Anies* are the third kind of *Indians* which came hither. Fifty of them went out in the war, being allies of the *English*, in order to plunder in the neighbourhood of *Montreal*. But the *French*, being informed of their scheme, laid an ambush, and killed with the first discharge of their guns forty-four of them; so that only the four who were here to-day saved their lives, and two others, who were ill at this time. They are as tall as the *Hurons*, whose language they speak. The *Hurons* seem to have a longer, and the *Anies* a rounder face. The *Anies* have something cruel in their looks; but their dress is the same as that of the other *Indians*. They wear an oblong piece of white tin between the hair which lies on the neck. One of those I saw had taken a flower of the rose mallow, out of a garden, where it was in full blossom at this time, and put it among the hair at the top of his head. Each of the *Indians* has a tobacco-pipe of grey lime-stone, which is blackened afterwards, and has a long tube of wood. There were no *Indian* women present at this interview. As soon as the governor-general came in, and was seated in order to speak with them, the *Mickmacks* sat down on the ground, like *Laplanders*, but the other *Indians* took chairs.

THERE is no printing-press in *Canada*, tho' there formerly was one; but all books are brought from *France*, and all the orders made in the country are written, which extends even to the paper-currency. They pretend that the

press

press is not yet introduced here, lest it should be the means of propagating libels against the government, and religion. But the true reason seems to ly in the poorness of the country, as no printer could put off a sufficient number of books for his subsistence; and another reason may be, that *France* may have the profit arising from the exportation of books hither.

THE meals here are in many respects different from those in the *English* provinces. This perhaps depends upon the difference of custom, taste, and religion, between the two nations. They eat three meals a day, *viz.* breakfast, dinner, and supper. They breakfast commonly between seven and eight. For the *French* here rise very early, and the governor-general can be spoke to at seven o'clock, which is the time when he has his levee. Some of the men dip a piece of bread in brandy, and eat it; others take a dram of brandy, and eat a piece of bread after it. Chocolate is likewise very common for breakfast, and many of the ladies drink coffee. Some eat no breakfast at all. I have never seen tea made use of; perhaps because they can get coffee and chocolate from the *French* provinces in *South-America*; but must get tea from *China*, for which it is not worth their while to send the money out of their country. Dinner is pretty exactly at noon. People of quality have a great variety of dishes, and the rest follow their example, when they invite strangers. The loaves are oval, and baked of wheat flour. For each person they put a plate, napkin, spoon, and fork. Sometimes they likewise

likewise give knives; but they are generally omitted, all the ladies and gentlemen being provided with their own knives. The spoons and forks are of silver, and the plates of *Delft* ware. The meal begins with a soup, with a good deal of bread in it. Then follow fresh meats of various kinds, boiled, and roasted, poultry, or game, fricassees, ragoos, &c. of several sorts; together with different kinds of fallads. They commonly drink red claret at dinner, mixed with water; and spruce beer is likewise much in use. The ladies drink water, and sometimes wine. After dinner the fruit and sweet-meats are served up, which are of many different kinds, *viz.* walnuts from *France*, or *Canada*, either ripe, or pickled; almonds, raisins, hazelnuts, several kinds of berries, which are ripe in the summer season, such as currants, cran-berries, which are preserved in treacle; many preserves in sugar, as straw-berries, rasp-berries, black-berries, and moss-berries. Cheese is likewise a part of the desert, and so is milk, which they eat last of all with sugar. Friday and Saturday they eat no flesh, according to the Roman Catholic rites; but they well know how to guard against hunger. On those days they boil all sorts of kitchen-herbs, and fruit; fishes, eggs, and milk, prepared in various ways. They cut cucumbers into slices, and eat them with cream, which is a very good dish. Sometimes they put whole cucumbers on the table, and every body that likes them takes one, peels, and slices it, and dips the slices into salt, eating them like raddishes. Melons abound here, and are always
eaten

eaten with sugar. They never put any sugar into wine, or brandy, and upon the whole, they and the *English* do not use half so much sugar, as we do in *Sweden*; though both nations have large sugar-plantations in their *West-Indian* possessions. They say no grace before, or after their meals, but only cross themselves, which is likewise omitted by some. Immediately after dinner, they drink a dish of coffee, without cream. Supper is commonly at seven o'clock, or between seven and eight at night, and the dishes the same as at dinner. Pudding and punch is not to be met with here, though the latter is well known.

Aug. 23d. In many places hereabouts they use their dogs to fetch water out of the river. I saw two great dogs to-day put before a little cart, one before the other. They had neat harness, like horses, and bits in their mouths. In the cart was a barrel. The dogs are directed by a boy, who runs behind the cart, and as soon as they come to the river, they jump in, of their own accord. When the barrel is filled, the dogs draw their burthen up the hill again, to the house they belong to. I have frequently seen dogs employed in this manner, during my stay at *Quebec*. Sometimes they put but one dog before the water-carts, which are made small on purpose. The dogs are not very great, hardly of the size of our common farmers dogs. The boys that attend them have great whips, with which they make them go on occasionally. I have seen them fetch not only water, but likewise wood, and other things. In winter it is

customary in *Canada*, for travellers to put dogs before little sledges, made on purpose to hold their cloathes, provisions, &c. Poor people commonly employ them on their winter-journies, and go on foot themselves. Almost all the wood, which the poorer people in this country fetch out of the woods in winter, is carried by dogs, which have therefore got the name of horses of the poor people. They commonly place a pair of dogs before each load of wood. I have likewise seen some neat little sledges, for ladies to ride in, in winter; they are drawn by a pair of dogs, and go faster on a good road, than one would think. A middle-sized dog is sufficient to draw a single person, when the roads are good. I have been told by old people, that horses were very scarce here in their youth, and almost all the land-carriage was then effected by dogs. Several *Frenchmen*, who have been among the *Esquimaux* on *Terra Labrador*, have assured me, that they not only make use of dogs for drawing drays, with their provisions, and other necessaries, but are likewise drawn by them themselves, in little sledges.

Aug. 25th. THE high hills, to the west of the town, abound with springs. These hills consist of the black lime-slate, before-mentioned, and are pretty steep, so that it is difficult to get to the top. Their perpendicular height is about twenty or four and twenty yards. Their summits are destitute of trees, and covered with a thin crust of earth, lying on the lime-slates, and are employed for corn-fields, or pastures. It seems inconceivable therefore, from whence these

these naked hills could take so many running springs, which in some places gush out of the hills, like torrents. Have these hills the quality of attracting the water out of the air in the day time, or at night? Or are the lime-slates more apt to it than others?

ALL the horses in *Canada* are strong, well made, swift, as tall as the horses of our cavalry, and of a breed imported from *France*. The inhabitants have the custom of docking the tails of their horses, which is rather hard upon them here, as they cannot defend themselves against the numerous swarms of gnats, gad-flies, and horse-flies. They put the horses one before the other in their carts, which has probably occasioned the docking of their tails, as the horses would hurt the eyes of those behind them, by moving their tails backwards and forwards. The governor-general, and a few of the chief people in town, have coaches, the rest make use of open horse-chairs. It is a general complaint, that the country people begin to keep too many horses, by which means the cows are kept short of food in winter.

THE cows have likewise been imported from *France*, and are of the size of our common *Swedish* cows. Every body agreed that the cattle, which were born of the original *French* breed, never grow up to the same size. This they ascribe to the cold winters, during which they are obliged to put their cattle into stables, and give them but little food. Almost all the cows have horns, a few, however, I have seen without them. A cow without horns would be

reckoned an unheard of curiosity in *Pensylvania*. The beef and veal at *Quebec* is reckoned fatter and more palatable than at *Montreal*. Some look upon the salty pastures below *Quebec* as the cause of this difference. In *Canada* the oxen draw with the horns, but in the *English* colonies they draw with their *withers*, as horses do. The cows vary in colour; however, most of them are either red, or black.

EVERY countryman commonly keeps a few sheep, which supply him with as much wool as he wants to clothe himself with. The better sort of clothes are brought from *France*. The sheep degenerate here, after they are brought from *France*, and their progeny still more so. The want of food in winter is said to cause this degeneration.

I HAVE not seen any goats in *Canada*, and I have been assured that there are none. I have seen but very few in the *English* colonies, and only in their towns, where they are kept on account of some sick people, who drink the milk by the advice of their physicians.

THE harrows are triangular; two of the sides are six feet, and the third four feet long. The teeth, and every other part of the harrows are of wood. The teeth are about five inches long, and about as much distant from each other.

THE prospect of the country about a quarter of a mile *Swedish*, north of *Quebec*, on the west side of the river *St. Lawrence*, is very fine. The country is very steep towards the river, and grows higher as you go farther from the water. In many places it is naturally divided into terraces.

racces.

rices. From the heights, one can look a great way: *Quebec* appears very plain to the south, and the river *St. Lawrence* to the east, on which were vessels sailing up and down. To the west are the high mountains, which the hills of the river end with. All the country is laid out for corn-fields, meadows, and pastures; most of the fields were sown with wheat, many with white oats, and some with pease. Several fine houses and farms are interspersed all over the country, and none are ever together. The dwelling-house is commonly built of black lime-slates, and generally white-washed on the out-side. Many rivulets and brooks roll down the high grounds, above which the great mountains lie, and which consist entirely of the black lime-slates, that shiver in pieces in the open air. On the lime-slates lies a mould of two or three feet in depth. The soil in the corn-fields is always mixed with little pieces of the lime-slate. All the rivulets cut their beds deep into the ground; so that their shores are commonly of lime-slate. A dark-grey lime-stone is sometimes found among the strata, which, when broke, smells like stink-stone.

THEY were now building several ships below *Quebec*, for the king's account. However, before my departure, an order arrived from *France*, prohibiting the further building of ships of war, except those which were already on the stocks; because they had found, that the ships built of *American* oak do not last so long as those of *European* oak. Near *Quebec* is found very little oak, and what grows there is not fit for use, being

being very small; therefore they are obliged to fetch their oak timber from those parts of *Canada* which border upon *New-England*. But all the *North-American* oaks have the quality of lasting longer, and withstanding putrefaction better, the farther north they grow, and *vice versa*. The timber from the confines of *New-England* is brought in floats or rafts on the rivers near those parts, and near the lake *St. Pierre*, which fall into the great river *St. Lawrence*. Some oak is likewise brought from the country between *Montreal* and *Fort St. Frederic*, or *Fort Champlain*; but it is not reckoned so good as the first, and the place it comes from is further distant.

Aug. 26th. THEY shewed a green earth, which had been brought to the general, *marquis de la Galissonniere*, from the upper parts of *Canada*. It was a clay, which cohered very fast together, and was of a green colour throughout, like verdigrease *.

ALL the brooks in *Canada* contain crawfish, of the same kind with ours. The *French* are fond of eating them, and say they are vastly decreased in number since they have begun to catch them.

THE common people in the country seem to be very poor. They have the necessaries of life, and but little else. They are content with meals of dry bread and water, bringing all other provisions, such as butter, cheese, flesh, poultry, eggs, &c. to town, in order to get

* It was probably impregnated with particles of copper ore.

money

money for them, for which they buy clothes and brandy for themselves, and dresses for their women. Notwithstanding their poverty, they are always chearful, and in high spirits.

August 29th. By the desire of the governor-general, marquis *de la Jonquiere*, and of marquis *de la Galissonniere*, I set out, with some *French* gentlemen, to visit the pretended silver-mine, or the lead-mine, near the bay *St. Paul*. I was glad to undertake this journey, as it gave me an opportunity of seeing a much greater part of the country than I should otherwise have done. This morning therefore we set out on our tour in a boat, and went down the river *St. Lawrence*.

THE prospect near *Quebec* is very lively from the river. The town lies very high, and all the churches and other buildings appear very conspicuous. The ships in the river below ornament the landscape on that side. The powder magazine, which stands at the summit of the mountain on which the town is built, towers above all the other buildings.

THE country we passed by afforded a no less charming sight. The river *St. Lawrence* flows nearly from south to north here; on both sides of it are cultivated fields, but more on the west side than on the east side. The hills on both shores are steep and high. A number of fine hills, separated from each other, large fields, which looked quite white from the corn with which they are covered, and excellent woods of deciduous trees, made the country round us look very pleasant. Now and then we saw a church of stone, and in several places brooks fell from

the hills into the river. Where the brooks are considerable, there they have made saw-mills, and water-mills.

AFTER rowing for the space of a *French* mile and a half, we came to the isle of *Orleans*, which is a large island, near seven *French* miles and a half long, and almost two of those miles broad, in the widest part. It lies in the middle of the river *St. Lawrence*, is very high, has steep and very woody shores. There are some places without trees, which have farm houses below, quite close to the shore. The isle itself is well cultivated, and nothing but fine houses of stone, large corn-fields, meadows, pastures, woods of deciduous trees, and some churches built of stone, are to be seen on it.

WE went into that branch of the river which flows on the west side of the isle of *Orleans*, it being the shortest. It is reckoned about a quarter of a *French* mile broad, but ships cannot take this road, on account of the sand-banks, which ly here near the projecting points of land, and on account of the shallowness of the water, the rocks and stones at the bottom. The shores on both sides still kept the same appearance as before. On the west side, or on the continent, the hills near the river consist throughout of black lime-slate, and the houses of the peasants are made of this kind of stone, white-washed on the outside. Some few houses are of different kinds of stone. The row of ten mountains, which is on the west side of the river, and runs nearly from south to north, gradually comes nearer to the river : for at *Quebec* they are near

two *French* miles distant from the shore; but nine *French* miles lower down the river, they are almost close to the shore. These mountains are generally covered with woods, but in some places the woods have been destroyed by accidental fires. About eight *French* miles and a half from *Quebec*, on the west side of the river, is a church called *St. Anne*, close to the shore. This church is remarkable, because the ships from *France* and other parts, as soon as they are got so far up the river *St. Lawrence*, as to get sight of it, give a general discharge of their artillery, as a sign of joy, that they have past all danger in the river, and have escaped all the sands in it.

THE water had a pale red colour, and was very dirty in those parts of the river which we saw to-day, though it was every where computed above six fathoms deep. Somewhat below *St. Anne*, on the west side of the river *St. Lawrence*, another river, called *le Grande Riviere*, or the *Great River*, falls in it. Its water flows with such violence, as to make its way almost into the middle of the branch of the river *St. Lawrence*, which runs between the continent and the isle of *Orleans*.

ABOUT two o'clock in the afternoon the tide began to flow up the river, and the wind being likewise against us, we could not proceed any farther, till the tide began to ebb. We therefore took up our night's lodging in a great farm belonging to the priests in *Quebec*, near which is a fine church called *St. Joachim*, after a voyage of about eight *French* miles. We were exceeding well received here. The king has given all the country

country round about this place to the seminary, or the priests at *Quebec*, who have leased it to farmers who have built houses on it. Here are two priests, and a number of young boys, whom they instruct in reading, writing, and Latin. Most of these boys are designed for priests: Directly opposite to this farm, to the eastward, is the north-east point, or the extremity of the isle of *Orleans*.

ALL the gardens in *Canada* abound with red currant shrubs, which were at first brought over from *Europe*. They grow excessively well here, and the shrubs, or bushes, are quite red, being covered all over with the berries.

THE wild vines * grow pretty plentifully in the woods. In all other parts of *Canada* they plant them in the gardens, near arbours, and summer-houses. The summer-houses are made entirely of laths, over which the vines climb with their tendrils, and cover them entirely with their foliage, so as to shelter them entirely from the heat of the sun. They are very refreshing and cool in summer.

THE strong contrary winds obliged us to ly all night at *St. Joachim*.

August 30th. THIS morning we continued our journey in spite of the wind, which was very violent against us. The water in the river begins to get a brackish taste, when the tide is highest, somewhat below *St. Joachim*; and the farther one goes down, the more the saline taste encreases. At first the western shore of the river

* *Vitis labrusca & vulpina.*

has fine, but low corn-fields, but soon after the high mountains run close to the river side. Before they come to the river, the hilly shores consist of black lime-slate; but as soon as the high mountains appear on the river side, the lime-slates disappear. For the stone, of which the high mountains consist, is a chalky rock-stone, mixed with glimmer and quartz*. The glimmer is black; the quartz partly violet, and partly grey. All the four constituent parts are so well mixed together, as not to be easily separated by an instrument, though plainly distinguishable with the eye. During our journey to-day, the breadth of the river was generally three *French* miles. They shewed me the turnings the ships are obliged to sail in, which seem to be very troublesome, as they are obliged to bear away for either shore as occasion requires, or as the rocks and sands in the river oblige them to do.

For the distance of five *French* miles we had a very dangerous passage to go through; for the whole western shore, along which we rowed, consists of very high and steep mountains, where we could not have found a single place to land with safety, during the space of five miles, in case a high wind had arisen. There are indeed two or three openings, or holes, in the mountains, into which one could have drawn the boat, in the greatest danger. But they are so narrow, that in case the boat could not find them in the hurry, it would inevitably be dashed against the

* *Saxum micaceo quarzoso calcarium.*

rocks.

rocks. These high mountains are either quite bare, or covered with some small firs standing far asunder. In some places there are great clefts going down the mountains, in which trees grow very close together, and are taller than on the other parts of the mountain; so that those places look like quick-hedges, planted on the solid rock. Soon after we passed a small church, and some farms round it. The place is called *Petite Riviere*, and they say its inhabitants are very poor, which seems very probable. They have no more land to cultivate than what lies between the mountains and the river, which in the widest part is not above three musket-shot, and in most parts but one broad. About seventeen *French* miles from *Quebec* the water is so salty in the river that no one can drink it, our rowers therefore provided themselves with a kettle full of fresh water this morning. About five o'clock in the evening we arrived at bay *St. Paul*, and took our lodgings with the priests, who have a fine large house here, and entertained us very hospitably.

BAY St. Paul is a small parish, about eighteen *French* miles below *Quebec*, lying at some distance from the shore of a bay formed by the river, on a low plain. It is surrounded by high mountains on every side, one large gap excepted, which is over against the river. All the farms are ~~at~~ some distance from each other. The church is reckoned one of the most ancient in *Canada*; which seems to be confirmed by its bad architecture, and want of ornaments; for the walls are formed of pieces of timber, erected

ed at about two feet distance from each other, supporting the roof. Between these pieces of timber, they have made the walls of the church of lime-slate. The roof is flat. The church has no steeple, but a bell fixed above the roof, in the open air. Almost all the country in this neighbourhood belongs to the priests, who have leased it to the farmers. The inhabitants live chiefly upon agriculture, and making of tar, which last is sold at *Quebec*.

THIS country being low, and situated upon a bay of the river, it may be conjectured, that this flat ground was formerly part of the bottom of the river, and formed itself either by a decrease of water in the river, or by an encrease of earth, which was carried upon it from the continent by the brooks, or thrown on it by storms. A great part of the plants which are to be met with here are likewise marine; such as glass-wort, sea milk-wort, and sea-side pease †. But when I have asked the inhabitants, whether they find shells in the ground by digging for wells, they always answered in the negative. I received the same answer from those who live in the low fields directly north of *Quebec*, and all agreed, that they never found any thing by digging, but different kinds of earth and sand.

It is remarkable, that there is generally a different wind in the bay from that in the river, which arises from the high mountains, covered with tall woods, with which it is surrounded on every side but one. For example, when the

† *Salicornia*, *Glaux*, *Pisum maritimum*.

wind comes from the river, it strikes against one of the mountains at the entrance of the bay, it is reflected, and consequently takes a direction quite different from what it had before.

I FOUND sand of three kinds upon the shore; one is a clear coarse sand, consisting of angulated grains of quartz, and is very common on the shore; the other is a fine black sand, which I have likewise found in abundance on the shores of lake *Champlain* *, and which is common all over *Canada*. Almost every grain of it is attracted by the magnet. Besides this, there is a garnet coloured sand †, which is likewise very fine. This may owe its origin to the garnet coloured grains of sands which are to be found in all the stones and mountains here near the shore. The sand may have arisen from the crumbled pieces of some stones, or the stones may have been composed of it. I have found both this and the black sand on the shores, in several parts of this journey; but the black sand was always the most plentiful.

August 3rd. ALL the high hills in the neighbourhood sent up a smoke this morning, as from a charcoal-kiln.

GNATS are innumerable here; and as soon as one looks out of doors, they immediately attack him; and they are still worse in the woods. They are exactly the same gnats as our common *Swedish* ones, being only somewhat less than the *North-American* gnats all are. Near Fort St.

* See p. 199. of this volume.

† See p. 199. of this volume.

Jean,

Jean, I have likewise seen gnats which were the same with ours, but they were somewhat bigger, almost of the size of our crane-flies*. Those which are here are beyond measure blood-thirsty. However, I comforted myself, because the time of their disappearance was near at hand.

THIS afternoon we went still lower down the river *St. Lawrence*, to a place, where, we were told, there were silver or lead mines. Somewhat below bay *St. Paul*, we passed a neck of land, which consists entirely of a grey, pretty compact lime-stone, lying in dipping, and almost perpendicular strata. It seems to be merely a variety of the black lime-slates. The strata dip to the south-east, and basset out to the north-west. The thickness of each is from ten to fifteen inches. When the stone is broken, it has a strong smell, like stink-stone. We kept, as before, to the western shore of the river, which consists of nothing but steep mountains and rocks. The river is not above three *French* miles broad here. Now and then we could see stripes in the rock, of a fine white, loose, semi-opaque spar. In some places of the river are pieces of rock as big as houses, which had rolled from the mountains in spring. The places they formerly occupied are plainly to be seen.

By way of amusement, I wrote down a few *Algonkin* words, which I learnt from a *Jesuit* who has been a long time among the *Algonkins*. They call water, *mukuman*; the head, *usligon*; the heart, *uta*; the body, *vetras*; the foot,

* *Tipula horticola*. Linn.

ukhita; a little boat, *usb*; a ship, *nabikoan*; fire, *skute*; hay, *maskoesee*; the hare, *whabus*; (they have a verb, which expresses the action of hunting hares, derived from the noun); the marten, *whabistanis*; the elk, *moosu** (but so that the final *u* is hardly pronounced); the reindeer, *atticku*; the mouse, *mawitulsis*. The Jesuit who told me those particulars, likewise informed me, that he had great reason to believe, that, if any *Indians* here owed their origin to *Tataria*, he thought the *Algonkins* certainly did; for their language is universally spoken in that part of *North-America* which lies far to the west of *Canada*, towards *Asia*. It is said to be a very copious language; as for example, the verb *to go upon the ice*, is entirely different in the *Algonkin* from *to go upon dry land*, *to go upon the mountains*, &c.

LATE at night we arrived at *Terre d'Eboulement*, which is twenty-two *French* miles from *Quebec*, and the last cultivated place on the western shore of the river *St. Lawrence*. The country lower down is said to be so mountainous, that no body can live in it, there not being a single spot of ground, which could be tilled. A little church, belonging to this place, stands on the shore, near the water.

* The famous *moose-deer* is accordingly nothing but an elk; for no one can deny the derivation of *moose-deer* from *moosu*. Considering especially, that before the *Iroquoise* or Five Nations grew to that power, which they at present have all over *North-America*, the *Algonkins* were then the leading nation among the *Indians*, and their language was of course then a most universal language over the greater part of *North-America*; and though they have been very nearly destroyed by the *Iroquoise*, their language is still more universal in *Canada*, than any of the rest. F.

No walnut-trees grow near this village, nor are there any kinds of them further north of this place. At bay *St. Paul*, there are two or three walnut-trees of that species which the *English* call butter-nut-trees; but they are looked upon as great rarities, and there are no others in the neighbourhood.

OAKS of all kinds, will not grow near this place, nor lower down, or further north.

WHEAT is the kind of corn which is sown in the greatest quantities here. The soil is pretty fertile, and they have sometimes got twenty-four or twenty-six bushels from one, though the harvest is generally ten or twelve fold. The bread here is whiter than any where else in *Canada*.

THEY sow plenty of oats, and it succeeds better than the wheat.

THEY sow likewise a great quantity of peas, which yield a greater encrease than any corn; and there are examples of its producing an hundred fold.

HERE are but few birds; and those that pass the summer here, migrate in autumn; so that there are no other birds than snow-birds, red partridges, and ravens, in winter. Even crows do not venture to expose themselves to the rigours of winter, but take flight in autumn.

THE *Bull-frogs* live in the pools of this neighbourhood. *Fire-flies* are likewise to be found here.

INSTEAD of candles, they make use of lamps in country places, in which the burn train oil of porpeffes, which is the common oil here.

Where

Where they have none of it, they supply its place with train-oil of seals.

Sept. 1st. THERE was a woman with child in this village, who was now in the fifty-ninth year of her age. She had not had the catamenia during eighteen years. In the year 1748, she got the small-pox, and now she was very big. She said she was very well, and could feel the motions of the fœtus. She looked very well, and had her husband alive. This being an uncommon case, she was brought to the royal physician, M. *Gauthier*, who accompanied us on this journey.

AT half an hour after seven this morning we went down the river. The country near *Terre d'Eboulement* is high, and consists of hills of a loose mould, which ly in three or four rows above each other, and are all well cultivated, and mostly turned into corn-fields; though there are likewise meadows and pastures.

THE great earthquake which happened in *Canada*, in *February*, 1663, and which is mentioned by *Charlevoix**, has done considerable damage to this place. Many hills tumbled down; and a great part of the corn-fields on the lowest hills were destroyed. They shewed me several little islands, which arose in the river on this occasion.

THERE are pieces of black lime-slate scattered on those hills, which consist of mould. For the space of eight *French* miles along the side of the river, there is not a piece of lime-slate to be seen;

* See his *Histoire de la Nouvelle France*, Tom. II. p. m. 125.

but instead of it, there are high grey mountains, consisting of a rock stone, which contains a purple and a chrystaline quartz, mixed with lime-stone, and black glimmer. The roots of these mountains go into the water. We now begin to see the lime-flates again.

HERE are a number of Terns*, which fly about, and make a noise along the shore.

THE river is here computed at about four French miles broad.

ON the sides of the river, about two French miles inland, there are such terraces of earth as at *Terre d'Eboulement*; but soon after they are succeeded by high disagreeable mountains.

SEVERAL brooks fall into the river here, over the steep shores, with a great noise. The shores are sometimes several yards high, and consists either of earth, or of rock-stone.

ONE of these brooks, which flows over a hill of lime-stone, contains a mineral water. It has a strong smell of sulphur, is very clear, and does not change its colour when mixed with gall-apples. If it is poured into a silver cup, it looks as if the cup was gilt; and the water leaves a sediment of a crimson colour at the bottom. The stones and pieces of wood, which ly in the water, are covered with a slime, which is pale grey at the top, and black at the bottom of the stone. This slime has not much pungency, but tastes like oil of tobacco. My hands had a sulphureous smell all day, because I had handled some of the slimy stones.

* *Sterna hirundo*, Linn.

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THE black lime-slate now abounds again, near the level of the water. It lies in strata, which are placed almost perpendicularly near each other, inclining a little towards W. S. W. Each stratum is between ten and fifteen inches thick. Most of them are shivered into thin leaves at the top, towards the day; but in the inside, whither neither sun, nor air and water can penetrate, they are close and compact. Some of these stones are not quite black, but have a greyish cast.

ABOUT noon we arrived at *Cap aux Oyes*, or *Geese Cape*, which has probably got its name from the number of wild geese which the *French* found near it, on their first arrival in *Canada*. At present we saw neither geese, nor any kind of birds here, a single raven excepted. Here we were to examine the renowned metallic veins in the mountain; but found nothing more than small veins of a fine white spar, containing a few specks of lead ore. *Cap aux Oyes* is computed twenty-two, or twenty-five *French* miles distant from *Quebec*. I was most pleased by finding, that most of the plants are the same as grow in *Sweden*; a proof of which I shall produce in the sequel.

THE sand-reed * grows in abundance in the sand, and prevents its being blown about by the wind.

THE sea-lime grass † likewise abounds on the shores. Both it and the preceding plant are

* *Arundo arenaria* Linn.

† *Elymus arenarius* Linn.

called *Seigle de mer* * by the French. I have been assured that these plants grow in great plenty in *Newfoundland*, and on other *North-American* shores; the places covered with them looking, at a distance, like corn-fields; which might explain the passage in our northern accounts, of the *excellent wine-land* †, which mentions, that they had found whole fields of wheat growing wild.

THE sea-side plantain ‡ is very frequent on the shore. The French boil its leaves in a broth on their sea-voyages, or eat them as a sallad. It may likewise be pickled like samphire.

THE bear-berries § grow in great abundance here. The Indians, French, English, and Dutch, in those parts of *North-America* which I have seen, call them *Sagackhomi*, and mix the leaves with tobacco for their use.

GALE, or sweet willow ||, is likewise abundant here. The French call it *Laurier*, and some *Poirrier*. They put the leaves into their broth, to give it a pleasant taste.

THE sea-rocket ¶ is, likewise, not uncommon. Its root is pounded, mixed with flour, and eaten here, when there is a scarcity of bread.

* Sea-rye.

† *Vinland det goda*, or the good wine-land, is the name which the old Scandinavian navigators gave to *America*, which they discovered long before *Columbus*. See *Torfæi Historia Vinlandiæ antiquæ s. partis Americæ septentrionis*. Hafniæ 1715, 4to. and Mr. *George Westmann's*, A. M. Dissertation on that subject. Abo, 1747. F.

‡ *Plantago maritima*, Linn.

§ *Arbutus uva ursi*, Linn.

|| *Myrica gale*, Linn.

¶ *Bunias cakile*, Linn.

THE forb-tree, or mountain-ash, the cranberry-bush, the juniper-tree, the sea-side peasé, the *Linnaea*, and many other *Swedish* plants, are likewise to be met with here.

WE returned to bay *St. Paul* to-day. A grey seal swam behind the boat for some time, but was not near enough to be shot at.

Sept. 2d. THIS morning we went to see the silver or lead veins. They ly a little on the south-side of the mills, belonging to the priests. The mountain in which the veins ly, has the same constituent parts, as the other high grey rocks in this place, viz. a rock-stone composed of a whitish or pale grey lime-stone, a purple or almost garnet-coloured quartz, and a black glimmer. The lime-stone is in greater quantities here than the other parts; and is so fine as to be hardly visible. It effervesces very strongly with *aqua fortis*. The purple or garnet-coloured quartz is next in quantity; lies scattered in exceeding small grains, and strikes fire when struck with a steel. The little black particles of glimmer follow next; and last of all, the transparent crystalline speckles of quartz. There are some small grains of spar in the lime-stone. All the different kinds of stone are very well mixed together, except that the glimmer now and then forms little veins and lines. The stone is very hard; but when exposed to sun-shine and the open air, it changes so much as to look quite rotten, and becomes friable; and in that case, its constituent particles grow quite undistinguishable. The mountain is quite full of perpendicular cliffs, in which the veins of lead-ore run from

E. S. E.

E. S. E. to W. N. W. It seems the mountain had formerly got cracks here, which were afterwards filled up with a kind of stone, in which the lead-ore was generated. That stone which contains the lead-ore is a soft, white, often semidiaphanous spar, which works very easily. In it there are sometimes stripes of a snowy white lime-stone, and almost always veins of a green kind of stone like quartz. This spar has many cracks, and divides into such pieces as quartz; but is much softer, never strikes fire with steel, does not effervesce with acids, and is not smooth to the touch. It seems to be a species of Mr. Professor *Wallerius's* vitrescent spar*. There are sometimes small pieces of a greyish quartz in this spar, which emit strong sparks of fire, when struck with a steel. In these kinds of stone the lead-ore is lodged. It commonly lies in little lumps of the size of peas; but sometimes in specks of an inch square, or bigger. The ore is very clear, and lies in little cubes†. It is generally very poor, a few places excepted. The veins of soft spar, and other kinds of stone, are very narrow, and commonly from ten to fifteen inches broad. In a few places they are twenty inches broad; and in one single place twenty-two and a half. The brook which intersects the mountain towards the mills, runs down so deep into the mountain, that the distance from the summit of the hill, to the bottom

* See *Wallerius's* Mineralogy, Germ. ed. p. 87. *Forst.* Introd. to Mineralogy, p. 13.

† It is a cubic lead-ore, or lead-glance. *Forster's* Introd. to Mineralogy, p. 51.

of the brook, is near twelve yards. Here I examined the veins, and found that they always keep the same breadth, not encreasing near the bottom of the brook; and likewise, that they are no richer below, than at the top. From hence it may be easily concluded, that it is not worth while sinking mines here. Of these veins there are three or four in this neighbourhood, at some distance from each other, but all of the same quality. The veins are almost perpendicular, sometimes deviating a little. When pieces of the green stone before-mentioned ly in the water, a great deal of the adherent white spar and lime-stone is consumed; but the green stone remains untouched. That part of the veins which is turned towards the air is always very rough, because the sun, air, and rain, have mouldered a great part of the spar and lime-stone; but the green stone has resisted their attacks. They sometimes find deep holes in these veins, filled with mountain crystals. The greatest quantity of lead or silver ore is to be found next to the rock, or even on the sides of vein. There are now and then little grains of pyrites in the spar, which have a fine gold colour. The green stone when pounded, and put on a red-hot shovel, burns with a blue flame. Some say, they can then observe a sulphureous smell, which I could never perceive, though my sense of smelling is very perfect. When this green stone is grown quite red-hot, it looses its green colour, and acquires a whitish one, but will not effervesce with *aqua fortis*.

THE sulphureous springs (if I may so call them) are at the foot of the mountain, which contains the silver, or lead ore. Several springs join here, and form a little brook. The water in those brooks is covered with a white membrane, and leaves a white, mealy matter on the trees, and other bodies in its way; this matter has a strong sulphureous smell. Trees covered with this mealy matter, when dried and set on fire, burn with a blue flame, and emit a smell of sulphur. The water does not change by being mixed with gall-apples, nor does it change blue paper into a different colour, which is put into it. It makes no good lather with soap. Silver is tarnished, and turns black, if kept in this water for a little while. The blade of a knife was turned quite black, after it had lain about three hours in it. It has a disagreeable smell, which, they say, it spreads still more in rainy weather. A number of grasshoppers were fallen into it at present. The inhabitants used this water, as a remedy against the itch.

IN the afternoon we went to see another vein, which had been spoken of as silver-ore. It lies about a quarter of a mile to the north-east of bay *St. Paul*, near a point of land called *Cap au Corbeau*, close to the shore of the river *St. Lawrence*. The mountain in which these veins lie, consist of a pale red vitrescent spar, a black glimmer, a pale lime-stone, purple or garnet-coloured grains of quartz, and some transparent quartz. Sometimes the reddish vitrescent spar is the most abundant, and lies in long stripes of small hard grains. Sometimes the fine black glimmer

glimmer abounds more than the remaining constituent parts; and these two last kinds of stone generally run in alternate stripes. The white lime-stone which consists of almost invisible particles, is mixed in among them. The garnet-coloured quartz grains appear here and there, and sometimes form whole stripes. They are as big as pin's heads, round, shining, and strike fire with steel. All these stones are very hard, and the mountains near the sea consist entirely of them. They sometimes lie in almost perpendicular strata, of ten or fifteen inches thickness. The strata, however, point with their upper ends to the north-west, and go upwards from the river, as if the water, which is close to the south-east side of the mountains, had forced the strata to lean on that side. These mountains contain very narrow veins of a white, and sometimes of a greenish, fine, semidiaphanous, soft spar, which crumbles easily into grains. In this spar they very frequently find specks, which look like a calamine blend *. Now and then, and but very seldom, there is a grain of lead-ore. The mountains near the shore consist sometimes of a black fine-grained horn-stone, and a ferruginous lime-stone. The horn-stone in that case is always in three or four times as great a quantity as the lime-stone.

In this neighbourhood there is likewise a sulphureous spring, having exactly the same qualities as that which I have before described.

* Forster's Introd. to Mineralogy, p. 50. *Zincum sterilum*, Linn. Syst. Nat. III. p. 126. Ed. XII.

The broad-leaved *Reed Mace* * grows in the very spring, and succeeds extremely well. A mountain-ash stood near it, whose berries were of a pale yellow fading colour, whereas on all other mountain-ashes they have a deep red colour.

THEY make great quantities of tar at bay *St. Paul*. We now passed near a place in which they burn tar, during summer. It is exactly the same with ours in *East-Bothnia*, only somewhat less; though I have been told, that there are sometimes very great manufactures of it here. The tar is made solely of the *Pin rouge* †, or red Pine. All other firs, of which here are several kinds, are not fit for this purpose, because they do not give tar enough to repay the trouble the people are at. They make use of the roots alone, which are quite full of resin, and which they dig out of the ground; and of about two yards of the stem, just above the root, laying aside all the rest. They have not yet learnt the art of drawing the resin to one side of the tree, by peeling off the bark; at least they never take this method. The tar-barrels are but about half the size of ours. A ton holds forty-six pots, and sells at present for twenty-five *francs* at *Quebec*. The tar is reckoned pretty good.

THE sand on the shore of the river *St. Lawrence*, consists in some places of a kind of pearl-sand. The grains are of quartz, small and

* *Typha latifolia*, Linn.

† *Pinus* foliis geminis longis; ramis triplici fasciculo foliorum terminatis, conis ovatis lævibus. *Flor. Canad.*

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femidia-

semidiaphanous. In some places, it consists of little particles of glimmer; and there are likewise spots, covered with the garnet-coloured sand, which I have before described; and which abounds in *Canada*.

Sept. 4th. THE mountains hereabouts were covered with a very thick fog to-day, resembling the smoak of a char coal-kiln. Many of these mountains are very high. During my stay in *Canada*, I asked many people, who have travelled much in *North-America*, whether they ever met with mountains so high, that the snow never melts on them in winter; to which they always answered in the negative. They say that the snow sometimes stays on the highest, *viz.* on some of those between *Canada* and the *English* colonies, during a great part of the summer; but that it melts as soon as the great heat begins.

EVERY countryman sows as much flax as he wants for his own use. They had already taken it up some time ago, and spread it on the fields, meadows, and pastures, in order to bleach it. It was very short this year in *Canada*.

THEY find iron-ore in several places hereabouts. Almost a *Swedish* mile from bay *St. Paul*, up in the country, there is a whole mountain full of iron-ore. The country round it is covered with a thick forest, and has many rivulets of different sizes, which seem to make the erection of iron-works very easy here. But the government having as yet suffered very much by the iron-works at *Trois Rivières*, nobody ventures

ventures to propose any thing further in that way.

Sept. 5th. EARLY this morning we set out on our return to *Quebec*. We continued our journey at noon, notwithstanding the heavy rain and thunder incommoded us. At that time we were just at *Petite Riviere*, and the tide beginning to ebb, it was impossible for us to come up against it; therefore we lay by here, and went on shore.

Petite Riviere is a little village, on the western side of the river *St. Lawrence*, and lies on a little rivulet, from whence it takes its name. The houses are built of stone, and are dispersed over the country. Here is likewise a fine little church of stone. To the west of the village are some very high mountains, which cause the sun to set three or four hours sooner here than ordinary. The river *St. Lawrence* annually cuts off a piece of land, on the east side of the village, so that the inhabitants fear they will in a short time lose all the land they possess here, which at most is but a musket shot broad. All the houses here are very full of children.

THE lime-slates on the hills are of two kinds. One is a black one, which I have often mentioned, and on which the town of *Quebec* is built. The other is generally black, and sometimes dark grey, and seems to be a species of the former. It is called *Pierre à chaux* here. It is chiefly distinguished from the former, by being cut very easily, giving a very white lime, when burnt, and not easily mouldering into

shivers in the air. The walls of the houses here are entirely made of this slate; and likewise the chimnies, those places excepted which are exposed to the greatest fire, where they place pieces of grey rock-stone, mixed with a deal of glimmer. The mountains near *Petite Riviere* consist merely of a grey rock-stone, which is entirely the same with that which I described near the lead-mines of bay *St. Paul*. The foot of these mountains consists of one of the lime-slate kinds. A great part of the *Canada* mountains of grey rock-stone stand on a kind of slate, in the same manner as the grey rocks of *West-Gothland* in *Sweden*.

Sept. 6th. THEY catch eels and porpeffes here, at a certain season of the year, viz. at the end of *September*, and during the whole month of *October*. The eels come up the river at that time, and are caught in the manner I have before described. They are followed by the porpeffes, which feed upon them. The greater the quantity of eels is, the greater is likewise the number of porpeffes, which are caught in the following manner. When the tide ebbs in the river, the porpeffes commonly go down along the sides of the river, catching the eels which they find there. The inhabitants of this place therefore stick little twigs, or branches with leaves, into the river, in a curve line or arch, the ends of which look towards the shore, but stand at some distance from it, leaving a passage there. The branches stand about two feet distant from each other. When the porpeffes come amongst them, and perceive the rustling

rustling the water makes with the leaves, they dare not venture to proceed, fearing lest there should be a snare, or trap, and endeavour to go back. Mean while the water has receded so much, that in going back they light upon one of the ends of the arch, whose moving leaves frighten them again. In this confusion they swim backwards and forwards, till the water is entirely ebb'd off, and they ly on the bottom, where the inhabitants kill them. They give a great quantity of train-oil.

NEAR the shore, is a grey clay, full of ferruginous cracks, and pierced by worms. The holes are small, perpendicular, and big enough to admit a middling pin. Their sides are likewise ferruginous, and half-petrified; and where the clay has been washed away by the water, the rest looks like ochre-coloured stumps of tobacco-pipe tubes.

AT noon we left *Petite Riviere*, and continued our journey towards *St. Joachim*.

BETWEEN *Petite Riviere*, which lies in a little bay, and *St. Joachim*, the western shore of the river *St. Lawrence* consists of prominent mountains, between which there are several small bays. They have found, by long experience, that there is always a wind on these mountains, even when it is calm at *Petite Riviere*. And when the wind is pretty high at the last-mentioned place, it is not adviseable to go to *Quebec* in a boat, the wind and waves, in that case, being very high near these mountains. We had at present an opportunity of experiencing it. In the creeks between the mountains,

tains, the water was almost quite smooth; but on our coming near one of the points formed by the high mountains, the waves encreased, and the wind was so high, that two people were forced to take care of the helm, and the mast broke several times. The waves are likewise greatly encreased by the strong current near those points or capes.

Sept. 7th. A LITTLE before noon, we continued our voyage from *St. Joachim*.

THEY employ tree-mushrooms very frequently instead of tinder. Those which are taken from the sugar-maple are reckoned the best; those of the red maple are next in goodness; and next to them, those of the sugar-birch. For want of these, they likewise make use of those which grow on the asp-tree or tremble.

THERE are no other ever-green trees in this part of *Canada* than the thuya, the yew, and some of the fir kind.

THE thuya is esteemed for resisting putrefaction much longer than any other wood; and next in goodness to it is the pine, called *perusse* here.

THEY make cheese in several places hereabouts. That of the isle of *Orleans* is, however, reckoned the best. This kind is small, thin, and round; and four of them weigh about a *French* pound. Twelve of them sell for thirty sols. A pound of salt butter costs ten sols at *Quebec*, and of fresh butter fifteen sols. Formerly, they could get a pound of butter for four sols here.

THE

THE corn-fields towards the river are sloping; they are suffered to ly fallow and to be sown alternately. The sown ones looked yellow at this distance, and the fallow ones green. The weeds are left on the latter all summer, for the cattle to feed upon.

THE ash wood furnishes the best hoops for tuns here; and for want of it, they take the thuya, little birch-trees, wild cherry-trees, and others.

THE hills near the river, on the western side, opposite the isle of *Orleans*, are very high and pretty steep. They consist, in most part, of black lime-slate. There are likewise some spots which consist of a rock-stone, which, at first sight, looks like a sand-stone, and is composed of grey quartz, a reddish lime-stone, a little grey lime-stone, and some pale grey grains of sand. These parts of the stone are small and pretty equally mixed with each other. The stone looks red, with a greyish cast, and is very hard. It lies in strata, one above another. The thickness of each stratum is about five inches. It is remakable, that there are both elevated and hollow impressions of pectinites on the surface, where one likewise meets with the petrified shells themselves; but on breaking the stone, it does not even contain the least vestige of an impression or petrified shell. All the impressions are small, about the length and breadth of an inch. The particulars of quartz in the stone strike fire with steel, and the particulars of lime-stone effervesces strongly with *aqua-fortis*. The upper and lower surfaces of the strata

strata consist of lime-stone, and the inner parts of quartz. They break great quantities of this stone in order to build houses of it, pave floors with it, and make stair-cases of it. Great quantities of it are sent to *Quebec*. It is remarkable, that there are petrifications in this stone, but never any in the black lime-slates.

THE women dye their woollen yarn yellow with seeds of gale *, which is called *poivrier* here, and grows abundant in wet places.

THIS evening, M. *Gauthier* and I went to see the water-fall at *Montmorenci*. The country near the river is high and level, and laid out into meadows. Above them the high and steep hills begin, which are covered with a crust of mould, and turned into corn-fields. In some very steep places, and near the rivulets, the hills consist of mere black lime-slate, which is often crumbled into small pieces, like earth. All the fields below the hills are full of such pieces of lime-slate. In some more elevated places, the earth consists of a pale red colour; and the lime-slates are likewise reddish.

THE water-fall near *Montmorenci* is one of the highest I ever saw. It is in a river whose breadth is not very considerable, and falls over the steep side of a hill, consisting entirely of black lime-slate. The fall is now at the bottom of a little creek of the river. Both sides of the creek consist merely of black lime-slate, which is very much cracked and tumbled down. The hill of lime-slate under the water-fall is quite perpendi-

* *Myrica gale*. Linn.

cular, and one cannot look at it without astonishment. The rain of the preceding days had increased the water in the river, which gave the fall a grander appearance. The breadth of the fall is not above ten or twelve yards. Its perpendicular height Mr. *Gauthier* and I guessed to be between a hundred and ten, and a hundred and twenty feet; and on our return to *Quebec*, we found our guess confirmed by several gentlemen, who had actually measured the fall, and found it to be nearly as we had conjectured. The people who live in the neighbourhood exaggerate in their accounts of it, absolutely declaring that it is three hundred feet high. Father *Charlevoix* * is too sparing, in giving it only forty feet in height. At the bottom of the fall there is always a thick fog of vapours spreading about the water, being resolved into them by its violent fall. This fog occasions almost perpetual rain here, which is more or less heavy, in proportion to its distance from the fall. Mr. *Gauthier* and myself, together with the man who shewed us the way, were willing to come nearer to the falling water, in order to examine more accurately how it came down from such a height, and how the stone behind the water looked. But, being about twelve yards off the fall, a sudden gust of wind blew a thick fog upon us, which, in less than a minute, had wet us as thoroughly as if we had walked for half an hour in a heavy shower. We therefore hurried away as fast as we could. The noise of the

* See his *Histoire de la Nouv. France*, tom. v. p. m. 190.

fall is sometimes heard at *Quebec*, which is two *French* miles off to the southward; and this is a sign of a north-east wind. At other times, it can be well heard in the villages, a good way lower to the north; and it is then reckoned an undoubted sign of a south-west wind, or of rain. The black lime-slate on the sides of the fall lies in dipping, and almost perpendicular strata. In these lime-slate strata are the following kinds of stone to be met with.

Fibrous gypsum *. THIS lies in very thin leaves between the cracks of the lime-slate. Its colour is a snowy white. I have found it in several parts of *Canada*, in the same black lime-stone.

Pierre à Calumet. THIS is the *French* name of a stone disposed in strata between the lime-slate, and of which they make almost all the tobacco-pipe heads in the country. The thickness of the strata is different. I have seen pieces near fifteen inches thick; but they are commonly between four and five inches thick. When the stone is long exposed to the open air or heat of the sun, it gets a yellow colour; but in the inside it is grey. It is a lime-stone of such a compactness, that its particles are not distinguishable by the naked eye. It is pretty soft, and will bear cutting with a knife. From this quality, the people likewise judge of the goodness of the stone for tobacco-pipe heads; for the hard pieces of it are not so fit for use as the softer

* *Gypsum emiantiforme*, Waller. *Min. Germ.* ed. p. 74. *Fibrous* or *radiated gypsum*, Forst. *Introd. to Mineralogy*, p. 16.

ones. I have seen some of these stones shivering into thin leaves on the outside, where they were exposed to the sun. All the tobacco pipe heads, which the common people in *Canada* make use of, are made of this stone, and are ornamented in different ways. A great part of the gentry likewise make use of them, especially when they are on a journey. The *Indians* have employed this stone for the same purposes for several ages past, and have taught it the *Europeans*. The heads of the tobacco-pipes are naturally of a pale grey colour; but they are blackened whilst they are quite new, to make them look better. They cover the head all over with grease, and hold it over a burning candle, or any other fire, by which means it gets a good black colour, which is increased by frequent use. The tubes of the pipes are always made of wood *.

THERE are no coals near this fall, or in the steep hills close to it. However, the people in the neighbouring village shewed me a piece of coal, which, they said, they had found on one of the hills about the fall.

WE arrived at *Quebec* very late at night.

Sept. 8. INTERMITTING fevers of all kinds are very rare at *Quebec*, as Mr. *Gauthier* affirms.

* All over *Poland*, *Russia*, *Turky*, and *Tartary*, they smoke out of pipes made of a kind of stone-marle, to which they fix long wooden tubes; for which latter purpose, they commonly employ the young shoots of the various kinds of *spirea*, which have a kind of pith easily to be thrust out. The stone-marle is called generally sea-scum, being pretty soft; and by the *Tartars*, in *Crimea*, it is called *kessikil*. And as it cuts so easily, various figures are curiously carved in it, when it is worked into pipe-heads, which often are mounted with silver. F.

On the contrary, they are very common near Fort *St. Frederic*, and near Fort *Detroit*, which is a *French* colony, between Lake *Erie* and Lake *Huron*, in forty-three degrees north latitude.

SOME of the people of quality make use of ice-cellars, to keep beer cool in, during summer, and to keep fresh flesh, which would not keep long in the great heat. These ice-cellars are commonly built of stone, under the house. The walls of it are covered with boards, because the ice is more easily consumed by stones. In winter they fill it with snow, which is beat down with the feet, and covered with water. They then open the cellar holes and the door, to admit the cold. It is customary in summer to put a piece of ice into the water or wine which is to be drank.

ALL the salt which is made use of here is imported from *France*. They can make good salt here of the sea water; but *France* keeping the salt trade entirely to itself, they do not go on with it here.

THE *Esquimaux* are a particular kind of *American* savages, who live only near the water, and never far in the country, on *Terra Labrador*, between the most outward point of the mouth of the river *St. Lawrence* and *Hudson's* bay. I have never had an opportunity of seeing one of them. I have spoken with many *Frenchmen* who have seen them, and had them on board their own vessels. I shall here give a brief history of them, according to their unanimous accounts.

THE *Esquimaux* are entirely different from the *Indians* of *North-America*, in regard to their

complexion and their language. They are almost as white as *Europeans*, and have little eyes: the men have likewise beards. The *Indians*, on the contrary, are copper-coloured, and the men have no beards. The *Esquimaux* language is said to contain some *European* words *. Their houses are either caverns or clefts in the mountains, or huts of turf above ground. They never sow or plant vegetables, living chiefly on various kinds of whales, on seals †, and walrusses ‡. Sometimes they likewise catch land animals, on which they feed. They eat most of their meat quite raw. Their drink is water; and people have likewise seen them drinking the sea-water, which was like brine.

THEIR shoes, stockings, breeches, and jackets, are made of seal-skins well prepared, and sewed together with nerves of whales, which may be twisted like threads, and are very tough. Their cloaths, the hairy side of which is turned outwards, are sewed together so well, that they can go up to their shoulders in the water without wetting their under cloaths. Under their upper cloaths, they wear shirts and waistcoats made of

* The *Moravian* brethren in *Greenland*, coming once over with some *Greenlanders* to *Terra Labrador*, the *Esquimaux* ran away at their appearance; but they ordered one of their *Greenlanders* to call them back in his language. The *Esquimaux* hearing his voice, and understanding the language, immediately stopped, came back, and were glad to find a countryman, and wherever they went, among the other *Esquimaux*, they gave out, that one of their brethren was returned. This proves the *Esquimaux* to be of a tribe different from any *European* nation, as the *Greenland* language has no familiarity with any language in *Europe*. F.

† *Phoca vitulina*. Linn.

‡ *Trichechus rosmarus*. Linn.

seals skins, prepared so well as to be quite soft. I saw one of their womens dresses; a cap, a waistcoat, and coat, made all of one piece of seal's skin well prepared, soft to the touch, and the hair on the outside. There is a long train behind at their coats, which scarce reach them to the middle of the thigh before; under it they wear breeches and boots, all of one piece. The shirt I saw was likewise made of a very soft seal's skin. The *Esquimaux* women are said to be handsomer than any of the *American Indian* women, and their husbands are accordingly more jealous in proportion.

I HAVE likewise seen an *Esquimaux* boat. The outside of it consists entirely of skins, the hair of which has been taken off; and the sides of the skins on which they were inserted are turned outwards, and feel as smooth as vellum. The boat was near fourteen feet long, but very narrow, and very sharp-pointed at the extremities. In the inside of the boat they place two or three thin boards, which give a kind of form to the boat. It is quite covered with skins at the top, excepting, near one end, a hole big enough for a single person to sit and row in, and keep his thighs and legs under the deck. The figure of the hole resembles a semi-circle, the base or diameter of which is turned towards the larger end of the boat. The hole is surrounded with wood, on which a soft folded skin is fastened with straps at its upper end. When the *Esquimaux* makes use of his boat, he puts his legs and thighs under the deck, sits down at the bottom of the boat, draws the skin before-men-

tioned round his body, and fastens it well with the straps; the waves may then beat over his boat with considerable violence, and not a single drop comes into it; the clothes of the *Esquimaux* keep the wet from him. He has an oar in his hand, which has a paddle at each end; it serves him for rowing with, and keeping the boat in equilibrium during a storm. The paddles of the oar are very narrow. The boat will contain but a single person. *Esquimaux* have often been found safe in their boats many miles from land, in violent storms, where ships found it difficult to save themselves. Their boats float on the waves like bladders, and they row them with incredible velocity. I am told they have boats of different shapes. They have likewise larger boats of wood, covered with leather, in which several people may sit, and in which their women commonly go to sea.

Bows and arrows, javelins and harpoons, are their arms. With the last they kill whales, and other large marine animals. The points of their arrows and harpoons are sometimes made of iron, sometimes of bone, and sometimes of the teeth of the walrus. Their quivers are made of seals skins. The needles with which they sew their cloaths are likewise made of iron, or of bone. All their iron they get, by some means or other, from the *Europeans*.

THEY sometimes go on board the *European* ships, in order to exchange some of their goods for knives and other iron. But it is not advisable for *Europeans* to go on shore, unless they be numerous; for the *Esquimaux* are false and

treache-

treacherous, and cannot suffer strangers amongst them. If they find themselves too weak, they run away at the approach of strangers; but if they think they are an over-match for them, they kill all that come in their way, without leaving a single one alive. The *Europeans*, therefore, do not venture to let a greater number of *Esquimaux* come on board their ships than they can easily master. If they are ship-wrecked on the *Esquimaux* coasts, they may as well be drowned in the sea as come safe to the shore: this many *Europeans* have experienced. The *European* boats and ships which the *Esquimaux* get into their power, are immediately cut in pieces, and robbed of all nails and other iron, which they work into knives, needles, arrow-heads, &c. They make use of fire for no other purposes but working of iron, and preparing the skins of animals. Their meat is eaten all raw. When they come on board an *European* ship, and are offered some of the sailors meat, they never will taste of it till they have seen some *Europeans* eat it. Though nothing pleased other savage nations so much as brandy, yet many *Frenchmen* have assured me, that they never could prevail on the *Esquimaux* to take a dram of it. Their mistrust of other nations is the cause of it; for they undoubtedly imagine that they are going to poison them, or do them some hurt; and I am not certain whether they do not judge right. They have no ear-rings, and do not paint the face like the *American Indians*. For many centuries past they have had dogs whose ears are erected, and never hang down. They

They make use of them for hunting, and instead of horses in winter, for drawing their goods on the ice. They themselves sometimes ride in sledges drawn by dogs. They have no other domestic animal. There are indeed plenty of rein-deer in their country; but it is not known that either the *Esquimaux*, or any of the *Indians* in *America*, have ever tamed them. The *French* in *Canada*, who are in a manner the neighbours of the *Esquimaux*, have taken a deal of pains to carry on some kind of trade with them, and to endeavour to engage them to a more friendly intercourse with other nations. For that purpose they took some *Esquimaux* children, taught them to read, and educated them in the best manner possible. The intention of the *French* was, to send these children to the *Esquimaux* again, that they might inform them of the kind treatment the *French* had given them, and thereby incline them to conceive a better opinion of the *French*. But unhappily all the children died of the small-pox, and the scheme was dropt. Many persons in *Canada* doubted whether the scheme would have succeeded, though the children had been kept alive. For they say, there was formerly an *Esquimaux* taken by the *French*, and brought to *Canada*, where he staid a good while, and was treated with great civility. He learnt *French* pretty well, and seemed to relish the *French* way of living very well. When he was sent back to his countrymen, he was not able to make the least impression on them, in favour of the *French*; but was killed by his nearest relations, as half a *Frenchman* and foreigner.

reigner. This inhuman proceeding of the *Esquimaux* against all strangers, is the reason why none of the *Indians* of *North-America* ever give quarter to the *Esquimaux* if they meet with them, but kill them on the spot; though they frequently pardon their other enemies, and incorporate the prisoners into their nation.

FOR the use of those, who are fond of comparing the languages of several nations, I have here inserted a few *Esquimaux* words, communicated to me by the Jesuit *Saint Pie*. One, *kombuc*; two, *tigal*; three, *ké*; four, *missilagat*; water, *sillalokto*; rain, *killaluck*; heaven, *taktuck*, or *nabugakshe*; the sun, *shikonak*, or *sakaknuk*; the moon, *takock*; an egg, *manneguk*; the boat, *kagack*; the oar, *pacotick*; the knife, *shawié*; a dog, *mekké*, or *timilok*; the bow, *petik-sick*; an arrow, *katsô*; the head, *niakock*; the ear, *tchiu*; the eye, *killik*, or *shik*; the hair, *nut-shad*; a tooth, *ukak*; the foot, *itikat*. Some think that they are nearly the same nation with the *Greenlanders*, or *Skralingers*; and pretend that there is a great affinity in the language*.

PLUMB-TREES of different sorts, brought over from *France*, succeed very well here. The present year they did not begin to flower till this month. Some of them looked very well; and I am told the winter does not hurt them.

* The above account of the *Esquimaux* may be compared with Henry Ellis's *Account of a Voyage to Hudson's Bay, by the Dobbs Galley and California, &c.* and *The Account of a Voyage for the Discovery of a North-West Passage by Hudson's Streights, by the Clerk of the California. Two Vols. 8vo.* And lastly, which *Cramer's History of Greenland. Two Vols. 8vo. F.*

Sept. 11th. THE marquis de la Galissonniere is one of the three noblemen, who, above all others, have gained high esteem with the French admiralty in the last war. They are the marquises de la Galissonniere, de la Jonquiere, and de l'Etendue. The first of these was of a low stature, and somewhat hump-backed. He has a surprizing knowledge in all branches of science, and especially in natural history; in which he is so well versed, that when he began to speak with me about it, I imagined I saw our great *Linnaeus* under a new form. When he spoke of the use of natural history, of the method of learning, and employing it to raise the state of a country, I was astonished to see him take his reasons from politics, as well as natural philosophy, mathematics, and other sciences. I own, that my conversation with this nobleman was very instructive to me; and I always drew a deal of useful knowledge from it. He told me several ways of employing natural history to the purposes of politics, and to make a country powerful, in order to depress its envious neighbours. Never has natural history had a greater promoter in this country; and it is very doubtful whether it will ever have his equal here. As soon as he got the place of governor-general, he began to take those measures for getting information in natural history, which I have mentioned before. When he saw people, who had for some time been in a settled place of the country, especially in the more remote parts, or had travelled in those parts, he always questioned them about the trees, plants, earths, stones, ores,

Vol. II. B b animals,

animals, &c. of the place. He likewise enquired what use the inhabitants made of these things; in what state their husbandry was; what lakes, rivers, and passages there are; and a number of other particulars. Those who seemed to have clearer notions than the rest, were obliged to give him circumstantial descriptions of what they had seen. He himself wrote down all the accounts he had received; and by this great application, so uncommon among persons of his rank, he soon acquired a knowledge of the most distant parts of *America*. The priests, commandants of forts, and of several distant places, are often surprized by his questions, and wonder at his knowledge, when they come to *Quebec* to pay their visits to him; for he often tells them that near such a mountain, or on such a shore, &c. where they often went a-hunting, there are some particular plants, trees, earths, ores, &c. for he had got a knowledge of those things before. From hence it happened, that some of the inhabitants believed he had a preternatural knowledge of things, as he was able to mention all the curiosities of places, sometimes near two hundred *Swedish* miles from *Quebec*, though he never was there himself. Never was there a better statesman than he; and nobody can take better measures, and choose more proper means for improving a country, and encreasing its welfare. *Canada* was hardly acquainted with the treasure it possessed in the person of this nobleman, when it lost him again; the king wanted his services at home, and could not leave him so far off. He was going to *France*

with

with a collection of natural curiosities; and a quantity of young trees and plants, in boxes full of earth.

THE black lime-slate has been repeatedly mentioned during the course of my journey. I will here give a more minute detail of it. The mountain on which *Quebec* is built, and the hills along the river *St. Lawrence*, consist of it for some miles together, on both sides of *Quebec*. About a yard from the surface, this stone is quite compact, and without any cracks; so that one cannot perceive that it is a slate, its particles being imperceptible. It lies in strata, which vary from three or four inches, to twenty thick, and upwards. In the mountains on which *Quebec* is built, the strata do not ly horizontal, but dipping, so as to be nearly perpendicular; the upper ends pointing north-west, and the lower ones south-east. From hence it is, the corners of these strata always strike out at the surface into the streets, and cut the shoes in pieces. I have likewise seen some strata, inclining to the northward, but nearly perpendicular as the former. Horizontal strata, or nearly such, have occurred to me too. The strata are divided by narrow cracks, which are commonly filled with fibrous white gypsum, which can sometimes be got loose with a knife, if the layer or stratum of slate above it is broken in pieces; and in that case it has the appearance of a thin white leaf. The large cracks are almost filled up with transparent quartz crystals, of different sizes. One part of the mountain contains vast quantities of these crystals, from which the corner of the mountain

which

which lies to the S. S. E. of the palace, has got the name of *Pointe de Diamante*, or Diamond Point. The small cracks which divide the stone, go generally at right angles; the distances between them are not always equal. The outside of the stratum, or that which is turned towards the other stratum, is frequently covered with a fine, black, shining membrane, which looks like a kind of a pyrous horn-stone. In it there is sometimes a yellow pyrites, always lying in small grains. I never found petrifications or impressions, or other kinds of stone in it, besides those I have just mentioned. Almost all the public and private buildings at *Quebec* consist of this lime-slate; and likewise the walls round the town, and round the monasteries and gardens. It is easily broken, and cut to the size wanted. But it has the property of splitting into thin shivers, parallel to the surface of the stratum from whence they are taken, after lying during one or more years in the air, and exposed to the sun. However, this quality does no damage to the walls in which they are placed; for the stones being laid on purpose into such a position that the cracks always run horizontally, the upper stones press so much upon the lower ones, that they can only get cracks outwardly, and shiver only on the outside, without going further inwards. The shivers always grow thinner, as the houses grow older.

IN order to give my readers some idea of the climate of *Quebec*, and of the different changes of heat and cold, at the several seasons of the year, I will here insert some particulars extracted from

from the meteorological observations, of the royal physician, Mr. *Gauthier*: he gave me a copy of those which he had made from *October* 1744, to the end of *September* 1746. The thermometrical observations I will omit, because I do not think them accurate; for as Mr. *Gauthier* made use of *de la Hire's* thermometer, the degrees of cold cannot be exactly determined, the quicksilver being depressed into the globe at the bottom, as soon as the cold begins to be considerable. The observations are made throughout the year, between seven and eight in the morning, and two and three in the afternoon. He has seldom made any observations in the afternoon. His thermometer was likewise inaccurate, by being placed in a bad situation.

The year 1745.

Jan. THE 29th of this month the river *St. Lawrence* was covered over with ice, near *Quebec*. In the observations of other years, it is observed, that the river is sometimes covered with ice in the beginning of *January*, or the end of *December*.

Feb. NOTHING remarkable happened during the course of this month.

March. THEY say this has been the mildest winter they ever felt; even the eldest persons could not remember one so mild. The snow was only two feet deep, and the ice in the river, opposite *Quebec*, had the same thickness. On the twenty-first there was a thunder-storm, which fell upon a soldier, and hurt him very much.

much. On the 19th and 20th, they began to make incisions into the sugar-maple, and to prepare sugar from its juice.

April. DURING this month they continued to extract the juice of the sugar-maple, for making sugar. On the 7th the gardeners began to make hot-beds. On the 20th the ice in the river broke loose near *Quebec*, and went down; which rarely happens so soon; for the river *St. Lawrence* is sometimes covered with ice opposite *Quebec*, on the 10th of *May*. On the 22d, and 23d, there fell a quantity of snow. On the 25th they began to sow near *St. Joachim*. The same day they saw some swallows. The 29th they sowed corn all over the country. Ever since the 23d the river had been clear at *Quebec*.

May. THE third of this month the cold was so great in the morning, that *Celsius's* or the *Swedish* thermometer, was four degrees below the freezing point; however, it did not hurt the corn. On the 16th all the summer-corn was sown. On the 5th the *Sanguinaria*, *Narcissus*, and violet, began to blow. The 17th the wild cherry-trees, raspberry-bushes, apple-trees, and lime-trees, began to expand their leaves. The strawberries were in flower about that time. The 29th the wild cherry-trees were in blossom. On the 26th part of the *French* apple-trees, cherry-trees, and plum-trees, opened their flowers.

June. THE 5th of this month all the trees had got leaves. The apple-trees were in full flower. Ripe straw-berries were to be had on

the

the 22d. Here it is noted, that the weather was very fine for the growth of vegetables.

July. THE corn began to shoot into ears on the 12th, and had ears every where on the 21st. (It is to be observed, that they sow nothing but summer-corn here) Soon after the corn began to flower. Hay-making began the 22d. All this month the weather was excellent.

Aug. ON the 12th there were ripe pears and melons at *Montreal*. On the 20th the corn was ripe round *Montreal*, and the harvest was begun there. On the 22d the harvest began at *Quebec*. On the 30th, and 31st, there was a very small hoar-frost on the ground.

Sept. THE harvest of all kinds of corn ended on the 24th and 25th. Melons, water-melons, cucumbers, and fine plums, were very plentiful during the course of this month. Apples and pears were likewise ripe, which is not always the case. On the last days of this month they began to plough the land. The following is one of the observations of this month: "The
" old people in this country say, that the corn
" was formerly never ripe till the 15th or 16th
" of *September*, and sometimes on the 12th;
" but no sooner. They likewise assert, that it
" never was perfectly ripe. But since the woods
" have been sufficiently cleared, the beams of
" the sun have had more room to operate, and
" the corn ripens sooner than before *." It

B b 4

* It is not only the clearing of woods, but cultivation, and population, that alter the climate of a country, and make it mild. The Romans looked upon the winters of *Germany* and *England* as very

is further remarked, that the hot summers are always very fruitful in *Canada*, and that most of the corn has hardly ever arrived at perfect maturity.

Oct. DURING this month the fields were ploughed, and the weather was very fine all the time. There was a little frost for several nights,

very severe, but happily both countries have at present a much more mild climate than formerly, owing to the three above-mentioned reasons. Near *Petersburg*, under sixty degrees north latitude, the river *Neva* was covered with ice 1765, in the beginning of *December* and cleared of it *April* the 11th 1766. At *Tsariſſin*, which is under forty-eight degrees forty minutes north latitude, the river *Volga* was covered with ice the 26th of *November* 1765, and the ice broke in the river *April* the 27th 1766, (all old file). Is it not almost incredible, that in a place very near twelve degrees more to the south, the effects of cold should be felt longer, and more severely, than in the more northern climate? And tho' the neighbourhood of *Petersburg* has a great many woods, the cold was, however, less severe, and lasting; *Tsariſſin*, on the contrary, has no woods for many hundred miles in its neighbourhood, if we except some few trees and bushes along the *Volga*, and its idles, and the low land along it. Wherever the eye looks to the east, there are vast plains without woods, for many hundred miles. The clearing a country of woods, cannot therefore alone contribute so much to make the climate milder. But cultivation does more. On a ploughed field the snow will always sooner melt, than on a field covered with grass. The inflammable warm particles brought in to the field, by the various kinds of manure, contribute much to soften the rigours of the climate; but the exhalations of thousands of men and cattle, in a populous country, the burning of so many combustibles, and the dispersion of so many caustic particles, thro' the whole atmosphere; these are things which contribute so much towards softening the rigours of a climate. In a hundred square miles near *Tsariſſin*, there is not so much cultivated land as there is within ten near *Petersburg*; it is in proportion to the number of the inhabitants of both places, and this makes the chief difference of the climate. There is still another consideration, *Petersburg* lies near the sea, and *Tsariſſin* in an inland country; and, generally speaking, countries near the sea have been observed to enjoy a milder climate. These few remarks will be, I believe, sufficient to enable every body to judge of the changes of the climate in various countries, which, no doubt, grow warmer and more temperate, as cultivation and population increase. F.

and on the 28th it snowed. Towards the end of this month the trees began to shed their leaves.

Nov. THEY continued to plough till the 10th of this month, when the trees had shed all their leaves. Till the 18th the cattle went out of doors, a few days excepted, when bad weather had kept them at home. On the 16th there was some thunder and lightning. There was not yet any ice in the river *St. Lawrence* on the 24th.

Dec. DURING this month it is observed, that the autumn has been much milder than usual. On the 1st a ship could still set sail for *France*; but on the 16th the river *St. Lawrence* was covered with ice on the sides, but open in the middle. In the river *Charles* the ice was thick enough for horses with heavy loads to pass over it. On the 26th the ice in the river *St. Lawrence* was washed away by a heavy rain; but on the 28th part of that river was again covered with ice.

THE next observations shew, that the winter has likewise been one of the mildest. I now resume the account of my own journey.

THIS evening I left *Quebec* with a fair wind. The governor-general of *Canada*, the marquis *de la Jonquiere*, ordered one of the king's boats, and seven men, to bring me to *Montreal*. The middle of the boat was covered with blue cloth, under which we were secured from the rain. This journey I made at the expence of the *French* king. We went three *French* miles to-day.

Sept.

Sept. 12. WE continued our journey during all this day.

THE small kind of maize, which ripens in three months time, was ripe about this time, and the people drew it out of the ground, and hung it up to dry.

THE weather about this time was like the beginning of our *August*, old stile. Therefore it seems autumn commences a whole month later in *Canada*, than in the midst of *Sweden*.

NEAR each farm there is a kitchen-garden, in which onions are most abundant; because the *French* farmers eat their dinners of them with bread, on Fridays and Saturdays, or fasting days. However, I cannot say, the *French* are strict observers of fasting; for several of my rowers ate flesh to-day, though it was Friday. The common people in *Canada* may be smelted when one passes by them, on account of their frequent use of onions. Pumpions are likewise abundant in the farmers gardens. They dress them in several ways, but the most common is to cut them through the middle, and place the inside of the hearth, towards the fire, till it is quite roasted. The pulp is then cut out of the peel, and eaten; people above the vulgar put sugar to it. Carrots, salad, *French* beans, cucumbers, and currant shrubs, are planted in every farmer's little kitchen-garden.

EVERY farmer plants a quantity of tobacco near his house, in proportion to the size of his family. It is likewise very necessary that they should plant tobacco, because it is so universally smoked by the common people. Boys of ten

or twelve years of age run about with the pipe in their mouths, as well as the old people. Persons above the vulgar do not refuse to smoak a pipe now and then. In the northern parts of *Canada*, they generally smoak tobacco by itself; but further upwards, and about *Montreal*, they take the inner bark of the red Cornelian cherry *, crush it, and mix it with the tobacco, to make it weaker. People of both sexes, and of all ranks, use snuff very much. Almost all the tobacco which is consumed here is the produce of the country, and some people prefer it even to *Virginian* tobacco: but those who pretend to be connoisseurs, reckon the last kind better than the other.

THOUGH many nations imitate the *French* customs; yet I observed, on the contrary, that the *French* in *Canada*, in many respects, follow the customs of the *Indians*, with whom they converse every day. They make use of the tobacco-pipes, shoes, garters, and girdles, of the *Indians*. They follow the *Indian* way of making war with exactness; they mix the same things with tobacco; they make use of the *Indian* bark-boats, and row them in the *Indian* way; they wrap square pieces of cloth round their feet instead of stockings, and have adopted many other *Indian* fashions. When one comes into the house of a *Canada* peasant, or farmer, he gets up, takes his hat off to the stranger, desires him to sit down, puts his hat on, and sits down again. The gentlemen and ladies, as well as the poorest pea-

* *Cornus sanguinea*. Linn.

sants and their wives, are called *Monsieur* and *Madame*. The peasants, and especially their wives, wear shoes, which consist of a piece of wood hollowed out, and are made almost as slippers. Their boys, and the old peasants themselves, wear their hair behind in a cue; and most of them wear red woollen caps at home, and sometimes on their journies.

THE farmers prepare most of their dishes of milk. Butter is but seldom seen, and what they have is made of sour cream, and therefore not so good as *English* butter. Many of the *French* are very fond of milk, which they eat chiefly on fasting days. However, they have not so many methods of preparing it as we have in *Sweden*. The common way was to boil it, and put bits of bread, and a good deal of sugar, into it. The *French* here eat near as much flesh as the *English*, on those days when their religion allows it. For excepting the soup, the sallads, and the desert, all their other dishes consist of flesh variously prepared.

AT night we lay at a farm-house, near a river called *Petite Riviere*, which falls here into the river *St. Lawrence*. This place is reckoned sixteen *French* miles from *Quebec*, and ten from *Trois Rivières*. The tide is still considerable here. Here is the last place where the hills, along the river, consist of black lime-slate; further on they are composed merely of earth.

FIRE-FLIES flew about the woods at night, though not in great numbers; the *French* call them *Mouches à feu*.

THE

THE houses in this neighbourhood are all made of wood. The rooms are pretty large. The inner roof rests on two, three, or four, large thick spars, according to the size of the room. The chinks are filled with clay, instead of moss. The windows are made entirely of paper. The chimney is erected in the middle of the room; that part of the room which is opposite the fire, is the kitchen; that which is behind the chimney, serves the people to sleep, and receive strangers in. Sometimes there is an iron stove behind the chimney.

Sept. 13th. NEAR *Champlain*, which is a place about five *French* miles from *Trois Rivières*, the steep hills near the river consist of a yellow, and sometimes ochre-coloured sandy earth, in which a number of small springs arise. The water in them is generally filled with yellow ochre, which is a sign, that these dry sandy fields contain a great quantity of the same iron ore, which is dug at *Trois Rivières*. It is not conceivable from whence that number of small rivulets takes their rise, the ground above being flat, and exceeding dry in summer. The lands near the river are cultivated for about an *English* mile into the country; but behind them there are thick forests, and low grounds. The woods, which collect a quantity of moisture, and prevent the evaporation of the water, force it to make its way under ground to the river. The shores of the river are here covered with a great deal of black iron-sand.

TOWARDS evening we arrived at *Trois Rivières*, where we staid no longer, than was necessary

cessary to deliver the letters, which we brought with us from *Quebec*. After that we went a *French* mile higher up, before we took our night's lodging.

THIS afternoon we saw three remarkable old people. One was an old Jesuit, called father *Joseph Aubery*, who had been a missionary to the converted *Indians* of *St. François*. This summer he ended the fiftieth year of his mission. He therefore returned to *Quebec*, to renew his vows there; and he seemed to be healthy, and in good spirits. The other two people were our landlord and his wife; he was above eighty years of age, and she was not much younger. They had now been fifty-one years married. The year before, at the end of the fiftieth year of their marriage, they went to church together, and offered up thanks to God Almighty for the great grace he gave them. They were yet quite well, content, merry, and talkative. The old man said, that he was at *Quebec* when the *English* besieged it, in the year 1690, and that the bishop went up and down the streets, dressed in his pontifical robes, and a sword in his hand, in order to recruit the spirits of the foldiers.

THIS old man said, that he thought the winters were formerly much colder than they are now. There fell likewise a greater quantity of snow, when he was young. He could remember the time when pumpions, cucumbers, &c. were killed by the frost about mid-summer; and he assured me, that the summers were warmer

mer now than they used to be formerly. About thirty and some odd years ago, there was such a severe winter in *Canada*, that the frost killed many birds; but the old man could not remember the particular year. Every body allowed, that the summers in 1748, and 1749, had been warmer in *Canada* than they have been many years ago.

THE soil is reckoned pretty fertile; and wheat yields nine or ten grains from one. But when this old man was a boy, and the country was new and rich every where, they could get twenty, or four-and-twenty, grains from one. They sow but little rye here; nor do they sow much barley, except for the use of cattle. They complain, however, that when they have a bad crop, they are obliged to bake bread of barley.

Sept. 14th. THIS morning we got up early, and pursued our journey. After we had gone about two *French* miles, we got into Lake *St. Pierre*, which we crossed. Many plants, which are common in our *Swedish* Lakes, swim at the top of this water. This Lake is said to be covered every winter with such strong ice, that a hundred loaded horses could go over it together with safety.

A CRAW-FISH, or river lobster, somewhat like a crab, but quite minute, about two geometrical lines long, and broad in proportion, was frequently drawn up by us with the aquatic weeds. Its colour is a pale greenish white.

THE cordated *Pontederia* * grows plentiful on the sides of a long and narrow canal of water, in the places frequented by our water-lillies †. A great number of hogs wade far into this kind of strait, and sometimes duck the greatest part of their bodies under water, in order to get at the roots, which they are very fond of.

As soon as we were got through Lake *St. Pierre*, the face of the country was entirely changed, and became as agreeable as could be wished. The isles, and the land on both sides of us, looked like the prettiest pleasure-gardens; and this continued till near *Montreal*.

NEAR every farm on the river-side there are some boats, hollowed out of the trunks of single trees, but commonly neat and well made, having the proper shape of boats. In one place I saw a boat made of the bark of trees.

Sept. 15th. WE continued our journey early this morning. On account of the strength of the river, which came down against us, we were sometimes obliged to let the rowers go on shore, and draw the boat.

AT four o'clock in the evening we arrived at *Montreal*; and our voyage was reckoned a happy one, because the violence of the river flowing against us all the way, and the changeableness of the winds, commonly protract it to fourteen days.

Sept. 19th. SEVERAL people here in town have got the *French* vines, and planted them in

* *Pontederia cordata*. Linn.

† *Nymphaea*.

their gardens. They have two kinds of grapes, one of a pale green, or almost white; the other, of a reddish brown colour. From the white ones they say, white wine is made; and from the red ones, red wine. The cold in winter obliges them to put dung round the roots of the vines, without which they would be killed by the frost. The grapes began to be ripe in these days; the white ones are a little sooner ripe than the red ones. They make no wine of them here, because it is not worth while; but they are served up at deserts. They say these grapes do not grow so big here as in *France*.

WATER-MELONS * are cultivated in great plenty in the *English* and *French American* colonies; and there is hardly a peasant here, who has not a field planted with them. They are chiefly cultivated in the neighbourhood of towns; and they are very rare in the north part of *Canada*. The *Indians* plant great quantities of water-melons at present; but whether they have done it of old is not easily determined. For an old *Onidoe Indian* (of the six *Iroquese* nations) assured me, that the *Indians* did not know water-melons before the *Europeans* came into the country, and communicated them to the *Indians*. The *French*, on the other hand, have assured me, that the *Illinois Indians* have had abundance of this fruit, when the *French* first came to them; and that they declare, they had planted them since times immemorial. However, I do not remember having read that the

* *Cucurbita citrullus*. Linn.

Europeans, who first came to *North-America*, mention the water-melons, in speaking of the dishes of the *Indians* at that time. How great the summer heat is in those parts of *America* which I have passed through, can easily be conceived, when one considers, that in all those places, they never sow water-melons in hot-beds, but in the open fields in spring, without so much as covering them, and they ripen in time. Here are two species of them, viz. one with a red pulp, and one with a white one. The first is more common to the southward, with the *Illinois*, and in the *English* colonies; the last is more abundant in *Canada*. The seeds are sown in spring, after the cold is entirely gone off, in a good rich ground, at some distance from each other; because their stalks spread far, and require much room, if they shall be very fruitful. They were now ripe at *Montreal*; but in the *English* colonies they ripen in *July* and *August*. They commonly require less time to ripen in, than the common melons. Those in the *English* colonies are commonly sweeter, and more agreeable, than the *Canada* ones. Does the greater heat contribute any thing towards making them more palatable? Those in the province of *New-York* are, however, reckoned the best.

THE water-melons are very juicy; and the juice is mixed with a cooling pulp, which is very good in the hot summer-season. Nobody in *Canada*, in *Albany*, and in other parts of *New-York*, could produce an example, that the eating of water-melons in great quantities had

hurt

hurt any body; and there are examples even of sick persons eating them without any danger. Further to the south, the frequent use of them it is thought brings on intermitting fevers, and other bad distempers, especially in such people as are less used to them. Many *Frenchmen* assured me, that when people born in *Canada* came to the *Illinois*, and eat several times of the water-melons of that part, they immediately got a fever; and therefore the *Illinois* advise the *French* not to eat of a fruit so dangerous to them. They themselves are subject to be attacked by fevers, if they cool their stomachs too often with water-melons. In *Canada* they keep them in a room, which is a little heated; by which means they will keep fresh two months after they are ripe; but care must be taken, that the frost spoil them not. In the *English* plantations they likewise keep them fresh in dry cellars, during part of the winter. They assured me that they keep better when they are carefully broke off from the stalk, and afterwards burnt with a red-hot iron, in the place where the stalk was fastened. In this manner they may be eaten at *Christmas*, and after. In *Pennsylvania*, where they have a dry sandy earth, they make a hole in the ground, put the water-melons carefully into it with their stalks, by which means they keep very fresh during a great part of winter. Few people, however, take this trouble with the water-melons; because they being very cooling, and the winter being very cold too, it seems to be less necessary to keep them for eating in that season, which is

already very cold. They are of opinion in these parts, that cucumbers cool more than water-melons. The latter are very strongly diuretic. The *Iroquesse* call them *Onoheferakatee*.

GOURDS of several kinds, oblong, round, flat or compressed, crook-necked, small, &c. are planted in all the *English* and *French* colonies. In *Canada*, they fill the chief part of the farmers kitchen-gardens, though the onions came very near up with them. Each farmer in the *English* plantations, has a large field planted with gourds, and the *Germans*, *Swedes*, *Dutch*, and other *Europeans*, settled in their colonies, plant them. Gourds are a considerable part of the *Indian* food; however, they plant more squashes than common gourds. They declare, that they have had gourds long before the *Europeans* discovered *America*; which seems to be confirmed by the accounts of the first *Europeans* that came into these parts, who mentioned gourds as common food among the *Indians*. The *French* here call them *citrouilles*, and the *English* in the colonies, *pumpkins*. They are planted in spring, when they have nothing to fear from the frost, in an enclosed field, and a good rich soil. They are likewise frequently put into old hot-beds. In *Canada*, they ripen towards the beginning of *September*, but further southward they are ripe at the end of *July*. As soon as the cold weather commences, they take off all the pumpkins that remain on the stalk, whether ripe or not, and spread them on the floor, in a part of the house, where the unripe ones grow perfectly ripe, if they are not laid

one

one upon the other. This is done round *Montreal* in the middle of *September*; but in *Pennsylvania*, I have seen some in the fields on the 19th of *October*. They keep fresh for several months, and even throughout the winter, if they be well secured in dry cellars (for in damp ones they rot very soon) where the cold cannot come in, or, which is still better, in dry rooms which are heated now and then, to prevent the cold from damaging the fruit.

PUMPKIONS are prepared for eating in various ways. The *Indians* boil them whole, or roast them in ashes, and eat them then, or go to sell them thus prepared in the towns, and they have, indeed, a very fine flavour, when roasted. The *French* and *English* slice them, and put the slices before the fire to roast; when they are roasted, they generally put sugar on the pulp. Another way of roasting them, is to cut them through the middle, take out all the seeds, put the halves together again, and roast them in an oven. When they are quite roasted, some butter is put in, whilst they are warm, which being imbibed into the pulp, renders it very palatable. They often boil pumpions in water, and afterwards eat them, either alone or with flesh. Some make a thin kind of pottage of them, by boiling them in water, and afterwards macerating the pulp. This is again boiled with a little of the water, and a good deal of milk, and stirred about whilst it is boiling. Sometimes the pulp is stamped and kneaded into dough, with maize flour or other flour; of this they make cakes. Some make puddings and

tarts

tarts of gourds. The *Indians*, in order to preserve the pumpions for a very long time, cut them in long slices, which they fasten or twist together, and dry them either by the sun, or by the fire in a room. When they are thus dried, they will keep for years together, and when boiled, they taste very well. The *Indians* prepare them thus at home and on their journies, and from them the *Europeans* have adopted this method. Sometimes they do not take the time to boil it, but eat it dry with hung-beef, or other flesh; and I own they are eatable in that state, and very welcome to a hungry stomach. They sometimes preserve them in the following manner at *Montreal*. They cut a pumpion in four pieces, peel them, and take the seeds out of them. The pulp is put in a pot with boiling water, in which it must boil from four to six minutes. It is then put into a cullender, and left in it till the next day, that the water may run off. When it is mixed with cloves, cinnamon, and some lemon peel, preserved in syrup, and there must be an equal quantity of syrup and of the pulp. After which it is boiled together, till the syrup is entirely imbibed, and the white colour of the pulp is quite lost.

Sept. 20th. THE corn of this year's harvest in *Canada*, was reckoned the finest they had ever had. In the province of *New-York*, on the contrary, the crop was very poor. The autumn was very fine this year in *Canada*.

Sept. 22d. THE *French* in *Canada* carry on a great trade with the *Indians*; and though it was formerly the only trade of this extensive country,

country, yet its inhabitants were considerably enriched by it. At present, they have besides the *Indian* goods, several other articles which are exported from hence. The *Indians* in this neighbourhood, who go hunting in winter like the other *Indian* nations, commonly bring their furs and skins to sale in the neighbouring *French* towns; however this is not sufficient. The *Indians* who live at a greater distance, never come to *Canada* at all; and, lest they should bring their goods to the *English*, as the *English* go to them, the *French* are obliged to undertake journies, and purchase the *Indian* goods in the country of the *Indians*. This trade is chiefly carried on at *Montreal*, and a great number of young and old men, every year undertake long and troublesome voyages for that purpose, carrying with them such goods as they know the *Indians* like, and are in want of. It is not necessary to take money on such a journey, as the *Indians* do not value it; and indeed I think the *French*, who go on these journies, scarce ever take a sol or penny with them.

I WILL now enumerate the chief goods which the *French* carry with them for this trade, and which have a good run among the *Indians*.

Muskets, Powder, Shot, and Balls. The *Europeans* have taught the *Indians* in their neighbourhood the use of fire-arms, and they have laid aside their bows and arrows, which were formerly their only arms, and make use of muskets. If the *Europeans* should now refuse to supply the *Indians* with muskets, they would be starved to death; as almost all their food consists

of the flesh of the animals, which they hunt; or they would be irritated to such a degree as to attack the *Europeans*. The *Indians* have hitherto never tried to make muskets or similar fire-arms; and their great indolence does not even allow them to mend those muskets which they have got. They leave this entirely to the *Europeans*. As the *Europeans* came into *North-America*, they were very careful not to give the *Indians* any fire-arms. But in the wars between the *French* and *English*, each party gave their *Indian* allies fire-arms, in order to weaken the force of the enemy. The *French* lay the blame upon the *Dutch* settlers in *Albany*, saying, that they began, in 1642, to give their *Indians* fire-arms, and taught them the use of them, in order to weaken the *French*. The inhabitants of *Albany*, on the contrary, assert, that the *French* first introduced this custom, as they would have been too weak to resist the combined force of the *Dutch* and *English* in the colonies. Be this as it will, it is certain that the *Indians* buy muskets from the *Europeans*, and know at present better how to make use of them, than some of their teachers. It is likewise certain, that the *Europeans* gain considerably by their trade in muskets and ammunition.

Pieces of white cloth, or of a coarse uncut cloth. The *Indians* constantly wear such pieces of cloth, wrapping them round their bodies. Sometimes they hang them over their shoulders; in warm weather, they fasten them round the middle; and in cold weather, they put them over the head. Both their men and women wear

wear these pieces of cloth, which have commonly several blue or red stripes on the edge.

Blue or red cloth. Of this the Indian women make their petticoats, which reach only to their knees. They generally chuse the blue colour.

Shirts and shifts of linen. As soon as an Indian fellow, or one of their women, have put on a shirt, they never wash it, or strip it off, till it is entirely torn in pieces.

Pieces of cloth. Which they wrap round their legs instead of stockings, like the Russians.

Hatchets, knives, scissars, needles, and a steel to strike fire with. These instruments are now common among the Indians. They all take these instruments from the Europeans, and reckon the hatchets and knives much better than those which they formerly made of stones and bones. The stone hatchets of the ancient Indians are very rare in Canada.

Kettles of copper or brass, sometimes tinned in the inside. In these the Indians now boil all their meat, and they have a very great run with them. They formerly made use of earthen or wooden pots, into which they poured water, or whatever else they wanted to boil, and threw in red hot stones to make it boil. They do not want iron boilers, because they cannot be easily carried on their continual journies, and would not bear such falls and knocks as their kettles are subject to.

Ear-rings of different sizes, commonly of brass, and sometimes of tin. They are worn by both men and women, though the use of them is not general.

Vermillion. With this they paint their face, shirt, and several parts of the body. They formerly made use of a reddish earth, which is to be found in the country; but as the *Europeans* brought them vermillion, they thought nothing was comparable to it in colour. Many persons have told me, that they had heard their fathers mention, that the first *Frenchmen* who came over here, got a great heap of furs from the *Indians*, for three times as much cinnabar as would ly on the tip of a knife.

Verdigrease, to paint their faces green. For the black colour, they make use of the soot at the bottom of their kettles, and daub their whole face with it.

Looking glassses. The *Indians* are very much pleased with them, and make use of them chiefly when they want to paint themselves. The men constantly carry their looking glassses with them on all their journies; but the women do not. The men, upon the whole, are more fond of dressing than the women.

Burning glassses. These are excellent pieces of furniture in the opinion of the *Indians*; because they serve to light the pipe without any trouble, which an indolent *Indian* is very fond of.

Tobacco is bought by the northern *Indians*, in whose country it will not grow. The southern *Indians* always plant as much of it as they want for their own consumption. Tobacco has a great run amongst the northern *Indians*, and it has been observed, that the further they

they live to the northward, the more they smoke of tobacco.

Wampum, or, as they are here called, *porcelanes*. They are made of a particular kind of shells, and turned into little short cylindrical beads, and serve the *Indians* for money and ornament.

Glass beads, of a small size, and white or other colours. The *Indian* women know how to fasten them in their ribbands, pouches, and cloths.

Brass and steel wire, for several kinds of work.

Brandy, which the *Indians* value above all other goods that can be brought them; nor have they any thing, though ever so dear to them, which they would not give away for this liquor. But, on account of the many irregularities which are caused by the use of brandy, the sale of it has been prohibited under severe penalties; however, they do not always pay an implicit obedience to this order.

THESE are the chief goods which the *French* carry to the *Indians*, and they have a good run among them.

THE goods which they bring back from the *Indians*, consist entirely in furs. The *French* get them in exchange for their goods, together with all the necessary provisions they want on the journey. The furs are of two kinds; the best are the northern ones, and the worst sort those from the south.

In the northern parts of *America* there are chiefly the following skins of animals: bears,

beavers, elks *, rein-deer †, wolf-lynxes ‡, and martens. They sometimes get martens skins from the south, but they are red, and good for little. *Pichou du Nord* is perhaps the animal which the *English*, near *Hudson's* bay, call the *wolverene*. To the northern furs belong the bears, which are but few, and foxes, which are not very numerous, and generally black; and several other skins.

THE skins of the southern parts are chiefly taken from the following animals: wild cattle, stags, roebucks, otters, *Pichoux du Sud*, of which *P. Charlevoix* makes mention §, and are probably a species of cat-lynx, or perhaps a kind of panther; foxes of various kinds, raccoons, cat-lynxes, and several others.

IT is inconceivable what hardships the people in *Canada* must undergo on their journeys. Sometimes they must carry their goods a great way by land; frequently they are abused by the *Indians*, and sometimes they are killed by them. They often suffer hunger, thirst, heat, and cold, are bit by gnats, and exposed to the bites of poisonous snakes, and other dangerous animals and insects. These destroy a great part of the youth in *Canada*, and prevent the people from growing old. By this means, however, they become such brave soldiers, and so inured to fatigue, that none of them fear dan-

* Originacs.

† Cariboux

‡ Loup cerviers.

§ In his *Hist. de la Nouv. France*, Tom. V. p. 158.

ger or hardships. Many of them settle among the *Indians* far from *Canada*, marry *Indian* women, and never come back again.

THE prices of the skins in *Canada*, in the year 1749, were communicated to me by *M. de Couagne*, a merchant at *Montreal*, with whom I lodged. They were as follow :

GREAT and middle sized bear skins, cost five livres.

SKINS of young bears, fifty fols.

———— *lynxes*, 25 fols.

———— *pichoux du sud*, 35 fols.

———— *foxes* from the southern parts, 35 fols.

———— *otters*, 5 livres.

———— *raccoons*, 5 livres.

———— *martens*, 45 fols.

———— *wolf-lynxes* *, 4 livres.

———— *wolves*, 40 fols.

———— *carcajoux*, an animal which I do not know, 5 livres.

———— *vifons*, a kind of martens, which live in the water, 25 fols.

RAW skins of *elks* †, 10 livres.

———— *stags* ‡.

BAD skins of *elks* and *stags* §, 3 livres.

SKINS of *roebucks*, 25, or 30 fols.

———— *red foxes*, 3 livres.

———— *beavers*, 3 livres.

* Loups cerviers.

† Originacs verts.

‡ Cerfs verts.

§ Originacs et cerfs passés.

I WILL now insert a list of all the different kinds of skins, which are to be got in *Canada*, and which are sent from thence to *Europe*. I got it from one of the greatest merchants in *Montreal*. They are as follow :

Prepared roebuck skins, *chevreuils passés*.
 Unprepared ditto, *chevreuils verts*.
 Tanned ditto, *chevreuils tanés*.
 Bears, *ours*.
 Young bears, *oursons*.
 Otters, *loutres*.
 Pecans.
 Cats, *chats*.
 Wolves, *loup de bois*.
 Lynxes, *louis cerviers*.
 North pichoux, *pichoux du nord*.
 South pichoux, *pichoux du sud*.
 Red foxes, *renards rouges*.
 Cross foxes, *renards croisés*.
 Black foxes, *renards noirs*.
 Grey foxes, *renards argentés*.
 Southern, or *Virginian* foxes, *renards du sud*
 où de Virginie.
 White foxes, from *Tadoussac*, *renards blancs*
 de Tadoussac.
 Martens, *martres*.
 Visions, or *foutreaux*.
 Black squirrels, *ecureuils noirs*.
 Raw stags skins, *cerfs verts*.
 Prepared ditto, *cerfs passés*.
 Raw elks skins, *originacs verts*.
 Prepared ditto, *originacs passés*.
 Rein-deer skins, *cariboux*.

Raw

Raw hind skins, *biches verts.*

Prepared ditto, *biches passées.*

Carcajous.

Musk rats, *rats musques.*

Fat winter beavers, *castors gras d'hiver.*

Ditto summer beavers, *castors gras d'été.*

Dry winter beavers, *castors secs d'hiver.*

Ditto summer beavers, *castors secs d'été.*

Old winter beavers, *castors vieux d'hiver.*

Ditto summer beavers, *castors vieux d'été.*

TO-DAY, I got a piece of native copper from the *Upper Lake*. They find it there almost quite pure; so that it does not want melting over again, but is immediately fit for working. Father *Charlevoix* * speaks of it in his *History of New-France*. One of the Jesuits at *Montreal*, who had been at the place where this metal is got, told me, that it is generally found near the mouths of rivers, and that there are pieces of native copper too heavy for a single man to lift up. The *Indians* there say, that they formerly found a piece of about seven feet long, and near four feet thick, all of pure copper. As it is always found in the ground near the mouths of rivers, it is probable that the ice or water carried it down from a mountain; but, notwithstanding the careful search that has been made, no place has been found, where the metal lies in any great quantity together.

THE head or superior of the priests of *Montreal*, gave me a piece of lead-ore to-day. He

* See his *Hist. de la Nouv. Fr.* Tom. VI. p. 415.

said it was taken from a place only a few *French* miles from *Montreal*, and it consisted of pretty compact, shining cubes of lead-ore. I was told by several persons here, that furthermore southward in the country, there is a place where they find a great quantity of this lead-ore in the ground. The *Indians* near it, melt it, and make balls and shot of it. I got some pieces of it likewise, consisting of a shining cubic lead-ore, with narrow stripes between it, and of a white hard earth or clay, which effervesces with *aqua fortis*.

I LIKEWISE received a reddish brown earth to-day, found near the *Lac de Deux Montagnes*, or *Lake of Two Mountains*, a few *French* miles from *Montreal*. It may be easily crumbled into dust between the fingers. It is very heavy, and more so than the earth of that kind generally is. Outwardly, it has a kind of glossy appearance, and, when it is handled by the fingers for some time, they are quite as it were silvered over. It is, therefore, probably, a kind of lead-earth, or an earth mixed with iron-glimmer.

THE ladies in *Canada* are generally of two kinds: some come over from *France*, and the rest natives. The former possess the politeness peculiar to the *French* nation; the latter may be divided into those of *Quebec* and *Montreal*. The first of these are equal to the *French* ladies in good breeding, having the advantage of frequently conversing with the *French* gentlemen and ladies, who come every summer with the king's ships, and stay several weeks at *Quebec*, but seldom go to *Montreal*. The ladies of this

last place are accused by the *French* of partaking too much of the pride of the *Indians*, and of being much wanted in *French* good breeding. What I have mentioned above of their dressing their head too assiduously, is the case with all the ladies throughout *Canada*. On those days when they pay or receive visits, they dress so gayly, that one is almost induced to think their parents possessed the greatest dignities in the state. The *Frenchmen*, who considered things in their true light, complained very much that a great part of the ladies in *Canada* had got into the pernicious custom of taking too much care of their dress, and squandering all their fortunes, and more, upon it, instead of sparing something for future times. They are no less attentive to have the newest fashions; and they laugh at each other, when they are not dressed to each other's fancy. But what they get as new fashions, are grown old, and laid aside in *France*; for the ships coming but once every year from thence, the people in *Canada* consider that as the new fashion for the whole year, which the people on board brought with them, or which they imposed upon them as new. The ladies in *Canada*, and especially at *Montreal*, are very ready to laugh at any blunders strangers make in speaking. In *Canada* nobody ever hears the *French* language spoken by any but *Frenchmen*; for strangers seldom come thither; and the *Indians* are naturally too proud to learn *French*, but oblige the *French* to learn their language. From hence it naturally follows, that the nice *Canada* ladies cannot hear any thing uncommon

without laughing at it. One of the first questions they propose to a stranger is, whether he is married? The next, how he likes the ladies in the country; and whether he thinks them handsomer than those of his own country; And the third, whether he will take one home with him? There are some difference between the ladies of *Quebec*, and those of *Montreal*; those of the last place seemed to be generally handsomer than those of the former. Their behaviour likewise seemed to me to be somewhat too free at *Quebec*, and of a more becoming modesty at *Montreal*. The ladies at *Quebec*, especially the unmarried ones, are not very industrious. A girl of eighteen is reckoned very poorly off, if she cannot enumerate at least twenty lovers. These young ladies, especially those of a higher rank, get up at seven, and dress till nine, drinking their coffee at the same time. When they are dressed, they place themselves near a window that opens into the street, take up some needle-work, and sew a stitch now and then; but turn their eyes into the street most of the time. When a young fellow comes in, whither they are acquainted with him or not, they immediately lay aside their work, sit down by him, and begin to chat, laugh, joke, and invent *double-entendres*; and this is reckoned being very witty*. In this manner they frequently pass the whole day, leaving their mothers to do all the business in the house. In *Montreal*, the girls are not quite so volatile, but more indus-

* *Avoir beaucoup d'esprit.*

trious. They are always at their needle-work, or doing some necessary business in the house. They are likewise chearful and content; and nobody can say that they want either wit, or charms. Their fault is that they think too well of themselves. However, the daughters of people of all ranks, without exception, go to market, and carry home what they have bought. They rise as soon, and go to bed as late, as any of the people in the house. I have been assured, that, in general, their fortunes are not considerable; which are rendered still more scarce by the number of children, and the small revenues in a house. The girls at *Montreal* are very much displeased that those at *Quebec* get husbands sooner than they. The reason of this is, that many young gentlemen who come over from *France* with the ships, are captivated by the ladies at *Quebec*, and marry them; but as these gentlemen seldom go up to *Montreal*, the girls there are not often so happy as those of the former place.

Sept. 23d. This morning I went to *Saint au Recollet*, a place three *French* miles northward of *Montreal*, to describe the plants and minerals there, and chiefly to collect seeds of various plants. Near the town there are farms on both sides of the road; but as one advances farther on, the country grows woody, and varies in regard to height. It is generally very strong; and there are both pieces of rock-stone, and a kind of grey lime-stone. The roads are bad and almost impassable for chaises. A little before I

arrived

arrived at *Saut au Recollet*, the woods end, and the country is turned into corn-fields, meadows, and pastures.

ABOUT a *French* mile from the town are two lime-kilns on the road. They are built of a grey lime-stone, burnt hard, and of pieces of rock-stone, towards the fire. The height of the kiln from top to bottom is seven yards.

THE lime-stone which they burn here, is of two kinds. One is quite black, and so compact, that its constituent particles cannot be distinguished, some dispersed grains of white and pale grey spar excepted. Now and then there are thin cracks in it filled with a white small-grained spar.

I HAVE never seen any petrifications in this stone, though I looked very carefully for them. This stone is common on the isle of *Montreal*, about ten or twenty inches below the upper soil. It lies in strata of five or ten inches thickness. This stone is said to give the best lime; for, though it is not so white as that of the following grey lime-stone, yet it makes better mortar, and almost turns into stone, growing harder and more compact every day. There are examples, that when they have been about to repair a house made partly of this mortar, the other stones of which the house consists, sooner broke in pieces than the mortar itself.

THE other kind is a grey, and sometimes a dark grey lime-stone, consisting of a compact calcareous-stone, mixed with grains of spar, of the same colour. It is full of petrified striated

shells

shells or pectinites. The greatest part of these petrifications are, however, only impressions of the hollow side of the shells. Now and then I found likewise petrified pieces of the shell itself, though I could never find the same shells in their natural state on the shores; and it seems inconceivable how such a quantity of impressions could come together, as I shall presently mention.

I HAVE had great pieces of this lime-stone, consisting of little else than pectinites, lying close to one another. This lime-stone is found on several parts of the isle, where it lies in horizontal strata of the thickness of five or ten inches. This stone yields a great quantity of white lime, but it is not so good as the former, because it grows damp in wet weather.

FIR-WOOD is reckoned the best for the lime-kilns and the thuya wood next to it. The wood of the sugar-maple, and other trees of a similar nature, are not fit for it, because they leave a great quantity of coals.

GREY pieces of rock-stone are to be seen in the woods and fields hereabouts.

THE leaves of several trees and plants began now to get a pale hue; especially those of the red maple, the smooth sumach*, the *Polygonum sagittatum*, LINN. and several of the ferns.

A GREAT cross is erected on the road, and the boy who shewed me the wood, told me that a person was buried there, who had wrought great miracles.

* *Rhus glabra*. Linn.

AT noon I arrived at *Saut au Recollet*, which is a little place, situated on a branch of the river *St. Lawrence*, which flows with a violent current between the isles of *Montreal* and *Jesus*. It has got its name from an accident which happened to a recollet friar, called *Nicholas Veil*, in the year 1625. He went into a boat with a converted *Indian*, and some *Indians* of the nation of *Hurons*, in order to go to *Quebec*; but, on going over this place in the river, the boat overlet, and both the friar and his profelyte were drowned. The *Indians* (who have been suspected of occasioning the oversetting of the boat) swam to the shore, saved what they could of the friar's effects, and kept them.

THE country hereabouts is full of stones, and they have but lately began to cultivate it; for all the old people could remember the places covered with tall woods, which are now turned into corn-fields, meadows, and pastures. The priests say, that this place was formerly inhabited by some converted *Hurons*. These *Indians* lived on a high mountain, at a little distance from *Montreal*, when the *French* first arrived here, and the latter persuaded them to sell that land. They did so, and settled here at *Saut au Recollet*, and the church which still remains here, was built for them, and they have attended divine service in it for many years. As the *French* began to increase on the isle of *Montreal*, they wished to have it entirely to themselves, and persuaded the *Indians* again to sell them this spot, and go to another. The *French* have since prevailed upon the *Indians* (whom they did

not

not like to have amongst them, because of their drunkenness, and rambling idle life) to leave this place again, and go to settle at the lake *des Deux Montagnes*, where they are at present, and have a fine church of stone. Their church at *Saut au Recollet* is of wood, looks very old and ruinous, though its inside is pretty good, and is made use of by the *Frenchmen* in this place. They have already brought a quantity of stones hither, and intend building a new church very soon.

THOUGH there had been no rain for some days past, yet the moisture in the air was so great, that as I spread some papers on the ground this afternoon, in a shady place, intending to put the seeds I collected into them, they were so wet in a few minutes time, as to be rendered quite useless. The whole sky was very clear and bright, and the heat as intolerable as in the middle of *July*.

ONE half of the corn-fields are left fallow alternately. The fallow-grounds are never ploughed in summer; so the cattle can feed upon the weeds that grow on them. All the corn made use of here is summer corn, as I have before observed. Some plough the fallow-grounds late in autumn; others defer that business till spring; but the first way is said to give a much better crop. Wheat, barley, rye, and oats, are harrowed, but pease are ploughed under ground. They sow commonly about the 15th of *April*, and begin with the pease. Among the many kinds of pease which are to be got here, they prefer the green ones to all others for sowing. They

require

require a high, dry, poor ground, mixed with coarse sand. The harvest time commences about the end, and sometimes in the middle of *August*. Wheat returns generally fifteen, and sometimes twenty fold; oats from fifteen to thirty fold. The crop of pease is sometimes forty fold, but at other times only ten fold; for they are very different. The plough and harrow are the only instruments of husbandry they have, and those none of the best sort neither. The manure is carried upon the fallow grounds in spring. The soil consists of a grey stony earth, mixed with clay and sand. They sow no more barley than is necessary for the cattle; for they make no malt here. They sow a good deal of oats, but merely for the horses, and other cattle. Nobody knows here how to make use of the leaves of deciduous trees as a food for the cattle, though the forests are furnished with no other than trees of that kind, and though the people are commonly forced to feed their cattle at home during five months.

I HAVE already repeatedly mentioned, that almost all the wheat which is sown in *Canada* is summer wheat, that is such as is sown in spring. Near *Quebec* it sometimes happens, when the summer is less warm, or the spring later than common, that a great part of the wheat does not ripen perfectly before the cold commences. I have been assured that some people, who live on the *Isle de Jesus*, sow wheat in autumn, which is better, finer, and gives a more plentiful crop than the summer wheat; but

but it does not ripen above a week before the other wheat.

Sept. 25th. In several places hereabouts, they enclose the field with a stone fence, instead of wooden pales. The plenty of stones which are to be got here render the harbour very trifling.

HERE are abundance of beech-trees in the woods, and they now had ripe seeds. The people in *Canada* collect them in autumn, dry them, and keep them till winter, when they eat them instead of walnuts and hazel-nuts; and I am told they taste very well.

THERE is a salt spring, as the priest of this place informed me, seven *French* miles from hence, near the river *d'Assomption*; of which during the war, they have made a fine white salt. The water is said to be very briny.

SOME kinds of fruit-trees succeed very well near *Montreal*, and I had here an opportunity of seeing some very fine pears and apples of various sorts. Near *Quebec* the pear-trees will not succeed, because the winter is too severe for them; and sometimes they are killed by the frost in the neighbourhood of *Montreal*. Plum-trees, of several sorts, were first brought over from *France*, succeed very well, and withstand the rigours of winter. Three sorts of *America* walnut-trees grow in the woods; but the walnut-trees brought over from *France* die almost every year down to the very root, bringing forth new shoots in spring. Peach-trees cannot well agree with this climate; a few bear the cold, but, for greater safety, they are obliged to put straw round them.

Chestnut-

Chestnut-trees, mulberry-trees, and the like, have never yet been planted in *Canada*.

THE whole cultivated part of *Canada* has been given away by the king to the clergy, and some noblemen; but all the uncultivated parts belong to him, as likewise the place on which *Quebec* and *Trois Rivières* are built. The ground on which the town of *Montreal* is built, together with the whole isle of that name, belongs to the priests of the order of *St. Sulpicius*, who live at *Montreal*. They have given the land in tenure to farmers and others who were willing to settle on it. The first settlers paid a trifling rent for their land; for frequently the whole lease for a piece of ground, three *arpens* broad, and thirty long, consist in a couple of chickens; and some pay twenty, thirty, or forty sols, for a piece of land of the same size. But those who came latter, must pay near two *ecus* (crowns) for such a piece of land, and thus the land-rent is very unequal throughout the country. The revenues of the bishop of *Canada* do not arise from any landed property. The churches are built at the expence of the congregations. The inhabitants of *Canada* do not yet pay any taxes to the king; and he has no other revenues from it, than those which arise from the custom-house.

THE priests of *Montreal* have a mill here, where they take the fourth part of all that is ground. However, the miller receives a third part of this share. In other places he gets the half of it. The priests sometimes lease the mill for a certain sum. Besides them nobody is allowed to erect a mill on the isle of *Montreal*,
they

they having reserved that right to themselves. In the agreement drawn up between the priests and the inhabitants of the isle, the latter are obliged to get all their corn ground in the mills of the former.

THEY boil a good deal of sugar in *Canada* of the juice running out of the incisions in the sugar-maple, the red maple, and the sugar-birch; but that of the first tree is most commonly made use of. The way of preparing it has been more minutely described by me in the *Memoirs* of the Royal *Swedish* Academy of Sciences *.

Sept. 26th. EARLY this morning I returned to *Montreal*. Every thing began now to look like autumn. The leaves of the trees were pale or reddish, and most of the plants had lost their flowers. Those which still preserved them were the following †:

Several sorts of asters, both blue and white.

Golden rods of various kinds.

Common milfoil.

Common self-heal.

The crisped thistle.

The biennial oenothera.

The rough-leaved sun-flower, with trifoliated leaves.

The *Canada* violet,

A species of gentian.

* See the Volume for 1751.

† *Asteres*. *Solidagines*. *Achillea millefolium*. *Prunella vulgaris*. *Carduus crispus*. *Oenothera biennis*. *Rudbeckia triloba*. *Viola Canadensis*. *Gentiana Saponaria*.

WILD vines are abundant in the woods hereabouts, climbing up very high trees.

I HAVE made enquiry among the *French*, who travel far into the country, concerning the food of the *Indians*. Those who live far north, I am told, cannot plant any thing, on account of the great degree of cold. They have, therefore, no bread, and do not live on vegetables; flesh and fish is their only food, and chiefly the flesh of beavers, bears, rein-deer, elks, hares, and several kinds of birds. Those *Indians* who live far southward eat the following things. Of vegetables they plant maize, wild kidney-beans * of several kinds, pumpions of different sorts, *squashes*, a kind of gourds, water-melons and melons †. They likewise eat various fruits which grow in their woods. Fish and flesh make a very great part of their food. And they chiefly like the flesh of wild cattle, roe-bucks, stags, bears, beavers, and some other quadrupeds. Among their dainty dishes, they reckon the *water-taregrafs* ‡, which the *French* call *folle avoine*, and which grows in plenty in their lakes, in stagnant waters, and sometimes in rivers which flow slowly. They gather its seeds in *October*, and prepare them in different ways, and chiefly as groats, which take almost as well as rice. They make likewise many a delicious meal of the several kinds of walnuts, chesnuts, mulberries, *aci-*

* *Phaseoli*.

† *Cucumis melo*. Linn.

‡ *Zizania aquatica*. Linn.

mine *, chinquapins †, hazel-nuts, peaches, wild prunes, grapes, whortle-berries of several sorts, various kinds of medlars, black-berries, and other fruit and roots. But the species of corn, so common in what is called the old world, were entirely unknown here before the arrival of the *Europeans*; nor do the *Indians* at present ever attempt to cultivate them, though they see the use which the *Europeans* make of the culture of them, and though they are fond of eating the dishes which are prepared of them.

Sept. 27th. BEAVERS are abundant all over *North-America*, and they are one of the chief articles of the trade in *Canada*. The *Indians* live upon their flesh during a great part of the year. It is certain that these animals multiply very fast; but it is no less so, that vast numbers of them are annually killed, and that the *Indians* are obliged at present to undertake distant journeys, in order to catch or shoot them. Their decreasing in number is very easily accounted for; because the *Indians*, before the arrival of the *Europeans*, only caught as many as they found necessary to clothe themselves with, there being then no trade with the skins. At present a number of ships go annually to *Europe*, laden chiefly with beavers skins; the *English* and *French* endeavour to out-do each other, by paying the *Indians* well for them, and this encourages the latter to extirpate these animals. Many people in *Canada* told me, that when they were young,

* *Annona muricata*. Linn.

† *Fagus pumila*. Linn.

all the rivers in the neighbourhood of *Montreal*, the river *St. Lawrence* not excepted, were full of beavers and their dykes; but at present they are extirpated in that quarter.

BEAVER-FLESH is eaten not only by the *Indians*, but likewise by the *Europeans*, and especially the *French*, on their fasting days; for his holiness, in his system, has ranged the beaver among the fish. The flesh is reckoned best, if the beaver has lived upon vegetables, such as the asp, and the beaver-tree *; but when he has eaten fish, it does not taste well. To-day I tasted this flesh boiled, for the first time; and tho' every body present, besides myself, thought it a delicious dish, yet I could not agree with them. I think it is eatable, but has nothing delicious. It looks black when boiled, and has a peculiar taste. In order to prepare it well, it must be boiled in several waters from morning till noon, that it may loose the bad taste it has. The tail is likewise eaten, after it has been boiled in the same manner, and roasted afterwards; but it consists of fat only, though they would not call it so; and cannot be swallowed by one who is not used to eat it. Sometimes, though but seldom, they catch beavers with white hair.

WINE is almost the only liquor which people above the vulgar are used to drink. They make a kind of spruce-beer of the top of the white-fir †, which they drink in summer; but the

* *Magnolia glauca*. Lion.

† *Apinette blanche*. The way of brewing this beer is described at large in the Memoirs of the Royal Academy of Sciences, for the year 1751, p. 190.

use of it is not general; and it is seldom drank by people of quality. Thus great sums go annually out of the country for wine; as they have no vines here of which they could make a liquor that is fit to be drank. The common people drink water; for it is not yet customary here to brew beer of malt; and there are no orchards large enough to supply the people with apples for making cyder. Some of the people of rank, who possess large orchards, sometimes, out of curiosity, get a small quantity of cyder made. The great people here, who are used from their youth to drink nothing but wine, are greatly at a loss in time of war; when all the ships which brought wine are intercepted by the *English* privateers. Towards the end of the last war, they gave two hundred and fifty *Francs*, and even one hundred *Ecus*, for a *barrique*, or hoghead, of wine.

A MIDDLING horse now costs forty *Francs* * and upwards; a good horse is valued at an hundred *Francs*, or more. A cow is sold for fifty *Francs*; but people can remember the time when they were sold for ten *Ecus* †. A sheep costs five or six livres at present; but last year, when every thing was dear, it cost eight or ten *Francs*. A hog of one year old, and two hundred, or an hundred and fifty pounds weight, is sold at fifteen *Francs*. M. Couagne, the merchant, told me, that he had seen a hog of four hundred weight among the *Indians*. A chicken

* *Franc* is the same as *Livre*; and twenty-two *Livres* make a pound sterling.

† An *Ecu* is three *Francs*.

is sold for ten or twelve *Sols* *; and a turkey for twenty *Sols*. A *Minot* † of wheat sold for an *Ecu* last year; but at present it cost forty *Sols*. Maize is always of the same price with wheat, because here is but little of it; and it is all made use of by those who go to trade with the *Indians*. A *Minot* of oats costs sometimes from fifteen to twenty *Sols*; but of late years it has been sold for twenty-six, or thirty *Sols*. Pease bear always the same price with wheat. A pound of butter costs commonly about eight or ten *Sols*; but last year it rose up to sixteen *Sols*. A dozen of eggs used to cost but three *Sols*; however, now are sold for five. They make no cheese at *Montreal*; nor is there any to be had, except what is got from abroad. A water-melon generally costs five or six *Sols*; but, if of a large size, from fifteen to twenty.

THERE are as yet no manufactures established in *Canada*; probably, because *France* will not lose the advantage of selling off its own goods here. However, both the inhabitants of *Canada*, and the *Indians*, are very ill off for want of them, in times of war.

THOSE persons who want to be married, must have the consent of their parents. However, the judge may give them leave to marry, if the parents oppose their union without any valid reason. Likewise, if the man be thirty years of age, and the woman twenty-six, they may mar-

* Twenty *Sols* make one *Livre*.

† A *French* measure, about the same as two bushels in *England*.

ry, without farther waiting for their parents consent.

Sept. 29th. THIS afternoon I went out of town, to the south-west part of the isle, in order to view the country, and the œconomy of the people, and to collect several seeds. Just before the town are some fine fields, which were formerly cultivated, but now serve as pastures. To the north-west appears the high mountain which lies westward of *Montreal*, and is very fertile, and covered with fields and gardens from the bottom to the summit. On the south-east side is the river *St. Lawrence*, which is very broad here; and on its sides are extensive corn-fields and meadows, and fine houses of stone, which look white at a distance. At a great distance south-eastward, appear the two high mountains near fort *Chamblais*, and some others near lake *Champlain*, raising their tops above the woods. All the fields hereabouts are filled with stones of different sizes; and among them there is frequently seen a black lime-stone. About a *French* mile from the town, the high road goes along the river, which is on the left-hand; and on the right-hand all the country is cultivated and inhabited. The farm-houses are three, four, or five arpents distant from each other. The hills near the river are generally high and pretty steep; they consist of earth; and the fields below them are filled with pieces of rock-stone, and of black lime-slate. About two *French* miles from *Montreal*, the river runs very rapidly, and is full of stones; in some places there are some

ways. However, those who go in boats into the southern parts of *Canada*, are obliged to work through such places.

WILD-GEESE and ducks, began to migrate in great flocks to the southern countries.

Oct. 2d. THE two preceding days, and this, I employed chiefly in collecting seeds.

THE last night's frost had caused a great alteration in several trees. Walnut-trees of all sorts shed their leaves in plenty now. The flowers of a kind of nettle * were all entirely killed by the frost. The leaves of the *American* lime-tree were likewise damaged. In the kitchen-gardens the leaves of the melons were all killed by the frost. However, the beech, oak, and birch, did not seem to have suffered at all. The fields were all covered with a hoar-frost. The ice in the pools of water was a geometrical line and a half in thickness.

THE biennial *oenothera* † grows in abundance on open woody hills, and fallow fields. An old *Frenchman*, who accompanied me as I was collecting its seeds, could not sufficiently praise its property of healing wounds. The leaves of the plant must be crushed, and then laid on the wound.

Sœurs de Congregation are a kind of religious women, different from nuns. They do not live in a convent, but have houses both in the town and country. They go where they please,

* *Urtica dioica*. Linn.

† *Oenothera biennis*. Linn.

and are even allowed to marry, if an opportunity offers; but this, I am told, happens very seldom. In many places in the country, there are two or more of them: they have their house commonly near a church, and generally the parsonage house is on the other side of the church. Their business is to instruct young girls in the Christian religion, to teach them reading, writing, needle-work, and other female accomplishments. People of fortune board their daughters with them for some time. They have their boarding, lodging, beds, instruction, and whatever else they want, upon very reasonable terms. The house where the whole community of these ladies live, and from whence they are sent out into the country, is at *Montreal*. A lady that wants to become incorporated among them, must pay a considerable sum of money towards the common stock; and some people reckon it to be four thousand livres. If a person be once received, she is sure of a subsistence during her life-time.

La Chine is a fine village, three *French* miles to the south-east of *Montreal*, but on the same isle, close to the river *St. Lawrence*. The farm-houses ly along the river-side, about four or five *arpents* from each other. Here is a fine church of stone, with a small steeple; and the whole place has a very agreeable situation. Its name is said to have had the following origin. As the unfortunate M. *Salée* was here, who was afterwards murdered by his own country-men further up in the country, he was very intent upon discovering a shorter road to *China*, by

means of the river *St. Lawrence*. He talked of nothing at that time but his new short way to *China*. But as his project of undertaking this journey, in order to make this discovery, was stopped by an accident which happened to him here, and he did not that time come any nearer *China*, this place got its name, as it were, by way of joke.

THIS evening I returned to *Montreal*.

OCT. 5th. THE governor-general at *Quebec* is, as I have already mentioned before, the chief commander in *Canada*. Next to him is the intendant at *Quebec*; then follows the governor of *Montreal*, and after him the governor of *Trois Rivières*. The intendant has the greatest power next to the governor-general; he pays all the money of government, and is president of the board of finances, and of the court of justice in this country. He is, however, under the governor-general, for if he refuses to do any thing to which he seems obliged by his office, the governor-general can give him orders to do it, which he must obey. He is allowed, however, to appeal to the government in *France*. In each of the capital towns, the governor is the highest person, then the lieutenant-general, next to him a major, and after him the captains. The governor-general gives the first orders in all matters of consequence. When he comes to *Trois Rivières* and *Montreal*, the power of the governor ceases, because he always commands where he is. The governor-general commonly goes to *Montreal* once every year, and mostly in winter; and during

during his absence from *Quebec*, the lieutenant-general commands there. When the governor-general dies, or go to *France*, before a new one is come in his stead, the governor of *Montreal* goes to *Quebec*, to command in the mean while, leaving the major to command at *Montreal*.

ONE or two of the king's ships are annually sent from *France* to *Canada*, carrying recruits to supply the places of those soldiers, who either died in the service, or have got leave to settle in the country, and turn farmers, or to return to *France*. Almost every year they send a hundred, or a hundred and fifty people over in this manner. With these people they likewise send over a great number of persons, who have been found guilty of smuggling in *France*. They were formerly condemned to the galleys, but at present they send them to the colonies, where they are free as soon as they arrive, and can choose what manner of life they please, but are never allowed to go out of the country, without the king's special licence. The king's ships likewise bring a great quantity of merchandizes which the king has bought, in order to be distributed among the *Indians* on certain occasions. The inhabitants of *Canada* pay very little to the king. In the year 1748, a begining was, however, made, by laying a duty of three *per cent.* on all *French* goods imported by the merchants of *Canada*. A regulation was likewise made at that time, that all the furs and skins exported to *France* from hence, should pay a certain duty; but what is carried to the colonies pays nothing. The merchants of all parts of

France and its colonies, are allowed to send ships with goods to this place; and the *Quebec* merchants are at liberty likewise to send their goods to any place in *France*, and its colonies. But the merchants at *Quebec* have but few ships, because the sailors wages are very high. The towns in *France* which chiefly trade with *Canada*, are *Rochelle* and *Bordeaux*; next to them are *Marseilles*, *Nantes*, *Havre de Grace*, *St. Malo*, and others. The king's ships which bring goods to this country, come either from *Brest* or from *Rocheport*. The merchants at *Quebec* send flour, wheat, pease, wooden utensils, &c. on their own bottoms, to the *French* possessions in the *West-Indies*. The walls round *Montreal* were built in 1738, at the king's expence, on condition the inhabitants should, little by little, pay off the cost to the king. The town at present pays annually 6000 *livres* for them to government, of which 2000 are given by the seminary of priests. At *Quebec* the walls have likewise been built at the king's expence, but he did not redemand the expence of the inhabitants, because they had already the duty upon goods to pay as above mentioned. The beaver-trade belongs solely to the *Indian* company in *France*, and nobody is allowed to carry it on here, besides the people appointed by that company. Every other fur trade is open to every body. There are several places among the *Indians* far in the country, where the *French* have stores of their goods; and these places they call *les postes*. The king has no other fortresses in *Canada* than *Quebec*, *Fort Chamblais*, *Fort St. Jean*, *Fort St.*

St. Frederic, or Crownpoint, Montreal, Frontenac, and Niagara. All other places belong to private persons. The king keeps the *Niagara* trade all to himself. Every one who intends to go to trade with the *Indians* must have a licence from the governor-general, for which he must pay a sum according as the place he is going to is more or less advantageous for trade. A merchant who sends out a boat laden with all sorts of goods, and four or five persons with it, is obliged to give five or six hundred livres for the permission; and there are places for which they give a thousand livres. Sometimes one cannot buy the licence to go to a certain trading place, because the governor-general has granted, or intends to grant it to some acquaintance or relation of his. The money arising from the granting of licences, belongs to the governor-general.

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