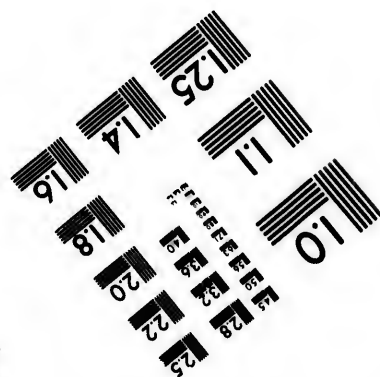
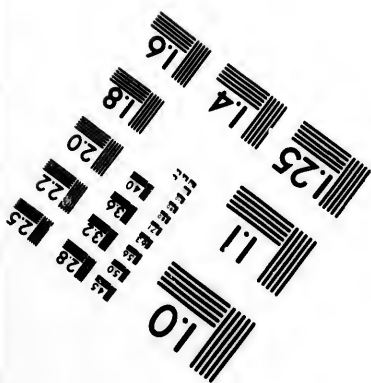
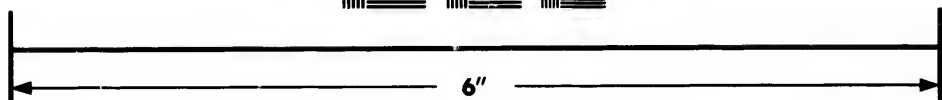
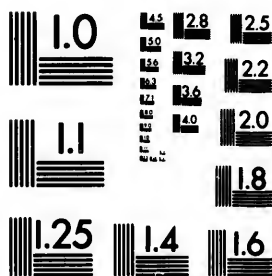


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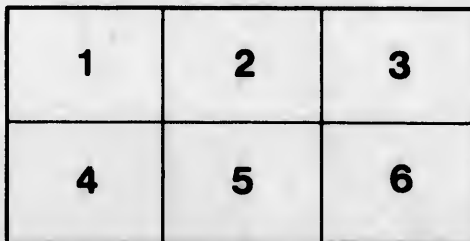
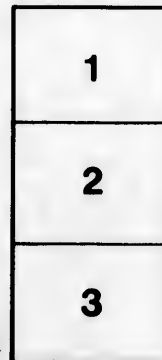
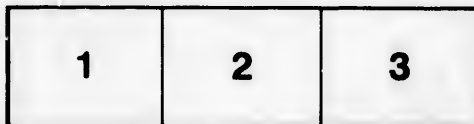
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## THE GREAT PLAINS OF CANADA.

WITH PICTURES BY FREDERIC REMINGTON.



THE northern portions of the two great continents which make up the non-insular land surface of the globe afford room for great plain areas wholly unlike, in extent at least, any similar areas in other latitudes. On both continents these broad tracts are very much alike in general features. They lie well toward the Arctic Ocean; they slope gradually toward the northern sea; their river-systems converge toward the pole; and they are scantily wooded and mostly covered with nutritious grasses. Marshes of great extent abound, and such lakes and inland seas as exist are shallow and more or less brackish in character. At the northern edge of the continents the surfaces sink more and more to the sea-level; the streams grow sluggish and broad; and the frozen sea invades the land in countless inlets, bays, and channels, leaving above the surface many low, swampy islands, which are little more than mud-banks.

No one, I think, who is acquainted with the great plains of our own western continent lying north of the great lakes can read the narratives of the expeditions sent out in search of the *Jeannette* explorers, or Mr. George Kennan's accounts of Siberian travel, without being impressed with the likeness suggested between the Asiatic steppes and the "Great Lone Land" of the western hemisphere. Many of Mr. Kennan's descriptions of the country through which he passed on his memorable journey to the penal colonies and the prison mines of eastern Siberia are equally well suited to the almost boundless tracts west of Hudson's Bay, and northward to the region of the Great Slave Lake. Indeed, I know of no more graphic and truthful portraiture of many parts of what used to be marked on the maps as British North America, and is now more commonly known as the British Northwest, or the Canadian Northwest, than these same narratives; but I am sure no words or pictures can adequately convey to the mind the real impressions which these regions make upon one who lives among and travels over them in long journeys in summer and winter. It is one thing to talk of vastness and solitude and silence, of transparent air

and illimitable sunshine in summer, or of fierce, howling winter tempests shutting down about the lonely traveler as he struggles forward, the only spot of color in the weltering waste of snow, with no friendly shrub or tree or sheltering hill greeting his tired senses, only to find an enforced halting-place where darkness overtakes him, from whose frozen torpor and death no morning may arouse him—it is quite another to have experienced these things in one's own person.

Among the mountains there are grandeur and solitude: mists wreath the lofty summits, and lie along the valleys where the rivers run; morning and evening bathe the snowy, ice-clad peaks in floods of golden and crimson glory; from moment to moment shadows, tints, and tones of color come and go to mark the passing hours; and climb where you will, the prospect is always limited, bounded, varied. Even the barren, unsociable sea is not without changing aspects and motions, fraught indeed, at times with danger and terror; but the traveler who has passed many seasons in the grandest mountain scenery, or has sailed on many a sea, has yet to find, in an acquaintance with the great plains, a new set of novel and strange experiences.

Perhaps the first thing which will impress him will be the absence of what Mr. John Burroughs calls an atmosphere. For the first time in his life he will feel that he is out of doors, or that his eyes have been suddenly opened. Objects which under other circumstances would have tempered and softened outlines, or would be altogether invisible, now seem as sharply defined as the shadows of houses or trees in the glare of the electric light. There is no toning of the light, and between the blades of grass on the ridge of some slope many rods away from him, he sees with utmost distinctness to unimaginable distances. The sky rises like a wall about him, and through the limitless air the sun shines like a resplendent disk of burnished metal. Upward, if he look long and steadfastly, he will lose the illusion of blueness, and will seem to be looking into blue-black depths, which will convey to his mind with a new meaning the notion of space. The distant forests, where they exist, and the low, tumbled hills, grassy and rounded to their summits, are seen without disguise or softening; and moving animals or trains of carts show every detail

with the distinctness of close proximity. Perchance a herd of white-tailed deer, of antelope, or possibly of elk, challenges him to a feat of arms, and he is chagrined to find that he has underrated the distance of the game, and that his shot has only served to startle his quarry. In the morning he looks out over the landscape far beyond the spot where he will take his mid-day meal, beyond even his next night's camp. As this experience is repeated from day to day with unvarying monotony, his spirits begin to flag, and a depression comes over him that may verge toward hopelessness. If the surface of the country is flat for many miles, as is often the case, this effect is intensified, and the horizon appears to be rising all about him and approaching nearer and nearer to swallow up the sky and overwhelm him. He longs for a tree or the slope of a hill to break the unvarying sameness of level horizon and to suggest to him new vistas. Even clouds and storm are welcome, for they at least bring shadows and changing lights and movement.

I shall never forget the peculiar sensation of being challenged which I experienced when, after a long railway journey from St. Paul, Minnesota, one day in April, some years ago, I arrived at the city of Winnipeg, Manitoba, and, as the clear morning sun rose above the level horizon unbroken by hill or tree, I went out to the edge of the town and looked away over the brown grass, now faintly flushed with the first tender green of early spring. It was easy to imagine that an almost audible voice invited me to penetrate the untraversed regions toward the north and west, and to discover the mysteries of the wilderness where almost unknown rivers ran, where vagrant, unbreathed winds were ever blowing, where wild animals and water-fowl lived unmolested; and it was with impatience that the necessary delay of preparation for a long journey far from civilization, with unknown perils and hardships to be encountered, was endured. This sense of challenge, which is not less an invitation to meet nature at first hand, without the conventionalities and the expedients of long use, is, I presume, one of the peculiar experiences of the pioneer and the explorer in every clime, whether by land or sea; and it must be practically unknown to the dweller in old communities, and not less to the ordinary tourist, to whom the thought of absence from his usual associates and the conveniences of mails and telegraphs and daily papers seems only painful.

We speak of darkness which can be felt. Similarly we may speak of silence which can be heard, and this is another impressive element of an experience of the plains. On the sea, except in calm, and in the forest and among the places of human habitation, there is always

sound, even at night; but on the treeless plains, in the midst of normal activity, there is silence as of the grave. Even a hurricane is comparatively inaudible, for there are no waters to dash, no forests to roar, no surfaces to resound, while the short grasses give forth no perceptible rustle; and there is something awful in the titanic rush of contending natural forces which you can feel, but cannot see or hear. The wind may sweep away your breath on a current of sixty miles an hour, and the clouds may rush through the sky as in a tornado, but no sounds confound the ear. A winter blizzard, which carries on its frigid breath destruction to life, which blinds the eyes, and which drives the particles of ice and snow with cutting force against the frozen cheek and through all but the heaviest fur clothing, is comparatively inaudible, and the traveler appears to himself to struggle vainly with an implacable, ghostly force which fills the whole creation. When, also, nature is undisturbed in tranquil summer mood, and the sky is blue and flecked with fleecy clouds floating far aloft, all sound seems to have died out of the world, and a mantle of silence enfolds everything. Partaking of the predominant natural sentiment, man becomes silent also; he ceases to talk to his mates and becomes moody and taciturn. The merry song of the voyager, echoing between wooded shores, the shout, the joke of the cheerful traveler here are stilled—stified you might almost say—by the immeasurable muffle of silence. Here are no woods to give back the answering shout, and the crack of the rifle is insignificant. The cry of the passing wild-fowl in the darkness, as you lie awake in your tent at midnight, comes to you with a weird, faint, far-away sound as if heard in a dream, and even the rare thunder breaks impotently on the continent of silence. If a comrade is lost, and you wish to make some sign to direct him to the camp, no noise which you can make with voice or firearms will be of any avail, for such noises will penetrate only a few rods at farthest. By day the only resource is a flag on some elevation or a smoke of burning grass; by night rockets must be sent up as at sea, or, if these have not been provided, firebrands from the camp-fire may be thrown up with some hope of success. No one can know, until he has experienced it, the longing which takes possession of one who has been for weeks practically separated from speaking men, once more to hear the sounds of common life, the roar of the city streets, the sound of bells, and even the crowing of the cock in the early dawn.

The Red River of the North, as it used to be called on the maps of our boyhood, when Green Bay was an obscure trading-post, and the Mississippi River, except by name, was

familiar to few, rises in the State of Minnesota in the same divide which sends a portion of its waters southward on their long journey to the Gulf of Mexico. By a short portage it is easy to pass from the head-waters of the Mississippi to those of the Red River, whence a continuous passage is open northward through Lake Winnipeg, the Sea or Nelson's River, and Hudson's Bay even to the Arctic Ocean. The river flows westward at first, but, presently turning, it forms the boundary line between Minnesota and Dakota. It drains a broad, level valley, and winds tortuously between clay banks like an irregular canal, fringed with a sparse growth of oak, ash, and box-elder, which nowhere spreads out into a forest. The valley is so broad and flat that only from the appearance of low elevations at a great distance to the east and the west can you correct your impression that the surface is that of an upland plain. Here are great areas of a heavy, fertile soil, which within a few years have become celebrated for the immense crops of wheat grown on them. Flowing away from the sun, the river suffers from disastrous floods, for while the advancing season thaws the snows along its upper course, the lower portions are yet locked in ice. At such times the valley is covered for miles with water to a depth of several feet, and as late as the month of April or May the city of Winnipeg, lying at the junction of the Assiniboin with the Red River, about sixty miles north of the international boundary line, is liable to be overflowed. During a part of the year small steamers navigate the river from a point in Minnesota to Winnipeg, and thence to Lake Winnipeg; but, below the city named, the channel, nowhere deep, is obstructed with shallows and rapids at the few places where the underlying rock approaches the surface; while, nearer the lake, the stream becomes so broad and shallow as to be of small commercial importance. The Assiniboin, rising about 450 miles west of its junction with the Red River, flows through a level or rolling plain to the eastward with many short turns, receiving no important tributaries. At favorable seasons of the year steamboats of small size and light draft can go as far west as Portage la Prairie, a distance of about 70 miles, and occasionally they push their way even up to the Hudson's Bay trading-post of Fort Ellice, about 350 miles from Winnipeg. Here the river lies in a deep valley between precipitous bluffs more than one hundred feet in height. In this portion of its course it affords a striking illustration of the action of streams in working over the materials along their courses. From the bluffs on which the post is situated you look down into the valley where the stream, now only a narrow creek fringed with willows and poplars, winds with

countless turns, swinging in the course of centuries from one side of the flood-plain to the other, obliterating old curves and forming new ones, but never moving in a straight line for a dozen rods, until the whole alluvial deposit has been worked over time and again.

The general aspect of the Great Lone Land of the Canadian Northwest is that of a broad plain lying inclined at a low angle of elevation against the eastern base of the Rocky Mountains, sloping both eastward toward Hudson's Bay and northward toward the Arctic Ocean. There may be said to be no rock-exposures throughout the whole area, and rarely does the surface rise even into low, rounded hills. In two expeditions of nearly a thousand miles each, in a direct line northwest from Winnipeg, my notes, made daily, show that rock *in situ* was seen only once, and that at Stony Mountain, not more than fifty or sixty miles from the city named. Here is an outcrop of bluelimestone of excellent quality for building purposes. It is perhaps fifty feet in height, and it covers an area of not more than a square mile. In a few places on the head-waters of the Red Deer, the Battle, and the two Saskatchewan rivers, a few layers of a yellowish sandstone were observed in the cut banks of the streams adjacent to strata of a poor quality of bituminous coal. The surface of the country is, however, in many places thickly strewn with granite boulders, generally of rounded form, sometimes abounding in the shallow marshes, the surrounding hills being destitute of them; or again, the slopes and the tops of the elevations are covered with them, while none appear in the depressions, the disposition of them appearing to be entirely capricious. For hundreds of miles at a stretch it is possible to go without finding a stone as large as the fist, and, along the beds of the rivers, the fragments of limestone brought down from the mountains in the annual freshets are carefully gathered by the few inhabitants as a source of the lime used for making the mortar with which they daub the spaces between the logs of their poor cabins. There are some hilly tracts, but the highest elevations are less than two hundred feet, and the summits are smoothly rounded and covered with grass, like the more level surfaces below. Occasionally sand-hills are met with, consisting of loose white sand, in which a few stunted poplars find a precarious foothold. The prevailing winds are constantly changing the contours of these hills, and they are at all times, except when covered deep in snow, extremely difficult to traverse with vehicles or animals. Blinding sand-storms frequently occur in their vicinity, against which it is difficult to advance. Shallow marshes and shallow lakes are numerous, the latter often having neither inlet nor outlet, and varying in size from small



ponds to large areas many miles in extent. Not infrequently the traveler discovers well-defined, ancient sea-beaches composed of rounded pebbles and fine sand, generally overlaid by the clay soil of the country, and appearing where the surface has been removed or broken through.

Hudson's Bay, a vast, shallow body of water, an inland sea, constitutes the great drainage-basin of the wide region under consideration. It is 600 by 900 miles in its greatest dimensions, and it is large enough to contain all the other inland waters of the western hemisphere without sensible increase. Into it flow from the west all the waters of a wide region which do not find their way northward to the Arctic Ocean through the Athabasca and the Peace rivers, the chief affluents of the mighty Mackenzie system. The principal channels of these accumulated waters are the Red River already spoken of, the Saskatchewan rivers, and the Churchill, or English, River. The Saskatchewan rivers, known as the North and South Saskatchewan, take their rise in the foot-hills of the Rocky Mountains at a considerable distance asunder, the South Saskatchewan receiving as its principal affluents the Red Deer River and, nearer the mountains, the Bow and the Belly rivers. The Battle River drains the area between the Red Deer River and the two Saskatchewan, and empties into the North Saskatchewan at Battleford, in longitude 108°. The latter stream, flowing in a direction a little north of east in its upper course, presently turns to the eastward; then bending to the southeast, it approaches to within twenty miles of the south branch, parallel to which it flows for some 300 miles, when the two streams unite their waters near Fort à la Corne in longitude 105°, latitude 53°. Receiving the waters of Lake Winnipeg and of the adjacent body of water known by the two names Lake Manitoba and Lake Winnipegosis at their northern extremity, not less than 260 miles from where the Red River discharges into Lake Winnipeg, the direction of the river thenceforth is northeastward, until the mighty flood pours into Hudson's Bay, in longitude 93°, latitude 57°.

Thus this Saskatchewan river-system drains an area extending through a region measured by some twenty-five degrees of longitude and some fifteen degrees of latitude; and some notion of the magnitude of these streams can be obtained from the fact that about midway in the course of the North Saskatchewan, before it unites with the south branch, it is four hundred yards broad, or as broad as the Ohio at Cincinnati, while nearer Lake Winnipeg it becomes much broader still. The Indian name of the two great branches of the system, Saskatchewan, means "swift-flowing," and it is applied to many other streams in the far North-

west. Throughout much of their courses these rivers sweep along with great velocity in broad but comparatively shallow channels, lined in some parts with a scanty growth of cotton-woods and poplars of little commercial value. The soil through which they cut their way is a yellow clay containing great quantities of fine sand. It is easily dissolved by water, and, as a consequence, the streams are always turbid, sand-bars are constantly forming and changing, and quicksands abound. Navigation in these streams is beset with all the difficulties which characterize the Missouri, if not with still greater ones. Yet, during three or four weeks in June and July, a few stern-wheel steamers of light draft leave the city of Winnipeg on the flood-waters, and, making a precarious passage down the Red River, traverse the length of Lake Winnipeg with difficulty, and stem the current of the North Saskatchewan in the hope of reaching the Hudson's Bay Company's trading-post of Edmonton before the waters fall. Occasionally they accomplish their endeavor, and land their cargoes of supplies at the head of navigation at Edmonton, within one hundred miles of the Rocky Mountains, after a tedious voyage of nearly two thousand miles; but more frequently these boats are stranded on the shifting sand-bars, perhaps four or five hundred miles from any settlement, in a totally uninhabited country. Here they must remain until another season in the charge of two or three men, who provide a store of fuel and prepare for a long nine or ten months of absolute isolation and the rigors of an arctic winter; or, when news of the almost expected disaster has reached some settlement by a messenger on foot or on horseback, a brigade of carts is fitted out and despatched to convey the stores by land to the point for which they were shipped, while the steamer winters where she was stranded.

Another feature of this great drainage area is the valleys which in the course of centuries the rivers have cut out for themselves. They are often of great depth, and in places have very steep walls. Arriving at the brink of the valley of the South Saskatchewan at one time in my journeyings, I sent out a guide in one direction, while I went in another, to search for a slope sufficiently gradual to enable us to get the wagons down in safety. After a half-day's search, we agreed upon a place for the undertaking. The valley of the Red Deer River is three hundred feet deep and three miles wide. Aware of its general course and situation, as I approached it with my half-breed guide on a wagon, I was surprised that no sign of it appeared. The rolling surface of the prairie seemed to stretch out to the horizon without a break, and yet, if the maps were only approximately

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correct, I knew that we could not be more than a mile or two from the edge of the depression. At length, in the treeless expanse in front of us, we observed what appeared to be a single small fir-tree three or four feet in height, standing alone in the plain. Approaching it, we came presently to the edge of the valley, and found that the small fir was only the tip of a great tree standing far down the steep declivity, while still below were whole groups of *Coniferae* whose tops did not reach half-way up to the general level of the country. A brief inspection showed us that no descent was possible for vehicles or animals, and, picketing our horses, we set out to descend, if possible, on foot. After a tortuous and toilsome task we reached the bottom, but we could not discover the stream, although we pressed our way to the opposite valley walls. We concluded that we

must have crossed a dry fork and that the river lay in some depression further on. It was necessary, therefore, to return to our starting-point, and, driving some miles down-stream, to make another attempt. This we did, and at length came to the stream, which was flowing with a moderately rapid current, not yet having lost the impetus derived from the Rocky Mountain slopes, some two hundred miles distant. Its waters still retained some of the characteristics of a mountain stream, being clearer, colder, and less bitter than those of streams nearer their mouths. In the banks of a small tributary of the main stream I discovered several thin layers of a poor quality of bituminous coal. This substance is found in nearly all the river-banks of the country near the mountains, and in places it is of such abundance and quality as to render it of great commercial value; and as the country

is opened up to settlement, and railroads are built to supply the necessary means of transportation, it will become increasingly important. At Edmonton, on the North Saskatchewan, seams of coal of a thickness of five or six feet are known and worked. Coal from these strata is used in the blacksmith's forge with success. Seams of much greater thickness are reported to exist nearer the foot-hills, but until recently the knowledge of them was confined to a few half-breed and Indian traders and hunters.

The soil of the country is mainly a yellow clay of unknown depth, of superior fertility when exposed to the action of sun and frost, but difficult to cultivate. It abounds in alkali, and this fact, together with the cool climate of the latitude, renders it the natural home of the wheat-plant, of which no insect enemies are here known. Grass is found everywhere, in the swamps, on the slopes, and among the hills even to their summits. It is of several varieties and of varied excellence. In the vicinity of the thriving settlement of Prince Albert, not more than one or two hundred miles from the junction of the two great streams already spoken of, on the slopes of a long hill, I remember that as I rode along the heads of the thick, nutritious grasses were on a level with the seats of the wagon upon which we sat. Farther west there are large tracts well suited to cattle-raising, notwithstanding the severity and the length of the winters. A fine grass grows to the height of about twenty feet, and as the season of growth closes, it dries up as it stands into a natural hay of great excellence; so that in winter, beneath snow a foot and a half in depth, there is often found a layer of bright, well-cured hay of a lively green color, and eight or ten inches in thickness, every particle of which animals eat with avidity. In other localities a short buffalo-grass mats the surface, and formerly furnished abundant pasturage for countless herds of buffalo, now unfortunately nearly extinct. In marshy regions, besides the customary well-known marsh-grasses, the "goose-grass," more commonly known in this country as the scouring-rush (*Equisetum*, probably *hiemale*), is often found, and, strange to say, it proves to be most fattening to horses. Where it abounds, the native ponies, after a long season's service in a trader's brigade of carts, turned out as valueless and abandoned to die, come out in the spring with sleek coats of hair, every gall-mark gone, and, as the traders say, "rolling fat." In waterless tracts a small patch of "goose-grass" furnishes both food and drink for the animals of an outfit, so that they fare better than the men, who, in the absence of water, can do no cooking, and do not care to eat unadorned pilot-bread.

In the southern portions of the country, in what may be called the Winnipeg region, there exists the black prairie loam, of considerable depth, so characteristic of the prairie areas of Illinois and Iowa. Farther west and north, about Regina, the present capital of the province, this friable, easily tilled soil changes to a tough brown clay called "gumbo." In summer it becomes nearly as hard as rock, dries and cracks into areas of perhaps a square yard each, between which deep fissures run, of a breadth of two or three inches and a depth of a foot or more. In such a soil the grass is pinched and scanty, and traveling over the surface either on horseback or on wheels is trying to the last degree. A team of not less than four horses is needed for breaking it up, and it turns up in great lumps containing several cubic feet. Fortunately it slacks upon exposure to the air and the frost, and proves to be very fertile and productive. When wet it adheres to vehicles and implements with the utmost tenacity, and in grading railroad embankments on the Canadian Pacific Railway a man with a shovel was assigned to each scraper and each plow to remove the gummy mass. Where the ordinary yellow clay is found, the surface becomes hard in summer, and the grass suffers in times of drought; but wherever the badgers have thrown up the earth about their burrows, the grasses grow rank and tall. Where settlement has been made, wheat is sown in the spring as soon as the snow disappears and an inch of soil is released from the grasp of the frost. It germinates quickly in the clear, hot sunshine and the long, cloudless days of the high northern latitude, and sends its roots downward with the retreating cold, while the upward growth is astonishing. The slowly unlocking ice-crystals furnish a constant supply of moisture and the cool soil so congenial to the plant. In a period of about ninety days the crop matures, and with the most ordinary culture the farmer harvests from forty to fifty bushels of wheat that weighs from sixty-two to sixty-eight pounds to the bushel. Oats, barley, and root-crops grow with equal luxuriance, heads of the first-named often measuring fourteen inches, and potatoes of two or more pounds weight being common. These crops grow freely as far north as the Peace River country, in latitude 60°, but, of course, this whole region is unsuited to the growth of corn, or of the commoner fruits of the temperate zone.

Certain indigenous fruits, however, are abundant and valuable, among which may be mentioned the common strawberry, which in places grows so thickly that the wheels of a cart in passing over the ground are speedily reddened, and the tracks resemble stripes of blood on the grass, while the fruity fragrance fills the air. A fine variety of the black cherry grows in thick-

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FROM A PAINTING IN POSSESSION OF H. G. YOUNG, ALBANY.

CONJURING BACK THE BUFFALO.

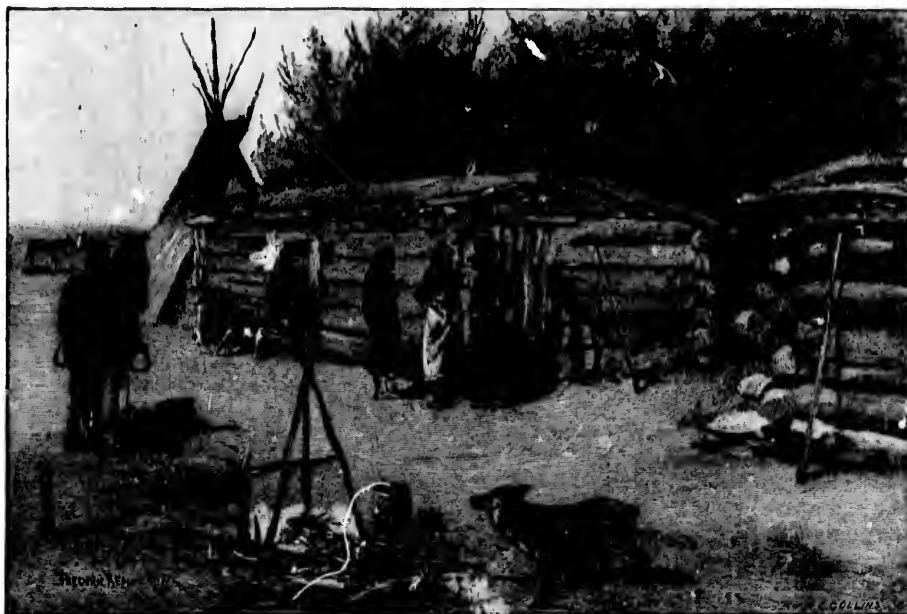
ets in many places, and supplies large quantities of desirable fruit to the wandering bands of Indians. Another berry which attracted attention, and which, I think, would repay cultivation as an agreeable substitute for the common currant, now nearly ruined by the currant-worm in so many parts of this country, is what is known among the half-breeds and Hudson's Bay employees as the "red berry." It is probably the buffalo-berry of the upper Missouri, *Elaeagnaceæ Sphæradia argentea*. At the elbow of the South Saskatchewan River it is found growing in thickets, as also in many other localities. The shrub sometimes attains a height of fifteen feet, having a black bark, very hard wood, many strong spines, and small, simple leaves. The berries are borne in the axils of the branchlets, and are usually three in number and of the dimensions of a medium-sized pea. They are of a bright scarlet color, though a yellow variety is sometimes found, and in flavor they resemble the common red currant of the gardens. The hardness of this fruit, its fine acid taste, and its freedom from insect enemies render it probably a desirable addition to our list of known fruits. But the most esteemed wild berry of the region is that which is called by the poetical name "Saskatoon." It is the *Amelanchier Canadensis* of the botanists, known by various common names, as the shad-berry, the June-berry, and the service-berry. It is gathered in large quantities, and one of its principal uses is in making berry pemmican, than which there is no more delectable food to an Indian or a Hudson's Bay man.

Of the forests of the northwest plains little can be said. From Lake Winnipeg on the east to the foot-hills of the Rocky Mountains on the west, and from below the international boundary to the far northern regions inhabited by the "Huskies," or Eskimos, no forests of large area and commercial value are to be found. Indeed, the scarcity of trees and water constitutes the most surprising and prominent characteristic of this wide region. For more than two weeks at a time one may travel constantly and not find so much as a twig or a shrub of any kind. Even the willow is not found, and nothing but grass and sky meet the view in any direction. I have crossed great rivers, skirted considerable lakes, and traversed hilly tracts for hundreds of miles at a stretch, and have had to depend for cooking purposes upon an oil-stove, which I had taken the precaution to carry with me. In the absence of such provision, the only resource is to carry a few dry poplar poles upon one of the carts, to be used with such economy as only a half-breed or an Indian knows for cooking his scanty food and for boiling tea. Even the "buffalo-chips" have disappeared since the

practical extinction of the buffalo, and to go without fire for days together is no unusual experience. When water also is not to be had, as often happens in traveling on these plains, the plight of the traveler is by no means enviable. And sometimes when water is abundant enough in lakes and ponds all about, it is not drinkable, and no boiling or other means of purification will render it serviceable. Of the loveliest color, as blue as the sky, lakes by the score may be counted from a single standpoint, let into the surrounding hills at various elevations like steps of lapis lazuli, without connection, inlet, or outlet; but so bitter are the waters that no animal, either horse or man, would drink of them. In them and around them, within the reach of the alkaline waters when blown by the wind, no vegetation is found, and on them no wild fowl alights. As camping-time approaches, near nightfall, in traveling over these plains, it is a necessary preliminary to send out a guide to taste the water of some pond near which it is proposed to make camp. Throwing himself prone upon the ground, he takes a quantity into his mouth, and then usually ejects it with a shake of the head and the emphatic utterance of the single word "Bad." Since, however, the waters of a tract may be of quite different characters, it is usual to find among the bitter lakes one or more whose waters may be drunk with passable satisfaction.

One day in summer, on leaving a river, misled by the appearance of the country before us, we took no water with us, arguing from the appearance of a distant forest on our line of advance that water must be discoverable. When we reached the belt of poplar woods, the sun was about setting, and we made all haste, leaving the carts still loaded, to find some creek or pond before the long, lingering twilight of the north should turn to darkness. Not a drop of water could be found in any direction, and we were forced to make camp in a hollow where the goose-grass afforded sustenance for our horses. Without water no cooking could be done, and a fire was unnecessary. Thirsty as well as weary, we lay down to sleep. In the early dawn, my half-breed guide declared that in a certain direction, at the distance of a mile or two, a body of water could be found. During the night he had heard wild geese flying over, and from their cries as they alighted he was informed of the existence of water not far away as certainly as if he had seen it. We broke camp, and, moving in the direction designated, within an hour came to a lake the waters of which, although not sweet, were drinkable. Here we took breakfast.

About Lake Winnipeg, and also on the head-



A HALF-BREED SETTLEMENT.

ENGRAVED BY R. C. COLLINS.

waters of the rivers near the mountains, are found some considerable forests of spruce; but the trees are not large or tall, and the lumber they are capable of affording is of no great value or amount. The oak is not found above latitude  $50^{\circ}$ , or, say, one hundred miles north of the southern boundary-line, and even further south than that line it is mostly of the variety known as the bur-oak, and it is dwarfed and valueless. Along the streams the box-elder (*Negundo aceroides*) is sometimes seen, but it rarely exceeds a thickness of six inches and a height of thirty feet. With the exception of a few specimens of the ash, it is practically the only hard wood known. The characteristic wood of the country is the aspen (*Populus tremuloides*), the most widely dispersed deciduous tree of the northern parts of the continent of which I have any knowledge. From below the latitude of Washington as far north as I have ever been, where other varieties of deciduous trees diminish and disappear, the aspen poplar maintains its existence, and I have found it growing in sheltered depressions along the hills far up toward latitude  $60^{\circ}$ , hundreds of miles north of any other deciduous forest-tree. Probably the aspen and the willow are the two forms of deciduous forest vegetation which endure successfully the widest variety of climatic conditions. Were it not for the prairie fires which sweep over the plains in autumn and spring, it is probable that in a few years vast tracts now covered only with grass would become aspen forests, and the present conditions of the coun-

try would be considerably changed as to aridity, exposure to extreme cold, and vegetable products. Considerable forests of this wood have been ravaged by the fires, and the trees yet stand branchless, dry, and rotting in the wind. In other parts the woodland is still green and vigorous, and is liable to flourish for many years longer, unless it too encounters the usual fate. As a proof of the tendency toward forest development seen in these regions, it is enough to say that the traveler finds now and then considerable plantations of aspens of one, two, or three years' growth, which have already been swept by the fires, like their more mature companions; while again a forest of seedlings has just set out upon a precarious existence. When dry, the wood of this tree is light, stiff, and sufficiently hard for most uses, although not very tough. Of it the half-breed and the Hudson's Bay hunter or trapper build their rude cabins, the logs rarely exceeding eight or ten inches in diameter. These houses are generally small, perhaps sixteen or eighteen feet square, and rarely more than six feet high at the corners. Each consists of a single room, which serves for all the purposes of family life, having one low, batted door turning on wooden hinges. It is roofed with alternate layers of prairie-grass and mud to the thickness of half a foot or more, resting on a layer of the poplar poles placed close together. A single small window, generally unglazed, serves the usual purposes of such an opening. The floor is of puncheons of the same wood as the rest of the

house, or is simply the clay tramped hard and smooth. The chimney and fireplace are made of mud molded upon a rude structure of sticks to give it form and stability. The fireplace, unlike the openings in the chimneys of our own backwoods, are not low and wide, but narrow and tall, perhaps one foot and a half by four feet in dimensions; and in them the half-breed sets up the billets of fuel on end, having cut them in the half-breed fashion. His ax is of light weight, and is always used in one hand as an American uses a hatchet, the other hand being employed in supporting the slender log he is chopping. Instead of notching the logs which make the walls of his



"IRON COLLAR,"  
BLACKFOOT.

abode upon one another at the corners, as is customary in the new parts of this country, the dweller in the Northwest squares large posts for the corners and for the sides of the door, and in these makes longitudinal channels two or three inches wide and deep to receive corresponding flat tenons wrought on the ends of the logs. The cracks and openings between the logs are stopped with clay, and thus after a few days' work, with an ax as his only implement, he constructs a house which makes up for all its deficiencies, from an architectural point of view, by its inexpensiveness and its comfort in a hyperborean climate. Like other primitive structures of man, it seems to have been suggested to the builder by the abodes of birds and animals in nature, like the dugout of Dakota; and I could never come upon a cluster of these cabins without observing their resemblance to the nests of the mud-wasps.

The so-called forts of the Hudson's Bay Company are in reality nothing more than trading-posts, and little reliance could ever have been placed on the strength and solidity of their construction against determined hostile attacks, even from Indians. A palisade of split logs of poplar twelve or fifteen feet high, sometimes with blockhouses at the corners somewhat higher than the palisade itself, sometimes without, incloses an area in which are placed the log structures used as storehouses, blacksmith-shops, and other necessary offices, together with the residence of the factor, or chief trader. Naturally these are of better construction and more commodious than the single houses of the few settlers outside the stockade, and they are generally two low stories in height; but all are made of logs of the poplar. The blockhouses are pierced for rifles, and command the approaches to the stout gates by

which on trading days— never Sundays— the motley crowd of Indians, half-breeds, and renegade white trappers and hunters are allowed to enter with their packs of furs. At Edmonton, through openings in the blockhouses, there peer down in grim silence what appear to be mounted cannon of small caliber and ancient construction, but their moral effect alone is relied upon, for they too, like the rest of the structures, are of wood only.

By preference, and from lack of other timber, of this same poplar the half-breed of the northwestern plains constructs his cart—the characteristic vehicle for all purposes in summer, and his sledge or jumper for winter use. With his ax, an auger, and his buffalo-knife for tools, in a short time he builds a light, stout cart singularly well adapted to his circumstances. As ordinarily constructed, it contains, like the harness with which it is attached to the draft-animal, not a particle of iron. The wheels are well framed together, and are about five feet in diameter. The spokes are well driven into the nave, the pieces of the felly are doweled together, and the structure dishes after the most approved fashion. The pony or the bullock which is to supply the motive power is harnessed between two large, light shafts, and upon the axle of the cart a light framework is built to contain the packages which are to form the load. It is lined and floored with thin boards wrought out of trees with the ax, or, more recently, the whip-saw. On such a cart a load of eight hundred pounds can be carried with safety, and its strength is such that repairs are rarely necessary. When a break does occur a ready resource is found in the bundle of "shaganappy," or strips of tanned buffalo-hide, which the native traveler always carries with him. Applied wet and flexible by wrapping around the broken shaft, felly, or axle, it soon dries in the wind of the plains and hardens like bone, and no second fracture can occur at the mended place. The harness also, made of the same tanned hide, can easily be mended with the same material. It is an amusing sight to observe the method of effecting such repairs. By some sudden wrenching occasioned by a deep rut, a long-used shaft is splintered, and must be mended. The strip of hide is softened in water, and two men wrap it closely about the broken part. Bracing their feet, they draw the bandage with all the strength of their hands and the muscles of their backs until you would say it could be drawn no more; but the process is not yet completed to the satisfaction of the dusky workmen. They now take the free ends in their teeth, and, using their hands as additional braces, they pull backward with such a strain as only iron jaws and steel teeth can withstand. The ends are now



A BLACKFOOT INDIAN.

ENGRAVED BY E. HEINEMANN.

secured by intricate knots, and the repairs are completed.

When the half-breed comes to a river to be crossed, however swollen and wide, he finds it scarcely an obstruction. A buffalo-hide, or, in recent times, since the buffalo has disappeared, a canvas cart-cover, placed beneath one of the wheels, its edges brought up over the rim, furnishes him a "bull-boat," seated upon the center of which he paddles himself across and guides his swimming pony. In succeeding journeys he ferries over his load and tows his remaining cart-frame. The wagon of the white man, however skeleton-like and light it may be, is incomparably less well adapted to the necessities of plains travel than this primitive construction, which practically can neither break nor sink, and which re-

quires no blacksmith or skilled wheelwright for its repairing. It is at the same time wagon and boat, and in case of necessity it serves as excellent fuel. Commonly, the hunters' and the traders' trains are made up of from twenty to seventy, or even more, of these vehicles moving in a single varying line over the rolling plain, each animal, except the first, attached to the cart in front. Covered usually with canvas covers, more or less white, they constitute a picturesque feature in the landscape when seen at a distance against the green of the grass, or against the sky as they creep over the summit of some slope—the only moving objects, except the clouds, within the reach of vision, arousing in the lonely spectator suggestions of human life and commerce and far-off civilization. No grease or other lubricant



is ever applied to the axles, since the Indian considers such a use of fatty substances a sheer waste of food, and the lugubrious creaking and wailing of the thirsty wood locates such an outfit even before it can be seen and after it disappears. A specimen of the Red River cart can be seen in the National Museum at Washington, but it has been repaired by the civilized device of iron nails, and so is not quite typical.

A characteristic feature of the great plains of Canada are the trails which connect the widely separated trading-posts and settlements, along which supplies are brought in and the peltries, which constituted in former times the chief products of the country, were carried to the great fur-depots on their way to Montreal, whence they were shipped to England. Formerly, before the construction of the St. Paul, Minneapolis, and Manitoba Railroad, access to these remote northern districts was by means of traders' carts from St. Paul over the unsettled prairies of Minnesota, and by small steamers on the Red River to Fort Garry, the site of the present city of Winnipeg, a journey of several weeks' duration. Earlier still the dog-trains, now a mode of conveyance known only to the past, except in the extreme arctic regions of this continent, brought down in the winter season sledge-loads of valuable furs, and only half-breeds and Indians made the journey. As late as 1869, the present president of the railroad named above, then a poor soldier of fortune living in St. Paul, was met one stormy day in winter alone with a dog-sledge pushing his way far north in Minnesota toward Fort Garry. Rumors had reached him of that movement of the half-breeds near the fort which took place upon the adoption of the articles of Canadian confederation in the year named, and which became known as Riel's rebellion, and he was on his way to see what openings for his adventurous and enterprising spirit might arise in a time of political disturbance. Earlier yet in the history of the country, before St. Paul had become a distributing center for the great areas north and west of it, before the Mississippi River had been approached by railroads, the principal highway by which the Northwest Territories were penetrated was a water-route now altogether abandoned, although many men still live who traversed it from time to time in the old days. Some of the Hudson's Bay trading-posts were established two hundred years ago at favorable points on the streams and lakes of the country, and supplies were brought to them annually, and furs were carried from them, by ships sent from England to Hudson's Bay. Arriving at

<sup>1</sup> The York boat is made at Fort York in the Hudson's Bay Territory. Constructed of whip-sawed boards, it is large, strong, and of great carrying capacity.

the bay after tedious and dangerous passages through the ice of Hudson's Straits, not far from the southern end of Greenland, they navigated the stormy, shallow waters and arrived in June or July at Fort Churchill or Port Nelson, where, lightening their cargoes, they received their return freight and hastily set sail for home, fearful lest the ice of winter should make them prisoners for an entire season before they could reach the open Atlantic. At the ports of debarkation, crews of men who had brought down the furs in York<sup>1</sup> boats from the distant posts were waiting to load the precious supplies and the annual mails for the return trip to the wilds. They rowed and pushed their heavy crafts up the broad, rushing streams and across the lakes, day after day through the uninhabited wilderness, until, after months in some cases, they reached Lower Fort Garry and Upper Fort Garry on the Red River; Fort Ellice and Fort Qu'Appelle on the Assiniboine; Fort à la Corne, Carlton House, Fort Pitt, and Fort Edmonton on the North Saskatchewan; and other posts on the English, or Churchill, River, and on the countless lakes for whose accumulated waters it furnishes a channel. By other routes from the bay, and by combined water and land journeys, they carried such necessary supplies as would bear transportation to posts on Great Slave Lake, on the Peace River, on the Athabasca, even to the far trading forts on the Mackenzie River, up to and beyond the arctic circle.

The freighters' passage left no traces in the fleeting waters, but on land there still exist many of the old trails winding mile after mile over the grassy plains. Some of them are now abandoned, the primitive commerce having taken new directions, yet in this arid climate decade after decade they remain just as the last wheel pressed them. The passage of such a train of carts as I have described leaves three tracks in the dry soil, which, deepened by following trains, become more and more distinct. One is made by the pony or the bullock which draws the load, the others by the wheels. At length hollows or chuck-holes are formed, and, to avoid them, a new series of tracks is made a few inches apart from the old one. This in turn is abandoned for another, and the process goes on until as many as a score of such sets of tracks are worn in the brown soil, each track a foot in width and nearly a foot in depth. They everywhere maintain their parallelism, never running into one another, and the appearance they present is that of brown bands of color winding through the green expanse. Often not another sign of human life or occupancy can be seen for hundreds of miles, and an infrequent passenger with his outfit hails the advance of another with all the interest with which, on long

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voyages in unaccustomed waters, one ship hails another on the homeward course. The travelers halt when they meet, cordial greetings are exchanged, the news of the distant points of departure is asked for, each party waits while the other prepares such letters as he may wish to send back to far-away friends, and with good

of mosquitos in the Northwest is a myth. It is a question of definitions, of course, but the learned writer could not have used the word "myth" in an ordinary signification. At least I used to think at times when the mosquitos were so abundant that we could not eat our soup at supper-time, even with the defense



PONIES HERDING AROUND SMUDGE FIRES.

ENGRAVED BY C. A. POWELL.

wishes they go on their separate journeys, and solitude unbroken reigns again.

The great plains are now comparatively devoid of animal life, and at certain seasons, even in summer, one may travel for several days at a time without seeing insect, bird, or beast of any kind. This surprising statement is literally true: but at other times insect life abounds beyond all comprehension or experience elsewhere; and now and then herds of antelope, or deer of several varieties, or a few elk, or a bear, or a band of wolves, or a badger may be seen; while the air is full of the winnowing of the wings and the cries of wild fowl. On every hand are seen lakes white with swans, plover, herons, cranes, curlew; and the active and enterprising cow-bird, which, alighting on the backs of domestic animals where there are any, promotes their comfort and satisfies its own hunger by the onslaught it makes on the myriads of mosquitos which torment them. Principal Grant at one time made a hurried journey through a part of this country, and upon his return wrote a book in which he averred that the existence

of a most powerful smudge of grass and leaves placed to windward, without finding every spoonful plentifully peppered with the culex, and a single sweep of the hand would capture a score of the winged pests, while the bitter tears ran from our eyes, that Principal Grant's powers of observation might have been considerably improved by exposure without protection for a time to such an atmosphere. Alas! during July and August mosquitos do abound, and they are attended by coadjutors of no mean powers—sand-flies, black-flies, deer-flies, bulldog-flies (the bot-fly), and I know not how many others, who conspire to make life for man and the animals on warm, damp days and at night nothing less than a burden. So numerous and virulent are they that animals grow thin in flesh during the period of their existence, and on the Athabasca River horses and cattle perish outright from their attacks. At night the traveler's animals are often stampeded by them, and the usual precaution taken is to make a dense, dank smudge of green boughs and sods, in the acrid smoke of which a passable degree of comfort

can be had. From such a smoke it would be impossible to stampede a band of horses, and for the choicest positions in it they will fight with teeth and hoofs.

But the most impressive signs of the abundance of nobler animal life in recent times are the countless buffalo-trails found almost everywhere. Like the cart-trails they are worn deep into the soil, and they remain unchanged for years. While feeding or resting, the buffalo are scattered about, and they make no permanent impression of their presence; but when they are going to water or are traveling to new pastures, they move in single file behind the leader of the herd, and a trail is speedily formed by their sharp hoofs. On their now deserted pasturing-grounds these trails cut the surface in every direction, now and then marked by the wallowing-places worn deep in the ground, where each animal followed the leader not only in marching, but in taking a dry wash for health and comfort. Up-hill and down-hill these paths wind and wind. Even on the thin edges of the hogbacks in the valley of the Red Deer River, and on their almost vertical faces, where no horse can find a footing, and a man would find difficulty in going, the buffalo found an easy road for his sure-footed majesty.

It is not long since this noble animal was the monarch of these lonely regions. Not only are the hill-slopes in many places terraced by their deep-worn paths, running parallel to one another at the distance of perhaps a yard, but in favorite localities, where they once fed in countless droves, their bones and horns lie scattered on every hand, bleaching and slowly decomposing in the drying wind. Sometimes every square rod of the surface presents the sad memorials of a noble animal gone to his death in a pile of shoulder-blades, rib-bones, leg-bones, horns still covered with the black, shining corneous substance which made them so striking during life, and in a broad skull with empty eye-sockets, still tufted with brown hair, and still maintaining a lordly port. At one time in my wanderings I came, near the Eyebrow Hills, to a tract some hundreds of miles in extent, already—early in the autumn as it was—scathed by the prairie fires and left black and charred, the only spots excepted being a few small round marshes in which the

moisture had checked the sweeping flames, where we found the only available pasturage for our animals at night. The coal-black surface was thickly dotted with the white bones of the buffalo, which, in some merciless onslaught of the hunters, had fallen there by the thousand for the paltry booty of their hides. Just where they fell, they lay scattered over miles of country, their bones the only mementos of once happy, crowding, noble animal life. As the skeletons gleamed white in the darkness and silence of night, the impression made on the thoughtful observer was depressing enough.<sup>1</sup>

Desiring one day to look over the country at large, with my half-breed guide I crossed some clay cañons on horseback, and climbed the slopes of one of the hills spoken of, whence in all directions the undulating plain lay spread out below me. A locating engineer with his party was following on my trail at a distance of some weeks' travel, and with him I wished to communicate concerning the best direction in which to carry his line. As my party consisted of only two men besides myself, I could not detach a messenger, and my only resource was to erect some monument on the summit of the hill, which, seen against the sky, would attract his attention. For such a construction the numerous buffalo-bones lying about offered ample materials. Inscribing a message to Douglass, the engineer, on a broad, white shoulder-blade, I put it at the base of the monument, and collecting a score of great skulls with the horns still attached to them, I piled them together to the height of eight or ten feet. At the top I placed another blade-bone directing attention to the message deposited below. As we rode away in the slanting light of the setting sun, which threw the shadow of the hill and its melancholy cairn of bones for miles and miles across the plain toward the east, whence we had come, I thought of the appropriate nature of such a monument—the monarch of the lonely plains, crowded to his death by the ruthless, fiery edge of advancing civilization, sullenly looking with sightless eyes afar to catch the first gleaming light and the thunderous rush of that highest embodiment of nineteenth-century progress and power, the railway locomotive.

Until the farmer came to look upon these broad areas as furnishing land for cultivation in

<sup>1</sup> Some notion of the former abundance of the buffalo in the Canadian Northwest may be obtained from the following memoranda of outfit for a single buffalo-hunt in 1840, the authenticity of which cannot be doubted. There were required: 200 carts and harness, 655 cart-horses, 586 draft-oxen, 403 horses for running buffalo with saddles and bridles, 1240 scalping-knives for cutting up meat, 740 guns (flint-lock), 150 gallons of powder, 1300 pounds of balls, 6240 gun-flints, and the number of persons was 1630. The expedition returned to Fort Garry in August, and the Hudson's Bay Com-

pany paid £1200, or \$6000, for the booty brought in. How many animals were slain we can only conjecture. Less than twenty years ago, my intelligent half-breed guide told me, he had seen, more than once, piles more than six feet in height of buffalo tongues which had been thrown together just as they were cut out after a single successful hunt by a party of Indians. These tongues were the perquisite of the medicine-man, who, during the progress of the hunt, sat in his tepee beating his drum and uttering incantations for its successful outcome, instead of participating more actively in the slaughter.

THE RETURN FROM THE FALL BUFFALO HUNT.

ENGRAVED BY JOHN P. DAVIS.



crops and for the raising of cattle, there was little to attract men, civilized or uncivilized, to make their homes here. Nature was forbidding, and offered few natural products for the subsistence of human beings; fuel was scarce and poor, water was of the meanest description, and a climate of the utmost rigor prevailed. The presence of fur-bearing animals in great abundance in former times, now sadly lessened, alone held out inducement to wandering tribes of Indians, who could clothe themselves from the fruits of the chase and feed their hungry bodies with the carcasses of the slain. More than two hundred years ago the early French voyageurs, traversing Lake Superior and penetrating among the tribes of Indians on the upper Mississippi, pushed their adventurous journeys northward also, and learned of the beaver, the buffalo, the otter, the fox, the sable, and other valuable fur-bearing animals existing in great numbers in a hitherto unexplored region. The Hudson's Bay Trading Company, one of the most remarkable commercial organizations of all history, entered and took possession of a waste of which as yet civilized men had no need. For two centuries, with their few European retainers and the dependent aborigines who gathered about them engaged in hunting and trapping, they held almost unchallenged possession of a territory nearly as large as the entire United States. A teeming population with settled homes and busy towns and cities was no part of their desire, and they took measures to exclude all except such servitors and dependents as could assist in gathering the annual stores of peltries and in transporting them to Montreal. When a few years ago this company was forced by the necessities of the times to dispose of its proprietary rights to the Canadian Dominion, the paucity of both human and animal life throughout these regions became apparent. The animals had been hunted and trapped, destroyed by powder and by poison until their skins no longer furnished a source of profitable trade, and the Indian tribes had largely perished by starvation and disease. The few remnants of once noble tribes were taken in hand by a paternal government and were gathered upon farms and reservations, deprived of the possibility of getting intoxicating liquor, and controlled by an efficient mounted police force, the like of which is not known on this side of the boundary line. Thus it is that the traveler of to-day in these lonely regions may journey for weeks at a time without encountering a single human being outside his own party, or finding a sign of former or present human occupancy, while the only tokens of the former abundance of animal life are those which betoken its extinction.



A MEMBER OF THE MOUNTED POLICE.

The early grass of spring is bright green in hue, like the springing wheat of the farmer; but as the season advances the prevailing tint is a sage-green, which forms an admirable background for the display of the colors of the flowers. The flora is abundant and varied, and of the usual character of the semi-arid regions, but the hues and tints of color in blossom and leaf and stem are of remarkable depth, purity, and intensity. The common orange-lily lifts its chalice of blood like that drawn fresh from living veins. The primroses flaunt their white and yellow in splendid magnificence, and the cactus blossoms flame against the gray-green surface. In favorable localities curious cypripediums, and the spiranthes, and other members of the orchis family, attract admiring attention. But the roses far surpass all other flowers; they nod and blush in perfect abandon over miles and miles of waste, to gladden the eye of the infrequent traveler.

C. A. Kenaston.

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