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HON. W. J. ROCHE, Minister; W. W. CORY, Deputy Minister
TOPOGRAPHICAL SURVEYS BRANCH—BULLETIN No. 35
E. DÉVILLE, *Surveyor General*

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DESCRIPTION OF SURVEYED TOWNSHIPS

IN THE

PEACE RIVER DISTRICT

IN THE PROVINCES OF

ALBERTA AND BRITISH COLUMBIA

(THIRD EDITION)

DEPARTMENT OF THE INTERIOR, CANADA
HON. W. J. ROCHE, Minister; W. W. CORY, Deputy Minister
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E. DEVILLE, *Surveyor General*

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PREFATORY NOTE

The information contained in this report has been gathered mainly from reports of surveyors and explorers who were sent out by this Department; the township descriptions are from the field notes of the surveyors who laid out the township and section lines, and the illustrations from various sources.

The object aimed at is to place in the hands of prospective settlers reliable, up-to-date information, which will enable them to form a correct idea of the country in which they wish to take up land, and of the easiest and most economical method of reaching it.

Descriptions of settlements in the Peace River district are given with the report of the township in which the main part of the settlement is located.

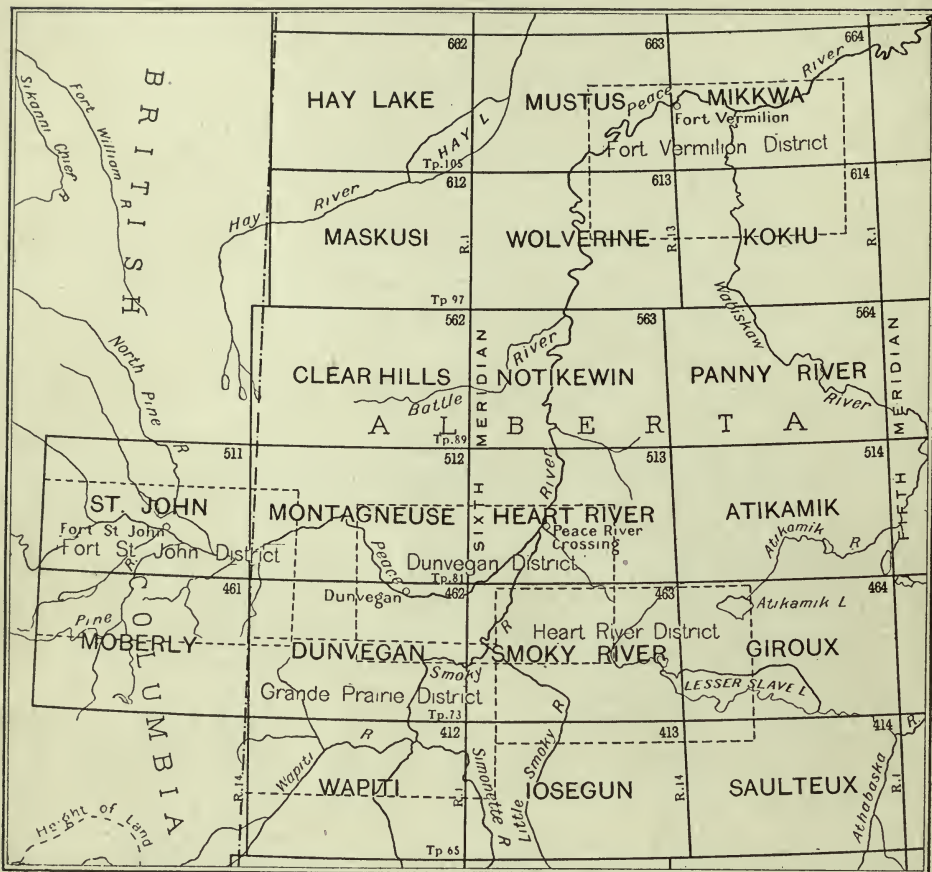
The townships in this pamphlet are placed in ranges, the number of the range and meridian being at the top of the page and the number of the township in heavy figures on the left side.

E. DEVILLE,

Surveyor General.

April, 1916

INDEX TO SECTIONAL MAPS IN THE PEACE RIVER DISTRICT



Sectional maps on a scale of three miles to one inch are published by the Surveyor General's office. The prices are, ¹⁵ six cents per map for heavy paper and ¹⁰ two cents per map for thin paper.

The maps may be obtained from the Surveyor General, Department of the Interior, Ottawa, by remitting the price, and they may be ordered by the numbers placed in the upper right-hand corner of each sheet.

Clear Hills, 562; Maskusi, 612; Kokuu, 614, and Hay Lake, 662, have not yet been issued.

The areas shown on the above index by dotted lines are the districts for which maps appear throughout this report, as follows:

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GENERAL DESCRIPTION

OF

PEACE RIVER DISTRICT

The area included in the district herein described lies between the north boundary of township 68 and the north boundary of township 112, and extends from the east boundary of range 9 west of the Fifth meridian to the western boundary of Alberta. It also includes the area known as the "Peace River Block," comprising three and one-half million acres in the northerly part of British Columbia adjacent to Alberta. The total area of the whole district is about 53,000 square miles, or a little larger than the combined areas of the provinces of New Brunswick, Nova Scotia and Prince Edward Island.

The Peace River District can be reached by the Edmonton, Dunvegan and British Columbia Railway, which runs northwesterly from Edmonton, passing south of Lesser Slave Lake and continuing westerly through Spirit River and Pouce Coupé districts to British Columbia.

The main line is now constructed as far as Spirit River City in tp. 78-5-6, and although passenger train service is yet established only as far as McLennan, in tp. 77-19-5, construction trains run the whole distance to Spirit River City. Passenger service will be established the whole distance as soon as the wooden bridges over the streams are replaced by more substantial structures.

A branch line from McLennan to Peace River Crossing is now in operation, and another branch line from Spirit River City to Grande Prairie is under construction.

Peace River Crossing can now be reached from Edmonton in about twenty-four hours, whereas this trip formerly took about two weeks. The difference in time alone is a great advantage, to say nothing of the comfort and convenience of the present mode of travel.

It is intended, at some future date, to continue the railway across Peace River, at Peace River Crossing, and from there to construct two branch lines, one running westerly about forty miles north of the river, and the other north and east along the left bank of the river to Fort Vermilion.

At Peace River Crossing the river, which is about a quarter of a mile wide, may be crossed on the ice till about April 21. In summer passengers and freight are taken across by a cable ferry, the current being the propelling power. From there a good wagon road has been constructed on the north side of the river to Dunvegan, where the river is again crossed by ferry, the country being too rough on the south side for travelling between Dunvegan and the Crossing.

The wagon road continues on the north side of the river from Dunvegan to Fort St. John, but as yet it is not in very good condition. The most difficult part is at the valley of North Pine River which is 800 feet deep. At this point the wagons must be unloaded and let down the bank empty.

The road is some distance back from the river throughout most of its length, as the valleys of the streams which have to be crossed are very deep near Peace River, but much shallower farther back. It is not very much travelled in summer, but in winter many loaded sleighs pass over it.

A sleigh road leads from Dunvegan south through Spirit River Settlement and then west to Fort St. John; in its present condition, however, it is impassable in summer. A longer road but good for transportation by wagon, extends from Dunvegan south to Lake Saskatoon, and thence along Beaverlodge River to Pouce Coupé Prairie. From there it follows the government telegraph line to Fort St. John.

From Fort St. John the pack-trail along the north bank of Peace River has been widened into a wagon road to a point about eight miles from Hudson Hope. At this point clay landslides, extend to the water's edge and the wagon road, if constructed farther, would have to be gouged out of the hills, only to be filled up by the next landslide.

In summer, Pouce Coupé may also be reached by travelling by boat from Peace River Crossing to Kiskatinaw River and thence south across the prairie land on a good wagon road.

Fort St. John receives a semi-monthly mail from Lake Saskatoon and this service is to be extended to Hudson Hope. But as the delivery depends largely upon the state of the rivers on the mail route, on none of which ferries are operated, the mail service during certain seasons is very irregular. The government telegraph line to Hudson Hope was established last year.

As the Edmonton Dunvegan and British Columbia Railway now extends to Spirit River Settlement, the route from Edmonton to Fort St. John and Hudson Hope, via Lake Saskatoon and Pouce Coupé, is considerably shortened.

In summer, from the middle of May to the beginning of September, two steamers of fifty to sixty tons each, ply the river from Hudson Hope to Vermilion "chutes," a distance of over 550 miles. Two other boats of greater capacity than any on the river at present are under construction at Peace River Crossing and will be launched in the spring of 1916. One of these boats is supplied with oil tanks so that oil may be used for fuel. Two outfits are at present boring for oil, one in the vicinity of Tar Island, about thirty miles from Peace River Crossing, and the other at Vermilion "chutes."



Photo by C. Engler, D.L.S.
Settlers on the road to Athabaska Landing

Most of the river traffic is from Peace River Crossing down the Peace. This is due to the fact that nearly all the supplies for northern Alberta which formerly were taken down the Athabaska in scows are now taken by rail to Peace River Crossing and thence freighted down the Peace. Navigating the Athabaska with scows is very difficult owing to the numerous rapids between Athabaska and McMurray. Such a small amount of freight goes down the Athabaska now, that the Hudson's Bay Co. have taken away the tramway which they constructed in 1894 on the island at Grand Rapids for portaging freight. When the Alberta and Great Waterways Railway is constructed to McMurray the Athabaska route will no doubt be again patronized as no rapids occur in the Athabaska below McMurray.

The soil in the townships crossed by the Peace River road from Grouard to the south boundary of tp. 81-19-5 is clay, and the district is thickly timbered except for a couple of miles at the crossing of Heart River. The timber is chiefly poplar six to ten inches, with scattered spruce of the same size. Large spruce and tamarack swamps are numerous.

From the south boundary of tp. 81-19-5 to Peace River Crossing the soil is chiefly a sandy loam, particularly well adapted to wheat growing. It might be described as twenty-five per cent. open country and the remainder scrub or timber.

After crossing Peace River Valley which extends three miles beyond the river, it is almost level plateau to Dunvegan. The soil varies from blue clay with a top soil of sandy loam two to six inches, to a sandy loam that is so much desired by wheat growers, and in places it is a rich black loam. Scrub and small poplar grow in patches, and the whole district might be described as seventy-five per cent. prairie and the remainder scrub, small poplar and a few spruce.

Five miles south of Dunvegan begins the district known as Spirit River. It is slightly rolling, about eighty per cent. prairie and the remainder scrub. The soil is either a rich sandy loam or a heavy black loam. The trail south from township 76 to the centre of township 74 crosses the Saddle Hills. They are thickly timbered with spruce and poplar from four to ten inches. The centre of township 74 is the edge of Grande Prairie. From here the trail runs south-westerly to Grande Prairie Settlement, and ~~Beaverlodge~~ on Saskatoon Lake is about twelve miles farther west. Grande Prairie District extends about fifteen miles east and west from Bear Lake. It is about eighty-five per cent. prairie and the remainder scrub; the soil varies from a sandy loam to a black loam. Towards Smoky River more scrub grows and the clay comes closer to the surface. Along the shores of Wapiti River and for six or eight miles north the country is timbered with poplar six to eight inches, and westward from range 8 larger spruce are found. There are two sawmills here, and lumber and shingles for house building can be obtained.

The banks of Beaverlodge River are not more than fifteen feet high. The river flows through an undulating country about sixty per cent. prairie.

North-westerly from Grande Prairie lies Pouce Coupé prairie comprising about sixteen townships. In this locality homesteads are being rapidly taken up and farming prospects are good. Four years ago Pouce Coupé Settlement had but one settler who had only a few cattle and depended on trapping for a living. Last fall two threshing outfits moved up from Grande Prairie to thresh an estimated crop of 175,000 bushels of grain.

Kiskatinaw River runs in a northerly direction through the westerly portion of Pouce Coupé prairie. It turns north-easterly near the 21st base line emptying into Peace River in township 82, range 15. In township 77, range 17, the banks are about twenty-five feet high and are formed of a top soil of sandy loam on a clay subsoil. At the 21st base line the banks are about 300 feet high. The valley varies from three-quarters of a mile to a mile and a half in width, and the stream is about two chains wide. The depth varies from a few inches in dry seasons to thirty feet at flood time, and the current from three miles per hour to a rushing torrent. The river is unnavigable.

The south-western portion of the Peace River Block from range 18 to the west boundary is all wooded with second-growth, and in places there is much windfall. It is also very hilly except from the river flats, and the district around Moberly Lake is not very suitable for settlement. The soil is very good, however, and a great variety of plants were found. Coal seams were noticed in the banks of a creek in range 26 flowing south into Pine River.

East of range 18 the surface is not so hilly and the land is more easily cleared.

Directly north of Peace River very little game is found, but south of the river and along the Smoky moose and bears are plentiful.

The best district for growing grain is around Spirit River, but another district almost as good extends from Winagami Lake, twenty-five miles west, and north almost to Peace River Crossing.

Vegetables, oats, barley and wheat if sown early in May mature, where the elevation is not too great, with very little danger from summer frosts. Wheat matures in about three months unless the season is very wet, and frost seldom comes in the valleys before the middle of August.

Growth is very rapid owing to the length of the day, cloudless skies, heavy dews and the great range of temperature during the twenty-four hours, from about 45° at sunrise to 80° at noon. The great amount of daylight is the greatest factor in producing growth, and, though the rays

Lake Saskatoon P.O.

of the sun are never vertical, compensation is made by the length of the day. At Peace River Crossing in June the sun at midnight is only ten degrees below the horizon, and the nights are very short and never quite dark. The greatest amount of sunshine per day is then over seventeen and a half hours, and in the month of August it is over fifteen hours.

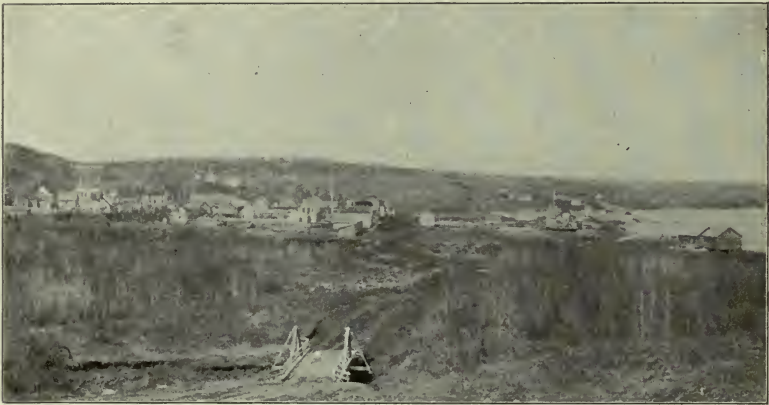


Photo by H. S. Holcroft, D.L.S.

Athabaska Landing

The plateaus near the foot-hills of the Rocky Mountains are suitable for ranching, but cattle would have to be fed for about five months in winter.

A large tract of exceedingly good land extends from Island Lake in township 83, range 4, west to Fort St. John. It is fifty per cent. prairie, the remainder being light poplar and scrub. The ground is covered with a luxuriant growth of upland hay and peavine, and an abundant supply of water is furnished by the creeks and small lakes. The soil is mostly a clay loam.

Nearly the whole of the Peace River Block north of Peace River has splendid soil for agricultural purposes, and it is about twenty-five per cent. prairie or lightly wooded. Most of the open prairie is along Peace River and its tributaries. The climate is much the same as that west of Calgary, but there is much more rain and snow.

The Clear Hills run about east from the western boundary of Alberta to the Sixth meridian, and lie just south of township 89. About range 4 they break up into several ridges which run mostly north and south as far as township 85. The top of these hills is nearly level, sloping gently to the north. The surface on this plateau is muskeg, under the surface growth of which lie gravel and sand, and the portion northward has been overrun by fire. The ridges here have a second growth of jack pine, but the muskegs carry no growth except moss and Labrador tea.

A short distance south from the 23rd base line the country breaks off and falls from two to three hundred feet. This slope is heavily wooded with jack pine, spruce and poplar up to fifteen inches in diameter. From the foot of these hills to Peace River lies a fine stretch of country well adapted to agriculture. It is generally lightly wooded with spruce and poplar with many open patches. The soil is good and the surface is nearly level, having only a gentle slope to the river. The Clear Hills with the timber form a fine protection for the flats and aid in retaining moisture to keep the streams supplied with water in late summer.

A strip of land well adapted for agriculture extends twenty or thirty miles north of Peace River from the Crossing west as far as the foot of Clear Hills. In this strip much of the land is open, and even where it is not open it could be easily cleared as it is very lightly wooded. North of this strip the country is wooded, and muskegs cover a considerable area. Where these muskegs are, frosts occur every month in the year.

The construction of the railroad into the Peace River district will enable the settlers to cultivate more land, as heretofore there was no market for grain and consequently only enough for

home consumption was raised. More live stock can be taken into the district, as the facilities afforded for ranching are excellent. More prospecting will be done, and the resources of the country made known and developed.

The cultivation of larger areas will no doubt affect the climate, and dangers from summer frosts will be materially lessened.

The slope of the whole district is toward the north-east, except a small area around the west end of Lesser Slave Lake. This lake is approximately 480 square miles in area and is about seventy miles long. A channel of comparatively deep water about a mile wide extends along the middle of the lake in an east-and-west direction, but the remainder is so shallow and so many sand-bars run out from the shore for miles, that in a dry season it is difficult to get close to land even with a canoe. The shore, low and shelving, is often marshy, affording good hay and pasture lands.

The largest stream is Peace River, which flows easterly through the north part of the district as far as Peace River Crossing, and then northerly towards Fort Vermilion. The river is about 800 feet wide where it enters Alberta, but after receiving a number of tributaries, the largest of which is the Smoky, its width is increased to 1,300 feet at Peace River Crossing. The current is about four miles per hour, and the river is navigable from the foot-hills of the Rockies to Lake Athabaska, except for half a mile where the "chutes" occur about fifty miles east of Fort Vermilion. The ice breaks up about April 21, and forms again about November 7.

Smoky River varies in width from 400 to 1,500 feet and has a current in places eight miles per hour. This stream is not navigable as it has too many rapids, but at only a few places could dams be built and power economically developed, as the shaly banks disintegrate rapidly.

The following extract from a treatise on the Climate of Canada by Prof. R. F. Stupart, Director of the Meteorological Service of Canada, read before the International Geographic Congress, held in St. Louis, Mo., in 1904, furnishes valuable information on the climate of the western provinces:



Photo by H. S. Holcroft, D.L.S.
Ferry at Athabaska Landing

"A knowledge of the climate of Manitoba and the North-west Territories is of considerable importance at the present time, as thousands of immigrants are pouring into the country. The available meteorological observations at most stations in the Canadian North-west extend over a period of twenty years. We can, therefore, at least form a fair estimate of the climatic changes.

At Winnipeg the series of observations extends to thirty years, and by comparing the records from one part of the country with those of another we are aided much in our estimate.

"On considering the spring and summer seasons, which are the more important from an agricultural standpoint, it will be found that spring opens a little earlier in Alberta, near the mountains, and in south-western Saskatchewan, than it does farther east in Saskatchewan and in Manitoba, but that after early in May the more eastern districts become the warmer, and that the average temperature of the three summer months in Manitoba, taking Winnipeg as approximately indicating the climate of the province, is some 5° higher than during the same season at Calgary and Edmonton. An average daily maximum temperature in April of 53° at Calgary, 52° at Edmonton, 58° at Medicine Hat, and 47° at Winnipeg, show that April is truly a spring month, and verifies the oft-repeated statement that spring seeding is well under way, or perhaps completed, in that month.

"The rapid upward trend of the temperature curve continues during May and June, and from the middle of May until the end of July the heaviest rainfall occurs throughout the whole region under discussion, a rainfall which is nearly the same as that of Ontario and Quebec during the same period, and which, as a rule, is ample to ensure successful crops. Bright hot days may be confidently looked for during July and August, and very occasionally in these months temperatures exceeding 90°, perhaps nearly 100°, are recorded; but the average mean maximum in July of 78° at Winnipeg, 76° at Qu'Appelle, 82° at Medicine Hat and 75° at Calgary indicate a not unpleasant warmth, while the corresponding minima show that the nights are pleasantly cool. A fact of peculiar interest in connection with the climate of our North-west Territories is that the summer season in Athabaska and the basin of the great Mackenzie River is nearly as warm as in Alberta. At Edmonton and Calgary the mean summer temperature is 59°; Dunvegan is 58°; Fort Chipewyan 59°; Fort Simpson 57°. The explanation of this lies chiefly in the fact that the insolation, i.e., heat received from the sun, scarcely varies about midsummer between the parallels of latitude 40° and 60°, the larger number of hours the sun is above the horizon in the higher latitudes very nearly balancing the effect of less direct solar radiation, and as after early May the snow has all disappeared we find the isothermal lines running nearly parallel with the Rocky Mountains. In the writer's opinion, this far north-western portion of the Dominion, the Mackenzie River District, is a land of great promise, but it should be spied out and experiments in agriculture made before any extensive immigration is encouraged, and this for the reason that, while the summers are warm, a rapid downward trend of the temperature curve is very noticeable after the middle of August, and frost is not uncommon before the close of that month. While, as we have seen, the summer climate as regards temperature in the Mackenzie River basin and Alberta does not differ very greatly from that found in Manitoba, this cannot be said of the colder seasons. Southern Alberta has a much milder winter than any other portion of the territories, and the cold becomes greater to the eastward, over Saskatchewan and Manitoba, and also northward, toward northern Alberta and the Mackenzie basin. Eastwardly from Alberta the average winter temperatures—December-March—are as follows: Calgary 17.1°; Medicine Hat 16.4°; Qu'Appelle 5°; Winnipeg 1.7°. Farther north the change is even more rapid, and is in strong contrast to the small variation during the summer: Calgary 17°; Edmonton 13° above zero; Dunvegan 1°; Fort Chipewyan 5° below; Hay River, at the entrance of Slave Lake 9° below; Fort Simpson, in latitude 62°, 13° below; and Fort Good Hope, near the Arctic Circle, 25° below. Since the winters are so cold in the far northern territories, while the summers are warm, the time of the opening of spring becomes all important, and the average date cannot be placed much before quite the end of April in the Peace River valley and early May farther north in the Mackenzie basin. All through April, however, the snow is melting fast and the temperature is frequently above 50°. Wild fowl are flying during the latter half of the month. Other features of peculiar interest in connection with the climate of the territories near the mountains are the rapid changes of temperature, which in winter frequently occur in short intervals of time, the marked variability of the mean winter temperature in different years, and the variability of rainfall during the summers of different years. The rapid changes in short intervals are accounted for by the well known chinook or Föhn effect, which is observed to a greater extent under the lee of mountains on the windward side of which moisture is precipitated. We know that the moist ocean winds which are forced up the western slopes of the mountain do not cool as rapidly as they otherwise would, owing to the condensation of their moisture, and that subsequently mechanical heating by compression as they descend the eastern slopes brings them to the prairie comparatively warm and dry. It

is when a cyclonic area from the Pacific moving across northern Alberta causes a rapid south-westerly and westerly flow of air across the Rocky Mountains that the chinook blows over our western prairies. Sometimes a change of wind from north and north-east to south-west will in Alberta mean a rise of temperature from perhaps 20° below zero to 40° above in a few hours.

"The variability of seasons is certainly to a great extent due to the varying position of the mean track of storm centres in different years. The average mean track for January, deduced from many years' observation, is across British Columbia, but in some winters the centres persistently move farther south than in others, and pass into the continent over Washington or Oregon States, and then the chinook does not blow east of the mountains in the Canadian territories, and north-east and north winds prevail, accompanied by continued low temperatures. In other years the storm centres just as persistently move across northern British Columbia, and then the chinook is the rule rather than the exception, and the weather under the lee of the mountains keeps mild. As an example of the variability of seasons, the mean temperature of January, 1886, at Edmonton, was 13.4° below zero, while in 1889 it was 21.9° above, a range of 35.3° . In February, 1887, it was 10.4° below, and in 1889, 21.9° above, a range of 32.3° . In November, 1896, it was zero, and in November, 1890, it was 38° .



Tracking on Athabaska River *Photo by C. Engler, D.L.S.*

"It will be obvious that as the mean track of low areas is over Vancouver Island, the farther we depart northward from this latitude the less frequent will be the chinook, and hence the departures from normal values are likely to be less marked as the latitude increases, and this is found to be the case.

"A feature of very pronounced importance in connection with the precipitation—i.e., rain and melted snow—of Manitoba and the larger portion of the territories, is that in the former province 50 per cent. and farther west more than 62 per cent. of total for the year falls between May and August, and June is the month of heaviest rainfall—just the very period when moisture is required by the growing crops.

"From information derived from a variety of sources, the writer has formed the opinion that 8 inches of well-distributed rainfall between May and August in our territories at present inhabited is sufficient for agriculture, and that farther north, where the ground is more deeply and permanently frozen, less will probably suffice.

"In Manitoba the rainfall is greater than in any portion of the North-west Territories. The normal annual precipitation over the province is approximately 22 inches, and the May-to-August

rainfall is 11.5 inches; drought is therefore not much to be feared here, but westward the danger increases. From Regina westward to Medicine Hat and northward to Saskatoon there are very few rainfall records that extend over a few years, but there is fair evidence that the average annual precipitation in this area nowhere exceeds 15 inches, and at many points is less than that amount. The records of eighteen years indicate an average rainfall of 11 inches in Saskatchewan and 12 in Alberta, which, with a snowfall of about 55 inches, gives a total annual precipitation of 16 or 17 inches over the larger part of Saskatchewan and 17 or 18 inches in Alberta. But it is to be remembered that the seasonal precipitation in the far west is extremely variable. At Calgary in 1892 the total precipitation of the year was but 7.91 inches, while last year it was 34 inches. For five years the rainfall has been ample in this region, but for many years prior to 1897 it was scant, and in several of the years irrigation appeared necessary for successful crops. We may fairly assume that there will be a return to the dry conditions, and that the government is acting in a most judicious manner in providing for irrigation in parts of Alberta.

The writer is of the opinion that the chinook has played an important role in producing a treeless prairie land in southern Alberta and Saskatchewan, and that the presence of wooded lands in northern Alberta and farther north is largely due to the diminishing frequency of the chinook with increasing latitude. The effect of the chinook in southern Alberta and Saskatchewan is to keep the prairies almost bare of snow during the winter and to leave it quite bare in the early spring, while farther north, as the chinook is less frequent the snow lies deep in winter, melts and waters the ground in early spring, providing moisture for trees at a time when moisture is most beneficial. Observation appears to warrant the statement that rainfall is much more variable near the mountains than it is farther east; also in southern portions of the territories than in northern portions. In the territories north of Edmonton values of rain and snow have been deduced from between six and ten years' observations, and from these it appears probable that the normal precipitation throughout Alberta and northward into the Mackenzie River basin is not very different, except that in the higher latitudes the proportion of snow is greater.

"A slight fall of snow and perhaps a frost occasionally occurs late in May after warm, summer-like weather, but such abnormal weather, while very disagreeable, appears to do no harm to the crops. What is more to be dreaded is a light frost just before the grain is harvested in August; but nearly twenty years of observation shows that such frosts are by no means of annual occurrence and when they do occur they are light and local.

"In Manitoba and the territories now settled, October is usually a fine, bright month; the days are warm, but frosts are frequent at night, and generally some light snowfalls may be expected before its close. November is winter, and as a rule in this month some of the heaviest snowfalls occur, and zero temperatures are not infrequent. Farther north, in northern Alberta and the Mackenzie River basin, the effect of higher latitude and the shortening days is very marked, even in September, in the rapid downward trend of the temperature curve, and winter may be considered set in before the end of October."

VERMILION DISTRICT

This district includes three settlements, viz., Fort Vermilion, North Vermilion, and Boyer. Fort Vermilion Settlement lies on the south shore of the river, about two hundred and fifty miles from Peace River Crossing in townships 108, ranges 12 and 13, west of the Fifth meridian. North Vermilion is in the same townships on the north side of the river, and Boyer Settlement lies in township 109, range 13, on the south side of Boyer River.

Peace River furnishes the only means of reaching the settlements. The current varies from three to five miles per hour, depending on the height of the water, and scows will float from Peace River Crossing to Fort Vermilion in about four days.

Steamers ply on the river from the chutes, which are fifty miles east of Fort Vermilion, as far west as Hudson Hope, a distance of over five hundred and fifty miles. East of the chutes the river is navigable to Lake Athabaska. If scows cannot be secured at Peace River Crossing, horses and freight can be transported on the Hudson's Bay Company's steamers. The company, however, do not care to take horses on their steamers, as, besides the hay which would have to be carried, the space taken up by one horse would stow about 3,000 pounds of freight. This would bring in about thirty dollars in rates from Peace River Crossing to Fort Vermilion, which

rate would have to be paid for horses unless the amount of freight to be handled is very small. A scow which will carry twenty horses can be rented, generally, for about one hundred and twenty-five dollars for the trip.

The channel of the river varies in depth, but boats drawing six feet of water can navigate the river from Hudson Hope to the chutes, except when the water is very low. At Fort Vermilion, the water in October is thirty-four feet deep, and in June and July the depth is ten to fifteen feet more. In many places sand and gravel bars extend almost across the river, but there is generally a deep channel where steamers can pass. A great many well-timbered islands are found all along the river.

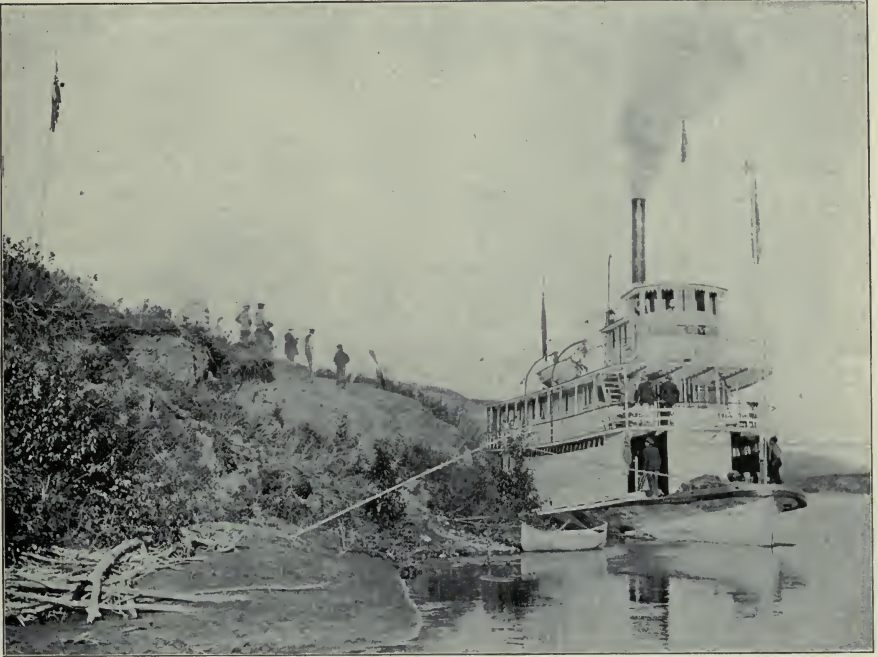


Photo by O. Rolfson, D.L.S.
Steamer "Peace River" at Fort St. John

The total fall in the river at the chutes is about twenty-five feet. The first rapid is about 300 yards long and the descent eight feet. One and a half miles farther down stream there is another rapid about one-third of a mile long and eight feet descent; then comes a perpendicular drop in the river of nine feet. At this point the river is about one mile wide. These falls are not a very impressive sight as the banks are low, the timber scrubby and, on account of the width of the river, the water is comparatively smooth. The falls and rapids do not cause much trouble to the passage of empty York boats or scows, for along the south side of the falls the waters have worn the rock away, so that instead of one perpendicular drop there are three or four of a foot or two each, forming a channel sixty or eighty feet wide, down which the boats run quite easily, their impetus being restrained by ropes from the shore. A natural wharf is located at the foot of the falls for loading or unloading boats.

As far up the river as Fort Vermilion the banks of the valley do not exceed one hundred feet in height, but farther west they begin to gain in altitude till at Battle River, about one hundred miles north of Peace River Crossing, they are from six hundred to eight hundred feet high.

At Fort Vermilion on the south side of the river there is about twelve or fourteen miles of prairie with small poplar and scrub which runs back from the river three miles. The soil is a good black loamy clay, loose and deep, with a gravelly clay subsoil. On the north side of the river,

an extensive tract of prairie and bluff country extends from Peace River to the watershed between the Peace and Mackenzie Rivers, about fifty miles, also south-westerly along Peace River for about forty miles and easterly for a few miles from Fort Vermilion. This is reported to be first-class land in every particular, consisting of a rich, deep, black, loamy clay soil well wooded and watered, and if the life of flowers and berries be any indication of freedom from frost, this district is well favoured in this respect, as the berries ripen here when they are killed in the surrounding parts.

From the end of this tract south-westerly to Battle River, the surface is mostly woods and swamps alternating with patches of prairie and open woods.

Twenty or thirty miles from Peace River, a little north-east of Fort Vermilion lies the western extremity of Cariboo Mountains. From here they extend easterly sixty or seventy miles and then appear to turn northerly. They rise to a height of 1,500 or 2,000 feet above the river.

North of the Buffalo Head Hills, which lie between Peace and Wabiskaw Rivers, there is a prairie district thirty miles long containing some very good hay lands. A belt of heavy bush, twenty miles wide, extends between this prairie and Fort Vermilion.

Fort Vermilion Settlement contains fifty-five lots, and covers a tract of land three miles and a half from east to west and three miles and a quarter from north to south. The surface is prairie and bluffs and the soil is a black sandy loam overlying a clay or sandy clay subsoil. The bluffs are timbered with spruce and poplar up to fifteen inches in diameter with clumps of large tangled willow. The bank of the river is about eighteen feet above low water mark. The land is level in the central portion of the settlement to a third of a mile inland where the ground rises fifteen feet, and from the summit of this elevation an immense plateau extends east, south and south-west. Wood for fuel is plentiful, but settlers are compelled to draw hay for their cattle fifteen miles.



Photo by L. Brenot, D.L.S.
Indians on the move. Moberly River

The Hudson's Bay Company have a roller-process flour mill at Fort Vermilion, which is supplied by wheat grown in the vicinity of the settlement. The wheat matures in about eighty-six days and the yield varies from five to sixty-six bushels per acre.

North Vermilion settlement consists of only fifteen lots. The surface is undulating and more timbered than in Fort Vermilion Settlement and the soil is also of better quality, consisting of a

deep black loam on a clay or sandy clay subsoil. The timber is poplar and spruce from six to fifteen inches, with patches of thick large willow. Hay is plentiful along Gull Lake, Gull Creek and Shoal Lake north of the settlement. Though a mill has been erected and a dam built on the creek, water-power can be obtained only in spring or a wet summer, as the creek usually dries up.

Boyer Settlement contains thirty-one lots. Two wagon roads lead from it to North Vermilion Settlement. The soil is of first-class quality, being composed of a deep black loam and black sandy loam over a clay or sandy clay subsoil. The surface is undulating prairie and bluffs, principally timbered with poplar and spruce mixed with large willow. The timber measures from six to fourteen inches in diameter. Boyer River flows along the north boundary of the settlement, emptying into Peace River. It is one hundred feet wide, two to fifteen feet deep and flows one and one-half miles per hour.

The soil in the lower Peace River valley is very fertile, growing wheat, oats and barley, and all kinds of vegetables. The long summer day causes rapid growth and, owing to the small elevation of the country above sea-level, the climate is very warm in summer and not very cold in winter.

Some very fine stretches of land lie in townships 109, ranges 13, 14, 15 and 16, especially along the north side of Boyer River in the last three ranges. Alkali shows slightly on the surface but in such small quantities that it is no serious drawback to the locality. The soil is a light sandy loam well suited to the needs of the country. Only a few good locations are found in township 107, range 15, and sand ridges and swamps are fairly numerous. Some good places are also found in township 108, range 14, but they are mostly settled on. Township 108, range 13, is the best settled portion of the district, only a few homesteads being vacant.

The district as a whole is best suited for mixed farming. Barley is always a good crop, but wheat and oats suffer from summer frosts. These frosts may disappear when the land is cultivated, cleared and drained, as has been the case elsewhere. Vegetables grow to a great size and are of good quality. Currants, raspberries and similar small fruits thrive, while tomatoes ripen occasionally. Timothy hay and brown grass grow well, but alfalfa has always been a failure.

Horses, cattle, hogs and chickens do well and can be purchased in limited quantities at reasonable prices.

Great deposits of limestone are found at Vermilion chutes and also farther down the river, from which a large quantity of good lime is manufactured. Ordinary salt exists in large quantities at Salt River about one hundred and thirty miles from the "chutes," and at the "cliff," fifteen miles north of Peace River Crossing, there is a seam of soft coal of very good quality about five feet thick, sixty feet above the level of the river.

Game of all sorts abounds in the whole district, and lakes, well stocked with almost all varieties of fish, are reported by hunters to be numerous in the Buffalo Head Hills.

DESCRIPTIONS OF TOWNSHIPS

TOWNSHIPS WEST OF THE FIFTH MERIDIAN

RANGE 9

Tp. 68 (*Eighteenth base line.*)—From the Fifth meridian to the crossing of Athabaska River, the base line runs through a rolling country covered irregularly with spruce and jack pine, with a few local areas of poplar, the timber being nearly all small, but growing thickly.

West of the Athabaska, the first six miles are through a rolling country, covered with jack pine, spruce and poplar, with local swamp land. For about a mile east and three miles west of the crossing of Saulteux River the lands are very swampy.

The country begins to rise at the end of the first mile in range 4, and, while there are a few local descents, the elevation of the whole rises steadily for twenty-six miles to the summit of Deer Mountain, where the line reaches an elevation of over three thousand seven hundred feet above sea-level, being a total rise from Athabaska River of nineteen hundred feet. The lands along this slope are all densely timbered. For some nine miles, across range 4 and to the centre of range 5, the timber is generally a heavy growth of poplar, running to fourteen and eighteen inches, with small areas of jack pine and spruce. From the centre of range 5 to the west end of range 13, a distance of over fifty miles, the timber is fully eighty per cent. jack pine, and of the remainder much the greater portion is spruce, poplar only occurring in small isolated patches.

From the summit of Deer Mountain, which occurs at the centre of range 8, the land falls above twelve hundred feet in six miles to Swan River. West of this river it again rises steadily to an elevation of about thirty-three hundred feet near the centre of range 10. From here for six miles to the centre of range 11, the whole country is cut up by hills, valleys and ravines.

Farther west the country is a succession of small mountains, the highest point reached on the line being near the west side of range 12, where the elevation is about four thousand two hundred feet. From this last summit the line falls some fifteen hundred feet in eight miles to the crossing of East Prairie River, the intervening area being composed of hills and valleys.

East Prairie River forms about the westerly end of the very rough country, but the line for some thirty miles farther west to the west side of range 18 is still in a hilly country. West of range 18 the land falls to Little Smoky River, the end of the line being at an elevation of about twenty-five hundred feet, and the country falling steadily farther west.

The area of hills and mountains extends from the east side of range 4 to the west side of range 17, the roughest part being along ranges 7 to 13, and probably extending for a distance of about fifteen miles to the north and south of the base line.

This latter rough area is unsuitable for settlement. The country is too broken and the soil too poor, being largely composed of sand and boulders. A remarkable characteristic is the almost total absence of grass, the entire surface for mile after mile being covered with moss. The cause of this must be the high elevation. There is abundance of good grass everywhere in the country around Lesser Slave Lake at an elevation of about fourteen hundred feet lower than the average elevation of these hills.

The rivers crossing this area have all the characteristics of mountain streams. The current is very rapid, the bed formed of gravel and boulders, and the water is beautifully clear. All the larger streams flow in sloping valleys, five hundred to eight hundred feet deep, but there is no level or agricultural land along their courses. The hills and mosses descend almost to the water's edge.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

This rough area, while being quite unsuitable for settlement, would make an admirable timber and game reserve. It holds the sources of many large streams, is well protected from fire by almost daily rain, and at present contains a large quantity of moose and fur-bearing animals. The timber certainly can never be expected to grow very large on account of the shallow nature of the soil, but on the other hand, if what timber there is is not preserved, there will probably be nothing of value left in these hills at all. Of course it would, first of all, be advisable to have the locality explored to ascertain the exact limit of the very rough area.—*J. N. Wallace, D.L.S., 1905.*

Tp. 71 (*Sections 31, 32 and 33.*)—The Swan Hills trail follows the east bank of Swan River through sections 32 and 33. Section 31 is rolling and covered with poplar, birch and some spruce. The eastern portion is covered with a high spruce muskeg extending the whole length of the section. The soil consists of about four inches of black loam with a sandy clay subsoil. The western portion of section 32 is in the flats of Swan River. The surface is level and the soil consists of eight inches of black loam over a sandy clay subsoil. The timber consists of poplar, birch and spruce with some cottonwood up to forty-eight inches in diameter. On the east side of the river the country has been burnt over, leaving scattered *brulé*, and for half a mile east to the foot of the hill, luxuriant grasses and peavine grow. These meadows extend into the north-east quarter of section 29. The eastern portion of section 33 is covered with *brulé* and windfall. The soil is of a sandy nature. Swan River, in this township, is in some places three hundred feet wide with wide gravel bars and numerous rapids. Water-power could be developed here although the river is subject to rapid fluctuations in water-level. After a heavy rain, in two days, there was a difference in water-level of fourteen feet, the river bringing down large quantities of drift. The current at low water here is three miles per hour, but at high water it is five miles per hour. Fish (suckers) were seen in Swan River.—*J. H. Johnston, D.L.S., 1913.*

Tp. 72 (*North outline.*)—The land in sections 36, 35, 34 and 33 is generally rolling, has a good soil and is wooded with poplar, birch and spruce of fair size and quality. Section 32 is swampy and mostly covered with scrub, and section 31 is also scrubby, but is good land. Swan River, a stream of about one hundred and twenty feet in width, variable depth and slow current, crosses the line close to the western boundary of the range. Along the river we found beautiful prairies, mostly of small size, but of rich soil adapted to any kind of farming.—*Edgar Bray, D.L.S., 1904.*

The eastern portion of this township lies at the foot of the westerly slope of Swan Hills through which Swan River flows from the south-east. The sides of the hills appear from the prairie to be thickly covered with spruce, some birch and poplar. The portion of the township subdivided has more or less prairie on each section except on sections 29 and 32, which are to some extent in a spruce and willow swamp with ridges of poplar. The surface is gently undulating, and is cut up by Swan River with its banks from fifteen to twenty feet high, and by numerous sloughs or old channels full of water in places. The soil is black loam on a clay subsoil with vegetation of rank growth. A small creek flows into Swan River in section 19 through a *coulée* from ten to twenty feet deep, coming from the south and west; this has very good water. The river is, as usual throughout its course, very crooked and cuts up the land in a very inconvenient manner. It becomes more shallow and wider in its channel south of section 30 and apparently flows between high ranges of hills from the south into this township. At the sharp bends of the river there is usually a flat or lower bench thickly covered with willow and large cottonwood, some being over five feet in diameter on the stump. Where the bank of the river is level with the prairie, erosion is taking place at a rapid rate, due in a great measure to the rapid rise in the water after a heavy rainfall. As an instance, on August 10 it rained all day and before the next morning the water rose five feet, carrying down with it large quantities of clay and trees which had fallen in after the undermining process had gone so far that the bank could no longer support them. The high water mark showed a difference of twelve feet from the normal state while I was in the township. The width of the channel from bank to bank is on an average two chains, but in many places it will measure three chains. The depth of water at normal stage is from one and one-half to three feet,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

while the current, when the water is low, seldom exceeds two miles per hour, but increases very much at the time of freshets. There are numerous old channels or sloughs which retain water in places all the year round. This water comes from the melting snow and the high water of the river, as there are no visible creeks entering them to keep up the supply. There is a wagon road through this township which enables the traveller to reach the lake at three different points, and into this road from the south a wagon trail was made and used this summer from Edmonton. Of course this latter cannot be called a good road though fairly heavy loads were brought in by those using it; besides there is good feed for stock most of the way in along this trail. The soil is black loam on a friable clay, warm and productive, suitable either for farming or stock-raising. Timber is chiefly poplar and willow except along the river where black poplar, cottonwood and willow predominate with a few scattered spruce. Hay can be made on any of the prairie openings and it is rank with a growth of peavine, vetch, fireweed and wild rhubarb. Water is generally good, very little with an alkaline taste being noticed. The climate seems to be all that could be desired, as no frosts occurred from June 1 to the end of August. Dry poplar wood is the favourite fuel, and is available a short distance from the river in any direction. Lignite is found in the form of float on the sand-bars in the river, showing there must be seams up the river in the hills to the south. No water-powers, stone-quarries nor minerals were seen, but I am told there are prospects in the hills to the south. Moose, bears and foxes are the only game heard of and these are not plentiful. Much may be expected from the country adjacent to Swan River, which on the advent of the railroad should become a thriving settlement. Even the lands suitable for farming and now covered with timber will be easily cleared, so that the small area of prairie now available for farms could soon be increased many times. Mineral prospects are close by. Considerable areas of spruce and poplar, good soil, plenty of fuel and good climate lead to this optimistic view.—*Henry W. Selby, D.L.S., 1908.*

(*Partial.*)—The Swan River Settlement trail, or what is known as the Swan Hills trail, from Edmonton to Grouard passes through this township. This is a first-class trail through the settlement, but on entering the Swan Hills the grade becomes steep in places. Several light loads were brought through from Edmonton during the summer by settlers. Sections 36, 35 and 34 lie on the northern slope of the Swan Hills. The southern portions are very rough and cut by deep ravines. Sections 22 and 27 are similarly on the western slope. The timber consists of thick poplar, birch and some spruce. The soil consists of about four inches of black loam overlying a sandy clay subsoil. Good grass is found on these slopes. The remainder of the township subdivided is gently rolling and covered with poplar, birch and spruce of fair size and quality. In sections 9, 16, 15 and 21 there are places where the black loam reaches a depth of eighteen inches with a sandy clay subsoil; its average depth is seven inches. In the north-west portion of section 28 and the south-west part of section 33 the land is low and swampy. Swan Creek which flows through sections 4, 9, 8 and 5 into Swan River has an average width of forty feet, a depth of ten inches and a current of about two miles per hour. In the western part of section 4 and the southern portion of section 9 there are open meadows producing an abundance of the finest grasses, including peavine and fireweed. The land in this township, when cleared, will be very productive and suitable for mixed farming. There are no available water-powers nor stone-quarries. In Swan River, which flows through the western portion of the township, float-lignite was found in several places. This undoubtedly has come from the hills farther up the stream where the finding of coal has been reported. No economic minerals were found. Wood for fuel is plentiful. Partridges and prairie chickens were the only game noticed. Vegetation showed no signs of any summer frosts. This is probably accounted for by the warm breezes off Lesser Slave Lake. The proximity of this lake taken in conjunction with the high altitude of Swan Hills, produces an abundant rainfall.—*J. H. Johnston, D.L.S., 1913.*

Tp. 73 The Sawridge-Grouard road passes through the north-east corner of this township. The surface is rolling and covered with poplar, birch and spruce, except in sections 16, 17 and the west portions of 6 and 7 where the finest of hay meadows occur. Vetches and peavine grow in abundance. Open patches of good grass also occur along the creek in sections 9 and 10. Sections 19, 20, 21, 28, 29, 32, 33 and 34 are low and inclined to be swampy. The

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

soil consists of about four inches of black loam with a clay subsoil. Fresh water is plentiful. There are no available water-powers nor stone-quarries. No coal nor economic minerals were found. Signs of moose were seen. The Edmonton, Dunvegan and British Columbia Railway enters this township in section 36 and leaves in section 19.—*J. H. Johnston, D.L.S., 1913.*



Packing

Photo by L. Brenot, D.L.S.

Tp. 74 (*Partial.*)—The south-west four sections 6, 7, 18 and 19, form the only portion of this township which is suitable for settlement in the near future. The remainder, except a few small patches of prairie on the banks of Swan River, is swamp and heavily timbered country. Sections 6 and 7 are prairie with a few poplar bluffs and willow along two water-courses, while 18 and 19 are covered in part with willow and the rest is hay land or meadow. There is no timber of any value except for fuel. Swan River touches the south-east corner of section 6, making this quarter-section one of the most desirable in the country. The winter road

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

from Giroux Bay to Assineau River runs through section 6, as also the road to Wapaw, making access to these lands quite easy.—*Henry W. Selby, D.L.S., 1908.*

(*Fractional.*)—The Sawridge-Grouard trail passes through the southern part of this township crossing Swan River at a ford. At high-water this ford is dangerous, and a raft must be used. The surface is level and covered mostly with poplar, birch and spruce. Spruce up to twenty-four inches in diameter occurs in patches along the river. In the south-east quarter of section 9 the land is marshy, also in the north-east quarter of section 4 and the south of section 3. This portion produces very rank grass (red top), which can be cut, and large quantities of hay may be obtained in an ordinary season. The soil consists of very rich black loam from four to eight inches deep on a sandy clay subsoil. No water-powers are available. Swan River, through this township, is deep with a very slow current averaging not more than two miles per hour. No coal, economic minerals nor stone-quarries were found. Game was scarce, only a few partridges and ducks having been seen.—*J. H. Johnston, D.L.S., 1913.*

Tp. 75 (*Fractional.*)—Sawridge formed the base of supplies and a sail-boat was employed to take forward supplies as required, steamers being unable to land on the north shore of Lesser Slave Lake owing to shallow water. The trail from Sawridge to Grouard along the north shore of Lesser Slave Lake passes through this township and is passable at all seasons of the year for light loads. A wagon trail was opened out through this township from township 76, range 9, to Lesser Slave Lake. The soil is a vegetable mould about three inches in depth, the subsoil being a sandy clay with rocks along the shore of Lesser Slave Lake. This township is entirely bush country. Poplar of a fair size prevails and some valuable spruce is scattered throughout. Hay is lacking with the exception of a small area along a creek in sections 33 and 34. A branch of Narrows Creek passes through this township, being four feet deep and fifteen feet wide. No alkali was observed. No water-power is available and none can be developed. The climate is similar to that of Edmonton, and the proximity to such a large body of water as Lesser Slave Lake would promise freedom from summer frosts. No stone-quarries nor minerals of economic value were observed. Game was scarce; a few bears were seen.—*A. W. Ponton, D.L.S., 1913.*

Tp. 76 (*North outline.*)—This township is undulating as far as the east boundary of section 31, and is covered with poplar and spruce from four to twenty inches in diameter, with a few birch, jack pine and a thick growth of alder brush. Section 31 is almost wholly muskeg covered with small spruce. The soil on the ridges is sand and clay, and between the ridges it is black loam of varying depths on a subsoil of clay or sand. In section 34 there is a good pack-trail south to Lesser Slave Lake.—*Henry W. Selby, D.L.S., 1905.*

Sawridge formed the base of survey, and supplies were forwarded by sail-boat as required. A wagon trail was opened out from township 76, range 8, into this township, following an old pack-trail. This trail is passable at all seasons of the year for light loads. The soil is a vegetable mould about three inches in depth with a sandy clay subsoil. This subsoil, when laid bare by fire, produces a luxuriant growth of grasses and no doubt would produce wheat and other farm products. The township is entirely bush country, the timber consisting for the most part of fair-sized poplar with scattered spruce and jack pine. Considerable quantities of good hay could be cut in dry years along the creek in sections 10, 4 and 3. The water is fresh and abundant everywhere. The east branch of Narrows Creek flows through this township and under ordinary conditions would be about two feet deep and ten feet wide, but owing to heavy rains during the progress of the survey in June, July and August, it had overflowed its banks and flooded the surrounding country to a depth of two feet. There are no water-powers nor can any be developed. The climate is similar to that of Edmonton in every way. Fuel is very plentiful. No stone-quarries nor minerals of economic value were observed. Game is scarce, though some signs of moose and bears were observed and a few partridges were seen.—*A. W. Ponton, D.L.S., 1913.*

Tp. 80 (*North outline.*)—The only route for reaching this township is by way of the wagon road leading from Grouard to the Atikamisis Lake trading post. From this point a pack-trail is, during the summer months, the only means of transportation, but

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

during the winter sleigh roads to Wabiskaw post and north to Loon Lake are also available. Boats and canoes may be used on the Atikamik and Atikamis Lakes in the summer. The soil is clay or sandy loam, and probably slightly more humus or vegetable mould than in ranges 13 to 18, with a clay or gravel subsoil. There is a large area of marsh or swamp lands, but much of it could be easily drained and reclaimed. Vegetables of all kinds, hay and the coarser cereals, such as barley and oats, are at the present time being produced with success. The surface is generally rolling and is all timbered, the ridges being covered with poplar, spruce and thick underbrush, and the lower lands with spruce, balm of Gilead, tamarack and black alder. Hay is abundant throughout the township, and in many places along Atikamik Lake the meadows comprise hundreds of acres, which produce a very large amount of hay. The water is fresh and abundant throughout the township. Atikamik River is a sluggish stream, one to two chains wide, two to six feet deep, with a current of one to one and a half miles per hour. Three or four miles north of the township the river has many rapids, is shallow in many places, and is said to have sandstone exposures along its banks. Fine hay meadows extend along either bank of the river. The climate is similar to that of Edmonton, and there are occasional summer frosts. The fuel most available is wood. It is abundant, and may be procured on almost every section. No minerals of economic value nor stone-quarries were noticed. Moose, caribou and bears are said to be fairly plentiful. Water-fowl of all kinds are numerous on the many small lakes and rivers. Willow and spruce-partridges and fool-hens are quite plentiful everywhere, and whitefish are abundant in Atikamik Lake.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline.*)—Wet marshy country extends north to the correction line, but south of the base line the land appears to be very good. Moose and bears are quite numerous, and spruce and willow partridges and ruffed grouse are plentiful, but only a few rabbits were seen. The soil varies considerably, humus and vegetable matter being found in the muskegs and marshes, and clay or sandy loam on the higher lands.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outlines; ranges 5 to 9.*)—At present this district can be reached only by pack-train by way of Wabiskaw following the old trails leading through the country. The soil on the ridges is sand or very sandy clay with humus and moss in the muskegs, and, judging from the scanty growth of grass, it is not fertile. The surface is rolling and has been largely burnt over; it is now covered with small poplar, willow brush, jack pine and spruce with occasional clumps of large spruce, poplar and balm of Gilead and a very large amount of heavy windfall. There was no timber of commercial value seen in these ranges. Hay was rather scarce in this locality with the exception of that along the shores of Loon Lake where hundreds of tons could be got. The water is all fresh but has strong indications both in taste and smell of its muskeg origin; it is also abundant. There are no water-powers. All this country is subject to summer frosts, but hay and garden truck can be raised successfully. Wood is the fuel that is most abundant throughout these ranges. No indications of coal nor lignite were observed. No stone-quarries nor minerals of economic value were noticed in this locality. Rabbits, partridges and prairie chickens were very plentiful; moose and bears were fairly numerous; indications of wolves, foxes and lynx were seen and muskrats are everywhere seen where there is water. These townships are not very desirable for early location.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outlines; ranges 1 to 9.*)—The portion of the country in range 9 to the west of Wabiskaw River is quite broken, the river curving around the eastern limit of the Buffalo Head Hills. A small creek, draining Wadlin Lake into Wabiskaw River, crosses the base line in this range. This stream flows through a deep ravine, and has a fall of approximately one thousand three hundred feet in a distance of about six miles. Considerable power could be developed here, due more to the head of water, however, than to the volume of discharge. In the vicinity of Wabiskaw River there is considerable timber of milling size both to the east and to the west of the river. There is some large spruce along Mikkwa River and Burnt Creek which could be easily cut and floated down to Peace River during high water.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

The country to the east of Wabiskaw River is quite flat or gently undulating. Mikkwa River flows in a valley from a quarter of a mile to half a mile in width and from fifty to eighty feet deep. The land back from the valley could possibly be drained, and it would then be suitable for agriculture. However, the drainage problem is a large one, and for this reason settlement will likely be slow. Game is plentiful and consists of moose, bears, beavers, foxes, martens, wolves, lynx and muskrats.—*J. A. Fletcher, D.L.S., 1914.*

Tp. 101 (*East outline.*)—With the exception of the east boundary of sections 1 and 12 where the land is dry, the east outline of this township runs over a wet country, mostly covered with tamarack and spruce swamp. The timber over sections 1 and 12 is composed of poplar and spruce to ten inches in diameter. The soil consists of sandy loam with clay subsoil, and will be suitable for mixed farming, when the country will be opened up.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 102 (*East outline.*)—This line runs through a low level country generally wet, and covered with tamarack and spruce swamp interspersed by ridges of jack pine to ten inches diameter on sections 25 and 36. The soil consists of a sandy loam with sand subsoil suitable for grazing.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 103 (*Exploration survey.*)—This township is crossed by Loon River. It is lightly wooded with poplar and spruce with open sloughs, hay meadows and muskegs.—*J. R. Akins, D.L.S., 1913.*

(*Partial.*)—The surface of this township is generally rolling except on sections 1, 2 and 11 where it is broken by the banks of Wabiskaw River, it is mostly all covered with jack pine, poplar and scattered spruce, the whole being suitable for farmers' use. The soil may be described as a light loam with sand or sandy clay subsoil, generally suitable for grazing purposes, but good farming land is also found on sections 6 and 7 where the soil improves. A few hay marshes are found in sections 4 and 5, but hay can only be secured from them in small quantity. This township is reached from Fort Vermilion Settlement by a fair wagon road entering on section 7 in a south-easterly direction, leading to section 2 where it ends in the Indian reserve. Good fresh water is found in Wabiskaw River which runs across sections 1, 2 and 11 between banks about fifteen feet high, and over a stony bed; the average depth of water is six feet. Alkaline water is also found in three small lakes lying in sections 8 and 9. These little lakes have a marshy shore averaging about seventy-five links wide, and are all surrounded by tamarack swamps. The climate was fine and warm at the time of the survey (August) and no frost was noticed. No water-powers, minerals nor stone-quarries were found, but large game is still abundant in the neighborhood and beavers were found at work on an island in Wabiskaw River in section 11.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 104 (*North outlines, ranges 1 to 9.*)—The country throughout these ranges is quite level and in the western four ranges the surface is very poorly drained. The ridges are merely slight rises in the ground, on which, owing to the absence of standing water and the soil absorbing sufficient heat, poplar and spruce may thrive. Very little timber suitable for milling was seen. Some large scattered spruce is found along Mikkwa River. The country would make good agricultural land but on account of the swampy nature of the ground and the inaccessibility of most of the country, there is at present time very little inducement for settlement.—*J. A. Fletcher, D.L.S., 1914.*

(*East outline.*)—This line runs through a tamarack, spruce and birch swamp which cannot be drained, as the country is level and flooded by beavers damming the creeks. Scattered ridges of poplar and jack pine are found, especially on the west side of the line along Wabiskaw River. The soil consists of moss and muck with sandy subsoil.—*P. M. H. LeBlanc, D.L.S., 1915.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

Tp. 111 (*Exploration survey.*)—This township lies on the south slope of Caribou Mountains and is heavily wooded with spruce and jack pine up to fifteen inches. The surface is rough and hilly, and covered with moss.—*J. R. Akins, D.L.S., 1914.*

Tps. 112 & 113 (*Base line.*)—These townships are on the top of Caribou Mountains, and are wooded with small spruce and covered with moss. At present these townships are of no use except as a game preserve, but if the moss were burned off they would be suitable for range land.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—The northern part of this township is occupied by Lake Margaret, which is well stocked with fish. The southern part is similar to the surrounding plateau-like country, being wooded with small spruce and covered with moss. Many small lakes are scattered over the township.—*J. R. Akins, D.L.S., 1914.*

RANGE 10

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 71 (*Partial.*)—Sections 31 and 36, inclusive, are very rough being cut by numerous ravines and creeks. The soil consists of about three inches of black loam over a glacial deposit subsoil. The timber is very dense poplar with scattered spruce and underbrush, except in section 31, where some good merchantable white spruce occurs. There are no water-powers. No stone-quarries, coal nor economic minerals were found. Signs of moose were seen and partridges were very plentiful.—*J. H. Johnston, D.L.S., 1913.*

Tp. 72 (*North outline.*)—Section 36 of this township is mostly prairie with some scrub, and has a remarkably rich soil. Section 35 and part of section 34 lie in a swamp of spruce and tamarack. Section 31 is about one-half swamp of the same description. Elsewhere the land is gently rolling with fair soil and is covered with poplar, with some birch and spruce.—*Edgar Bray, D.L.S., 1904.*

The north-east corner is the only part of this township which is likely to be occupied in the near future, the remainder being thickly timbered with poplar, some spruce and birch on the high lands, with large areas of spruce muskeg between. This land rises rapidly towards the hills to the south, and unless fire destroys the timber it will not soon be looked upon as desirable farming land. The portion subdivided has a gently undulating surface, lightly timbered with poplar and willow, and parts of two spruce muskegs extend into it from the other part of the township. Prairie is found on sections 24, 25, 35 and 36. A good wagon road passes through sections 25, 24 and 36, giving access to this land both from Lesser Slave Lake and the trail over the Swan Hills from Edmonton. The soil is black loam on a light clay subsoil, and produces luxuriant grass, vetch and peavine everywhere except on the muskegs. Good water is found in a creek flowing from the west through sections 14 and 13 into Swan River on section 19, township 72, range 9. No settlers have yet located any land in this township. No water-powers, stone-quarries, minerals, coal nor lignite have been discovered, still the shore of Swan River is strewn in many places with drift lignite, which when put into the fire burns freely. I had no means of testing its value. Dry poplar wood for fuel is found in the adjoining timbered lands. Moose and bear tracks are often seen and many ducks are found on the sloughs and river. This land is probably better suited to mixed farming than anything else.—*Henry W. Selby, D.L.S., 1908.*

This township is reached by the Swan River Settlement trail which passes through its north-east corner. The surface is gently rolling to a little south of the south chord and is timbered with dense poplar, alder and some scattered spruce. The soil consists of from three to five inches of black loam overlying a sandy clay subsoil. Tamarack and spruce swamps occur in the east of section 33, the west of section 34 and in the north of section 31. A high spruce muskeg occurs in sections 16 and 21. Good grass is found everywhere. This land will be well adapted to mixed farming when the timber is taken off. The southern part of the township rises rapidly and its

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

surface is cut by numerous deep ravines and creeks. It is thickly timbered with poplar, some birch and scattered spruce, but not enough to be of commercial value. In the south-west corner of section 6 some good merchantable spruce occurs, although it is not extensive. The soil consists of from two to four inches of black loam covering glacial deposit. In the southern part of section 15 and the northern part of section 9 patches of open land occur along a creek which furnishes plenty of fresh water. Good water can be obtained everywhere in the township. Wood for fuel is plentiful, but no coal, lignite, water-powers, stone-quarries nor economic minerals were found. Signs of moose were noticed, and prairie chickens and partridges were seen. Although it was a very wet season, the grain at Swan River Settlement was not damaged by frost and a good yield was obtained.—*J. H. Johnston, D.L.S., 1913.*

Tp. 73

This township may be conveniently divided into four parts for description, viz.: the east two tiers, the north, south and centre two miles of the west four tiers. Swan River, in a tortuous course, flows northerly through the east two tiers, and on each side of it considerable areas of prairie land are found. On the banks and especially in the sharp bends, large cottonwood and thick willow brush are found, the cottonwood being of immense size, some being as large as sixty-two inches in diameter; a few spruce were seen, but over the rest of this portion of the township the timber is chiefly in bluffs of poplar and willow brush. The land is gently undulating with a slight descent towards the north. The soil is a deep black loam on a clay and clay loam subsoil with luxuriant growth of grass, vetch and pea-vine. The north two miles of the west four tiers has more timber on it, chiefly poplar and willow with a few scattered spruce. The soil is similar to that on the east two tiers and when cleared will make excellent farming land, but at present there are very few prairie openings. The south two miles being on a ridge from twenty-five to fifty feet above the remainder of the township, has less black loam and a stony clay subsoil. The timber is chiefly poplar from four to sixteen inches with a few sections nearly covered with willow. This portion of the township may not be desirable for farming purposes, except on sections 9 and 10 where considerable prairie is found. The centre two miles with the exception of a portion of sections 15 and 22 is composed of hay lands and willow sloughs with islands of black poplar in places. This portion of the township is inclined to be wet, but it may be easily drained and will make good hay and pasture lands. The township as a whole is a desirable farming country; much of that lightly covered with timber has a good soil which, together with the influence of the lake winds to drive away frost, will make it one of the best places for settlement around the lake when there is a market for what the tract can grow. There is no timber in this township of a commercial value or that is not required for the needs of the settler. Great quantities of hay could be cut on the prairie land, which, however, should not be called hay land. While the hay land properly so called on the centre two miles has so much willow as to make it rough and hummocky, considerable work will be required to make it level enough to operate a machine thereon. The water in both Swan River and Strawberry Creek is good, though very muddy in the river after a heavy rain of several days. Many sloughs are found throughout, with good water in them. Strawberry Creek rises in the large muskegs south of the base line, and in this township has a width of from thirty to fifty links and a depth of one and one-half to three feet, but on the east boundary of section 17 it narrows down to seven links and has a depth of four feet with a very rapid current. It is about at this point where the drainage of the hay lands might be effected by cleaning out the gravel bars in the creek and old beaver dams. There is a good wagon road running northerly through the prairie sections which reaches the lake near the north end of township 74, range 10. Another wagon road crosses Strawberry creek in section 11 and runs westerly to Giroux Bay. Another road has been cut sixteen feet wide, running north-easterly from section 8 and leaves the township in section 36. Continuing in about the same direction it crosses Swan River, and eventually reaches the lake near Assineau River. This was cut through for a winter road to avoid the drifting snow and the bad ice on the lake some years. It is seldom used and never by freighters. Three settlers had located on sections 1 and 11 at the time of survey, and had made valuable improvements, while several others had done a little breaking. Since the survey was made another settler has built a house and stable on the south-west quarter of section 23 and is living there with his family.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

He has considerable stock and some machinery. As this was the first year that any breaking has been done to any extent no judgment should be passed upon the crops seen growing. I might state, though, that I saw corn ready to use, beans, peas, carrots, beets, onions and splendid potatoes, also small patches of oats and wheat, but between poor seed and spring breaking it did not seem to be a success this year. Plenty of dry poplar wood can be got for fuel, but no coal has been discovered within the township. No water-powers, stone-quarries nor minerals have been found and very little game. Moose have been killed in the north part of the township and bears were occasionally seen.—*Henry W. Selby, D.L.S., 1908.*

Tp. 74 This township is broken by Lesser Slave Lake, and the area of good land is included within the six south-east sections. The remainder of the dry land has been formed or reclaimed from the lake and is in low ridges of sand and hay sloughs, which the Indians have been cutting hay upon for some years to feed the freighters' teams coming up the lake in winter time. The soil is from six to eighteen inches of black loam on a sandy clay subsoil, which seems to be warm soil and a quick producer, very suitable to the climate and short seasons. The timber on the south-east portion is chiefly poplar bluffs and willow, while the remainder is willow and scattered black poplar. A few spruce and tamarack are on sections 3 and 4, which timber may be of use to the settlers but is of very little commercial value. A good wagon road follows very closely the east boundary of the township to the lake shore, where the beach is used for a wagon road. No creeks and only a few sloughs had any water. While camped on section 12 we had to dig for water, and at three feet found it suitable for general purposes. Plenty of dry poplar is found for fuel, but there are no signs of coal in this part of the country. No water-powers, stone-quarries or minerals were noticed and there were very few signs of game except an occasional moose or bear.—*Henry W. Selby, D.L.S., 1908.*

Tp. 75 As this township is situated along the north shore of Lesser Slave Lake it can be reached either by boat or by the wagon trail along the shore. Owing to the sand and stones this trail is never good, and during high water it is impassable. The north-west corner of the township is about three hundred or four hundred feet above the water of the lake and from this level the land slopes south-easterly for about two miles to a muskeg which is very little above the level of the lake. This high land occupies about seven sections. The soil here is a few inches of black loam over a hard clay subsoil. The remainder of the township with the exception of a narrow strip along the lake-shore is swamp and muskeg. It might be possible to grow oats and hay on the high land but the rest is practically useless. The high ground is timbered with poplar and a few scattered large spruce, and there is a fringe of the former along the shore of the lake. The swamp is mostly covered with spruce and tamarack up to six inches in diameter. The margin of the lake is rather marshy and in seasons of low water considerable hay can be cut. The lake and muskeg give an ample supply of good, fresh water. As there are no large streams, no water-powers could be developed. The climate is rather variable and summer frosts occur occasionally. The ice in Lesser Slave Lake usually breaks up between the 15th and the 25th of May. Wood is the only fuel available and the supply is ample. No stone-quarries nor minerals were discovered. As regards game, moose and deer are in the vicinity, and partridges and water-fowl also. The lake contains whitefish, trout and several other kinds of fish.—*I. J. Steele, D.L.S., 1913.*

Tp. 76 This township is gently rolling, consisting of low ridges covered with poplar, spruce, birch and jack pine, alternating with strips of spruce muskeg. The soil on the ridges is mostly black loam from two to eight inches in depth. The subsoil is clay or sand and in the muskegs it is black loam.—*Henry W. Selby, D.L.S., 1905.*

Sawridge formed the base of supplies for the survey of this township. A trail was opened up from township 75, range 9, into this township as far as section 15. This trail would ordinarily be fairly good, but it was very wet during the survey operations this season. The soil is a vegetable mould of an average depth of about three inches with a clay subsoil, and it appears to be suitable for farming purposes. The township is timbered throughout with poplar, spruce, birch and jack

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

pine. In sections 5, 6, 3, 2, 11 and 12 there is some spruce of commercial value, but not in sufficient quantity for lumbering purposes. There is no hay. Water is fresh and abundant. There are no water-powers. The climate is similar to that of Edmonton. Fuel is plentiful and consists of poplar, spruce and jack pine. No stone-quarries nor minerals of economic value were observed. Game appears to be scarce, only a few partridges being noted.—*A. W. Ponton, D.L.S., 1913.*

Tp. 80 The only route for reaching this township is by way of the wagon road leading from Grouard to the Atikamisis Lake trading post. From this point a pack-train is, during the summer months, the only means of transportation, but during the winter, sleigh roads to Wabiskaw post and north to Loon Lake are also available. Boats and canoes may be used on Atikamik and Atikamisis Lakes in the summer. The soil is clay or sandy loam with some humus or vegetable mould and a clay or gravel subsoil. There is a large area of marsh or swamp lands, but much of it could be easily drained and reclaimed. Vegetables of all kinds as well as barley, oats and hay are at present grown with success. The surface is generally rolling and all timbered, the ridges being covered with poplar, spruce and thick underbrush, and the lower lands with spruce, balm of Gilead, tamarack and black alder. Hay is abundant throughout the entire township, the hay meadows along Atikamik Lake comprising hundreds of acres which produce a very large amount of hay. Water is fresh and abundant throughout this locality. The climate is similar to that of Edmonton and there are occasional summer frosts. The fuel most available is wood, and can be procured on almost every section. No minerals of economic value nor stone-quarries were noticed. Moose, caribou and bears are said to be fairly numerous. Water-fowl of all kinds abound on the small lakes and rivers and willow and spruce-partridges and fool-hens are quite plentiful everywhere. Whitefish are abundant in Atikamik Lake.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline, ranges 10 to 14.*)—After we crossed a creek in section 36, range 10, the muskegs were much smaller, and the surface in ranges 10, 11 and 12 was covered chiefly with poplar and spruce timber, while along the creeks were many good hay meadows, especially along Lubicon River which flows east from Lubicon Lake to Loon Lake. This country is accessible by the winter trail from the Whitefish Lake trading post, which is opened as far as Lubicon Lake, and along this trail, both north and south, are many good hay meadows and marshes. From the sleigh trail westerly through ranges 13 and 14 we passed through a rather fine country. Along the trail just south of the base line are several Indian cabins and stables where the Indians reside in the winter looking after their cattle and horses. There are about five hundred acres of open country and an abundance of good hay just south of the line, and also around the north end of Lubicon Lake are many fine hay meadows and marshes. The country along the south side of the lake is very fertile, as evidenced by the vigorous growth of grass and peavine found in the open places, but there is a heavy growth of poplar, balm of Gilead and spruce throughout this locality. The Indians cultivate little or no land, preferring to hunt and fish for their subsistence. No coal nor minerals of economic value were seen in this locality.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outlines; ranges 10 to 17.*)—The soil in these ranges is largely humus and moss with a subsoil of clay, while on the ridges it is generally a sand or very sandy clay. It is perhaps more fertile than in ranges 1 and 9, as more hay was seen in this locality. The surface is rolling and is now covered with a vigorous growth of small poplar, spruce, jack pine and balm of Gilead with an occasional clump of spruce, and poplar up to twenty inches in diameter. It has mostly been burnt over and is now covered over in many places with very heavy windfall. Hay was more plentiful than in the former ranges, especially along the north and south branches of Cadotte River and the streams emptying into them. The water is all fresh and good and is quite abundant, but the streams are not suitable for the development of water-power. The country is subject to summer frosts, but hay and garden truck can be raised successfully. Wood is the fuel that is most readily available and is abundant throughout these ranges. No indications of either coal or lignite were observed. Neither stone-quarries nor minerals of

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

economic value were seen. Rabbits, partridges and prairie chickens are found in great number throughout these ranges; moose and bears were fairly numerous; indications of lynx, foxes and wolves were seen; muskrats are found wherever there is water and water-fowl were quite plentiful on the small lakes. These townships may be reached best in winter by the sleigh road that leads from Grouard to the Whitefish Lake trading post, thence north following the sleigh road to Lubicon Lake and thence on to Otter Lake. During the summer the same route may be followed, but from Whitefish Lake the pack-trail is the only method available.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outlines, ranges 10 to 17.*)—Ranges 16 and 17 lie at the base of the western slope of Buffalo Head Hills, and have sufficient slope for the country to be well drained by the numerous creeks. These ranges would make good agricultural land, as well as parts of range 15 where, however, the country is more rolling. From range 14 to Wabiskaw River the land is more or less rolling with intervals of muskeg. The soil of the rolling country is generally light as is indicated by the extensive growth of scrubby jack pine.—*J. A. Fletcher, D.L.S., 1914.*

Tp. 101 (*East outline.*)—The line runs through Buffalo Head Hills where the country may be described as rough, hilly and broken by gullies and ravines, where numerous creeks rise of various size containing fresh water. The surface is covered with poplar, spruce, birch and jack pine mostly fire-killed except on section 1, where the timber is green and of larger dimensions. The soil consists of muck or clay loam with clay subsoil, and will make good farming land when opened up. This township is reached only by pack-trails.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 102 (*East outline.*)—The south half of the east boundary of this township runs over ravines and gullies in the valley of Birch Creek, as far as its junction with Rat Creek on section 24, and from there it runs over a heavy rolling country covered with fire-killed timber, while the part south of Rat Creek may be described generally as heavily timbered with poplar, birch and spruce up to eighteen inches in diameter on the west side of the meridian. On the east side is found an old brûlé with heavy windfall, now over-grown with small poplar. The soil consists of a black loam with sandy clay or clay subsoil, which will be found suitable for farming purposes when the country will be opened up. No minerals, stone-quarries nor water-powers were observed.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 103 (*Exploration survey.*)—This is one of the best townships crossed during the season. It is nearly all open prairie and covered with bluejoint hay. It is known as "Tall Cree's" prairie, has good soil and is connected with Fort Vermilion by a good trail.—*J. R. Akins, D.L.S., 1913.*

Tp. 104 (*North outline.*)—Nearly all the western half of this township is part of "Tall Cree's" prairie. It is composed of first-class soil and grows an abundance of hay. The northern and eastern parts are dry muskeg which were burned over a few years ago.—*J. R. Akins, D.L.S., 1913.*

This township is reached from Fort Vermilion Settlement by a fairly good wagon road. The country around the Indian reserve No. 173A which is situated in this township, is level and covered with poplar, willow and a few spruce, all partly fire-killed. The land ranks first class for farming purposes on sections north or south of the reserve, but it is low and partly flooded west of the reserve for the four northern sections, while on the east side of the reserve, as far as Wabiskaw River in the next range, it is covered with tamarack swamps with a few jack pine ridges increasing in number and extent in the neighborhood of the river, and over that part the soil is poor. Very little hay is found in this township outside of the reserve where thousands of tons can be cut. Good water is found in the tamarack swamps and in a small creek; it can also be procured by

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

digging three to four feet. The climate was fine at the time of survey (July and August), and no frost occurred before September. No water-powers, stone-quarries nor minerals were seen, but large game appears to be abundant.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tps. 105 & 106 (*Exploration survey.*)—These two townships are slightly wooded with spruce, willow and poplar, with open hay sloughs and dry muskegs. There is a small lake in the eastern part of township 105 with plenty of hay around it. The wagon road from Fort Vermilion passes through the western side of these townships.—*J. R. Akins, D.L.S., 1913.*

Tp. 109 (*South third.*)—South of Beaver Creek which crosses sections 3, 4, 7 and 8, lies a flat of Peace River. It is mostly open and interspersed with clumps of poplar and willow. The soil consists of clay loam on clay subsoil and is suitable for general farming purposes. North of Beaver Creek the banks of the river rise abruptly to sixty feet, after which the country becomes level and wooded with poplar and spruce. The soil is sandy loam with sandy clay or clay subsoil and is suitable for mixed farming. This township can be easily reached from Fort Vermilion by a wagon road to section 28 in township 108, range 11, where a private ferry is operated. Peace River flows across sections 4, 3, 2 and 1. The left bank is twenty feet high till Beaver Creek is reached, where it rises to sixty feet easterly along the river and northerly along Beaver Creek. An island on sections 1, 2 and 3 is well wooded with cottonwood up to twenty inches and spruce up to twelve inches. Firewood can be obtained anywhere but no coal, stone-quarries nor minerals were found.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 111 (*Exploration survey.*)—This township lies on the south slope of Caribou Mountain and is more heavily wooded than the top of the mountains. The timber is composed of spruce and jack pine, and grows to a diameter of fifteen inches; the surface is rough and hilly and covered with moss.—*J. R. Akins, D.L.S., 1914.*

Tp. 112 (*North outline.*)—Part of this township is on the slope and part on the top of Caribou Mountains. The surface is rough and covered with moss and spruce.—*J. R. Akins, D.L.S., 1913.*

Tps. 113 & 114 (*Exploration survey.*)—These townships lie on the top of Caribou Mountains. The surface is wooded and covered with moss. The only use they could serve at present is as a game reserve, but if the moss were burned off, the soil might grow range feed, and excellent water could be secured from the many lakes which dot the surface.—*J. R. Akins, D.L.S., 1913.*

RANGE 11

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 72 (*North outline.*)—The country along this outline is mostly good rolling land with thick woods of poplar, birch and spruce.—*Edgar Bray, D.L.S., 1904.*

(*East outline.*)—Through sections 36 and 25 the country is rolling with an occasional high muskeg. The timber consists of poplar with some scattered spruce. In sections 24, 13, 12 and 1, the country rises rapidly to the south. The soil is a glacial deposit on the hills, covered with a thin layer of humus or black loam. In section 1 some good merchantable spruce occurs, but it is not extensive.—*J. H. Johnston, D.L.S., 1913.*

This township can be reached by a rough surveyor's trail which enters the township in section 32 and also by another which enters in section 30. These trails unite in section 20 and end in section 15. Both are in poor condition. The soil generally consists of several inches of black

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

loam over a clay subsoil and is suitable for all kinds of agriculture. The surface is entirely timbered with poplar, spruce, birch, alder, willow and balsam. The poplar and spruce average about ten inches in diameter, the birch and balsam about eight inches and the alder about five inches. The south third of the township is higher, drier and rougher than the remainder of the township. There is no hay. The water is fresh and permanent and sufficient supply could be obtained by sinking wells. The creeks are nearly all small and are liable to dry up in dry seasons. None of the land is liable to be flooded. No water-powers are available. The climate is typical of Western Canada, summer frosts being liable to occur and the summers are generally dry and hot while the winters are very cold. Wood for fuel is plentiful throughout the township. No coal nor lignite veins, stone-quarries nor minerals of economic value were found. Moose are plentiful and also game of the feathered variety.—*E. A. Neville, D.L.S., 1913.*

Tp. 73 (*East third.*)—This portion of the township is conveniently divided into the north and south two miles. The south two miles is on the hillside or descent from the range of hills to the south, and is covered with a thick growth of poplar and a few scattered spruce. The northerly portion is chiefly meadow land with the outlet of Strawberry Creek running north-westerly through it. At present a spruce swamp lying along the north boundary of section 11 is very wet and extends westerly along the lake shore from a quarter to half a mile in width across the township. The north two miles appears to have been formed from the deposit from the lake and creeks and the annual decay of vegetable matter. The soil is generally a deep black loam on a silt or clay like the bottom of the lake, and the old lake shore may be plainly seen and followed into township 73, range 10, with a bank varying from five to ten feet high, and almost in line with the south shore of Giroux Bay. The main road to Swan River prairie passes through sections 14, 11 and 12 and, although at times it is very soft, still there is a very good chance to make a first-class road all the way through. This northerly portion would make an excellent ranching country, with any quantity of hay to be cut outside of the pasture lands. Strawberry Creek has a channel in this township about a chain wide and from two to four feet deep, but has scarcely any current. The water is fresh and good and only slightly flavoured by the vegetation growing in the channel. Vegetation showed no signs of there having been any frosts up to the time of survey, August 31, and the opinion is offered that this fact is largely due to the influence of the lake winds east or west prevailing. The fuel consists of wood, chiefly poplar, as no coal has yet been discovered near by, but it is thought that coal will be found in quantities in the hills to the south. No water-powers, stone-quarries, minerals nor game were found on these lands.—*Henry W. Selby, D.L.S., 1908.*

(*Partial.*)—This township is easily reached by a trail along the south shore of Lesser Slave Lake. It can also be reached by boat. The Edmonton, Dunvegan and British Columbia Railway will afford another means of access as soon as it is put into operation. The soil is generally a rich, black loam from three to six inches in depth overlying a clay subsoil, and is suitable for all kinds of agricultural purposes. The surface is entirely wooded with poplar spruce, birch, alder and willow, excepting a fringe of marsh along Lesser Slave Lake. The timber averages about eight inches in diameter, and of this poplar represents about fifty per cent. A small amount of spruce up to twenty inches in diameter will afford a sufficient supply of building material for settlers' purposes. A limited amount of hay is available along the shore of Lesser Slave Lake. The quality is that of ordinary slough hay. A good supply of fresh water can be obtained anywhere within the township by sinking wells to a depth of eight or ten feet. The only streams are small creeks which are liable to dry up in summer. There are one or two, however, which may have a permanent flow. The only land likely to be flooded is the marshy strip adjoining the lake which may nearly all be flooded to a depth of from two to four feet. No water-powers are available. The climate is typical of North-western Canada. In summer the temperature reaches a maximum of about ninety degrees (in the shade), while the winter temperature will probably reach a minimum of forty degrees below zero. Summer frosts are liable to occur, but they rarely do serious damage to vegetation. Wood is the only available supply of fuel within the township. No coal nor lignite veins were found. There are no stone-quarries nor minerals of economic value. Signs of moose were seen and partridges are plentiful.—*E. A. Neville, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

Tp 74. At present the only route by land to this township is by means of a winter trail from Driftpile River I.R. No. 150. The most advantageous means of access is by water from Lesser Slave Lake on Driftpile River. The soil consists of from three to ten inches of rich, black loam overlying a clay subsoil, and is suitable for the production of all kinds of crops. The west half of section 6 is timbered with poplar and birch up to twelve inches in diameter with a few scattered spruce up to twenty inches. The remainder of the township, not occupied by Lesser Slave Lake, is nearly covered with gray willow. There is a fringe of hay land and marsh along Lesser Slave Lake and also some small meadows in sections 5 and 6. The quality of the hay is good, making this an admirable spot for stock-raising. The water is all fresh. A sufficient and permanent supply is available by sinking wells to a shallow depth. Driftpile River flows through the township, forming another unfailling source of water supply. This river is about a chain wide, from three to ten feet deep and flows at a rate of from two to three miles per hour. The only land liable to be flooded is that adjoining Lesser Slave Lake, which may reach a depth of three feet. No water-powers are available. The temperatures range from fifty degrees below zero in January and February to one hundred and twenty above (in the sun) in July and August. Summer frosts are liable to occur, but rarely do serious damage to vegetation. The only available supply of fuel consists of wood. No coal nor lignite veins are known to exist. There are no stone-quarries nor minerals of economic value. Moose and bears are found, and also some game of the feathered variety.—*E. A. Neville, D.L.S., 1913.*

Tp. 75 As this township is situated along the north shore of Lesser Slave Lake it can be reached either by boat or by the wagon trail which runs along the shore. Owing to sand and stones this trail is never very good, and during high water it is impassable. The northern portion of the township is three hundred or four hundred feet above the water of the lake, and from this level the land gradually slopes to the lake-shore. The soil is generally a few inches of black loam over a hard clay subsoil. There is a large peat muskeg in sections 31 and 32. Oats, barley and hay could probably be grown but the clearing of the land would be a slow process. The entire township is heavily timbered with poplar and spruce, but the spruce, large enough for lumber, is so scattered that it is of little value. Everywhere there is a thick undergrowth of willow and alder. The margin of the lake is rather marshy in places, but in dry seasons considerable hay can be cut. The lake and several small creeks give an ample supply of good fresh water. As all the creeks are small, there are no water-powers. The climate is rather variable and summer frosts occur occasionally. The ice on Lesser Slave Lake usually breaks up between the 15th and 25th of May. Wood is the only fuel available and the supply is ample. No stone-quarries nor minerals were discovered. As regards game, moose and deer are found in this vicinity. There are also partridges and water-fowl. The lake contains white-fish, trout, and several other kinds of fish.—*I. J. Steele, D.L.S., 1913.*

Tp. 76 (*North outline.*)—In sections 36, 35 and 34 the country is undulating and covered with poplar, spruce, birch and some jack pine on the ridges, with spruce, tamarack and willow between. Sections 33, 32 and 31 are rolling country with thick poplar, a few spruce, birch and jack pine in which is mixed thick alder brush. In section 32 a good trail crosses the line to the south-east, which reaches Lesser Slave Lake at Big Point. Shaw Creek with good water flows southerly to the lake. The soil is black loam on a sandy clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

The only means of access to this township is a winter sleigh trail which probably could not be used again even in the winter, but it would be possible to cut a wagon trail through the township to the south from the lake-shore trail. This latter trail is never very good owing to stones and sand and when the water is high it is impassable. With the exception of the coulée of the west branch of Shaw Creek and another small valley in sections 4 and 9 the surface is gently rolling. There is a large swamp extending throughout the central portion of the township. The surface of the greater part of this large swamp and also that of the smaller ones is covered with a thick growth of tamarack and spruce. There is a grove of jack pine in sections 17 and 20. The remainder of the township is generally covered with poplar and a few scattered clumps of

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

large spruce. Nearly everywhere there is a thick undergrowth of willow and alder. No hay could be cut but there is a small quantity of grass along the west branch of Shaw Creek. The streams, lakes and muskegs give a permanent supply of good, fresh water. There are no water-powers. The climate is rather variable and summer frosts occur occasionally. The ice on Lesser Slave Lake usually breaks up between the 15th and the 25th of May. In the muskegs there are several feet thick of peat. The soil elsewhere is generally a few inches of black loam over a hard clay subsoil with some sand in sections 17 and 20. Wood is the only fuel available but the supply is ample. No stone-quarries nor minerals were discovered. As regards game, moose and deer are found in this vicinity. There are also partridges and water-fowl.—*I. J. Steele, D.L.S., 1913.*



Photo by L. Brenot, D.L.S.

Vegetable Garden 15 miles West of Fort St. John

Tp. 80

The only route for reaching this township is by way of the wagon road leading from Grouard to the Atikamisis Lake trading post. From this point a pack-trail is, during the summer months, the only means of transportation, but during the winter sleigh roads to Wabiskaw post and north to Loon Lake are also available. During the summer, boats and canoes may be used on Atikamik and Atikamisis Lakes. The soil is clay loam or sandy loam, and has probably slightly more humus or vegetable mould than in ranges 13 to 18, with a clay or gravel subsoil. There is a large area of marsh or swamp lands, but much of it could be easily drained and reclaimed. Vegetables of all kinds, hay and the coarser cereals such as barley and oats, are at the present time being produced with success. The surface is generally rolling and is all timbered, the ridges being covered with poplar, spruce and thick underbrush, and the lower lands with spruce, balm of Gilead, tamarack and black alder. Hay is abundant throughout the entire district, the hay meadows along the north shore of Atikamisis Lake and in places on the shores of Atikamik Lake being very extensive. The water is fresh and abundant. The climate is similar to that of Edmonton, and there are occasional summer frosts. The fuel most available is wood; it is abundant and may be procured on almost every section. No minerals of economic value nor stone-quarries were noticed. Moose, caribou and bears are said to be fairly numerous. There are many water-fowl of all kinds on the small lakes and rivers. Willow and spruce-partridges and fool-hens are quite plentiful everywhere. Whitefish are abundant in the larger lakes.—*A. H. Hawkins, D.L.S., 1910.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

This township is reached by a well-travelled wagon trail from Grouard to Atikamisis Lake Settlement which lies in sections 8 and 9. In a rainy season the trail is very soft and is practically of no use except with pack-horses. The soil consists generally of a few inches of black loam overlying either a clay loam, loam or sandy loam subsoil, and is slightly stony in many places. Sections 7, 9 and 18 which lie along Atikamisis Lake contain fairly good land with many small patches of open land. A great portion of the central part of the township is muskeg. The surface is generally rolling and heavily timbered with poplar, cottonwood and some spruce up to twenty-four inches in diameter with thick underbrush. The muskegs and swamps are covered with dense spruce and tamarack averaging six inches in diameter interspersed with willow. The large timber is not found in sufficient quantity for lumbering purposes. Good hay is found in sections 7 and 8 along Atikamisis Lake, and also along Mink Creek and around nearly every small lake and pond. All the water is fresh and of good quality. Mink Creek, running south-westerly into Atikamisis Lake, is twenty-five feet wide, three feet deep and flows with a current of two or three miles per hour over a gravelly bottom. Whitefish River is thirty-five feet wide, four feet deep, and flows over a sandy bottom with a current of two or three miles per hour. This stream enters the township in section 7 and flows into Atikamisis Lake and out again through Utikuma I.R. No. 155 which occupies the south-easterly portion of the township. These two streams with the large number of lakes and small creeks ensure a very abundant supply of water everywhere in the township. No land is liable to be flooded except perhaps a strip of a few chains in width around the lakes and along Mink Creek where it is low and marshy. No falls nor rapids are found in this township. Heavy rains occurred in June this year, but the climate is generally fine. Light frosts were experienced about the end of July. No coal is found in this locality, but there is an abundance of wood for fuel. No stone-quarries nor minerals were noted. Game is rather scarce. Ducks, geese, muskrats, etc., were seen and there is a plentiful supply of whitefish, jackfish and pickerel in Atikamisis Lake and in the large streams.—*P. R. A. Belanger, D.L.S., 1914.*

Tp. 84 (*North outline.*)—See report on township 84, range 10.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—See report on township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outline.*)—(See the report on township 100, range 10.)—*J. A. Fletcher, D.L.S., 1914.*

Tp. 103 (*Exploration Survey.*)—This township lies mostly in Buffalo Head Hills. It is wooded with spruce, jack pine and poplar up to fifteen inches. The northern part has considerable open country lying along the foot of the hills, where there is a very good trail. Bluejoint hay grows luxuriantly in the open places.—*J. R. Akins, D.L.S., 1913.*

Tp. 104 (*North outline.*)—This township is very wet, as a large stream flowing from the Buffalo Head Hills suddenly discharges its entire volume all over the country. If this water were controlled this township would make first-class agricultural land, as the soil is good. It is only during wet seasons that the land is flooded. During a dry season these flooded areas produce an abundance of hay. The surface, where not open, is wooded with spruce, poplar, willow and alder.—*J. R. Akins, D.L.S., 1913.*

Tp. 105 (*Exploration survey.*)—The west and south-west parts of this township are flooded in wet seasons, but the eastern part is dry. The township is wooded with tamarack, spruce, alder, willow and poplar.—*J. R. Akins, D.L.S., 1913.*

Tp. 106 (*Exploration survey.*)—The surface is fairly level and lightly wooded with spruce, poplar and willow. The soil is good and well suited for farming purposes. The township is drained by Bear River.—*J. R. Akins, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

(*West two-thirds.*)—Two wagon trails cross this township in the north chord, one passing through sections 28, 29 and 30 to Peace River where a ferry is in operation, and the other passing across sections 19, 20, 21 and 22. The north third is rolling and covered with poplar, spruce and jack pine, mostly fire-killed, whereas the central chord is level, low and covered with poplar and spruce up to fourteen inches, principally along the river bank. The soil varies from sandy loam to clay loam with sandy clay or clay subsoil, and is suitable for farming. Large quantities of hay grow on sections 30, 29, 21, 20 and 19 from which settlers at Fort Vermilion take their winter's supply. Water in the sloughs is slightly alkaline. Peace River flows across sections 22, 27, 28, 32, 33 and 34; it averages one mile in width, twenty-five feet in depth, and flows about three miles an hour between banks forty feet high. The channel between the river bank and Sled Island dries up completely in the fall. No summer frosts were experienced in 1914 and 1915. Fresh water is found in a lake in sections 31 and 32. The lake is surrounded by a marshy shore from two to five chains wide. No stone-quarries, water-powers, coal or minerals were found.—*P. M. H. LeBlanc, D.L.S., 1914.*

Tp. 108 From Fort Vermilion there are two wagon trails to this township; one ends at Peace River in section 33, and the other runs in an easterly direction through the middle of the township. The latter is really the winter trail to Red River and is not a very good wagon road for part of the way. The first-mentioned is the better trail. Sections 34, 35, 36, 25 and 26 of this township contain some of the finest soil found in the Fort Vermilion district. All the pits dug in these sections show black loam to a depth of eighteen inches. South of Peace River there are many swamps and sand ridges, rendering this part of the township useless for any agricultural pursuit except ranching. Poplar and spruce up to eighteen inches in diameter and willow are found in nearly every section, while an occasional tamarack and jack pine may also be seen. Hay could be cut on some of the swamps. Peace River flows through the north-easterly corner of the township and is usually about a mile wide. Many islands and sandbars occur in it. Outside of this supply, good water is scarce, but could probably be obtained by digging to a reasonable depth, perhaps thirty feet. Wood is everywhere plentiful for fuel but no coal was seen. No water-power could be developed. No stone was found except in the bed of Peace River. No minerals of economic value were noticed. On the north side of the river the banks are very low but on the south side they reach a height of fifty feet. Minks, weasels, rabbits, foxes, wolves, coyotes, moose, bears, ducks, geese, prairie chickens and grouse are found.—*J. S. Galletly, D.L.S., 1912.*

Tp. 109 (*East half.*)—A good pack-trail from North Vermilion, following the north bank of Peace River, enters this township in section 18 and continues south-westerly to section 3 where it joins a good wagon trail which goes almost due east through sections 3, 2 and 1. In winter there is a good sleigh trail on the south side of the river from Fort Vermilion to a ranch in section 3 of this township. Peace River itself, which flows across the south-westerly corner of the township is a fairly convenient route to this township. The surface of the township towards the south is fairly open, but about half a mile from the base line the bush becomes thicker. The north two-thirds of the township contains no open patches except hay marshes and about two sections in the north-west corner which have been swept by fire. The timber is mostly poplar up to twelve inches in diameter, some spruce from six to twenty-four inches, and willow. The soil is generally second class, being about four inches of black loam overlying a clay loam subsoil. It should grow all the crops of the district. Numerous hay marshes occur throughout the township but they are nearly all small. Because of these and the plentiful supply of good water in Beaver Creek and Peace River, the township is well adapted to ranching. The banks of Peace River and of Beaver Creek are seldom fifty feet high and are usually much less. Beaver Creek is about thirty feet wide, from two to four feet deep and flows at about four miles per hour; it has been dammed in many places by beavers. Summer frosts are likely to occur. No water-power could be developed. Wood for fuel is plentiful everywhere, but no coal of any kind was seen. No minerals of economic value were

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

found. Stone in the form of boulders can be obtained in the bed of the river. Water of good quality can be procured in Peace River and Beaver Creek, or by digging near any of the hay marshes; the latter might possibly be alkaline. There is a slight tinge of alkali all over the township, but not enough to seriously interfere with the pursuits of settlers. Beavers, minks, weasels, foxes, coyotes, wolves, rabbits, moose and bears are found, also ducks, geese ptarmigan, prairie chickens and ruffed grouse.—*J. S. Galletly, D.L.S., 1912.*

Tp. 109 (*West half.*)—A pack-trail from North Vermilion to Caribou River runs through range 12, and from it a good wagon road leads into this township. The surface of sections 5, 6 and 7, which lie south of Peace River is generally level to within half a mile of the river, where there is a drop of about forty feet and then a gradual descent to the river. These sections are covered with willow, poplar and spruce, fire-killed on the banks, but green in the river-flat. The soil is clay loam with clay subsoil. North of the river the surface is level becoming slightly rolling in the northern part and is timbered with a second growth of poplar, spruce and willow. The soil is sandy clay loam on a clay subsoil. North of the river the surface is level, becoming slightly rolling in the northern part, and is timbered with a second growth of poplar, spruce and willow. The soil is sandy clay loam on a clay subsoil, well suited for any kind of farming. Patches of prairie and numerous hay marshes are found throughout the township. Peace River flows across sections 5, 7, 8, 9 and 18. It is from thirty-six to one hundred and twenty chains wide, has a depth of thirty feet in places, and flows about two and a half miles per hour. Its banks vary from fifteen feet to sixty-five feet. The two islands in the river are level and wooded with cottonwood, spruce and willow. The soil is sandy loam on a clay subsoil. Poplar and spruce are available for fuel, but no coal, water-powers nor minerals were seen. No summer frosts were experienced.—*P. M. H. LeBlanc, D.L.S., 1914.*

Tp. 111 (*Exploration survey.*)—This township is covered with standing dry timber up to fifteen inches, as the country was burned over about two years ago. There is plenty of horse feed, as the surface is grown up with wild rye grass. The township has good soil and is drained by Caribou River and its branch, Carl Creek.—*J. R. Akins, D.L.S., 1914.*

Tp. 112 (*North outline.*)—The north-eastern part is rough and wooded, and the south-western part lies on the flat at the bottom of the mountains. The soil is only fair.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—The township is very rough being on the face of the Caribou Mountains. The soil is only fair, and the whole township was overrun with fire a couple of years ago.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—This township was overrun by fire about two years ago, and is now covered with small dry burnt spruce. The surface is rough and is drained by Caribou and Boyer Rivers.—*J. R. Akins, D.L.S., 1914.*

RANGE 12

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 72 (*North outline.*)—Section 31 is in a spruce and tamarack swamp. Elsewhere the land is rolling, with woods of poplar, birch and spruce, and good soil.—*Edgar Bray, D.L.S., 1904.*

This township is reached by a rough, surveyors' wagon trail leading southerly from Driftpile River I.R. No. 150. A winter pack-trail which is in poor condition passes through the south-westerly portion of the township, keeping in close proximity to Driftpile River and crossing it many times. The northerly two-thirds of the township is nearly level, rising slightly to the south. The southerly third is very rough and broken, with occasional stretches of level land.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.—*Continued.*

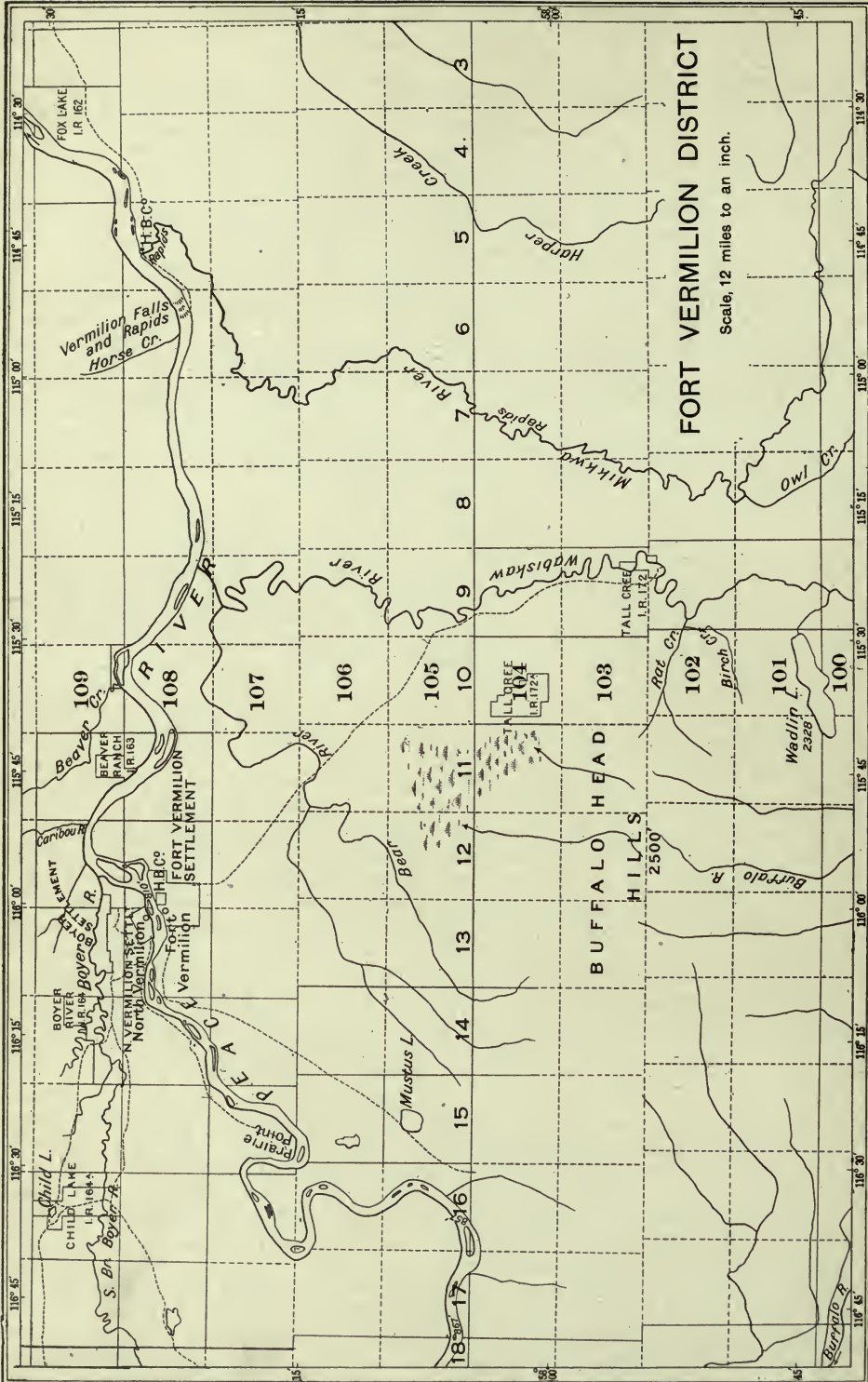
The soil for the most part consists of a few inches of black loam with either a clay or sandy subsoil. There are a few muskegs but these could be easily drained. The surface is wholly timbered. The level parts are covered mainly with poplar and birch, averaging from six to ten inches in diameter, with scattered spruce up to twenty inches in diameter. In the rougher parts towards the south there is more spruce, which occasionally reaches thirty-six inches in diameter. There is also considerable gray willow and alder throughout the township and some tamarack in the swamps. No hay was found. The water is fresh and supplied by the numerous small creeks. These streams have their source in the hills within the township and flow generally north-westerly to Driftpile River. The supply is liable to give out in dry seasons. The streams average two feet in width and half a foot deep with an average flow of one mile per hour. No land is liable to be flooded. Driftpile River which winds through the south-westerly portion of the township could be easily used for power development. It has an average width of one hundred feet, a depth of two feet and a current of approximately three miles per hour. There are numerous shallow rapids. The climatic conditions are similar to those of the surrounding country. No summer frosts were noted. Wood is the only available fuel at present, but coal or lignite veins may be found as there is evidence of coal along Driftpile River. No stone-quarries nor minerals of economic value were found. There are moose and bears in the township, and also game of the feathered variety.—*E. A. Neville, D.L.S., 1913.*

Tp. 73

This township is reached easily by means of the trail which runs along the south shore of Lesser Slave Lake through this township. The trail is not in first-class condition during wet seasons. The soil which consists of from four to eight inches of black loam with a clay or sandy subsoil, is very rich and admirably suited for the production of all kinds of vegetables and farm produce. The surface is mostly timbered but a few patches of open prairie were found adjoining Driftpile River I.R. No. 150 in sections 17, 16, 22 and 23. The timber consists of poplar up to twenty inches in diameter, birch up to twelve inches, scattered spruce from twelve to twenty inches and also a thick growth of gray willow. Alder averaging four inches in diameter is found in the low-lying parts along the creek-beds and sloughs. Spruce of commercial value varying up to thirty-six inches in diameter is found in section 36. The supply of hay within the Indian reserve is extensive but the quantity is very meagre in other parts of the township. The quality is good, being of the upland variety. The water is fresh and the supply is ample for local needs. Driftpile River passes diagonally through the township, the greater part being in the Indian reserve. Good water can be obtained by sinking wells to a depth of from ten to twenty feet. Driftpile River is the only probable source of water-power. It has an average depth of from three to four feet, a width of about one hundred and twenty-five feet and a current of about three miles per hour. The climate is generally hot and dry in summer and cold in winter, the two extremes of temperatures being about one hundred and twenty degrees (in the sun) in July and fifty degrees below zero in February. Summer frosts occasionally occur. Wood for fuel is abundant and of good quality. No coal nor lignite veins, stone-quarries nor minerals of economic value were found. Game of the feathered variety was seen. The right of way of the Edmonton, Dunvegan and British Columbia Railway is cut through this township, entering in section 24 and leaving in section 30.—*E. A. Neville, D.L.S., 1913.*

Tps. 73 & 74

(*East Outline.*)—That part of the township south of the Indian reserve is a high gently rolling country descending towards the north, heavily timbered with poplar and willow and scattered spruce and birch. The soil is two to three inches of black loam with a stony or gravelly clay, at present not suitable for agriculture. In section 13 there is a very soft spruce and willow swamp, the timber being small and of little value. This extends north-westerly through a large part of section 24 and easterly to the lake shore, about a mile distant. A slough about one hundred feet wide extends easterly from near Driftpile River through the north half of section 24 to the lake shore in which the water and mud is from six to eight feet deep. This slough is known as the "bad slough," and horses frequently get mired in it. With the help of the Indians we built a bridge in one day, as I had to cross several times. The only place suitable for settlement, when cleared, is parts



FORT VERMILION DISTRICT

Scale, 12 miles to an inch.

FOX LAKE
L.R. 162

Vermilion Falls and Rapids
Horse Cr.

109
Beaver Cr.
BEAVER RANCH
L.R. 163

108
Caribou R.
BOYER SETTLEMENT
BOYER LAKE
L.R. 164
BOYER CR.
VERMILION SETTLEMENT
North Vermilion
H.B.C.
Fort Vermilion

CHILD L.
CHILD LAKE
L.R. 161
S. Dr. Boyer Cr.

116
Prairie Point

114
Muskus L.

112
Beaver R.

106
River

107
River

103
Milkwood Rapids
River

105
Wabiskaw

104
TALL CREE
L.R. 112

102
Red Cr.
Birch

103
BUFFALO HEAD
HILLS
2500

101
Wadlin L.
2328

100
Buffalo R.

118
17
Buffalo R.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.—*Continued.*

of sections 36 and 1, township 74, range 12, and sections 31 and 6, township 74, range 11. On the south bank of Driftport River, there is a belt of fine spruce from 8 to 24 inches in diameter which extends south-westerly two miles into the Indian reserve and about one mile down the river from this line. The river is about one chain wide and from one to two feet deep with a rapid current to a mile below this line, where it meets the level of the lake. The water in the river is good, being very seldom muddy.—*Henry W. Selby, D.L.S., 1908.*

Tp. 74 The only route to this township by land is by means of a winter pack-trail from Driftport River I.R. No. 150. It can be reached by water from Lesser Slave Lake. The surface is generally wooded excepting a strip of marsh and hay land along Lesser Slave Lake. The timber consists of poplar, birch, spruce, alder, willow and balm of Gilead of an average diameter of from eight to ten inches. There are occasional spruce bluffs where a diameter of twenty-four inches is reached. The greater part of the timber consists of poplar and birch from six to twelve inches in diameter. There is a good supply of hay of fair quality along Lesser Slave Lake. The water is all fresh. A sufficient and permanent supply can be obtained by sinking wells to a depth of about ten feet. There are no streams. A narrow strip along the lake is subject to flooding to a depth of two feet during high water. No water-power is available. The climate is cold in winter and is tempered by lake breezes in summer. Wood is the only local supply of fuel. No coal nor lignite veins are known to exist. There are no stone-quarries nor minerals of economic value. Moose and bears are found, and also game of the feathered variety.—*E. A. Neville, D.L.S., 1913.*

Tp. 75 As this township is situated along the north shore of Lesser Slave Lake it can be reached either by boat or by the wagon trail along the shore. Owing to the stones and sand this trail is never very good, and during high water it is impassable. The northern portion of the township has an elevation of from three hundred to four hundred feet above the water of the lake, and from this level the land slopes gradually to the lake-shore. The surface is somewhat rolling in places. The soil is generally a few inches of black loam with a hard clay subsoil but there is occasionally a little sand and gravel. It would probably be suitable for growing oats, barley and hay, but no one has as yet tried to grow any grain in this vicinity. The timber is mostly poplar with a thick underbrush of willow and alder, but there are a few scattered clumps of tamarack and spruce in the low, swampy places. The shore of the lake is somewhat marshy in places, and in seasons of low water a limited amount of hay can be cut. The creeks in this township are all very small and no doubt are dry except during wet weather, but the lake gives an ample supply of good, fresh water. The climate is rather variable and summer frosts occur occasionally. The ice in Lesser Slave Lake usually breaks up between the 15th and the 25th of May. Wood is the only fuel available, but the supply is ample. No water-powers, stone-quarries nor minerals were seen. Moose and deer are found in the vicinity, and partridges and water-fowl were also seen. Whitefish, trout and several other varieties of fish are found in the lake.—*I. J. Steele, D.L.S., 1913.*

Tp. 76 (*North outline.*)—This township is rolling country with large beaver meadows between the low ridges. The timber on the ridges is mainly poplar. Some spruce, birch and jack pine are seen, and in the valleys some dry muskegs. On sections 32 and 33 there are large ponds of fairly good water with a good growth of grass about them. The soil is mainly black loam on clay and gravel, clay and stones and sandy clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

The only road through this township is a winter sleigh trail which probably could not be used again even in the winter. A wagon trail could be cut through the township to the south from the trail along the north shore of Lesser Slave Lake. This lake-shore trail is never good on account of sand and stones, and when the water is high it is impassable. The surface of the greater part of the township is rolling with muskegs in the depressions. The timber is generally poplar with a small percentage of spruce, but there is not sufficient large spruce to be of commercial value. The muskegs have a growth of small spruce and tamarack. Nearly everywhere in the

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.—*Continued.*

poplar there is a thick undergrowth of willow and alder. No hay can be cut but there is a limited amount of grass along the creeks. The creeks and muskegs give a permanent supply of good, fresh water. There are no water-powers. The climate is rather variable and occasionally summer frosts occur. The ice in Lesser Slave Lake usually breaks up between the 15th and the 25th of May. Wood is the only fuel available but the supply is ample. No stone-quarries nor minerals were seen. As regards game, moose and deer are found in the vicinity. There are also partridges and water-fowl.—*I. J. Steele, D.L.S., 1913.*

Tp. 80 (*North outline.*)—This township is reached by way of the wagon road leading from Grouard to the Atikamisis Lake trading post. From this point a pack-train is, during the summer months, the only means of transportation, but during the winter, sleigh roads to Wabiskaw post and north to Loon Lake are also available. During the summer boats and canoes may be used on Atikamik and Atikamisis Lakes. The soil is clay loam or sandy loam, and has probably slightly more humus or vegetable mould than in ranges 13 to 18, with a clay or gravel subsoil. There is a large area of marsh or swamp land, but much of it could be easily drained and reclaimed. Vegetables of all kinds as well as barley, oats and hay are, at the present time, being produced with success. The surface is generally rolling and is all timbered, the ridges being covered with poplar, spruce and thick underbrush, and the lower lands with spruce, balsam of Gilead, tamarack and black alder. Hay is abundant throughout the entire district. Water is fresh and plentiful. The climate is similar to that of Edmonton, and there are occasional summer frosts. The fuel most available is wood; it is abundant and may be procured on almost every section. No minerals of economic value nor stone-quarries were noticed. Moose, caribou and bears are said to be fairly numerous. Water-fowl of all kinds are common on the small lakes and rivers, while willow and spruce-partridge and fool-hens are quite plentiful everywhere and whitefish are abundant in the larger lakes.—*A. H. Hawkins, D.L.S., 1910.*

(*East third.*)—This township is reached by a wagon road from Grouard to the south-west end of Atikamisis Lake. From here a pack-trail runs in a northerly direction along the west shore of the lake. The wagon road is very wet in many places during the rainy season, when it is passable for pack-horses only, but at other times it is fairly good, although broken by a number of mud holes. The soil of the two northerly rows of sections surveyed consists of a few inches of black loam overlying a sandy loam subsoil, and in the southerly third there is about five inches of black loam overlying a clay loam subsoil; the central portion is composed of muskeg and swamp. The surface is rolling and heavily wooded in the north and south parts with poplar, cottonwood, spruce and tamarack averaging eight inches in diameter and thick underbrush. The remainder of the township is brûlé, willow swamps and muskegs alternating with ridges covered with thick small poplar and windfall. A fine hay marsh is found in the north-east quarter of section 15 and north-west quarter of section 14. Water is fairly abundant, fresh and of good quality, and is supplied by the small lakes, creeks and Whitefish River, which flows through sections 11 and 12 into Atikamisis Lake. This stream is thirty-five feet wide, four feet deep, and has a current of about two and one-half miles per hour. No land is liable to be flooded to any great extent. There are no water-powers. The climate is suitable for agriculture. Light frosts were experienced in this vicinity about the end of July. Wood for fuel is plentiful everywhere. No stone-quarries nor minerals were observed. Fish are plentiful in Atikamisis Lake. Game has become rather scarce in the last few years.—*P. R. A. Belanger, D.L.S., 1914.*

Tp. 84 (*North outline.*)—See report on township 84, range 10.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—See report on township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outline.*)—See report on township 100, range 10.—*J. A. Fletcher, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.—*Continued.*

- Tp. 103** (*Exploration survey.*)—Most of this township lies in Buffalo Head Hills. It is wooded with spruce, jack pine and poplar up to fifteen inches. The northern part has considerable open country lying along the foot of the hills where there is a good trail. Bluejoint hay grows luxuriantly in the open places.—*J. R. Akins, D.L.S., 1913.*
- Tp. 104** (*North outline.*)—The surface of this township is nearly level, with sufficient fall to the north for drainage purposes. It is wooded with poplar, willow and alder.—*J. R. Akins, D.L.S., 1913.*
- Tp. 105** (*Exploration survey.*)—The eastern part of this township is flooded as a large stream flowing from Buffalo Head Hills has no particular channel, but flows over the country. Bear River in the northern part collects this water and carries it to Peace River. The soil is good, and would make excellent farming land, if the flooding could be controlled.—*J. R. Akins, D.L.S., 1913.*
- Tp. 106** (*Exploration survey.*)—The surface of this township is fairly level and is lightly wooded with spruce, poplar and willow. The soil is good and well suited for farming purposes. The township is drained by Bear River.—*J. R. Akins, D.L.S., 1913.*
- Tp. 108** (*East third.*)—A good wagon road from Fort Vermilion forks on section 26, one branch running north-easterly to section 25 and the other south-easterly to sections 23 and 24. The surface is fairly level except the south part of sections 25 and 26, which is rolling. The soil is clay loam on a clay subsoil and is suitable for mixed farming. Hay meadows are found on sections 24 and 26, where settlers from Fort Vermilion get their annual supply of hay. The northern part is wooded with spruce and poplar up to sixteen inches but in the southern part it is small and suitable only for firewood. The water in the sloughs is slightly alkaline. No coal, minerals, water-powers nor stone-quarries were found and no game was seen.—*P. M. H. LeBlanc, D.L.S., 1914.*
- (*Partial.*)—The winter trail to Red River passes through sections 28, 27, 26 and 25 of this township. This is a good wagon trail as far as Wolf Lake which lies to the east of section 24. Another wagon road, recently cut, runs through Fort Vermilion Settlement, part of which occupies a portion of the west of this township, and then crosses sections 5 where it leaves the township. A branch of the latter trail, cut by ourselves, runs through sections 4 and 3. The best part of the township is taken up by Fort Vermilion Settlement. The remainder is generally covered with poplar up to eight inches in diameter, spruce up to fifteen inches, and willow. A few tamarack are scattered through the spruce. There are many hay marshes and the surface is generally of muskeg which would not bear the weight of a horse. Fire has swept the surface, leaving much deadfall. The soil consists of about three or four inches of black loam overlying a sandy clay loam. It is second class but should grow all the crops of the district. Summer frosts are likely to occur. Except in Peace River, which occupies the north-west corner of the township, water is scarce and we had difficulty in securing enough for camp use. No minerals of economic value were seen. No coal was found but wood is plentiful for fuel. No water-powers could be developed. Other than the boulders which occur in the bed of Peace River, no stone was noticed. Hay is scarce. Moose, bears, minks, weasels, rabbits, lynx, geese, ducks and prairie chickens were seen. The township is best adapted to mixed farming.—*J. S. Galletly, D.L.S., 1912.*
- Tp. 109** (*South third.*)—From North Vermilion there is a pack-trail which crosses Boyer and Caribou Rivers and leaves this township to continue to a ranch in township 109, range 11. These rivers are not always passable for horses during the spring when they are in flood. Peace River would also form a ready means of entering this township as it crosses the base line in section 3 and leaves the township in section 13. Some large islands break the river into several channels, but usually it is about three-quarters of a mile wide and flows at about three miles per hour. It reaches a depth of forty-five feet in the main channel.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.—*Continued.*

Boyer River is about two and a half chains wide and empties into Peace River in section 9. It flows at about three miles per hour and varies from a few inches to several feet in depth. Caribou River, about a chain and a half wide, is very swift but usually shallow. There is an almost continuous cut bank along this river which renders it difficult for horses to cross. It flows southeasterly through the township and enters Peace River in section 13. Generally speaking, the soil is about four inches of black loam overlying a clay loam subsoil. It is second class but should grow all the crops of the district. North of Caribou River the country has been swept by fire and much of it is open. The remainder of the township is covered with a thick growth of poplar up to twelve inches in diameter, spruce up to eighteen inches and willow. South of Peace River there is a considerable amount of deadfall. The water in the rivers is good but none was found beyond this source. Summer frosts are likely to occur. No water-power could be developed. A little hay could be cut along the base line but this is already taken up by residents of Fort Vermilion. No minerals of economic value were seen. No stone, except in the river beds, was noticed. Wood is plentiful for fuel but no coal was found. Bears, moose, minks, beavers, weasels, rabbits, ducks, geese and prairie chickens are found. The township is best suited for mixed farming.—*J. S. Gallely, D.L.S., 1912.*

This township can be reached by Peace River or by a pack-trail from Boyer Settlement. The surface is nearly level except where broken by Peace River valley and by ravines and banks of small creeks emptying into the river. The soil consists of a sandy loam with sandy clay or clay subsoil and is suitable for farming. The timber is composed of poplar and spruce, good only for firewood and fencing purposes. However some fair size spruce, good for building purposes, can be found on sections 30 and 31, and on the banks of Peace River, the islands and also in the valley of Caribou River. Peace River flows through sections 16, 15, 14 and 13 in an easterly direction; it averages fifty chains in width with a depth varying from one to thirty feet; its water is fresh and the current is about two and a half miles per hour. The left bank of the valley varies from fifty to eighty feet in height, while the right bank is only about twenty feet high. Hay meadows and marshes are found along several small creeks in this township. Caribou River averages eighty links wide and runs in a valley about half a mile wide; it carries about two feet of good fresh water in summer time, but rises very suddenly in rainy weather, and in early spring its current averages approximately a mile and a half per hour. The climate is the same as at Fort Vermilion, warm in summer time and cold in winter. No water-powers, minerals nor stone-quarries were found, and no game was noticed.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tps. 111 & 112 (*Base line.*)—These townships are covered with standing dry timber up to fifteen inches in diameter. The surface was burned over a couple of years ago, and plenty of wild rye grass grows which makes good feed for horses. The township has good soil and is drained by Caribou River and its branch, Carl Creek.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—The surface of this township is rough as it lies on the top of Caribou Mountains. It was burned over a couple of years ago and is now grown up with wild rye grass. The soil is fairly good.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—This township was overrun with fire about two years ago and is now covered with small dry burnt spruce. It is rough and is drained by Caribou and Boyer Rivers.—*J. R. Akins, D.L.S., 1914.*

RANGE 13

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 72 (*North outline.*)—Driftpile River, a stream of about eighty feet in width and variable depth and current, crosses the line near the western boundary of section 36, and here some unimportant openings were found. Generally, however, the land is of fair

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—*Continued.*

quality and is covered with woods of poplar, birch and spruce. The surface is mostly rolling with a gradual rise from Driftpile River to the middle of section 32, where considerable altitude is attained. This point is also the beginning of a descent to the west, which continues for nearly a mile.—*Edgar Bray, D.L.S., 1904.*

(*North half.*)—This township is most easily reached by the old Klondyke trail which crosses the Edmonton, Dunvegan and British Columbia Railway near Sucker Creek Settlement and passes through the south-west corner of section 19. This trail is little used, but is fairly good in dry weather for lightly loaded wagons. From this wagon road a survey pack-trail passes through sections 30, 29, 28, 27 and 26, connecting with an old pack-trail running along Driftpile River, which flows northerly through sections 24, 25, 26, 35 and 36. This trail leads to the road along the south shore of Lesser Slave Lake. A branch of this pack-trail runs south-westerly through sections 35, 26, 27 and 22. The trails are little used except by hunters. Driftpile River has a valley about a mile wide with prominent valley banks, one hundred and thirty feet high on the western and one hundred and eighty feet high on the eastern side. The river has an average width of seventy feet, a depth of two feet and a current of about one mile per hour. The channel is from ten to twelve feet deep, thus preventing flooding. A number of small creeks, rising in the central portion of the township, and containing excellent water, flow toward Driftpile River, through ravines increasing in depth to one hundred feet; they unite and enter the river in section 35. The river valley is level or gently rolling, and contains small patches of balm of Gilead from eighteen to thirty-six inches in diameter, growing on rich alluvial benches. Also in sections 24 and 25 patches of spruce eighteen to twenty-four inches in diameter grow along the river. Otherwise it is lightly timbered with small poplar, balm of Gilead, and willow, with a few small prairie openings. These with scattered patches of prairie along the creeks are the only places where horse feed may be obtained. The surface except in the immediate vicinity of the river valley and its tributary ravines is gently rolling and covered with white poplar, balm of Gilead and scattered spruce from four to sixteen inches in diameter. In sections 28, 29 and 20 there is considerable birch from five to eight inches in diameter. In sections 22, 23 and 26 there are small muskegs, containing tamarack and spruce up to ten inches in diameter. Very thick underbrush, consisting of hazel, high bush cranberry, alder, willow, etc., is a very prominent feature in this township. The soil is good, averaging about six inches of black loam on a clay subsoil, which, together with an abundant rainfall in the months of June and July, produces a very heavy growth of hay and other vegetation, making the township well adapted to mixed farming and stock raising. There are no water-powers. Frequent rapids or shallows occur along Driftpile River, but at these places the drop is only a couple of feet. Wood for fuel and building purposes is everywhere plentiful. No coal seams, minerals or any stone-quarries were seen. Drift coal of fair quality is, however, seen in the river. Bears, moose, coyotes, lynx, foxes and other fur-bearing animals are common.—*D. F. McEwen, D.L.S., 1915.*

Tp. 73

(*East outline.*)—This line runs through a high gently rolling country descending towards the north and towards Driftpile River on the east. Leaving the base line, and about fifty chains along the east boundary of section 1, a descent of one hundred and fifty feet is made to Driftpile River. The line crosses the river three times in the next half mile, and we again ascend about one hundred feet to a ridge on the west bank of the valley in which the river flows. There is not much prairie in this valley until the Indian reserve line is reached. Small openings are found on sections 7 and 17, township 73, range 12. The timber in this valley is chiefly willow, while on the hills it is thick poplar and willow with an occasional spruce. This township is composed of rolling land, cut up by coulées and creeks, and is heavily timbered with poplar and spruce to within half a mile of the lake and to the south boundary of township 74. Good grass grows on the prairie lands along Driftpile River and over a large part of the Indian reserve, but very little use is made of this, and scarcely any cultivation of the soil is done on the reserve. Water-powers might be developed at some of the rapids in the river. This stream is from one to one and a half chains wide and from nine inches to two feet deep, with a current of three miles per hour, and if mining operations should be started in the hills to the south, this might be utilized to advantage. The water is good. Drift coal is found on the sandbars, but

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—*Continued.*

I did not see the seams from which it came. No minerals nor stone-quarries were noticed, but some may be discovered as the country adjacent has indications of their existence. Moose and bears are occasionally shot, but generally farther to the south.—*Henry W. Selby, D.L.S., 1908.*

This township can be reached by boat on Lesser Slave Lake or by trail along the south shore of the lake either from Sawridge at the east end of the lake or from Grouard at the west. The trail is poor in summer, but is excellent in winter. The right of way of the Edmonton, Dunvegan and British Columbia Railway passes through this township and will probably afford a means of access to it within a year from this date. The soil is on the whole a rich black loam from two to nine inches in depth with a clay subsoil. It is suitable for the production of all kinds of farm produce and vegetables. The range of productiveness is limited only by the climate and not by the soil. The surface is heavily timbered with poplar and scattered spruce up to twenty-four inches in diameter. The average diameter of the poplar is from eight to ten inches. Birch, alder and gray willow are also found. The distribution of the different varieties is fairly uniform over the whole township. There is no hay. The water is fresh, but the supply from the several small creeks within the township is neither sufficient nor permanent; it could, however, be obtained by sinking wells to a depth of from fifteen to twenty feet. Nearly all the streams are about two feet wide and one foot deep and have a current of from one to three miles per hour. Ninety per cent. of these exist in the spring and wet seasons only. The land is not liable to be flooded. No water-power is available within the township. The climate is typical of northern Alberta and summer frosts are likely to occur. This feature, however, would probably disappear with the clearing and cultivation of the land. Neither coal nor lignite veins were discovered, but wood for fuel is plentiful. There are no stone-quarries nor minerals of economic value. Moose, bears and feathered game are plentiful.—*E. A. Neville, D.L.S., 1913.*



Photo by L. Brenot, D.L.S.

Pack Train on North Shore of Pine River

Tp. 74

The small piece of land within the outlines of this township is all covered with poplar and willow except two small prairie spots on sections 8 and 9. The land is gently rolling with a descent towards the north. The shore in sections 8, 17 and 18 is covered with poplar almost to the high-water mark and a steamer can approach to within ten feet of the

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—*Continued.*

water's edge in the present state of the water. There are very few places around the lake where this can be done. The soil is three to four inches of loam on a gravelly and sandy clay. No settlers are living on this land, but a building was erected this spring near the north-east corner of section 8. The fall fishing for winter use in this part of the country is done from these shores. A small stream of excellent water flows through sections 6, 7 and 8 to the lake. The volume of water varies greatly with the seasons, but might average four feet wide and six inches deep, as it flows through a coulée from ten to twenty-five feet deep. There is no commercial value to the timber, which would all be required for the use of the settlers. There is no water-power, coal, mineral, stone-quarry, hay land nor game. A wagon road has been cut through the woods a short distance back from the lake but it is travelled only in places, as the beach generally makes the best road.—*Henry W. Selby, D.L.S., 1908.*

Tp. 75 This township is situated along the north shore of Lesser Slave Lake, a few miles east of the town of Grouard. It may be reached by boat or by the wagon trail along the shore. There is also a more direct winter road which enters the township at the north-west corner of section 19. Both these trails are almost impassable during wet weather, but are fair in dry weather. The soil is generally a few inches of black loam over a hard clay subsoil, but near the lake it is somewhat gravelly. It is probably suitable for growing certain kinds of grain provided the climate will permit. A squatter in this township is raising potatoes and garden vegetables successfully. A large part of the township is timbered with poplar and occasional clumps of spruce. Most of the latter, large enough to be valuable, is found in sections 19, 30, 31 and in the northerly parts of sections 32 and 33. Some of it has already been cut in sections 19 and 30, but a considerable amount still remains. Throughout the rest of the township there are a few small clumps of large spruce. No hay can be cut and there is very little grass. The streams are all very small and are probably dry most of the year, but the lake furnishes a supply of good, fresh water. There are no water-powers and no land is liable to be flooded. The climate is rather variable and summer frosts occur occasionally. The ice on the lake usually breaks up between the 15th and 25th of May, but this year the frost was not out of the muskogs until near the end of July. Wood is the only fuel available, but the supply is ample. No stone-quarries nor minerals were seen. Moose and deer are found in this vicinity, also partridges and water-fowl. Whitefish, trout and several other kinds of fish are found in the lake.—*I. J. Steele, D.L.S., 1913.*

Tp. 76 (*North outline.*)—This township is rolling and mostly covered with poplar, jack pine, birch and large scattered spruce. There are some beaver meadows and spruce muskogs. Salt Creek crosses section 34, and there is a luxuriant growth of vegetation in the flats through which it flows. The lands to the west of the creek are suitable for agriculture, while those to the east are at present unfit for farming.—*Henry W. Selby, D.L.S., 1905.*

This township is most readily reached from Grouard, in township 75, range 14, by following the Atikamik Lake trail north to Heart River and Salt Prairie Settlement and then a branch trail to the north-east corner of section 35, township 76, range 14. From this point the only road is a winter sleigh trail which could not be used in the summer. The Atikamik Lake trail is very poor during the periods of wet weather. The soil is generally a few inches of black loam over a clay subsoil. There are a few small peat bogs of several feet in depth. Sand and gravel are found in places. Oats, barley and hay can probably be grown if the climate will permit. The entire township is heavily timbered, mostly with poplar, but in the low places there are clumps of medium-sized spruce. These clumps are too scattered to be of much commercial value except along the southerly side of sections 4, 5 and 6, where there is sufficient good spruce to make the operation of a portable saw-mill possible in the near future. Everywhere there is a thick undergrowth of willow and alder. No hay can be cut, but there is a limited quantity of grass along the creeks. Salt creek and its branches together with several small ponds and muskogs give a permanent supply of fairly good water. In sections 29 and 30 there are several springs which are slightly mineralized. The climate seems to be rather variable and summer frosts occur occasionally. The ice on Lesser Slave Lake usually breaks up between the 15th and the 25th of May.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—Continued.

The only fuel available is wood, and the supply is ample. No water-power, stone-quarries nor minerals were seen. Moose and deer and also partridges and water-fowl were found in the vicinity.—*I. J. Steele, D.L.S., 1913.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a road could be built along South Heart River with little trouble. The wagon road from Grouard is a fairly good one and no doubt, as it is a main highway through this country, will be improved each year. The soil is either clay or sandy loam from six to twelve inches deep, with a subsoil of clay, or sand and gravel on the ridges. In the marshes and swamps there is a black humus six to eighteen inches deep with generally a clay subsoil. The true muskeg is composed of moss and other vegetable fibre from six inches to six feet or more in depth, but it is not very prevalent in this township. The soil is well adapted to mixed farming as all varieties of vegetables, as well as oats, barley and hay, grow in great profusion. The surface is gently rolling and is almost all timbered, the exceptions being marshes or open muskegs. The timber is chiefly poplar, spruce, balm of Gilead, balsam, alder, willow and some jack pine. It can scarcely be said to have much commercial value. The poplar runs from three to fourteen inches in diameter and the spruce up to twenty-four inches. Hay is abundant on all sloughs and streams. Water is everywhere fresh and abundant, but there are no water-powers. The fuel is wood and is found on almost every section. No stone-quarries nor minerals of economic value were noticed. Moose, caribou and bears are quite numerous, and water-fowl are abundant on open marshes, sloughs and rivers. Fool-hens and willow and spruce-partridges are quite plentiful.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline.*)—See report on township 84, range 10.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—See report on township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outline.*)—See report on township 100, range 10.—*J. A. Fletcher, D.L.S., 1914.*

Tp. 103 (*Exploration survey—Ranges 13 to 15.*)—These townships are very similar, and lie for the greater part in Buffalo Head Hills. These hills are wooded with spruce, jack pine and poplar up to fifteen inches in diameter. The northern parts have considerable open country along the foot of the hills where there is a good trail. Bluejoint hay grows luxuriantly in the open places.—*J. R. Akins, D.L.S., 1913.*

Tp. 104 (*North outline.*)—This township is very wet, and would require draining before it would be suitable for farming. There are many open muskegs and swamps. The timber growth is small and is composed of spruce, willow and poplar.—*J. R. Akins, D.L.S., 1913.*

Tps. 105 & 106 (*Exploration survey.*)—These two townships are lightly wooded with poplar, spruce and willow, with some muskegs and hay sloughs. The country is nearly level and the soil is good.—*J. R. Akins, D.L.S., 1913.*

Tp. 108 This is the best settled township in the district. Peace River runs about two miles south of the base line and varies from thirty chains to a mile and a half in width. The current varies from three to five miles per hour, and the depth in places is forty feet. Several large islands occur in it. The settlement of North Vermilion lies almost wholly in this township, being in sections 36, 35, 34, 27, 26 and 25. Fort Vermilion Settlement on the south side of the river occupies part of sections 23, 24, 14, 11, 2 and 1, and all of sections 12 and 13. A good wagon trail from North Vermilion to Prairie Point follows the north side of the river. The trail to Hay River passes through sections 35 and 34. Both of these trails are in good condition. South of Peace River the country is more open and almost any section can be reached

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—*Continued.*

with a wagon. The soil is usually second class, being a sandy loam. It is slightly alkaline, but not enough to be a serious objection. North of Peace River swamps are more numerous and the soil is generally third class. Here also is the heaviest timber of the township, poplar from four to fifteen inches, spruce from four to twelve inches and tamarack from four to eight inches in diameter being found. The islands in Peace River are usually covered with poplar from four to fifteen inches, spruce from four to eighteen inches and balm of Gilead from six to fifty inches in diameter. Lac d'Ours in sections 3, 4, 10 and 9 would provide about two hundred tons of hay of good quality. This supply is eagerly sought after by the residents. The water in Peace River is good. Several of the residents have wells, the water of these being found usually at a depth of about twenty feet. No water-powers are available. Summer frosts occur. Wood for fuel is plentiful, but no coal nor lignite was seen. Stone for building may be obtained in the bed of Peace River. No minerals of economic value were noticed. Foxes, rabbits, weasels, prairie chickens and grouse were found. The Government experimental station is located in section 19 and the locality surrounding this, known as Stony Point, is the most productive of the district.—*J. S. Galletly, D.L.S., 1912.*

Tp. 109 The wagon trail from North Vermilion to Hay River passes through sections 3, 4, 5 and 6 of this township. It is in good condition. There is a fair surveyors' sleigh trail crossing the Boyer River in section 17, and going as far as section 27. South of Boyer Settlement there are a few open places, especially along the trail, but north of Boyer River the country is usually thickly timbered with poplar up to twelve inches in diameter and spruce up to fifteen inches, with willow. The soil is generally four inches of black loam over a clay loam subsoil. It is second class, but should grow all the crops of the district. Some alkali is apparent south of Boyer River, but there is none north of it. A few hay marshes were seen near the base line, but the yield is not great. This hay is at present cut by the inhabitants of North Vermilion. There is fresh water in Boyer River and in a creek flowing easterly through the northern third of the township, also in Gull Lake, but all of these freeze to the bottom in winter. No surface water was found beyond these sources. Summer frosts are liable to occur. No coal was seen but wood for fuel is everywhere plentiful. No minerals of economic value nor stone, except a few loose rocks in the bed of Boyer River, were found. This river is about a chain and a half wide, flows about two miles per hour, and is about two feet deep. No water-power could be developed. Bears, moose, beavers, martens, minks, rabbits, coyotes, foxes, weasels, ducks, geese and prairie chickens were found. The township, on the whole, is best suited for mixed farming.—*J. S. Galletly, D.L.S., 1912.*

Tps. 111 & 112 (*Base line.*)—These townships have been overrun by fire, but are now growing up with second-growth spruce, willow and poplar. Horse feed is plentiful. The area is drained by Boyer River; it is a stream about seventy feet wide, three feet deep and has very steep and high banks.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—This township is fairly rough. It is cut by Boyer River, which has very steep cut banks. The surface has been recently burned over, but the soil is yet fairly good, and plenty of feed grows.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—This township, at the edge of Caribou Mountains, is very rough and the soil is poor and light. It is wooded with spruce, jack pine and birch, and is drained by Boyer River and its branches.—*J. R. Akins, D.L.S., 1914.*

RANGE 14

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

Tp. 71 A pack-trail from Sucker Creek Settlement enters near the north-west corner of the township and runs south through sections 31, 30, 19, 18, 7 and 6, following the general course of East Prairie River most of the way. This trail is well beaten, and apparently much used by hunters proceeding south. A second pack-trail connecting with the old Edmonton-Dawson trail in section 35, township 72, range 14, runs south-westerly through sections 24, 13, 14, 11, 2 and 3. This also is a good and well-travelled trail, but climbs over a high range of hills near the north-east corner of the township. A survey pack-trail crossing sections 19, 20, 21, 22, 23 and 24 connects the two older trails mentioned. The soil throughout the township is good, having an average depth of five or six inches of black loam, on a clay subsoil. The surface is generally slightly rolling, but from sections 34 and 27 eastward, it is very high and cut by innumerable ravines, varying from ten feet to one hundred and fifty feet. Many of these ravines had small streams of excellent water running through them at the time of survey (October), fed by springs in the hills in sections 35, 36 and 25. The ravines become much fewer and smaller in the southerly two-thirds of the township, leaving the surface but very slightly broken. The land throughout would be excellent for stock raising, having good soil and plenty of good water. East Prairie River, one hundred feet wide and one and a half feet deep, has an average velocity of about one mile per hour. The banks are nearly vertical and average twelve feet in height. It flows northerly through sections 4, 5, 7, 8, 18, 19 and 30. Along its banks are many small patches of fine meadow with a heavy growth of grass. This is about the only feed in the township, except such as is scattered along the ravines and through the willow and alder swamps. Along the river banks is a heavy growth of willow and alder, white poplar and spruce from six to twelve inches in diameter and patches of balm of Gilead from twelve to forty inches in diameter. On sections 3, 4, 8, 9, 10, 16 and 17 are small shallow muskegs with spruce and tamarack from four to ten inches in diameter, and intervening small knolls bearing jack pine up to ten inches in diameter. The rest of the township is largely covered with birch four to ten inches in diameter, with scattered poplar and spruce up to fifteen inches in diameter, and balm of Gilead up to twenty inches, though in the easterly two-thirds of the township the birch largely predominates. There is throughout a dense growth of cranberry, alder, willow and other underbrush. On practically every section is an abundance of timber for fuel and building purposes, but there is no timber of any considerable commercial value. There are no available water-powers, though at some future time it might be feasible to develop a small power on East Prairie River, which, south of this township, appears to become narrower with higher banks, and numerous small rapids. Float coal of good quality is found in the bed of the river, but no seams nor any other mineral deposits were seen. Bears, moose, lynx, foxes, mink, marten and beaver are found. The climate is similar to that of the Lesser Slave Lake Settlement there being little sign of frost during the past season till mid-September.—*D. F. McEwen, D.L.S., 1915.*

Tp. 72 (*North outline.*)—Sections 36 and 35 are mostly rolling land, with good soil and heavy timber of poplar, spruce and birch. The remaining sections (with a few unimportant exceptions) are part of an extensive wet swamp of spruce and tamarack and are of no present value.—*Edgar Bray, D.L.S., 1904.*

Tp. 73 The greater portion of this township will make excellent farms some time, but at present there are not prairie openings of sufficient area to induce the settler to take up land there. There are numerous small spruce muskegs nearly dry, a large one at the south-east corner and another near the north-east corner. Both of these large muskegs are at present very soft and unsafe for pack-trains to cross, and the timber adjoining these muskegs is not large enough nor in large enough quantities to be of much value except possibly for settlers' uses. Large poplar is found in belts along the east boundary but it is decaying rapidly. A creek flowing through the westerly part of the township crosses the north boundary in section 31. The average width is twenty-five feet and the depth of water three inches in the rapids. Very little current can be noticed except where the water is shallow. The banks rise from twenty-five to seventy-five feet, and prairie spots are found occasionally along this creek. Another small stream leaves the township near the north-east corner, and flows north-easterly into the lake

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

about a mile and a quarter east of the east boundary of township 74, range 14. This small stream, about four links wide and two inches deep, contains good water, and is said by the Indians to have its source in a small lake east of the wagon road and south of the large muskeg. Several other water-courses were crossed which had water in pools within their banks but no running water. These came from the higher lands to the south and east of the township. The wagon road which crosses the base line in section 2 leaves the township in section 34 and is quite good as far as seen. It is used occasionally by people travelling light, but it would require much improvement for loaded wagons. No rock, coal nor game, and very few sloughs or hay meadows were seen.—*Henry W. Selby, D.L.S., 1907.*

This township is traversed by the old Klondyke wagon trail leading from Edmonton to Lesser Slave Lake which is the only means of access at present. It enters in section 2 and leaves in section 34. The soil consists principally of several inches of black clay loam overlying a clay subsoil, and is suitable for the production of all kinds of crops. The surface is entirely timbered with poplar, birch, spruce, tamarack, alder and willow. Poplar up to fourteen inches in diameter, birch up to ten inches and scattered spruce up to fifteen inches is found on the higher land. Spruce and scattered tamarack up to eight inches in diameter grow in the numerous muskegs. Swamps, covered with thick gray willow averaging six inches in diameter, are often found bordering the muskegs. There is no hay within the township. The water is fresh and the only source of supply is from the creeks, of which Sucker Creek is the largest with a width of from twenty to forty feet, a depth of from three to five feet and an average flow of three miles per hour. Good water could probably be obtained anywhere by sinking wells ten or twelve feet. The land is not liable to be flooded, and with proper drainage the present wet area would rapidly disappear. No water-powers are available. The climate is typical of northern Alberta. Summer frosts are liable to occur. The summers are generally dry with a temperature reaching one hundred degrees in the shade, while winter temperatures will probably reach forty-five degrees below zero. Wood for fuel is plentiful in all sections, but little of it is suitable for commercial purposes. No coal nor lignite veins were found. There are no stone-quarries nor minerals of economic value within the township. Some feathered game was seen and there were also signs of moose and bears.—*E. A. Neville, D.L.S., 1913.*

Tp. 74 This township is broken by Lesser Slave Lake on the north and by Sucker Creek Indian Reserve on the west. It has a gentle descent from the south towards the lake, and is not very heavily timbered, the timber being mainly poplar with a few scattered spruce throughout the township. Prairie spots and bunches of willow occur in the sections adjoining the Indian reserve line. As the water in the lake has been low for the past two years, it leaves a wide beach, except at prominent points where the shore is generally covered with boulders. Settlers and others who have to travel through this country use the beach for a road, cutting across the points to avoid the water and boulders. There has been so much of this kind of travel that quite a good wagon road is marked upon the beach from the west end of Lesser Slave Lake to the east boundary of this township. A wagon road has been cut from Little Sucker Creek easterly above the high-water mark to Swan River, but it has become more or less filled in with fallen timber, as the beach road can be used at the time of low water and is much smoother to travel over. Most of the land in this township may be described as first-class farm land. A large muskeg near the south boundary makes sections 1, 2 and 3 broken, but this can be easily drained. The soil generally is black loam from four to ten inches deep on clay subsoil, and the surface of the country is undulating. Three creeks drain the land, Sucker Creek, Little Sucker Creek in the centre of the township, and a small creek in section 1. The water is very good in the first and last, but not so good in Little Sucker Creek. In addition to the wagon road already mentioned, a fairly good road runs through sections 3, 10 and 14 to the lake. This is known as the "Road to Edmonton via Swan Hills." No railway survey has been made through this part of the country, but it is believed that when there is one made it will pass through this township. Oats and potatoes were grown on the Indian reserve and did well, although frosts occurred several times during the summer. No large areas of hay land were found, but a quantity of hay is made every year by the Indians on sections 15 and 16. There are no waterfalls on Sucker

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

Creek, but several rapids occur. No coal nor minerals were found in this township, but I have seen specimens from the country south and east of it, and in some of the coulées up in the hills placer gold has been found. Game is scarce, none being seen except ducks and geese on the lake shore and a few partridges in the spruce hills.—*Henry W. Selby, D.L.S., 1907.*

Tp. 75 That part of the township north of Lesser Slave Lake lies with a general slope towards the lake into which the greater part of it is drained. The settlement survey lying within its boundaries takes in nearly all the prairie, but there has been a good deal of the timber suitable for sawlogs and much firewood cut for the uses of the settlement, so that it would not be difficult to clear up many of the farms not embraced within the settlement survey. There are several hundred thousand feet of spruce which could be cut yet, and should a fire run over the slashed portion of the bush it would severely damage that now standing. A road about sixteen feet wide has been cut south-easterly from the village, and leaves the township in section 24 and intersects Slave Lake about a mile east of the township. This road is used mainly by the freighters in the winter to avoid the dangerous ice around Shaw Point. It is also used by people in the summer who are travelling with light loads. The soil generally is loam with a sandy clay subsoil and will make good farming land when once cleared. Shaw Point and the country for some little distance inland is composed of coarse sand, gravel and stones partly covered by sand and leaf mould. At the time of low water there is a strip of land along the west side of the settlement survey which makes good pasture land, especially those portions of it west of the main outlet of Buffalo Bay, but this is liable to be flooded at any time. There is a narrow strip of land a little over six chains wide lying to the west of Indian reserve No. 150A which, being thickly covered with brush, is now considered too wet for farming, but when cleared it will make excellent farming or meadow land. There are two squatters, one on section 31 and the other on section 12, who have good houses but very little clearing, neither of them living there at the time of survey. Water found in the township is very good; one spring found near the south-east corner of section 27 has a strong mineral taste. If this were analyzed it might prove to be of commercial value. There are no hay lands except those mentioned along the west boundary and along the lake-shore at low water. I did not see any coal or stone-quarries on these lands and no game of any kind, although moose were killed this spring three miles east of here.—*Henry W. Selby, D.L.S., 1907.*

Tp. 76 (*North outline.*)—The line crosses what is known as Salt Creek prairie, in sections 36, 35 and 34, where are seen to the south and south-west enclosed clearings, farm buildings and excellent crops of grain, vegetation everywhere indicating a richness of soil not noticeable anywhere east of these lands. A wagon road crosses the line on section 34 connecting Lesser Slave and Whitefish Lakes. Two branches of Salt Creek cross the line in sections 34 and 35; the water is good but very hard. On the west half of section 34 the line again enters heavy timber, mainly poplar, with a few spruce and jack pine in places. The soil is black loam on a clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

The south third of this township is at present heavily timbered with poplar and spruce from four to sixteen inches in diameter, and the land is high and quite rolling. Where it adjoins Buffalo Bay, an arm of Lesser Slave Lake, it falls in terraces, about a hundred feet, to the beach near the shore. The Salt Prairie Settlement survey covers a large part of the prairie in this township, but outside of it there are sections 36, 35, 25, 26, 22, 23 and 24 and part of the township north of the settlement survey which have prairie spots and light timber and windfall easily cleared. The central portion of the subdivision rises towards the south and east to the rolling, heavily timbered land. There is a large spruce swamp on sections 18, 19 and 20, through which the fire ran this summer, uprooting and felling the timber in many places, and there are other smaller muskegs on sections 22, 23 and 26. The several branches of Salt Creek become one in section 27, and this stream flows with a current of about two miles per hour, has a depth of from four to six inches and a width of twenty feet. It runs through a valley seventy-five feet deep and from five to fifteen chains wide to section 21; then it leaves the valley and flows between its own banks, often overflowing them, until it reaches Buffalo Bay, near the south-west corner of section 18. There are three good wooden bridges over it, one in section 18, one in section 17,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

and another in section 21, all built by private means. The soil, which is black and sandy loam on clay with some sand and sandy loam, is generally good, and grass grows luxuriantly. There was only one squatter living in this township at the time of the survey, but improvements have been made on the north-east quarter of section 34, there being a house, a stable and five acres of breaking; also on the north-west quarter of section 17 there is a good log house besides a stable and some breaking. The meridian between sections 20 and 21 ran through the improvements made by the only squatter living on his claim. He had a house, a stable and several acres of breaking. Where crops are growing this season they look so well that I think it will not be long before there are numbers of settlers here; in fact before I left the district several had taken up their residence. Timber, except on sections 13, 14, 15, 16 and 17 and the south third of the township, is of very little value except for fuel, but some good spruce and poplar for building purposes may be had on these sections. Water in Salt Creek is good for general use, but I am told that where wells are sunk there is quite a strong mineral, and in some cases, saline taste. No rocks nor stones were seen except a few rolling stones in some sections. The wagon road from Lesser Slave Lake to Whitefish Lake runs partly in the settlement survey and partly in the township, and since the survey was made I have driven over a road lately cut with the aid of Government money north from the village through sections 5, 8, 16 and 21 and crossing Salt Creek at the bridge on section 21. This road, being on high land, is intended to be used when the freshets flood the one usually travelled around the shores of Buffalo Bay.—*Henry W. Selby, D.L.S., 1906.*

Tp. 77 (*South part.*)—This township is composed of high rolling country of varying character, but the portion subdivided is nearly all good for farming purposes. The north third is at present not suitable for farming, the west portion being largely a spruce muskeg and the easterly portion very rolling with some sand-hills covered with a growth of timber of little or no value. Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14 and 23 are composed of good prairie land, the south-east part containing bluffs of small timber, poplar and willow. Good water can be had on nearly all of these sections. They are suitable for mixed farming and stock-raising. Grass grows quite luxuriantly and it is quite frequently made into hay by those living nearby. The soil is four to twelve inches of black loam or clay. There are no settlers in this township but some breaking has been done and a fence built on section 2 and section 3. Both of these are sure to make good farms. The remainder of the township is covered with poplar bush and scattered spruce with willow brush along the creeks and sloughs. Two branches of Salt Creek pass through these lands, but there is very little saline taste to the water. The wagon road from Lesser Slave Lake to Whitefish Lake passes northerly through this township. It is my opinion that this township will be settled, it having the advantages of good soil, water, plenty of fuel, a good wagon road to enable settlers to reach the township, and close proximity to the village of Grouard where hay and grain can be disposed of, while the danger from summer frosts will be no more than in other parts of the country where farming is successfully carried on. Moose and caribou tracks were observed, but scarcely any other signs of game were seen.—*Henry W. Selby, D.L.S., 1906.*

The best route to this township is from Edmonton by train to Sawridge, thence by boat across Lesser Slave Lake to Grouard and thence by the wagon trail to Atikamik Lake which passes through the western half of the township. This trail is good except during the rainy seasons in June and July when pack-horses have to be used. The soil consists chiefly of from two to four inches of black loam over a clay subsoil with peat in the muskegs. The land with the exception of the muskegs is suitable for mixed farming. The surface is slightly rolling and covered with poplar, spruce and tamarack up to twelve inches in diameter with willow and alder underbrush. The large timber is not in sufficient quantities to be of commercial value, but can be used by settlers for building and fencing. There is no prairie in this township and no hay could be cut, but there is good feed for horses and cattle in sections 25 and 36. There is a permanent supply of fresh water in the small creeks which are from one to three feet wide with an average depth of two feet and a current of from one-half to one and one-half miles per hour. No land is liable to be flooded. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

Moose, bears, foxes, lynx, partridges and ducks were seen. There are no fish in the creeks or in the lake. The climate is similar to that of Edmonton and no summer frosts were experienced.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 78 The best route into this township from Edmonton is by train to Sawridge, thence by boat across Lesser Slave Lake to Grouard, thence by the Atikamik Lake wagon trail as far as section 36, township 77, range 14, and thence by a pack-trail which branches off at this point. The wagon trail is good except in the rainy season in June and July when pack-horses have to be used. The soil consists of from two to six inches of black loam with a clay subsoil, and is suitable for mixed farming. The surface is slightly rolling and is covered with spruce, poplar and jack pine up to fourteen inches in diameter with willow and alder underbrush. There is also some tamarack and birch in the swamps up to eight inches in diameter. The timber is of no commercial value but will be useful to settlers for fencing and building purposes. There is no prairie in this township but a little hay could be cut around most of the lakes where there is excellent feed for horses and cattle. A permanent supply of fresh water is found in the small creeks and lakes. No land is liable to flooding. There are no water-powers. The climate is similar to that of Edmonton and there were no summer frosts. Wood for fuel is plentiful everywhere. No stone-quarries nor minerals were noted. Moose, bears, foxes, lynx, partridges and ducks were seen. There are no fish in the lakes or creeks.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 79 The best route into this township is from Edmonton to Sawridge by train, thence by boat across Lesser Slave Lake to Grouard, thence by the Atikamik Lake wagon trail to section 36, township 77, range 14, and thence north by pack-trail. The trails are good except during the rainy season in June and July. The soil consists of from two to six inches of black loam with a clay subsoil and is quite suitable for mixed farming. The surface is slightly rolling and is covered with spruce, poplar, tamarack, and a few birch, with willow and alder underbrush. Some of the spruce reaches twenty-four inches in diameter, but there is not enough to be of commercial value. The poplar, tamarack and birch averages about ten inches in diameter. The timber will be useful to settlers for building purposes. There is no prairie in this township and practically no hay can be cut, but there is plenty of feed for horses and cattle along the creeks and around the lakes. There is a permanent supply of fresh water in the creeks and some of the lakes. None of the country is liable to be flooded. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere. Moose, bears, foxes, lynx, partridges and ducks were seen. There are no fish in the lakes or creeks. The climate is similar to that of Edmonton. No summer frosts were experienced.

Lakes.—The lake in the north-east quarter of section 3 has boggy shore and well-defined banks. It is surrounded by muskeg timbered with spruce and tamarack with some willow. The water is clear and open. The greater part of the lake in sections 13 and 24 lies in the township to the east. It has marshy shores and well-defined banks and is surrounded by spruce and poplar ridges. The lake in the south-easterly quarter of section 13 has marshy shores and indefinite banks. It is surrounded by a spruce and tamarack swamp. The water is slightly alkaline and contains considerable vegetable matter. The open water is surrounded by wet marsh about one and one-half chains wide. The greater portion of the lake in section 25 lies in the township to the east. It has gravelly shores and well-defined banks. The horizontal distance between high and low water is about forty feet. It is surrounded by heavy spruce and poplar ridges. The water is slightly alkaline and about twenty feet deep. There is no apparent inlet but a creek enters the marsh on the east side of the lake. The greater part of the lake in the northern part of section 33 lies in the township to the north. It has marshy shores and indefinite banks. The horizontal distance between high and low water is one chain. It is surrounded by marsh, varying from one to five chains in width, fringed with willow, back of which is poplar and spruce timber. The land slopes gently towards the lake. The water is clear, fresh and open. A creek fourteen feet wide and three feet deep flows out of the south-east part of this lake. The small lake in the northern part of section 33 has boggy shores and is surrounded by spruce and tamarack muskeg. The water is clear and open. The lake in section 28 has marshy shores and an indefinite

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

bank. The horizontal distance between high and low water varies from one to five chains. It is surrounded by marsh from one to five chains wide, back of which lies low, level land covered with poplar and willow except to the north where the marsh extends for thirty or forty chains. The water is clear and deep. A large creek flows into and out of the lake. The lake in section 35 has boggy shores and muskeg banks. It is surrounded by spruce muskeg, back of which lie low, poplar ridges. The water is clear and about eight feet deep. An island about seven chains long and ten and a half chains wide is situated in the centre of the lake. The greater portion of the lake in section 2 lies in the township to the south. It has boggy shores and well-defined banks, and is surrounded by spruce muskeg. The water is clear and deep.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a good road could be built along South Heart River with little trouble. The wagon road from Grouard is a fairly good one and no doubt, as it is a main highway through this country, will be improved each year. The soil is either clay or sandy loam from six to twelve inches deep with a subsoil of clay, or sand and gravel on the ridges. In the marshes there is a black humus six to eighteen inches deep with generally a clay subsoil. The true muskeg is composed of moss and other vegetable fibre from six inches to six feet or more in depth, but it is not very prevalent in this township. The soil is well adapted to mixed farming, all varieties of vegetables as well as oats, barley and hay growing in great profusion. The surface is gently rolling and is almost all timbered, the exceptions being marshes or open muskegs. The timber consists of poplar, spruce, balm of Gilead, balsam, alder, willow and some jack pine. It could scarcely be said to have much commercial value. The poplar runs from three to fourteen inches in diameter and the spruce up to twenty-four inches. Water is everywhere fresh and abundant, but there are no water-powers. Hay is plentiful on all streams and sloughs. The only fuel is wood and it can be found in almost every section. No stone-quarries nor minerals of economic value were noticed. Moose, caribou and bears were quite numerous, and water-fowl were abundant on the open marshes, sloughs and rivers. Willow and spruce-partridges and fool-hens were quite plentiful.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline.*)—See report on township 84, range 10.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—See report on township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 100 (*North outline.*)—See report on township 100, range 10.—*J. A. Fletcher, D.L.S., 1914.*

Tp. 103 See report on township 103, range 13.—*J. R. Akins, D.L.S., 1913.*

Tp. 104 (*North outline.*)—A large part of this township is open prairie, and is crossed by two fairly large streams. The soil is good, and in the open places bluejoint hay grows in abundance.—*J. R. Akins, D.L.S., 1913.*

This township is reached from Fort Vermilion Settlement by a fair wagon road. The surface is level and the soil a heavy clay loam with clay subsoil, very suitable for general farming purposes. The westerly two-thirds of the township is mostly prairie with small bluffs of poplar, and a small amount of prairie is also found in sections 35 and 36. The remainder of the township is covered with small poplar and spruce, mostly fire-killed, and good only for fire-wood. Large quantities of hay grow, and settlers from Fort Vermilion go there for their annual supply. Two creeks containing fresh water flow northerly across the township. The country along the east outline is low and wet, but it could be easily drained into the most easterly creek by a short canal. Fire-wood can be obtained anywhere, but no coal, stone-quarries nor minerals were found. Tracks of bears and moose were seen, and wolves and foxes are plentiful.—*P. M. H. LeBlanc, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

Tp. 105 (*Exploration survey.*)—In the northern part heavy spruce and poplar grow, but the eastern part is more lightly wooded. The surface is level and the soil is good.—*J. R. Akins, D.L.S., 1913.*

(*East Outline.*)—This outline runs for two miles through a low swampy country up to Bear Creek, and from there northerly the surface becomes drier, though level. The whole is covered with poplar and spruce up to twelve inches in diameter. The soil consists generally of black loam with clay subsoil.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 106 (*Exploration survey.*)—The surface of this township is lightly wooded, and there are many openings containing sloughs and hay meadows. The soil is good.—*J. R. Akins, D.L.S., 1913.*

(*East outline.*)—The surface along the east boundary of this township is level and covered with poplar and spruce up to twelve inches in diameter, which is partly fire-killed in the northern half. Areas of spruce timber are found in the southern half on both sides of the line, but not in sufficient quantity for commercial purposes. The soil is composed of black loam with sandy clay subsoil, suitable for farming.—*P. M. H. LeBlanc, D.L.S., 1915.*



Photo by J. S. Galletly, D.L.S.
Indian Camp at Ford on Boyer River

Tp. 108 (*Partial.*)—There is a good wagon trail running from North Vermilion through this township to Prairie Point in township 107, range 15. It follows the left bank of Peace River at a distance of about half a mile from the water. This river occupies part of sections 6, 5, 4, 3, 10, 11, 14, 13, 24 and 25. It varies from thirty chains to a mile in width and flows at the rate of from three to six miles per hour, depending on the height of the water; in places the depth reaches forty feet. There are several large islands in the river

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

here. Most of the land on the north side of the river is third-class, except the large flat occupied by a ranch in sections 10, 15, 14 and 23, and a few places in sections 6, 5 and 4, through which the trail runs. In these localities the land is generally first or second-class. The remaining sections are mostly occupied by hay swamps, especially sections 18, 17 and 16, and to the east by sand ridges and muskegs. No water-power could be developed. The climate is similar to that of the district and summer frosts are likely to occur. Wood for fuel is everywhere plentiful, but no coal of any kind was seen. Stone can be obtained in the bed of Peace River but was not seen elsewhere. No minerals of economic value were found. Foxes, timber wolves, weasels, rabbits, ptarmigans, grouse and prairie chickens were seen.—*J. S. Galletly, D.L.S., 1912.*

(*North third.*)—Two wagon roads from North Vermilion enter this township, one in section 25 along Peace River, and the other in section 33. The surface is rolling and broken by ridges of jack pine up to twelve inches with some sloughs and tamarack swamps. The soil is a light loam with sandy clay subsoil and is suitable for mixed farming. A few good homesteads are available on sections 30, 31 and 32. The timber is chiefly jack pine, poplar and spruce, partly fire-killed and good only for fire-wood and fencing. A small amount of hay can be found in the marshes, and water is furnished by Peace and South Boyer Rivers. This latter stream flows through section 31. It is seventy-five feet wide and flows at the rate of one and one-half miles per hour between banks fifty feet high. No minerals, stone-quarries nor game were noticed.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 109 (*Partial.*)—Both branches of the North Vermilion-Hay River wagon trail pass through this township, one being entirely south of Boyer River and the other crossing the south branch in section 12 and remaining between the two branches of the river until it leaves the township in section 18; both are good trails. There is some open country south of the north branch of Boyer River, but otherwise the surface of the country is covered with a growth of poplar up to twelve inches in diameter, and willow, while in the valleys of the branches of Boyer River some spruce timber from four to eighteen inches in diameter is to be found. The soil is usually about four inches of black loam overlying a light sandy clay loam. It is second-class, but should grow all the crops of the district. There is a slight tinge of alkali all over the township, but not enough to do serious harm. Good fresh water is obtainable in Boyer River and in a few creeks in the township. It is likely that it can be obtained everywhere in the township or even in the Fort Vermilion District at a reasonable depth, probably forty feet. Hay is scarce and there was practically none at the time of survey (June and July). No stone was found with the exception of boulders and loose stones in the bed of Boyer River. There are no minerals of economic value. No water-power could be developed. Wood is plentiful for fuel, but no coal was seen. The south branch of Boyer River is about one chain wide and varies from a few inches to several feet in depth. It flows at the rate of about two miles per hour. The north branch is somewhat larger and deeper. These branches meet and leave the township in section 12. Bears, moose, coyotes, wolves, foxes, minks, weasels, rabbits, ducks, prairie chickens and partridges are found here. The township is best suited for mixed farming.—*J. S. Galletly, D.L.S., 1912.*

Tps. 111 & 112 (*Base line.*)—These townships have been burned over and are grown up with spruce, willow and poplar. In many places good horse feed grows. The surface is drained by Boyer River; it is about seventy feet wide, three feet deep and has steep banks.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—The surface is open, as the fires have made clean work of the timber. The northern part is rough but the southern part is fairly level. The soil is of medium quality, and plenty of horse feed grows.—*J. R. Akins, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

Tp. 114 (*Exploration survey.*)—This township is poor and rough, and the soil is light. The surface is wooded with spruce, jack pine and birch, and is drained by Boyer River and its tributaries. This township lies at the edge of Caribou Mountains.—*J. R. Akins, D.L.S., 1914.*

RANGE 15

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 71 Two branches of a good pack-trail leading from Arcadia on the Edmonton, Dunvegan and British Columbia Railway, pass through this township. One runs south-westerly through sections 34, 27, 28, 21, 20 and 19, the other follows approximately along the east boundary of the township. A survey pack-trail crosses the township through sections 30, 31, 32, 33, 34, 27, 35, 26, 25 and 24. The surface is gently rolling with a general rise to the south-west corner of the township. A small irregular muskeg or alder swamp occupies parts of sections 20, 29 and 28. Fairly large muskegs, containing spruce tamarack and birch from four to eight inches in diameter, and a small amount of spruce and tamarack from ten to twelve inches in diameter, lie in the vicinity of sections 23 and 34. The greater part of these muskegs appear to be quite shallow and could easily be converted into good agricultural land by giving sufficient outlet to the river, from which they are separated by a narrow strip of higher land. East Prairie River flows north-westerly through sections 24, 25, 36 and 35. It has an average width of a hundred feet, a depth of one and one-half feet, with a current of about one mile per hour. It has banks from twelve to eighteen feet high, preventing danger from flooding. Along the river are some fine patches of prairie, especially in sections 24, 35 and 36, up to forty or fifty acres in extent, with a heavy growth of grass, nearly four feet high. Back from the river very few hay sloughs occur, but good feed is found along the creeks and scattered through the birch, alder and willow swamps. One creek flows through sections 1, 2 and 12, and another through sections 17, 20, 21, 28, 27, 34 and 35. Most of the other numerous small creeks were dry or nearly so at the time of survey (September). On about every section poplar from six to fourteen inches in diameter is plentiful, and in most sections poplar up to twenty inches, with a small amount of spruce of similar size can be found to supply timber for local demand. Birch, willow and alder grow on the lower land throughout the township. From four to six inches of black loam overlies a clay subsoil, and with a climate similar to that of the Edmonton district it is suited for general agricultural purposes. Plenty of small pieces of float coal of good quality is seen along East Prairie River, but no seams were observed. There are no signs of mineral deposits or rock in place. Bear, moose, lynx, foxes and other small fur-bearing animals are fairly plentiful. Fresh signs of beaver were also noticed. There are no water-powers. A small lake with probably a maximum depth of ten feet lies in the south-east quarter of section 32. It is surrounded by a soft marsh a half to one chain in width and has a marshy bed. The level of the water does not appear to vary but slightly. It is situated in a tongue of muskeg between poplar ridges on the east and west. The water is fresh but dark in color, due to the muskeg.

In sections 25 and 26 lies a portion of an old river bed, now cut off from the present channel. It is surrounded by a hay marsh from one half to a chain in width, has a soft muddy bottom and contains clear fresh water up to four feet in depth. Within about five chains on either side, the land rises seven or eight feet above the level of the water. The horizontal distance between high and low water mark will not vary more than about a chain.—*D. F. McEwen, D.L.S., 1915.*

Tp. 72 (*North outline.*)—East Prairie River, a tributary of South Heart River, which empties into the west extremity of Lesser Slave Lake, flows northerly through section 32 of the township. This stream is about fifty-five yards wide, with banks twelve feet high, a stone or gravel bottom and an average current of three miles an hour. The hills on each side of the river are thirty-five feet high. This river is reported to join South Heart River at about six miles above its estuary. Along each bank of the river, there is a strip of poplar

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

trees six inches in diameter, with a heavy undergrowth of alder and willow. Except the east half of section 35, which has a rolling surface, covered with poplar and spruce averaging eight inches in diameter, the country adjoining the line is a continuous spruce and tamarack muskeg. The soil on the east side of the river is a fine grayish silt, four inches deep, overlying a sand and stone subsoil, whilst on the opposite side of the river it is black loam eight inches deep with a sandy subsoil. There are some hay meadows north of the line in sections 5 and 6, township 73. A pack-trail from Sucker Creek Indian reserve runs near the north-east corner of section 35.—*Arthur Saint Cyr, D.L.S., 1904.*

This township has a good pack-trail, on each side of East Prairie River, leading from Arcadia on the Edmonton, Dunvegan and British Columbia Railway, and considerably used by hunters. The western one runs through sections 32, 29, 20, 19 and 18, and thence south-westerly. The other and better trail passes through sections 35, 36, 25 and 24, where it branches. One branch passes south through sections 13 and 12, the other through sections 14, 11, 10 and 3. The two main trails are connected by a survey trail through sections 29, 28, 27, 26, 23 and 24, but it is not very good in section 27, where it crosses a muskeg. East Prairie River enters the township at the south-west corner of section 1 and flows in a north-westerly direction through sections 2, 3, 10, 15, 16, 21, 22, 28, 29, 32 and 33. It has an average width of about one hundred feet, a depth of one and a half feet, and a current of about one mile per hour. It has cut a channel from ten to twenty feet in depth with almost vertical banks, and as there is no low lying land which it can flood, the water rises rapidly in the river after heavy rains to as much as eight feet above the normal level. The water is fresh and clear, except when in flood, when it becomes turbid. There is a small lake on the north boundary of section 25 and another in section 36, which are drained by a small creek through sections 36, 35, 26 and 27 and empties into a portion of the old river channel in the latter section. Parts of earlier river channels, now cut off from the present river, and containing fresh water up to six or seven feet in depth, occur—one at the south-east corner of section 3, two in the south-east quarter of section 15, one at the south-west corner of section 27, and one in the west half of section 32. Several other portions of old river channels, which have been more completely filled up or drained, exist in the township in the form of hay marshes and sloughs, on which a small amount of hay could be cut. Fine bench land more or less lightly timbered with white poplar, scattered willow, balm of Gilead and spruce, and containing many small prairie openings, extend from one-half to three-quarters of a mile on each side of the river. A prairie of sixty to seventy-five acres in extent is located on the east boundary of section 3. Another lies on the east boundary of section 16, and others at the north-east corner of section 29, and the east boundary of section 32. Adjoining this bench land, on each side, is a strip of muskeg or alder swamp varying from a quarter to one and a half miles in width. These muskegs are principally covered by spruce and tamarack from four to eight inches in diameter. They appear to be shallow, and could be comparatively easily drained. Another spruce muskeg occupies the larger part of section 36 and a portion of the east of section 25. The remainder of the township is generally level or gently rolling with a regular fall to the river, and is covered with white poplar, balm of Gilead and scattered clumps of spruce from six to eighteen inches in diameter together with some birch from five to ten inches in diameter, alder, willow and thick cranberry underbrush. In sections 6, 11 and 12 there is a small amount of jack pine up to twelve inches. Patches of big balm of Gilead from two to three and one-half feet in diameter are seen at intervals, growing on the rich alluvial benches along the river. The soil has from two to eighteen inches of black loam over a clay or sandy subsoil, and is well suited for mixed farming, stock-raising or dairying. There was little sign of frost until September. Drift coal of good quality is found all along the river, but no seams of coal, or signs of mineral or rock in place were observed. There are no water-powers. Bears and moose are fairly numerous, though the township has in the past been a frequent resort for hunters. Foxes, lynx and mink are fairly plentiful.

(Lakes.)—The lake on the north boundary of section 25 contains fresh clear water, from about fourteen inches deep at the edge to probably ten feet deep in the centre. It is free from vegetation except around the marshy shore. It has a muddy basin and forms the end and outlet

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

of a tongue of the muskeg situated in section 36. Both on the south and north side there is a strip of swamp six or seven chains wide. The land then rises to a height of six or eight feet, and is covered with poplar. A small meadow producing good hay adjoins it on the west. A small creek enters at the north-east end, which comes from the lake lying about twelve chains to the north, in section 36. The source of supply of this latter lake is the muskeg which borders on it to the east and north. A narrow band of swamp two or three chains wide extends around on the south and west, separating it from the adjoining poplar land. A small pond three or four acres in extent, lies about four chains to the west. The bottom of the pond is boggy. It is shallow, with a depth of a foot of water at the edge to probably four or five feet in the central portion. The water is fresh and slightly colored by vegetable matter. The surface is partially covered throughout by water lilies.—*D. F. McEwen, D.L.S., 1915.*

Tp. 73 Large muskegs are seen in various parts, but these should not be a permanent detriment; the township being high, they can be easily drained. The soil is from three to ten inches of black loam on hard clay subsoil, and produces rich vegetation. The timber generally is not of much value, most of the spruce and poplar being bad at the heart and easily broken off by the wind. Several small creeks or water-courses were crossed and the water was good, especially in one flowing easterly through section 25. The west branch of this creek rises in the westerly part of the township and, although only a small stream three links wide and three inches deep, it appeared to be flowing quite steadily when it was crossed, while many others were quite dry.—*Henry W. Selby, D.L.S., 1907.*

The only means of access afforded to this township at present is a rough surveyor's trail entering the township in section 24 and ending in section 16. This is a winter trail and would be very wet during the summer. The soil consists generally of black loam from two to six inches in depth overlying a clay subsoil, and is well suited for general agricultural purposes. The surface is almost entirely wooded. There are a few patches of prairie adjoining the East Prairie River in sections 5, 6, 7 and 8. The timber averages from five to seven inches in diameter and consists of poplar, spruce, birch, gray willow, alder, tamarack and jack pine; the latter is found only along the southern boundary of the township in sections 4 and 5. Poplar forms about fifty per cent. of the entire growth and is well distributed throughout the township. There is a scattering of spruce running up to fifteen inches in diameter. Some good spruce in commercial quantities is found in sections 2 and 3, and also along the banks of the East Prairie River in sections 5, 6, 7 and 8. The supply of hay is limited to the open land adjoining the river in sections 5, 6, 7 and 8. The quality would probably be good as it is of upland growth. There are from two hundred to six hundred acres available. Water can readily be obtained in all parts from shallow wells. There are some extensive muskegs, especially in the south-west quarter of the township. However, these could be easily drained. The East Prairie River has an average width of two chains, a depth of from three to six feet, and a rate of flow of from two to three miles per hour. The water is fresh. Water-power could not be easily developed. Summer frosts are liable to occur but would probably disappear with the clearing, draining and cultivation of the land. The climate does not differ from that of the surrounding country. Fuel in the form of wood is plentiful. No coal nor lignite veins were found. No stone-quarries nor minerals of economic value are known to exist. Signs of moose were frequent, and partridges are abundant.—*E. A. Neville, D.L.S., 1913.*

Tp. 74 This township is very well supplied with wagon roads, one passing through the north-westerly sections 18, 19, 30 and 32 from the Prairie River Settlement to Grouard, and the other from the same settlement through sections 18, 17, 16, 15, 14 and 13, to the lake at the mouth of Sucker Creek. These roads, except at the time of wet weather, are very good for present traffic. The soil is black loam from eight to eighteen inches deep on clay subsoil. The surface is undulating with a very gentle descent towards the north-east. A large spruce swamp occupies the greater part of sections 25 and 26 and extends into the Indian reserve. The timber in this swamp is generally small but around the outer edge a few spruce trees from twelve to sixteen inches in diameter are found. The poplar on the south tier of sections is from four to fourteen inches in diameter, and with a few spruce and willow bunches fairly

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

covers the remainder of the township. The poplar is in belts and bluffs with prairie openings and willow bunches. The greater part of sections 13, 14, 15, 16, 19, 20, 29, 30, 31 and 32 are prairie with poplar bluffs and bunches of willow along the water-courses. Some of these sections have been occupied for several years and the growth of grain, potatoes and hay is amazing. Several well-defined water-courses are noticeable within the township, but only three appear to be permanent creeks. These are Travers Creek, Bridge Creek and the west branch of Sucker Creek. The water in every one of these is good though slightly alkaline; this, of course, is more noticeable later in the season. There is a slough which lies across sections 29, 28 and 27, and in which the water is from four to eight feet deep and over a chain wide. It has the appearance of once having been a river channel which had been dammed by beaver in places, and gradually filled up so that there is no inlet or outlet except at flood time. The dry channel is seen through the willow both east and west of the part which crosses sections 27, 28 and 29. Hay grows in abundance on all the prairie sections mentioned and besides hay meadows are found on sections 21, 22, 27, 28, 34 and 35, upon which grass grows luxuriantly; the ground, however, is so rough and wet generally that a good deal of work would be required before machinery could be used. No water-power could be developed on either of the small streams flowing through this township. Summer frosts occur nearly every month, but they do not injure the grain where the seed has been grown in the district. The fuel of this part of the country is poplar and willow. No coal seams have been found, neither are stone-quarries nor minerals known to exist there. With the exception of the prairie wolf game is very scarce. This township is best adapted to mixed farming, the growing of coarse grain and stock-raising being best suited to the conditions existing. It is very possible that minerals will be found in the adjacent hills to the south, as well as in the foot-hills of the Rocky Mountains where large deposits of coal and other minerals have already been found. Settlement cannot advance very fast without better means of transportation to the markets for the produce which can be grown in this beautiful country.—*Henry W. Selby, D.L.S., 1907.*

Tp. 75

(*East outline.*)—This line was run on the ice because its course lay over so much water that it could not be done in the warm weather. Its north end is in Buffalo

Bay, and in running south it keeps a short distance west of the main outlet for nearly three miles, when the mainland is again reached and a connection made with the survey of Sucker Creek Indian reserve, No. 150A. The land along this line is not suitable for farming, but the township west is composed mainly of farming and meadow land. Thousands of tons of hay have been cut on these meadows, and hundreds of horses range here every season.—*Henry W. Selby, D.L.S., 1906.*

This township, according to the Indian legends, was once under the water of Lesser Slave Lake, but through the process of time it has been built up by the deposits or sediment brought there by the rivers and creeks, all of which flow from the west and south-west, draining the higher lands. The north-easterly ten sections are partly flooded at the time of high water, but not for very long, since upon these sections large quantities of hay are annually put up for the use of the settlement. Sections 29, 30, 31 and 32 are at present too rough and hummocky and have too much willow and dead timber lying upon them to be of much use, although through it all there is a fine growth of hay which cannot be cut. The rest of the township is high enough to make good farms for mixed farming, having a depth of from fourteen to eighteen inches of black loam on a sandy clay subsoil. Many prairie spots are found through this portion and the bush is mainly willow with bluffs of poplar and occasionally a few spruce, but there is little timber of any commercial value, and what little there is will not be sufficient for the needs of the settler. A road called Prairie River Road enters the township in section 4, and running north-easterly, leaves it in section 24. There are other wagon roads used by haymakers and others and in fact there is very little difficulty in opening roads in this township anywhere on account of the many openings in the willow brush. Two small creeks run through the township in a north-easterly direction to the west arm of Lesser Slave lake and are slightly alkaline. The actual water running is probably not more than three feet wide and three inches deep, but there are many places where the water lying in the bed of the coulées in which these creeks run is three or four feet deep and from sixty to one hundred links in width. The banks of these coulées rise to about fifteen feet

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

above the water at the south boundary of the township. Two squatters were found on sections 7 and 18 at the time of survey and since then three others have begun breaking and building on sections 6 and 8. These squatters had 105 acres in crop this year, and have large numbers of horses and cattle besides the necessary buildings. The surface being so nearly level no outcrops of coal or stone were found, and except ducks and geese no game was seen.—*Henry W. Selby, D.L.S., 1907.*

Tp. 76 (*North outline.*)—The line across this range is over a gently undulating country on the height of land overlooking the west end of Lesser Slave Lake which lies to the south, and it runs through thick poplar and alder brush and occasional bunches of spruce. No water is seen in the small water-courses which are dry in summer. Near the east boundary of section 31 the wagon road connecting Grouard and Peace River Crossing is crossed. The soil is black loam on sandy clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

This land may be conveniently divided, for the purpose of description, into the north and south halves. The north half, from a height of probably two hundred and fifty feet near the twentieth base line slopes towards the south and south-east, where the south half slightly higher than the waters of Buffalo Bay, is met. Parts of sections 7, 18 and 13, being on the high land, should not be included with the south half, but as they lie mostly within the settlement survey, they need not be affected by this division. All the sections north of the settlement survey, although heavily wooded with poplar up to twelve inches in diameter, will make beautiful farms when cleared, and as settlement takes place and this wood is cut fires will make prairie land of it. Water is found only in the creeks running in coulees forty to fifty feet deep on sections 32, 33, 34 and 27, and it has a very strong alkaline or mineral taste, being evidently fed by springs or underground currents. Springs were noticed on sections 18 and 19 in the settlement, the water of which does not taste so much of the mineral as in the creeks. Where wells have been sunk this taste is quite strong for a while, but the water improves on being used regularly. Wash creek, coming from section 32 and entering the marsh alongside of Heart River in section 22, has a rapid current. It does not average two inches in depth and two feet in width, and apparently is fed by springs. This creek flows in a coulée, fifty feet deep, to the centre of the Indian reserve. Where the banks of the coulée end it has cut a channel, and at high water several channels are running. I saw it in June near my camp on section 28 four feet deep and twelve to fifteen feet wide. This was the result of only two days' rain, and it remained like that for three days before gradually subsiding. One can imagine what would be the effect upon South Heart River, which is only a little over a chain wide and seldom over two feet deep, it has a current of about two miles per hour and winds its way across the south half of this township. Several channels have been made through this low land, the soil of which shows that it has been deposited by the ever recurring freshets, and has gradually risen until now the greater part of the low land remains dry at all times; but thousands of acres are still flooded by the sudden pouring of this volume of water into Buffalo Bay. These old or partly-used channels are in places like rivers without any current, with bars in them where, at low water, one can cross dry-shod, and where at time of freshet, with the current setting up-stream a canoe will be carried as fast as it will ordinarily down-stream in the main channels. There are now at low water four mouths to South Heart River, and they are annually emptying such a quantity of silt or deposit into Buffalo Bay that it remains only a question of time until this bay will become only the channel of South Heart River. In paddling a canoe over the bay at low water the bottom can be touched at from two to three feet, and for a quarter of a mile from shore the water is not over from six inches to a foot in depth. This low land at the mouth of South Heart River is very rich, and grows great crops of hay besides pasturing hundreds of horses and cattle. There are dry elevations or low ridges, and the banks of the old channels and other water-courses are thickly grown up with willow, and towards the west side of the township several bluffs of poplar from two inches to ten inches in diameter are found, with some scattered spruce as large as fourteen inches in diameter. Peace River Road leaves the road through the settlement at the east end of the Indian reserve (150D), and about a quarter of a mile westerly from this point the wagon road for Winagami Lake and Prairie River Settlement branches south-westerly from Peace River Road. Several of the lots have occupants, but there

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

are none outside of the settlement survey at present. Many fields of oats, wheat and barley are seen which look very well, though farming seems to be carried on in a half-hearted way for the lack of a better market. No rock nor quarries were discovered, and although water-power might be developed on South Heart River by building a dam, the opinion is given that it would be too great a risk to put one there on account of the sudden rise at times of the water. This township is essentially best suited for mixed farming and stock-raising. No game of any kind was seen, except a few partridges and rabbits, and one jumping deer south of South Heart River in the hay lands.—*Henry W. Selby, D.L.S., 1906*

Tp. 77 (*Partial.*)—The south one-third of this township is composed of gently rolling land at an elevation of about two hundred and fifty feet above Lesser Slave Lake. It is conveniently situated for farming purposes, the Peace River Road cutting across the south-west corner of sections 5 and 6. The richness of the soil is shown by the luxuriant growth of grass, peavine and vetch which grow in the open lands. The ridges are lightly covered with poplar and a few scattered spruce, and between the ridges bunches of willow, and a few willow sloughs. Most of these sections, when cleared, ought to make beautiful farms. Sections 5, 6 and 7 have had fires on them which has left parts of them almost cleared. A large muskeg which occupies the northerly part of the township lies to the north of these sections and from it several fine streams of water of good quality take their origin. No stone, rock or coal was found and no hay lands, as the timber grows quite evenly over these sections. There are a few spruce around section 10 which would make building timber or sawlogs. No game of any kind was seen.—*Henry W. Selby, D.L.S., 1907.*

(*North two-thirds.*)—The best route into this township is by the Edmonton, Dunvegan and British Columbia Railway from Edmonton to Sawridge, thence by boat across Lesser Slave Lake to Grouard and thence by the Peace River wagon road which passes through the south-west corner of this township. The road is good except during the rainy season in June and July when pack-horses have to be used. The soil consists of from two to six inches of black loam with a clay subsoil and is suitable for mixed farming. The surface is slightly rolling and is covered with poplar and spruce up to twelve inches in diameter and some birch and tamarack in the swamps up to eight inches in diameter with willow and alder underbrush. The timber is of no commercial value but can be used by settlers for building and fencing. There is no prairie in this township and no hay can be cut, although there is good feed for horses along the creeks and in the poplar timber. There is a permanent supply of fresh water in the numerous small creeks which are from two to four feet wide and have an average depth of two feet and a current of from one-half to two miles per hour. No land is liable to be flooded. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere. Moose, bears, foxes, lynx and partridges were seen. The climate is the same as that of Edmonton and no summer frosts were experienced.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 78 The best route into this township is the Edmonton, Dunvegan and British Columbia Railway from Edmonton as far as Sawridge, thence by boat to Grouard, thence by the Peace River wagon road to township 77, range 15, and thence by a wagon road running north which was cut this spring. The wagon roads are good except in the rainy season, when pack-horses have to be used. The soil consists of a few inches of black loam with a clay subsoil and is suitable for mixed farming. The surface is slightly rolling and is covered with poplar and spruce up to twelve inches in diameter and some birch up to six inches in diameter with alder and willow underbrush in the swamps. The timber is of no commercial value but can be used by settlers for building and fencing. There is very little prairie with the exception of a few small patches along the creek which flows from section 13 to section 31 where there is good feed for horses and cattle. Very little of this hay could be cut as the surface is too brushy and rolling. There is a permanent supply of fresh water in the numerous small creeks, which vary up to seven feet in width and average about two feet in depth, the current being from half a mile

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

to two miles per hour. No land is liable to be flooded. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere. The climate is similar to that of Edmonton, and no summer frosts were noticed. Moose, bears, foxes, lynx and partridges were seen.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 79 The best route into this township is by train from Edmonton to Sawridge, thence by boat across Lesser Slave Lake to Grouard, thence by the Peace River wagon road as far as section 32, township 76, range 15. From here a wagon road was cut in a northerly direction through townships 77 and 78. The roads are good except in June and July when pack-horses have to be used. The soil consists of from two to six inches of black loam with a clay and sandy clay subsoil, with peat in the muskegs, and is quite suitable for mixed farming. The surface is slightly rolling and is covered with spruce, poplar, jack pine, tamarack and birch with willow and alder underbrush. The spruce and poplar will reach twenty-four inches in diameter, but are too scattered, while the jack pine, tamarack and birch averages about ten inches in diameter. None of the timber is of any commercial value. It will, however, be useful to settlers for building and fencing. There is no prairie in this township but good feed is found along South Heart River and the numerous small creeks. The river floods its banks in the rainy season, usually in July, but soon goes down again. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere. The climate is similar to that of Edmonton, and there were no summer frosts. Moose, bears, foxes, lynx and partridges were seen. There are jackfish and goldeye in South Heart River.

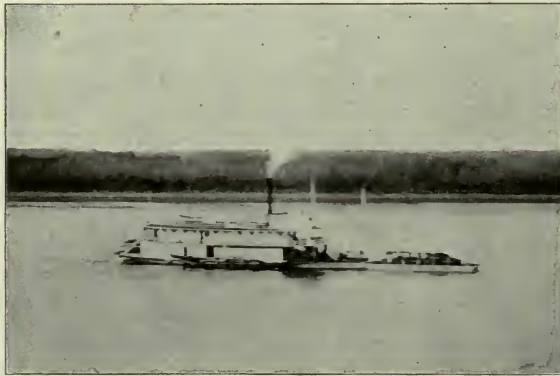


Photo by J. S. Galletly, D.L.S.
Steamer "Peace River" Pushing Scow Upstream

Lakes.—The lake in the south-east quarter of section 25 has a marshy shore and definite banks. The horizontal distance between high and low water is about twelve feet. It is surrounded by spruce and tamarack swamp, with willow at the water's edge. The water is stagnant and slightly saline. The lake is about ten feet deep and has a sluggish outlet at the north-east corner. The lake in the west half of the same section has swampy shores and indefinite banks. The horizontal distance between high and low water varies from one to two chains. It is surrounded by poplar ridges with gentle slopes. The water is clear and from eight to ten feet deep. The lakes in sections 23 and 26 are joined by a short creek. They have swampy shores and definite banks, and are also surrounded by poplar ridges with gentle slopes. The water is good and clear and about thirty feet deep. The lake in the north-west quarter of section 11 has marshy shores and definite banks and is surrounded by spruce and tamarack swamps. It is stagnant and contains considerable vegetable matter. The lake in the east half of section 15 extends into section 14. It has marshy shores and definite banks and is surrounded by poplar ridges. The

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

horizontal distance between high and low water varies from twenty to thirty feet. The water is stagnant but clear and about six feet deep. The lake in the south-east quarter of section 15 has swampy shores and muskeg banks. It is surrounded by spruce and tamarack muskeg. The water is fairly good and about fifteen feet deep. The lake in section 12 has boggy shores and low muskeg banks, and is surrounded by spruce and tamarack muskeg. The water is stagnant. The lake in the west half of section 11 extends into section 10. It has marshy shores and definite banks. The horizontal distance between high and low water is from fifteen to twenty feet. It is surrounded by gently rolling country covered with poplar. The water is good and clear and about ten feet deep. The lake in the west half of section 10 has swampy shores and definite banks, and is surrounded by poplar ridges. The water is good and clear. The lake in the north-west quarter of section 11 has firm shores, shelving to the water's edge, and definite banks. The horizontal distance between high and low water is about thirty feet. It is surrounded by poplar ridges. The water is clear but stagnant. The lake in section 3 which has both an inlet and outlet has marshy shores and low, marshy banks and is surrounded by spruce woods. The water is fairly clear with some vegetable matter in suspension. The lake in sections 1 and 2 has marshy shores and definite banks. The horizontal distance between high and low water varies from one to five chains. It is surrounded by marsh from one to fifteen chains in width with poplar ridges to the north and spruce muskeg to the south. The water is good but shallow and contains some vegetable matter and a few reeds. The lake has both an inlet and outlet.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a road could be built with little difficulty along South Heart River. The wagon road from Grouard is a fairly good one, and, as it is the main highway through this country, no doubt it will be improved each year. The soil is either clay or sandy loam from six to twelve inches in depth, with a subsoil of clay or sand and gravel on the ridges. In the marshes and swamps it is a black humus six to eighteen inches deep generally on a clay subsoil. The true muskeg is composed of moss and other vegetable fibre from six inches to six feet or more in depth, but it is not very prevalent here. The soil is well adapted to mixed farming, and all varieties of vegetables as well as oats, barley and hay grow abundantly. The surface is gently rolling and is almost all timbered with the exception of the marshes and open muskegs. The timber is chiefly poplar, spruce, balm of Gilead, balsam, alder, willow and jack pine. It can scarcely be said to have much commercial value. Poplar runs from three to fourteen inches and spruce up to twenty-four inches in diameter throughout the township. Hay is found on all streams and sloughs. This district lies between North and South Heart Rivers and water is everywhere fresh and plentiful, but there are no water-powers. Wood for fuel is found in almost every section, but no stone-quarries nor minerals of economic value were noticed. Moose, caribou and bears were quite numerous and water-fowl were plentiful on open marshes, sloughs and rivers, as were also spruce-partridges and fool-hens.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline, ranges 15 to 18 inclusive.*)—The country along the base line in these four ranges presents little change in its physical aspect. The surface is gently rolling and covered with poplar, spruce, balm of Gilead, alder and willow. Numerous muskegs are crossed by the base line, more particularly in ranges 17 and 18, but they have well-defined drainage to the north. Cadotte Lake lies in the centre of township 86, range 16, and numerous hay meadows and marshes lie along the streams flowing into it. Some of the timber measures as high as twenty-four inches in diameter, but generally it is small. South of the base line the muskegs are more numerous, and in township 83, range 17, there is much burnt country and windfall. North of the base line in the vicinity of the correction line there is heavy windfall similar to that along the thirteenth and fifteenth base lines. No coal nor minerals of economic value were found in this locality. The country is accessible only by pack-trail by way of Whitefish trading post or Peace River Crossing.—*A. H. Hawkins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—Continued.

Tp. 88 (North outline.)—See report on township 88, range 10.—A. H. Hawkins, D.L.S., 1912.

Tp. 103 (See report on township 103, range 13.)—J. R. Akins, D.L.S., 1913.

Tp. 104 (North outline.)—The east half of the township is nearly all open prairie, with an abundance of peavine and hay. The horses were wintered at this place during the winter of 1913-14, hay having been secured from the small prairie openings the previous fall. The surface is nearly level and the soil is good. The western part is wooded with poplar, spruce and birch.—J. R. Akins, D.L.S., 1913.

Tp. 105 (Exploration survey.)—The southern part of the township is heavily wooded with spruce and poplar up to twelve inches in diameter, but the northern part is open. Mustus Lake, where the Indians from Fort Vermilion put up hay, lies about the centre of the northern part. A good wagon road connects it with Fort Vermilion, and another wagon road runs from the lake to the prairie in the township to the south.—J. R. Akins, D.L.S., 1913.

(East outline.)—This outline runs through a level country covered with poplar and spruce, but in the northern half the timber is partly fire-killed. The soil consists of clay loam with clay or sandy clay subsoil, suitable for farming purposes. In the interior of this township are found numerous hay marshes and meadows, where quantities of hay can be cut.—P. M. H. LeBlanc, D.L.S., 1915.

Tp. 106 (Exploration survey.)—The surface of this township is gently rolling and lightly wooded with willow, spruce and poplar. The soil is second class in quality and appears suitable for growing grain.—J. R. Akins, D.L.S., 1913.

The western row of sections is mostly rolling and broken with ridges of jack pine, spruce and poplar up to eighteen inches, alternating with tamarack swamps which will dry up when the country is opened. The remainder of the township is level to within half a mile of Peace River, where it becomes hilly and broken by ravines and gullies. The soil is mostly black loam with sandy clay subsoil, and is suitable for farming purposes. The north-east and south-central sections are partially open, and ready for immediate settlement. The remainder of the township is well wooded with poplar and spruce, which along the river bank measures up to twenty inches in diameter. Hay grows on the marshes in sections 3 and 36. A good wagon road from Fort Vermilion enters the township in section 35, leaving on section 3, and continuing on to Mustus Lake. It branches south-westerly to "la Crete," a portage station on Peace River for Fort Vermilion traffic. Peace River flows through sections 31, 32 and 33. The banks are about twenty feet high and its width is about sixty chains. The depth of the river varies from one to thirty feet, and the current is about two miles per hour. The banks of the valley do not exceed one hundred and sixty feet in height. Besides Peace River, several lakes, scattered through the township, furnish a good supply of water. No water-power, stone-quarries nor minerals were noticed, and no game was seen.—P. M. H. LeBlanc, D.L.S., 1914.

Tp. 107 The south-east quarter of this township is reached from Fort Vermilion Settlement by a good wagon road crossing section 1. The surface is level till within half a mile of Peace River where it becomes rolling and broken. It is about fifty per cent. prairie, the remainder being covered with small poplar, willow and scattered spruce. The soil varies from sandy loam to clay loam, with clay subsoil, and is suitable for farming purposes. Sections 6 and 7 are more easily reached from North Vermilion by a fairly good wagon road leading to Prairie Point on section 5, where a private ferry crosses Peace River to secure the hay growing on sections 6 and 7. These two sections are on a river flat covered with hay and clumps of willow. The soil is first-class heavy clay loam with clay subsoil, and is good for general farming purposes. Peace River flows through sections 7, 6, 3, 10 and 11, between banks ninety feet high; it averages about sixty chains wide, three to thirty feet deep and has a current of two miles per

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

hour. At low water many sandbars are seen, but they are continually shifting their positions. Some poplar and spruce are found in the south third of the township, but they are not large enough for milling purposes. No stone-quarries, minerals nor water-powers were found. Small game and fish are scarce, but wolves, coyotes and foxes are plentiful, while tracks of bears and moose were seen.—*P. M. H. LeBlanc, D.L.S., 1914.*

The wagon trail from North Vermilion to Prairie Point, which is located in the vicinity of sections 4, 5 and 6, passes through the township in a south-westerly direction. This is a good wagon trail. The soil is nearly all third-class, except in a few places along the trail and at Prairie Point where it is either first or second-class. Generally speaking, the country is covered with scrub poplar, spruce up to fifteen inches in diameter, and willow. In the northern part of the township there are numerous swamps and sand ridges, the latter being covered usually with jack pine up to eighteen inches in diameter and sometimes with small poplar. Hay could be cut only in sections 18, 19, 4, 5 and 6. The yield would not be large and it is at present cut by a rancher who has also a part of the open country at Prairie Point under cultivation. Peace River enters the township in section 19 and flows southerly for about four miles, thence easterly along the correction line to section 3, and then turning northwards it leaves the township in section 36. It averages about three-quarters of a mile in width and has many sandbars. The current varies from three to five miles per hour, and the depth in the deepest places is about thirty-five feet. The water is fresh but muddy in the spring. Water may be found anywhere in the northern part of the township in the swamps. Summer frosts are liable to occur. No water-power could be developed. No minerals of economic value were found. Wood for fuel is plentiful everywhere, but no coal was seen. Stone for building purposes can be gathered in the bed of Peace River. Timber wolves, coyotes, foxes, weasels, rabbits, prairie chickens, grouse, ducks and ptarmigan are found. A large part of the township is unsuitable at present for settlement, being sandy or swampy, but a few good homesteads may be found adjoining the wagon trail.—*J. S. Galletly, D.L.S., 1912.*

Tp. 108 The north third of this township is reached by a wagon trail from North Vermilion, and, as it contains quite a few open spots, would doubtless appeal to those in search of homesteads. The bush in this part of the township is mostly a light scrubby poplar which could be easily cleared. The soil here is second class, being about four inches of black loam overlying a sandy loam subsoil. The south two-thirds of the township is a succession of jack pine ridges and swamps and is practically useless for agriculture.—*J. S. Galletly, D.L.S., 1912.*

This township may be reached from North Vermilion Settlement by a very good wagon road across the north tier of sections. The surface of the northern part is level and covered with poplar up to ten inches, with a few scattered prairie areas, while the southern part is undulating and generally timbered with willow, poplar, spruce and jack pine up to fourteen inches. A number of hay sloughs, and ridges up to seventy feet high, are also found in the southern part. The soil varies from sandy to clay loam with clay subsoil, and is well suited for farming. Water can be obtained from a small lake in section 13 and from the south branch of Boyer River which flows across the north-east corner of the township. It is three feet deep and flows with a slow current between banks fifty feet high. No summer frosts were noticed and, judging from the crops growing in the vicinity, the climate is favourable for raising all kinds of vegetables and cereals. Fire-wood is everywhere plentiful, but no coal, stone-quarries or minerals were found.—*P. M. H. LeBlanc, D.L.S., 1914.*

Tp. 109 Two good wagon trails enter this township from North Vermilion. The north trail passes through sections 24, 23, 22, 21, 20 and 19 and leaves in section 30. The southerly road runs south of the base line for about three and a half miles, entering in section 4 and passing through sections 5 and 6. The south branch of Boyer River flows through this township in an easterly direction about one mile north of the base line. North of the river there are quite a large number of open stretches and it would be possible to enter almost any section here with wagons. South of the river there is more bush and the underbrush

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

is usually more dense. The soil is for the most part about four inches of black loam overlying a sandy clay subsoil; near the river, however, there is black loam to a depth of eighteen inches or more. It should grow all the crops of the district. South of Boyer River there is generally a heavy growth of poplar from four to eight inches with a few spruce from four to twelve inches in diameter; spruce occurs usually along the river valley. To the north the country is more open though there are occasional bluffs of poplar from four to ten inches in diameter. The water of Boyer River is fresh but beyond this source surface water was scarce. No water-powers are available. Summer frosts are likely to occur. Wood for fuel can be obtained in every section but no coal was found. Stone occurs in the bed of Boyer River but no stone-in-place was noted. No minerals of economic value were located. Game was scarce, only ducks, geese, grouse, prairie chickens and rabbits being seen. Hay could be cut in sections 16 and 15 and the vicinity. In the south-east of section 21, the south-west of section 22, the south-east of section 19 and the south-west of section 20, the quality is good but the quantity is small. The township is best suited for mixed farming and there are several large tracts ready for immediate settlement.—*J. S. Galletty, D.L.S., 1912.*

Tps. 111 & 112 (*Base line.*)—These townships have been burned over and are now growing up with second-growth spruce, willow and poplar. Good horse feed grows in abundance. The surface is drained by Boyer River, a stream about seventy feet wide and three feet deep, with very steep and high banks.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—This township is open, having been thoroughly burned over. The surface is rolling and grass grows abundantly, although a large amount of the black soil has been burned over.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—The whole surface has been burned over. The northern part is rough, but the southern part is fairly level. The soil is fairly good and grows plenty of good horse feed.—*J. R. Akins, D.L.S., 1914.*

RANGE 16

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 71 This township is most easily reached by means of a pack-trail, from High Prairie Settlement, which passes through sections 31 and 30, a branch of which follows the right bank of West Prairie River. A survey pack-trail passes south through sections 34 and 27, and another across sections 35, 26, 25 and into township 71, range 15, where it connects with pack-trails leading to Sucker Creek Settlement. West Prairie River flows in a north-westerly direction through sections 21, 28, 29 and 32. It is about half a chain in width, and will average about one foot in depth with a current of about one mile per hour. It has very steep cut banks which in places in this township are forty feet high. In every case the banks are high enough to prevent any danger from flooding. The water is clear and fresh. A small muskeg lake in section 25 is the only other considerable body of water in the township. A considerable area of spruce, tamarack and willow swamp and muskeg lies in the vicinity of the river, and would require drainage. For this the river affords a good outlet. Muskeg also covers a portion of sections 36, 25 and 26. Some fine meadows are found along the river, with a heavy growth of hay, and through the north-west quarter of the township a number of beaver meadows and hay sloughs exist, though the grasses are mostly coarse. The remainder of the township is covered with white poplar, balm of Gilead, and spruce up to eighteen inches in diameter, with scattered patches somewhat larger. There is also some birch from five to eight inches in diameter, together with willow, alder and heavy underbrush. In places the muskegs, especially west of the river, have small quantities of tamarack, up to eighteen inches in diameter, but they are covered mostly with small spruce and tamarack. The soil is fairly good, consisting of two to eighteen inches of black loam, with a clay subsoil. The climate is typical of the country lying east of Smoky River

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

where there is considerable rainfall in the early summer, resulting in a very heavy growth of all kinds of vegetation. Light frosts occurred during the past summer, but were not heavy enough to do much damage to crops. The winter weather is steady and bright, with extreme frost only during part of January and February. The country is best suited to mixed farming, dairying and stock raising. No water-powers, minerals nor stone-quarries were noticed. An abundance of fuel and timber for local demand is found on every section. Game and small fur-bearing animals are fairly plentiful.—*D. F. McEwen, D.L.S., 1915.*

Tp. 72 (*North outline.*)—Sections 35 and 36 are part of a large muskeg. The other sections, which have a general slope to the north, are thickly wooded with poplar, birch, spruce, balm of Gilead from six to twelve inches in diameter, and a thick underbrush of willow. The soil is a black or sandy loam four to eight inches deep over a sand or clay subsoil. A pack-trail from Prairie River Settlement to Snipe Lake crosses the line near the middle of section 33. The divide between East Prairie River and West Prairie River occurs in section 31. Creeks running north cross the north boundary of this township in sections 31, 32 and 36.—*Arthur Saint Cyr, D.L.S., 1904.*

A good pack-trail leading from High Prairie Settlement, passes from north to south through sections 33, 28, 21, 20, 17, 8 and 6 of this township. Another leading from Sucker Creek Settlement passes south-westerly through sections 13, 12 and 2. A survey pack-trail connects with a survey wagon road on the west side of section 19, and crosses from west to east through the township. There is an abundance of fuel and timber for local demand throughout this township, as it is heavily timbered with white poplar and balm of Gilead, ranging from six to twenty-four inches in diameter. There is also a small amount of spruce from twelve to eighteen inches in diameter. Birch, alder and willow are found on the lower land. A tamarack and spruce muskeg covers the greater part of section 7. Another covers a portion of sections 35 and 36, and a third lies in the vicinity of section 24. The spruce and tamarack is mostly small, but there are scattered patches of tamarack from eight to fourteen inches in diameter. West Prairie River, which in this township is about thirty-five feet wide, and from one to two feet deep, has a current of about one mile per hour. It flows north and west through sections 5 and 6. In these sections adjoining the river there is some open land which was covered at the time of survey by a very heavy growth of hay. Open meadow affording good pasture also lies along a creek flowing through sections 23, 25 and 36. This creek, which contained a flow of good water throughout the summer, West Prairie River and a small lake on the east boundary of section 1, form the principal water supply. Plenty of good water can be obtained in any part of the township by digging wells. The soil consists of two to eighteen inches of black loam, with a clay subsoil, and is suitable for all classes of farming. There are no water-powers in the township and no minerals or rock in place were noticed. Game is fairly plentiful.—*D. F. McEwen, D.L.S., 1915.*

Tp. 73 (*East outline.*)—This line, with the exception of section 12 and part of section 13, passes through a thickly timbered country. Several spruce muskegs are crossed, but the north half of the township is covered with poplar, and the land has a descent towards the north and is nearly dry. In the country lying along the 19th base line there is a large spruce muskeg very wet in places with a small quantity of large trees on the outer edge. East Prairie River crosses the line twice in the north half of section 12 and following a very crooked course passes out of the township in section 34. Landslides and erosion of the banks by the water have given the land adjoining the river an uneven appearance, one side frequently being only seven or eight feet high, while the other rises abruptly to a height of seventy-five or a hundred feet about the water. As seen from the west, north and east boundaries and from a walk south on the west side of the river in sections 12 and 13, there are several prairie spots, the timber and brush having been burnt. My opinion is that this township would not be suitable for farming but would be more useful as a timber reserve.—*Henry W. Selby, D.L.S., 1906.*

This township may be reached by a surveyors' wagon trail which passes through sections 34, 27 and 28 and ends in section 21. A pack-trail continues from where the wagon trail ends,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

southerly through sections 21, 16, 9 and 4. East Prairie River enters the township in section 12 and flows through sections 13, 14, 24, 23, 22, 26, 27 and 34. This river is very crooked, and at low water averages about one hundred feet in width and three feet in depth, and has a current of about three miles an hour. The valley varies in depth from forty to seventy-five feet and is about three-quarters of a mile wide at the top. The river-flats contain some good soil, upon which the vegetation is quite rank and the timber grows thickly. Parts of these flats are liable to be flooded, but not to any serious extent. Sections 19, 20, 21, 18, 17, 16, 15, 9, 10, 11, 3 and 4 and part of sections 14 and 22 are mostly spruce and tamarack swamp, and the land is at present totally unfit for agricultural purposes. Elsewhere, with the exception of the river-flats, which are mostly silt, the soil consists of two to twelve inches of black loam over a clay subsoil. With the exception of the river valley the country is nearly level. Several creeks flow into East Prairie River. There is some large timber in the river valley. The swamp areas are wooded with small spruce and tamarack, while the remainder of the township is wooded with poplar, balm of Gilead, spruce and white birch from six to nine inches in diameter. A few open spots on the river-flats are the only prairie land in the township. Practically no hay could be cut, but the river valley affords excellent summer pasturage, as the vetch and grasses grow very luxuriantly. East Prairie River and its tributary creeks provide an abundant and permanent supply of fresh water, but there is no available water-power. No stone in place, coal nor minerals of economic value were found. Signs of bears and moose were plentiful, and a few ruffed grouse were seen, but other game was scarce.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 74

A bird's-eye view of this township taken from any of the slight elevations around it, gives one the impression that it is covered with a dense growth of willow, large and heavy in places, which appears to conform to some regular but tortuous course, while the smaller and less dense growth fills in the view. The actual number of acres of prairie is very small compared with the whole, but the clearing of the land with the willow upon it is simple, and of the land not regularly flooded there should be very little that the average homesteader should object to on account of the brush. This township combines all the qualities for a settlement except a railroad to convey the produce, capable of being grown therein, to a market. People have been located there for some years, but they can use and dispose of only a limited quantity of grain, consequently many have not cultivated their land to any extent, but it is certainly suitable for grain growing or stock-raising. A little over four sections in the north end of the township may be called flooded land, but this will, in the course of time become dry. From my observation the flooding of this place is caused by the stoppage of the water in the river by driftwood and log jams. I have seen a rise of six inches in the river above this land cause the water to flow over the sections from six to twelve inches deep for several days simply because the channel was so packed with logs and driftwood that it could not get through. Considerable dry timber for fuel can be obtained throughout this township, but once it begins to fill up with settlers they will be compelled to go south for their firewood. There is some timber in the south tier of sections, but it is small and not standing very thickly. Vegetation is generally very rank, stock looks well and a large quantity of hay is saved for winter feeding. The soil generally is a loose loam changing from black in the portion liable to flooding to a light loam or clay farther from the river. A good wagon road running from Grouard to Sturgeon Lake Settlement passes from east to west through this township, and other roads branch off northerly for the use of settlers and to reach Slave Lake without crossing so much water. East Prairie River follows a very crooked course with a general trend towards the north near the north end of the township; its channel is not much over half as wide as it is in the south, but the current is more rapid. The greater part of the land is drained into East Prairie River through numerous coulées, some having small creeks in them at present, though most of them are dry. I am told that in some of these coulées, at the time of high water in the river, the water backs up several miles, and crops growing in fields adjoining them are benefited according to their proximity. No rocks or quarries were noticed nor game of any kind.—*Henry W. Selby, D.L.S., 1906.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—Continued.

Tp. 75 (*Partial.*)—For the present it was thought unnecessary to cut the lines through the remainder of this township, as much of it is flooded by East Prairie River. These six sections are nearly flat and are composed of prairie with large bunches of willow brush and willow-fringed coulées. A quantity of black poplar and spruce is found on the north half of section 4. A sawmill is in operation about half a mile east of the east boundary of section 4, and it has been supplied with spruce logs from the land adjacent to the river and its tributaries. The timber is of good size, but is scattered. Two squatters have made improvements on section 6, but the amount of breaking is small all through the settlement, since the market is very limited. Much progress cannot be looked for without a railway.—*Henry W. Selby, D.L.S., 1906.*

(*South third.*)—The surface of this township is level and, in the northern part through which South Heart River flows, it is mostly flooded and not well suited for farming, although the soil is good throughout the whole township. Willow scrub, open marshes and prairie occur. The prairie is mostly confined to sections 18, 19, 30 and 31. There is some spruce in sections 1 and 2 and scattered poplar grows in places. Slough hay of fair quality grows in sections 29 and 32 and upland hay in sections 18, 19 and 30. The open places generally are too wet for hay-making. South Heart River enters this township on the west boundary of section 31 and leaves on the north boundary of section 33. It is a very crooked stream, and doubles on its course frequently. This river is about one hundred and twenty feet wide, three feet deep and has a current of one mile per hour. East Prairie River enters in section 2 and, running northerly, empties into South Heart River in section 35. It is one hundred feet wide, two feet deep and flows one mile per hour. Sections 13 to 36, except the four mentioned above, were flooded, the water remaining on the ground until the freeze-up. The weather was very cold in November, the thermometer registering -30° during the first week. Poplar wood in small quantities is available for fuel. No stone-quarries nor minerals were found. Game of the feathered variety was plentiful.—*J. J. Stock, D.L.S., 1911.*

Tp. 76 (*North outline.*)—The surface is gently undulating, and across sections 35 and 36 is found green poplar from four to eighteen inches in diameter. Near the east boundary of section 34 a wagon road is crossed which connects the settlement to the south with the Peace River Road to the north. From section 34 west the line runs through an old burnt district of scrub poplar, large scattered poplar, large lying spruce and jack pine, slash and windfall. The soil is black loam on sandy clay.—*Henry W. Selby, D.L.S., 1905.*

The northern two-thirds of this township, with the exception of small portions south of the wagon road to Lesser Slave Lake, is well suited for mixed farming and stock-raising. The soil is black loam on clay subsoil, and grass and vetches grow luxuriantly all over it, except on the most heavily wooded sections, though not to the same extent that they do in parts of Prairie River Settlement. There are two small creeks, one of which rises a short distance north of the base line in the highlands and flows in a coulée about twenty-five feet deep through section 32, where the coulée ends, the other rises in section 36 and flows through sections 35 and 27 in a coulée about twenty feet deep. From these points the coulées become simply rolling country, and the creeks find their way to the low lands near Heart River. Many grassy sloughs which are nearly dry this year are found in sections 20, 21, 28 and 29. The settlement survey covers nearly all the prairie sections, but prairie is found sufficient for a good start on sections 16, 17, 18, 20, 21, 22, 27 and 28. On these the land is good, being clay, and black loam on clay subsoil, while the timber is small and not difficult to clear. Bluffs of poplar suitable for building purposes and fuel are on each of these. On the north half of section 17 a piece of breaking of about two acres is fenced, but no buildings have been erected, and there is no crop in yet. There is a house partially built in the south-west quarter of section 23, but no one resides there. In fact no one lives in this township except one settler on lot 110, one on 108, and one on lot 104, though there are crops growing on several of the settlement lots, which the frosts of several cold nights do not appear to have injured. The chord four miles south of the base line runs through the low lands adjacent to Heart River, locally called Horse Lakes when flooded. These basins or lakes were dry last year, and in May of this year there was no water to be seen in them. In June the greater

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

part of sections 8, 9, 10, 11 and 14 were covered to a depth of two to four feet of water after a rain of two days' duration. In September very little water is to be seen in them. The reason for this flooding appears to be that East and West Prairie Rivers flow into South Heart River in township 75, range 16. The quantity of water usually flowing in each of the Prairie Rivers is about equal to that flowing in Heart River, and the banks of Heart River being only about seven feet high cannot receive this extra flow of water. Consequently it has to overflow, some to the north of Heart River and some into basins south and along the Prairie Rivers. This land not being at present suitable for farming or grazing I did not subdivide it. The most heavily timbered sections are 19, 30, 31, 32, 33, 34, 35 and 36; on these the timber is mainly poplar from two inches to twelve inches in diameter, with some willow. On the rest of the township the poplar is small and scattered and mixed with willow. A few trees of spruce and tamarack up to fourteen inches in diameter are seen on the south boundary of section 18, and along the west halves of sections 6 and 7 there are some good spruce and tamarack, but only a small quantity and probably more useful for the needs of the settlers than for commercial purposes. No game was seen in this township but among the berry bushes tracks of bear were observed.—*Henry W. Selby, D.L.S., 1906.*

(*South third.*)—This township is reached by a branch trail which leaves the trail running from Big Prairie Settlement to Winagami Lake about four miles from the former place. This branch trail is very poor. It runs south-west across the township to Prairie River Settlement. Most of the south part of the township is not suited for farming as the land is flooded, but in several places hay can be obtained. The surface is covered with willow scrub, with open marsh and prairie in places. South Heart River flows across the south-east corner of the township. There are no available water-powers as the township is level. Poplar wood is available for fuel, but the supply is not abundant. Very cold weather was experienced in November, the thermometer registering -30° the first week in the month. No stone-quarries nor minerals were noticed. Game of the feathered variety is plentiful, consisting of partridges, prairie chickens, ducks and geese.—*J. J. Stock, D.L.S., 1911.*

Tr. 77 The south-east quarter of this township will make first-class farms. The soil is clay and black loam on clay subsoil, and grows peavine, vetch and grass where the timber is not too thick. The Peace River Road passes in a north-westerly direction through these sections and the timber along this road is open poplar bush and willow bunches. Several open prairie spots occur, while the whole is well watered with small streams of fresh water. The timber on the rest of the surveyed portion of this township is mainly poplar two to twelve inches in diameter, with scattered spruce, and willow between the ridges. A few large spruce were seen on section 10 around a portion of a large spruce muskeg extending into the south-westerly portion of the township. Another road has been cut from the Big Prairie Settlement northerly through sections 2, 11 and 14 to the Peace River Road, which is used by freighters and others, to shorten the distance coming from the south and west. No rocks, coal, nor hay lands of any size nor game were seen.—*Henry W. Selby, D.L.S., 1907.*

The trail from Peace River Crossing to Grouard runs diagonally through the township. This trail is good in dry weather but very poor in wet weather. The soil is of good quality and is well suited to mixed farming. The south half of the township is heavily timbered principally with poplar and balm of Gilead, while spruce and birch are found in places. Towards the north the timber grows less and considerable scrub and some prairie is found. Upland hay grows in sections 27, 28 and 33. Numerous small creeks, besides South Heart River, furnish an abundant supply of fresh water. The river is about one hundred feet wide and during the past season, which was very wet, it averaged eight feet deep. The current is about one mile per hour. No available water-powers occur within the township. The climate is similar to that of Edmonton, though, perhaps, a little colder. A noticeable feature was the frequency of the chinook winds and the rapidity with which the snow disappeared early in April when spring set in. Summer frosts were noticed. Wood fuel is available in all parts of the township. No stone-quarries nor minerals were observed. Game consisting of grouse and water-fowl is plentiful, and moose and bears are sometimes seen.—*J. J. Stock, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

Tp. 78 The best route into this township is from Edmonton by train to Sawridge, thence by boat across Lesser Slave Lake to Grouard, and thence by the Peace River wagon road which passes through the south-west corner of the township. The soil consists of from two to ten inches of black loam with a clay subsoil, and is very suitable for mixed farming. The surface is slightly rolling and covered with poplar, spruce and jack pine up to fourteen inches in diameter with willow and alder underbrush. There is also some birch and tamarack in the swamps up to ten inches in diameter. The timber is of no commercial value but can be used by settlers for building and fencing. There is a little prairie along the flats of South Heart River and a quantity of good hay could be cut there and also around the lakes; feed for horses and cattle is plentiful. There is a permanent supply of fresh water in South Heart River and in the small creeks. The river floods its banks for a week or two in the spring. There are no water-powers, stone-quarries nor minerals. Wood fuel is plentiful everywhere. Moose, bears, foxes, lynx and partridges were seen. The climate is similar to that of Edmonton with no summer frosts.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 79 The best route into this township is from Edmonton by train to Sawridge, thence by boat across Lesser Slave Lake to Grouard, thence by the Peace River wagon road to the crossing of South Heart River in the south-west corner of township 78, range 16, and thence by an old pack-trail which runs in a northerly direction along the river. The soil consists of from two to twelve inches of black loam with a clay subsoil, and is suitable for mixed farming. The surface is slightly rolling and is covered with poplar, spruce and jack pine up to eighteen inches in diameter and a few tamarack and birch in the swamps up to eight inches in diameter with willow and alder underbrush. The large timber is too scattered for commercial purposes but can be used by settlers for building and fencing. There are small patches of prairie along South Heart River but very little hay could be cut as it is interspersed with willow brush. There is good feed for horses and cattle along the small creeks and also along South Heart River. There is a permanent supply of fresh water in the numerous small creeks and in South Heart River. There are no water-powers, stone-quarries nor minerals. Wood for fuel is plentiful everywhere. Moose, bears, foxes, lynx and partridges were seen. The climate is similar to that of Edmonton, and no summer frosts were experienced.—*R. V. Heathcott, D.L.S., 1914.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a road could be built with little difficulty along South Heart River. The wagon road from Grouard is a fairly good one and, as it is the main highway through this country, no doubt it will be improved each year. The soil is either clay or sandy loam from six to twelve inches in depth, with a subsoil of clay, or sand and gravel on the ridges. In the marshes and swamps it is a black humus six to eighteen inches, generally on a clay subsoil. The true muskeg is composed of moss and other vegetable fibre from six inches to six feet or more in depth, but is not very prevalent here. The soil is well adapted to mixed farming, and all varieties of vegetables besides oats, barley and hay grow abundantly. The surface is gently rolling and is all timbered with the exception of the marshes and open muskegs. The timber consists of poplar, spruce, balm of Gilead, balsam, alder, willow and jack pine. It can scarcely be said to have much commercial value. Poplar runs from three to fourteen inches, and spruce up to twenty-four inches in diameter throughout the township. Hay is found on all streams and sloughs, a very large meadow producing hay abundantly occurring in this township. This district lies between North and South Heart Rivers, and water is everywhere fresh and plentiful, but there are no water-powers. Wood for fuel is found in almost every section, but no stone-quarries nor minerals of economic value were noticed. Moose, caribou, bears, spruce-partridges and fool-hens were plentiful, and water-fowl were numerous on open marshes, sloughs and rivers.—*A. H. Hawkins, D.L.S., 1910.*

Tp. 84 (*North outline.*)—See report for township 84, range 15.—*A. H. Hawkins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

- Tp. 88** (*North outline.*)—See report for township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*
- Tp. 89** (*Exploration survey.*)—Brulé with small poplar on the low ridges, and patches of muskeg comprise the surface of this township. Where the fires have overrun the timbered areas there is extensive windfall.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 90** (*Exploration survey.*)—Some patches of good hay grow at old beaver workings along Little Cadotte River, which flows in from the east of this township. Some large milling spruce grows along the river, but the land farther back is alternate muskeg and low ridges of poplar and spruce.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 91** (*Exploration survey.*)—The height of land occurs near the north boundary of this township, and along this height there are numerous small lakes, drained by creeks flowing south-west. The surface is gently rolling and alternates with muskeg and low ridges. Stones of glacial origin are found on the crests of the ridges, most of which have been fire-swept and are now covered with windfall and brulé. The muskeg intervals support a growth of spruce and willow and when drained would make good farming land.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 92** (*Exploration survey.*)—The height of land crosses the southern part of the township where numerous lakes are found. Patches of muskeg border these lakes, but the north half is dry and supports a good growth of poplar, indicating soil well suited for agricultural purposes.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 93** (*Exploration survey.*)—Numerous small creeks cross this township. Spruce and poplar ridges alternate with muskeg. Old beaver workings have produced some small hay meadows along the creeks. The surface is gently undulating.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 94** (*Exploration survey.*)—Some creeks flowing north drain this township. The surface is gently undulating and is mostly timbered with spruce and poplar. Small meadows lie between spruce and tamarack muskegs.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 95** (*Exploration survey.*)—This township drains to the north by several small creeks, collecting into a larger stream called Cache Creek, which in turn flows into Wolverine River in township 100. The soil is rich loam and is well adapted for agriculture. Patches of brulé and some old beaver workings are found.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 97** (*Exploration survey.*)—The surface of this township is wooded with poplar, spruce and some birch. The creeks have more noticeable banks as Peace River is reached, the banks of which are from thirty to forty feet high. Wolverine River flows sluggishly through a winding channel.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 98** (*Exploration survey.*)—This township is gently rolling and is wooded with poplar and spruce with some swampy parts. Good black loam is found on the west side of Wolverine River.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 99** (*Exploration survey.*)—Some excellent homesteads are found in this township, but they are difficult of access. The surface is wooded with small poplar and spruce.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 100** (*Exploration survey.*)—The township drains toward the west with a good slope. The soil varies from loam to heavy clay and would make good agricultural land. Towards the east there is considerable windfall.—*J. A. Fletcher, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

- Tp. 101** (*Exploration survey.*)—Some merchantable spruce grows in the township, the surface of which drains toward the west. The soil is a good clay loam well suited for agriculture. A few patches of muskeg are found, but these could be easily drained.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 102** (*Exploration survey.*)—The surface of this township becomes rough and hilly in the north-eastern part, where it rises into Buffalo Head Hills. The ridges are very stony and the township is covered with small poplar, birch and spruce.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 103** (*Exploration survey.*)—The township is rough and hilly, but is well timbered with spruce, birch and poplar. The soil is clay loam but very stony on the hills.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 104** (*North outline.*)—Peace River just touches the north part of this township. The soil is good, and there are many open places where good meadow grass grows. Poplar, willow, birch and alder grow in patches.—*J. R. Akins, D.L.S., 1913.*



Photo by J. S. Galletly, D.L.S.
Vegetables grown at Fort Vermilion

- Tp. 105** (*East outline.*)—This outline runs through a level country over sections 1 and 12, but enters a rolling country for the remaining sections. The land is generally covered with poplar, spruce and jack pine. In the south half the soil consists of a light loam with clay subsoil, but the north half is sandy.—*P. M. H. LeBlanc, D.L.S., 1915.*
- Tps. 105 & 106** (*Exploration survey.*)—These townships are cut by Peace River and are very rough. The soil is fairly good and is wooded with jack pine, spruce, poplar and willow.—*J. R. Akins, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—Continued.

Tp. 107 (*Exploration survey.*)—Peace River flows across this township between banks 225 feet high. Back from the valley the surface is gently rolling and timbered with spruce, poplar and jack pine. North of Peace River the soil is light and very sandy in places. Jack pine ridges broken by muskegs and marshy intervals are found throughout the township.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 108 (*Exploration survey.*)—This township is mostly jack pine ridges with marshy intervals, supporting a growth of coarse grass with numerous small ponds. The soil is light and sandy and the surface is covered with jack pine, poplar, spruce and some tamarack. The trail from Keg River to Fort Vermilion forms, roughly, the northern boundary of the poor soil area.—*J. A. Fletcher, D.L.S., 1913.*

(*Partial.*)—This township is reached from North Vermilion by a good wagon road passing through sections 34, 33, 29 and 30. The soil consists of a black loam on sandy clay or clay subsoil, and is suitable for farming purposes. The surface is level, and covered with poplar, willow and scattered bunches of spruce up to twelve inches in diameter in the southern part, while in the northern part patches of prairie are found. Hay grows abundantly in the marshes and sloughs scattered throughout the township, but water is scarce, only one small alkaline lake being found in section 16. Summer frosts were noticed. Firewood can be had anywhere, but no coal, stone nor indication of minerals were observed. Game is very scarce, only a few bears being seen.—*P. M. H. LeBlanc, D.L.S., 1914.*

Tp. 109 Two good wagon trails from North Vermilion pass through this township, one through sections 1, 2, 11, 10, 15, 22 and 27, and the other through sections 25, 26 and 27. These join at the north-west corner of Child Lake, and, passing through sections 28, 33, 32 and 31, leave the township in the last section. This is known as the Hay River Trail. The township is covered in most places with poplar scrub and willow, also some large poplar up to twelve inches and a few spruce; the latter is found in nearly every section. The eastern half contains some large open stretches. Hay could be cut in the large meadows in section 1 and also south of the base line. There is also a little in the west half of section 34, the east half of section 33, the north-west quarter of section 33, the north-east quarter of section 32, and around Child Lake. The yield would not be very great, possibly about one hundred tons in section 1 and the neighbourhood, twenty-five tons in sections 33 and 34, and fifty tons in sections 33 and 32. It is of fair quality. Boyer River is a little over a chain wide and from six inches to six feet deep with a very slow current. The water in Boyer River is good but that in Child Lake is alkaline. We dug two wells near this lake, one in the surrounding marsh and the other about half a mile away. The water in the former became fresh after the well had been open about two weeks, but the latter was still alkaline when we left. Water was obtained at a depth of about five feet. There is some swamp land north of the Hay River Trail in sections 31 and 32. Water could be obtained here by digging. The soil is usually three to four inches of black loam overlying a sandy clay subsoil. It should grow all the crops of the vicinity. Wood for fuel is plentiful but no coal nor lignite were seen. Many stones were seen in the bed of Boyer River. No water-power could be developed. Summer frosts are common. Game was very scarce, only a few prairie chickens, ducks and rabbits being seen. No minerals of economic value were seen.—*J. S. Galletly, D.L.S., 1912.*

Tps. 111 & 112 (*Base line.*)—This township is well wooded with small spruce, willow and poplar, and is fairly level. The soil is of good quality.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—The surface of this township is nearly level and is wooded with spruce, poplar, willow and alder. The soil is of good quality. The township is drained by two branches of Melvin River.—*J. R. Akins, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 16.—*Continued.*

Tp. 114 (*Exploration survey.*)—The soil in this township is light. The surface is rolling and has been recently burned over. It is drained by Roe Creek.—*J. R. Akins, D.L.S., 1914.*

RANGE 17

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 71 This township can be reached from township 72, by a survey pack-trail running down the east boundary of sections 32 and 29, then across sections 28, 27, 26 and 25. There is also an old pack-trail following along the east side of Carrot Creek, to the confluence with West Prairie River, and thence northerly along the river. Another pack-trail leading from High Prairie Settlement, through townships 73, 72 and 71, range 16, passes through sections 25, 24 and 23. The soil is good, consisting of three to ten inches of black loam, with clay subsoil, and almost all the land when cleared would be suitable for mixed farming. Carrot Creek, confined between steep banks from twelve to twenty feet high, is about half a chain in width, and from one and a half to three feet deep. It has a current of about one mile per hour, and is the only stream of importance in the township. Grassy meadows are found along its banks, producing a heavy growth of hay. Hay sloughs in this township are not numerous or large. The land is level or gently rolling, and covered principally with white poplar, balm of Gilead, and scattered spruce from six to eighteen inches in diameter. In sections 31 and 32 there is some spruce and balsam from eight to thirty inches in diameter. Some tamarack from six to twelve inches in diameter occurs in the northern part of sections 35 and 36. Water could be obtained easily by digging in almost any part. There is no land liable to be flooded—nor are there any water powers, stone-quarries nor minerals of economic value.—*D. F. McEwen, D.L.S., 1915.*

Tp. 72 (*North outline.*)—The surface of this township is undulating and timbered with poplar, birch, spruce and balm of Gilead, eight inches in diameter. There are some extensive spruce muskegs notably in sections 31, 32, 34 and 35, with intervening narrow strips of high land, well wooded. West Prairie River, coming from the south-west, crosses the north boundary of this township near the corner of section 32. It is forty yards wide with banks fifteen feet high. It flows in a narrow valley bounded on the east by steep hills forty feet high, while those on the west side of the river are seventy-five feet high. There is a prairie flat along the river, where the line intersects it. This river is said to be another tributary of South Heart River which it joins about fifteen miles above its mouth. The soil is black or sandy loam six inches deep with sand and stones or clay and stony subsoil.—*Arthur Saint Cyr, D.L.S., 1904.*

This township is best reached by a wagon road leading south from High Prairie, on the Edmonton, Dunvegan and British Columbia Railway, and ending in section 25. From here a survey pack-trail leads westerly to West Prairie River in section 21, and from there southerly through sections 16, 9 and 4, but it is not good during the summer over a portion of sections 26 and 27 where it crosses a muskeg. An old pack-trail follows the general course of West Prairie River, on its eastern side, across the township, and thence north to the wagon road leading to High Prairie. It is fairly good in most parts. West Prairie River flows in a north-westerly direction through the township. Its most important tributary is Carrot Creek, a stream half a chain in width, flowing in a channel of about the same width cut down from twelve to twenty feet. At the time of survey the water in this creek was from two to three feet deep. West Prairie River above the confluence of Carrot Creek is only about thirty-five feet in width. Down stream from this point it is from sixty-six to eighty feet in width, with a depth varying from two to three feet, except over rapids which occur at intervals. The sides of the channel are steep and from eight to twenty feet high. There is no low-lying land to be flooded. Signs of extremely high water were seen eight feet above the normal level. The river, down stream from the entrance of Carrot Creek, has an irregular valley, from sixty to eighty

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

feet below the general level of the country. The water is fresh and clear. Small meadows, producing good hay and pasture, occur on the benches at intervals along the river. These form practically all the open land in the township. West of the river the country is mostly rolling. The central part of section 21, and sections 20, 19 and 30 are covered with a heavy growth of large spruce up to thirty-six inches, white poplar and balm of Gilead up to thirty inches, together with some birch. A small amount of spruce and balsam from ten to eighteen inches in diameter grow in the southern part of section 6. The surface east of the river is level or gently rolling. A muskeg containing spruce and tamarack from three to ten inches in diameter occupies a considerable portion of sections 29, 32 and 31. Another muskeg parallels the river through the township on the east side, and in places contains tamarack and spruce from eight to fourteen inches in diameter. These muskegs, in places, run to within a few chains of a considerable drop to the river valley, which provides an easy and inexpensive means of drainage. The remainder of the township is covered with a heavy growth of poplar, balm of Gilead and spruce up to twenty-four inches in diameter, with thick underbrush. The climate is characteristic of northern Alberta. Rainfall was abundant, especially in the early part of the summer. Float coal, of good quality, was observed along the river, but no coal seams, quarries or minerals were seen. Moose, bears, foxes, lynx and other smaller fur-bearing animals are fairly plentiful.—*D. F. McEwen, D.L.S., 1915.*

Tp. 73

The Sturgeon Lake-Grouard trail passes through sections 36, 25, 26, 27, 22, 21, 16, 17, 8, 7 and 6 of this township, crossing West Prairie River at a good safe ford in section 26. It is chiefly a winter trail, being almost impassable for loaded wagons in summer. From the Sturgeon Lake-Grouard summer trail along the right bank of West Prairie River, a branch joins the winter trail in section 25. From this branch another crosses West Prairie River at the north boundary of section 35 and joins the winter trail in section 26; both these branches can be travelled in summer. The soil in this township consists of two to twelve inches of black loam over a clay or clay loam subsoil. In some places a clay or sandy loam occurs between the top covering and the subsoil and parts of the valley of West Prairie River have sand and gravel under silt. The soil is generally first-class, and should grow all the common cereals and vegetables of the district. Except a few small patches of open along the banks of West Prairie River the surface is practically all covered with a dense growth of timber or scrub. The timber consists of poplar, balm of Gilead, spruce, white birch, a few tamarack and considerable willow. All the timber is smaller in size in the western half of the township and the willow is more plentiful there. Along the banks of West Prairie River the spruce grows up to twenty inches, the balm of Gilead up to twenty-four inches, and the poplar up to sixteen inches in diameter, but elsewhere they are all much smaller. The white birch averages about six inches in diameter throughout the township. A few tons of hay could be cut along the banks of West Prairie River. At the time of survey (August) West Prairie River averaged eighty feet wide, two feet deep, and had an average current of about one and a half miles per hour. At high water, however, the river is twelve feet or more in depth and floods some of the low bench lands but does little damage. Several small rapids occur in the river, but it would be difficult to develop any water-power. This river, together with two small lakes in section 7, practically constitutes the water supply of the township, although fresh water may also be obtained by digging in most parts. Wood for fuel is plentiful everywhere. West Prairie River contains a quantity of light float bituminous coal or lignite, but no veins were found. Stone in place or minerals of economic value were not observed in this township. The weather in August was very cold and wet and several severe summer frosts occurred. Moose and bears were plentiful and a few ruffed grouse were seen, but otherwise game was scarce.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 74

(*Partial.*)—Before deciding as to the subdivision of township 74, range 17, after running the east and south outlines, I travelled over a large part of it and for the following reasons decided to subdivide only the east two miles for the present. The main reason was that there is more timber and brush west of Prairie River than homesteaders care to locate on until settlers become more numerous. And although in sections 18 to 14 and 19 to 23 there are numerous prairie spots and the grass and vegetation is quite rank and the soil

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

all that could be desired, there are wet sloughs, coulées and some muskegs which make it look uninviting. The southerly third of the township west of the river falls gently towards the north and west, has poplar and willow all over it, and the soil is mostly a white clay with very little loam. The northerly third is more or less heavily timbered and flooded by the high water of West Prairie River, but as this does not often occur this land may be suitable for stock-raising, but for the ordinary ranch where cattle and horses are supposed to rustle all winter, I do not think this part of the country will be suitable without providing hay for three months when the snow gets a crust on it. Sections 1 to 12 and the west parts of 26 and 35 are covered with poplar and willow and there is considerable willow and a few poplar bluffs scattered over the remainder of this part of the township, but there is not a quarter section of this latter part that has not enough prairie on it to give a settler a good start, as is evidenced by the number of claims already occupied. The peculiar feature of this part of the country is the large number of coulées or water-courses fringed with willow and scattered poplar, which now are nearly dry, but some have old beaver dams across them which hold the water back in pools. These coulées or ravines appear to have been washed out by the water in the spring made by the melting snow over an almost level surface, and they run in every direction, many at right angles to others and beginning near others already formed. Some again, show their origin from springs or underground currents, since there is a small stream flowing at all times of the year and the banks of the coulées are constantly sliding in. This would not occur if it were only a water-course. The vegetation on sections 2, 11, 14, 23, 25 and 36 is decidedly more rank than on the other sections, but from the information to be had it does not appear to be an advantage, for where I have seen crops growing the grass and weeds are not nearly so rank and the yield of grain was greater. The soil where the vegetation grows rank seems more loose and spongy, while in the other case it is closer and more difficult to cultivate. This rank vegetation had to be cut down to get the lines through. Mr. F. Mearon, who has been on the south-east quarter of section 24 for the past three years, has thirty-five acres of land broken and under crop this season. It is well fenced and he has good log buildings, machinery necessary to work his farm with, ten head of horses and four head of cattle. He came there practically without anything. This shows what industry and thrift ought to do on such soil. His crop this year is very good, some being so heavy that it lodged. Frost has not injured any of the crops in this township, the potatoes being green at the end of September. Vegetables of all kinds appear to do well and grow to an amazing size and quality. There are plenty of bears along West Prairie River; jumping deer were seen in the township and coyotes are very numerous.—*Henry W. Selby, D.L.S., 1906.*

(*Partial.*)—The summer trail between Grouard and Sturgeon Lake crosses this township from east to west about the centre. The ford where the trail crosses West Prairie River, near the north-east corner of section 10, can be passed only at low water. Most of the surface is covered with willow and small poplar, but there are a few open patches close to the trail in sections 15, 20 and 29. No marketable timber grows, but some poplar is found twelve inches in diameter. West Prairie River overflows its banks in section 34 and floods most of the north halves of sections 31, 32, 33 and 34, rendering this area unfit for agriculture. Iroquois creek enters the township on the west boundary of section 19 and, flowing north-easterly, leaves the township on the north boundary of section 32. In section 30 it changes from a swiftly flowing creek to a large sluggish river. One of the Iroquois Lakes occupies a portion of section 31 and some swampy land lies in sections 17, 16, 15, 10 and 9. The soil consists of black loam to a depth of four to eighteen inches over a clay loam subsoil, and should produce all the cereals and vegetables common to the district. The climate is similar to that of the surrounding district and frosts occurred in September. Some hay could be cut in the open patches, and although water is everywhere plentiful no power could be developed. Firewood is plentiful, but no coal, stone nor minerals of economic value were seen. Ruffed grouse, geese and ducks were seen and signs of moose and bears were noticed.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 75

(*East outline.*)—In running the east outline of township 75, range 17, I found the sand-hills and spruce muskeg to continue south-westerly to so great an extent with South Heart River and West Prairie River cutting in, several parts and places

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

along the rivers so subject to flooding, and the land at present so unfit for settlement, that I decided not to subdivide it. But when the east outline was run three settlers were found within the first mile west, with valuable improvements and farms of the best quality of soil. Consequently the survey of sections 1, 12, 13 and 24 was completed. The only portions of section 1 not suitable to farming are the two coulées which drain it, and through which spring creeks are running most of the year, furnishing water for the stock owned by the two settlers on the section. The coulées are therefore a benefit instead of otherwise. The crop of oats, wheat and barley grown by Joseph Ferguson on the north-east quarter of section 1 is excellent, and when the land is properly worked will greatly improve as the soil is a rich loam on clay subsoil. Grass grows very rank and with it thick masses of vetch and peavine. The settlers can go almost anywhere on the prairie and put up from three to five loads per acre, while stock destroys more than they eat. The water found in the coulées has in most cases an iron or alkaline taste, but the well water after being used for a while becomes free from this mineral taste. Many frosty nights have occurred this season, but little or no damage has been done, and that little only to grain sown late. Garden produce such as potatoes, cabbage, beets, turnips, carrots and lettuce have developed to a perfect state. One has only to observe the condition of the horses, cattle, pigs, etc., to arrive at an opinion as to the rich quality of the soil and its produce. Sections 12 and 13 are equally as good as section 1 except that more willow brush is found growing along and between the various water-courses, but the quality of the soil and vegetation would indicate their fitness for farming purposes. A very imperfectly farmed field of oats put in by A. McDonald on these sections has been cut, and although not threshed the turnout promises exceedingly well. Section 24 is somewhat cut up by South Heart River and the land adjacent to it is more or less flooded and cut into by the water when the floods subside, but the east half has very little land on it that cannot be farmed, while the west half will do for grazing or hay when the brush and timber is cut. The first road into the settlement from the north was opened through this section, being free from danger of flooding from the rise of the water in the rivers.—*Henry W. Selby, D.L.S., 1906.*

A road that connects the trail from Grouard to Spirit River Settlement with the summer trail from Grouard to Sturgeon Lake Settlement passes through sections 25, 24, 13, 12 and 1 of this township. To reach that part of the township that lies west of South Heart and West Prairie Rivers one has to take a surveyors' trail, which leaves the Grouard-Spirit River trail at its intersection with the east boundary of section 13, township 76, range 17, pass through sections 13, 12, 11, 2 and 3 of township 76, range 17, ford South Heart River and then pass through sections 33, 28, 21, 20, 17 and 18 of this township. The northern portions of both these trails are wet. The north and north-easterly parts of the township are very sandy and the southerly part very wet. The soil in the remainder is mostly good, consisting of black loam to a depth of two to twelve inches overlying a clay or clay loam subsoil. The surface of the township is covered with a dense growth of timber or scrub. Sections 33, 34, 35, 36, 27 and 26 are covered mostly with Banksian pine, and sections 31, 32, 30, 29, 28, 20, 21, 22 and 23 with poplar, balm of Gilead and occasional spruce. Sections 2, 3, 4, 5, 6, 9, 10 and 11 and part of section 8 are at present useless. The greater part of this tract is flooded by reason of West Prairie River leaving its bed and spreading out over the adjacent land. Sections 3 and 4 are very boggy and almost unapproachable. The remainder of the township is covered with small poplar, balm of Gilead, willow and a few spruce. Little or no hay could be cut. South Heart River, West Prairie River, Iroquois Creek and two of the Iroquois Lakes provide the greater part of the township with a sufficient and permanent water supply. South Heart and West Prairie Rivers are each nearly a chain wide and flow swiftly for most of their courses in the township. Iroquois Creek averages about thirty feet wide and is quite deep. Most of sections 2, 3, 4 and 5 are permanently flooded. No water-power could be developed. During June 1911, the weather was rather cool and a great many frosts occurred at night, though apparently doing little damage to the crops of the settlers. Fuel is plentiful. No coal nor lignite veins, nor minerals of economic value were seen. There were indications of moose, bears (black and brown), mink, marten, weasels and coyotes. Some ducks, geese, ruffed grouse and muskrats were observed.—*H. S. Holcroft, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—Continued.

Tp. 76 (North outline.)—This township is gently undulating to section 31, where the line crosses the valley in which South Heart River flows. This range is covered mainly with poplar and occasional bunches of spruce. On section 32 and section 5 of township 77, the spruce and poplar timber is very large, and convenient for lumbering operations, as it could be taken down the river to Slave Lake. This range will make good farming land when cleared. The soil is black loam on sandy clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

The wagon trail from Grouard to Winagami Lake passes through the middle of this township. Another wagon road leaves the main trail in section 18, township 76, range 16, and runs south-westerly to a ford on South Heart River in section 3. The easterly parts of both trails are in low ground and are very bad in wet weather; the westerly parts are good. Practically all of sections 1 to 8, inclusive, and parts of sections 11 to 18, are sandy and useless for agriculture, except a narrow strip of bench land along South Heart River, which strip contains good black loam. The soil in the remainder of the township consists of two to twelve inches of black loam overlying a clay loam or sandy clay subsoil. All that part of the township to the north and east of South Heart River, beginning about half a mile back from the river, is nearly level and would make excellent farming land. The whole surface is covered with bush or scrub, and sections 1 to 8 inclusive, and parts of sections 11 to 18 have a large jack pine ridge running across them almost parallel to South Heart River. The remainder of the township is covered with willow, poplar from two to twelve inches in diameter, scattered spruce from four to fifteen inches in diameter and some tamarack. In the easterly half of the township the timber is lighter and scarcer than in the westerly half. Sections 9 to 15 inclusive, are rather low, and contain considerable marshy land, but little or no hay could be cut. The water is all fresh. It is scarce in the two northerly tiers of sections, but elsewhere there is a sufficient supply. Doubtless if wells were dug the supply would be permanent. A small creek flows through sections 28, 21, 15, 14, 13 and 12, but dries up in summer time. South Heart River flows south-westerly through sections 31, 19, 18, 7, 8, 5, 4 and 3. It is about a chain wide at high water and flows swiftly in most places. In summer the water drops considerably, the river becoming quite a small stream. No land is liable to flooding to any extent. Though the river is swift and much water comes down, it would be difficult to construct a dam for power purposes as the banks are low, and such a structure would have to extend across the whole valley. During the period of subdivision (early April and late May) the climate was cool and the season backward; frosts frequently occurred, but did no damage to growing grain. In the adjacent township fuel in the form of wood is everywhere plentiful. No coal nor lignite veins occur nor were any minerals of economic value seen. No stone in place was observed. There were signs of moose, black and brown bears, marten, mink, muskrats and coyotes. There are some ruffed grouse, ducks, and rabbits.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 77 A very poor wagon trail, cut while the frost was in the ground, enters this township on the east boundary of section 13 and continues west through the township to South Heart River. The soil is good, consisting of four inches of black loam on a clay subsoil, and is suitable for mixed farming. The township is timbered with poplar and balsam of Gilead up to eight inches in diameter, and spruce in scattered clumps up to twenty inches. Muskeg, which is confined to the northern part of the township, constitutes one-third of the area. Much of it has been burned over, but there is considerable green tamarack up to five inches. Birch, willow and alder underbrush is found in most parts of the township. No hay grows. The water of the township is all fresh. South Heart River enters in section 25 and after pursuing a winding course leaves from section 6. It is one hundred feet wide, five feet deep in spring and flows one mile per hour. No land is liable to be flooded and there are no water-powers. The climate is somewhat colder than that of Edmonton. Snow two feet deep was found in the bush in April, and summer frosts were noted in every month. Wood fuel is available in all parts of the township. No stone-quarries nor minerals were observed. Game consisting of moose and bears was seen, while ducks, partridges and rabbits were plentiful.—*J. J. Stock, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

Tp. 78 The trail from Grouard to Peace River Crossing enters the township near the north-east corner of section 12, and running north-westerly leaves the township from section 31. This trail is not hilly, and in dry weather is fairly good, but in wet weather is very poor. The surface of the township is level, and the soil is five inches of black loam on a clay subsoil, well suited for mixed farming. The timber consists of poplar and balm of Gilead up to eight inches, with some willow scrub and alder underbrush. Scattered spruce up to twenty inches, mixed with poplar, grows throughout the township, and tamarack and small spruce up to four inches is found in the muskegs. A few scattered spruce are found. Coarse hay of poor quality grows around the lake in the north-west quarter of section 32, and slough hay of a better quality grows around a small lake in the south-east quarter of section 1. An abundant and permanent supply of fresh water is obtainable in several small creeks, but there are no water-powers, and no land is liable to be flooded. The climate is somewhat colder than that at Edmonton, summer frosts occurring every month. Chinook winds are prevalent. An abundant supply of wood is available in all parts of the township. No stone-quarries nor minerals were seen. Moose and bears are not numerous, but small game consisting of rabbits, partridges, ducks and geese, is plentiful.—*J. J. Stock, D.L.S., 1911.*

Tp. 79 The south-west corner of the township is crossed by the trail from Grouard to Peace River Crossing. This trail is fair in good weather but very poor in wet weather. Another trail enters section 30 from range 18 and ends at a small lake in section 33. The soil consists of four inches of black loam on a clay subsoil, and is suitable for mixed farming. The surface is well timbered, principally with poplar and balm of Gilead up to six inches. Spruce is found in small clumps and small tamarack and spruce grow in the muskegs. There is also considerable willow and alder underbrush. Slough hay grows around the lake in section 33 and it would be possible to cut about twenty tons. A less quantity could be cut in sections 8 and 5. A sufficient and permanent supply of fresh water is available in several small creeks, the largest of which is Bear Head Creek, flowing out of a small lake in section 33. There are no water-powers, and although the country is level no land is liable to be flooded. The climate is somewhat colder than that in the vicinity of Edmonton and frost occurred every month. Wood is the only available fuel, but an abundant supply is available in all parts of the township. No stone-quarries nor minerals were seen. A few moose and bear roam about, but small game, consisting of rabbits, partridges and water-fowl, is abundant.—*J. J. Stock, D.L.S., 1911.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a road could be built with little difficulty along South Heart River. The wagon road from Grouard is a fairly good one, and, as it is the main highway through this country, no doubt it will be improved each year. The soil is either clay or sandy loam from six to twelve inches in depth with a subsoil of clay or sand and gravel on the ridges. In the marshes and swamps it is a black humus six to eighteen inches deep, generally on a clay subsoil. The true muskeg is composed of moss and other vegetable fibre from six inches to six feet or more in depth, but is not very prevalent here. The soil is well adapted to mixed farming, and all varieties of vegetables, besides oats, barley and hay, grow abundantly. The surface is gently rolling, and is all timbered with the exception of the marshes and open muskegs. The timber consists of poplar, spruce, balm of Gilead, balsam, alder, willow and jack pine. It can scarcely be said to have much commercial value. Poplar runs from three to fourteen inches, and spruce up to twenty-four inches in diameter throughout the township. Hay is found on all streams and sloughs. This district lies between the North and South Heart Rivers, and water is everywhere fresh and plentiful, but there are no water-powers. Wood for fuel is found in almost every section, but no stone-quarries nor minerals of economic value were noticed. Moose, caribou, bears, spruce-partridges and fool-hens were plentiful, and water-fowl were numerous on open marshes, sloughs and rivers.—*A. H. Hawkins, D.L.S., 1910.*

This township is reached by the branch trail which leaves the trail from Grouard to Peace River Crossing at Bear Head Creek. This branch trail is poor, as is also the main trail in wet

TOWNSHIPS WEST OF THE FIFTH MERIDIAN:

RANGE 17.—*Continued.*

weather. The soil is of good quality and is well suited for mixed farming. The surface throughout is well timbered with poplar, balm of Gilead from four to fifteen inches, spruce up to twenty inches, jack pine and tamarack. The timber in the eastern part of the township has been killed apparently by the heavy growth of alder underbrush which is prevalent everywhere. No hay grows in the township. A good supply of permanent fresh water is available from several small creeks. No development of water-powers is possible, nor is any land liable to be flooded. The climate is colder than that of Edmonton and summer frosts were noted. Wood fuel is abundant everywhere. No stone-quarries nor minerals were found. Game consisting of moose, bears, rabbits, partridges, ducks and geese was seen.—*J. J. Stock, D.L.S., 1911.*

Tp. 84 (*North outline.*)—See report for township 84, range 15.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—See report for township 88, range 10.—*A. H. Hawkins, D.L.S., 1912.*

Tp. 89 (*Exploration survey.*)—Brulé with small poplar on the low ridges and patches of muskeg comprise the surface of this township. Where the fires have overrun the timbered areas there is extensive windfall.—*J. A. Fletcher, D.L.S., 1913.*



Photo by H. S. Holcroft, D.L.S.
Main Street, Grouard, in 1911

Tp. 90 (*Exploration survey.*)—Some patches of good hay grow at old beaver workings along Little Cadotte River which flows in from the east of this township. Some large milling spruce grows along the river but the land farther back is alternate muskeg and low ridges of poplar and spruce.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 91 (*Exploration survey.*)—The height of land occurs near the north boundary of this township, and along this height there are numerous small lakes, drained by creeks flowing south-west. The surface is gently rolling and alternates with muskeg and low ridges. Stones of glacial origin are found on the crests of the ridges, most of which have

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

been fire-swept and are now covered with windfall and brûlé. The muskeg intervals support a growth of spruce and willow and when drained would make good farming land.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 92 (*Exploration survey.*)—The height of land crosses the southern part of the township where numerous lakes are found. Patches of muskeg border these lakes, but the north half is dry, and supports a good growth of poplar, indicating soil well suited for agricultural purposes.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 93 (*Exploration survey.*)—Numerous small creeks cross this township. Spruce and poplar ridges alternate with muskeg. Old beaver workings have produced some small hay meadows along the creeks. The surface is greatly undulating.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 94 (*Exploration survey.*)—Some creeks flowing north drain this township. The surface is gently undulating and is mostly timbered with spruce and poplar. Small meadows lie between spruce and tamarack muskegs.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 95 (*Exploration survey.*)—This township drains to the north by several small creeks, collecting into a larger stream called Cache Creek, which in turn flows into Wolverine River in township 100. The soil is rich loam and is well adapted for agriculture. Patches of brûlé and some old beaver workings are found.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 96 (*Exploration survey.*)—This township slopes to the north-west and is largely timbered with spruce and poplar. The soil is generally rich with some lighter knolls, and hay meadows, sloughs and patches of muskeg are encountered.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 97 (*Exploration survey.*)—The surface of this township is wooded with poplar, spruce and some birch. The creeks have more noticeable banks as Peace River is reached, the banks of which are from thirty to forty feet high. Wolverine River flows sluggishly through a winding channel.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 98 (*Exploration survey.*)—This township is gently rolling and is wooded with poplar and spruce with some swampy parts. Good black loam is found on the west side of Wolverine River.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 99 (*Exploration survey.*)—Some excellent homesteads are found in this township, but they are difficult of access. The surface is wooded with small poplar and spruce.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 100 (*Exploration survey.*)—The township drains toward the west with a good slope. The soil varies from loam to heavy clay and would make good agricultural land. Towards the east there is considerable windfall.—*J. A. Fletcher.*

Tp. 101 (*Exploration survey.*)—Some merchantable spruce grows in the township, the surface of which drains toward the east. The soil is a good clay loam well suited for agriculture. A few patches of muskeg are found, but these could be easily drained.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 102 (*Exploration survey.*)—The surface is gently rolling, and the soil varies from clay loam to sandy loam. The township is mostly prairie with small poplar and windfall. Grass and beaver meadows are plentiful, and the land is well adapted for agriculture.—*J. A. Fletcher, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

- Tp. 103** (*Exploration survey.*)—The surface is largely prairie or covered with young poplar, and is gently rolling. The soil varies from light sand to loam. The beaver meadows with a mucky soil support luxuriant grasses.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 104** (*North outline.*)—Peace River touches this township on the north. The soil is good and the surface where open is covered with good meadow grass, but where it is wooded there is a good growth of poplar, willow, birch and alder.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 105** (*Exploration survey.*)—Peace River flows across this township between banks two hundred and twenty-five feet high. Back from the river valley the surface is gently rolling and timbered with spruce, poplar and jack pine. North of Peace River the soil is light and quite sandy in places. Jack pine ridges separate muskegs and marshes.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 106** (*Exploration survey.*)—The surface is largely jack pine ridges with marshy intervals containing many small ponds along which coarse grass grows. The soil is a light sandy loam and the district is not very suitable for agriculture.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 108** (*Exploration survey.*)—The township is covered with poplar and spruce, and some old beaver meadows are found. Underbrush of alder and saskatoon covers a number of areas. The surface is gently rolling and the soil is a good loam, well adapted for agriculture. The township is easily accessible by wagons from Fort Vermilion. Boyer River flows through this township with a sluggish current.—*J. A. Fletcher, D.L.S., 1913.*
- This township may be reached from North Vermilion by following the Keg River trail which runs diagonally across from section 25 to section 18, through a nearly level country lightly covered with willow and poplar, suitable only for firewood. The soil consists generally of sandy or clay loam with clay subsoil, and is suitable for mixed farming, especially in the north two-thirds where there are many large prairie patches and hay meadows. The south third consists mostly of jack pine ridges alternating with swamps. Good water is found in the lakes and in Boyer River which runs across sections 30, 31 and 32, between banks about thirty feet high. This stream averages forty feet wide and its banks are covered with small poplar up to eight inches. No coal, minerals nor stone-quarries were found. Ducks were plentiful, but were the only game seen.—*P. M. H. LeBlanc, D.L.S., 1914.*
- Tp. 109** This township is reached from North Vermilion by the Hay River trail which runs through a prairie opening across the northern row of sections. It is also reached from the ford of the south branch of Boyer River by the Hay River trail, and a new road which branches westerly along the north side of the river, entering the southern part of the township. The soil is generally black loam with sandy clay or clay subsoil, suitable for farming purposes. Except where broken by the south branch of Boyer River, the country as a whole is level, and generally covered with poplar, spruce and willow interspersed by small prairie openings. A small quantity of hay can be obtained from several small sloughs on sections 4, 5, 8 and 36. The south branch of Boyer River enters the township in section 5 and joins on section 6 with Deadhorse Creek which is thirty links wide and five feet deep. Both form a fairly large stream. After the spring freshet there is only a slow current and the river becomes a chain of long reaches of water about seven feet deep occasionally broken by small rapids. The water is fresh and the banks vary up to ten feet high. No frosts occurred during the course of the summer season. No coal, minerals, stone-quarries, nor water-powers were found and no game was seen. Wood for fuel is everywhere plentiful.—*P. M. H. LeBlanc, D.L.S., 1915.*
- Tp. 111** (*Exploration survey.*)—This is a good township, timbered with small spruce, willow and poplar. The soil is good and the surface is fairly level.—*J. R. Akins, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 17.—*Continued.*

- Tp. 112** (*North outline.*)—The northern part of this township has been burned over and is now covered with standing dry trees. The south part is wooded with small spruce, poplar and willow, among which there is much deadfall. The surface is fairly level and the soil is good.—*J. R. Akins, D.L.S., 1914.*
- Tp. 113** (*Exploration survey.*)—The surface of this township is nearly level or gently rolling. The soil is good and the second-growth poplar, spruce, willow and alder is mixed with deadfall.—*J. R. Akins, D.L.S., 1914.*
- Tp. 114** (*Exploration survey.*)—This township is drained by Melvin River and Roe Creek. The surface is gently rolling and covered with burnt spruce and poplar, with a second growth of willow and alder.—*J. R. Akins, D.L.S., 1914.*

RANGE 18

- Tp. 68** See report for township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*
- Tp. 72** (*North outline.*)—This township includes the north-eastern slope of Hunter's Mountain, which is timbered with very large spruce averaging twenty-four inches in diameter. Spruce of thirty inches and thirty-six inches in diameter are not uncommon. The trees are sound, straight and clear of limbs to a height of forty feet or more. The other trees noticed are balsam, fir (savin), poplar, twelve to fifteen inches in diameter, birch, balm of Gilead and large cottonwood. The underbrush in this forest is very dense, and in places the ground is covered with bad windfall. The soil is generally a sandy loam, six inches deep, covering a subsoil of heavy clay. Nat-sho-e or Iroquois Creek, which flows northwards into Iroquois Lake and ultimately into Little Smoky River, crosses the line in section 36, as does also the winter trail from Prairie River Settlement to Sturgeon Lake. There are a few small patches of prairie land along this creek. The divide between West Prairie River and Snipe Creek is in section 31.—*Arthur Saint Cyr, D.L.S., 1904.*
- Tp. 73** This township was reached by the winter trail from Grouard to Sturgeon Lake which crosses the south-east quarter of section 1. This is a good winter trail but is hardly passable in summer. The soil is a rich black loam averaging about eight inches in depth over a clay or sandy clay subsoil, and with proper drainage should make a splendid mixed farming district. The township is timbered throughout. All or parts of sections 2, 3, 4, 5, 6, 8, 9, 10, 11, 15, 16 and 17 are included in T. B. No. 1225, a large percentage of the timber included in the berth being spruce. The remainder of the township is timbered with poplar, spruce and birch with a heavy undergrowth of willow and alder. The spruce, balsam, balm of Gilead and poplar included in T. B. No. 1225 averages about eighteen inches, but the timber of the rest of the township does not average over six inches in diameter. No hay meadows were noted. During the survey all the water, though scarce, was fresh and of good quality, and all the streams were frozen solid. The country is very flat, however, and quite the opposite may be the case during the summer months, but it is not probable that the country is liable to serious floods. No water-power can be developed. General indications are that the climate is similar to that of the neighbouring settlement of High Prairie where farming has been carried on for years. Wood for fuel is abundant everywhere. No stone-quarries nor minerals of economic value were noted. Moose appear to be quite plentiful and a few partridges were seen.—*W. H. Waddell, D.L.S., 1914.*

- Tp. 74** This township is accessible by the summer trail from Grouard to Sturgeon Lake which crosses the north part of this township. Parts of this trail are through swamps and in wet years it is impassable for anything except light loads. The whole surface, half of which is very wet, is covered with bush. The south two-thirds is mostly willow,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—*Continued.*

with bluffs of poplar scattered throughout. Sections 25 to 30 are drier and contain larger poplar, but the greater part of sections 34, 35 and 36 is wet swamp containing small spruce. Small tamarack grows in sections 16, 17, 19, 20, 21, 22, 32, 35 and 36. The soil consists of black loam from six to sixteen inches deep over a clay loam from six to sixteen inches deep, and under this is a subsoil of clay. It would produce the cereals and vegetables common to the district. During September the weather was wet and rather mild, although heavy frosts occurred. No hay is available in this township but water is plentiful. Parts of sections 3, 4, 9, 10, 15 and 16 are boggy. Several small creeks drain the township, among which is Iroquois Creek, a crooked stream about eight feet wide and two feet deep, with banks eight feet high. The whole surface is so level that a sluggish creek connecting two lakes runs either way according to the height of the water in the lakes. Generally the current is eastward, but after a heavy rain the water backs up from the overflowed West Prairie River to the east and the current is then westward. The water in Iroquois lakes is fresh but not pleasant to drink as it holds in suspension a great amount of vegetable matter. There are no waterfalls from which power could be developed. Wood fuel is everywhere abundant, but no coal nor minerals of economic value were seen. Game consists of moose, black bears, weasels, ruffed grouse, geese and many varieties of ducks, while signs of marten, mink, coyotes and foxes were noticed.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 75 A rough surveyors' trail entering this township on the east boundary of section 13 is the only road into this township. The old pack trail from Grouard to Sturgeon Lake passes through sections 12, 11, 2, 3 and 4. The soil is composed of three to ten inches of black loam on a clay subsoil and would grow all the usual products of the district. The surface is almost level draining gently towards the south. Timber of varying sizes covers the township, but that growing on the north half is larger than on the south half. The two westerly tiers of sections contain a lot of willow, while poplar, balm of Gilead, jack pine, spruce and tamarack are scattered over the whole township. In the north-east quarter of the township the poplar averages fourteen inches but elsewhere it grows no larger than six inches. The spruce averages twelve inches on sections 29 to 33, but on the remainder of the township it is small. The jack pine grows on clay soil in the north two-thirds of the township. This is unusual as jack pine is generally found on sandy soil. Practically no hay grows in the township and in a dry season water would be scarce, but it could no doubt be obtained by digging a few feet. One of the Iroquois Lakes lies on the north-east quarter of section 1. A creek about forty feet wide flows out of this lake; it has a sluggish current and the bottom is muddy. No land is liable to be flooded and no water-power could be developed. A great amount of rain fell during the month of July, and though the weather was cool no frosts occurred. Good feed for animals, consisting of peavine, vetch and grasses grows abundantly. Wood fuel is plentiful everywhere but no coal, stone nor minerals were noticed. Moose, bears, ducks and ruffed grouse constitute the game in the township.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 76 (*North outline.*)—This township is gently rolling to Winagami Lake, in section 35. The timber is mainly poplar from three to seven inches in diameter, with scattered bunches of spruce. Winagami (not good water) Lake begins in section 35 and is five and one-quarter miles across and about four miles wide north and south. There are large hay meadows on the south shore. This ought to be a good ranching property as stock does well and does not object to the water. Several Indians and half-breeds have houses near the west end of the lake and quite a band of horses. Some fish were caught in the lake and large flocks of water-fowl were seen.—*Henry W. Selby, D.L.S., 1905.*

This township is easily reached by the Grouard-Spirit River Settlement trail, which passes through sections 24, 23, 22, 21, 20, 29 and 30. The route is really a winter one, but can be travelled in summer for a short distance westerly from this township, and is at its best in dry weather. The soil is generally a black loam from two to six inches in depth on a clay subsoil. Occasionally sand occurs and the west third of the township is covered by a large swamp composed of moss and black muck. The soil should produce the cereals and vegetables commonly grown in this part of the country. With the exception of a narrow strip around Winagami Lake where

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—*Continued.*

excellent hay grows in abundance, and a large meadow and marsh occupies most of the east half of section 9 and the greater part of section 10, the surface of the township is nearly all covered with a dense growth of bush and scrub. Winagami (Stinking) Lake, the waters of which smell strongly of hydrogen sulphide, occupies sections 27, 28, 29, 31, 32, 33 and 34 and parts of sections 35, 26, 21, 20 and 30. The lake water is scarcely fit to drink, but good water is readily obtained from marshes and swamps and from a creek which flows easterly through sections 18, 17, 16, 9, 10, 11, 2 and 1. At the time of the spring thaw this stream has an average width and depth of eight and five feet respectively, but later in the season becomes a small rivulet. South Heart River, a swift stream a little less than a chain in width, but having no rapids or falls where power could be developed, flows through sections 36, 25 and 24. No land is liable to be flooded to any serious extent. During the period of survey (April and May) frosts occurred nearly every night. Fuel in the form of poplar, spruce, balm of Gilead, willow, tamarack, jack pine, and a little white birch is plentiful throughout the township. Timber consists for the most part of poplar and spruce, and in the southerly part the latter variety is found scattered among the poplar and other woods, with an average diameter of twelve inches and as large as twenty-four inches in diameter. No coal nor lignite, stone-quarries nor minerals of economic value were seen. Winagami Lake contains large numbers of pike and mullet, and goldeye are found in South Heart River. Geese, swans and ducks of various kinds are numerous and a few ruffed grouse and moose were seen.—*H. S. Holcroft, D.L.S., 1911.*

Tp. 77 A wagon road from Grouard to Falher runs along the south side of Winagami Lake and passes within about two miles of this township. From Grouard to Winagami Lake the trail is exceptionally poor in summer but considerable improvement work is now being done on it. From Winagami Lake to McLennan the trail is good. McLennan is the second divisional point on the Edmonton, Dunvegan and British Columbia Railroad which is now under construction. All trails within the township itself are pack-trails. The soil is principally a few inches of black loam overlying a clay subsoil, and is suitable for mixed farming. The surface is timbered mainly with poplar of an average diameter of eight inches with poplar scrub and spruce scattered throughout. The spruce runs up to twenty inches in diameter. There is a considerable amount of willow scrub, and a few birch are also found. The only timber available is the spruce which is scattered throughout the township, but in no instance does it occur in any quantity. A small amount of slough hay is obtainable along the shores of the several lakes. The quantity is difficult to estimate and would vary accordingly as the season is wet or dry. The water is fresh. That in Winagami Lake, while not alkaline, has a flavour which makes it unpalatable. The lake also gives off a peculiar odour in summer. The supply of water is sufficient and permanent. There are a few small creeks in the township. No land is liable to be flooded. There are no water-powers in the township. The climate is similar to that in the vicinity of Grouard. No summer frosts were noted. Wood for fuel is available in all parts of the township. No stone-quarries nor indications of minerals were noticed. Moose and bears are scarce, but ducks, geese and grouse are plentiful.

Lakes.—Winagami Lake occupies about five sections in this township and extends into the townships to the south, south-west and west. It is shallow for the most part, but in places it is thirty feet deep. It has a muddy bottom and low marshy shores. Pike are found in this lake. The lake in section 13 extends into the township to the east. Its shores are low and marshy and are surrounded by spruce swamps, poplar and willow. It has a maximum depth of six feet and a muddy bottom. The small lake in section 14 has a maximum depth of eight feet. In all other respects it is similar to the one in section 13. The lake in sections 22 and 24 is small and shallow, having a maximum depth of five feet. It has low, marshy shores and a muddy bottom.—*J. J. Stock, D.L.S., 1914.*

Tp. 78 The north-east corner of this township is less than a mile from the trail connecting Grouard and Peace River Crossing. A pack-trail connecting this wagon trail with Kimiwan Lake in township 78, range 19, crosses this township in a westerly direction. This could be easily converted into a wagon road and would make the best connection

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—*Continued.*

between Edmonton, Dunvegan and British Columbia Railway running along the west shore of Kimiwan Lake and the Grouard-Peace River Crossing trail. The soil is generally a black loam with a clay subsoil and is suitable for mixed farming. The surface is timbered mainly with poplar of an average diameter of seven inches, with considerable spruce of the same size scattered throughout. Sections 15, 16, 21 and 22 are mainly spruce swamp, the spruce having an average diameter of five inches. Willow, birch and balm of Gilead are found throughout the township. There is no timber of any commercial value. In the north-west quarter of section 16 and the south-west quarter of section 21 there is an area of about thirty acres of slough hay. In section 35 about one hundred acres of slough hay are found. The hay is of fair quality. All the water is fresh and the supply is sufficient and permanent. Numerous creeks flow through the township. No land is liable to be flooded. There are no water-powers in the township. The climate is similar to that of the vicinity of Grouard. No summer frosts were noted. An abundance of wood for fuel is available in all parts of the township. No stone-quarries nor minerals were found. Game is scarce in this vicinity, but moose, bears, geese, ducks and grouse may be found.

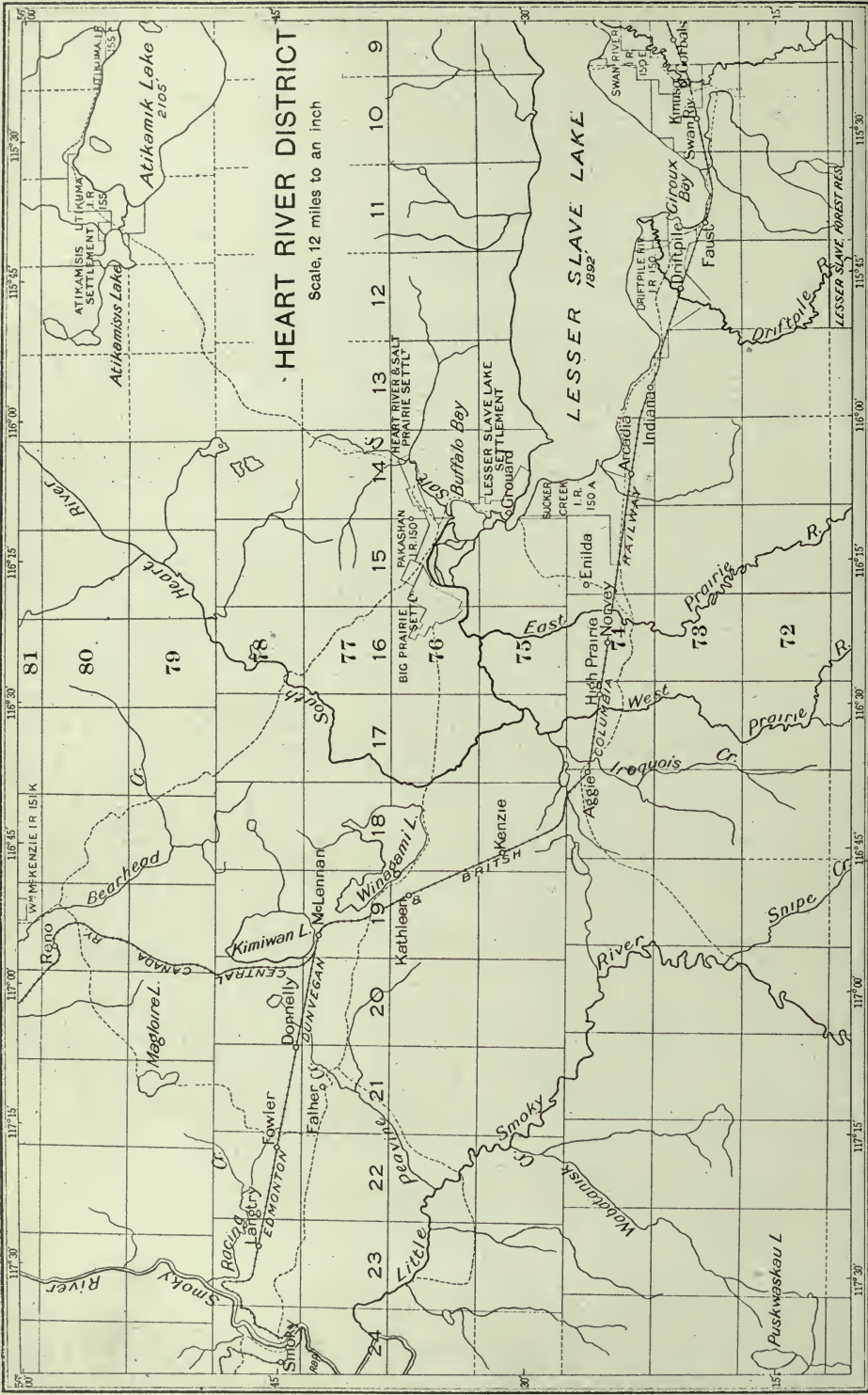
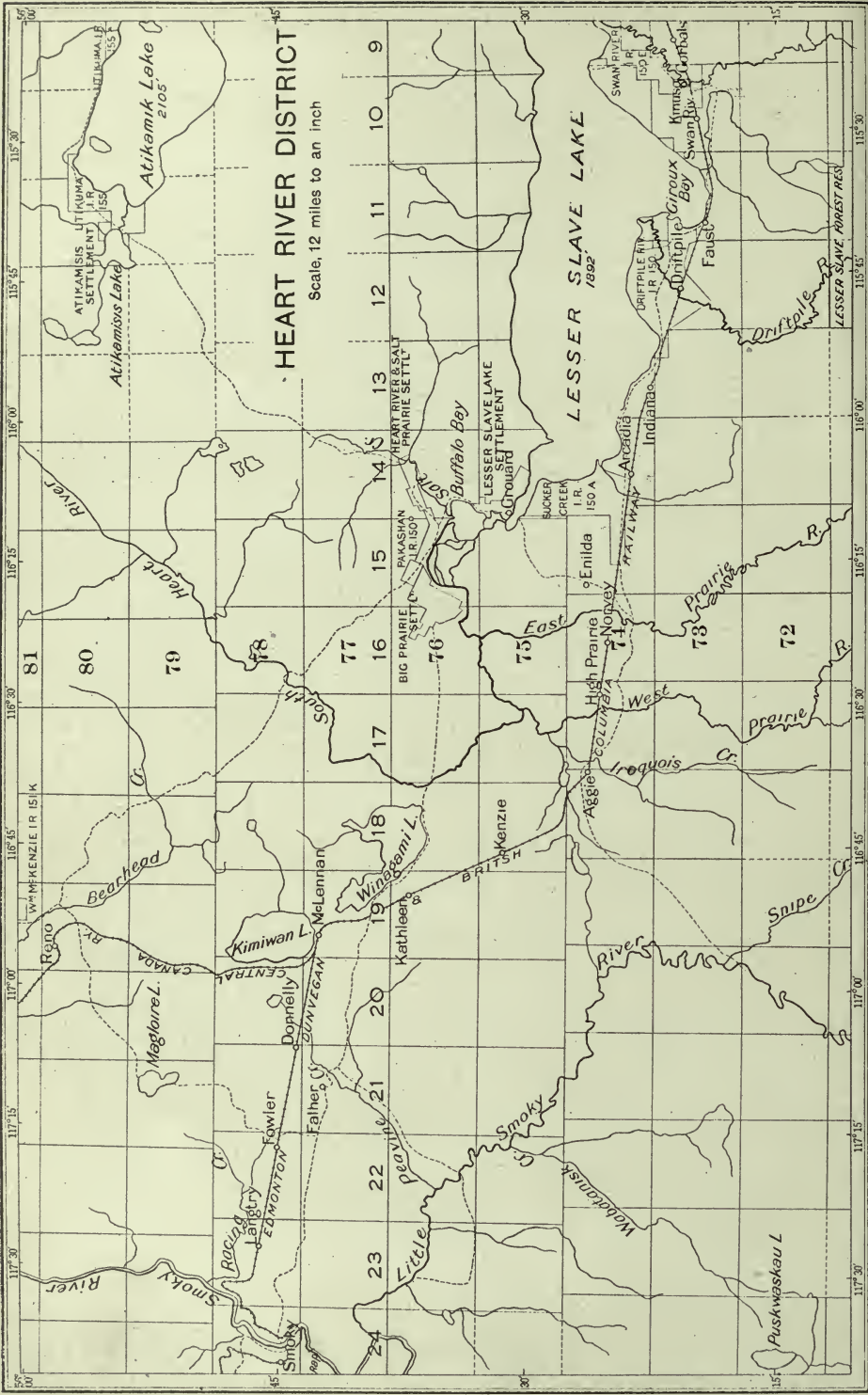
Lakes.—The lake in sections 21 and 22 and also that contained in sections 13, 14, 23 and 24, have flat shores and are surrounded by marshy land from one to two chains wide. They both have a mud bottom and a maximum depth of six feet.—*J. J. Stock, D.L.S., 1914.*

Tp. 79 The best route into this township is by means of the Edmonton, Dunvegan and British Columbia Railway to Sawridge, thence by boat to Grouard, and thence by wagon on the Peace River Crossing Road which passes through the north-east corner of the township; the surveyor's pack-trail to the east outline of township 79, range 19, is good and can be used all summer. The surface of the township is nearly level and covered with poplar, spruce and jack pine up to twelve inches in diameter, with willow and alder underbrush. With the exception of the timber in section 30 where there is jack pine up to fourteen inches, spruce up to ten inches and poplar up to fourteen inches in diameter, the timber is of little commercial value and might be left for the use of the settlers. The soil consists of from two to four inches of black loam, with peat in the muskegs, and a clay subsoil, and is suitable for mixed farming. There are no hay meadows, but there is good grazing throughout the township. The township is well watered by Bearhead Creek, which flows from east to west. No land is liable to serious flooding at high water. The water throughout is slightly alkaline. No water-powers, coal, minerals nor stone-quarries were seen. Wood for fuel is plentiful. The climate is slightly colder than that of Edmonton, and there were heavy frosts on July 27 and 28, and slight frosts on August 12 and 13. Although this district suffered this year, frosts have been unknown for years in this locality. Game is not plentiful, although moose and black bears were seen. Foxes and partridges are very scarce, and only a few ducks were noticed on the lakes. *G. Z. Pinder, D.L.S., 1914.*

Tp. 80 (*North outline.*)—This township is accessible from the wagon road between Grouard and Peace River Crossing, and I believe a good road could be built along South Heart River with little trouble. The wagon road from Grouard is a fairly good one and, as it is a main highway through this country, will no doubt be improved each year. The soil is either clay or sandy loam from six to twelve inches deep with a subsoil of clay or sand and gravel on the ridges; in the marshes and swamps there is a black humus, six to eighteen inches deep, with generally a clay subsoil. The true muskeg is not prevalent in this township. The soil is well adapted to mixed farming, all varieties of vegetables as well as oats, barley and hay growing in great profusion. The surface is gently rolling and is almost all timbered, the exceptions being marshes or open muskegs. The timber is chiefly poplar, spruce, balm of Gilead, balsam, alder, willow and some jack pine, and could scarcely be said to have any commercial value. Poplar runs from three to fourteen inches in diameter and spruce up to twenty-four inches. Hay is abundant along all streams and in the sloughs. Water is everywhere fresh and plentiful throughout this township, a good part of which lies between the North and South Heart Rivers. There are no water-powers. The fuel is wood and is to be found on almost every section. No stone-quarries of economic value nor minerals were noticed. Moose, caribou and bears were quite

HEART RIVER DISTRICT

Scale, 12 miles to an inch



TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—*Continued.*

numerous. Water-fowl were common on open marshes, sloughs and rivers, and willow and spruce-partridges and fool-hens were also plentiful.—*A. H. Hawkins, D.L.S., 1910.*

The trail from Grouard to Peace River Crossing runs diagonally through this township. This trail is good in a dry season but in wet weather it is very poor. The soil is good and is suitable for mixed farming. The surface is well timbered with poplar, balm of Gilead up to ten inches tamarack, willow and a heavy growth of alder underbrush. A small amount of slough hay grows along the trail. The supply of water is fresh and permanent in the numerous creeks, but no water-powers exist nor is the land liable to be flooded. The climate is somewhat colder than that of Edmonton and summer frosts were noted. Wood fuel may be easily procured in any part of the township. No stone-quarries nor minerals were found. Game consists of moose, bears, partridges and rabbits.—*J. J. Stock, D.L.S., 1911.*

Tp. 81 This township can be reached from the road between Grouard and Peace River Crossing, as a good wagon road branches from it in sections 10 of the township to the west and leads into this township. With the exception of occasional patches of muskeg the soil is black loam on a clay subsoil. The surface is rolling and covered with poplar up to ten inches, spruce, a few birch and in places a dense tangle of willow and alder underbrush. A few small clumps of spruce up to eighteen inches in sections 12 and 13 form the only merchantable timber. Benjamin Creek furnishes a permanent supply of water. It flows through sections 35, 27, 28, 21 and 19, is ten feet wide, two feet deep, and has a current of one mile per hour. Both banks average from forty to fifty feet high, but there are no available water-powers. Poplar and spruce form a plentiful supply of fuel, but no coal, stone-quarries nor minerals were seen.—*A. G. Stewart, D.L.S., 1912.*

Tp. 84 (*North outline.*)—See report for township 84, range 15.—*A. H. Hawkins, D.L.S., 1911.*

Tp. 88 (*North outlines; ranges 18, 19 and 20.*)—This locality may be reached from Peace River Crossing by Peace River to the mouth of Cadotte River, thence by the valley of either branch of this river to these townships. The soil seems to improve as Peace River is approached, varying from a sandy clay to a good clay loam with humus or moss in the lower or marshy portions. The surface is very gently undulating with a gradual easy descent to Peace River except where it is broken by the valleys of the branches of Cadotte River where it is very rugged and rough in places. The surface of the plateau is covered largely with small poplar, willow and alder with a few clumps of larger poplar and spruce. There are a few small marshy lakes. The valleys support a much larger growth of timber, ranging up to twenty inches in diameter, but it is rather scattered and not more than enough for the use of settlers who are sure to find their way to these favoured localities at an early date. Hay was much more plentiful in these ranges than in those to the west. Many very fine meadows are found along the rivers, and the whole plateau was covered with a more or less luxuriant growth of grass and peavine, making splendid feed for cattle or horses. The water is all fresh and the supply in the creeks is both permanent and abundant. There are several places along both the north and south branches of Cadotte River where with comparatively small improvements the rapids might be utilized to develop electrical energy. Wood is the fuel that is most readily available and is abundant throughout these ranges. No indications of either coal or lignite were observed. Neither stone-quarries nor minerals of economic value were found. Along the north branch of Cadotte River in range 20, section 35, close to the stream were noticed several springs having a very decided saline taste, and in the east half of section 34, range 19, we came across a very large and apparently favoured moose-lick. Small game such as partridges, grouse and prairie chickens are abundant; bears and moose are numerous and foxes, lynx and wolves are in evidence. It would appear to the writer that there are several desirable locations in these valleys for horse or cattle ranches, as the natural or country grass is most excellent for feed, the water is good and there is an abundance of shelter, all of which tend to make it an ideal place for such purposes.—*A. H. Hawkins, D.L.S., 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—Continued.

- Tp. 89** (*East outline.*)—Little Cadotte River enters this township from the north and flows in a valley from fifty to one hundred and twenty-five feet deep, in a very winding channel. A few large spruce border the river. A creek flows through a fine hay meadow in the northern part, and south of it lies an area of spruce muskeg and patches of brulé. The southern sections contain some large spruce and heavy windfall, which cover some excellent agricultural land.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 90** (*East outline.*)—Little Cadotte River flows through the south-east corner of the township in a meandering course through a valley forty to fifty feet deep. Patches of jack pine with light soil border the river, south-east of which is some good spruce and poplar growing on heavier soil. The north-west part is poorly drained, being largely composed of tamarack and spruce muskeg.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 91** (*Exploration survey.*)—The height of land occurs near the north boundary of this township, and along this height there are numerous small lakes, drained by creeks flowing south-west. The surface is gently rolling and alternates with muskeg and low ridges. Stones of glacial origin are found on the crests of the ridges, most of which have been fire-swept and are now covered with windfall and brulé. The muskeg intervals support a growth of spruce and willow and when drained would make good farming land.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 92** (*North outline.*)—The northern part of this township is nearly all open and covered with grass. Many small streams flow north across it. The southern part is wooded with spruce, poplar and willow, and in the south-east corner a small lake is surrounded by marshy spots.—*J. R. Akins, D.L.S., 1913.*
- Tp. 93** (*Exploration survey.*)—The south part of this township is partly open but the north part is heavily wooded with spruce, poplar and undergrowth, but a large part was burned last year.—*J. R. Akins, D.L.S., 1913.*
- Tp. 94** (*Exploration survey.*)—Some creeks flowing north drain this township. The surface is gently undulating and is mostly timbered with spruce and poplar. Small meadows lie between spruce and tamarack muskegs.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 95** (*Exploration survey.*)—This township drains to the north by several small creeks, collecting into a larger stream called Cache Creek, which in turn flows into Wolverine River in township 100. The soil is rich loam and is well adapted for agriculture. Patches of brulé and some old beaver workings are found.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 96** (*North outline.*)—The surface is wooded with jack pine and tamarack. The soil is light and sloughs, muskegs and small lakes are numerous.—*J. R. Akins, D.L.S., 1913.*
- Tp. 97** (*Exploration survey.*)—The eastern part of this township is traversed by Cache Creek. The western half has many lakes and small sloughs and is at present not very good for farming. It is wooded with spruce and tamarack around the sloughs and lakes.—*J. R. Akins, D.L.S., 1913.*
- Tp. 98** (*East outline.*)—Peace River flows through the north-west corner of this township, and the neighboring land is somewhat broken by its banks which are about four hundred feet high. The soil is loamy and jack pine grows on the ridges between which are patches of muskeg. Some poplar-covered areas are found near Cache Creek which flows between banks one hundred and fifty feet high.—*J. A. Fletcher, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—Continued.

- Tp. 99** (*East outline.*)—The surface is gently undulating and broken by Peace River, which has banks four hundred feet high. Buffalo River flows from the south-east between banks fifty feet high. It drains Buffalo Head Hills and flows in a deep sluggish channel through a fertile prairie which would make excellent homesteads if they were more easily accessible from Peace River. As the creeks approach the Peace they resemble mountain streams flowing over stony and gravelly bottoms in a series of rapids ending in Peace River.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 100** (*North outline.*)—This township is cut by Wolverine River and big creeks whose valleys are deep, and are consequently very rough. The soil is fairly good and the surface is wooded with spruce, poplar and willow.—*J. R. Akins, D.L.S., 1913.*
- Tp. 101** (*Exploration survey.*)—This township is not of much value, as it is rough, being cut by several large streams. Most of the soil is light and wooded with jack pine, spruce and poplar.—*J. R. Akins, D.L.S., 1913.*
- Tp. 102** (*East outline.*)—The surface is gently rolling, and the soil varies from clay to sandy loam. The township is mostly prairie with some small poplar and windfall. Beaver meadows are plentiful, and the land is well adapted for agriculture.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 103** (*East outline.*)—The township is gently rolling, and is mostly prairie though young poplar grows in patches. The soil varies from light sand to loam, and the beaver meadows support a luxuriant growth of grass.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 104** (*North outline.*)—The north-western part of this township is wooded with spruce and jack pine and has light soil. The southern part is lightly wooded with willow, poplar and jack pine.—*J. R. Akins, D.L.S., 1913.*
- Tp. 105** (*East outline.*)—Peace River flows through this township between banks about two hundred and twenty-five feet high. Back from the valley of Peace River the surface is gently rolling and timbered with spruce, poplar and jack pine. North of Peace River the soil is light and sandy in places. Between the jack pine ridges lie muskegs and marshes.—*J. A. Fletcher, D.L.S., 1913.*
- Tps. 106 & 107** (*East outline.*)—The surface is largely jack pine ridges with marshy intervals supporting a growth of coarse grass with numerous small ponds. The soil is light sandy loam, and jack pine, poplar and spruce grow, among which there is considerable windfall and brulé.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 108** (*East outline.*)—Poplar and spruce with old beaver meadows cover most of the township. The soil is a good loam well adapted for agriculture, and the district is easily accessible from Fort Vermilion most of the year by wagon trail. Boyer River flows through the township with a sluggish current.—*J. A. Fletcher, D.L.S., 1913.*
- (*Partial.*)—The main trail from North Vermilion to Keg River enters this township on section 13 in a south-westerly direction, but the township is most easily reached by a sleigh trail from the Keg River trail on section 18 of the township adjacent to the east. The soil is a sandy or clay loam on a sandy or clay subsoil, and is suitable for mixed farming. The surface is level, except where broken by the south branch of Boyer River and Deadhorse Creek. It is entirely wooded with poplar, spruce and willow, which along the banks of the south branch of Boyer River grows large enough for building purposes. The south branch of Boyer River crosses the township in a north-easterly direction and its banks are about thirty-five feet high. It averages fifty links wide, two feet deep and has a slow current over a stony bottom. Deadhorse Creek flows across

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 18.—*Continued.*

the northern part of the township. It is about thirty feet wide, eighteen inches deep, and flows with a slow current between banks twenty-five feet high. Few hay meadows were seen. Wood is everywhere plentiful, but no coal, stone-quarries nor game were seen.—*P. M. H. LeBlanc, D.L.S., 1914.*

Tp. 109 The Hay River trail meanders across the two northern tiers of sections of this township through open country. A wagon trail through the south row of sections turns north in section 7, joining the Hay River trail in section 33. The soil is black loam on a clay subsoil and is suitable for general farming. The surface is level and wooded with poplar up to twelve inches, but dry wood can be obtained in abundance. A burnt tract of land in the south-west corner requires little clearing. Deadhorse Creek, flowing across the southern part of the township is five feet deep at high water, and flows with a current of one and one-half miles an hour between banks twenty feet high. It averages twenty-five feet wide. Good hay grows in patches along the creek. No coal, stone-quarries, minerals or game were seen.—*P. M. H. LeBlanc, D.L.S., 1915.*

Tp. 111 (*Exploration survey.*)—This township is well wooded with spruce, willow and poplar. The surface is fairly level and the soil is good.—*J. R. Akins, D.L.S., 1914.*

Tp. 112 (*North outline.*)—This township is wooded with spruce, poplar, willow and alder. Muskegs and swamps are found over the level surface, but the soil is good, in general.—*J. R. Akins, D.L.S., 1914.*

Tp. 113 (*Exploration survey.*)—The surface is nearly level or gently rolling. The soil is fairly good and deadfall is interspersed with the second-growth poplar, spruce, willow and alder.—*J. R. Akins, D.L.S., 1914.*

Tp. 114 (*Exploration survey.*)—This township is drained by Melvin River and Roe Creek. The soil is good and the surface is gently rolling and covered with burnt spruce and poplar with a second growth of willow and alder.—*J. R. Akins, D.L.S., 1914.*

RANGE 19

Tp. 68 (*North outline.*)—See report on township 68, range 9.—*J. N. Wallace, D.L.S., 1905.*

Tp. 72 A thick forest of spruce of two feet in diameter, balsam, fir (sapin), birch, balm of Gilead, and large cottonwood covers this township, the surface of which is rolling and sloping towards the north-west. Section 35 is covered with impassable wind-fall. Fairly large creeks flow through every section along the line and go to feed Stony Creek, which winds along the west edge of Hunter's Mountain and crosses the line at the north-east corner of section 34. The ground is stony in places on the surface and the soil is light, being a sandy loam from six to ten inches deep with a heavy clay and stone subsoil.—*Arthur Saint Cyr, D.L.S., 1904.*

The land in this township is excellent, consisting of about eight inches of black loam with clay subsoil, and is suitable for agriculture. It is all level and covered by a dense growth of spruce and poplar up to ten inches with willow and alder. No hay grows in the district. Snipe Creek runs through this township, draining Snipe Lake. It is a permanent stream about thirty feet wide, two feet deep and has a current of about two miles per hour. Water-power could be easily developed by damming Snipe Creek, near Little Smoky River, as the valley is very deep and narrow. The climate is good with no summer frosts. There are no stone-quarries nor minerals and wood is the only fuel. Moose, bears, foxes, lynx, beaver, mink, marten, skunk, weasels and rabbits are fairly plentiful.—*A. E. Glover, D.L.S., 1915.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

Tp. 73

(*East outline.*)—The Grouard-Sturgeon Lake winter trail enters on the east and leaves on the south boundary of this township. It is in poor condition for summer travel. Several pack-trails, adjuncts of the Sturgeon Lake summer trail, cross the north-west corner of the township. In most places the soil seems good and when cleared would be suitable for general farming. There is some excellent timber consisting of spruce and balsam of Gilead, from twelve to thirty-six inches, and poplar from twelve to twenty-four inches in diameter in the timber limits in the southern portion of the township. Immediately to the north of and adjoining the limit lies a belt of burnt country with a growth of young poplar and a considerable amount of deadfall upon it. This strip extends north of the timber limit for a distance of two miles. North of this, poplar is found from four to twelve inches in diameter with willow and occasional spruce. There are a few small creeks, tributaries of Iroquois Creek, but with the exception of these the supply of water is scarce, especially in a dry season. No water-powers are available and no hay can be cut. Wood is plentiful, but no coal or lignite veins nor minerals of economic value were observed. Signs of moose and bears were plentiful and some ruffed grouse, foxes and weasels were seen.—*H. S. Holcroft, D.L.S., 1911.*



Photo by J. S. Galletly, D.L.S.

Sheridan Lawrence's Farm—Fort Vermilion

The summer trail from Grouard to Sturgeon Lake passes through this township. This trail is probably passable at all seasons, but is not suitable for heavy traffic during any part of the summer season. The soil is a rich, black loam from two to fifteen inches deep over heavy clay subsoil, and with proper drainage should make splendid farm land. The township is timbered throughout; all of section 2 and parts of sections 1, 3, 10, 11 and 12 are included in T. B. No. 1225. North of this timber there is a strip of about a mile in width which is covered with large burnt timber with second-growth poplar. Sections 15 to 22, inclusive, and sections 28, 29 and 30 are covered with poplar and willow scrub, and patches of large green poplar averaging about eight inches in diameter. The remainder of the township is covered with poplar averaging about eight inches with scattered spruce and birch. Some good hay could be cut in and around a few scattered sloughs, but there are no large areas of hay land. The township is well supplied with water of splendid quality, contained in the numerous small creeks. In its present condition there is a considerable portion of the township flooded during the wet season but this should entirely disappear with the clearing of the land and the construction of small drains. Little Smoky River flows through the north-west quarter of section 31.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

This stream averages about four chains in width and six feet in depth and has a current of from two to four miles per hour. There is no available water-power. The climate appears similar to that at High Prairie, a settlement a few miles to the west of Grouard. Wood for fuel is very abundant. No stone-quarries nor minerals of economic value were noted. A few partridges were seen, also signs of moose, but game is not very plentiful. Fresh beaver work was noticed in different parts of the township.—*W. H. Waddell, D.L.S., 1914.*

Little Smoky River.—The horizontal distance between the high and low water marks varies largely at different points. At the bends of the river the outside of the curve is usually steep and there is a very small difference, while on the inside there is ordinarily a sand or gravel beach where the difference may be as much as two chains. Between the bends the difference varies from a few links to over a chain. At the bends the outside bank is clay and in many cases it is a steep cut bank. During low water one shore is usually sand or gravel. Throughout the greater part of the river the banks are well defined. All the adjoining land is high and timbered. The slopes rise from two hundred to two hundred and fifty feet. In some places these rise abruptly from the water's edge to a height of one hundred feet or more while again there may be a small flat from which the hills rise gradually, and in other places the slopes are very broken caused from repeated slides, many of these occurring half a mile from the stream. The surface of the stream is open throughout. The water is fresh and of good quality, but while the ice is going out and during the summer floods it becomes very muddy from the breaking away of the clay cut banks. During ordinary seasons the depth of the water varies from three feet in the rapids to twelve or fifteen feet in the slower-running portion but during the summer flood of 1914 the general level of the river was about fifteen feet higher.—*W. H. Waddell, D.L.S., 1914.*

Tp. 74

A sleigh trail was cut in a northerly direction from a point on the Grouard-Sturgeon Lake summer trail in section 34 of the township to the south. This trail crosses considerable muskeg and would not be passable for wagons in the summer. The summer trail between Grouard and Sturgeon Lake passes through sections 13, 12, 1 and 2, and this is passable at all seasons, but it cannot be said to be a good trail. The soil is a rich, black loam from three to ten inches in depth over a clay subsoil and with the exception of the sections adjoining Iroquois Lake where boulders occur. The township when properly drained should be well adapted to farming. Excepting a few small patches of prairie in sections 20, 29 and 28 and a number of small hay meadows, the surface is timbered throughout. Poplar averaging about six inches in diameter is found in all parts of the township. There is also some spruce averaging about eight inches and birch about five inches in diameter scattered among the poplar. In sections 1, 11, 14, 33, 34, 35 and 36 there is considerable jack pine averaging about ten inches in diameter. No large hay meadows were noted, but considerable hay could be cut in the open prairie patches and meadow land in sections 20, 21, 22, 28 and 29, while smaller meadows are scattered throughout the township. All water is fresh and of good quality. A large number of small creeks cross the township from east to west, but it is quite probable that these are dry during a dry season. The country being very flat there is considerable danger of spring floods, but this will probably be overcome by the clearing of the bush and a small amount of drainage work. Little Smoky River crosses the south-west quarter of section 6. This stream is only about two chains wide at this point, and the banks are very precipitous in places. Water-power could be developed on this stream, but it is questionable if the volume of water is large enough during the dry season to warrant the heavy cost of development. General indications are that the climate is similar to that of the settlement of High Prairie to the east of Grande Prairie to the west. Wood for fuel is abundant everywhere. No coal was noted along Little Smoky River in this township. No stone-quarries nor minerals of economic value were seen. Moose appear to be fairly plentiful, but other game is scarce. For further information on Little Smoky River, see the report on tp. 73-19-5.—*W. H. Waddell, D.L.S., 1914.*

Tp. 75

A pack-trail which runs in a northerly direction through the eastern part of the township connects the Grouard-Falher wagon trail with the Grouard-Sturgeon Lake trail. Both of these wagon trails are poor, but the latter is the better. The main line of the Edmonton, Dunvegan and British Columbia Railway, now under construction,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

runs within a short distance of the eastern boundary of the township. The soil varies from black to sandy loam six inches deep with a clay subsoil, and is suited for mixed farming. The surface of the township is timbered principally with poplar, balm of Gilead and jack pine of an average diameter of eight inches. Spruce and birch are scattered throughout. There is considerable alder and willow underbrush, and numerous willow swamps occur. There is no timber of commercial value in the township. No hay was found. The water is all fresh, and the supply is sufficient and permanent. There are a few small creeks in the township. No land is liable to be flooded. There are no water-powers. The climate is similar to that of the Peace River district. No summer frosts were noted. Wood is the only fuel available and is obtainable in all parts of the township. No stone quarries nor indications of minerals were noticed. Game is scarce, but moose, bears, rabbits and grouse may be found.—*J. J. Stock, D.L.S., 1914.*

Tp. 76 (*North outline.*)—The west limit of Winagami Lake extends nearly to the east boundary of section 35. Here the whole character of the country changes, fire having overrun the township leaving only islands of green spruce and poplar and burnt slash; in some places the surface has been burnt clean of timber. During a wet year this township, being so nearly level, would have a good deal of water on it, but this year it is all quite dry. The soil is a thin layer of loam on clay. Vegetation indicates that there is a rich soil.—*Henry W. Selby, D.L.S., 1905.*

A wagon trail from Grouard passes through the north-east corner of this township. It is at present a very poor summer one, but is being improved by the Alberta Government. The Edmonton, Dunvegan and British Columbia Railroad, now under construction, also passes through this township. The soil in the eastern half of the township varies from a black to a sandy loam several inches deep with a clay subsoil, and is suitable for mixed farming. Most of the western half is spruce swamp with a humus soil. Without drainage this part of the township is useless. The eastern half is timbered with poplar and balm of Gilead averaging five inches in diameter with a considerable growth of willow and alder. Spruce and jack pine of an average diameter of six inches are scattered throughout. The western half of the township is timbered mainly with spruce of an average diameter of five inches with scattered tamarack of the same size and occasional clumps of poplar. There is no timber of marketable value in the township. There is little or no hay with the exception of that around Winagami Lake. The water is all fresh and the supply is sufficient and permanent. A creek with an average width of five feet, a depth of eighteen inches and a current of six miles per hour runs in an easterly direction through the centre of the township. It has its source in the muskeg to the west and is important for drainage purposes. No land is liable to be flooded. There are no water-powers in the township. The climate is similar to that of the vicinity of Grouard. No summer frosts were noted. Wood is available for fuel in all parts of the township. No stone-quarries nor indication of minerals were noticed. Game such as moose, bears and partridges may be found, but is not plentiful.—*J. J. Stock, D.L.S., 1914.*

Tp. 77 This township is well adapted to agricultural purposes with the exception of sections 27 to 34 inclusive, the soil on which has been badly burned, leaving a surface of hard white clay. There is very little green timber on these sections but there is a great deal of poplar and willow brush as well as heavy windfall. The remainder of the township is fairly well timbered with poplar from four to ten inches in diameter and some scattered spruce and jack pine. Parts of Winagami and Round Lakes are situated in this township and both are shallow with grassy shores and muddy bottoms. The water is of an alkaline nature, especially that in Winagami Lake, which is totally unfit for drinking or domestic purposes. This is due to that fact that the lake has no outlet. At the eastern end Heart River flows within a quarter of a mile at a level approximately fifty feet lower than the level of the lake. As the lake is very shallow, it could be drained without serious difficulty, and a considerable area of waste land could be reclaimed for farming purposes. Three or four Indian families live in this district but they do not follow agricultural pursuits to any extent. They have a few cattle and horses and raise what vegetables they require for their own consumption. Spirit River Road runs westerly through the township, leaving it in section 18. Another wagon road branches from the Spirit

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

River Road in section 10, and running in a north-westerly direction, leaves the township near the north-west corner. There are some hay lands around the shore of Winagami Lake.—*J. H. Smith, D.L.S., 1910.*

Tp. 78 This township may be easily reached from the Grouard-Falher wagon trail which runs along the south shore of Kimiwan Lake. There are no roads in the township, but wagons can be used along the shores of Kimiwan Lake without difficulty. The trail from Grouard to Kimiwan Lake is poor in summer but considerable improvement work is being done on it. This township will be well situated as to railway facilities after the completion of the Edmonton, Dunvegan and British Columbia Railroad, now under construction. The second divisional point of this railway will be at McLennan in the township to the south. The soil is generally a black loam, with a clay subsoil, and is suitable for mixed farming. The surface is timbered mainly with poplar and balm of Gilead averaging six inches in diameter. Tamarack of the same average size is found in the north half of section 3, in section 10 and in the south half of section 15. Spruce, averaging six inches in diameter, and also birch and willow, are scattered throughout the township. There is no timber of any commercial value in the township. About one hundred acres of slough hay are available along the shores of Kimiwan Lake. All the water is fresh and the supply is sufficient and permanent. A few small creeks flow through the township. No land is liable to be flooded. There are no water-powers. The climate is similar to that in the vicinity of Grouard. No summer frosts were noted. Wood for fuel is available in all parts of the township. No stone-quarries nor indications of minerals were noticed. Big game, such as moose and bears, is scarce. Geese, ducks and grouse may be had, but they are not plentiful.—*J. J. Stock, D.L.S., 1914.*

Tp. 79 The best route into this township is by train to Sawridge, thence by boat or over the ice to Grouard, thence by trail to Kimiwan Lake, in township 78, range 19, and thence by following a wagon road which enters this township in section 5 and leaves in section 32. The wagon road to Kimiwan Lake is almost impassable in spring and during the wet season. An alternative route, which is considerably longer but possibly the surer in a bad season, notwithstanding the exceedingly bad condition of the road between Spruce Grove and Bearhead, is to take the Peace River Crossing Road to section 26, township 80, range 19, thence westerly to the grade of the Central Canada Railway and thence south to this township. This railway enters this township in the north-west quarter of section 6, and leaves in the north-east quarter of section 32. With the exception of sections 5, 6, 7, 8, 18 and 24, and portions of sections 2, 3, 4, 9, 17 and 23, the country is not suitable for agricultural purposes as the remainder is practically muskeg and swamps, the northern portion being very wet. The soil varies from two to four inches of black loam with a heavy clay subsoil. Peat is found in the swamps. The surface is practically level and covered with poplar averaging six inches with scattered spruce up to eighteen inches in diameter, and stunted spruce, tamarack and willow in the swamps. The timber is practically of no value commercially, although some ties have been cut in section 32; it might be left for the use of settlers. There is an excellent hay meadow with a creek running through the centre of it in section 24, which would yield from one to one and a half tons per acre. Feed throughout the remainder of the township is scarce. Fresh water is plentiful in the swamps although there are only two creeks. The creeks flowing into Frank Lake drain only the swamp and do not extend far south. Wood fuel is fairly plentiful. The climate is similar to that of Edmonton, but summer frosts are liable to occur. No water-powers, stone-quarries, coal nor minerals were seen. Game is not very plentiful, although moose and black bears are found. Partridges are very scarce and only a few ducks were seen on Frank Lake. Rabbits are very plentiful throughout this locality.—*G. Z. Pinder, D.L.S., 1914.*

Tp. 80 (*North third.*)—Access to these sections is readily obtained over the Peace River Road, which passes from south-east to north-west and upon which much money has been spent to make it serviceable to the public. The soil generally is a black loam on clay subsoil and is suitable for mixed farming. About half of these sections through

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

which the road passes is gently undulating prairie with poplar bluffs and willow bunches. The timber on the remainder is chiefly poplar from two to ten inches in diameter and much willow. Occasional spruce are seen but they are too scrubby for lumber. Good hay is grown on the prairie sections, but these would not necessarily be called hay lands. They are well watered by two creeks, Bearhead being the larger, and the principal branch of North Heart River. Water is good, being only slightly alkaline. Grain and vegetables have been grown on section 26 for a number of years with good results, and are seldom troubled with frosts. No water-powers, stone-quarries, coal nor minerals have been found, and very little game except moose and bears has been seen.—*Henry W. Selby, D.L.S., 1908.*

This township is easily reached from Grouard by the Peace River Crossing Road which passes through the northern portion of the township. A good wagon road which is used by the Central Canada Railway Company runs westerly from this road to the north-east quarter of section 21 and thence southerly, following the general direction of the railway and crossing the north boundary of section 33, township 79. A pack-trail leaves the latter road in the north-east quarter of section 21 and runs in a westerly direction toward the north shore of Magloire Lake, situated in the north-east portion of township 79, range 21; this trail is in excellent condition. The Central Canada Railway is graded through this township. The surface of the township is gently undulating and thickly wooded. No prairie nor hay meadows were seen. The soil consists of from two to four inches of black loam overlying a clay subsoil with peat in the swamps, and has in places a high percentage of lime. The township is suitable for mixed farming. The timber consists principally of poplar from two to ten inches, scattered spruce from four to twelve inches and jack pine from six to twelve inches in diameter, but it is not of any commercial value and should be reserved for the use of the settlers. Water is plentiful in the central and eastern portions of the township, being supplied by Bearhead Creek and its tributaries, but in the western portion no creeks are found. The water throughout the township appears to be alkaline. No water-powers, coal, minerals nor stone-quarries were seen. Wood for fuel is plentiful. The climate is slightly colder than that of Edmonton, and there were heavy frosts on July 27 and 28, and slight frosts on August 12 and 13. Although this district suffered this year, frosts have been unknown for years in the locality. Although very little game was actually seen, moose and black bears abound in the township. Caribou, foxes and wild fowl are scarce.—*G. Z. Pinder, D.L.S., 1914.*

Tr. 81 The greater portion of this township except the north-east part is a heavily timbered area rising quite perceptibly to the east from North Heart River. Peace River Road runs through this district making a very convenient highway for the prospective settler. The soil is a black loam on a sandy clay subsoil and is, therefore, very suitable for farming purposes. The squatters here have large herds of cattle and horses, showing the possibilities of mixed farming. The surface is gently undulating prairie with poplar bluffs and much willow scattered throughout. There is no timber of any commercial value except a small patch of spruce and tamarack on sections 21 and 28. All the rest of the timber is poplar from two to ten inches in diameter and willow bunches. The water found was generally good. No alkali was noticed except in a spring on the north-east quarter of section 16. The climate is good and not much affected by summer frosts, though to what extent nothing definite can be said as there have not been any crops grown here until this year. Dry poplar wood for fuel is to be had in the adjacent timbered lands and in many bluffs where fire annually kills quite a number of trees, but no coal or lignite seams are known to exist. No water-powers, stone-quarries nor minerals have been found and the only game heard of was moose and bears in the adjoining timber lands, and a few water-fowl on the river. Without railway facilities there is not likely to be much grain grown in this locality except for home consumption. Indian reserve No. 151 K occupies part of sections 2, 3, 10 and 11, but there are no Indians living upon it. Squatters are living upon sections 30, 29, 20 and 10 with no other improvements than log dwellings and stables, a hay corral fenced, in which to feed their cattle and horses in the winter. All their efforts seem to have been used in putting up hay for their own stock and the freighters' teams that pass here every day through the winter, and to fill contracts for hay when they can be had. Mr. Elliott

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

and his son who located on the east half of section 20 last year have sown about twelve acres of different kinds of grain which should prove to be a useful experiment to that part of the country, it being at an altitude of from one thousand two hundred to one thousand five hundred feet above Peace River, along the bank of which the noted wheat of the Peace River Valley has been grown successfully for over twenty years.—*H. W. Selby, D.L.S., 1908.*

(*Partial.*)—A good wagon trail leaves the road from Grouard to Peace River Crossing in section 10 and follows the south bank of Benjamin Creek. The soil is black loam on clay subsoil and is suitable for mixed farming. The surface is generally level and covered with a thick growth of poplar up to ten inches and willow underbrush. No hay grows in the portion subdivided. Benjamin Creek flows through sections 24, 23 and 14, forming a permanent supply of fresh water. It is ten feet wide, two feet deep and flows one mile per hour. The banks are from ten to thirty-five feet high, but no water-power could be developed. Dry poplar for fuel is plentiful, but no coal, stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

Tp. 82 This township can be reached by a good wagon trail which branches from the road between Grouard and Peace River Crossing at Keith's Place and follows along the west bank of West Heart River in a north-easterly direction. The soil is black loam with clay subsoil and is suitable for mixed farming. The surface is generally level and except along the west bank of Heart River is covered with poplar and spruce up to eight inches with alder and willow underbrush. Some open patches on which hay is cut extend along the banks of Heart River.

North Heart River flows through sections 4, 9, 15, 16, 22 and 23 and forms a permanent supply of good fresh water. No water-powers are found in the township. Slight frosts occurred at night towards the end of August. Dead spruce and poplar can be obtained for fuel but no coal, stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

This township is reached from the Grouard and Peace River trail by a trail following the north branch of North Heart River. The soil consists of three to twelve inches of black loam on a clay subsoil and is suitable for mixed farming or grazing. About seventy-five per cent. of the township is covered with timber and willow, the remainder being rolling prairie. Most of the prairie land follows Heart River through section 26, 25 and 36. The soil on this prairie is very rich and produces an abundance of grasses, vetches and peavine. Two squatters were found on this prairie. Heart River is from twenty to forty feet wide and about two feet deep; its banks are about fifteen feet high and the rate of current about two and a half miles per hour. Plenty of fuel is found throughout the township. The creeks supply an abundance of fresh water but no water-power, economic minerals or stone-quarries were seen. Game consists of moose, bears, coyotes and foxes.—*J. H. Johnston, D.L.S., 1915.*

Tp. 83 This township is reached by a pack-trail from township 82. The surface is level and covered largely with poplar and jack pine ridges. About fifty per cent. of sections 17, 20, 21 and 16 is muskeg, and throughout the whole township there are small patches of muskeg. The soil consists of three to eight inches of black loam on a clay subsoil, except on the jack pine ridges where it is sandy clay. The timber has no commercial value and should be reserved for the use of settlers for fuel. There is an abundant supply of water in the lakes and creeks. Some hay meadows were seen but not of great importance. No water powers, stone-quarries or economic minerals were seen. Moose, and black and brown bears were seen. Several lakes are found in the township. In the south-east quarter of section 13, Heart Lake takes in the eastern portion of this quarter, extending mostly into section 18; its area is approximately two hundred acres, and its average depth about ten feet. Its shores are marshy and flat, surrounded by higher land, with poplar growth, but the water is fresh. In the south-east quarter of section 24, there is another lake of about forty acres. This lake has marshy shores surrounded by higher land with poplar, and averages five feet deep. In sections 17, 20, 21 and 16 there are six small lakes, all shallow, with muck bottoms and surrounded by muskeg.—*J. H. Johnston, D.L.S., 1915.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—Continued.

 Tp. 84

(North outline, ranges 19 and 20.)—The area crossed by the base line in these two ranges has been burnt over a number of times and as a result the timber is very small.

Along the small lakes, however, there are belts of fairly good spruce some of which measures twenty inches in diameter. Although small muskegs are numerous, they could be easily drained. There is a large soft muskeg on the east side of township 84, range 19, but west of it the land is comparatively dry. The soil is a clay or sandy loam and in the open places supports a luxuriant growth of grass, peavine and vetch. Several small water-courses cross the line, but the only stream worthy of mention is in section 31, range 20. It is five or six hundred feet below the general surface of the country and is rough and very broken. The timber in this valley is generally small but fair spruce up to twenty inches was found in a few places. This valley has a very steep slope and a dam for the purpose of generating power could be easily built, but the volume of water in summer is very small. A large amount of windfall extends across these ranges on both sides of the base line to the correction lines. This area appears to have been well timbered at one time, as spruce and pine trees twenty-five to thirty inches in diameter and eighty to ninety feet long were noticed among the fallen timber. These townships would make an ideal horse or cattle ranching district as there is an abundance of feed and water and some good hay meadows, but access would be difficult.—*A. H. Hawkins, D.L.S., 1911.*

This township is reached from the Peace River trail by a branch trail running north-easterly from a point on the main trail about four miles from Peace River Crossing. The soil consists of two to twelve inches of black loam on a clay subsoil and is suitable for mixed farming or grazing. There are a few spruce and tamarack muskegs in this township which cover approximately fifteen per cent. of its area. The remainder of the township is all covered with poplar and scattered spruce, but the timber has no commercial value. No large areas of hay land were seen, but grass abounds mostly everywhere, especially along the creeks. Along "Three Creeks," which flows through the centre of the township, there is an abundant supply of vetches and peavine. There is a good supply of water in the creeks and in small lakes in sections 4, 29 and 33. These lakes are shallow with muck bottom and are surrounded by muskeg. In the north-east corner of section 32 and the north-west corner of section 33 there is a lake, also extending into township 85. This lake contains fresh water, and its shores are wide and marshy with quite a supply of hay. The depth of water would average ten feet. No stone-quarries, economic minerals or water-powers were seen. Game consists of moose, bears, lynx, coyotes and foxes. Signs of beaver were seen in some of the creeks.—*J. H. Johnston, D.L.S., 1915.*

 Tp. 85

This township is reached from the Grouard, Peace River trail, by a wagon road running in a north-easterly direction from a point about four miles from Peace River Crossing. The surface is rolling and covered largely with poplar and scattered spruce, with some open places. Fires have burnt through the township, and through these burnt areas the grass is very luxuriant. The soil consists of two to eight inches of black loam covering a clay subsoil. There is plenty of fuel throughout the township, and an abundant supply of fresh water in the creeks. No economic minerals, stone-quarries or water-powers were seen. In the south-west quarter of section 35, there is a small lake of about four acres; the water is fresh and about three feet deep. Its shores are marshy where there is considerable hay. In the south-east corner of section 5, and south-west corner of section 4, there is a lake, extending into township 84. The water is fresh and about ten feet deep. Its shores are low and marshy and in a dry year considerable hay could be cut. Several other small lakes, of ten to four acres, were found, surrounded mostly by shallow muskegs, with muck bottom. No minerals, stone-quarries or waterfalls were found. Game consists of moose, black and brown bears, foxes, lynx and coyotes.—*J. H. Johnston, D.L.S., 1915.*

 Tp. 86

This township is reached from the Grouard-Peace River trail, by a branch road running in a north-easterly and northerly direction, from a point about four miles from Peace River Crossing. The surface is generally rolling, and the soil consists of two to eight inches of black loam covering a clay subsoil, suitable for mixed farming or grazing. About five per cent. of the township is muskeg covered with scrub spruce and tamarack. The

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

greater part of the township is covered with a second growth of poplar and a few spruce, especially on areas that have been burnt over at some time. In the northern part of the township, the timber is larger averaging ten inches in diameter. This timber has no commercial value and should be reserved for the use of settlers. Throughout the whole township there is an abundant supply of fuel and water. Cadotte River flows through section 36 in a north-westerly direction. The river averages eighty feet wide and about three feet deep, its banks are steep cut banks in some places and flats in others. These flats are not subject to overflow on account of their elevation above high water. The soil in the flats consists of a rich black loam, producing an abundance of grasses, peavine and vetches, and even the slopes of the valley produce a rank growth of vegetation. Cadotte River meanders through the valley with a current of about two miles per hour. In some places the valley of the river is two thousand feet wide and has a depth of one hundred feet. Runaway Lake, which approximately covers two hundred and twenty acres is situated in sections 20, 21, 28 and 30, the water averages two feet deep but in a large portion of the lake water-plants grow to its surface. The shores are marshy and the horizontal distance between high and low water would average two hundred feet. For three hundred feet surrounding the lake the hay grows very rank and large quantities could be cut, but beyond this is higher land covered with poplar. No stone-quarries, water-powers nor minerals were seen. Moose, black and brown bears, coyotes and lynx were observed, and signs of beaver were noticed in Cadotte River. Ducks and geese were noticed in great numbers on Runaway Lake, during August and September. The climate was excellent and the rainfall was sufficient, but slight summer frosts were noticed.—*J. H. Johnston, D.L.S., 1915.*

Tp. 87

This township is reached by a trail from the Grouard to Peace River Crossing trail, branching off about four miles from Peace River Crossing. The surface of the township is rolling, covered with second-growth poplar, so small that the land could be easily cleared. The soil consists of three to eight inches of black loam with a clay subsoil producing in the greater part of the township a luxuriant growth of grasses, peavine and vetches. The township is well drained by Cadotte River which runs from the south-east corner to the north-west corner. Cadotte River is about eighty feet wide, meandering in a valley about two thousand feet wide and an average depth of seventy feet. The water is more or less sluggish, averaging three feet deep, with few rapids. The banks of the river proper are about eight feet high and numerous flats of very rich soil occur along the river. There is an abundant supply of water and fuel in the township but no timber of commercial value. No economic minerals or stone-quarries were seen. Game consists of moose, bear, coyotes, lynx and foxes. Signs of beaver and muskrat were seen along Cadotte River.—*J. H. Johnston, D.L.S., 1915.*

Tp. 88

(*North outline, ranges 19 and 20.*)—The best way to reach these townships is down Peace River by boat and then up Cadotte River. The soil varies from sandy loam to heavy clay loam and supports a luxuriant growth of red-top, bunch grass, peavine and some marsh grass. Many places appeared to be well adapted for oats, barley and vegetables. The surface in and along the valleys is rough and broken, the higher parts being timbered with poplar and willow scrub. Back from the valleys the surface is gently rolling and generally easily cleared. The only timber is some scattered patches of spruce, poplar and balm of Gilead along the valleys. Although the soil supports a good growth of grass some clearing would have to be done before hay could be cut, as the frequent fires have left the ground littered with dead timber. Water is abundant. Cadotte River is one and a half chains wide, four feet deep in places, and has a current of three and a half miles per hour at low water period. It could be easily dammed at several places in sections 34 and 35, range 19, for power development. The climate is similar to that of Edmonton, but summer frosts occur. Wood fuel is abundant, but no coal was found. No stone-quarries were seen, but boulders are numerous in the beds of the streams. Moose, red deer, bears and foxes were seen, rabbits were numerous and partridges and prairie chickens are found everywhere. Several springs were seen, the waters of which had a very saline taste. One of these in section 3, township 89, range 19, seemed to be a favourite

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—*Continued.*

resort for moose and deer. The locality appears to be well adapted for a horse or cattle ranch.
—A. H. Hawkins, D.L.S., 1912.

Tp. 89 (*Exploration survey.*)—Little Cadotte River flows westerly across this township in a valley from half a mile to two miles wide. The valley is three or four hundred feet deep, at the west boundary and rises rapidly toward the east. The channel is consequently largely rapids and the slopes of the valley quite steep. Ravines run back from the valley, through which small creeks flow, draining the muskegs. The valley of Little Cadotte River is largely burned over and the slopes are either grassy or covered with windfall. Small poplar and spruce grow on the plateau back from the river and a few patches of muskeg with small spruce and tamarack occur. This country would make good agricultural or grazing land.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 90 (*Exploration survey.*)—Most of this township has been fireswept in recent years and the muskegs are covered with dry standing timber. Some low ridges occur but they are mostly covered with moss, spruce and poplar.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 91 (*Exploration survey.*)—Small lakes are found on the tops of high ridges, which are heavily wooded with spruce and poplar. The soil is poor in places.—*J. R. Akins, D.L.S., 1913.*

Tp. 92 (*North outline.*)—A lot of dry spruce muskeg is found in this township. In the north-western part there is a ridge of spruce and poplar up to fifteen inches. The soil is fairly good.—*J. R. Akins, D.L.S., 1913.*

Tp. 93 (*Exploration survey.*)—The surface is wooded with light poplar and willow, but there are some open meadows.—*J. R. Akins, D.L.S., 1913.*

Tp. 94 (*Exploration survey.*)—This township is not as good as adjacent ones, as the soil is very light. The western half contains spruce and tamarack muskegs and the east half is sandy and timbered with jack pine.—*J. R. Akins, D.L.S., 1913.*

Tp. 95 (*Exploration survey.*)—Peace River crosses the westerly half and the easterly half is composed of sand ridges. In the south part there are several small lakes. The surface is wooded chiefly with jack pine.—*J. R. Akins, D.L.S., 1913.*

Tp. 96 (*North outline.*)—The soil in this township is light and sloughs, muskegs and small lakes are numerous. The surface is wooded chiefly with jack pine and tamarack.—*J. R. Akins, D.L.S., 1913.*

Tp. 97 (*Exploration survey.*)—The eastern part is lightly wooded with jack pine and the west part is cut by Peace River. The soil east of Peace River is poor.—*J. R. Akins, D.L.S., 1913.*

Tp. 98 (*Exploration survey.*)—This township is not very good, and it is badly cut up by Peace River. South-east of the river the soil is sandy and wooded chiefly with jack pine, but in the north-west part the soil is fairly good.—*J. R. Akins, D.L.S., 1913.*

Tp. 99 (*Exploration survey.*)—This township is badly cut up by the valley of Peace River but the soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—Continued.

Tps. 100 & 101 (*Base line.*)—These townships are very rough and are cut by Peace River. The soil is mostly sandy and wooded with spruce, jack pine and poplar.—*J. R. Akins, D.L.S., 1913.*

Tp. 102 (*Exploration survey.*)—The surface of this township is rough and is cut by Peace River. The soil is fairly good and the surface is lightly wooded with considerable windfall in the northern part.—*J. R. Akins, D.L.S., 1913.*

Tp. 103 (*Exploration survey.*)—The surface is gently rolling and is largely prairie. The soil varies from light sand to loam. Beaver meadows with a mucky soil support luxuriant grass, and some spots of young poplar were found.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 104 (*Exploration survey.*)—Peace River flows through this township between banks two hundred and twenty-five feet high. Back from the valley the surface is gently rolling and timbered with spruce, poplar and jack pine. North of Peace River the soil is light and very sandy in places. Jack pine ridges are separated by marshes and sloughs.—*J. A. Fletcher, D.L.S., 1913.*



—Photo by Burke, Edmonton

Vegetable Garden at Fort Vermilion

Tps. 105 & 106 (*Exploration survey.*)—Jack pine ridges run across this township, between which lie marshes supporting a growth of coarse grass with numerous small ponds. The soil is light sandy loam, and the surface is timbered with jack pine, poplar, spruce and a few tamarack with considerable windfall and brulé.—*J. A. Fletcher, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 19.—Continued.

- Tp. 107** (*Exploration survey.*)—The surface is mostly flat and timbered with willow, poplar and spruce. Areas of swamp have been made by beaver dams. The drainage is toward the north into the south branch of Boyer River. Along Keg River trail good grass grows and the soil is mostly loam.—*J. A. Fletcher, D.L.S., 1913.*
- Tp. 111** (*Exploration survey.*)—The surface of this township is wooded with small spruce, willow and poplar, and is fairly level. The soil is good.—*J. R. Akins, D.L.S., 1914.*
- Tp. 112** (*North outline.*)—This township is wooded with spruce, poplar, willow and alder. The soil is fairly good and the surface is nearly level, causing swamps and muskegs.—*J. R. Akins, D.L.S., 1914.*
- Tps. 113 & 114** (*Exploration survey.*)—These townships have swamps and muskegs of green timber, consisting of spruce, tamarack, willow and alder. The surface has not been burned over for a long time and the spruce in places is fairly large. The ground is very wet, but the soil is good.—*J. R. Akins, D.L.S., 1914.*

RANGE 20

- Tp. 68** (*North outline.*)—In this range the soil is principally clay with an alluvial deposit of black loam a few inches in depth. The surface is undulating and is timbered throughout with poplar, cottonwood, spruce, balsam, fir and birch. There is also an undergrowth of willow and alder which is very thick in places. All the different kinds of timber are well distributed as to size, running from six to twelve inches in diameter. Many small running streams, tributaries to Carrot Creek, drain this part of the country. In section 35 we crossed the height of land (two thousand three hundred feet above sea-level) between Carrot Creek and Goose River.—*A. Saint Cyr, D.L.S., 1906.*
- Tps. 69 & 70** (*East outlines.*)—These townships were reached by a good pack-trail which runs parallel to the east outlines about one and one-half miles to the east. The east outlines run through level country well timbered with spruce up to three feet in diameter. The soil is good from an agricultural standpoint, consisting of six inches of black loam with clay subsoil. The land slopes gradually towards Carrot Creek. The climate is good with no summer frosts. Carrot Creek is a fresh water stream about twenty-five feet wide, two feet deep and has a current of two miles per hour. Water-power could not be developed as the valley is too wide. No stone-quarries, minerals nor hay were seen and no fuel is found except wood. Moose, bears, lynx, foxes, beaver, mink, marten, skunks, weasels and rabbits are fairly plentiful.—*A. E. Glover, D.L.S., 1915.*
- Tp. 71** This township is excellent for agricultural purposes. The soil in some places is twelve inches of black loam with clay subsoil. The central and southern parts of the township are the best, being nearly all covered by willow in bunches, scattered small poplar and birch, with open stretches. This portion of the township would be excellent for summer grazing, but owing to the lack of any real hay meadows no hay could be cured for winter use. The land is all gently undulating with a slope on the west to the valley of Little Smoky River and on the south-east a slope towards Carrot Creek. There are many small creeks in the north-east portion, all draining to the Little Smoky, which runs through sections 18, 19, 30 and 31. This stream averages six chains wide, four feet deep and has a current of two and one-half miles per hour. No water-power could be developed. The north part of the township is covered by a dense growth of spruce, poplar and birch up to twelve inches. In sections 4 and 5 there is a batch of spruce with some trees up to forty inches, which would produce about 1,000,000 feet of merchantable timber. The climate is good with no summer frosts. No stone-quarries nor minerals were found and wood is the only fuel. Moose, bears, foxes, coyotes, lynx, beaver, mink, marten, weasels, skunks and rabbits are fairly plentiful.—*A. E. Glover, D.L.S., 1915.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

Tp. 72 Little Smoky River, which is the principal tributary of Big Smoky River, enters the township near the north-east corner of section 35. It is one hundred and forty yards wide, has a stony bottom, a swift current and banks fifteen feet high. Its valley proper is less than two miles wide and is bounded by hills one hundred and thirty feet high. In sections 35 and 36, the country is rolling and covered with young poplar, while in the other sections it is either level or undulating and thickly wooded with birch, poplar and spruce bluffs, alternating with patches of willow and alder. Along the river the soil for one mile and a half west of it is a heavy clay, changing to a sandy loam four to eight inches deep over a clay subsoil in sections 31 and 32. Snipe Creek, which is the outlet of Snipe Lake, a body of water five and a half miles long lying in ranges 18 and 19, township 71, crosses the north boundary of section 36. It winds along the foot of the high hills and joins the Little Smoky River about half a mile north of the line. The wagon road from Grouard to Sturgeon Lake crosses the middle of section 35.—*Arthur Saint Cyr, D.L.S., 1904.*

This township can be reached from Aggie, on the Edmonton, Dunvegan and British Columbia Railway, by the summer road from High Prairie to Sturgeon Lake, a distance of twenty-three miles to the ford on Little Smoky River. The road from Aggie is always in very poor condition, as the country is practically level and the drainage is very poor. The soil consists of an average depth of six inches of black loam covering a heavy clay subsoil and it will all be good agricultural land when cleared of its timber. There is a large tamarack and spruce swamp in the north-west corner covering all of section 29 and parts of sections 28, 33, 32, 30, 19 and 20. This is practically worthless at present, but it will be a very easy proposition to drain it to the river, a very short distance. The whole township is covered by a dense growth of poplar and spruce up to twelve inches and birch up to eight inches with a constant smaller growth of willow and alder. The undergrowth of cranberry and saskatoons is very dense in places. No merchantable timber grows, excepting a few very small patches in the river valley, and no hay was found in the whole township. Little Smoky River runs diagonally across the township. This is a fresh-water stream of a fairly constant flow during the summer months. There are many shallow reaches where the water runs over a very rough boulder bed, making many rapids, and there are many reaches where the current runs smooth and sluggish before falling down these rapids. The river averages six chains wide and about four feet deep, and has a current of two and one-half miles an hour. No land is liable to flood and water-power could be developed only by the construction of long dams as the valley is quite wide. The climate is very equable; no summer frosts were experienced. No stone-quarries nor minerals were seen and only wood fuel can be obtained. Moose, bears, mink, marten, beaver, skunks, rabbits, coyotes, foxes and weasels are fairly abundant.—*A. E. Glover, D.L.S., 1915.*

Tp. 73 The trail from Grouard to Sturgeon Lake passes through sections 12, 1 and 2, crossing Little Smoky River in section 2. From this trail a new one was cut northerly through the township. Neither of them are passable with heavy loads except during the winter or very dry seasons. The soil is a heavy black loam from four to ten inches deep over a very heavy clay subsoil, and with proper drainage appears to be well adapted to general farming purposes. With the exception of a small prairie in section 1, the township is timbered throughout with a fairly heavy growth of poplar, spruce and birch and willow undergrowth. In sections 16, 17, 18, 19, 20, 21, 29 and 30 there is an area which had been burnt over and which is now covered with a scrubby second growth. North of this in sections 28, 29, 30, 31 and 32 there is a patch of heavy spruce and poplar, which averages about twenty inches in diameter. Throughout the remainder of the township the timber averages about five inches in diameter. In section 1 there is an area of open land from which good hay could be obtained but apart from this very little hay could be cut. There is, however, good feed to be found in every open or semi-open spot in the township. All water is fresh and of splendid quality. Little Smoky River which flows northerly through the two easterly tiers of sections is from two to five chains in width and from three to five feet in depth and is for the most part quite swift. From this stream the hills rise from two hundred to three hundred feet to a very level plateau which, until such time as the country is drained, will be liable to more or less serious floods during the

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

wet season. If the drainage be carried out, however, the drains will not need to be very large nor will they be difficult to make. A limited amount of water-power could be developed on Little Smoky River but as this stream is reported to become very low during dry seasons it is doubtful if any power scheme is feasible. General indications point to a climate very similar to that of Grande Prairie about sixty miles to the west. Wood for fuel is abundant in all parts of the township. In the north-east quarter of section 24 a seam of good coal about fifteen feet or more in thickness outcrops on the right bank of Little Smoky River. A seam of sandstone outcrops at the same point, but it appears to be very soft and is probably of little commercial value. Where this seam appears it is about fifty feet in thickness but may be much thicker. No minerals of economic value were noted. Signs of a few moose were seen and bears appear to be rather plentiful. Geese are numerous along the rivers, and a great many beavers through this district, are indicated by the many fresh workings. For further information on Little Smoky River see the report on tp. 73-19-5.—*W. H. Waddell, D.L.S., 1914.*

Tp. 74 From the crossing of the Grouard-Sturgeon Lake summer trail with Little Smoky River in the township to the south a new wagon trail was cut northerly into section 16 of this township. From this point it turns westerly along the left branch of Little Smoky River, leaving the township in section 19. This trail is very soft and is hardly passable after the frost leaves the ground. The soil is a rich, black loam of an average depth of about six inches over a heavy clay subsoil and with proper drainage should make good farming land. Practically the whole of the township is heavily wooded with poplar averaging about six inches in diameter and a few scattered spruce and birch with a heavy growth of willow throughout. No large hay meadows were noted but a few small ones are found in sections 23, 24, 27 and 28, and on a number of small flats along Little Smoky River. All this hay appears to be of good quality. Good feed is found in all parts of the township and hay in very small quantities could be cut from numerous small sloughs and open patches throughout the township. All water is fresh and of good quality. Little Smoky River enters the township in section 1 and after following a very winding course leaves in section 30. This stream averages about five chains in width and under ordinary conditions it is from three to ten feet in depth with a current of about three miles per hour. The banks of this stream rise to an average height of over three hundred feet to a level plateau which will require considerable drainage to overcome the danger of serious floods during the wet season; such drainage, however, should not be of an expensive character. While there are a great number of small rapids in Little Smoky River it is doubtful if there is water-power in commercial quantities owing to the fact that the river is reported to run nearly dry during a dry season. General indications point to a climate similar to that of Grande Prairie in tp. 71-6-6. No frosts were noted at the time of survey (May). Wood for fuel is abundant everywhere but neither coal nor lignite was found. No stone-quarries nor minerals of economic value were seen. A few bears and moose are found, and geese are fairly abundant along Little Smoky River, but game cannot be said to be plentiful. Beavers are, however, very numerous at the present time, which are indicated by the fresh work in many places. For further information on Little Smoky River see the report on tp. 73-19-5.—*W. H. Waddell, D.L.S., 1914.*

Tp. 75 This township is well suited for mixed farming, having a fairly level surface and a soil composed generally of five inches of black loam underlaid with a clay loam. The country is mostly covered with scrub poplar averaging in size from three to nine inches in diameter. No timber suitable for building purposes was found. Good water is scarce and only at times can a supply be obtained from small creeks in sections 26 and 30. No coal, nor minerals of economic value were found.—*J. H. Smith, D.L.S., 1910.*

This township may be reached from a pack-trail in township 75, range 19, which connects the Grouard-Winagami Lake Road to the Grouard-Sturgeon Lake Road and runs parallel to the Edmonton, Dunvegan and British Columbia Railway now under construction. The surveyors' pack-trails leading into the township from the above-mentioned trail are poor. The soil varies from black to sandy loam averaging five inches in depth over a clay subsoil and is suitable

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

for mixed farming. The surface is timbered principally with poplar and balm of Gilead averaging five inches in diameter with spruce and jack pine scattered throughout. There is considerable poplar and willow scrub and willow and alder swamps are numerous. There is no timber of commercial value in the township. Hay is very scarce, there being about thirty acres of slough hay in the east half of section 23 which is of a fair quality. All the water is fresh and the supply is sufficient and permanent. There are several creeks in the township which will be useful for drainage purposes. No land is liable to be flooded. There are no water-powers. The climate is similar to that in the vicinity of Grouard. No summer frosts were noted. Wood is the only fuel available and is obtainable in all parts of the township. No stone-quarries nor indications of minerals were noticed. Game is rather scarce and consists of moose, bears, ducks and part-ridges.—*J. J. Stock, D.L.S., 1914.*

Tp. 76 (*North outline.*)—The line passes through a gently undulating country which is covered with a growth of poplar, a few spruce and occasional bunches of willow and alder brush. This should make a good farming section of the country. The soil is generally black loam on clay or sandy clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

This township was reached by a wagon road cut by myself along the north boundary of range 21, entering the township at the north-west corner. The northern portion of the township is heavily timbered with poplar and spruce, sections 27, 28, 29, 32, 33 and 34 being well wooded with merchantable spruce from ten to twenty-four inches in diameter. The north-east portion is covered with a heavy windfall, while the south-west consists chiefly of a wet spruce and tamarack muskeg. The soil is not very well adapted to agriculture as there is too much variation in the quality. Plenty of water both in swamps and creeks was found in the eastern part of the township, although the remainder was very dry. No minerals of economic value, hay marshes nor water-powers were seen nor was any game noticed. Wood for fuel is found in abundance. At the time of survey (October), the weather was cold with snow six inches in depth.—*J. H. Smith, D.L.S., 1910.*

Tp. 77 The wagon road from Grouard to Winagami Lake has been continued through this township and with a little improvement where sloughs and water-courses are crossed, it would be a fairly good road. The surface is gently undulating, the east three miles being flatter than the west, and is composed of grassy swamps between ridges lightly timbered with poplar and a few spruce. These swamps appear to be made by the beaver damming up the water-courses, and are more or less covered with small brush and burnt timber. A few prairie openings are found on sections 2, 10 and 14. The south four sections of the west four miles are covered with heavy timber, poplar, cottonwood and some spruce ten to eighteen inches in diameter, but the north five miles of the west half of the township is chiefly dry land with considerable prairie, small poplar and willow and bluffs of poplar and brulé easy to clear. The soil is a black loam on a clay subsoil and is more suitable at present for mixed farming than wheat-growing. Considerable hay could be made on sections 18, 14 and 23, and good pasturage is found all over the township. The main branch of Peavine Creek enters in section 3, running north-westerly to section 18, where it is joined by the north branch which flows from section 12. Round Lake is touched by the north-east corner of section 36. This lake lies partly in three townships and is about four miles long by three miles wide, its east end being about two miles north of the north-west arm of Winagami Lake with which it is connected by a wagon road. The water is good and its outlet is through Round Lake Creek into Peavine Creek passing through sections 32 and 31. These creeks are in well-defined channels with banks from three to ten feet high and have a strong current. The width varies from three to ten feet and the depth from six inches to three feet. The water is invariably good but the supply is uncertain. No water was running in September, though there was some found in pools in the channels. The only flooding which this land is liable to is from the melting snow in the spring. The low lands should dry up much quicker if the outlets were slightly deepened and cleaned out. Frosts do not appear to hurt anything, the natural fruits ripening in great abundance, the leaves only beginning to

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

fall in October. No water-powers could be developed here. Large quantities of dry poplar and spruce can be cut for fuel in many places in the township and in the adjacent lands, but no coal was discovered. No minerals nor stone-quarries have been found. Moose and bears are killed here nearly every season, but seldom any other game.—*Henry W. Selby, D.L.S., 1909.*

Tp. 78 (*East outline.*)—This outline runs for five miles through Kimiwan Lake, the north shore of which is about four chains north of the north-east corner of section 25. Farther north the surface is nearly level and covered with brulé, consisting of poplar and willow partially burned.—*G. Z. Pinder, D.L.S., 1914.*

(*Subdivision.*)—The wagon road from Grouard to Falher runs through this township and has recently been shortened by the opening up of the road allowance along the north boundary of the township to the south. It is a poor summer trail but is being gradually improved by the Alberta Government. The south-east corner of the township is about two miles distant from McLennan, a divisional point on the Edmonton, Dunvegan and British Columbia Railway, now under construction. The Central Canada Railway runs through the eastern part of the township, while the Edmonton, Dunvegan and British Columbia Railway running west from McLennan, crosses the southern part of the township. The soil is principally black loam, which in some places is eighteen inches deep, with a clay subsoil. Although in a few scattered places the soil is light, on the whole the township is admirably adapted to mixed farming. The surface is timbered mainly with second-growth poplar and willow scrub. Large patches of open country are found in the western part of the township. There is no timber with the exception of some poplar and spruce averaging eight inches in diameter in the northern part of section 34, but it is of no commercial value. About one hundred acres of hay of fair quality are available along the shore of Kimiwan Lake and a large quantity could also be cut around Reed Lake. It is very probable that a considerable amount of upland hay could be cut in various portions of the township. The water is all fresh and the supply is sufficient and permanent. No land is liable to be flooded. There are no water-powers. The climate is similar to that of the vicinity of Grouard. No summer frosts were noted. Wood is available for fuel in all parts of the township. No stone-quarries nor indications of minerals were noticed. Moose, bears, ducks and grouse are found but they are not plentiful.—*J. J. Stock, D.L.S., 1914.*

Tp. 79 (*East outline.*)—The surface of the country crossed by this line is nearly level, and is covered for the most part with poplar up to twelve inches in diameter and spruce up to eighteen inches with willow underbrush. The soil consists of from two to four inches of black loam over a heavy clay subsoil, with peat in the swamps. A fire overran this country some time ago and did considerable damage.—*G. Z. Pinder, D.L.S., 1914.*

(*Subdivision.*)—The best route into this township is by way of the Kimiwan Lake trail from Grouard and thence northerly along the Central Canada Railway wagon road which runs close to the east boundary of section 1. The railway will cross the south-east corner of this township. The surveyors' pack-trail, which is in good condition, runs westerly across sections 1, 2 and 3, and then northerly through the centre of the township. The township is dry and there would be no difficulty in locating wagon roads to any section. The surface is slightly rolling and is heavily timbered throughout with poplar up to eighteen inches, spruce up to twenty-four inches and scattered jack pine up to fourteen inches in diameter, with willow and alder. The following should be reserved for timber berths: sections 2, 6, 7, 8, 9, 10, 11, 13, 14, 15, 20, 21, 22, 24 and 29. The soil is a black loam averaging four inches in depth with a clay subsoil. It contains few stones and is suitable for mixed farming. Feed is plentiful, but there are no hay sloughs. Wood fuel is abundant. Water is very scarce but that in the few small creeks and lakes is fresh and pure. No water-powers, coal, minerals nor stone-quarries were seen. The climate is somewhat similar to that of Edmonton with a slightly lighter rainfall. The frosts of July and August which were peculiar to this district during the past season did not appear to have had any appreciable effect in this township. With the exception of black bears and moose, game is very scarce.

Lakes.—The lake in section 32 is shallow and stagnant with neither inlet nor outlet, and for a distance of thirty feet around the edge it is covered with reeds. The shore is marshy but the

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—Continued.

banks are well defined. The horizontal distance between high and low water is thirty feet. The country immediately surrounding the lake is swampy, but at a distance of from five to ten chains from the lake it rises and is covered with poplar up to twelve inches in diameter which is partially fire-killed on the west side and contains much windfall. The water is muddy. The lake in section 28 has neither inlet nor outlet but the water is pure, fresh and free from reeds. The land surrounding it is swampy, but the banks are well defined.—*G. Z. Pinder, D.L.S., 1914.*

Tp. 80 The best route into this township is by way of the Peace River Crossing Road from Grouard to section 26, township 80, range 19, and thence westerly by a pack-trail to the Central Canada railway grade which may be followed into this township. Roads can easily be located into any section. The steel will probably be laid on the Central Canada Railway through township 80, range 19, next year. The surface is slightly rolling and is heavily wooded with poplar up to twelve inches in diameter and some scattered spruce up to eighteen inches and jack pine up to fourteen inches in diameter with willow. The timber is not large enough for lumbering purposes but would be suitable for pulpwood. The soil which contains only a few stones consists of from two to four inches of black loam with a hard clay subsoil, and should be suitable for mixed farming. No muskegs were encountered but there are some swamps and sloughs. The eastern half of the township is well supplied with fresh water in the creeks, but the western portion is very dry. The grazing along the main creek north of section 10 is excellent, the hay standing from four to five feet high in some parts, and there is also good feed amongst the poplar. Dry wood for fuel is not very plentiful, nearly all the timber being green. No water-powers, coal, minerals nor stone-quarries were seen. The climate is somewhat more severe than that of Edmonton. The frosts in July and August which were peculiar to this district during the past season did not appear to have affected anything in this township. Moose, black bears and foxes are fairly numerous, but only a few partridges were seen.—*G. Z. Pinder, D.L.S., 1914.*

Tp. 81 The east half of this township being composed of black loam on a light friable clay subsoil will make excellent farming land and although numerous sloughs and willow swamps occur, these may be drained quite easily into North Heart River and other natural waterways. The river crosses sections 13, 14, 22 and 23 in a valley from ten to twenty chains wide. This valley is from twenty to thirty feet below the general surface of the country, and as the river winds its tortuous course to Peace River, the valley becomes deeper and wider until it is over a mile wide and a thousand feet deep. Immense landslides occur which change the channel quite materially, leaving the old channel in the form of a partially dried up slough. In this township the river is about a chain wide and from three to five feet deep with a current of three miles per hour. There is a good wagon road giving access to the south part of this township, which leaves Peace River Road in section 16, township 81, range 19, and another in the northerly part of the township which leaves the road in section 29, township 81, range 19. The surface may be described as a gently undulating country with a slight descent towards North Heart River. Prairie openings are found on sections 3, 9, 10, 11, 12, 13, 14, 23, 24, 25, 26, 35 and 36, where grass, vetch and peavine are found growing, but not so rank as in lower portions of the country. Hay is made on some of these prairie spots by the settlers, and being what is termed upland hay it is considered much better than the usual swamp land or slough grass. The timber is principally poplar and willow and rarely over ten inches on the stump. It is short and scrubby like second-growth, and the willow is very thick on the lower lands. Besides North Heart River, small creeks flow through sections 12 and 13, and 3, 9, 16 and 24, into the river. These have well-defined water-courses and banks from ten to twenty-five feet high, but on the north side of the river only one well-defined water-course is found running south-westerly through sections 36, 25 and 24, and section 19, township 81, range 19, into the river. All the water found in this part of the township was good at the time of survey (April and May), but I am told it becomes slightly alkaline later in the season. The climate is good and is cooler than on the southern slopes, but as far as my observation went it was not much affected by summer frosts. No crops have been grown there, except hay, until this year, and these had not been injured by frost

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

when I left there by the middle of June. Dry timber for fuel is plentiful in the adjacent timbered lands, but no indications of coal or lignite were seen. No stone-quarries nor minerals were found. By damming North Heart River water-power of a small capacity might be developed. Moose, bears and water-fowl are known to frequent the country around here but they are not plentiful.—*Henry W. Selby, D.L.S., 1908.*

The route followed to this township was the Peace River Crossing Road from Grouard to within about thirty miles of Peace River Crossing, and thence a wagon road which branches from the main road and leads into this township. These roads were frozen at the time of our going into the country and were consequently in good condition, but they become very soft later in the year. The soil is composed of six inches of black loam with a clay subsoil and is suitable for growing vegetables and grain. The surface is undulating, broken by North Heart River and covered with poplar from two to ten inches in diameter and willow bush. North Heart River is about one chain in width and was frozen at the time of the survey. It is shallow and has a swift current. The water is fresh and the supply is both sufficient and permanent. Hay can be obtained in small quantities. No land is liable to be flooded. There are no falls nor rapids. The climate is similar to that in the Edmonton district except that winter temperatures are lower. Summer frosts occur. Wood is the most readily available fuel and can be procured in all parts of the township. No stone-quarries, minerals nor coal or lignite veins were found. Moose, deer, bears, coyotes, ducks, partridges and rabbits comprise the game.—*T. A. Davies, D.L.S., 1914.*

Tp. 82 The trail from Grouard to Peace River Crossing crosses this township, passing through sections 2, 10, 9, 16, 17, 20, 29, 30 and 31. A branch leaves this main trail in section 17, and passes through sections 17, 18, 7 and 6; it is used by a half-breed settler for hauling hay to his stopping-place on the main trail. The soil is black loam on clay subsoil with occasional patches of muskeg. The surface is level and covered with poplar and spruce up to ten inches with willow underbrush. A small amount of hay grows on the marshes in sections 17, 7 and 6. Water is not plentiful, as the few small marshy lakes found in sections 6 and 7 dry up early in the season. There were no frosts at the time of survey (July). Dry poplar and spruce form an abundance of fuel, but no coal, stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

Tp. 83 (*East outline.*)—The trail from Peace River Crossing to Grouard intersects this outline in section 12. The soil is black loam on clay subsoil, and the surface is covered with a thick growth of small poplar and willow. No hay, timber nor water-powers were found, and no stone-quarries, minerals nor coal were noticed, but an abundance of small dry poplar can be secured for fuel.—*A. G. Stewart, D.L.S., 1912.*

A good wagon road leaves the trail from Peace River Crossing to Grouard about four miles from the former place, and passing through sections 18, 17, 16 and 15 ends in section 14. The soil is black loam eighteen inches deep on a clay subsoil. The surface is level and covered with poplar up to fifteen inches, and spruce with willow underbrush. Small quantities of good marsh hay grow in sections 14 and 15. A few small streams furnish a permanent supply of water, but there are no water-powers. Wood fuel consisting of poplar and spruce is plentiful, but no coal, stone-quarries nor minerals were seen.—*A. G. Stewart, D.L.S., 1912.*

Tp. 84 (*North outline.*)—See report for township 84, range 19.—*A. H. Hawkins, D.L.S., 1911.*

(*East outline.*)—This outline was reached by a pack-trail which leaves the end of the wagon road in section 14, township 83, and goes in a north-easterly direction, crossing this outline in section 13. The surface along the east boundary is generally level and covered with poplar and spruce up to ten inches, with patches of brulé and second-growth poplar and willow. A creek four feet wide and sixteen inches deep, flowing two miles per hour, crosses the east boundary of section 24. The banks are ten to fifteen feet high at this point, but are much higher on the westerly side of the township. No hay, merchantable timber nor water-powers were seen. An abundant supply of fuel can be obtained, consisting of spruce and poplar. The only game noticed was moose.—*A. G. Stewart, D.L.S., 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

This township lies about ten miles in a north-easterly direction from Peace River Crossing and can be reached only by a pack-trail as the country is rough and hilly. The soil is a black loam from two to six inches deep with a brown clay subsoil. The surface is gently rolling except for a deep ravine running through sections 30, 19 and 20, and is timbered with small poplar and willow. There are a number of good clumps of valuable spruce varying from eight to twenty-two inches in diameter in this ravine. No hay can be cut except a small amount on the upland. The water is fresh in all streams. The larger creeks contain water the year around, but the majority of the small ones dry up in a dry season. At the time of survey the largest creek was only two feet deep and fifteen feet wide. There are no water-powers. The climate is very good for mixed farming, but occasionally the district is subject to early frosts. Dry spruce and poplar will furnish the necessary fuel. No coal, stone-quarries nor minerals of economic value were found. The game consists of moose, bears, foxes, coyotes, deer and the smaller game. Grouse and prairie chickens are also found.—*A. L. Cumming, D.L.S., 1914.*

(*Easterly two-thirds.*)—This township is reached from the Grouard and Peace River Road by a branch wagon road running north-easterly, from a point about four miles from Peace River Crossing. It may also be reached by a pack-trail running north-easterly direct from Peace River Crossing. The surface is generally rolling and covered with a second-growth poplar with a few scattered spruce. That portion to the north of a large creek which runs westerly through the centre of the township is more or less bushy and very easily cleared. To the south of this creek the timber is larger, averaging eight inches in diameter. In sections 1 and 2 there are small patches of nice spruce, but not in large enough areas to be of any commercial value. The soil consists of two to twelve inches of black loam on a clay subsoil, and is suitable for mixed farming or grazing. There is an abundant supply of fuel throughout the township. Plenty of fresh water can be obtained from the creeks. "Three Creeks," a stream averaging ten feet in width and one foot deep runs across the centre of the township, in a valley averaging about eighty feet deep with steep slopes. No large hay meadows were seen, but grasses, consisting of peavine and vetches abound throughout the township. The climate was excellent with sufficient rainfall. No stone-quarries, economic minerals or water-powers were seen. Game consisting of moose, black and brown bears, foxes, ducks, geese and prairie chickens were seen.—*J. H. Johnston, D.L.S., 1915.*

Tp. 85 This township is traversed by Peace River which flows in a northerly direction through sections 30 and 31. A good pack-trail from Peace River Crossing follows along the east brow of the Peace River Valley to this township. A wagon road could be easily constructed into this township from a point on the Grouard trail about six miles out from Peace River Crossing. This route would avoid any deep ravines adjoining the river. The soil consists of from two to six inches of black loam overlying a light clay subsoil and is suitable for mixed farming or grazing. The country for approximately three-quarters of a mile on the east side of Peace River is rough and hilly, the table-land rising about seven hundred and fifty feet above the river. Through sections 18, 19 and 30, these hill slopes, having been burnt over, produce a luxuriant growth of grass, and should be excellent for pasturage in the early spring, the snow disappearing much earlier than on the surrounding table-land. Sections 31, 32 and 33 are timbered. Sections 26, 27, 34, 35 and 36 are badly broken by ravines, but produce an abundance of pasturage. Sections 5, 6, 7 and 8 are cut by creeks with deep ravines, and are more or less timbered. The remainder of the township is gently rolling. Sections 15, 16, 17, 20, 21, 22, 27, 28 and 29 are covered with scrub and numerous hay sloughs. Sections 1, 2, 3, 4, 9, 10, 11 and 12 are covered with a very light scrub and produce an abundance of grass. The remainder of the township is covered with scrub. The creeks in the township are small, being from two to six feet wide, but they furnish an abundant supply of fresh water. No portion of the land is liable to flooding. There is no available water-power. The climate should be excellent for grain-growing, no summer frosts occurring until late in August. Wood for fuel is plentiful in the northern part of the township. No coal, lignite, economic minerals nor stone-quarries were seen. Game is scarce and consists of moose, foxes, lynx, minks, weasel, ruffed grouse and a few prairie chickens.—*J. H. Johnston, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

Tp. 86 This township is traversed by Peace River which enters in section 6 and leaves in section 33. Wagon roads could be easily constructed on either side of the river from Peace River Crossing as most of the timber has been burnt off and the land is well drained. The soil consists of a layer of black loam, varying from two to six inches deep, overlying a clay subsoil, and should be suitable for growing cereals and vegetables of all varieties, or for grazing. Sections 5, 6, 7, 8, 9, 16, 17, 18, 20, 21, 28, 29, the east half of sections 32 and 33, and the west half of section 34, lie on the slopes of the Peace River Valley. These sections are more or less rough and rolling, and are generally covered with scrub poplar, but produce a luxuriant growth of vetches and peavine. Open patches occur on the knolls, and usually in the spring the snow is off these knolls about two weeks ahead of the surrounding table-land, and for this reason the slopes of the Peace River Valley make excellent grazing-lands. Sections 2, 3, 10 and the northern portion of section 9, are cut by deep ravines from two hundred to three hundred feet deep; two creeks flowing through these ravines, join in section 3. These creeks are about four feet wide and four inches deep. The water in the one from the south is fresh, but the other creek is saturated with some soluble salts which make the water unfit for domestic use. Sections 29 and 30 are also broken by deep ravines which, however, run out very rapidly so that in the western portion of section 30 they are only about forty feet deep. Two creeks of fresh water, each about two feet wide and four inches deep, run in these ravines, uniting in section 29. The remainder of the township is gently rolling and is covered with scrub and a few scattered small hay sloughs, except sections 25 and 36 which are mostly muskeg. The climate is suitable for grain-growing with a plentiful rainfall. No summer frosts were observed until the middle of August when a slight one occurred. There is no available water-power. Poplar and spruce for fuel are most readily available in the ravines and in sections 4 and 5. No economic minerals nor stone quarries were seen. The game consists of moose, bears, minks, foxes, coyotes, prairie chickens, ruffed grouse, ducks and geese.—*J. H. Johnston, D.L.S., 1913.*

Tp. 87 Peace River enters this township in section 3 and flows northerly to section 26, where it turns to the west, leaving the township in section 32. It has an average width of one thousand six hundred feet, and flows at the rate of three and a half miles per hour. During high water (June) the river rises from ten to eighteen feet, but no damage is done to the adjoining lands as the banks are high enough to prevent overflow. The difference in elevation between Peace River and the table-land is approximately six hundred and fifty feet. The slopes of the valley are rough and hilly, and are covered with dense poplar scrub and windfall, except in sections 27, 28, 29, 32 and 22 where they are heavily timbered with poplar. In parts of sections 27 and 28 there is a small area containing scattered spruce averaging eighteen inches in diameter. The grasses on the slopes of the valley in this township are not so luxuriant as in some of the surrounding townships on account of the dense growth of scrub and timber. Goose grass, vetches and ordinary grasses occur on these timbered slopes. The surface of the remainder of the township is gently rolling and covered with scrub, poplar and windfall, except sections 29, 30, 31, 34, 35 and 36, which are covered with dense poplar and scattered spruce averaging ten inches in diameter. Numerous small hay sloughs are found throughout the township. In the south-east quarter of section 17, there is a fresh-water lake of about sixty acres, and surrounding this lake there is an area of about thirty acres of land, producing an abundance of redtop hay. Section 33 is situated on a bench sloping to the west about two hundred feet above the river. The soil in this section is mostly a sandy clay with a stony clay subsoil. Scattered Banksian pine are found throughout this section. The soil in the remainder of the township consists of from two to four inches of black loam overlying a clay subsoil, and is suitable for mixed farming or grazing. The climate was excellent with a plentiful though not excessive rainfall. No summer frosts were experienced until the middle of August, when a slight one occurred. Wood fuel is plentiful, but no coal nor lignite was found. Fine-grained sandstone cliffs occur along the right bank of Peace River in sections 32, 33 and 34, and also along the left bank in sections 29 and 32. These cliffs are from sixty to one hundred feet high, and could be quarried and used for building purposes. The sandstone is not of first-class quality, as it contains a small percentage of iron. No economic minerals were found. Several small gas springs are found below the high water

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

mark on a gravel bar adjoining Tar Island, which is situated in the south-east quarter of section 15 and the north-east quarter of section 10. These springs occur within a radius of two hundred feet, and a small quantity of gas escapes from them continually. Small quantities of crude tar are deposited on the surface, and there is a residue of sodium chloride resulting from the evaporation of the salt water escaping from the springs. The game consists of moose, elks, jumping-deer, bears, foxes, coyotes, grouse, ducks and geese.—*J. H. Johnston, D.L.S., 1914.*

Tp. 88 (*North outline.*)—See report on township 88, range 19.—*A. H. Hawkins, D.L.S., 1912.*

This township is traversed by Peace River, which enters in section 5 and flows northerly leaving the township in section 31. Whitemud River, which enters the township in the north-west quarter of section 18 and flows through sections 19 and 30 into Peace River, has an average width of about one hundred feet, and a depth of eighteen inches, and a current of about three miles per hour. Its valley averages about one mile wide, and in this township it is about five hundred and fifty feet deep. The slopes of the valley are similar to those of Peace River, being thickly timbered and very rough. Cadotte River also passes through this township, entering in section 1 and leaving in section 33. This stream averages about one and a half chains in width, about eighteen inches in depth, and flows at the rate of about three and a half miles per hour at low water. Numerous rapids occur in this stream. The valley averages about one mile wide, and where it enters the township it is approximately one hundred and fifty feet deep, but where it leaves the depth is four hundred feet. Little Cadotte River, which flows from the east along the northern boundary of this township and joins Cadotte River in section 33, averages about fifty feet in width, one foot in depth, and has a current of two miles per hour. The slopes of the valleys of Cadotte and Little Cadotte Rivers are rough and rolling, and are covered with light poplar scrub, the heavier timber having been burnt off some time previously. These slopes with their numerous flats produce a luxuriant growth of peavine, vetches, bunch grass and marsh grass, making an ideal place for grazing purposes. The portion of the township to the west of Peace River, and the two south tiers of the portion to the east are heavily timbered with poplar up to ten inches in diameter and spruce. The remainder of the township is covered with scrub poplar, and numerous small hay sloughs. This latter portion produces an abundance of grasses, more especially on the area between Cadotte River and Little Cadotte River where the growth is luxuriant. The soil consists of from two to five inches of black, sandy loam, overlying a heavy clay subsoil, and is suitable for mixed farming and grazing. There are some excellent patches of spruce in this township, one consisting of about forty acres of clean spruce, being on a flat adjoining the mouth of Whitemud River where the trees average eighteen inches in diameter. Another area of about one hundred and forty acres is located on a flat in the east half of section 8. The spruce on the latter area is of excellent quality, averaging twenty-four inches in diameter, but it is intermixed with balm of Gilead of an average diameter of thirty inches. Sections 2, 3, 10 and 11 also contain spruce in commercial quantities, the trees averaging twenty inches in diameter, but the growth is more or less scattered in some parts. There are no creeks in the township, but plenty of fresh water is supplied by the rivers. No available water-powers are found. The climate is excellent with sufficient rainfall. No summer frosts were experienced. Wood for fuel is readily available in almost any portion of the township. No coal, lignite nor economic minerals were found. On the left bank of Peace River in sections 5, 8, 16, 17 and 20, and also on the right bank in section 5, outcrops of fine-grained sandstone occur of approximately one hundred feet in thickness. The sandstone could be quarried for building purposes, but it is of second quality on account of it containing a small percentage of iron. Game consists of moose, deer, bears, grouse, minks, foxes and coyotes.—*J. H. Johnston, D.L.S., 1914.*

Tp. 89 Peace River passes through sections 18, 19 and 30 of this township. Cadotte River flows through sections 4, 8, 9 and 17, and joins Peace River in section 18, averages two chains wide, two feet deep, and flows at the rate of three miles per hour. Little Cadotte River flows from the east along the south boundary of the township, joining Cadotte River just south of section 4. Little Cadotte River averages fifty feet in width, eighteen inches in depth and flows at the rate of about two miles per hour. The valleys of Cadotte

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

and Little Cadotte Rivers are each approximately one mile wide and about four hundred feet deep, the slopes being rough and broken and covered with poplar scrub and windfall. This rough country comprises the south halves of sections 1, 2 and 3, all of section 4, the west half of section 9, the north-easterly three-quarters of section 8 and all of sections 17, 18, 19, 20, 29 and 30, the last five sections being in the Peace River Valley. The remainder of the township is gently rolling. The south-westerly half is covered with poplar scrub, willow and windfall and in the north-easterly half of the township there is a dense growth of poplar and spruce up to ten inches in diameter. The soil consists of from two to six inches of black loam overlying a clay subsoil, and supports a luxuriant growth of redtop, vetches and bunch grass, and in some places there is marsh grass. Small quantities of hay could be cut in some open patches in sections 24 and 25. There is no merchantable timber, but wood for fuel is readily available everywhere. The climate is mild and warm, and no summer frosts were experienced. The rainfall was sufficient, but not excessive. There is an abundance of fresh water in the rivers and creeks. No land is liable to be flooded. A creek about four feet wide and six inches deep flows through sections 25, 26, 27, 28 and 29. The supply appeared to be permanent. There are no available water-powers. No economic minerals, coal, lignite nor stone-quarries were noted. The game consists of moose, jumping deer, bears, foxes, coyotes, lynx, minks, partridges and prairie chickens.—*J. H. Johnston, D.L.S., 1914.*



Photo by J. S. Galletly, D.L.S.

Camp in Township 109, Range 14, West of the Fifth Meridian

Tp. 90 (*Exploration survey.*)—The surface is heavily rolling and lightly wooded with spruce and poplar. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

Tp. 91 (*Exploration survey.*)—Peace River bounds this township on the west, and there is also a deep ravine in the north-west corner. The soil is good and the surface is wooded with poplar and spruce.—*J. R. Akins, D.L.S., 1913.*

This township is most easily reached by boat down Peace River from Peace River Crossing. The river does not flow through the township although it comes within half a mile of the north-west corner. The surface, with the exception of the westerly portion, is fairly level and wooded with poplar and willow and a few spruce. Spruce timber of commercial value was found in sections 24 and 25. This timber is of excellent quality, but as the trees are scattered, the total amount is not large. The soil consists of a layer of black loam over clay subsoil, and

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—*Continued.*

should prove very adaptable to agricultural purposes. Many small creeks were noted, although they were practically all dry during the month of September. No hay meadows were found, and feed for horses is not very plentiful. The climate was generally warm with no summer frosts until late in August. Plenty of poplar is available for fire-wood, but no stone-quarries, lignite veins or minerals of economic value were seen. Moose were plentiful, but no other game was seen.—*J. A. Buchanan, D.L.S., 1915.*

Tp. 92 (*North outline.*)—This township is very rough, as Peace River which flows across it has banks nearly six hundred feet deep, and the streams flowing into the river have similar banks. The soil is of first class quality and the surface is lightly wooded.—*J. R. Akins, D.L.S., 1913.*

This township is most easily reached by boat down Peace River from Peace River Crossing. The river follows the westerly boundary of the township throughout its length, thus causing the westerly tier of sections to be very rough and broken. The remainder of the township is level, and wooded throughout with light poplar and willow. Several small creeks were found in this township, but two miles from the river they are practically all dry during the months of August and September. Great difficulty was experienced in securing water for camp purposes. No hay meadows were found although summer feed was very abundant. The soil in the westerly half of the township has been badly burned by successive forest fires, and very little black earth remains. The easterly half of the township has not suffered so severely from fires, and still has a layer of black loam over clay subsoil. No timber of commercial value grows in the township, and poplar wood is the only available fuel supply. The climate was generally warm and free from summer frosts until late in the month of August. No stone-quarries, lignite veins nor minerals of economic value were found. A few moose were seen, but no other game of any kind were noticed.—*J. A. Buchanan, D.L.S., 1915.*

Tp. 93 (*Exploration survey.*)—This township is cut by Peace River but the soil is good and well adapted for farming.—*J. R. Akins, D.L.S., 1913.*

Tp. 94 (*Exploration survey.*)—Peace River flows east across the south part of the township and then north along the eastern boundary. The soil is of good quality, but the surface is rough and lightly wooded with willow and poplar.—*J. R. Akins, D.L.S., 1913.*

Tp. 95 (*Exploration survey.*)—The valleys of Battle and Peace Rivers cut the surface up very badly. The soil, however, is good and the surface is lightly wooded.—*J. R. Akins, D.L.S., 1913.*

Tp. 96 (*North outline.*)—The eastern part of the township is rough and cut by Peace River, the banks of which are covered with windfall. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

Tp. 97 (*Exploration survey.*)—The soil in this township is well suited for farming. The surface is lightly wooded with willow, poplar and spruce.—*J. R. Akins, D.L.S., 1913.*

Tp. 98 (*Exploration survey.*)—This township is lightly wooded with poplar, with a few open hay meadows. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

Tp. 99 (*Exploration survey.*)—Some large timber grows in this township, but the most of the timber consists of small poplar, willow and spruce. Patches of muskeg and hay meadows are also found.—*J. R. Akins, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 20.—Continued.

Tps. 100, 101 & 102 (*Exploration survey.*)—The surface of these townships is rough in general but the soil is of good quality and there are considerable open patches. The only timber is light poplar and willow.—

J. R. Akins, D.L.S., 1913.

Tps. 103, 104, 105 & 106 (*Exploration survey.*)—These townships are fairly flat and are drained by the south branch of Boyer River toward the north. They are covered with willow, poplar and spruce, with swampy areas caused by old beaver workings. Good grass and meadows border the Keg River trail and the soil is mostly loam.—*J. A. Fletcher, D.L.S., 1913.*

Tp. 111 (*Exploration survey.*)—The east end of Watt Mountain lies in this township. The soil is not very good and the surface is rough and timbered with spruce and jack pine.—*J. R. Akins, D.L.S., 1914.*

Tp. 112 (*North outline.*)—The wagon trail to Hay River from Fort Vermilion crosses this township. The trail is good from Fort Vermilion to the base line but beyond the line it is very stony. Meander Creek flows through this township and empties into Hay River. Open country lies west of the creek and cherries and saskatoon berries grow in profusion. The soil is good and the surface rolling.—*J. R. Akins, D.L.S., 1914.*

Tps. 113 & 114 (*Exploration survey.*)—These townships have green timber swamps and muskegs. Most of the timber is small spruce, tamarack, willow and alder, but some is of fairly good size. The soil is good as the townships have not been fireswept for a long time. They are nearly level and very wet.—*J. R. Akins, D.L.S., 1913.*

RANGE 21

Tp. 68 (*North outline.*)—In this township the base line crosses Goose River (altitude one thousand and nine hundred feet above sea-level) three times, once in the middle of section 34 and twice at short intervals near the north-east corner of section 33. This stream, coming from the south-east, flows into Little Smoky River, joining it about two miles north of its intersection with the base line.

Goose River is two chains wide with banks ten to forty feet high. It flows swiftly over a stony bottom. A well-defined pack-trail intersecting the north boundary of this township near the north-east corner of section 33 leads to the confluence of Goose River with Little Smoky River. This is a favourite camping ground used by the Indian hunters from Sturgeon Lake when journeying to the south on their frequent hunting expeditions.

Little Smoky River (one thousand and seven hundred feet above sea-level) is the next and largest stream intersected by this line. It is met first in the middle of section 31 and again close to the north-east corner of township 68, range 22. At this crossing the river is three chains wide with a depth of three feet, at the time of survey. It has a sandy bottom and its banks are thirty feet high. Its valley is about half a mile wide. There is some partly open level land at intervals along this stream, and thin seams of coal were seen along its banks. The east half of this township is wooded with poplar, spruce and birch. The soil is the same as in range 20. The west half is in places swampy, and wooded with small spruce.—*A. Saint Cyr, D.L.S., 1904.*

Tps. 69 & 70 (*East outlines.*)—The east outlines of these townships run through a nice level piece of good agricultural country with a thick growth of large poplar, some spruce, small birch, willow and alder. There is a good slope each way to Carrot Creek, which is a fresh-water stream about thirty feet wide, two feet deep and has a current of two miles per hour. Water-power could not be developed as the valley

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

is wide. No stone-quarries, minerals nor hay were seen, and wood is the only fuel. Moose are exceptionally plentiful in township 69, and bears, foxes, lynx, beaver, mink, marten, skunks, weasels and rabbits are fairly numerous.—*A. E. Glover, D.L.S., 1915.*

Tp. 71 The soil is not extra good in this township, as there is a great lot of swamp all over the south half, but the northerly third is very good, consisting of a top soil of black loam about six inches deep and a heavy clay subsoil. The whole township is covered by a dense growth of spruce and poplar up to thirty inches, birch up to ten inches and tamarack in the swamps, with willow, alder and much small undergrowth. The timber averages about sixteen inches. A lot of heavy spruce grows along the Sturgeon Creek valley, and in many places along the valley of the Little Smoky. No hay is found in the township. Little Smoky River runs through the east part of this township; it is a fresh-water stream of a fairly constant flow, and has a succession of deep, sluggish reaches followed by a stretch of rough boulder bed which causes rapids, all very shallow. The river has an average width of six chains, a depth of four feet, and a current of about two and one-half miles per hour. No land is liable to be flooded. Sturgeon Creek runs across the southerly part of the township emptying into Little Smoky River. This is a permanent stream averaging thirty feet wide, two feet deep, and has a current of two miles per hour. Water-power could be developed more readily in the Sturgeon valley than in the Smoky as the valley is fairly narrow. The climate is good with no summer frosts. No stone-quarries nor minerals were found and wood is the only fuel. Moose, bears, foxes, coyotes, mink, marten, weasels, skunks, beaver and rabbits are fairly plentiful.—*A. E. Glover, D.L.S., 1915.*

Tp. 72 The surface of this township is nearly level and covered with spruce, birch and poplar wood. The timber ranges from six to eight inches in diameter. There is a spruce muskeg in section 35, and a larger one, which starts north of section 34, extends westerly through sections 33, 32 and part of 31. Creeks flowing south cross the north boundary of section 35. The old pack-trail from Grouard to Sturgeon Lake intersects section 31. It follows along a stream flowing north towards Little Smoky River. The soil is very good in the vicinity of this trail and creek, being a black loam ten inches deep with a clay subsoil. Through the other sections the soil is a black or a sandy loam three to ten inches deep overlying a clay subsoil.—*Arthur Saint Cyr, D.L.S., 1904.*

Nearly all of sections 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33 and 34 are covered by a spruce and tamarack swamp. The remainder of the township is covered by a dense growth of spruce, poplar and birch with much willow, alder, cranberry and saskatoon. The timber does not run any higher than fifteen inches and there is absolutely no merchantable timber in the township. The soil is a good black loam, about six inches on an average with a subsoil of rich heavy clay. It will be well suited to agriculture when the timber is taken off. The township is nearly level with some parts gently rolling. There is very little water in the township. A creek about eight feet wide runs across the south-east corner of the township and Little Smoky River flows through the east half of section 1. This is a fresh-water stream, and the part in this section is very deep with a sluggish current. No land is liable to be flooded, and no water-power could be developed. The climate is good with no summer frosts. No stone-quarries nor minerals were found and the only fuel is wood. Moose, bears, foxes, coyotes, lynx, beaver, weasels, mink, marten and rabbits are fairly plentiful.—*A. E. Glover, D.L.S., 1915.*

Tp. 73 This township was reached by following the trail from Grouard to Sturgeon Lake as far as Little Smoky River, and thence by a surveyor's trail which crosses the east boundary of this township in section 13. These trails are passable most of the year, but as this season was exceptionally wet great difficulty was experienced in moving supplies. The soil is mostly black loam to a depth of four inches over a subsoil of clay or sandy clay, and appears well suited to farming. The surface is level and densely wooded throughout with poplar, scattered spruce, birch and jack pine, with willow and alder underbrush. There is no prairie nor hay but horse feed can be obtained during June, July and August in the willow sloughs. The water is fresh but there are few creeks, only one of which is permanent. During the rainy

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

season surface water is found in places six inches deep. No water-power can be developed. The climate is similar to that in the vicinity of Edmonton, and though summer frosts occur they do not hinder agricultural pursuits. Wood for fuel is abundant, but no coal was found. Signs of moose were noticed and a few partridges were seen.—*A. W. Ponton, D.L.S., 1914.*

Tp. 74

This township may be reached by a new wagon trail which was cut from the junction of the Grouard-Sturgeon Lake summer trail and Little Smoky River through townships 73, ranges 20 and 21, and thence northerly to Little Smoky River. This trail is not passable with heavy loads during the summer season. The soil is a rich, black loam from three to twelve inches in depth over a heavy clay subsoil and when properly drained should make good farm land. The township is timbered throughout. Sections 20, 21, 22, 23, 24, 27, 28 and 29 are very swampy and are covered in the swamps with a heavy growth of willow. The remainder of the township has poplar averaging about six inches in diameter and a few scattered spruce and birch from four to twelve inches. There are numerous willow swamps in all parts of the townships. Feed is very plentiful in all the swamps and in the more open spots, but very little hay could be cut, there being no open hay meadows. All the water is fresh and of splendid quality, and during the greater part of an ordinary season there are numerous small creeks. These, however, would probably dry up during a dry season. Little Smoky River which flows through sections 25, 26, 23, 27, 34 and 33 averages about four chains in width and about six feet in depth, and has an average current of about three miles per hour. The slopes on either side rise to a height of from three hundred to four hundred feet. In its present condition the greater part of this township is liable to be flooded every season, but with the clearing of the woods and the construction of small drains this should be largely overcome. Water-power could possibly be developed on Little Smoky River, but owing to the reported very low water during dry seasons the proposition is not considered feasible. General indications point to a climate similar to that at High Prairie, a settlement a few miles west of Grouard. However, during the present season vegetation was fully a week earlier in this district than it was at Grouard. Wood for fuel is abundant everywhere. Drift coal was noted along Little Smoky River but no seams were seen. No stone-quarries nor minerals of economic value were noted. A few geese and ducks were seen on the river, and some signs of moose were noted, but game is not plentiful. Beavers appear to be very numerous in this district at the present time (May). For further information on Little Smoky River see the report on tp. 73-19-5.—*W. H. Waddell, D.L.S., 1914.*

Tp. 75

(*Partial.*)—The survey of this township was made from camps in township 76, consequently there are no roads. The soil is generally good, being composed of from four to six inches of black loam with a clay subsoil. On account of several creeks in the remainder, only the eastern portion is suitable for farming. Plenty of fresh water may be obtained in the western part although none was seen east of section 27. At the time of survey (November) the weather was cold, with eight inches of snow on the ground. Some poplar and spruce timber was found in sections 29, 30, 31 and 32, but the remainder of the surface is covered with windfall overgrown with poplar and willow brush. An abundance of dry wood, however, is available for fuel. No coal nor minerals, no game of any kind, hay marshes, water-powers nor stone-quarries were noticed. Owing to the depth of the ravines there is little danger of the surrounding country being flooded.—*J. H. Smith, D.L.S., 1910.*

From the crossing of the Grouard-Sturgeon Lake summer trail with Little Smoky River, a new wagon trail was cut through townships 73 and 74, range 20, into township 74, range 21, along the left bank of the river. Owing to the very deep valley of the river it was impossible to continue the trail farther and a pack-trail was therefore cut northerly into this township. The greater part of this new wagon road is very soft and is barely passable while the frost is out of the ground. The soil is a rich, black loam over a clay subsoil, and with proper drainage that part of the township not broken by Little Smoky River should become good farm land. With the exception of a few prairie patches in the valley of the river and a few small ones on the plateau towards the north, the township is timbered with a growth of poplar averaging about six inches in diameter and a few scattered spruce and birch of about the same size with a heavy undergrowth

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

of willow. In the two easterly tiers of sections this willow predominates, in places the country being flat and swampy. Considerable good hay could be cut from the prairie spots mentioned above. All water is fresh and of splendid quality. Little Smoky River enters the township at the south-west corner of section 2 and finally leaves it in section 19. This stream averages about five chains in width, about six feet in depth during ordinary seasons, and has a current of about three and one-half miles per hour. There is little or no danger of serious floods along this stream, but the valley rises to a height of about four hundred feet to a very level plateau which is of a swampy nature and at present subject to serious floods; it appears however, that this could be overcome by the construction of drains. A limited amount of power might be developed from Little Smoky River during ordinary seasons, but as this stream is reported to become very low during dry seasons it is doubtful if any such power scheme is feasible. General indications point to a climate very similar to that of Grande Prairie, about sixty miles to the west. No summer frosts were noted. Wood for fuel is abundant everywhere. No coal nor lignite veins, stone-quarries nor minerals of economic value were noted. With the exception of a few moose and bears and some geese along the river, game appears to be very scarce. Beavers are very plentiful in this district at present. For further information on Little Smoky River, see the report on tp. 73-19-5.—*W. H. Waddell, D.L.S., 1914.*

Tp. 76 (*North outline.*)—This township is gently undulating with very little timber of any value, it having been burnt over and in places almost clear of slash, grass grows luxuriantly. The soil is generally black loam on clay subsoil and should be first-class farming land. In section 31 a coulée is met with in which Peavine Creek flows from the north and east south-westerly into Little Smoky River. Water is slightly alkaline. The land on the west side of the coulée is thickly covered with vetch and peavine and it is a favourite feeding ground for horses and big game.—*Henry W. Selby, D.L.S., 1905.*

This township was reached by cutting a wagon road through township 76, range 23, and entering range 22 at the north-west corner of section 30. The soil is of a quality quite suitable for agricultural purposes, the surface being in most places level. Very little timber of any size is found but the land is covered with windfall and overgrown with poplar and willow brush. Peavine Creek flows through the north-west portion of the township and there are some smaller creeks flowing through the south-west, providing a supply of fresh water at all times. No minerals of value were found nor was any game noticed. No hay marshes, water-powers nor stone-quarries were observed. On account of frequent forest fires in this locality fuel is not plentiful. At the time of survey (October) the weather was cold, snow to a depth of six inches covering the ground.—*J. H. Smith, D.L.S., 1910.*

Tp. 77 The winter trail from Grouard to the Spirit River district was cut through this township about five years ago, and follows very closely the traverse line run by Mr. Thompson, D.L.S., in 1882. This season the trail was widened out to this township so that wagons could be used, and low places were cut around or corduroyed. A very wet depression or flat made by beavers damming Peavine and Round Lake Creeks occupies a large portion of sections 14, 15, 22, 23 and 26. To get into the westerly part of the township a detour was made northerly into section 35, where Round Lake Creek was crossed, and thence southerly to the banks of Peavine Creek. Without considerable work a wagon road could not be made along the winter trail west of Round Lake Creek, since the willow flats to be crossed, which drain northerly and are wide, hold the water until late in the season. There will not be any difficulty in draining the roads for there is a good fall in Peavine Creek, and its banks, commencing in section 15, are from five to fifty feet high before leaving the township. Between the centre of section 13 and the centre of section 15 it is not easy to find the creek. The water coming down Peavine Creek through township 77, range 20, having a strong current, overflows the flats in sections 14 and 15, until it again reaches the natural channel in section 15. The same may be said of Round Lake Creek. It has well-defined banks through sections 36 and 35, then spreads over parts of sections 26, 27 and 22, forming a willow and hay swamp, and thence slowly finds its way into the natural channel in section 15. In September there is very little of this flooded

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

land which cannot be driven over with wagons, which goes to show that when the roads are opened up and ditched there will be very little trouble with the water. The water in both Round Lake and Peavine Creek was good at all times of the year, but there was not much of it in October. The width of the channel of Peavine Creek is from four to ten feet as it runs westerly, varying in depth from three inches to three feet. Round Lake Creek is smaller and is seldom more than four feet wide, and when running is from one to three feet deep. After the two join, the banks become higher, until at the south boundary of the township they are fifty feet high. The timber over the main part of the township is composed of poplar bluffs on the high land and willow brush on the lands which are lower. Large patches of prairie are found in all parts of the township, except on sections 1, 11, 12, 6 and 7, where the timber is chiefly poplar four to twelve inches in diameter. Large hay swamps are found on sections 22, 23, 26 and 27, from which it would be easy to cut two hundred tons of fine hay. Hay could also be made on much of the prairie land, and pasture is found everywhere. Only the facilities of a railway are wanting to make this as fine a tract of farming country as there is in the West, for it is well known that settlers would go there if they could market their grain. There is plenty of dry fuel, both poplar and spruce, convenient on this and the adjoining townships. No coal, minerals nor stone-quarries were discovered but moose, bears and some foxes were seen.—*Henry W. Selby, D.L.S., 1909.*

Tp. 78 This excellent tract of country is reached by a wagon road now opened and travelled from the west end of Lesser Slave Lake. This road follows very closely the traverse line cut out by Mr. Thompson, D.L.S., in 1882, and in winter time it is used by those settlers in the Spirit River country who go to Edmonton for their supplies and machinery which cannot be obtained at present at reasonable prices nearer home. This is the shortest route, and I believe the best one for such a purpose. There is a route by way of Peace River Crossing and Dunvegan, which is probably a better wagon road at present, but it is very much shorter by way of Winagami Lake, and there are scarcely any hills to travel over in the winter. There were no wagon trails into this township until I began the survey, but there was no difficulty in making a trail wherever one was required. After crossing Round Lake Creek in section 35, township 77, a wagon could be driven anywhere with very little cutting. The surface of the township is very gently undulating on the ridges and bluffs of poplar and prairie alternate with small willow brush between the ridges. By these willow the drainage of the country is affected, causing the road or trail to be soft in the early part of the season. The general altitude of the township is higher than the surrounding country so that later on in the season these soft places dry up. The south four miles drains into a depression on sections 4, 9 and 10. Here Hunting Creek rises, and, leaving the township in section 7, flows north-westerly into Smoky River. Another depression lies in sections 18 and 19, which my wagons passed over in September, but in which, earlier in the season, a pony would sink and get mired. The rest of this township is excellent land and very easily cleared of the light timber found on it, except in section 36 where the timber is heavy poplar and spruce. Considerable timber, which was killed and partly burned in the fire of 1904, lies in the north-easterly sections. A second growth of poplar is springing up through the fallen and burnt timber. The soil is a black loam from six to fourteen inches in depth on a friable clay subsoil. Hay might be cut near the upper part of Hunting Creek, on sections 5, 7 and 8, and a little on small openings here and there, but without some willow cutting there could not be much obtained. There is splendid pasture all over the township, peavine and vetch growing thickly on the uplands, and heavy grass on the lowlands. Fuel is plentiful, either dry poplar or spruce, in the lands adjacent, and occasionally through the township. Water is scarce, and after August no surface water was found outside Hunting Creek, except by digging in a slough on section 31. This land is suitable for farming, but for the first few years it is occupied it would be better for the settler to depend on mixed farming and stock-raising until the drainage of large swamps was effected. By that time there would not be so much danger from frost. The climate is suitable for grain growing, in fact wheat was grown this year in range 17, where the conditions were not so good as they should be here. Another thing which should encourage the settler is the possibility of railway construction through this township. I believe the best crossing over Smoky River is just west of it, and one of the lines being built westerly is liable to select this route at any time.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

Although coal has not been discovered near here there is a possibility of its being found. Moose, bears and some of the smaller fur-bearing animals are killed here every year.—*Henry W. Selby, D.L.S., 1909.*

Tp. 79 (*East outline.*)—This line runs along the watershed which slopes toward Reed Lake in sections 36 and 25. The land is gently rolling and heavily timbered with poplar and considerable spruce, a small belt of fairly large spruce being found on section 30, township 79, range 20. A grassy slough or water-course apparently connecting Reed Lake with another small lake in township 78, range 20, crosses the line in section 1. Reed Lake is about one and a half miles in length by one mile in width, and is very shallow with islands of reeds over a large part of it. This is a favourite feeding ground for moose. They wade in and feed on the roots in the lake, especially during fly time. The soil south of the lake becomes better and is composed of black loam on clay, and after the timber is removed should make good farm lands. Considerable prairie is found in township 79, range 21. The water is generally good. No coal, stone-quarries nor minerals were found and only tracks of moose, bears and small fur-bearing animals were seen.—*Henry W. Selby, D.L.S., 1909.*

The best route into this township is by way of Grouard and McLennan, a new wagon road having been cut from Falher Road to Magloire Lake. The steel for the Edmonton, Dunvegan and British Columbia Railway will be laid this fall as far as McLennan, thus enabling intending settlers to pass the worst part of the road (between Grouard and McLennan) by train. The surface is very slightly undulating and covered with fire-killed poplar and willow which is absolutely of no commercial value. The soil consists on an average of two inches of black loam with a heavy clay subsoil without any stone, and is suitable for mixed farming. There are four squatters in sections 6 and 7, and the township to the south appears to be fairly well settled. The country adjoining the north-west side of Magloire Lake is exceedingly marshy and wet, and a swampy strip with a heavy growth of hay runs from this marsh in the south-east quarter of section 28 through sections 21, 20 and 17. There are no very extensive hay meadows although there are a considerable number of small hay sloughs with scattered willow throughout the township. There are only four creeks, three of which appear to join, forming Lalby Creek. The water is pure and fresh but the township is not well watered. Dry wood for fuel is plentiful. No water-powers, coal, minerals nor stone-quarries were seen. Moose are plentiful in the vicinity, and Magloire Lake is frequented by great numbers of ducks, swans and muskrats. A good pack-trail runs from the south shore of this lake in a north-easterly direction to the Peace River Crossing Road. Hunters and trappers evidently locate here as several drying frames were seen. The climate is somewhat more severe than that of Edmonton. As regards summer frosts, it is probable that the heavy frosts in July and August, peculiar to the district this year, would be felt in this township.—*G. Z. Pinder, D.L.S., 1914.*

Tp. 80 (*North outline.*)—The surface is undulating and is well wooded. A hay marsh half a mile long lies one-quarter of a mile south of the base line in section 31. Small streams, tributaries of North Heart River, cross the line in sections 34 and 35. In sections 31 and 32 the subsoil is clay mixed with gravel and stones. In the rest of the range the soil is blue clay covered by a few inches of loam. Throughout this township there are many willow swamps. An Indian pack-trail from "Little Prairie" crosses the line in section 34. Smoky River and the country east of it is now accessible by a wide road which I had to cut in order to reach the initial point of my survey.—*Arthur Saint Cyr, D.L.S., 1906.*

(*East outline.*)—This land, as seen from the line, presents a gently rolling appearance and is heavily timbered with poplar four to ten inches in diameter, with a few scattered spruce on the high lands and around the small sloughs; occasionally in the depressions large willow are found. The soil is chiefly a shallow black loam on a gravelly clay subsoil, and the timber is smaller and shorter than where the soil is better. No water was found near the line in the north four miles, and very little in the next two miles. Hay or grass was not seen. No minerals, coal nor stone-quarries were discovered and no game was seen.—*Henry W. Selby, D.L.S., 1909.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

This township is best reached by the Peace River Crossing Road from Grouard as far as section 26, township 80, range 19, and thence by a pack-trail leading to the southern part of the township. There is no difficulty in locating a wagon road anywhere in this vicinity. The soil consists of about two inches of black loam over a heavy clay subsoil with some stone, and is not very suitable for agricultural purposes. The surface is very slightly rolling and is heavily wooded with poplar from three to twelve inches in diameter and willow with a few scattered spruce up to twelve inches and jack pine to ten inches in diameter. The timber is of no value commercially, the majority of it having been damaged by fire and in the southern portion of the township about fifty per cent. is absolutely fire-killed. No hay meadows were found although there is a good supply of hay in the timber. Water is very scarce throughout the township, in fact there was great difficulty in getting water of any sort for our own use. No water-powers, coal, minerals nor stone-quarries were seen. Wood for fuel is plentiful. Moose abound in this township, and there are a few black bears. Two large flocks of sand-hill cranes were observed, but no partridges nor ducks were seen. The climate is somewhat similar to that of Edmonton, though it has a rather lighter rainfall. The frosts in July and August which were peculiar to this district during the past season, did not appear to have affected anything in this township.—*G. Z. Pinder, D.L.S., 1914.*

Tp. 81 (*East outline.*)—This township was reached by an old wagon trail which was cut for the survey of the twenty-first base line and crosses the outline in section 12. It is grown up with willow and brush, but could be made into a good trail with very little labour. The soil is black loam with clay subsoil, and the surface is covered with poplar up to twelve inches with willow underbrush. The south two-thirds is generally level while the north third is cut up by the valley of North Heart River. No hay, timber, nor water-powers were seen. Heart River forms a permanent supply of good fresh water and has good grazing along its banks. Poplar wood for fuel is plentiful, but no stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

The route followed to this township was the road from Grouard to Peace River Crossing to within about thirty miles of the latter place. From this point a wagon road leads into this township. These roads were frozen when travelled over and were consequently in good condition, but they became very soft and difficult to travel over later in the season. The soil is composed of black loam from four to six inches deep with a clay subsoil and is suitable for the growing of vegetables and grain. The surface is undulating except in the vicinity of North Heart River in sections 34, 35, 36 and 25 where it is rolling. The township is covered with poplar from four to ten inches in diameter and willow. North Heart River which is about one chain in width was frozen at the time of survey, but it is reported to be shallow and flowing swiftly throughout this township. The water is fresh and the supply is sufficient and permanent. There are no falls nor rapids. No land is liable to flooding. Hay can be obtained in small quantities from the several sloughs. The climate is similar to that of the country surrounding Edmonton, except that the winter temperatures are lower. Summer frosts occur. Wood is the most readily available fuel, and can be obtained in all parts of the township. There are no stone-quarries nor minerals, nor coal nor lignite veins. Moose, deer, bears, coyotes, ducks, partridges and rabbits are found.—*T. A. Davies, D.L.S., 1914.*

Tp. 82 (*East outline.*)—A wagon trail from section 7 in the township to the east leads into this township. The soil along the outline is black loam with clay subsoil, and the surface is level and covered with second-growth poplar, prairie patches occurring on the south half. North Heart River flows across the township north-westerly. Dry poplar for fuel can be obtained, but no coal, stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

The surveyed road from Grouard to Peace River Crossing passes through the north-east corner of this township. The valley of North Heart River is roughly one mile and a half wide, and runs in a north-westerly direction through sections 3, 4, 9, 8, 17, 18, 19, 20, 29, 30 and 32. It consists of cut banks and very steep slopes, and is worthless for farming purposes. The soil

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

in the valley is loam with gumbo on the steep slopes. The remainder of the township is level with a clay loam soil, and would make an excellent farming land, particularly mixed farming. The surface is covered with a few scattered spruce, but mainly small poplar and willow, which has been partly fire-killed. Although there is plenty of lumber for temporary building purposes, there is very little of a marketable nature. There are a few clumps of spruce running as high as twenty inches in diameter found in the valley. A few tons of hay could be cut in section 1. There is good grazing almost everywhere. This township in a fair season is well supplied with small creeks and sloughs. North Heart River, which is the only large stream, drains a large area to the south and east and fluctuates very quickly in rainy seasons. At low water this river is only one chain wide and from two to four feet deep, but at high water it is a continuous series of rapids about ten feet deep. No land of value is flooded at high water. North Heart River could be dammed at several points, but the power obtained would depend on the height of the dam. There would be no difficulty in obtaining a head of twenty-five feet. During May a few light frosts were experienced, but from then until the end of August the weather except a few rainy days was bright and sunny and the nights were cool. The growth is very luxuriant in season, and cattle would do well if it were not for the flies. There is a good quantity of dry poplar and spruce for fuel. No coal, stone-quarries nor minerals of economic value have been discovered. Bears, moose and deer are found in this township. The location line of the Edmonton, Dunvegan and British Columbia Railway running to Peace River Crossing follows the valley of North Heart River.—*A. L. Cumming, D.L.S., 1914.*

Tp. 83 (*East outline.*)—The Peace River Road crosses this outline in section 12. The soil is mostly black loam with a clay subsoil. The surface is level and covered with a thick growth of small poplar and willow. No hay, timber nor water-powers were noticed. Fuel in the form of dry poplar can be obtained. No stone-quarries, minerals nor game were seen.—*A. G. Stewart, D.L.S., 1912.*

(*North third.*)—This township is easily reached by the wagon road from Grouard to Peace River Crossing, which passes through sections 27, 28, 29 and 32 of this township. We travelled over this road in winter and found it quite satisfactory, but settlers have stated that it is in very poor condition at other times. Sections 29, 30 and 31 are broken by Peace River, and the settlement of Peace River Crossing occupies parts of sections 31, 32, 30 and 29. North Heart River flows through sections 28 and 29, thence through Peace River Crossing into Peace River. This river varies from one and one-half to two and one-half chains in width, and is from two to four feet deep; it flows at the rate of about six miles per hour. As we saw this river only during the spring floods in May, these figures may not be correct for other times of the year. Peace River varies in width from one thousand and seven hundred feet—where the ferry crosses—to three-quarters of a mile, and has a current of from three to eight miles per hour; according to the height of the water. A creek, running in a deep valley, flows through sections 25, 26, 27, 34, 33 and 32 into Peace River. This was a fairly large creek when we saw it, but would possibly dwindle to a very small one in the hot weather. The water in the rivers and creeks becomes very muddy in the spring. All of the rivers and creeks mentioned above run in deep valleys, the Peace River Valley being about six hundred feet deep and the others about four hundred feet. Owing to these deep valleys sections 32, 34, 27, 28 and 29 are hilly and fit only for grazing; beyond these sections the country is generally level. The country is covered with a fair growth of poplar, from two to twelve inches in diameter, and willow, while in the creek valleys there are a few spruce; the latter are practically worthless owing to their inaccessibility. The rest of the timber is of no commercial value. Bush fires have done considerable damage and there is now much dead and standing timber. The soil is generally a layer of from three to six inches of black loam overlying a hard blue clay subsoil. This subsoil is practically impervious to water, with the result that when the snow melts there are small pools of water all over the level parts of the townships; we found these even at the end of May. This would hinder farming operations in the spring. The soil should grow most of the crops of the district. The climate is that of the surrounding country. In May the temperature ranged from freezing point to 90° Fahrenheit in the shade. Summer frosts may occur, but these might disappear if the

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

country was settled. Good fresh water can be obtained in the creeks and rivers, but elsewhere it is hard to find. No hay can be cut. No stone nor minerals of economic value were seen. Wood is plentiful for fuel, but no coal was found. No water-power could be developed. Moose, bears, minks, martens and rabbits were seen, also ducks, geese and partridges.—*J. S. Galletly, D.L.S., 1912.*

This township lies in the immediate vicinity of the town of Peace River Crossing, and may be reached either by the surveyed road from Grouard or by a pack-trail following along the west side of the Heart River Valley from Peace River Crossing. This pack-trail is in good condition. The surface of the township is very much broken by the valley of Heart River and the east slope of the valley of Peace River. The valley of Peace River drops about eight hundred feet in a distance of one mile, and although quite broken could be utilized for grazing purposes. The soil is a clay loam somewhat inclined to be sandy in places. The plateau between the Peace and North Heart Rivers is first-class farming land but is rather difficult of access on account of the hills. The soil here is a clay loam suitable for mixed farming. Sections 5, 6, 8, 16, 17 and 20 have been mostly taken up, and potatoes, cabbages, lettuce, radishes, onions, and also oats have been raised successfully. The surface is covered with scrub poplar and willow which have been partly fire-killed. The valley of North Heart River is about a mile and a half wide and is worthless for farming purposes, being composed of cut banks and steep slopes. The east half of the township is broken by several small tributaries of this river which, although quite small have each a valley of from a quarter to half a mile in width and from five hundred to six hundred feet deep at their junction with North Heart River. These valleys are of no great length extending only about two miles into the surrounding level country to the south and east. The soil consists of clay loam with gumbo on the slopes of the cut banks. The inclines are generally covered with poplar and willow scrub; the more precipitous parts of the valley, however, are quite bare. To the east of the valleys of North Heart River and its tributaries, and adjoining the Grouard trail there are several sections containing first-class farming land. The surface of these sections is sparsely timbered with poplar from ten to fifteen inches in diameter and a few spruce. There is no timber of commercial value in the township. No hay sloughs are found but the grazing is good. On the plateau the only available water is that found in small sloughs which dry up in late summer. The water of North Heart River has a very slight clayey taste. This stream has an average width of eighty feet, and is made up of a succession of small rapids. The bed is largely composed of boulders. In June this river rose six feet in two days and over twelve feet in ten days. No land suitable for agricultural purposes is liable to flooding. North Heart River has a drop of about two hundred and forty feet in this township, and flows through a very deep valley. There are several places where it would be feasible to dam this river and develop considerable power, the amount depending on the height of the dam. The climate is well suited to farming, although there is a likelihood of an occasional early frost occurring. The only available fuel is the dry poplar and spruce. No stone-quarries were located although some small sandstone ledges are found along the river bank. No minerals of economic value were found. The only game seen in this township was bears.—*A. L. Cumming, D.L.S., 1914.*

Tp. 84 (*North outline.*)—Peace River flows from south to north across this township and crosses the north boundary in the middle of section 33. The river is here half a mile wide. From the river the land rises gradually till, at three-quarters of a mile from the left bank it reaches an altitude of seven hundred feet. Across the line, and close to the right bank lies an island wooded with cottonwood and spruce. East of the river the country is broken by deep ravines and is covered with young poplar and willow and alder scrub. Solid timber begins half a mile south of the line, and extends southerly to Peace River Crossing. Where the line intersects the right bank of Peace River I noticed an outcrop of sandstone fifty feet in height, which extends for a considerable distance on either side of the line. Lying close to the right bank of the river there are also, in this vicinity, many islands, all wooded with cottonwood and black poplar. The middle of township 84, range 21, includes the valley of Peace River, which flows through this township from south to north, and the township is consequently much cut by deep and wide gulches, separated by some narrow bench land. The soil in one-half of section

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

33 and the whole of section 34, is poor, but in the other two sections it is a black loam four to eight inches deep, with a clay subsoil. The land is covered with small poplar and willow scrub.—*Arthur Saint Cyr, D.L.S., 1906.*

(*Partial.*)—The trail from Grouard to Peace River Crossing enters this township in section 6, part of which, together with part of section 5, is occupied by the latter settlement. This makes a good winter road but, according to the settlers, is poor at any other time of the year. Peace River occupies part of sections 5, 6, 7, 8, 18, 17, 16, 20, 21, 28, 29, 32 and 33. Its width varies from a half to one and a half miles and its rate of flow from three to eight miles per hour, depending upon the level of the water. A creek running in a deep valley occupies part of sections 3 and 4, and another flows through the easterly tier of sections. The sections adjoining these creeks and those also adjoining Peace River are hilly and suitable only for grazing. On the east side of Peace River, the soil is usually from two to six inches of black loam overlying a hard blue clay subsoil. The remarks concerning this subsoil made in the report on township 83, range 21, are also applicable to this township. Apart from the creeks there will be the same difficulty in obtaining water. The country is generally second class on the east side of Peace River. The soil is better on the west side, and where level the country is first class. Generally the country is covered with poplar from two to twelve inches in diameter and willow with an occasional spruce from three to fifteen inches and birch from two to five inches in diameter. None of the timber is of any commercial value. There are a few open patches west of Peace River. The water in the creeks and in the river is fresh but muddy in the spring. The climate is similar to that of the district and summer frosts may occur. The township should produce the crops of the surrounding country where level enough for cultivation. No hay could be cut. No water-power could be developed. A few loose stones were found in the bottom of the creeks and in the bed of Peace River. Along the left bank of the river, in sections 6 and 7, there is a cut bank of very soft sandstone about fifteen feet high. No minerals of economic value were found. Moose, bears, minks, martens, rabbits, ducks, geese, cranes and partridges were seen.—*J. S. Gallely, D.L.S., 1912.*

(*Partial.*)—The only route at present by which the recently subdivided part of this township may be reached is the trail which leads northerly from Peace River Crossing. This is followed to a point about three quarters of a mile from the village, and from there a sleigh trail, opened up to carry on the survey, leads to the north-east corner of section 14. The surface of this area, excepting those sections adjoining the twenty-second base line which are broken by ravines, is undulating and thickly wooded with poplar, scattered spruce and birch. Although the soil is of fair quality, consisting of a layer of black loam to a depth of four inches on a clay subsoil, it is, however, considered unsuitable for settlement under existing conditions. During the survey nothing worthy of note was observed regarding hay marshes, water-powers, stone-quarries or minerals of economic value. As to the water supply and climatic conditions, if the date of the survey (December) is taken into consideration, it is obvious that no reliable information can be furnished in this connection.—*L. E. Fontaine, D.L.S., 1913.*

(*Peace River Crossing Settlement.*)—This settlement, situated east of Peace River and near North Heart River, is on a flat about fifteen feet above the river. It is surrounded on the east and south sides by hills of six hundred to eight hundred feet above the river. There are ten lots of different sizes in the settlement. The soil is a deep black sandy loam resting on a clay and sandy clay subsoil. Grain and vegetables grow well. Good water is plentiful all through the settlement and wood for fuel is close by. This settlement is reached by the Grouard and Peace River Crossing wagon trail. There is no water-power nor stone-quarry, and no mineral of any description has been found there during the progress of the work. The people of the place cut their hay on top of the hills along the wagon trail. The North-west Mounted Police have their quarters south of North Heart River, farther up Peace River.—*J. B. Saint Cyr, D.L.S., 1907.*

Tp. 85

This township was reached from Peace River Crossing by rafts down Peace River which flows across the south-east corner. The old Indian trail from Peace River Crossing to Fort Vermilion runs in a north-easterly direction through the township and, though not in use for a number of years, was in good condition; it could be converted into a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

wagon trail with very little difficulty as it is for the most part high and dry. A good wagon road already exists from Peace River Crossing to section 19 in the township to the south. A trail was cut into this township from the west, entering at the west boundary of section 7 and joining the old Indian trail to Fort Vermilion in section 8. This trail could also be made suitable for wagons with very little cutting. Practically all of the district to the east of the old Indian trail to Fort Vermilion, except sections 35, 26, 22 and 23, and the quarter-sections touching the north-east corner of section 9, is rendered useless for farming purposes by the Peace River valley, which is from two to two and one-half miles wide and from seven hundred to eight hundred feet deep. The slopes of the valley are very rough and broken, and there are no flats worth mentioning along the river. The south-east corner of the township is especially rough, being cut by deep ravines. The portion of the township west of old Fort Vermilion trail is gently rolling and would make excellent farming land. It is for the most part covered with small poplar, willow and alder brush. The soil throughout the township is good, and is suitable for agriculture, being composed of from three to six inches of black loam overlying a clay subsoil. In sections 6, 7, 8, 17 and 18, a considerable quantity of spruce up to thirty inches in diameter is found. With the exception of this spruce and a few small patches along Peace River and on the islands in the river, no timber of value is found. Scattered poplar and spruce up to twelve inches in diameter grow all through the township and would furnish a supply for building, fencing and fuel. No hay meadows nor hay sloughs were seen but good grass grows almost everywhere. An abundant supply of fresh water is furnished by Peace River and by the creeks rising in springs on the low ridge which runs in a north and south direction through the township. There is no land liable to flooding, and no



Photo by Burke, Edmonton

Wheat Field at Fort Vermilion

water-power can be developed. Peace River is forty chains wide and has a current of four miles per hour. It is navigable from the beginning of May to the latter part of September. The climate is much the same as that of central Alberta. The rainfall, though sufficient, was not heavy. A snowstorm occurred on September 19 and 20, but no more snow fell until November 10. Dry

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

spruce and tamarack furnish an abundance of fuel, but no coal nor lignite veins were seen. Outcroppings of sandstone were found practically all along the western side of Peace River, but more especially in sections 3, 4, 10, 25 and 36. No minerals of any kind were noted.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 86 This township was reached from the township to the south by the old Indian pack-trail which follows along the top of the bank of Peace River. The trail was very good and with a little cutting could be made into a good wagon road. The surface is generally rolling and covered with a growth of scrub poplar and willow. Practically the whole township is high and dry, and is especially adapted to agriculture. Although the surface has been overrun by fire and most of the black loam soil burned off, there still seems to be a good growth of grass in places, and the soil is fast regaining its fertility. There is no timber of commercial value, and it is doubtful if there is even enough to supply the needs of settlers. No hay meadows were seen, but grazing is especially good in the southern part of the township. A creek five feet wide and one foot deep with a current of three miles per hour furnishes an abundant supply of good fresh water to the southern part of the township, but throughout the four northerly tiers of sections wells will have to be dug. No portion of the township is liable to flooding and no rapids were seen from which power could be developed. The climate is very desirable, the long summer days being warm and the nights cool without frosts. A limited supply of wood for fuel is available. No coal, stone-quarries nor minerals of economic value were seen. Moose and bears as well as foxes and other fur-bearing animals were numerous.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 87 A trail was cut from the township to the south to Whitemud River in the south-east quarter of section 5 of this township, and thence in a northerly direction to section 32. This trail is generally good and, with the exception of the portion leading down into the Whitemud River Valley, could be easily converted into a wagon road. The surface of the township is mostly rolling and covered with scrub poplar and willow. In many places the black soil has been burned by the severe fires that swept over this district some years ago. However, grass grows in many places, and no doubt the soil could soon be made very productive. Sections 1, 2, 25 and 36 are heavily timbered with poplar up to sixteen inches in diameter and scattered spruce up to twelve inches. These sections comprise all the merchantable timber except a few small patches of spruce along the river flats. No hay is found in this township. Whitemud River furnishes an abundant supply of water, but most of its tributaries dry up in the autumn. This stream is from three and a half to four feet in depth, and at high water has a width of from a chain and a half to two chains and a current of four miles per hour. There are no waterfalls nor rapids, and no land is liable to flooding as the ravines through which the streams flow are very deep. The climate is similar to that of central Alberta with probably less moisture. There was sufficient rain, however, to prevent drought. The days in summer are very warm and the nights cool without summer frosts. No coal was found and the only available fuel at present is the dry, standing timber which can only be procured in limited quantities throughout the whole township. No stone-quarries nor minerals of economic value were noted. Moose and bears are found in large numbers, while foxes and other fur-bearing animals are very numerous.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 88 (*North outline.*)—This township is cut by Peace River, the valley of which is from six hundred to eight hundred feet in depth and presents a rather formidable obstacle to the would-be settler. The soil in the immediate valley appears to be either a sandy or a clay loam. The surface is very broken and rough, being cut up by many mud slides and cut banks. It is generally covered with a heavy growth of underbrush, and in many places some very fine patches of spruce timber were seen. One especially fine clump was noticed on the west bank, just north and adjoining the mouth of Whitemud River. There is little or no hay along the river. The water is excellent and the supply abundant. Wood is the fuel most readily available and may be found in abundance throughout the township. No coal nor lignite were found in place, but several pieces of drift were seen along the banks.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

No stone-quarries were noticed but along the shores there is an abundance of both limestone and sandstone drift which would be admirably suited for building purposes. Small game, such as rabbits, partridges and prairie chickens is generally plentiful, signs of moose and bears were numerous and waterfowl are abundant.—*A. H. Hawkins, D.L.S., 1912.*

Access to this township is rather difficult on account of the valley of Whitemud River. However, there are several places where wagon roads could be constructed through the valley from Peace River Crossing to this township. The soil varies from a sandy loam in the vicinity of section 26 to a few inches of black loam with a clay subsoil in the remainder of the township, and supports a luxuriant growth of redtop, bunch grass, vetches, peavine and in some places marsh grass. With very little clearing hay could be cut in sections 3, 4, 5, 6, 7, 8, 9 and 10. The easterly two tiers of sections are cut by the valleys of Peace and Whitemud Rivers and by the deep canyons of their tributary creeks. The surface in this portion is rough and broken, and is covered for the most part with poplar and scattered spruce up to ten inches in diameter. The valley of Whitemud River is one mile wide and about four hundred feet deep. The river averages seventy-five feet in width, about eighteen inches in depth, and flows at the rate of two and a half miles per hour during low water. The surface of the remainder of the township is slightly rolling with a gentle ascent to the west, and is covered with scrub poplar and willow. The land in sections 21, 22, 27, 28, the east half of sections 32 and 33, and the west half of section 34 is a low muskeg, portions of which are inclined to be swampy, producing a heavy growth of grass. This portion, however, could be easily drained. The only merchantable timber is a small area of spruce, averaging eighteen inches in diameter, located in the south-east quarter of section 36, adjoining Peace River. Water is abundant, as most of the creeks flow throughout the summer. No land is liable to be flooded. There are no available water-powers. The climate is very similar to that of Edmonton and no summer frosts were experienced. Wood for fuel is readily available everywhere. No stone-quarries, economic minerals, coal nor lignite were found. Moose, jumping deer, bears, foxes and coyotes were seen; rabbits were numerous, and partridges and prairie chickens are found everywhere.—*J. H. Johnston, D.L.S., 1914.*

Tp. 89 This township is accessible from township 89, range 22, or from township 88, range 21, by the construction of wagon roads which is not a difficult matter. The soil consists of a light sandy loam, and supports a growth of ordinary grasses. The surface appears to have been well timbered with large spruce and Banksian pine at one time, but it has been burnt over several times, leaving patches of heavy windfall with a second growth of poplar and willow. The easterly half of the township is broken by Peace River, and is rough and rolling, with the exception of sections 35 and 36 which are on the table-land. Section 13, the south-east quarter of section 14, the south half of section 25, and portions of sections 23 and 24, comprise the flats along Peace River. The soil in these flats consists of a deep rich, black loam, which supports a rank growth of vetches, peavine and redtop. With very little clearing a large quantity of hay could be cut. This land is well adapted to either farming or stock-raising. Sections 4, 5, 6, 7 and 8 are low and swampy. There is no merchantable timber with the exception of a small patch of spruce in the north-east quarter of section 33, but wood for fuel can be readily procured in the ravines and from the scattered bluffs of poplar. Sufficient fresh water can be obtained from Peace River and the several small lakes which are found throughout the township. No land is liable to be flooded. The climate is very similar to that of Edmonton. The rainfall is sufficient and no summer frosts were experienced. No economic minerals, coal, lignite nor stone-quarries were found. The game consists of moose, jumping deer, foxes, coyotes and minks.—*J. H. Johnston, D.L.S., 1914.*

Tp. 90 This township is most easily reached by boat down Peace River from Peace River Crossing. Two steamers ply more or less regularly between Peace River Crossing and Fort Vermilion, although the river is easily navigable for canoes and small boats.

Peace River flows in a northerly direction, practically through the centre of this township. This leaves the centre two tiers of section very rough and broken. The remainder of the township

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

is fairly level, and is heavily wooded with poplar and willow scrub. The soil is of fair quality, being composed of a layer of black loam over clay subsoil. Sufficient timber to meet the requirements of incoming settlers can be found on the north-east quarter of section 21, the east half of section 28 or the west half of section 27. No hay was found in this township, although the growth of grass and peavine was very luxuriant on the small flats above the river bank. With the exception of Peace River no permanent water supply exists, although in the month of June the small sloughs contained a supply of fresh water. The climate was found to be generally warm and quite free from summer frosts. No stone-quarries, lignite veins or minerals of economic value were found. Plenty of wood fuel is readily available in many parts of the township, as the surface is thickly wooded with poplar. No game of any kind was seen.—*J. A. Buchanan, D.L.S., 1915.*

Tp. 91 This township is most easily reached by boat down Peace River from Peace River Crossing. Two steamers ply more or less regularly on Peace River between Peace River Crossing and Fort Vermilion. The easterly third of the township is very rough and broken by the valley of the Peace. Bear Creek flows easterly through the central part of the township, the valley of which is approximately one mile wide, so that several sections are very rough and broken. The remainder of the township is fairly level, and for the most part heavily wooded with poplar and willow scrub; with the exception of a few sections in the south-westerly portion there is very little land in the township suitable for agriculture. The soil consists of a thin layer of black loam with a clay subsoil. Good spruce timber for building purposes may be found in sections 34 and 35, but no hay was found, although there was abundance of summer feed for horses. The climate was quite warm and free from summer frosts. No stone-quarries, lignite veins or minerals of economic value were found. No game of any kind was seen.—*J. A. Buchanan, D.L.S., 1915.*

Tp. 92 This township is most easily reached by boat down Peace River from Peace River Crossing. It may also be reached by wagon road from Peace River Crossing. With the exception of the easterly tier of sections this township is fairly level and wooded with scrub, poplar and willow. The westerly half of the township consists of wet swampy land, while the soil of the greater part of the remainder has been very badly burned by many fires, so that very little black loam remains. Some building timber could be obtained in section 27. A few small creeks furnish a supply of fresh water, although during some seasons they would become dry. No good hay was found although the west half of the township contains an abundant supply of summer feed. The climate was found to be generally very warm, and free from summer frosts. No stone-quarries, lignite veins or minerals of economic value were found, and poplar wood is practically the only available fuel. No game of any kind was seen.—*J. A. Buchanan, D.L.S., 1915.*

Tp. 93 (*Exploration survey.*)—The surface is rough as the township is badly cut up by Peace River, but the soil is fairly good. Some open meadows are found.—*J. R. Akins, D.L.S., 1913.*

Tp. 94 (*Exploration survey.*)—Battle river flows north-easterly across this township. The surface is fairly open and good grass for stock is plentiful. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

Tp. 95 (*Exploration survey.*)—The westerly side of this township is on the slope of Hawk Hills. This slope is heavily wooded with spruce and poplar up to sixteen inches. The remainder of the township is lightly wooded with poplar and willow. The soil is well suited for farming purposes.—*J. R. Akins, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

- Tp. 96** (*North outline.*)—The easterly half of this township is open and lightly wooded with poplar and willow. The westerly half is rougher, being on the slope of Hawk Hills. At the foot of the hills is a very wet muskeg. The timber on the slope grows as large as sixteen inches in diameter.—*J. R. Akins, D.L.S., 1913.*
- Tp. 97** (*Exploration survey.*)—Considerable muskeg and swamp lies in this township which is wooded with tamarack and spruce.—*J. R. Akins, D.L.S., 1913.*
- Tp. 98** (*Exploration survey.*)—The surface of this township is lightly wooded with poplar and willow. Some open hay meadows are found. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*
- Tp. 111** (*Exploration survey.*)—This township is covered with spruce and jack pine. Although the soil is good the surface is rough as Watt Mountain runs through the township.—*J. R. Akins, D.L.S., 1913.*
- Tp. 112** (*North outline.*)—The surface is lightly wooded with small spruce, poplar and willow and is easily cleared. There are many open places on which horse feed grows. The township slopes to the north and drains through Meander Creek into Hay River.—*J. R. Akins, D.L.S.*
- Tps. 113 & 114** (*Exploration survey.*)—The wagon trail from Hay River to Fort Vermilion runs north through these townships. Meander Creek, emptying into Hay River, runs almost parallel to the trail. West of the creek there is open country where berries and cherries grow in great profusion. The soil in these townships is good but the surface is rolling.—*J. R. Akins, D.L.S., 1914.*

RANGE 22

- Tp. 68** (*North outline.*)—In this range Little Smoky River is crossed in the middle of section 36. From that point westerly to the north-east corner of township 68, range 23, the ground is gradually rising and undulating. In sections 35 and 34, the land is covered with young poplar and scrub willow and could be easily cleared. Sections 33 and 34 are generally swampy, and then poplar and spruce bush begins and extends to the west limit of this range, which is as far as this survey went. The pack-trail from lake St. Ann to Sturgeon Lake crosses this line close to the north-east corner of township 68, range 23. The general elevation of this part of the country is two thousand feet above sea-level. The soil is good.—*A. Saint Cyr, D.L.S., 1904.*
- Tp. 69** There are two routes for reaching this township. They are the Edson-Grande Prairie Road which passes within a half mile of the south-west corner of the township and the trail from Grouard to Sturgeon Lake and thence along the Edson Road; Grouard is reached from Athabaska Landing either by trail or steamer. The distance from this township to Edson is about one hundred and sixty miles, and from Athabaska Landing about three hundred miles. Owing to the hilly nature of the Edson Road it was found expedient to take our supplies over the winter trail crossing Lesser Slave Lake. There is a wagon road cut to section 16 of this township which leaves the Edson Road about thirteen miles from Sturgeon Lake; and there is also a pack-trail which runs close to the south cross line across the township, leaving the Edson Road about ten miles from Sturgeon Lake. The soil is of a good quality, being black loam of varying depth over a clay subsoil. The country is of a rolling character, sloping to Little Smoky River, and is fairly well covered with light poplar and willow; there is a good deal of brulé towards the west, also some muskegs especially in sections 2, 11, 30, 31 and 32. There is some large timber, mostly spruce up to thirty inches in diameter and a certain amount of balsam

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—Continued.

and poplar up to twenty inches in diameter. The timber is principally contained in sections 1, 10, 12, 13, 14, 23, 26 and 36. Section 12 contains some very fine spruce. There is very little hay in this township. There are few running creeks, nor indeed any large water supply in this township, excepting Little Smoky River on the east. This stream averages about four chains in width and varies in depth from two to ten feet; there are many swift shallow places. Late frosts were noticed till the middle of June. No coal nor minerals were observed. Very little game was seen. A few moose and bear tracks were noticed. Prairie chickens and partridges were not numerous, but this year (1912) rabbits were plentiful. A few bull-trout, small trout, pike and grayling were seen in Little Smoky River.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 70

The Sturgeon Lake-Grouard trail crosses this township entering at section 30 and leaving at section 34; this is the summer trail. The winter trail branches off in section 28 at McDermott's ranch (since burned down) and leaves the township at the north-east corner of section 24. A hay trail also branches at the same spot in section 28 and leads to Little Smoky River; it leaves the township at section 12. There is practically no water throughout this township, excepting Sturgeon River which runs across the north of the township and Little Smoky River in the south-east corner; the creeks are generally dry after the spring water has drained. There is good spruce and poplar along Sturgeon River and also along Smoky River; the remainder of the township is generally covered with small poplar and willow. Several muskgs are scattered over the surface, especially in the south-west portion; they are generally covered with spruce up to eight inches in diameter. The surface is gently rolling to level. The soil is generally a black loam of various depths with a clay subsoil. There is a good hay meadow a short distance east of the east boundary of section 12 (in township 70, range 21) and there are also several patches of open country in the north-west part of this township where upland hay could be cut. No minerals, stone nor coal were seen. No water-power could be developed. Frosts were noticed up to the middle of June. There are a few beavers in Sturgeon River, but other game seemed exceedingly scarce. A few prairie chickens and numerous rabbits were seen.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 71

The Grouard-Sturgeon Lake trail runs through this township from the north-east corner of section 24 to the south boundary of section 2. It can also be reached from the Edson-Grande Prairie Road by leaving it at Sturgeon Lake and travelling up the Grouard trail. A trail has been cut leaving the Grouard trail at section 14 and crossing the township to the east boundary of section 13, township 71, range 23. A pack-trail has also been cut from section 21 in a northerly direction along the west outline to the vicinity of the nineteenth base line. These trails are hardly fit for pack-horses, owing to the large brûlé and windfall. The township is thickly wooded with spruce up to twenty-four inches in diameter, jack pine and poplar. Section 31 and parts of sections 30, 29, 32 and 33 are included in Timber Berth No. 1220. There is a good tract of spruce up to twenty-four inches in diameter and large poplar and jack pine in sections 6, 7, 5, 8, 4 and 9. The remainder of the township is covered with spruce, jack pine and poplar up to ten inches in diameter. There are some good spruce trees along Sturgeon Creek in the south of section 1. Water is very scarce in the north of the township. There is a muskeg lake in the east of section 24, a fine hay lake in sections 10, 11, 14, 15, a muskeg lake on the east boundary of section 9, and another on the east boundary of section 4. There is also Sturgeon Creek running close to the east half of the south boundary. No water-power could be developed. Very little game of any kind was seen. No coal nor minerals were noticed. The soil is generally black loam of various depths with a clay subsoil. Frosts were noticed till the middle of June. There are some bad shaking muskgs in the south-west part of the township.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 72

(*North outline.*)—This township is covered with impassable windfall and its surface which is rolling or undulating, is stony in places. Two muskgs extend across section 35. Spruce timber is found only in small patches in the brûlé, which is overgrown with small poplar and thick willow scrub. Creeks of good water, flowing north-

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

easterly towards Little Smoky River, run through sections 36, 33, 32 and 31. Along one stream and its branches, running through section 36, is a strip of prairie land half a mile wide dotted in places with willow clumps. The soil is a black loam fifteen inches deep with a clay subsoil. This creek receives from the west a tributary, the outlet of a lake half a mile long and lying one-quarter of a mile north of section 35. In sections 31, 32, 33, 34 and 35 the soil is a heavy clay.—*Arthur Saint Cyr, D.L.S., 1904.*

Tp. 73 This township was reached by continuing the trail from the township to the east. From section 16, range 21, and throughout this township the trail is much better to travel as the country is higher and better drained. The surface has been overrun by fire and the loam top-soil has been completely burned off, but the clay and sandy clay subsoil appears to be suitable for farming. A second growth of young poplar is springing up, and the many dead trees, still standing, will make good fire-wood. Many areas of prairie land are found in the fire-swept area. During a dry year slough hay would be plentiful, and peavine and upland grass furnish an abundance of horse feed. Although only two creeks of a permanent nature were found, plenty of water can be obtained in the numerous sloughs and in low places covered with surface water. A creek flowing northerly through the north-east portion of the township, is forty feet wide and during June and July its depth is fifteen feet. In September, however, the depth is not more than two feet, and the current is about three miles per hour. Although this stream flows through a deep ravine there are no available water-powers. No land is liable to flooding. The climate is similar to that of Edmonton and slight summer frosts are experienced. No stone-quarries nor minerals were noticed. Partridges and signs of moose were observed.—*A. W. Ponton, D.L.S., 1914.*

Tp. 74 A trail which is passable for light loads leads from the township to the south into this township. The soil consists of black loam from two to six inches deep over a clay or sandy subsoil, and it is well suited for farming purposes. The surface is wooded throughout with poplar, spruce and willow. Some small areas of open prairie lie in sections 31, 32 and 33. Hay of good quality can be cut in many open places and the numerous small sloughs provide good grazing during the summer months. Two large creeks and numerous alder and willow sloughs provide an abundance of good fresh water. As these creeks flow through ravines from fifty to one hundred feet deep there is no land liable to flooding. No sites for the development of water-power were seen. The climate is similar to that in the vicinity of Edmonton and is well adapted to all branches of farming. Wood for fuel is everywhere abundant, but no coal was found. No stone-quarries nor minerals were noted. The game consists of moose, bears and partridges.—*A. W. Ponton, D.L.S., 1914.*

Tp. 75 (*Partial.*)—This township as far east as the eastern boundary of sections 34 and 27 is well adapted to mixed farming. It is generally timbered with poplar averaging in size from four to ten inches in diameter, but a few jack pine were seen in limited quantities. The soil is a thin layer of black loam on a clay loam subsoil. No water was found in the western portion of the township. Sections 25, 26, 35 and 36 are very much broken by the valley of Smoky River which renders the eastern portion useless for agricultural purposes. No minerals were seen but some small pieces of coal were noticed along the shores of Smoky River. At the time of survey (September), the weather was moderate with occasional night frosts. No hay marshes, stone-quarries nor available water-powers were met with. The game consists chiefly of moose and black bears.—*J. H. Smith, D.L.S., 1910.*

(*Partial.*)—This township can be reached by either of two trails, one coming from the township to the west and the other from the township to the south. These trails are all passable for light loads. The westerly half of the township has been burned over and is now growing up with poplar and willow scrub. The easterly half is wooded with poplar, spruce and scattered jack pine. The soil is black loam from three to six inches deep on a subsoil of clay or sandy clay, and appears well suited for farming purposes. While there are no hay meadows, good grazing is found throughout the burned area. The supply of water is good and abundant. Wabatanisk Creek runs through

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

the eastern portion of the township in a ravine, two hundred feet deep in places, and joins Little Smoky River in section 24. It is from ten to fifteen feet wide and has a current of about three miles per hour. Little Smoky River flows through the north-east corner of the township; it is from three to four chains wide, three feet deep and has a current of not more than five miles per hour. It flows through a valley two hundred feet deep and about one and a half miles wide. It is subject to sudden floods and overflows its banks covering the low flats. There are no sites for water-power development. The climate is similar to that of Edmonton, and is suitable for farming purposes although slight summer frosts occur. Wood fuel is abundant and loose drift coal of a lignite quality was found along Little Smoky River and Wabatanisk Creek; no seams, however, were observed. No stone-quarries or minerals of any kind were seen. Partridges were noticed, and the beaver dams along Little Smoky River and Wabatanisk Creek show that these animals are present in large numbers.—*A. W. Ponton, D.L.S., 1914.*

Tp. 76 (*North outline.*)—This line runs through gently undulating country which for four miles is thickly covered with poplar and spruce. Section 36 has been partly overrun by fire which has left a bad slash and windfall. Between the ridges occur willow swamps which are dry this year. In sections 32 and 31 there are wet muskegs, tamarack and spruce swamps and beaver meadows; vegetation is luxuriant. The soil is black loam on clay subsoil, and when drained should make good farming or ranching land.—*Henry W. Selby, D.L.S., 1905.*

This township was reached by cutting a wagon road through township 76, range 23, and entering range 22, on the west boundary of section 6. This road, which I myself cut, runs in a north-easterly direction, crosses Smoky River in section 10 and leaves the township in section 36. Very little of the land is suited to mixed farming, on account of the broken and hilly nature of the country, which is a result of the wide and deep valleys of both Smoky River and Peavine Creek. Sections 13, 14, 25 and 36 are old brulé and are now overgrown with poplar and willow brush. Good water may be obtained from Smoky River and Peavine Creek and dry wood for fuel is abundant. No coal nor mineral was found, and a few partridges and black bears were the only game seen.—*J. H. Smith, D.L.S., 1910.*

Tp. 77 (*Partial.*)—The east two tiers of the north two miles of this township have been partly burnt over leaving prairie spots, slash, windfall and scrub poplar, and the remainder of these four sections is covered with heavy poplar and a few spruce. The rest of the township is gently rolling, the ridges being heavily timbered with poplar and belts of spruce, some of which is large enough to make sawlogs, but the most of it is about the size required for ties. Between the ridges large sloughs and ponds are found where moose feed in the heat of summer. The winter trail between Grouard and the Spirit River country passes through sections 25 and 35. Some work would be required on it to make it fit for travel with wagons. No hay lands, but good pasture for stock is found here. Water can be obtained in the large sloughs but no running streams were seen. No coal, minerals nor stone-quarries could be found, but a few boulders were seen. Moose, bears and small fur-bearing animals are killed in this township occasionally.—*Henry W. Selby, D.L.S., 1909.*

This township was reached by following the Spirit River Road as far as the east boundary of section 26, township 77, range 21, and then following a wagon road running in a south-westerly direction. This road was cut and used by Mr. Selby in 1909. The road ended at the north-east corner of section 8, and from here we were obliged to cut our own roads. This township, although heavily timbered with poplar and a few spruce, has a soil and climate well adapted to farming. The surface soil is a black loam from three to seven inches in depth on a subsoil of clay. There is not sufficient spruce to be of much value for building purposes. Although good water is available by digging a short distance, no running water was found in the township, and no hay lands of any size exist. At the time of survey (June), the weather was warm without summer frosts. No minerals were observed, and game consists chiefly of black bears and a very few moose. No stone-quarries were found.—*J. H. Smith, D.L.S., 1910.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

Tp. 78 (*Partial.*)—The east third of this township is gently undulating with considerable areas of prairie, willow brush, brulé and fallen timber. Scattered bunches of poplar and a few spruce are found on the west boundary of sections 2, 11 and 23, but the fire which destroyed the timber east of the township, killed large quantities on the boundary line, and these trees are now being blown down. Another fire would leave this land almost ready for farming operations. The soil is generally black loam from four to twelve inches deep on a clay or clay loam subsoil, and is rich and productive. No hay lands of any extent were found, but there is good pasture everywhere. Large sloughs, from which hay could be cut, extend over a large portion of the southerly part of the west four miles, and there are small bunches of spruce that would make sawlogs and building timber. Prairie openings were seen all along Hunting and Reed Creeks and these should be surveyed for settlement before a railway is built into this part of the country. The water in Hunting and Reed Creeks is good, but there is very little to be had after August. No coal, stone-quarries nor minerals were found and only tracks of moose and bears were seen.—*Henry W. Selby, D.L.S., 1909.*

(*Partial.*)—This township was reached by a sleigh road running south from section 19 of the township to the north to section 19 of this township. This road could be used only in winter. The soil is poor, being mostly a greyish clay with very little difference between the surface soil and the subsoil. The surface of the township is slightly rolling and is covered with small poplar with some spruce. The present growth would be of little value commercially, but there is plenty for the use of settlers. A few prairie openings were observed in sections 3, 10, 22 and 35, and many sloughs which would produce a fair quality of hay were seen in the south-west quarter of the township. Numerous small sloughs are scattered throughout the township. The surface water was fair, and in no part of the township should there be any difficulty in obtaining an ample supply of good water. Racing Creek, which flows in a westerly direction through the northern part of sections 21, 20 and 19 and the southern part of sections 28, 29 and 30, averaged about eight feet in width and three feet in depth at the time of survey (December). There is said to be a good flow of water throughout the summer. The valley of this creek varies from fifty feet deep and four hundred feet wide at the north-east of section 20 to one hundred feet deep and one thousand and five hundred feet wide at the west side of section 19. No sites suitable for water-power development were noted. Winter set in about the middle of November. From that time to about the middle of January the temperature varied from twenty degrees above zero to ten degrees below. From the middle of January to the middle of February the temperature was rarely above twenty degrees below. With the exception of these five weeks the weather was milder than the average winter of Manitoba. Wood was the only fuel discovered in this township. No stone-quarries nor minerals of value were observed. A few moose and foxes were seen, and partridges were fairly plentiful.—*C. D. Brown, D.L.S., 1913.*

Tp. 79 (*East outline.*)—The country along this line is gently undulating and crossed by large sloughs draining into Reed Creek, which flows south-westerly through township 79, range 21, from Reed Lake. There were several prairie openings seen to the east of the line in sections 6 and 7 and near the banks of Reed Creek. The soil is good, being clay loam varying from six to fourteen inches in depth on a clay subsoil. There is not much water found on these lands except in the grassy sloughs, but it is fairly good. The water can be easily drained off and the land rendered good for hay or mixed farming. The timber is chiefly poplar in bluffs or small belts between the sloughs or willow swamps, and small spruce is found in patches, but it is of very little value. A small amount of hay can be cut, but large areas could be made suitable for hay lands with a little work. No coal, minerals nor stone-quarries were found. Moose and bear tracks were seen.—*Henry W. Selby, D.L.S., 1909.*

This township was reached by a rough wagon road which runs in a southerly direction from the centre of township 80, range 22, to the north-east corner of section 20 of this township. The soil is very poor, consisting generally of a hard grey clay with about six inches of moss on the surface; the north-east portion is quite stony. However, mixed farming might be carried on with some success. Practically the whole of the surface has been burned over, and the windfall in the east half is very heavy and dense. The western part of the township is covered with burnt

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

poplar, and sloughs and swamps are very numerous. This township was burned over about two years ago, and therefore, there is practically no timber of any value commercially. There would, however, be ample for the use of settlers and an abundant supply of firewood for years. The water in the sloughs and muskegs is fairly good. A small creek flows south-westerly through the north-west portion of section 31. Many sloughs which should produce hay of medium quality are found in the west two-thirds of the township. There are no sites suitable for water-power development. Winter set in about the middle of November, and from that time until about the middle of January the temperature varied from twenty degrees above to ten degrees below zero. From the middle of January until the middle of February the temperature was rarely above twenty degrees below, and frequently went down to forty or fifty degrees below zero. With the exception of these five weeks the winter was milder than the average winter of Manitoba. Spring set in about the first week of April. No fuel other than wood, and no stone-quarries nor minerals of value were noted. Moose, foxes and a few wolves were seen.—*C. D. Brown, D.L.S., 1913.*

 Tp. 80

(*North outline.*)—The height of land between Smoky and North Heart Rivers occurs in section 34. West of this divide, in sections 31, 32 and 33, are many hay marshes, while east of it the ground slopes gently towards the valley of North Heart River.

The land in this township also is wooded with poplar six to ten inches in diameter. There are many willow swamps. The soil consists of a few inches of loam on a clay subsoil.—*Arthur Saint Cyr, D.L.S., 1906.*

(*East outline.*)—This land as seen from the line is more or less rolling and is on the height of land, the drainage being toward the north-west and south-west. The northerly four miles is to some extent covered with stones and boulders. In the depressions there are a few sloughs and grassy swamps surrounded by large willow and on the higher lands the timber is chiefly poplar, from four to sixteen inches in diameter with an occasional spruce. The soil is good, being clay loam on clay and gravelly clay subsoil, with many boulders in places. These lands, being heavily timbered are at present unsuitable for agriculture. No water was found except in the sloughs, and that was not very good. No hay lands were seen. No stone-quarries nor minerals were discovered. Tracks of moose were seen and the hunting trails indicate that a few are shot every season.—*Henry W. Selby, D.L.S., 1909.*

This township was reached from Grouard by following the trail to the settlement in township 78, range 21, by way of Kimiwan Lake. At the time of the survey (October), this trail was in a very bad condition, being mostly a series of mud holes. A wagon-trail was cut through township 79, range 21, entering this township at the south-east corner and running in a north-westerly direction to the centre of the township where it terminates. This portion of the trail was through a swampy country and would be of very little use in the future. The soil is poor, being mostly a hard grey clay with about six inches of moss on the surface. On the south-east side of the township it was still worse, being stony as well. Mixed farming might be carried on fairly well. The east third of the township is dry and covered with poplar from four to eight inches in diameter with practically no undergrowth. The remainder of the township consists of willow swamps, muskegs and some higher ground covered with poplar and spruce. The timber in this township is mostly poplar and consequently would be of little value for lumbering purposes. There would, however, be an abundant supply of suitable timber for the use of settlers. Sloughs which would provide a liberal quantity of fairly good hay are scattered throughout the westerly two-thirds of the township. In the easterly third there is no surface water, and that in the sloughs and muskegs is not good, being alkaline. Two small creeks of about four feet in width flow from the muskegs in the centre of the township in a south-westerly direction, but there are no sites for the development of water-power. Winter set in about the middle of November and from that time until the middle of January the temperature varied from twenty degrees above to ten degrees below zero. From then until the middle of February it was rarely above twenty degrees below and frequently went down to forty-five below. With the exception of these five weeks, the winter was milder than the average winter of Manitoba. Spring set in about the first week in April. No fuel other than wood, and no stone-quarries nor minerals of value were observed. A few moose, foxes and martens were seen.—*C. D. Brown, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

Tp. 81. This township may be reached by following the Peace River Crossing road from Grouard to within about thirty miles of Peace River Crossing, from which point a wagon road leads into this township. These roads, when frozen, are in good condition, but they become very soft later in the season. The soil is composed of three inches of black loam with a clay subsoil. The surface is undulating except in sections 31 and 32, where the valley of Smoky River makes the country rolling and rough. It is covered with poplar from four to ten inches in diameter, willow and some scattered clumps of spruce and jack pine. Two marshes, which are partly willow swamps and had from twelve to thirty inches deep of water at the time of survey, cover portions of sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 21, 22, 23 and 27. The water is fresh but the supply might be neither sufficient nor permanent. There are no water-powers. No land is liable to be flooded. Hay could be obtained in considerable quantities from the marshes. The climate is similar to that of the country in the vicinity of Edmonton except that the winter temperatures are lower and summer frosts occur. Wood for fuel is most readily available and is obtainable in any part except where the marshes are found. No stone-quarries, minerals nor coal or lignite veins were found. Moose, deer, bears, coyotes, ducks, partridges and rabbits comprise the game.—*T. A. Davies, D.L.S., 1914.*

Tp. 82 This township can be reached by a pack-trail from Peace River Crossing following the North Heart River Valley and entering this township in the south-east quarter of section 24. Smoky River flows in a north-easterly direction through a valley averaging about two miles in width and from six hundred to eight hundred feet in depth. This valley is useless for farming purposes as the slopes are very steep and there are many land-slides. A level flat varying considerably in width occupies sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26 and 36. The valley has been overrun by fire but elsewhere the surface is covered with small poplar, willow and a few spruce. The soil consists generally of clay loam with a gumbo subsoil. There are a few small sloughs in the southern part of the township. The portion of the township to the north of Smoky River is very rough and broken. There are a few clumps of spruce containing timber up to twenty inches in diameter which could be used for building purposes. Very little hay can be cut but there is good grazing. This township is well supplied with water as it is crossed by both Smoky and Peace Rivers. Smoky River has an average width of about fifteen chains, and under ordinary conditions it is quite shallow with a deep channel varying from thirty to forty feet in width and from six to twelve feet in depth. The bed of the river is composed of sand and gravel. The water is of very good quality. This river is subject to sudden rises during the wet season. The river flats are from twenty to thirty feet above the normal level of the river and are liable to flooding only in a season when the water is exceptionally high as during this year when the flats were flooded to a depth of three feet. Power could be developed by constructing a dam but the expense would be very great. The climate is similar to that of the Edmonton district. The days are quite warm, and the nights cool and clear. Early summer frosts occur occasionally, but they are very seldom severe enough to damage the crops. Dry poplar and spruce furnish a plentiful supply of fuel. No coal veins, stone-quarries nor minerals of economic value were found. Moose, caribou, deer, bears and foxes were seen in this township. *A: L. Cumming, D.L.S., 1914.*

Tp. 83 (*Partial.*)—This township is reached by following the Peace River Crossing trail and St. Germain's trail. The soil consists of from three to six inches of black loam on a clay subsoil, but there are numerous gravel or stony ridges along the face of the hill. However, it is mostly good farm or grazing land. On the upland the surface is rolling, but along the south and east it is quite rough and broken, slopes rapidly towards Peace River and is better suited for grazing than farming. Nearly all the upland is covered with poplar and willow scrub, with small prairie openings intervening. There is considerable prairie land along the face of the hill. Timber is very scarce, but a few scattered spruce from six to ten inches in diameter were found. A few hay sloughs exist on the uplands where good hay might be cut, though it is not plentiful. The water is fresh, creeks and springs providing a fairly large supply. A very small creek runs all season down the west side of the township in a deep and steep coulee.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

Around the brow of the hill are numerous springs which are the head waters of five small streams, some of which run underground again in their course. The land is not liable to be flooded and there are no water-powers. The climate was fine (September), the days were bright, and the nights sharp and frosty, but no snow fell. Wood for fuel is plentiful. No stone-quarries nor minerals were found, and ducks and prairie chickens were the only varieties of game observed.—*W. G. McFarlane, D.L.S., 1910.*

(*Partial.*)—Only the portion of this township to the south of Peace River was surveyed. A road from Peace River Crossing runs along the north side of the river through Shaftesbury Settlement, and it is possible to cross the river by boat at almost any point in the settlement. This part of the township lies between Smoky and Peace Rivers, and as the surface is of a very rough and broken nature it is of very little use for farming. The soil is alluvial and consists of a light sandy loam. The hills are covered with dry and green poplar and willow. There is no timber of value. No hay can be cut, but the grazing is good. The climate is very good for farming from May until August, the days being warm and the nights cool. An early frost is sometimes experienced in August. Dry poplar for fuel is plentiful. No coal, stone-quarries nor minerals of economic value have been found. The game consists of bears, moose, foxes and coyotes, and also many kinds of smaller game.—*A. L. Cumming, D.L.S., 1914.*



Photo by J. S. Galletly, D.L.S.

Roman Catholic Mission at Fort Vermilion

Tr. 84

(*North outline.*)—The surface is rolling, and is covered by heavy windfall. A pack-trail leading to the Roman Catholic mission crosses the line in the middle of section 34. There is a large hay marsh in section 33, and an extensive muskeg in section 32.

The soil is a black loam from two to eight inches deep with a clay or gravelly subsoil.—*Arthur Saint Cyr, D.L.S., 1906.*

St. Germain's trail from Shaftesbury Settlement enters this township in section 2, and runs north-westerly to section 30. It is in very good condition and is much travelled. The soil is fine black loam about six inches deep on a clay subsoil. The surface of the south third is rolling and the remainder is generally level. Small poplar and brush cover the south third, with some small prairie openings, and the north part is covered with small poplar and clumps of spruce. Slough hay can be cut in several marshes in the north part, and in sections 18 and 19 good meadows were seen. The only supply of fresh water is furnished by a creek ten feet wide and two feet deep which flows about two miles per hour through sections 19, 18, 7, 8 and 5. The supply is likely

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—*Continued.*

to be permanent even in a dry season. No stone-quarries, minerals, water-powers nor coal were seen, but wood fuel is plentiful. The days were warm in June, but during the first part of the month frosts occurred at night.—*A. G. Stewart, D.L.S., 1912.*

Tp. 85

From township 86, range 22, a pack-trail was cut in a south-westerly direction, entering this township in the north boundary of section 33. From this point the trail follows a southerly direction through sections 33, 28, 21 and 22 to the south-west quarter of section 15. From here a trail was cut in a south-easterly direction through section 15, 10, 11, 2 and 1, leaving the township on the east boundary of section 1. From this point the trail follows the twenty-second base line and joins the old Fort Vermilion trail at the north-east corner of section 31, township 84, range 21. On account of the heavy windfall in the northern half of this township considerable cutting and clearing would be necessary to construct wagon trails, but as the southern part of the township has been burned more severely little difficulty would be experienced. The whole township is a rolling country covered with small second-growth poplar, willow and alder brush; this is varied somewhat in the northern part where patches of dense fire-killed poplar and heavy windfall are found. Dry and green spruce, poplar and jack pine up to eighteen inches in diameter are found scattered throughout the township, but not in sufficient quantities to be of any merchantable value; sufficient would be found, however, for building and fencing purposes. This township, which was once a splendid timber country, is now rendered of very little value by forest fires. On this account, also, there is very little if any top-soil to be found. The subsoil is for the most part clay, though in the eastern portion much sand and stone are found. There is no reason why this soil should not be suitable for farming. There are no creeks, but the country appears to drain into a muskeg running through sections 4, 10, 15, 16, 17 and 20 and eventually into Lac St. Germain which lies in sections 19 and 30. All the lakes in this township contain good fresh water and form the supply for this locality. The great quantity of dry spruce, poplar and jack pine to be found all through the township forms an abundant supply of fuel. Good grazing is scarce on account of the recent fires. Good feed, however, is found around the lakes and in the numerous small sloughs scattered throughout the township. A considerable quantity of hay is found along the south shore of Lac St. Germain and also around the lakes on the north boundary of section 7 and the east boundary of section 16. In section 23 there is a large hay slough covering about half of the section where a considerable quantity of hay could be cut with little difficulty. The climate is much the same as that of central Alberta. The rainfall is moderate, and up to the time of the completion of the survey (October 10) there was practically no snow. No summer frosts were experienced, though the nights get very cool towards the latter part of July and the beginning of August. No coal nor lignite veins were found anywhere in the township. It would be impossible to develop any water-power. No stone-quarries nor minerals of any kind were found. Game is plentiful, moose, bears, deer, lynx, foxes, coyotes and other smaller game being seen. Partridges and prairie chickens as well as ducks, geese and other water-fowl were seen in large numbers.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 86

This township was reached from that to the north. The surface for the most part is rolling and covered with windfall, scrub, poplar and willow. The two southern tiers of sections are low and until properly drained will be useless for agriculture. The remainder of the township is mostly high and dry, and is suitable for agriculture, but the black loam soil has been burned away in places by the severe fires that swept over this country some years ago. There is no timber of commercial value, but it can be found in sufficient quantities for homestead improvements. No hay lands were noted. Whitemud River, which flows through the northern portion of the township furnishes a supply of pure, fresh water, but apart from this the water supply is very limited. This stream averages about a chain and a half in width, and at the time of survey (August) was from three to four feet deep. There are no falls nor rapids, nor any opportunities to develop power by the erection of dams. The climate is very desirable, being warm during the day, cool during the nights and without summer frosts. No indications of coal were found, and at present dry spruce and poplar furnish the fuel supply.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE, 22.—*Continued.*

No stone-quarries nor minerals of economic value were discovered. Moose and bears are very plentiful, and there is much evidence denoting the presence of many varieties of fur-bearing animals.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 87 From the south-west quarter of section 22, township 88, range 22, a trail was cut to the south-west quarter of section 16 of this township. This trail is fairly level and is in good condition throughout. With the exception of a strip of about two miles in width running from north to south in the central portion of the township the surface is entirely level and low. Although this land is low it was quite dry at the time of survey.¹ However, it would doubtless be very wet during some seasons of the year, but by draining it into Whitemud River it could be made permanently dry. The soil is quite rich in black loam and vegetable matter, and would be very suitable for agricultural purposes. On the higher ground in the centre of the township the soil has been rendered much less suitable for agriculture by several severe forest fires. Practically the whole of the township had been burned over some years ago, and the surface is now covered with scrub spruce, tamarack and scattered willow on the lower portions. No timber of merchantable value was noted but there are scattered patches of spruce and tamarack which would furnish sufficient lumber for the needs of intending settlers. No hay lands were found. In the southerly portion of the township there is a creek which would give a good supply of fresh water. This creek is from four to five feet in width, one foot deep, and has an average current of two and a half miles per hour. No rapids nor waterfalls were found on this stream. No water-power can be developed. The climate was very good; being moderately warm during the day and cool in the evening. No summer frosts were experienced. There are no signs of coal, and the only source of fuel is the dry spruce and poplar. No stone-quarries nor minerals of economic value were noticed. Moose and bears were very plentiful and there were frequent indications of the presence of fur-bearing animals.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 88 (*North outlines; ranges 22 and 23.*)—The soil in these ranges is a sandy loam with a gravel subsoil or a clay loam with a clay subsoil, and appears to be very fertile. The surface is rolling and has the appearance of having been swept by fire many times and at the present time is largely covered with a rather thick growth of small poplar, white birch, willow and spruce with a few clumps of large poplar and spruce up to sixteen inches in diameter. Very fair hay may be found along the creeks that flow through this country and to the south along the valley of Whitemud River it grows most luxuriantly. Water is rather scarce in this country and even that found in the streams had a very decided saline taste; there are no water-powers. The country is probably subject to summer frosts but hay, oats and the coarser grains could be successfully grown as well as all kinds of garden truck. Wood is the fuel most readily available and may be found throughout these ranges. No stone-quarries nor minerals of economic value were noticed. Small game of all kinds is abundant. These townships were particularly well thought of for settlement purposes as the land will be easily cleared and appears to be very fertile.—*A. H. Hawkins, D.L.S., 1912.*

From the north-west quarter of section 16, township 87, range 21, a trail was cut in a north-westerly direction to the north-west quarter of section 22 of this township. This trail with the exception of a few low spots was very good throughout. The surface of the township is mostly rolling and covered with heavy windfall and scrub poplar and willow. The westerly sections are low and until properly drained will be practically useless. The remainder, however, is high and contains a few small patches of muskeg. The soil is a black loam overlying a clay subsoil. This locality has been fire-swept and the depth of the black loam depends largely on the severity of the fires. With the exception of the low lands the township should prove to be a very good agricultural district, as even where the fire has been most severe the soil is fast regaining its productiveness. There is no timber of commercial value, but there are small patches scattered throughout the township which will furnish an ample supply for the first needs of settlers. In the south half of section 15 there is a large hay meadow containing about one hundred acres from which many tons of hay could be cut. There are no creeks which furnish permanent supplies of water, but a fresh-water lake, known as Driftwood Lake, was found in sections 8 and 9. This

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 22.—Continued.

lake is saucer-shaped and has an average diameter of one-half mile. The water, although fresh, is of poor quality. The shore line at the west is rocky while the remainder is low and swampy. The surrounding country is approximately fifteen feet above the water level and is timbered with poplar and willow. There is no apparent outlet or inlet, and the greatest depth of water is ten feet. No fish of any kind were found in the lake. A peculiar feature and the one which gives the lake its name, is that a great deal of drift wood and partly submerged dead trees form a fringe around the shore and extend about three hundred feet from the water-line. The rise and fall of the water is small as it apparently depends entirely upon evaporation. There are no waterfalls nor rapids, and no power can be developed. The lower areas are liable to be flooded to a depth of a foot in a rainy season, as the drainage is rather poor. The climate is very warm in summer with cool nights but no summer frosts. No signs of coal were found, and the only available fuel at present is wood. No stone-quarries nor minerals of economic value were found. Moose and bears are very plentiful, and there are many indications of the presence of several varieties of fur-bearing animals.—*J. A. Buchanan, D.L.S., 1914.*

Tp. 89 (*East outline.*)— This township is well suited for farming purposes and although it is lightly wooded with poplar, spruce and willow, it could be easily cleared.—*J. R. Akins, D.L.S., 1913.*

Tp. 90 (*East outline.*)—A creek with a very deep valley runs easterly through this township. The soil is of good quality and the surface is timbered with spruce, poplar and willow.—*J. R. Akins, D.L.S., 1913.*

Tp. 91 (*East outline.*)—The surface is very rough on account of the deep banks of creeks flowing into Peace River. The soil is of good quality and well suited for agriculture, and the surface is lightly wooded with willow and spruce.—*J. R. Akins, D.L.S., 1913.*

Tp. 92 (*East outline.*)—The northern part of this township has been recently burned over, and the southern part is lightly wooded, with some open hay sloughs and patches of spruce muskeg. The soil is of good quality.—*J. R. Akins, D.L.S., 1913.*

Tp. 111 (*Exploration survey.*)—A fire over-ran this township several years ago and considerable windfall covers the ground. Watt Mountain extends into the eastern part of this township. It is very rough and the surface is wooded with spruce and jack pine. The soil is of fair quality.—*J. R. Akins, D.L.S., 1914.*

Tp. 112 (*North outline.*)—The surface of this township is lightly wooded and easily cleared. Some poplar, spruce and willow grow in patches, but there are many open patches where plenty of horse feed grows. The surface is nearly level with a gentle slope to the north.—*J. R. Akins, D.L.S., 1914.*

Tps. 113 & 114 (*Exploration survey.*)—A second growth of poplar and spruce, strewn with deadfall, covers most of this township, but there are some open patches where plenty of grass grows. The soil is of good quality and the surface is rolling.—*J. R. Akins, D.L.S., 1914.*

RANGE 23

Tp. 68 (*North outline.*)—This township is tolerably level, and the land is stony in places. It is covered with young poplar, balm of Gilead and thick willow scrub. There is a large muskeg in section 32, and another one in section 34. A well-travelled pack-trail from Sturgeon Lake to Little Smoky River enters this township near its north-east corner. The soil is a sandy loam two to six inches deep, or in places a black loam fifteen inches

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

deep, with a heavy clay of sandy subsoil. Spruce timber of small dimensions is found in the muskegs. Small creeks, tributaries to Little Smoky River, cross this line in sections 35 and 36. The height of land (two thousand and three hundred feet above sea-level) between the basins of Simonette and Little Smoky Rivers, occurs near the north-east corner of section 31.—*Arthur Saint Cyr, D.L.S., 1904.*

(*North outlines; ranges 23 to 25.*)—The country in these ranges is fairly level. The eastern eight miles are well wooded with spruce and poplar with numerous muskegs. Throughout the remainder the timber is lighter, consisting of poplar, birch, alder and willow; there are also many muskegs. Hay is scarce. The soil is black loam with clay subsoil. This area is badly supplied with water as the creeks go dry in summer and freeze solid in winter. No minerals, coal nor stone were seen. No water-power could be developed. No game was seen, except prairie chickens, partridges and rabbits.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 69 The Edson-Grande Prairie Road runs across this township from section 1 to section 31. It may also be reached by the Athabaska Landing-Grouard-Sturgeon Lake trail. The latter trail is preferable for heavy loads. The distance by trail from this township to Edson is about one hundred and seventy miles, while from Athabaska Landing it is two hundred and eighty-five. There are several Indian pack-trails in the northern part of this township. The soil consists of a layer of varying thickness of black loam over clay. The surface is level to gently rolling and slopes to the north. This township is wooded for the most part with poplar of moderate size and willow with some brulé throughout. There are two good tracts of spruce, one situated mainly in section 21 and the other in sections 30 and 31. There is a hay meadow of about twenty acres in sections 27 and 26, but no others of any size. The creeks are quite small and nearly all of spring origin; they drain Sturgeon Lake. No coal, minerals nor stones were noticed. Game was scarce. A few prairie chickens and partridges were seen, also a few tracks of moose, deer, bears, etc. No water-power could be developed.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 70 (*Partial.*)—The surface of this township is generally of a gently rolling nature and is covered with poplar of medium size and willow. There are some stretches of very thick windfall along the east boundary and also some fair-sized spruce in sections 28 and 27. Sturgeon Lake and Sturgeon River provide plenty of water for the north portion of the township. There is very little hay which can be cut. No minerals, coal nor stone were seen. No game was found. Whitefish and pike may be caught in Sturgeon Lake and River.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 71 The north third of this township is occupied by Timber Berth No. 1220A. There are also tracts of spruce and poplar, close to the lake, and some in the west of the township. There is a little hay in section 4 around the lake. The township is fairly well watered by Sturgeon Lake, Sturgeon River and a large creek which runs close to the east boundary. A trail has been cut from the east boundary of section 13 to the shore of Sturgeon Lake in section 4. No game excepting ducks and partridges was seen. No water-power could be developed. The soil is principally black loam with a clay subsoil. Frosts were observed up to the middle of June.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 72 (*North outline.*)—The north boundary of this township runs over a mountain timbered with spruce from ten to twenty-four inches in diameter, some attaining a diameter of thirty-six inches, jack pine, poplar, balsam, fir and birch. The highest point, two thousand and seven hundred feet above the sea, is reached at the north-east corner of section 33. The land is well irrigated by several creeks of good water flowing in deep ravines. The largest one of these streams is called Wabotanisk (white earth) by the Cree Indians, and is a tributary of Little Smoky River. There is some bad windfall overgrown with small poplar in section 36, and north of sections 34 and 35. Two pack-trails leading to Sturgeon

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

Lake join in section 19, after crossing the north boundaries of sections 31 and 32. The soil is clay.—*Arthur Saint Cyr, D.L.S., 1904.*

(*East outline.*)—This line runs through rolling country covered with spruce and poplar, some of it being up to twenty-six inches in diameter. It is not well watered. Practically no game was seen excepting a few partridges and rabbits. A few tracks of larger game were seen:—*H. M. R. Soars, D.L.S., 1912.*

Tp. 73 This township can be reached from Grouard by following the trail which leads to township 73, range 22, from where a trail was cut into this township, entering in section 25. This trail from the centre of range 21, is better than the average bush trail, and is passable for light loads most of the year. The soil in this township has been burned off, but the clay subsoil appears to be well adapted to agricultural pursuits. The surface is mostly wooded with poplar, small clumps of spruce and a few jack pine. A large amount of standing timber, which has been killed by fire and would make good fuel, is found in the south half. No hay sloughs were seen, but some small meadows along Wabotanisk Creek contain good hay. There is also an abundance of hay among the windfall and burned timber fit for grazing purposes. The water supply is fresh and abundant. The township is drained by numerous creeks which, however, dry up in summer, except Wabotanisk Creek which appears to be permanent. This stream is about ten feet wide, three feet deep and has a current of two miles per hour. No land is liable to be flooded and no water-power could be developed. The climate is similar to that of Edmonton and is well adapted to farming of all kinds. Wood for fuel is abundant. No coal, stone-quarries nor minerals of any kind were found. Partridges, the only game seen, were scarce.—*A. W. Ponton, D.L.S., 1914.*

Tp. 74 This township was reached from High Prairie in township 74, range 16, by following the summer trail leading to Sturgeon Lake as far as Little Smoky River and thence by a trail opened out by a surveyor through township 73, range 20; a trail was then cut through township 73, ranges 21, 22 and 23, and thence northerly into this township. The surface is covered with poplar and spruce, and some jack pine, alder and willow are found in scattered areas. The south third of the township has been burned over, but is again growing up with young poplar and willow. The soil consists of about four inches of black loam overlying a clay or sandy clay subsoil, and appears to be well suited to farming purposes. Good grazing land is found throughout the township, and section 33 is almost entirely a hay meadow with hay about two or three feet in height and hundreds of tons could be obtained here each season; it is well drained by a creek passing through the township and is not liable to be flooded. Fresh water is found in abundance in the numerous creeks, most of which, however, stop flowing after the rainy season. Two creeks flow throughout the year but they have no falls for the development of water-power. The climate is similar to that of Edmonton and is well suited to all branches of farming. Summer frosts occur, but they are not severe enough to do much damage. Wood for fuel is abundant. No coal, stone-quarries nor minerals were found. Partridges were the only game seen. Signs of bears and moose were observed throughout the township.—*A. W. Ponton, D.L.S., 1914.*

Tp. 75 (*Partial.*)—The soil in this township is composed of about four inches of black loam upon a subsoil of clay loam. The surface of the country is comparatively flat and taken altogether is well adapted to farming. There is no timber of importance but the land is generally wooded with poplar from four to ten inches in diameter. No hay lands were seen. Water is very scarce and of poor quality, there being but a few sloughs containing a small amount of alkaline water. At the time of survey (August) the weather was warm and no summer frosts occurred. Coal or minerals of economic value were not met with. Game is scarce, black bears and a few moose being the only varieties seen.—*J. H. Smith, D.L.S., 1910.*

(*Partial.*)—This township may be reached from township 74 by a fairly good trail cut out by my party. The portion subdivided has been burned over and is now growing up with poplar and willow scrub. The soil consists of two to four inches of loam on a clay subsoil, and is well

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

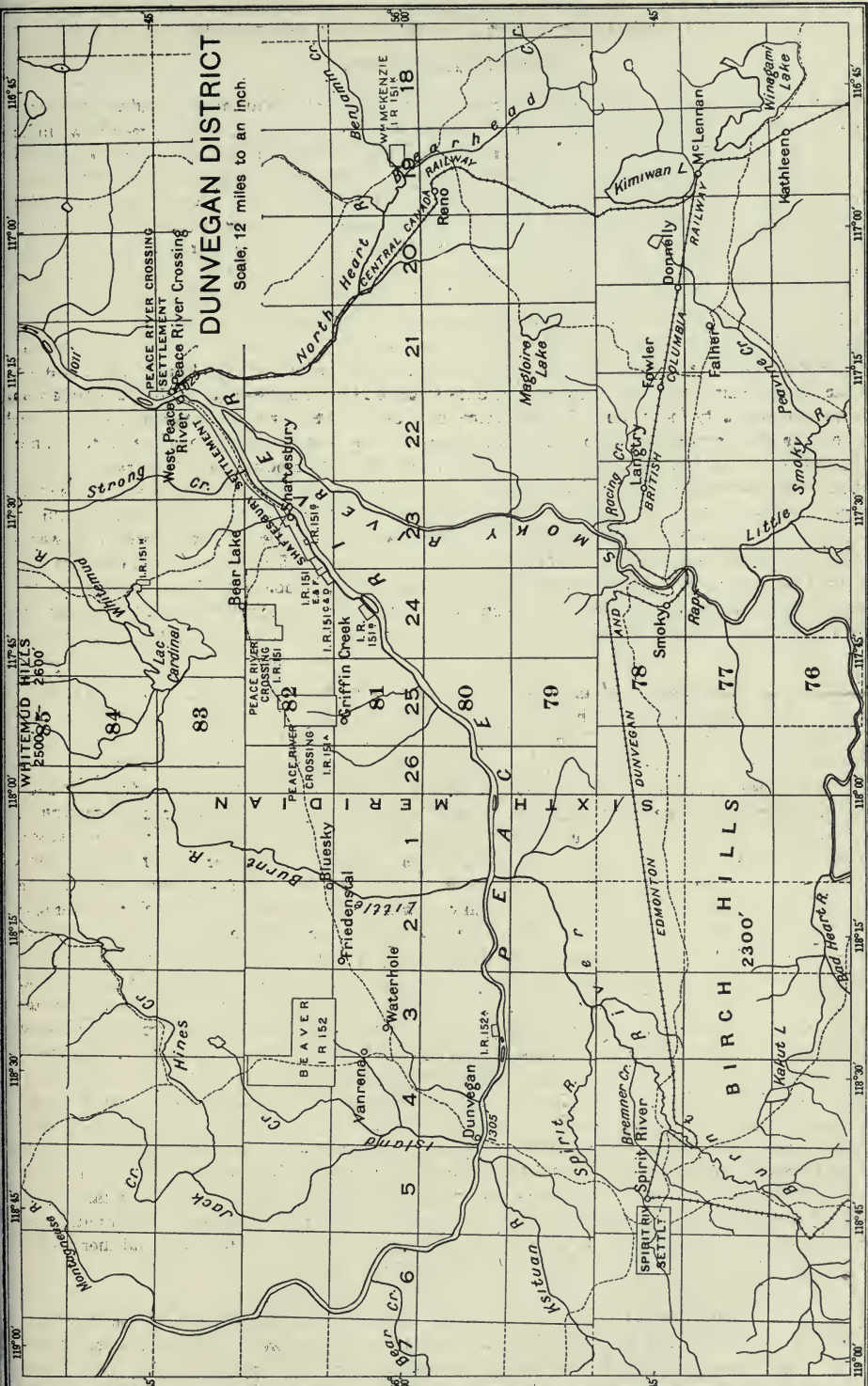
adapted for farming. A great portion of the township, though not prairie, is fairly open and could be easily brought under cultivation. Good grazing is found throughout but there are no hay meadows. The creeks and sloughs, though they contain good water, are not permanent. The climate is similar to that of Edmonton, and seems well suited for farming; slight summer frosts occur, but they do no serious damage. Wood fuel is abundant but no stone-quarries nor minerals of any kind were found. A few partridges were the only game seen.—*A. W. Ponton, D.L.S., 1914.*

Tp. 76 (*North outline.*)—This line runs through gently rolling country to section 33 where the descent to Little Smoky River begins. The height of land or low ridge in section 33 extends south-easterly and north-westerly, to the north of which the country is full of sloughs, ponds and beaver meadows with islands of poplar and spruce, some birch, alder and willow. South of the ridge is the descent to the valley of Little Smoky River. Near the east boundary of section 31 the line crosses the river, which is about nine chains wide, of varying depth and rapid current, owing to the numberless rapids occurring in its course northerly. At present the stream in many places is not over two hundred feet wide and so shallow as to be easily forded in the rapids. Section 31 is very rough, being the west bank of the river; it rises about five hundred feet to the township line. The timber on this section is poplar, large spruce and some birch. The soil, generally, is black loam on clay subsoil.—*Henry W. Selby, D.L.S., 1905.*

This township was reached from township 77. Little Smoky River flows diagonally across the township and consequently the country is much broken and too rough for mixed farming. The soil, consisting generally of six inches of black loam on a clay subsoil, is of good quality and the surface is wooded with poplar from four to ten inches in diameter. Good water may be obtained in Smoky River and in its tributary creeks, but no water-powers were found. Some indications of coal were noticed along the shores of Smoky River, but no valuable seams were observed. The weather was warm at the time of survey (August) and there were no summer frosts. No game of any kind was seen.—*J. H. Smith, D.L.S., 1910.*

Tp. 77 This township was reached by a wagon road cut by myself running westerly through township 77, range 22, at the northerly limit of section 12. This road runs westerly as far as the north-east corner of section 8, from which point it turns south, crossing the twentieth base line at the quarter post on the north boundary of section 33, township 76. The central and south-easterly portions of the township are well adapted to farming, as the soil consists of from three to five inches of black loam underlaid with clay. In the westerly part the country is much broken by ravines running to Smoky River, which enter the township in section 5 and cross sections 6 and 7, leaving in section 18. The north-easterly part of the township is very low and wet, and nearly the whole of sections 26, 27, 34 and 35 is a network of small sloughs, making travel almost an impossibility. The township is mostly timbered with poplar from four to ten inches in diameter. A few spruce were noticed in the valley of Little Smoky River. Great difficulty was experienced in the survey of this township owing to the scarcity of water, since no creeks exist, and the only available supply was that found in sloughs. Except in the north-east part sloughs containing water were very scarce, and frequently we were without water for luncheon. Smoky River has many shallow rapids but no available water-powers. The weather at the time of survey (July) was very mild, and no summer frosts occurred. Some indications of coal were noticed along the shores of Little Smoky River, but no seams were found, neither were stone-quarries nor minerals of economic value noticed. Game consisted chiefly of black bears and a few moose.—*J. H. Smith, D.L.S., 1910.*

Tp. 78 This township was reached by a sleigh road which was constructed by the Edmonton, Dunvegan and British Columbia Railroad engineers from township 78, range 22. In the south two-thirds of the township the soil is fair, being mostly a yellow, sandy clay; throughout the rest of the township it is of poorer quality. In sections 1, 12, 13, 24, 34, 35 and 36 the surface is fairly level, but the remaining sections are badly broken by the valleys of Racing Creek and Smoky River. Smoky River flows through the north half of section 30 and



DUNVEGAN DISTRICT

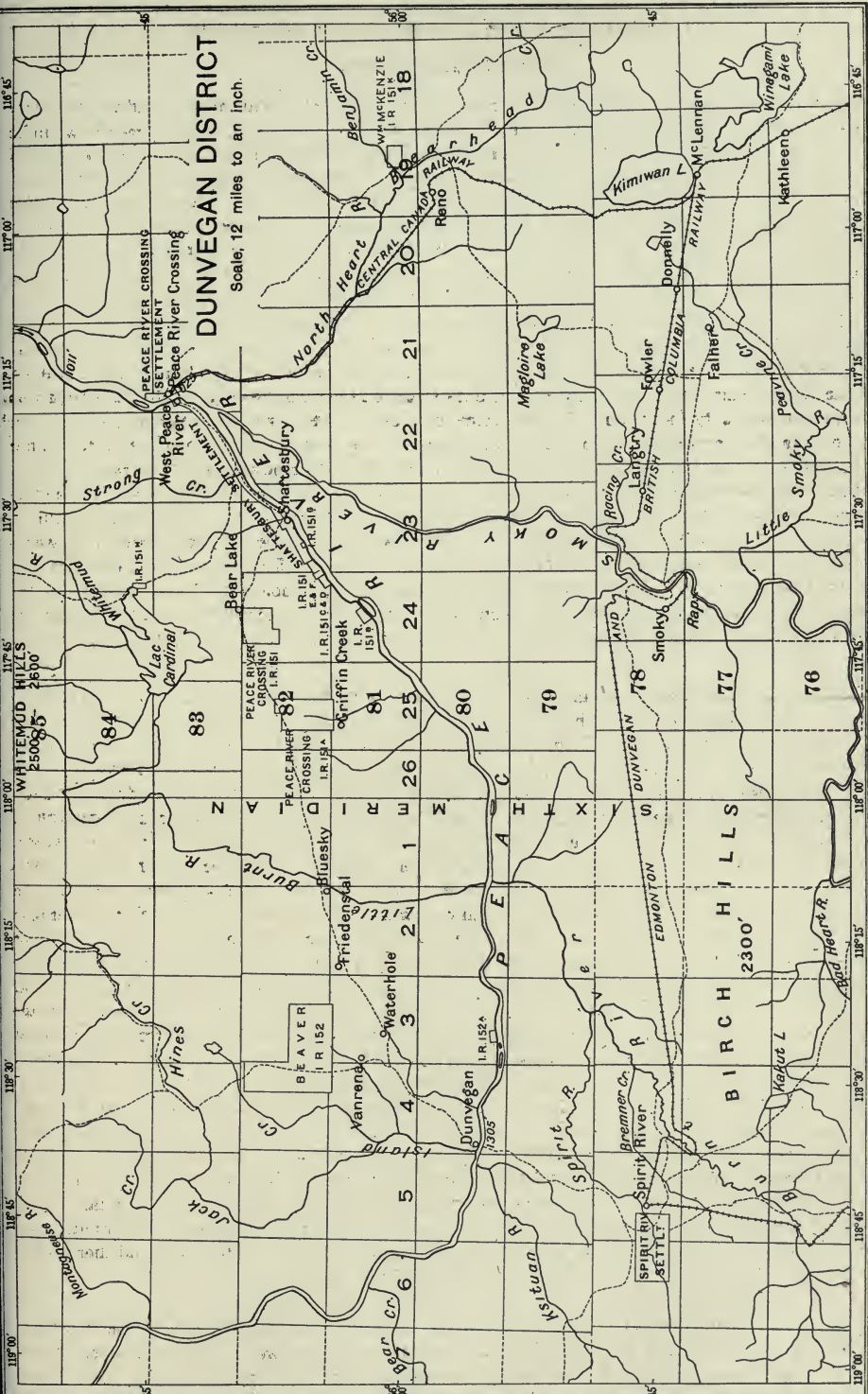
Scale: 12 miles to an inch.

WHITEMUD HILLS
25000'
2600'

BIRCH HILLS
2300'

BEAVER
R. 152

SPIRIT RIVER
SETTLEMENT



DUNVEGAN DISTRICT

Scale: 12 miles to an inch.

WHITEMUD HILLS
25000'
2600'

BIRCH HILLS
2300'

BEAVER
R. 152

SPIRIT RIVER
SETTLEMENT

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

the east half of section 31. Its valley is about a mile and a quarter wide and six hundred feet deep. The valley is too rough and broken to be of any value agriculturally. Racing Creek flows in the vicinity of the north boundaries of sections 24, 23, 22 and 21 and the east boundaries of sections 29 and 32 through a valley which increases in depth from one hundred feet to three hundred and fifty feet, and in width from about a quarter of a mile to half a mile. Along the sides of this valley which are very rough there is a good growth of spruce. In the south half of the township there are many large marshes and in sections 8 and 17 a lake of about one hundred and thirty acres was found. This lake was four feet deep, but the water was not of a very good quality. In those portions of the south half of the township which are occupied by marsh there is a good growth of poplar. An abundance of hay could be found in the south half, but there is very little in the north half of the township. The only water in the south half consists of surface water which was not of a very good quality. Smoky River averaged about eight chains in width and ten feet in depth at the time of survey (January) with a current of about four miles per hour. Racing Creek was from eight to twenty feet wide and about three feet deep. The flow was not great but it appears to be large and very rapid in the spring and summer. The water is of very good quality. There is no danger of damage from floods. No sites suitable for water-powers were observed. Winter set in about the middle of November, and from that time to about the middle of January the temperature varied from twenty degrees above zero to ten degrees below. From the middle of January to the middle of February the temperature was rarely above twenty degrees below zero, and it frequently went down to forty or fifty degrees below. With the exception of these five weeks, the winter was milder than the average winter of Manitoba. No fuel, other than wood, and no stone-quarries nor minerals of value were seen. Bears, moose, foxes and partridges are fairly plentiful. Ducks and geese are probably found in season.—*C. D. Brown, D.L.S., 1914.*

Tp. 79 This township was reached from that to the north by a sleigh road on the ice of Smoky River. The soil is of poor quality, being mostly a greyish clay with little difference between the surface and the subsoil. With the exception of the valley of Smoky River, which is too rough for cultivation, it is best suited for mixed farming. The valley of Smoky River is about one and one-quarter miles wide and from six hundred to seven hundred feet deep. The river enters the township in section 4 and flows through sections 3, 10, 15, 22, 23, 27 and 34. The valley is very rough, the sides being cut by deep ravines. Those portions of the township on either side of the valley are fairly level, with many swamps, most of which are covered with willow. The greater part of the surface, with the exception of these willow swamps, is covered with poplar averaging about eight inches in diameter. There are a few scattered spruce of fair size, especially along Smoky River. At present very little hay could be cut in this township, but by clearing the willow swamps of bush a fair supply could be obtained. The water is of good quality in Smoky River and also in the numerous small tributaries. The river averages about ten chains in width and during the survey was about ten feet deep with a current of probably four miles per hour. There is no danger of the river overflowing in this township as the banks are quite high. No sites suitable for water-power development were noticed. Winter set in about the middle of November and from that time until about the middle of January the temperature varied from twenty degrees above zero to ten degrees below. From the middle of January to the middle of February the temperature was rarely above twenty degrees below zero and frequently went down to forty and forty-five degrees below zero. With the exception of these five weeks the winter was milder than the average winter of Manitoba. There is an abundant supply of wood for fuel. No coal, stone-quarries, nor minerals of value were noticed. Bears and foxes were fairly numerous and a few moose were seen. There were plenty of partridges and there should be ducks and geese in season.—*C. D. Brown, D.L.S., 1914.*

Tp. 80 (*North outline.*)—Smoky River flows northerly through the middle of this township, and crosses the north boundary a short distance west of the north-east corner of section 33. At this point the river is three hundred and thirty yards wide, and has a swift current flowing over a stony bottom. Precipitous hills rise to a height of seven

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

hundred feet on both sides of this stream, the valley of which is one mile and a quarter wide. With the exception of the immediate vicinity of the river, where the land is much broken by deep ravines, high mud banks and landslides, the country is either level or undulating, and supports a thick growth of poplar, spruce, birch and cottonwood with heavy undergrowth. The soil is a few inches of loam over a clay subsoil.—*Arthur Saint Cyr, D.L.S., 1906.*

This township was reached by following a sleigh road constructed by the Edmonton, Dunvegan and British Columbia Railway engineers through township 78, ranges 22, 23, and 24 as far as Smoky River, and thence by this river which was frozen at the time of survey. The soil is mostly a light-colored clay of poor quality. The surface soil and subsoil are similar in quality although the surface soil might be classed as loam in some places, being loosened with the growth of vegetation. This township is considerably broken by the valley of Smoky River which enters the township in the south-east quarter of section 3, and flows in a northerly direction through sections 3, 10, 15, 22, 21, 28 and 33. The river valley is nearly one and a half miles wide, and seven hundred and fifty feet deep. The sides of the valley are extremely rough being cut by innumerable ravines. In many places steep cut banks of considerable height occur. None of the land within half a mile of the river is of any value for agricultural purposes on that account. The remaining portion, or about three-quarters of the township, is nearly level and about twenty-five per cent. of it consists of willow swamp. The timber in this township is mostly poplar and would be of little value except for settlers' use. A few spruce grow in the valley of Smoky River, but not in sufficient quantities to be of any value commercially. Only a few small sloughs which might produce a fair quantity of hay were seen. The water throughout the township is of good quality and there should be no difficulty in obtaining a plentiful supply. Smoky River varies from five to fifteen chains in width and is about ten feet deep. The rate of flow is about four miles per hour. It is quite likely that the depth and rate of flow would be greater in summer. There is no danger from flooding as the banks are generally quite high. No sites suitable for the development of water-power were seen. Winter sets in about the middle of November, and from that time to about the middle of January the temperature varies from twenty degrees above to ten degrees below zero. From the middle of January until the middle of February the temperature was rarely above twenty degrees below zero and frequently went down to forty and fifty degrees below. With the exception of these five weeks the winter was milder than the average winter of Manitoba. No fuel, other than wood, and no stone-quarries nor minerals of value were seen in this township. Black bears, foxes, moose and many partridges were seen.—*C. D. Brown, D.L.S., 1913.*

Tp. 81

In order to reach this township the road from Grouard to Peace River Crossing was travelled to within about thirty miles of Peace River Crossing. From this point a wagon road was used leading into township 81, range 22, and thence a pack-trail through range 22 into this township. These roads were frozen during the survey and consequently were in good condition but they become very soft and difficult to travel on later in the season. The soil is a black loam averaging five inches in depth overlying a clay subsoil. The surface is rolling, broken by the valley of Smoky River and covered with poplar, spruce, balsam of Gilead and willow. There is a small quantity of spruce measuring from ten to thirty inches in diameter along the east bank of the river in sections 10, 14, 15 and 23, and also in sections 21 and 28. Hay can be obtained only in small quantities from the small sloughs in sections 5 and 6. The water is fresh and the supply is sufficient and permanent. Smoky River is approximately sixteen chains in width, about twelve feet deep and flows about three miles per hour. It flows through a valley from two to one-half miles wide and from eight hundred to nine hundred feet deep. There is no land liable to be flooded. No falls nor rapids exist. The climate is very similar to that of the country from Edmonton to Athabaska except that in winter the temperature is considerably lower. Summer frosts occur. Wood is the most readily available fuel and can be procured in all parts of the township. No stone-quarries, minerals nor coal or lignite veins were found. Moose, bears, coyotes, ducks, partridges and rabbits comprise the game.—*T. A. Davies, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

Tp. 82 The soil is a black loam about six inches deep with a clay subsoil, and it is excellent farm land except along the face of the hill, where the loam is scarce and there are stones. The surface is gently rolling, but broken by the north bank of Peace River which slopes rapidly toward the settlement five hundred feet below, and by several deep coulées running toward it from the north. The surface is mostly prairie with a few poplar and willow bluffs, but it is covered with neither timber nor hay. There are no water-powers, and there is no danger of floods, but water is fresh and plentiful in streams flowing into Peace River. No stone-quarries nor minerals were noted, and wood fuel is plentiful. There is very little game. Summer frosts occur.—*W. G. McFarlane, D.L.S., 1910.*

(*Partial.*)—The portion of this township to the south of Peace River was the only part surveyed. A road from Peace River Crossing runs along the north side of the river through Shaftesbury Settlement, and it is possible to cross the river by boat at almost any point in the settlement. This part of the township is situated between the Peace and Smoky Rivers and is of little value for farming owing to its rough and broken nature. The soil is good, consisting of clay loam. The slopes to both of the rivers are very steep and broken. The eastern slope is covered with poplar and willow, and has a number of grassy knolls. There is a small flat adjoining Smoky River in sections 14, 23 and 25 which could be cleared and cultivated. Very little timber of value is found in this township. There is not much hay but the grazing is good. Peace River is approximately seventeen chains wide and is navigable for a distance of three hundred miles upstream and about the same distance downstream. The water is of a bottle-green colour. The weather in May and June was very favourable for farming, the days being very warm and the nights cool. Slight frosts occurred in May but none were experienced from that time until the end of August. Dry wood for fuel is plentiful. No coal, minerals of economic value nor stone-quarries were noted. Bears, moose, foxes and coyotes are numerous.—*A. L. Cumming, D.L.S., 1914.*

Tp. 83 The soil of this township is a black loam from four to six inches deep, with a clay subsoil, and is good farm land. The surface is gently rolling and except in the south where prairie predominates is covered with light poplar and willow scrub and some jack pine and spruce ridges, none of which timber is of any value, except for the use of settlers. Hay is plentiful and of good quality on the prairie, in hay sloughs around lakes in the north, and in beaver meadows to the east. There are no water-powers because the streams are all very small but as the latter have their origin in springs, the water supply is fresh and permanent. No stone-quarries nor minerals are found; game is scarce and wood fuel is abundant. The climate was cool in October, with hard frosts.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 84 (*North outline.*)—The outlet of Bear Lake, which is a tributary of Whitemud River, flows northerly through section 32, and the land is swampy for some distance on each side of this stream. Another stream, flowing south-east, is crossed in section 36. On the swampy land, found in the vicinity, a limited quantity of hay could be cut. A wagon road, leading to the place of Chas. St. Germain, a settler living near Peace River, has been cut along this creek as far as the base line. The last mentioned creek is reported to have its source in two small lakes lying four miles north of the line.—*Arthur Saint Cyr, D.L.S., 1906.*

From Shaftesbury Settlement a good wagon trail leads to this township. The soil is loam on a clay subsoil. The whole surface is level, the north part being covered with second-growth poplar and spruce windfall, and the south part with small poplar and a few prairie patches. No timber of merchantable value is found. Marsh hay grows around Cardinal Lake and around small lakes in sections 2, 3, 4 and 24. There are no large streams but the lakes furnish a permanent supply of water. The water in the smaller lakes is strongly tainted with decayed vegetation, but shallow wells near the shore would no doubt overcome this. In May the days were warm, but the nights were clear and frosty. Dry poplar and spruce furnish an abundance of fuel, but no coal, stone-quarries nor minerals were seen. Ducks and grouse constitute the only game found, but signs of moose were noticed.—*A. G. Stewart, D.L.S., 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.* **Tp. 85**

The trail by which this township is reached passes Lake Cardinal and entering the township in section 6 continues almost directly north. This trail or wagon road is good in a dry season, but in wet seasons, on account of the marsh or meadow around Lake Cardinal, it is quite difficult to pass with loads of any size. There is also a hay trail running directly north from section 1 to Lac St. Germain. This road comes from Peace River Crossing following a very good grade up the banks of Peace River directly opposite the present landing of the ferry. However, in a wet season this trail through township 84, is impassable, on account of the muskegs and streams. In winter this is the better trail and is very much shorter. The soil is very good and suitable for mixed farming. There is not very much prairie but a considerable quantity of brulé exists which would vanish should another fire run over it. The surface is generally covered with poplar and willow with a number of lakes and muskegs. In section 6 there is an area of about eighty acres of land which is the only open spot in the country. Good upland hay can be cut here. Hay can be cut in the following sections: twenty acres in section 1, eighty acres in section 24, fifty acres in sections 4 and 5, while a little is available in sections 12 and 13. This is of the slough grass variety, but is fairly good. In wet seasons it would be rather difficult to cut but not as difficult as on the meadows around the several lakes. Lakes in sections 12, 24 and 25 produce large quantities of hay, but in section 19 of the adjoining township there is a larger area of hay land. Settlers near Peace River Crossing secure hay here in dry seasons. Plenty of water may be obtained during all seasons either from the many lakes



Photo by O. Rolfsen, D.L.S.

The Banks of Peace River Valley

or from the creek which flows directly north through the western part of the township. This stream is about ten feet wide, three feet deep and flows at the rate of about one mile per hour. The banks are very low until section 20 is reached where they become about six feet high; farther north they become still higher. There is little danger of flooding with the exception that the water gathers in the hay meadows. No water-power is available. The climate is very good

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

with no frosts until the middle of August, and these were very slight. Plenty of wood for fuel can be obtained. There are no stone-quarries nor minerals. Prairie chickens, partridges and ducks comprise the game. Rabbits were very numerous this season.—*G. A. Tipper, D.L.S., 1913.*

Tp. 86

There is a fairly good wagon road from Lake Cardinal which crosses the south-west corner of the township and also a pack-trail was cut for survey purposes east to the junction of a creek with Whitemud River in the north-east corner of section 9. The soil in the south-west corner of the township is black loam and clay, and is fairly good farming land, but the remainder is mostly muskeg. All of the land to the north of Whitemud River is muskeg and for a distance of from one-half to two miles back on either side it is covered with very thick windfall. The north-westerly corner of the township is very low and at the time of survey was completely covered by water backing up from the river and creeks. There are small patches of prairie in sections 5, 6, 7, 8, 9, 16, 17 and 18 where upland hay may be cut in small quantities. Poplar and willow grow extensively to the south of the river, but to the north there is small spruce and tamarack which is mostly dead. The water is supplied by Whitemud River and the above-mentioned tributary. This river enters the township at the north-west corner and first flows south and then south-east to section 10 where it turns and runs north-east, leaving the township in section 24. As far as section 16 the current is sluggish and the banks are low. From this point to where it leaves the township the current is swift, the banks are high, and the valley steadily increases in depth. The river itself averages one hundred feet in width and from eight to ten feet in depth and had a current of two and a half miles per hour at the time of survey. The creek flows in a northerly direction through a valley about one hundred and fifty feet deep. It averages twenty-five feet in width, three feet in depth and has a current of two and a half miles per hour. The river will flood all of the land adjoining it in sections 31 and 32. A small amount of power could be developed at some of the narrow rapids by the construction of dams. The climate was very good and no frosts were noticed until August 29. Plenty of wood can be obtained for fuel. No stone-quarries nor minerals were seen. A few partridges, prairie chickens and geese comprise the game to be found in this township.—*G. A. Tipper, D.L.S., 1913.*

Tp. 87

There are two pack-trails entering this township. The one entering at the west boundary of section 30 runs straight east, while the other crosses Whitemud River at a ford and enters at the south boundary of section 3. Both of these trails are very bad except in winter as there are so many bad muskegs which have to be crossed. This township is of little value; practically the whole area is low and was covered with water during this season which was very wet. The greatest difficulties were experienced in making our way through this country even on foot and it is exceedingly difficult with horses as feed is found only in the marshes. A great portion of the surface is muskeg and that adjoining Whitemud River in the south-west corner was covered with water from one to five feet deep. In sections 4, 5, and 6 large lakes were found, but ordinarily these are willow flats. A portion in the north-east of the township is rolling, with muskegs between the hills. There is very little timber; the greater part of the surface is covered with dense willow with some spruce and tamarack. Some small poplar and brulé are found in the north-east part of the township. The only hay is the marsh grass which is plentiful. Water can be found everywhere, the difficulty being to find land without it. Floods are frequent on all the low land as explained above. There are no water-powers, stone-quarries nor minerals. Plenty of wood for fuel is available. Ducks were seen on all the sloughs and are the only game to be found.—*G. A. Tipper, D.L.S., 1913.*

Tp. 88

(*North outline.*)—See report for township 88, range 22.—*A. H. Hawkins, D.L.S. 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24

 Tp. 68

(*North outline.*)—The country is level, and covered with willow scrub, small spruce, birch, poplar and balm of Gilead. A large spruce muskeg extends across section 31, and the west half of 32. Another large muskeg takes up the east half of section 34 and the west half of 35. In these muskegs the timber is scraggy and small. Two pack-trails from Sturgeon Lake run through section 35 in close proximity to each other, and another one through the middle of section 36. The soil is generally a black or sandy loam from four to eight inches deep over a clay or sand and stone subsoil, but in places the soil is gravel.—*Arthur Saint Cyr, D.L.S., 1904.*

(*North outline.*)—See report on township 68, range 23.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 69

This township can be reached by the Edson-Grande Prairie Road which passes through township 69, range 23, whence a wagon trail commences entering this township at the north-east corner of section 24. It may also be reached by the Athabaska Landing, Grouard and Sturgeon Lake trail; the latter is longer but easier for heavy loads. Several pack-trails cross this township. The soil is a fair depth of black loam over clay. The surface is gently rolling and rather heavily wooded with spruce and poplar up to twelve inches in diameter; there is some burnt country and willow flats in the vicinity of the lakes, also a considerable area of muskeg throughout the southern half of the township. There are two good tracts of large spruce one in section 36 and the other in sections 27, 28, 33 and 34, and also several smaller clumps toward the south-east corner of the township. No hay meadows exist with the exception of that contained in the Goose Lake Indian reserve. There are two good sized lakes in the central portion of the township, to which many spring creeks flow. These lakes are drained by Goose Creek, which runs north-east from Goose Lake to Sturgeon Lake. No water-power could be developed and there is no land liable to be flooded. No stone, coal nor minerals were noticed. Game was very scarce. Frosts were noticed until June 15.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 70

The trails from Edson and Grouard join at Sturgeon Lake Settlement (Indian reserve) and run through sections 27, 28, 29 and 30. There is also an old sleigh or wagon trail running through sections 16, 17 and 18 which was used to reach Simonette River. The surface is generally rolling and covered with poplar and willow. There are several muskegs, the biggest situated in sections 21 and 28 being covered with spruce up to six inches in diameter. There is practically no hay land. In a summer drought, water might be very scarce, with the exception of Sturgeon Lake at the north. No minerals, coal nor stone were seen. No game was seen excepting prairie chickens and ducks.—*H. M. R. Soars, D.L.S., 1912.*

 Tp. 71

There is a good wagon trail which leaves the Grande Prairie trail at the west end of Sturgeon Lake and runs through the township from north to south. This trail leads to a big hay lake (Puskwaskau Lake) in township 72, range 24. The surface is generally rolling with a slope toward Sturgeon Lake. The soil consists of a layer of black loam of varying depth with a clay subsoil. There is a little hay around the small lake in section 32, also some at Sturgeon Lake narrows in the south of sections 2 and 3. No coal, minerals nor stone were seen. The north half of the township is fairly thickly covered with spruce and poplar up to twenty-eight inches in diameter. The growth is lighter towards the south. There is some good timber fringing the lake. With the exception of Sturgeon Lake and the small lake in section 32, the township is poorly watered. No game was seen of any sort, with the exception of ducks on Sturgeon Lake and some partridges. No water-power could be developed. Frosts were noticed up to the middle of June.—*H. M. R. Soars, D.L.S., 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

Tp. 72 This township consists of undulating country wooded with poplar and spruce from six to twelve inches in diameter. The height of land between the basin of Big Smoky River and those of Sturgeon Lake and Little Smoky River crosses the north boundary of section 36. Among the many streams which flow through this township, the most important is Puskwaskau River, the outlet of the Puskwaskau (Marecageux) Lake, lying in section 32. It is a tributary to Big Smoky River. There are hay meadows in sections 32, 34 and 35, and a large spruce muskeg covers the west half of section 32 and nearly the whole of 31. The soil is a sandy loam three to four inches deep with a subsoil of clay.—*A. Saint Cyr, D.L.S., 1904.*

(*East outline.*)—This line passes through some heavy spruce and poplar up to twenty-six inches in diameter. There is much bad windfall in the surrounding country. There are a few good creeks crossing the line. The surface is generally rolling.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 73 A good trail leads from High River to township 73, range 21, and from there a trail was cut by my party into this township. The surface is nearly level and timbered throughout with spruce, poplar and jack pine; the northern portion has been burned over, but is now growing up again with small poplar and willow. The soil is well suited for farming, as it consists of black loam about four inches deep on a subsoil of clay or sandy clay. Two timber berths take up a portion of the township and contain fine spruce up to thirty inches. There is also a block of good spruce in the centre of the township. No hay meadows were noticed, but good horse feed can be obtained in summer on the burned areas. The only permanent stream is Puskwaskau River; it is about sixty feet wide, four feet deep and has a current of three miles per hour. The other creeks of which there are several, dry up in late summer. Summer frosts prevail, but they do no great damage, and do not hinder farming operations. Dry wood fuel is abundant, but no coal, stone-quarries nor minerals were found. Signs of moose and bears were noticed, but partridges were the only game actually seen.—*A. W. Ponton, D.L.S., 1914.*

Tp. 76 (*North outline.*)—Section 36 is on a general ascent and covered with heavy poplar and spruce. Section 35 is descending to where Smoky River is met at the line between sections 34 and 35, at which point it is, by aneroid barometer, five hundred and eighty-six feet below the height of land. The bed of the river is fourteen chains wide, but at present the water only covers nine chains in width. The depth is from four to twelve feet and the current too rapid to ford. The east half of section 34 is the west bank of the river, and consists of a big landslide covered with timber lying in all directions. The west half of section 34 together with sections 33, 32 and 31 is gently rolling country with a light covering of leaf mould on sand subsoil. The timber is mainly jack pine with some spruce and poplar. There is very little vegetation and the country is totally unfit for farming purposes.—*Henry W. Selby, D.L.S., 1905.*

Tp. 77 (*Sections 26 and 35.*)—This district will in the very near future be accessible by the Edmonton, Dunvegan and British Columbia Railway which is expected to cross the north-west quarter of section 35. The soil consists of a thin layer of black loam overlying a sandy clay subsoil and is rated as third-class. Both sections are heavily wooded with poplar and scattered spruce of fair dimensions. The surface of section 26 is rolling and that of section 35 is broken by the valley of Smoky River. Good water is to be had in all the small streams and also in Smoky River. No hay marshes were noted and no water-power can be developed. Wood for fuel is plentiful. No stone-quarries were seen. An oil claim has been staked in section 2 of the township to the north.—*L. E. Fontaine, D.L.S., 1914.*

Tp. 78 The best route to this township is the wagon road from Grouard to Kimiwan Lake which continues on, following fairly well the Edmonton Dunvegan and British Columbia Railway right of way to Smoky River in this township. The greater part of this road is in good condition. About fifteen miles from Smoky River the road passes

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

through three or four short bad moss swamps and a few miles farther some willow swamps. About eight miles of the road immediately east of what is called Winagami Lake is very rough and wet with many bad mud holes. The soil is a black loam averaging two inches in depth with a clay subsoil except along the flat close to Smoky River where the black loam is from six to eighteen inches deep. The surface generally is heavily rolling and broken by the valley of Smoky River which is about three and one-half miles wide and from seven hundred to eight hundred feet deep. At present this is covered with burned poplar from four to twelve inches in diameter with a thick growth of second-growth poplar from twelve to fifteen feet high. Along both sides of the river there is a flat from one-half to three-quarters of a mile wide on which are open patches where hay can be obtained in small quantities. There are large hay sloughs in the south-west quarter of sections 6 and in the adjoining country to the south and south-west. The water is fresh in Smoky River and generally in the sloughs, and the supply is sufficient and permanent. Smoky River from bank to bank is approximately eighteen chains wide and flows at the rate of three miles per hour. The depth varies so much along the river, depending on the time of the year and weather conditions, that an estimate would be very rough, but the main channel would be well over twelve feet deep. In extremely high water the flat is liable to be flooded with possibly a foot of water. There are no rapids nor falls on the river in this township. No coal or lignite veins, stone-quarries nor minerals were found. During the latter part of July and August the heat was excessive with frost during the nights in August. According to settlers summer frosts occur annually. Wood is the most readily available fuel and can be obtained in any part of the township. Black and brown bears, moose, deer, rabbits, ducks and partridges are found, bears being very numerous.—*T. A. Davies, D.L.S., 1914.*

Tp. 79 The best route to this township is the wagon road from Grouard to Smoky River by way of Kimiwan Lake, crossing Smoky River in township 78, range 24, and continuing as far as section 29 in township 78, where a pack trail leads north-easterly into this township. This road is in very fair condition with the exception of eight miles immediately east of what is called Winagami Lake which is very rough with some bad mud holes and also a portion about fifteen miles east of Smoky River where the road goes through a few bad moss swamps, and a few miles farther on through some willow swamps. The soil is a black loam averaging four inches in depth with a clay subsoil. The surface generally is level and covered with poplar from four to twelve inches in diameter and willow. There is a considerable area of willow swamp which at the time of survey was covered with from six inches to three feet of water. Hay could be obtained during dry weather in large quantities from marshes in sections 7, 8, 17, 18, 19 and 20. The water is fresh but the supply could not be called sufficient and permanent. It is obtained from the sloughs and a creek which flows along the east boundary of sections 10 and 3. There are no water-powers. Weather conditions were favourable for farming purposes. Summer frosts occur. Wood is the most readily available fuel and is procurable in all parts of the township. There are no coal or lignite veins, stone-quarries nor minerals. Moose and bears are numerous, but deer, rabbits, ducks and partridges are also found.—*T. A. Davies, D.L.S., 1914.*

Tp. 80 (*North outline.*)—The surface is undulating and is wooded with poplar, birch, cottonwood and some spruce from five to fifteen inches in diameter. The soil is a black loam from two to five inches deep over a clay subsoil. There are many small willow swamps, and a large muskeg extends north of section 33. A small creek flowing northerly intersects the north boundary of section 32.—*Arthur Saint Cyr, D.L.S., 1906.*

The best route to this township is the wagon road from Grouard to Smoky River by way of Kimiwan Lake which crosses Smoky River in township 78, range 24, and continues as far as section 29, in township 78, where a pack-trail leads northerly through township 79 and into this township. This road is in very fair condition with the exception of about eight miles immediately east of what is called Winagami Lake which is very rough with some bad mud holes and also a portion about fifteen miles east of Smoky River where the road goes through a few bad moss swamps and some miles farther on some willow swamps. The soil is a black loam averaging three inches in depth with a clay subsoil. The surface generally is level and covered with poplar

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

from four to twelve inches in diameter and willow. There is a considerable area of willow swamp which at the time of the survey was covered with from six inches to three feet of water. Hay could be obtained in very dry seasons or by draining the numerous swamps. The water is fresh but the supply might not be permanent as it comes altogether from the various ponds and sloughs. No land is liable to be flooded. There are no water-powers. Weather conditions are favourable for farming purposes, the temperature in the summer being very much the same as in the more southern part of Alberta but lower in winter. Summer frosts occur. Wood is the most readily available fuel and is procurable in all parts of the township. There are no coal or lignite veins, stone-quarries nor minerals. Moose and bears are numerous, but deer, rabbits, ducks and part-ridges are also found.—*T. A. Davies, D.L.S., 1914.*

Tp. 81 This township is divided into two parts, by Peace River, which enters the township in sections 17 and 18, and flows north-easterly through its centre. That part of the township which lies to the south-east of the river can be reached only by crossing the river from the north-west side. This portion of the township is heavily timbered with poplar, spruce, balm of Gilead, cottonwood, white birch and willow. Starting at the river the hills rise to a height of eight hundred feet in about one mile and a quarter; from the top of this rise back from the river the country is nearly level. Adjoining the river banks are a few narrow strips of flat country. On the level back from the river the poplar averages about ten inches in diameter, the spruce eighteen inches and the birch six inches. On the hills, and near the river, the poplar is larger, averaging twelve inches or more, the spruce ten inches and the cottonwood twenty inches, some of the latter being as large as four and one-half feet in diameter. The several varieties of timber are well distributed over all sections of this part of the township. The undergrowth is dense. The soil consists of from one to three inches of humus or black loam overlying clay subsoil. With the exception of a marsh in sections 2 and 3, no hay could be cut, though pasture in the form of peavine and grasses is found in the woods. Later in the summer water is very scarce at the top of the hill, and what there is is very hard and slightly alkaline. There are no streams, and no lands are liable to be flooded. During this season no frosts occurred until late in August. Wood for fuel is plentiful. No coal nor lignite veins were found. No stone whatever occurs, and no minerals were seen. A considerable number of ducks, a few ruffed grouse, geese and swans were seen. There are quite a number of moose and bears. A few beaver were seen around the banks of Peace River, but there are very few left in the country. With the exception of sections 31 and 32, which are nearly level, all that portion of this township which lies on the left bank of the river consists of rough hilly country, intersected by deep canyons down which small streams trickle. These creeks, after carrying off the spring flood water, are practically dry, but a few of the larger ones have a little water in them all summer. The hills are almost bare, but every little depression is filled with a dense tangle of scrub, poplar and willow. The ravines and canyons contain a small amount of timber, a few spruce averaging about eighteen inches in diameter and poplar averaging six inches in diameter. About fifty per cent. of this part of the township is open. The soil is two or three inches of black loam on a clay subsoil. The hills are so well drained that it would be practically impossible to raise any crop on them. A good pack-trail follows the river bank from Shaftesbury Settlement through this township to Dunvegan, more than fifty miles up the river. A wagon could be used in sections 31 and 32. A small creek runs through sections 33, 28 and 22. This water is very hard and the volume in summer is very small. No lands are liable to be flooded, and no water-power could be developed. Practically no hay could be cut, but there is good pasture. Summer frosts rarely occur. Loose stones occur in places, especially near the banks of the river, but no stone in place was seen. Fuel in the form of small poplar and willow occurs throughout this portion of the township. No coal nor lignite veins nor economically valuable minerals were seen, though a little float coal was picked up on the shore of the river. Peace River flows through this township at a rapid rate, the current averaging two and one-half to three miles an hour. The river is about thirty chains wide, but numerous islands make many channels, some of which are dry at low water (August until the following spring). The river water is fresh and not so hard as the other water in the country. In the spring flood the water raises from ten to eighteen feet, but does no damage,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

as the banks are high. A few prairie chickens, ruffed grouse, geese, ducks, sand-hill cranes and some signs of bears were seen.—*H. S. Holcroft, D.L.S., 1908.*

Tp. 82

There are two main trails coming up the hill from Shaftesbury Settlement on Peace River to this township, one from the rear of lot No. 12, known as "Brick's" trail and one from Indian reserve No. 151C, known as "Xavier's" trail. Both of these trails are in fair condition but the ascent from Peace River to the top of the hill is about six hundred and fifty feet. "Brick's" trail passes through sections 36, 35, 34, 33, 32 and 31, while "Xavier's" trail passes through sections 1, 2, 11, 10, 9, 16, 17 and 18. From the top of the hill back from the river both these trails are good. They join in township 82, range 25, and pass by "Old Wives" Lake to Dunvegan. The soil is black loam with a depth varying from two to six inches, overlying a subsoil of clay in the southern and eastern portions of the township and a gravel subsoil in the northerly and westerly portions. The soil is suitable for growing all the products of the country. About fifty per cent. of the township is open while most of the remainder is covered with willow and small poplar. All that part of the township lying to the south-east of a line drawn from the south-east corner of section 5 to the quarter section post on the east boundary of section 13 is hilly and broken by numerous ravines. The remainder of the township is gently rolling. A few spruce averaging from eight to ten inches in diameter occur in the ravines in sections 4, 12, 13, 14 and 24. Scattered throughout the remainder of the township are numerous bluffs of small poplar, with an occasional poplar averaging eight inches in diameter. No slough hay occurs. Upland hay could be cut in a moist season in sections 19, 20, 29, 30, 32, 21, 28, 33 and 27. The only places in this township where water occurs on the surface are in three small creeks, one rising in section 14, one in section 23 and one in section 4. These creeks rise from springs; the water, where it comes out of the ground, is fresh but quickly becomes hard and slightly alkaline by absorption of salts from the surface soil; these springs are permanent. The remainder of the township is practically dry in summer time. No floods are liable to occur. No water-power of any importance could be developed. The climate is mild and warm. During the past summer no frosts occurred, and the season was rather dry, but a fine autumn was experienced. Fuel consisting of poplar, willow and some spruce is plentifully distributed throughout the township. No coal nor lignite veins, nor minerals of economic value were seen and no stone in place was discovered. Game is scarce. A few prairie chickens, ruffed grouse, red foxes and coyotes were seen. Indian reserve No. 151 occupies the greater part of sections 20, 27, 28, 29, 32, 33 and 34. This is used principally as a hay reserve.—*H. S. Holcroft, D.L.S., 1908.*

Tp. 83

The trail from Peace River Crossing to Dunvegan crosses the south part of this township, and from this trail several branches run northerly to Bear Lake. The soil is black loam from two to twelve inches deep over a clay loam subsoil, and is suitable for mixed farming or grazing. About sixty per cent. of the surface is prairie with an abundance of vetches and peavine in the parts lightly covered with willow and poplar. The remainder is covered with timber consisting of poplar and a few spruce up to ten inches in diameter. The best timber is located in sections 25, 26, 35 and 36, but it is of no commercial value and should be reserved for the use of settlers. An abundant supply of hay can be obtained on all the upland prairie and from meadows along the shore of Bear Lake. These meadows cover an area of about four hundred acres in sections 17, 19 and 20, but during a wet year this area is liable to be flooded to a depth of two to eighteen inches. Bear Lake lies in the north part of this township and covers about eleven square miles. An abundant supply of water fit for domestic use can be obtained in this lake, and in the numerous sloughs throughout the township. There are no available water-powers. The climate is similar to that of Edmonton, and although summer frosts occur they will likely disappear when the land is settled and cultivated. Wood fuel is abundant, but no stone-quarries nor minerals were noticed. Black bears, prairie chickens, partridges and ducks constitute the game to be found.—*J. H. Smith, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

Tp. 84 The surface of this township is undulating, stony and swampy in places, and covered with windfall. The soil is a black loam two to six inches deep; the subsoil is clay. All the timber has been destroyed by fire. A creek coming from the north-west crosses the base line near the corner of section 32. Through the middle of section 36 runs an Indian trail, leading to Bear Lake. The eastern extremity of Whitemud Hill is in section 35.—*Arthur Saint Cyr, D.L.S., 1906.*

A wagon road from the township to the west, along the north boundary of this township furnishes a means of access. This trail was very wet in spring, but was hard and dry in summer. The soil consists of a thin layer of black loam with a gravel and clay subsoil. The surface is level and covered with second-growth poplar with windfall in places. Hay is plentiful on the shore of Cardinal Lake, which is the only permanent supply of water. Some small streams which flow into the lake probably dry up in summer. A creek flows out of the lake in section 15; in May it was about thirty feet wide, three feet deep and had a current of two miles per hour, but no water-power could be developed from it. Dry poplar and spruce form an abundant supply of fuel, but no coal, stone-quarries nor minerals were found.—*A. G. Stewart, D.L.S., 1912.*

Tp. 85 The best route into this township is from Peace River Crossing along the Dunvegan Road as far as the Catholic mission in Shaftesbury Settlement, thence north-westerly along the wagon trail to Whitemud River which runs through the south-east corner of this township; the road is good except around the east end of Bear Lake, where it is very soft in the spring. The soil consists of a few inches of black loam with a clay or a clay loam subsoil, and is suitable for mixed farming. The surface is gently rolling and has nearly all been burnt over during the last few years. It is now covered with small poplar, alder and willow with clumps of jack pine and spruce and some tamarack in the muskegs; there is also considerable windfall and numerous dead standing stumps. The timber, consisting of spruce, tamarack and jack pine, does not reach more than eight inches in diameter, and is of no commercial value. There are several small hay sloughs scattered all over the township and hay is plentiful everywhere, but very little could be cut at present owing to the windfall, though it makes good feed for stock. Water is plentiful in the numerous small creeks and it is fresh and clear; the land is not liable to be flooded. Wood fuel is plentiful everywhere. There are no water-powers, stone-quarries or minerals. The climate is the same as that of Edmonton; there was one light summer frost in June, but it did no damage to the crops in this vicinity. Moose, bears, foxes and prairie chickens were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 86 The wagon road from Lake Cardinal enters this township at the north-east corner of section 12 and running north-easterly crosses Whitemud River at a ford in the north-west corner of the township. This road is in a fair condition for travelling, but in wet seasons it is not very good on account of crossing so many hay meadows. The ford is not very good and the load had to be rafted across; sometimes the wagon has to be taken apart and rafted, but at the time of low-water the wagon can be pulled across with long ropes, the mud being bad on the shores. The soil is generally a good black loam with a subsoil of clay and would make good land for cultivation in the open patches. The surface is generally slightly rolling and mostly timbered except immediately along the trail where there are many small patches of prairie and meadow land. The timber is chiefly poplar averaging eight inches in diameter. There are some small clumps of spruce up to eighteen inches in diameter along Whitemud River in sections 31 and 32, but there is practically no merchantable timber. Plenty of hay can be procured from the meadows and prairie along the trail in sections 28, 27, 26, 23 and 24. An abundant supply of water may be obtained from the creeks and Whitemud River. Two creeks unite in section 28 and discharge into Whitemud River near the north-east corner of section 36. This stream averages three feet wide, is one foot deep and flows at the rate of about one mile per hour. Whitemud River, which crosses the north-west corner of the township and also the east boundary of section 25, averages one hundred feet wide, is four feet deep and has a current of two miles per hour. It is dammed in many places by beavers, thus making it sluggish and deep. It floods its banks at the time of high-water, making access to the river impossible.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

During this summer (1913) the flooding was very bad, all the water-courses and small valleys being flooded. No water-power is available. The climate was good except during the rainy season. During June the river rose twenty feet after a few days of heavy rain. There were no frosts in the summer months. Plenty of dry wood can be obtained for fuel. No coal, stone-quarries nor minerals were noticed. A few partridges, prairie chickens and geese are the only game. One settler is located on the high land adjoining the river in section 31 where he grows fine potatoes and oats. The grasses for grazing are very good in the vicinity of the trail.—*G. A. Tipper, D.L.S., 1913.*

Tp. 87 This township can be reached either by a wagon trail which crosses the west boundary near the north shore of Helen Lake or by the Fort Vermilion pack-trail which crosses the south boundary of section 5 and runs almost due north through the township. The former is a surveyor's trail and is in fair condition. The soil is a black loam of fair depth with a subsoil of clay. On the prairie openings in sections 18, 17 and 20 some farming can be done but the land is rather low and inclined to be wet especially in bad seasons. The greater portion of the eastern part of the township and all the land south of Beaton Creek, except that in sections 5 and 6, is worthless. Most of the land is low and the water collects and forms large marshes, thus making it useless for even hay meadows except in dry seasons. Dense *brulé* exists in the north-western part of the township. There are considerable areas of prairie in sections 5, 6, 7, 18, 17, 20 and 19. The remainder of the township is covered with willow in the south and burnt poplar and spruce in the north. Hay can be cut on the meadows in sections 5, 6 and 7, also in favourable seasons in sections 17, 18, 19 and 20. This township is well watered by creeks. Beaton Creek which almost parallels Whitemud River and flows into it in section 1, averages fifty feet wide, is three feet deep and has a current of from one to two miles per hour. This creek is very erratic in its course. The flooding of its banks is the source of great inconvenience. Whitemud River flows through the southern corners of the township and is about one hundred and twenty-five feet wide, is six feet deep and has a current of two miles per hour. Because of the beavers and several log jams the channel is deepened to ten or fifteen feet in some places. Both the river and creek are bordered by dense willow, which is almost impassable. The lands adjoining the creeks and river were all flooded at the time of survey and hence on the low meadows, lakes were formed. There are no water-powers, stone-quarries nor minerals. We experienced very fine weather while here with no frosts. Plenty of dry wood is available for fuel. No game was seen.—*G. A. Tipper, D.L.S., 1913.*

Tp. 88 (*North outlines; ranges 24, 25 and 26.*)—The soil in these townships is largely humus and moss in the muskegs and marshes, and clay or clay loam on the higher lands. The surface is rolling and has apparently been swept by fire right up to the foot of the Clear Hills. It is now largely covered with brush and heavy windfall, with a few clumps of large poplar and spruce. There is some hay around the lakes in range 25 and along the streams flowing into Battle River, but it is of poor quality, and after being frozen made very poor horse-feed; the summer frosts to which this country is subject appear to have more effect on it than on that to the south. Water is plentiful, but there are no water-powers. Wood is the fuel most readily available and is abundant in these townships. Neither coal, lignite, stone-quarries nor minerals of economic value were seen. The northern part of range 24 in township 88, ranges 25 and 26, and the twelve miles north along the meridian, passes through a rather poor country, and will not probably be called for at an early date.—*A. H. Hawkins, D.L.S., 1912.*

RANGE 25

Tp. 68 (*North outline.*)—The western half of this township is rolling and lightly covered with willow scrub and bluffs of small poplar and birch, while the eastern half is level. The land is stony on the surface, and there are many hay meadows. A pack-trail from Sturgeon Lake to Simonette River crosses the north boundary of this township at the north-east corner of section 35. Creeks, giving an ample supply of good water and flowing

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

southerly towards Simonette River, intersect this line in every section. The soil is a sandy loam from four to twelve inches deep, with a subsoil of clay or clay and stones. At about half a mile north of the line there is a range of low hills with a large meadow extending along their south base. This would be a good ranching country.—*Arthur Saint Cyr, D.L.S., 1904.*

(*North outline.*)—See report on township 68, range 23.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 69 A wagon trail enters this township in the south-east corner of section 25 and leaves in the north-west corner of section 34. A branch of this trail which we cut for the survey runs to a point in the centre of the township. There is also a pack-trail running across section 1 and another running about a mile south of the north boundary. This last is a poor trail. The soil of the township is fair. The surface is covered with light poplar and willow brush, some birch and alder, but no timber of any value. No hay marshes were seen. A permanent supply of water is furnished by the large lake in sections 20 and 21 and the two small ones in sections 27 and 5. There are also several creeks, mainly of spring origin. The largest of these is the one which runs north in sections 35 and 36 and empties into a lake in section 1, township 70, range 25. No water-power could be developed. Frosts were noticed up to the middle of June. No coal nor minerals were noticed. Game seems scarce, only a few ducks, prairie chickens and partridges being seen.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 70 The Edson-Grande Prairie Road runs through the north-east corner of this township from the east boundary of section 25 to the north-east corner of section 33. There is also an old sleigh trail running across the centre of the township from section 24 to section 30. A very poor trail has been cut from this last trail at the north-east corner of section 21 to the township to the south, crossing the south boundary of section 3. The southern portion of the township is well supplied with water by the lakes in sections 1, 10, 9, 5, 8 and 18, but the creeks in the northern part are generally dry in summer. The south part is wooded with spruce and poplar, some of the former ranging up to thirty inches in diameter, but there is not sufficient to be of commercial value. The remainder of the township has been fairly well burned over. Hay can be cut around the lakes, but there is practically no upland hay. No minerals, coals nor stone were seen. Game of any sort was very scarce with the exception of ducks on the lakes and some prairie chickens and partridges. No water-power could be developed.—*H. M. R. Soars, D.L.S., 1912.*

Tp. 71 The wagon road from Edson to Grande Prairie runs in a north-westerly direction through the south-west portion of the township. The surveyors' pack-trail leaves the wagon road in section 9 and runs in a northerly direction leaving the township in section 33. An old Indian pack-trail from Sturgeon Lake crosses the northern part of the township. The soil of this township consists mainly of a few inches of black loam, vegetable mould, leaves and moss over a white clay subsoil and, no doubt, when the land is cleared of the abundant growth of timber it will make an excellent agricultural district. The surface is gently rolling throughout. The two southern tiers of sections have been burnt over and are covered with wind-fall, dead and standing timber, occasional patches of green timber and small poplar and willow scrub. In the remainder of the township there is a fine area of virgin forest consisting principally of spruce and poplar with scattered birch, alder and willow. The best part of this timber extends roughly to a line through the centre of sections 25, 26, 27, 28, 29 and 30. In this portion there is spruce up to thirty-six inches in diameter with a height of from sixty to seventy feet, and poplar up to twenty inches in diameter and from fifty to sixty feet high. The birch is scattered and of poor quality running up to ten inches in diameter. With the exception of that contained in two small marshes in sections 5 and 8 there is no hay. The remainder of the township is covered with moss. A few small fresh-water creeks drain the township, so that the land is never liable to be flooded. No water-power could be developed. The climate is equable with no summer frosts on account of the large amount of timber. No stone of any kind nor minerals were seen. Wood is the only fuel available. Moose, lynx and rabbits are plentiful and an occasional bear may be seen.—*A. E. Glover, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—Continued.

Tp. 72

(*North outline.*)—The forest extends westerly through this township as far as the middle of section 32, where the brulé and windfall begin. The surface of this township is nearly level and is well drained by several large creeks, feeders to Puskwaskau River. The soil is black loam three to ten inches in depth overlying a subsoil of clay, or clay and stones. The timber is mostly spruce, poplar, cottonwood and birch from six to fifteen inches in diameter.—*Arthur Saint Cyr, D.L.S., 1904.*

(*East outline.*)—This line is generally through a rolling country, covered with spruce and poplar averaging twelve inches in diameter. It is fairly well watered with creeks. There are several beaver dams.—*H. M. R. Soars, D.L.S., 1912.*

The soil consists of a few inches of black loam and moss with a heavy clay subsoil. The surface in the eastern two-thirds of the township is level while the remainder slopes to the west and is considerably broken and rolling. The entire township is covered with spruce, poplar, jack pine, birch and small balsam. In sections 7, 8, 9, 16, 17, 18, 19, 20, 21, 28, 29 and 30, the spruce and poplar reach an average diameter of twenty inches and would possibly run about four hundred thousand feet, board measure, to the section. The remainder of the township, with the exception of some brulé in sections 15, 22, 23 and 14, is very densely wooded with small timber which would be suitable for railroad ties. An abundance of hay grows in this brulé, but on account of windfall it could not be cut. No hay was found in any other part of the township. There are many small creeks of good water and the supply will be permanent as long as the timber remains. No land is liable to be flooded. This district has an equable climate with no summer frosts. There is an abundance of fuel in the form of wood. No stone-quarries, water-powers nor minerals were observed. Moose and rabbits are plentiful, but there are also some bears and lynx.—*A. E. Glover, D.L.S., 1914.*

Tp. 73

This township may be reached either by the old Indian pack-trail from Sturgeon Lake to Spirit River Settlement which crosses the township in a north-westerly direction, or by the surveyors' pack-trail which enters from the township to the south at the south-west corner of section 2 and runs in a northerly direction, joining the Spirit River trail near the north-east corner of section 16. The soil consists of a light covering of moss and vegetable mould over a heavy clay subsoil. The surface is gently rolling and thickly covered in the portion south of Puskwaskau River by poplar, spruce, jack pine, birch, alder and willow with a heavy undergrowth in places of high-bush cranberry. North of the river there is considerable brulé with a second growth of poplar and willow. Many spruce swamps are found in this portion. There is no merchantable timber as the larger trees are scattered. On the whole the timber averages from six to eight inches in diameter. Around the lakes in sections 1, 2, 11 and 12 there is an abundance of hay, but as the land is very marshy it cannot be cut. The water supply is abundant, there being many permanent fresh-water streams in the township. The only one of any importance is Puskwaskau River which averages eighteen feet in width, from one to three feet in depth, and has a current of three miles per hour. No land is liable to flooding. Five small lakes containing fresh water of good quality are found in this township. Their depths vary from seven to ten feet. The climate is equable with no summer frosts. Wood is the only fuel available. There are no stone-quarries, water-powers nor minerals. Moose, bears, beavers, lynx, muskrats, rabbits and wood-chucks comprise the game.—*A. E. Glover, D.L.S., 1914.*

Tp. 76

(*North outline.*)—This line runs through a gently rolling country, the ridges being nearly all sand with a light growth of jack pine more or less burnt over. Between the ridges are sloughs and large beaver meadows surrounded by old dry slash and windfall. On section 33 there has been a large pond or lake, now dry, the bed of which is alkaline sand and hard enough for a man to walk upon, but unsafe for horses or cattle. A creek flows north-easterly on section 33 towards Smoky River. This township as seen from the line is unfit for farming purposes.—*Henry W. Selby, D.L.S., 1905.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—Continued.

Tp. 77 (*Outlines.*)—The country along the base line is swampy for the first three miles and of a rolling sandy nature for the next two. The last mile of the base line and the first five miles of the eastern boundary are the usual poplar and spruce country. The last mile of the east boundary and the whole north boundary is through a network of open marshes interspersed with some belts of very good land rather heavily timbered.—*C. C. Fairchild, D.L.S., 1902.*

This township was reached in winter by following a pack-trail which runs from the south-west corner of the marsh, known as Coote Lake, in the township to the north. As this trail crosses many marshes it would be difficult to enter the township in a wet season. The Spirit River trail crosses the south end of Coote Lake. The soil of the township is rather light, consisting generally of a good sandy loam. The surface with the exception of the marshes, is quite flat and is wholly covered with poplar of varying size. These marshes are mostly found in the northern portion of the township, and are covered with grass. The southern portion is low with a large amount of muskeg. A considerable portion of the north-west part has been burned over and is now covered with standing dry timber. There is at present little or no timber of any value. Slough grass can be cut in many places, namely: fifty acres in section 6, twenty acres in section 19, twenty acres in section 32, one hundred acres in sections 8 and 19, ten acres in section 33, and thirty acres in section 36. The water is fresh and of fairly good quality. A creek of about six feet in width, one foot in depth and with a current of one mile per hour flows in an easterly

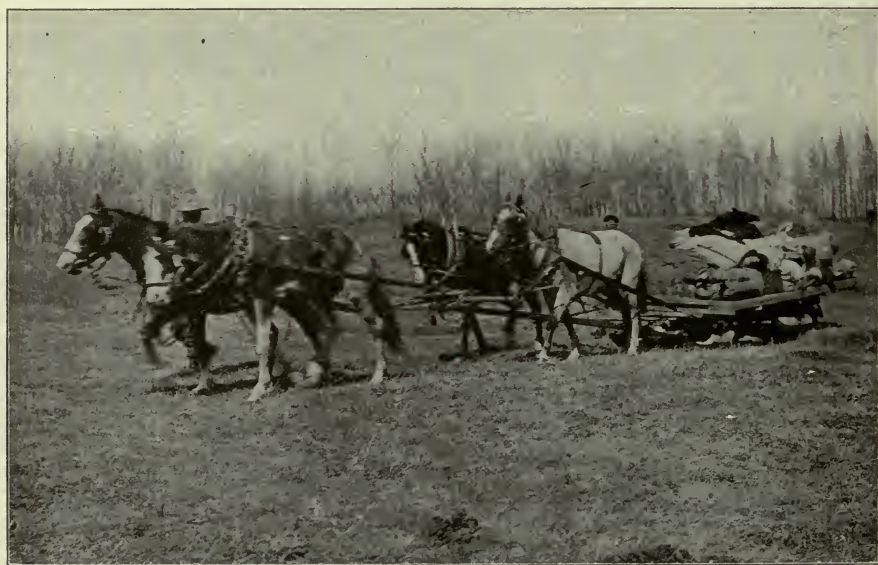


Photo by O. Rolfsen, D.L.S.
On the Trail 20 miles east of Boundary Lake

direction across the centre of the township. Throughout the eastern portion of the township this creek forms high banks, increasing to about one hundred and fifty feet high at the east boundary. No land is liable to be flooded. There is no water-power available. The climate is very fair and no summer frosts of any consequence have been recorded. Wood for fuel is plentiful everywhere. No stone, coal nor minerals were seen. The game consists of bears, moose and ducks.

Tamarack Lake.—The horizontal distance between the high and low water marks is very indefinite. The shore is marshy and covered with grass. The bank along the north-east, south

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

and most of the western side is well defined. At the north-west corner there is a large meadow. The land surrounding the lake is generally low and marshy, except towards the north where it rises to quite a hill; it is densely timbered with spruce. If any drainage outlet exists it is to the east by seepage through the grass. The surface of the lake is almost all open water with some reeds in the west and south parts. The water is fairly clear but becomes rather stagnant during a dry summer. The depth is probably ten feet, it being impossible to state it accurately on account of the muddy bottom.—*G. A. Tipper, D.L.S., 1914.*

Tp. 78 (*Partial.*)—The south two-thirds of this township is very marshy over the greater part, and Coote Lake is little more than a great marsh. The township is heavily timbered in the north, while the south is heavy in places and light in others. The country adjoining the east and south sides of Coote Lake is full of marshes of varying size and practically grades No. 4 for settlement. The pack-trail from Grouard to Spirit River Settlement crosses this township, running north to Coote Lake. The soil is excellent where not marshy, and in some of the dry marshes hay six feet in height was seen.—*C. C. Fairchild, D.L.S., 1902.*

This township may be reached by the Spirit River wagon trail which is in fairly good condition as far as section 22 of this township, but beyond this it is very wet and difficult to travel by wagon. The soil excepting that of the marshes is rather heavy, but is suitable for agriculture. The south-western portion of the township is occupied by a large marsh which was formerly called Coote Lake. The water has receded a great distance leaving very large meadows. A moose was seen to wade across the marshy part so that it cannot be very deep. Heavy bluffs of poplar are found throughout this area. There is a narrow strip of marshy land running east from this large marsh through the centre of the township in which is evidently its outlet during high water to Smoky River which is a few miles to the east. The remainder of the township is generally heavily timbered with poplar and a few scattered spruce. Some sections have been overrun by fire. There is an almost unlimited quantity of hay to be had from the meadows surrounding the marsh and also extending to the east. There is probably 1,000 tons in all available. It is of the slough-grass variety and grows to a good height. These meadows are used as a wintering camp for cattle, of which there were about three hundred last season. Water of good quality is not very plentiful. There are no creeks. The water of the marshes, although not very good, is not unpalatable. The only lands liable to flooding are the meadows surrounding the marsh in time of high water. No water-power is available. The climate was very good and no summer frosts were noted. Wood for fuel is plentiful. No stone, coal nor minerals were seen. The game consists of moose and bears, also numerous ducks and a few partridges and geese.—*G. A. Tipper, D.L.S., 1914.*

Tp. 79 (*East outline.*)—The country is generally heavily timbered. The soil is good and for the most part dry.—*C. C. Fairchild, D.L.S., 1902.*

This township was reached by the pack-trail which enters in section 2. The soil, excepting the marshes, consists of clay with a varying depth of top-soil. The surface is generally slightly rolling with a slight slope to the west. The central part of the township is occupied by an extensive marsh which drains to the west. Hay could be cut around some of the smaller marshes, and in sections 32 and 33 a considerable quantity could be obtained, although the surface is rather rough. The township is generally well timbered with poplar of fair size, except the large marsh mentioned above where clumps of willow grow. The water in the marshes is not of a disagreeable taste. No running water was noted. There are no water-powers. No coal seams, stone-quarries, nor minerals were seen. The large marsh is always flooded, but other than this no land is liable to flooding. The climate was good, and no summer frosts were noted which was probably due to the presence of so much water. Wood for fuel may be procured in many places surrounding the marsh. No game was seen. A few signs of moose were noticed in the southern portion of the township.

Phil Lake.—The shore of this lake is marshy and the banks are not very well defined. The horizontal distance between high and low water marks varies about five chains, except at the north where there is a meadow extending perhaps twenty or thirty chains from the shore. The

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

surrounding land is timbered and fairly low except to the north-east where it is high. The surface of the lake outside of the marsh is free from reeds. The water is clear and fresh. The depth was not accurately obtained, but it is probably about ten feet. The source and outlet are doubtful, there being no definite indications.—*G. A. Tipper, D.L.S., 1914.*

Tp. 80 As only the boundaries and the northern one-third of this township were surveyed, the report is confined to that part of the township. North of Peace River the country is generally rolling prairie with enough timber on some sections to provide for the requirements of the prairie parts. On the margin of the river and extending back in places for a mile or more is a block of as fine farming land as can be found in the North-west Territories. These lands are partially prairie and the soil is excellent. The surface is generally level and a fringe of good timber skirts the river. On the south side of the river, with the exception of the prairie running down to the river, is found heavy timber covering both sidehill and valley. The valley, when cleared, will make excellent farming land, and timber enough can be had for all requirements. A considerable sprinkling of spruce is found throughout the other timber, but not in quantities to recommend its being reserved. On the islands, or rather what are islands at high water, large spruce grows in such quantities that I would recommend its reservation. The twenty-first base line in its fifth mile along the north side of range 25, reaches the summit of the banks of Peace River, which I estimated at nine hundred feet above the river. On this plateau the land is excellent, and not so heavily timbered as the south flat of the river. Numerous small hay marshes abound on this level plateau, but I am informed by the Indians and others that these are practically all dry except in a wet season such as 1901. In fact, great difficulty is met with by hunters in obtaining water here except in the river, Egg Lake and two or three creeks found between. This township, like the one to the west, is very difficult to approach, except by boat or saddle horse, and this objection applies to the whole of the country between the twentieth and twenty-first base lines.—*C. C. Fairchild, D.L.S., 1901.*

This township may be reached by means of Peace River, either by boats in summer or over the ice in winter. It may also be reached by a pack-trail running along the north bank of the river, or by the pack-trail which runs from the south boundary through the centre of the township. This latter trail connects with the Spirit River wagon trail which is a few miles to the south. The soil is very good and suitable for agriculture. The surface is well wooded with poplar up to eight inches in diameter and a small amount of spruce. Spruce up to twelve inches is found on the south slope of the river-valley. The river and its tributaries cut up the township badly, the valley being as deep as seven hundred and fifty feet. The two south tiers of sections are fairly level. On the north side of the river there is a good flat which is occupied by a settler in section 20, and also on the south side there is one of about twenty acres in area. The hills on the north side are mostly bare and would make good grazing land. There is very little hay to be had. The water is of good quality, and is chiefly supplied by Peace River and its tributaries, two of which are found on either side of the river. Water-power could not be easily developed on Peace River as there are no rapids. The climate is suitable for farming. Wood for fuel is plentiful. No coal other than drift pieces along the shore of the river was found. No stone-quarries nor minerals were seen. The game consists of moose and bears.

Peace River.—The horizontal distance between the high and low water marks averages about sixty feet. The shore is gravelly and there are no cut banks. The banks are well defined. The surrounding land is generally heavily timbered on the south side and on the islands. On the north side of the river the land is mostly open on the slopes and lightly timbered above. The valley is about seven hundred and fifty feet deep. The slopes consist of clay, and on the south side it is much steeper than on the north. The valley extends about a mile on the south side, but on the north side it extends into the township to the north. The surface of the river is open, except that there are a few islands and a large projection in sections 17 and 18, which was formerly an island, but is now practically a peninsula. The water is of a bluish colour but is as well as the water of the creeks, of good quality. The depth of the river could not be exactly ascertained, but it is at least ten feet. The width is about twenty chains, but where islands occur it is somewhat wider.—*G. A. Tipper, D.L.S., 1914.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.***Tp. 81**

A trail which leaves lot No. 1 of Shaftesbury Settlement enters this township in section 33. This trail is in moderately good condition. The soil in this township consists of a layer of black loam varying from two to eight inches deep overlying a clay subsoil and should be suitable for growing all varieties of cereals and vegetables. The north half of the township is partly open. Bluffs of small poplar and willow are scattered throughout this portion. Sections 4, 5, and 8 are also more or less open, while the remainder of the township is covered with a more or less dense growth of small poplar, balm of Gilead and willow. In sections 2, 3, 5, 6, 7, 12 and 13 are a few scattered spruce. In a large deep valley in sections 4, 5, 6, 7 and 18, and in sections 2, 3, 10, 11, 12, 13, 14 and 24, which are close to Peace River, the timber is heavier. Poplar and balm of Gilead run up to fourteen inches in diameter. The northern half of the township is rolling, and the remainder is rough and broken by hills and valleys, especially near Peace River. A creek passing through sections 5, 6 and 7 runs in a valley from one hundred and fifty to one hundred and eighty feet deep with steep banks. This creek, with Coldsprings Creek, which passes through sections 33, 28, 22, 21, 15, 10, 3 and 2, and Peace River, provides water for the township. These are the only places from which water can at present be procured, the remainder of the township being quite dry. Coldsprings Creek rises from some cold springs in Indian reserve No. 151A just north of this township. Its water is clear, cold, fresh and hard, the volume varying but slightly the whole year round. This creek averages about five or six feet in width and eight to twelve inches deep, and flows softly; a considerable portion of the more level parts of the township could be irrigated from it. No land is liable to be flooded. One hay meadow occurs in section 32, but upland hay could be cut in most of the open places in the northern portion of the township. Fires run through the country every year, being started by those who have horses ranging out. The fires decrease the wooded area yearly, and this year the fires burned so fiercely that they retarded the growth of the grass considerably. During the months of April, May and June, the climate was mild and dry; a couple of light frosts occurred late in May, but did no harm. Sufficient rain fell to do considerable good to the vegetation. No coal nor lignite veins, stone in place nor economically valuable minerals were discovered. Float coal was seen along the shores of Peace River. Bears and moose were noted, also a few prairie chickens and ruffed grouse; ducks and geese flew over in large numbers. Signs of marten, foxes and coyotes were seen, but there are no gophers or badgers. Evidences are present that elk once existed in this township, but there are none now. The whole township would make an excellent ranching country, and the northern half a fine farming country.—*H. S. Holcroft, D.L.S., 1908.*

Tp. 82

The trail from Peace River Crossing, which is the best in the district, cuts this township diagonally. The subsoil is clay loam covered with black loam from two to twelve inches and mixed farming or grazing could be successfully carried on. In the open parts which constitute about seventy-five per cent. of the township, prairie grass and vetches furnish good pasture, and peavine and vetches grow in the parts lightly covered with willow and poplar. A few spruce and jack pine up to ten inches grow, but they are of no commercial value and should be reserved for settlers' use. Hay grows on about ten per cent. of the prairie. Indian reserve No. 151A is situated in this township in which lies Old Wives Lake, a body of fresh water covering about one hundred and fifty acres. This lake has no surface outlet, but about one mile south springs of good water are located which form a creek four feet wide, four inches deep, with a current of two and one-half miles per hour. This creek flows south through the reserve and empties into Peace River. This lake and creek are the only sources of water supply in the township except sloughs which are numerous and in wet years contain good water fit for domestic use. There are no available water-powers in the township nor were stone-quarries or minerals observed. The climate is similar to that of Edmonton and although summer frosts occur they will likely disappear with cultivation. Wood for fuel is readily obtainable from the poplar bluffs which are scattered over the township. Black bears, prairie chickens, partridges and ducks are plentiful.—*J. H. Smith, D.L.S., 1911.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

Tp. 83 This township may be reached from Old Wives Lake which is on the trail from Peace River Crossing to Dunvegan. About forty per cent. of the prairie is covered with poplar up to sixteen inches in diameter, interspersed with small spruce and willow, while the remainder is prairie with patches of scrub. The soil is two to twelve inches of black loam on a clay loam subsoil well suited for grazing and mixed farming. The timber is of no value commercially and should be reserved for settlers' use. Good hay can be obtained on all the prairie in the township and on about one hundred acres around Bear Lake lying at the north-east corner of the township. This hay land around the lake is liable to be flooded in wet years to a depth of two feet. Good water can be obtained from the lake, from sloughs and from a small creek flowing easterly into the lake. The climate is, in many respects, similar to that in the vicinity of Edmonton, and though summer frosts occur they will probably disappear when the land is cleared and cultivated. The poplar timber furnishes an abundance of fuel, but no stone-quarries nor minerals were seen. Game, consisting of black bears, prairie chickens, partridges and ducks is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 84 (*North outline.*)—The north boundary of this township runs over the south slope of the Whitemud Hills, where all the timber was destroyed by fire a few years ago. The surface is high and rolling and the land, which is stony in places, is covered with willow and alder scrub and second-growth poplar. The soil consists of a few inches of loam over a clay subsoil. A large creek running south crosses the base line at the north-east corner of section 32, and flows into the west end of Bear Lake. A well-defined pack-trail follows along the east bank of this stream, and leads to the south shore of Bear Lake, where it joins the wagon road to Brick's Settlement on Peace River. Other small streams also cross the line in every section, all flowing into Bear Lake.—*Arthur Saint Cyr, D.L.S., 1906.*

(*East outline.*)—The trail from Peace River Crossing to Dunvegan passes south of this township and furnishes the only means by which the township may be reached. The soil is composed of a little black loam or red sand on a clay subsoil and is not suitable for farming. The surface is generally rolling and is covered with small poplar, spruce and tamarack, but none of it is of commercial value. No hay meadows, water-powers, stone-quarries nor minerals were seen. The timber throughout the township furnishes an abundance of fuel. Game consisting of moose, bears, beavers, marten and partridge is plentiful.—*J. H. Smith, D.L.S., 1911.*

This township can be reached by a good wagon trail from the south-west part of Cardinal Lake as far as section 11. From there we extended the trail north-westerly to section 32 where it joined another wagon trail running along the base line. The surface soil is rich loam with a gravel subsoil in the north half and a clay subsoil in the south half. The whole surface is practically level. Patches of open prairie lie in sections 1 and 2, but the remainder is covered with second-growth poplar and spruce, the large timber having been all fire-killed. Marsh hay can be obtained around Cardinal Lake. Some streams flowing into the lake in section 1 appear to have a permanent flow. Wood fuel is abundant, but no coal, stone-quarries nor minerals were seen. Signs of moose were noticed and ducks are numerous around the lake.—*A. G. Stewart, D.L.S., 1912.*

Tp. 85 The best route into this country from Peace River Crossing is by a wagon road to the west end of Bear Lake, thence northerly following an old pack-trail which has been opened up as a wagon road; the road is good except during the heavy rains in the spring, when the bridges over the creeks are liable to be washed out. The soil consists of a few inches of black loam or black muck with a good clay subsoil, and is very suitable for mixed farming. The surface is rolling and has been swept by fire during recent years. It is covered with second-growth poplar, heavy alder, and willow, the alder predominating, excepting a few sections in the north-west corner, where there is some heavy timber. The timber is situated in sections 19, 20, 28, 29, 30, 31, 32, 33 and 34; it consists of spruce, poplar, jack pine and some birch, and reaches twenty-four inches in diameter, but it is too scattered and mixed with small timber to be of commercial value and should be left for the use of settlers. Very little hay could be cut in this township as there is practically no prairie, but feed for stock is plentiful everywhere. Fresh

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

water is plentiful in the numerous small creeks, and the country is not flooded during the heavy rains. There are no water-powers, stone-quarries or minerals. Wood fuel is plentiful everywhere but no indications of coal were seen. The climate is the same as that of Edmonton; there was one summer frost, but it was too slight to do any damage. Moose, bears, foxes, partridges and ducks were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 86 The route to this township is Whitemud River wagon trail as far as Whitemud River and thence westerly to Flood Lake, passing along its south shore. This trail, except the portion around the lake, is in fairly good condition in wet seasons. The soil is very good with a fair depth of black loam over a clay subsoil. The south portion is on a large range of hills but the remainder of the township is almost level. Fairly good merchantable spruce can be found on the hills in the southern tier of sections and also in sections 7, 8, 11, 12, 13 and 14, but it is not easily taken out as there are no nearby streams. The remainder of the township is covered with poplar and willow. Some small openings of prairie exist in sections 25, 26, 35 and 36. There is little or no hay, but plenty of green feed may be obtained. This township is well watered by the many creeks which are usually about three feet wide and one foot deep. Parts of sections 28, 29, 32 and 33 were flooded. Whitemud River, which flows through the north-east corner of the township is about one hundred feet wide, is six feet deep and has a current of two miles per hour. When in flood it covers the adjacent land for a distance of about three hundred feet. Flood Lake was swollen greatly after the rains, at the time of survey. There are no water-powers, stone-quarries nor minerals. Wood for fuel is found in many places. Ducks, geese and partridges were the only game seen. The weather was extremely dull and cloudy during the time of survey.—*G. A. Tipper, D.L.S., 1913.*

Tp. 87 (*Ranges 25 and 26.*)—The route to these townships is the Whitemud trail which was opened out for wagons almost to the Sixth meridian. This trail is fair. The soil is a good black loam with a clay subsoil. With a little clearing, mixed farming could be carried on along the trail, but not so in the northern portion which is timbered heavily with poplar and some spruce towards the north-west corner. The surface is generally rolling with a fair-sized hill in the north-west part. There is little hay except what may be cut in the openings. The water is of good quality and is quite plentiful. Beaton Creek, a stream about four feet wide and two feet deep with a current of one and a half miles per hour, flows across these ranges. Whitemud River which flows through the southern tier of sections, averages eighty feet wide, is three feet deep, and has a current of two miles per hour. The river is quite shallow here as there are not many dams, and many fords exist. Only lands adjacent to the river and creek are liable to be flooded. There are no water-powers, stone-quarries nor minerals. Plenty of dry wood can be obtained. The weather was fine at the time of survey (July and September), and frosts were noticed. Prairie chickens constitute the game.—*G. A. Tipper, D.L.S., 1913.*

Tp. 88 (*North outline.*)—See report on township 88, range 24.—*A. H. Hawkins, D.L.S., 1912.*

RANGE 26

Tp. 68 (*North outline.*)—Simonette River flows northwards through this township and crosses its north boundary in section 33; on both sides of the river are steep hills, one hundred and seventy-five feet high. At some distance from the river the ground is undulating, while in its immediate vicinity its surface is rough and furrowed by deep ravines. Belts of large spruce timber which have been spared by fire were noticed in the flats along the river. On the high lands one hundred and seventy feet above the river, some green timber is also found in bluffs, separated by large tracts of fire-killed timber. Sections 35 and 36 are quite open, with patches of willow and scrub poplar here and there. The soil is very good, being a black and sandy loam eight to ten inches deep over a clay subsoil. Near the river the subsoil is generally sand or stone and gravel. The eastern half of this township is sufficiently open, and there is enough wild hay growing to render it fit for ranching. There are a few small swamps and muskegs in the township.—*Arthur Saint Cyr, D.L.S., 1904.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

Tp. 70 This township may be reached by following the Edson-Grande Prairie Road to a point about a mile and a half west of Sturgeon Lake, and thence by an old sleigh road that runs to Grande Prairie by way of Simonette River. The whole township has been overrun by fire and as a result the soil in the brulé is rather light. It could all be considered as second-class land from an agricultural standpoint as peavine and vetches seem to flourish. The surface is gently rolling with the hollows generally occupied by spruce and tamarack swamps. There are a few scattered patches of the old original spruce forest. The untimbered parts are mostly covered with windfall and a luxuriant second growth of poplar, willow and alder. The spruce in the patches of the original forest runs as high as thirty inches in diameter, but there is not enough to warrant it being set aside as a reserve. The only hay slough in the township occupies about sixty acres of the north-east quarter of section 17. All the water is fresh, being supplied from the swamps, but with the exception of Deep Creek, it is not likely that any of the streams are permanent. Deep Creek is about six feet wide, two feet deep, and flows at the rate of three and one-half miles per hour. The land is not liable to flooding as there is good drainage to Simonette River. The climate is equable and no summer frosts occur. The dead, standing timber throughout the township affords an abundant supply of fuel. No coal, stone-quarries nor minerals of any kind were found. The game consists of rabbits, partridges and prairie chickens.—*A. E. Glover, D.L.S., 1914.*

Tp. 71 The road from Edson to Grande Prairie passes through the north-east portion of this township, entering in section 24 and leaving in section 32. On the whole the soil is very good as it has had time to recover from the fires of a few years ago. There is a light covering of loam over a clay subsoil. The surface of the greater part of the township is generally level and somewhat broken by ravines; the south-westerly portion, however, is badly cut up by Deep Creek, and its several tributaries. The whole township has been burned over within the past few years and what once was a grand forest has now become a mass of windfall and second-growth poplar, spruce, alder and willow with patches of dead, standing timber. As a result there is no timber of any commercial value. Feed in the form of peavine and vetches grows very luxuriantly all over the township, but no hay is found. The creeks are numerous and all drain into Deep Creek. This stream occupies a valley almost half a mile wide and from one hundred and twenty-five to two hundred feet deep. At ordinary stages it is about twenty feet wide and three feet deep with a current of about five miles per hour. There is no danger of flooding in any part of the township. Some power could be developed by damming Deep Creek, but this would flood the valley for six miles upstream. The climate is equable and no summer frosts were experienced. An abundant supply of wood is the only fuel that can be procured. There are no stone-quarries nor minerals of any kind. The game consists of a few bears and moose. Rabbits are plentiful.—*A. E. Glover, D.L.S., 1914.*

Tp. 72 Running diagonally from the north-west to the south-east across this township is a wide depression following the foot of Mt. des Salines on section 34. With the exception of patches of green timber in sections 21, 27 and 34, nearly all the timber is fire-killed and is either standing or strewn thickly over the ground. The divide between Simonette and Puskwaskau Rivers is in section 35. There is a lake in sections 16 and 17, a large marsh in section 20, and some hay meadows in section 31. Creeks flowing north cross the north boundary of section 36, while those crossing sections 33, 34 and 35 flow southerly towards the Simonette. The soil, in the east half of this township, is a sandy loam five to ten inches deep over a subsoil of clay; in the other half the loam is only four inches deep with a clay or sandy subsoil. The land is stony on the surface in the vicinity of Mt. des Salines.—*Arthur Saint Cyr, D.L.S., 1904.*

The soil of this township, on the whole, is not very good, being a very light top-soil overlying a heavy clay. The surface varies from rolling to gently rolling and is considerably broken by spruce and tamarack swamps. The land in the western two-thirds of the township is covered with windfall and a heavy growth of small poplar, willow and alder, this being interspersed with fire-killed, standing timber. The remainder of the township is generally covered with the virgin

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

forest which is broken in many places by patches of *brulé*. This timber, however, could not be considered of much value commercially as the trees average only about fourteen inches in diameter. Very good railroad ties could be procured here; therefore sections 1, 2, 11, 12, 13, 14, 23, 24, 25 and 26 might be set aside, along with township 72, range 25, as a timber reserve. Feed for stock is very plentiful in the westerly part, there being areas of open *brulé* in which peavine and vetches flourish, but there are no hay meadows. There are numerous small creeks throughout the township which will afford a supply of good fresh water as long as the timber remains. The land is not liable to flooding as there is quite a slope to the south-west. The climate is equable and no summer frosts were observed. A plentiful supply of wood for fuel is available. No water-powers, stone-quarries nor minerals of any kind were seen. There are a few moose and bears and rabbits are plentiful.—*A. E. Glover, D.L.S., 1914.*

Tp. 73 This township was reached by the old pack-trail from Sturgeon Lake to Spirit River Settlement which was in good condition. The soil varies considerably.

In the alder and willow swamps which cover practically all of the south-west quarter it is of a heavy, peaty nature and on the higher land in sections 10, 11, 12, 13, 14 and 15, it is somewhat light. The surface is considerably broken by small hills in the above-mentioned high lands, but in practically all the rest of the township it is of a gently rolling nature. The south half is covered with fallen timber and a dense growth of small poplar, willow and alder, while in the northern portion there is poplar and scattered spruce up to ten inches in diameter, and alder and willow in the large low area referred to above. No timber of any merchantable value is found. There is an area of about two hundred and fifty acres of good hay meadow in sections 26 and 27. The water supply is abundant, there being numerous small creeks flowing from the central high part to the north-west and south. Puskwaskau River, which runs through sections 34, 35 and 36, averages about thirty feet in width and four feet in depth, and has a current of three miles per hour. The north-western portion of the township is always liable to flooding at times of heavy rains. No water-powers of any value could be developed. The climate is equable with no summer frosts. Wood is the only fuel available. There are no stone-quarries nor minerals. Moose, bears, wood-chucks and rabbits are plentiful.—*A. E. Glover, D.L.S., 1914.*

Tp. 77 This township may be divided generally into two parts for agricultural purposes, viz.: (1) north of Birch Hills, (2) south of Birch Hills. That part lying north of Birch Hills slopes gradually to the north from the crest of the hill and contains some excellent farming land where not too heavily timbered. The north-west corner is the best part of the township. The eastern portion of the north half is more heavily timbered, chiefly with poplar, and interspersed with small marshes. This may be said to be the case with the eastern part of the south half as well, except that the timber is larger, with a greater proportion of spruce, and that marshes are more frequent and larger. The south-western portion consists mostly of a series of connected swamps and marshes, the only valuable feature being a considerable extent of large poplar, spruce, tamarack and jack pine timber. Birch Hills extend only about one mile east of the Sixth meridian; the east and south sides of the range are very steep and broken, while the north slope, as before mentioned, is for the greater part a steady decline.—*C. C. Fairchild, D.L.S., 1902.*

This township was reached by a pack-trail which enters in section 13 and connects with the Spirit River wagon road a few miles to the north. The soil generally is black loam of average depth with a clay subsoil. Fires have burned off considerable soil, but the remainder is good agricultural land. The surface is wooded throughout with the exception of a few openings in the north-west corner. The timber consists mostly of poplar and is not very valuable. What good spruce remains near the western boundary has been burned through. Along the creek flowing through the southern portion of the township there are marshy areas where small quantities of hay could be cut in dry seasons. There are but few sloughs where hay could be obtained. The beginning of the ascent to Birch Hills is in the north-western portion of this township where the land is of considerable height. The southern portion is low with many muskegs along the south boundary. The township is fairly well watered by the creek mentioned above. This

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

stream is five feet wide, three feet deep, and flows at the rate of one mile per hour. No land is likely to be flooded except in the immediate vicinity of the creek. There is no water-power available. No summer frosts were recorded. Wood for fuel is plentiful. No stone-quarries, minerals nor coal were seen. The game consisted of a few partridges and ducks.—*G. A. Tipper, D.L.S., 1914.*

Tp. 78. The surface of this township is generally slightly undulating and covered with a growth of poplar and spruce of varying size. A considerable portion of the surface is covered with a thick undergrowth of willow and a large marsh in the centre of the township detracts considerably from its value. The soil is excellent when dry, but it is rated as No. 2 on account of the timber growth. The creeks shown on the lines all run dry in the summer. The trail from Grouard to Spirit River Settlement passes through the southern part of the township.—*C. C. Fairchild, D.L.S., 1902.*

The Spirit River trail which runs through the southern part of this township is rather wet in places, but wagons can be taken over it in dry seasons. The soil is suitable for agriculture. The surface is almost wholly covered with timber of some description, but it is not in sufficient quantities to be of much value. There are many low and swampy places throughout the township, and while there are no muskegs yet the presence of water in the sloughs makes transportation very difficult. There is but little hay of value; a small quantity can be cut around the marshes in section 15. Good feed for grazing purposes is plentiful. The water is fresh and of good quality in Fox Creek which flows along the west outline. This stream develops a slight valley at the north-west corner of the township. It is about fifteen feet wide, four feet deep and has a current of about one mile per hour. There is no water-power available. No stone-quarries, minerals nor coal were found. The climate was very good during the survey (May) and no frosts were experienced. No game with the exception of partridges and ducks was seen. Tracks of bears were noticed.—*G. A. Tipper, D.L.S., 1914.*

Tp. 79 This township has more prairie and is better drained than any of the others examined by me on the south side of Peace River. Fox Creek, a never failing stream of good water runs from east to west across the township, and a branch runs from the south-west angle of the township in a north-easterly direction to join the main stream. This branch, however, dries up in the summer. A greater part of the land lying on either bank of these creeks is prairie broken with bluffs of small poplar and willow. The soil is excellent, generally well drained, and, but for the timber which increases in size as you get farther from the creek, would be No. 1 for agricultural or grazing purposes. Some small marshes are found in the north end of the township, and strange to relate, though the north limit runs at the west side within one mile of Peace River the drainage is all towards Fox Creek. The ravine through which the creek runs is only about twenty-five feet deep at the east boundary, but increases to more than one hundred feet at the west boundary, where both banks are generally heavily timbered.—*C. C. Fairchild, D.L.S., 1902.*

This township was reached by a pack-trail which branches from the Coote Lake trail in the range to the east and enters this township in section 12 and leaves in section 25. The soil in the north-eastern portion is rather light, but in the remainder of the township it is heavier and suitable for agriculture. The surface is gently rolling except in the vicinity of Fox Creek where it is rolling. The edge of the valley of Peace River is found at the north boundary but the slope of the land is toward Fox Creek which flows through the central part of the township. The surface is timbered throughout and some spruce of large size can be had along the creek, but not in any large quantities. The land adjoining Fox Creek in sections 12 and 13 is mostly open for half a mile back, and then the small poplar begins, followed farther back by large poplar until it becomes quite dense in section 25. There is no hay except that which may be cut on the uplands adjoining Fox Creek and its principal branch from the east. The township is well watered by Fox Creek and its tributaries, which flow from all directions. This stream averages sixty feet wide and three feet in depth, and has a current of one mile per hour. The principal branch enters the township in section 12, having its origin in the extensive marsh to the east.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

The valley of this stream increases in depth from sixty feet in section 12 to one hundred and twenty feet at the west boundary of the township. A small amount of water-power could be developed on this creek, varying according to the season's precipitation. No land is liable to be flooded. The climate was fine and no summer frosts were noted. Wood for fuel can be procured in the township. There are no stone-quarries, minerals nor coal. The game consists of a few moose, coyotes and beavers.—*G. A. Tipper, D.L.S., 1914.*

 Tp. 80

On July 26 I started the survey of this township. My greatest difficulty was the crossing of the various marshes, many of which had three feet of water in them at the end of July, but were practically dry by the middle of September. The township lies almost wholly in the valley of Peace River, i.e., between the tops of the high banks. The soil is first-class clay loam and black loam, but a great portion of the surface is so broken that it would be practically useless for grain farming, but would do for grazing. There is plenty of timber for wood and building, although a portion of the township north of the river has little besides small poplar scrub. The growth during the summer of 1901 was almost tropical, the pea-vine and grass reaching a height of six feet in places. Raspberry and saskatoon bushes are plentiful in many places, and the yield for the season was very heavy. Horses run wild over the district north of the river and have not the slightest difficulty in wintering without feed. The township is approachable, however, only by boat or saddle horse. The deep gullies found by the tributary creeks make road building almost an impossibility. Some creeks had to be bridged before I could get my pack-trains across, while in September no water was running in any of them. The greater part of the township north of Peace River has been burnt over in past years, while the south bank is as yet untouched. Peace River was so flooded that I found it impossible to swim my horses, and I was forced to transfer them in a boat, but by the time the traverse of the river was made it had fallen to normal low water. Some excellent flat lands, mostly on the south side of the river, would make splendid farms. These lands hemmed in by surrounding hills like the settlement at the south of Smoky River, are among the finest I have ever seen.—*C. C. Fairchild, D.L.S., 1901.*



Photo by J. S. Galletly, D.L.S.
Flower Garden at Fort Vermilion

This township may be reached by means of Peace River, either by boats in summer or over the ice in winter. It may also be reached by a pack-trail running along the north bank of the river. The soil is of good quality, but the nature of the surface is not suitable for farming.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

The country is broken by Peace River flowing through the southern portion of the township and its tributaries, the ravines being up to eight hundred feet in depth. The north-west corner of the township is the only part of much value. The hills produce good feed for cattle in the open parts, and many horses were feeding here at the time of survey (March), thus showing the early growth in the spring of the year. There is no hay. Although the township is wholly timbered yet the only timber of any value is in the small areas of good spruce on the south slope of the valley, and on the islands. The water in the river and creeks is of good quality. Peace River varies considerably in width due to the many islands, but it may be averaged at twenty chains. The depth is approximately fifteen feet and the current is about three miles per hour. The two tributaries, one of which crosses the east outline of section 25 and the other enters the river in section 13, average about five feet in width and one foot in depth and under ordinary conditions have a current of one mile per hour. Water-power could be developed from Peace River, but as there are no rapids it could not be spoken of as of great value. There are no river flats. The climate is favourable for agriculture. There is a plentiful supply of wood for fuel. No coal seams were noted, although a few drift pieces were seen along the shore of the river. There are no minerals nor stone-quarries, the gravel along the river being the only stone to be had. No game was seen.

Peace River.—The horizontal distance between high and low water marks averages a little over a chain on the south side of the river and a little less on the north. The shores are composed of gravel. The banks are well defined, and there are no cut banks. The valley is about seven hundred and fifty feet deep. The land on the south side of the river is heavily timbered, while that on the north is only lightly timbered with small poplar and contains many bare hills. The soil in the valley consists of clay and sand, and in section 13 on the south side of the river there is a rocky area. The slope on the south side is quite steep as it extends back only about a mile, beyond which the drainage is to the south. On the north side the slope extends back from two to three miles, beyond which the drainage flows south-easterly to the river through the deep creek valleys. The many islands increase the width of the river to about half a mile except at the east outline where the width is about a quarter of a mile. The water is of bluish colour, but is of good quality. The depth of the river could not be exactly ascertained, but it is at least ten feet.—*G. A. Tipper, D.L.S., 1914.*

Tp. 81

A well-defined trail from lot No. 1 of Shaftesbury Settlement leads to the ranch of Thomas Griffin in section 33, township 81, range 25, and from there it is about two miles south-westerly over semi-open country to the east outline of this township. The soil consists of a coating of two to eight inches of black loam over a clay subsoil, but clay loam occurs on top of the clay in some places, while section 33 is mostly a gravel subsoil. This soil should grow good cereals and vegetables of all varieties. The greater part of sections 12, 13, 14, 24, 25, 26, 35 and 36 is semi-open country. Small bluffs of small poplar with scrub poplar and willow occur. Sections 15, 16, 21, 22, 28 and 27 are covered with a thick growth of poplar and balm of Gilead from four to fourteen inches, spruce from three to eighteen inches, tamarack from four to twelve inches in diameter and scrub. These last mentioned sections are more or less swampy. The remainder of the township is covered with small poplar, balm of Gilead and dense willow scrub. An occasional spruce occurs in sections 9, 10, 2 and 3 along the banks of a creek. About one-sixth of the whole township is open. Some hay meadows occur in section 36, but upland hay of good quality can be cut in most of the open places. The north-easterly portion of this township would make excellent farming country and the remainder good ranching and grazing country. Water, permanent and sufficient, occurs throughout the township. Creeks flow through sections 1, 2, 3, 9, 10, 12, 13, 14, 23, 24, 26, 27, 34 and 36, and with the exception of the creek, which flows through section 26 and 36 and which is slightly alkaline, all the water is fresh. All the creeks have their rise in or near this township and flow south-easterly to Peace River. Shortly after leaving their sources these creeks begin to flow rapidly between banks which quickly get higher, or in other words, the water cuts the earth down and flows to the destination on a steeper plane than the plane of the surface of the township. Therefore by going somewhat higher up and tapping the stream a considerable portion of the surface could be irrigated.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

The farther down the stream the higher are the banks, being in some places nearly two hundred feet high. By damming the larger streams and making reservoirs a small amount of power could be generated. Hydraulic rams could easily be installed. During the period of the survey of this township (May), the weather was warm and summer-like with very little rain. Some frost occurred towards the end of May, but appeared to do no harm to vegetation or the cereals of some of the settlers in the vicinity. Fuel, in the shape of poplar, spruce and tamarack is plentiful throughout the township. No stone in place nor any mineral of economic value was seen. Boulders, generally igneous, appeared occasionally. Bears and moose were plentiful. A few ruffed grouse, ducks of many varieties and sand-hill cranes were seen. A few signs of lynx and marten were also noticed. Every year the country is being denuded of its wood and the best part of the top-soil by fires. These fires are started, I believe, by people owning stock running the ranges.—*H. S. Holcroft, D.L.S., 1908.*

Tp. 82 This fractional township is crossed by the trail from Peace River Crossing to Dunvegan. The soil is black loam from two to twelve inches deep over a clay loam subsoil. About one-third of the surface is covered with spruce and jack pine up to ten inches in diameter, scattered over the whole township. Most of the jack pine is situated in section 10, but none of it is of commercial value and should be reserved for the use of the settlers. Good hay can be obtained on about ten per cent. of the prairie, and about two hundred acres of hay meadows lie around Moose, Stony and Meridian Lakes. These lakes are located in the north part of the township and contain an abundant supply of water fit for domestic use. The meadows on the shore are liable to be flooded during a wet year from two to twelve inches. No water-power is available. The climate is similar to that of Edmonton and the summer frosts which occur will likely disappear when the land is cultivated. Wood fuel is plentiful, but no stone-quarries nor minerals were found. Game, consisting of moose, bears, partridges and prairie chickens, is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 83 This township is reached from the trail running from Peace River Crossing to Dunvegan. The soil consists of two to twelve inches of black loam on a clay loam subsoil and is suitable for mixed farming or grazing. About forty per cent. of the surface is covered with timber and willow, the remainder being rolling prairie. The timber is mostly poplar up to ten inches, scattered over the whole township, but it has no commercial value and should be reserved for the use of settlers. About seventy-five acres of hay is found on the shore of Last Lake in section 35. Some hay could be obtained on the prairie spots throughout the township. Last Lake contains an abundant and permanent supply of fresh water, and covers about one hundred acres. Good water can be obtained from sloughs but the supply is not permanent. The hay land around Last Lake would probably be flooded in wet seasons from two to twelve inches deep. No water-powers were noticed. The climate is similar to that of Edmonton, and although summer frosts were noted they will likely disappear when the land is cultivated. The poplar timber which grows throughout the township furnishes plenty of fuel. No stone-quarries nor minerals were seen. Game consisting of moose, black bears and partridges, is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 84 (*North outline.*)—This is a fractional township. The Sixth meridian intersects its north boundary 65.19 chains west of the north-east corner of section 35. The country in this vicinity is gently rolling and is covered with windfall, willow and alder scrub and second-growth poplar. Green timber, of small diameter, is found only in clumps scattered here and there. The soil is a black loam two to ten inches deep with a subsoil of clay. A creek flowing to the south crosses the line in section 35. Stones were noticed on the surface in places.—*Arthur Saint Cyr, D.L.S., 1906.*

A pack-trail leaves the wagon road in section 17 of the township to the east and leads into this township. As fire has lately overrun this district it would likely have to be cut out again. The north third of the township is rolling and the remainder is level. The soil is six inches of loam in the north half with gravel subsoil, which in places comes to the surface, and the south half has

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 26.—*Continued.*

the same amount of black loam on a clay subsoil. The only timber is second-growth poplar, the spruce having been burnt. There is no hay and no likely supply of water. Frosts occurred at night during the survey (April). Dead spruce furnishes an abundance of fuel but no stone-quarries nor minerals were noticed.—*A. G. Stewart, D.L.S., 1912.*

Tp. 85 The best route into this township, from Peace River Crossing, is by the Dunvegan wagon road west as far as section 26, township 82, range 25, thence in a north-westerly direction along a wagon trail cut by the settlers; this trail is good except during the heavy rains in the spring, when the bridges over the creeks are liable to be washed away. The soil consists of a few inches of black loam with a clay subsoil and is suitable for mixed farming, though the clearing of the timber in the northern half will entail considerable work. The surface of the southern half is rolling and has been burnt over during the last few years; it is covered with second-growth poplar and willow, and alder brush; the northern half is more heavily rolling and is covered with spruce, poplar, jack pine, balm of Gilead and birch. There is practically no large timber in the southern half of the township, but the northern half is covered with spruce, poplar, jack pine, balm of Gilead, and a few birch up to twenty inches in diameter; it is mixed with heavy alder, and is not in sufficient quantities to be of commercial value, but is very suitable for building purposes for the settlers. There is practically no hay in this township but there is plenty of good feed for stock in the southern portion. Fresh water is plentiful in the numerous small creeks but the country is not liable to be flooded. Wood fuel is plentiful everywhere. There are no water-powers, stone-quarries nor minerals. The climate is the same as that of Edmonton. There was one light summer frost, but it was not severe enough to do any serious damage. Moose, bears, foxes and partridges were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 86 (*Fractional.*)—There is a pack-trail running along the Sixth meridian by which this township can be reached. The soil is about five inches of black loam with a subsoil of clay. There are very few patches of prairie. The greater portion of the township is covered with poplar from three to ten inches in diameter. Towards the south spruce is found but not in large quantities. Little if any hay could be cut here but there is fairly good grazing along the creeks. The southern portion of the township is on a large range of hills and gradually falls away towards the flat in the vicinity of Whitemud River to the north. Good water is found in the creeks, and beaver dams conserve plenty of it for the season. No land is liable to be flooded. No water-powers, minerals nor stone were seen. The fuel consists of dry wood which may be found in many places. No game was seen.—*G. A. Tipper, D.L.S., 1913.*

Tp. 87 (See report on township 87, range 25).—*G. A. Tipper, D.L.S., 1913.*

Tp. 88 (*North outline.*)—See report on township 88, range 24.—*A. H. Hawkins, D.L.S., 1912.*

RANGE 27

Tp. 68 This is a fractional township adjoining the Sixth initial meridian which intersects its north boundary 28.89 chains west of the north-east corner of section 35. Moose River, a tributary of Simonette River, flows northerly through this township crossing its north boundary near the middle of section 36. Over this part of the country are deep ravines leading to the river and all land is covered with bad windfall. The soil is a sandy loam six inches deep over a sandy subsoil near the river, or a clay subsoil on the highlands.—*Arthur Saint Cyr, D.L.S., 1904.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN

RANGE 1

Tp. 68 (*North outline.*)—Ten chains west of the Sixth meridian the line crosses Moose River, which is here eighty links wide, and was three feet deep at the time of survey (July). Its banks are ten to fifteen feet high. West of the river a flat, one-quarter of a mile wide, brings us to the foot of steep hills, which rise to a height of two hundred feet above the level of the river and are denuded of timber. Thence the surface of the country remains undulating and is dotted with many lakes, ponds and hay marshes, most of which are connected at high water. Around some of these lakes a moderate amount of hay could be cut. Such a lake, three-quarters of a mile long by one-quarter of a mile wide, occurs near the north boundary of section 29. Some surface stones were noticed through this township.—*A. Saint Cyr, D.L.S., 1906.*

Tp. 69 (*East outline.*)—Simonette River crosses the Sixth meridian for the last time near the north-west corner of section 12 of this township. Less than half a mile west of that point it receives a tributary called Moose River. This very tortuous stream crosses the line twice in section 36, and four times in section 25; it is about sixty-five yards wide, has a swift current, a stony or gravelly bottom and banks fifteen feet high. The hills on each side of the river are one hundred and seventy-five feet high, and in places end in steep cut banks, reaching to the water's edge. The surface of the north half of this township is level and swampy. It is old *brulé* overgrown with young poplar and willow. There is a belt of spruce, tamarack, poplar and birch in section 24. Through the south half of this township run deep ravines leading to Simonette and Moose Rivers. A few strips of good spruce ten to twenty inches in diameter were noticed along both streams. A pack-trail runs through section 13. The soil is loam, two to eight inches deep, with a clay or sand and clay subsoil.—*A. Saint Cyr, D.L.S., 1904.*

Tp. 70 (*East outline.*)—Simonette River crosses the east boundary of this township three times in sections 36 and 25. Between the river and the foot of the steep hills which bound its valley are some flats where narrow belts of good timber, consisting of spruce twelve to thirty inches in diameter and large cottonwood were noticed. South of the Simonette, the surface of this township is generally level and covered with small poplar and willow in belts and clumps, with spruce and tamarack swamps and hay meadows intervening between the belts of small poplar. As usual, the land is thickly covered with impassable windfall piled several feet high, the soil is a loam, four to ten inches deep with a sandy subsoil in the sections adjoining the river, and a clay or sand and clay subsoil in the others. A pack-trail crosses this line not far from the north-east corner of the township. In section 25 there is a large hay flat at about half a mile west of the Sixth meridian and close to the right bank of the river. The sections adjoining the river are much broken by deep ravines.—*A. Saint Cyr, D.L.S., 1904.*

Tp. 71 (*East outline.*)—Simonette River, a large tributary of Big Smoky River, crosses the east boundary of this township three-quarters of a mile south of the north-east corner of section 1. At the crossing on the line Simonette River is one hundred yards wide, with a swift current. Its banks are about ten feet high, and its valley, three-quarters of a mile wide, is enclosed between rough hills one hundred and seventy feet high. Extensive mud slides occur on both sides of the valley. After crossing the line the river is reported to flow nearly due west to the Big Smoky and during the winter becomes part of the winter trail from Sturgeon Lake to Grande Prairie. In this township nearly all the best timber has been destroyed by fire, and though many dry trees are left standing, many more have fallen over the ground, making bad windfall. A belt of good timber consisting of spruce twelve to twenty inches in diameter, is however, found between an old channel of the Simonette and the river proper in section 1.

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.—*Continued.*

Section 13 is very hilly. A large muskeg extends across section 24 and numerous creeks irrigate this part of the country. The soil is a loam four to eight inches deep overlying a clay subsoil, though in some places the subsoil is a greyish fine silt of the kind noticed in township 75, south of Big Smoky River. Large lumps of drift coal were found along the banks of the river and indications of coal were noticed at many places in the mud slides. The country is hilly in the vicinity of the river.—*A. Saint Cyr, D.L.S., 1904.*

(*Partial.*)—This township is easily reached at all seasons from Grande Prairie. The Edson-Grande Prairie Road enters the township in section 33 and leaves in section 31. This road, while used throughout the year is practically impassable during the summer. Throughout this township however, it is always in fair condition. The surface generally is gently rolling, although sections 13, 14, 23 and 24 are badly broken by the valley of Deep Creek. The soil consists of loam from two to four inches deep overlying a sand or sandy clay subsoil. The country as a whole is rather wet, numerous depressions preventing the drainage of the water; old beaver dams have also contributed to this. Upland grass is luxuriant as is also the growth of peavine. The township was formerly heavily timbered with spruce and poplar, but this has practically all been destroyed by fire. Windfall is common. The present surface is covered with a heavy growth of poplar, willow, jack pine and alder. In dry seasons hay in small quantities could be cut around many of the small sloughs. Fuel is abundant. No minerals, coal nor stone in place were found. Grouse and prairie chickens were the only game seen. The climate is similar to that of the Grande Prairie district, with perhaps more storms owing to the proximity to the valley of Smoky River.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 72 (*East outline.*)—Along this outline the country is rolling and slopes towards the west and south-west. It is covered with bad windfall and overgrown with thick poplar; many fire-killed trees still standing are the remains of what was a few years ago a fine forest. There were still some patches or bluffs of green timber surrounded by willow swamps or muskegs. An Indian trail runs through section 13. The soil in sections 1, 12, 13, 25 and 36 is a loam four to twelve inches deep with clay subsoil. In section 24 it is hard clay. Drift lignite in considerable quantity was found in the bed of a small stream flowing through the middle of section 13.—*A. Saint Cyr, D.L.S., 1904.*

(*North outline.*)—Along this line the country is undulating and lightly covered with an irregular growth of small poplar and spruce. While there is no prairie nor open country the timber is nowhere large enough to be of value.—*J. N. Wallace, D.L.S., 1904.*

The Edson-Grande Prairie Road enters this township in section 1 and leaves it in section 4. This road is used summer and winter. The surface of the township is generally rolling, but large areas of level wet country occur. The soil consists of from two to six inches of vegetable loam overlying a clay or sandy clay subsoil. As a whole the township is not unsuitable for agriculture, although considerable drainage would be required and this would be rather difficult. With the exception of the northern third the timber in this township has been nearly all destroyed by fire, the surface at present being covered with poplar, small spruce, jack pine and willow. Fuel is abundant, much of the fire-killed timber being still standing. Grass is very plentiful, small sloughs being dotted throughout the township, but little could be cut except in a dry season. At present hay is cut in section 9, but not in large quantities. Water is plentiful, numerous muskegs conserving the supply. The water in the small creeks of the township is retarded by beaver dams which also account for the numerous beaver meadows. No minerals nor stone in place were found. While prairie chickens and grouse were the only game seen, evidence of moose, bears and deer were noticed. The climate is similar to that of the Grande Prairie district, but is no doubt affected by the proximity to the valley of Smoky River, where storms seem to be prevalent.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 73 (*East outline.*)—The surface of this township is undulating. All the timber in this part of the country was destroyed by fire about eight years ago, with the result that the land is at present thickly strewn with bad windfall and brulé overgrown with very small poplar and thick willow scrub. From the middle of section 36 the Sixth meridian

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.—*Continued.*

follows the western slope of a range of hills extending southwards. The soil is very good, being a loam six to twelve inches deep with a clay or sand and clay subsoil. Another range of high hills is seen eight or ten miles to the east.—*A. Saint Cyr, D.L.S., 1904.*

Tp. 74 (*East outline.*)—Puskwaskau (Grassy) River, a tributary of Big Smoky River, enters this township at the north-east corner of section 24. It is about half a chain wide and furnishes a good supply of water. It flows out of Puskwaskau (Grassy) Lake, one mile and three-quarters long and one-half mile wide. Large quantities of good hay (red top) could be procured from the vicinity of this lake. This township is wooded with spruce, jack pine, poplar from six to fifteen inches in diameter, and birch, with dense underbrush of willow scrub and alder. In section 1 the land is flat and swampy, while section 25 is much broken by ravines. The soil is a black loam three to six inches deep with a clay subsoil. The regular pack-trail from Sturgeon Lake to Birch Hills and Ghost River crosses the east boundary of the township in section 13.—*A. Saint Cyr, D.L.S., 1904.*

Tp. 75 (*East outline.*)—The east boundary of this township runs through an undulating and wooded country irrigated by numerous small creeks. The timber is chiefly poplar, from ten to fifteen inches in diameter, spruce six to ten inches and birch mixed with a heavy underbrush of alder and willow scrub. A pack-trail crosses this line in section 13, and small creeks in sections 13, 24 and 36. In sections 13, 24, 25 and 36 the soil is a fine greyish silt from four to fifteen inches deep with hard clay subsoil. In sections 1 and 12 the soil improves, being a loam six inches deep overlying hard clay.—*A. Saint Cyr, D.L.S., 1904.*

Tp. 76 (*East outline.*)—Big Smoky River, an important tributary of Peace River, flows through this township from west to east, crossing the east boundary at a quarter of a mile north of the north-east corner of section 12. It is at that point a quarter of a mile wide, has a current of four miles an hour and banks twenty feet high. Its bed is stony and gravelly. The hills facing the river from the north side are five hundred feet high while those on the south side are less than two hundred and fifty. The width of its trough-like valley, measured between the crests of the hills on both sides, is almost three-quarters of a mile. North of the river the country is rolling and heavily timbered with spruce ten to fifteen inches in diameter, poplar of the same dimensions and birch. It is also much broken by ravines in section 25, through which runs a creek of good water. The country south of the river is also timbered, but more level. Creeks of good water cross the east boundary of the township in sections 1, 12, 24 and 25. A tamarack and spruce swamp fifty chains wide with trees about six inches in diameter extends across the line and lies partly in sections 36 and 25. The soil in the sections north of Big Smoky River is generally a black or sandy loam four to fifteen inches deep, with a clay subsoil, while in those south of the river it changes to a greyish silt four to fifteen inches deep overlying hard clay.—*A. Saint Cyr, D.L.S., 1904.*

(*North outline.*)—This line runs through country timbered with poplar up to twenty inches in diameter, with scattered spruce and a few birch.—*J. N. Wallace, D.L.S., 1904.*

Tp. 80 This township is reached by a trail which branches from the main trail between Peace River Crossing and Dunvegan at Burnt River. The soil consists of about five inches of black loam on a clay subsoil and is suitable for mixed farming. The north third of the township is wooded with poplar and willow with some prairie openings. The south two-thirds is heavily wooded with poplar and balm of Gilead, and scattered spruce grows on the south side of Peace River. No hay grows except small patches of upland hay on the prairie. Peace River runs through this township from west to east. The valley is from one to two miles wide and about eight hundred feet deep. The banks are cut, rough and precipitous. The river is about a quarter of a mile wide and has a current of three miles per hour. Burnt river runs through sections 7 and 18 in a valley about a quarter of a mile wide and six hundred to eight hundred feet deep. The stream is twenty feet wide, one foot deep and flows with a current of five miles per hour. Numerous small streams run into Eurnt and Peace Rivers but the flow

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.—Continued.

is not permanent. There are no available water-powers. The weather in April was fine, the days warm and the nights clear and frosty. Dry poplar for fuel is plentiful. No minerals were noticed but good sandstone is found along the valley of Peace River, which settlers were using for grindstones. A few black bears and some timber wolves were the only game seen.—*A. G. Stewart, D.L.S., 1912.*

Tp. 81 The route followed to reach this township was a trail running southerly along the east side of Little Burnt River from the Dunvegan to the Peace River Crossing trail, down towards Peace River and then across the prairie. The soil is from three to six inches of black loam with clay subsoil, and would make good farm land. The surface is very gently rolling and is mostly covered with poplar and willow scrub, with some stretches of prairie intervening. There is a large clump of spruce and tamarack two to fourteen inches in diameter in sections 23, 24, 25 and 26, and some jack pine and poplar six to twelve inches in diameter in sections 34 and 35. Hay is rather scarce, but some of good quality could be cut on the prairie. The water is fresh and fairly plentiful in springs in the spruce and tamarack areas, and in holes left in creek beds where there have been old beaver dams. There are no water-powers, The climate was fine with occasional showers and some frost. The only fuel is wood which is plentiful. No stone-quarries nor minerals were found. No game, except prairie chickens, was seen.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 82 Over the greater part of this township the soil consists of from two to ten inches of black loam with a clay subsoil, but there is some gravel at the south-east corner. The greater part of the township is good farming land. The surface is gently rolling. Most of the north half of the township is covered with poplar and willow scrub and dense spruce windfall. The south half consists of prairie and scattered bluffs. There is very little standing timber of value. Hay is plentiful in two large lake bottoms near the north-west corner of the township and along Little Burnt River, and is of good quality. It is scarce in the southern part of the township. Water is fresh and fairly plentiful in the northern part of the township. Little Burnt River is about twenty links wide, six inches deep and has a current of about one mile an hour. The climate was cool at times, and we had considerable rain and some frost. Wood for fuel is plentiful. No stone-quarries nor minerals were found, and the only game seen consisted of ducks, geese and prairie chickens.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 83 The best route into this township is by wagon road from Peace River Crossing to Last Lake which is situated in section 36 in this township. The soil consists of two to six inches of black loam with a clay or a clay loam subsoil and is very suitable for mixed farming; one of the squatters in this township raised a good crop of oats this year. The surface is gently rolling and is covered with small poplar and willow brush with a few clumps of small spruce, except in section 6 and the south half of section 7, which are heavily timbered. There are also several patches of prairie in the east half of the township. The only timber of any size is situated in section 6 and the south half of section 7, it consists of spruce, poplar and jack pine; some of the spruce reaches thirty inches in diameter, but the most of the timber varies from ten to eighteen inches in diameter; as this is practically the only timber of any size in this township it might be left for the use of settlers. There is plenty of upland hay in the eastern half of the township and it can be cut after clearing away the light windfall; all the squatters have stacked a considerable quantity of upland hay this summer. Slough hay is also plentiful around Last Lake and also the banks of Burnt River. Fresh water is plentiful in the numerous small lakes and in Burnt River, which flows through this township; this river is from twelve to twenty feet in width and from three to six feet deep; it flows very sluggishly through several small lakes. The banks are low and usually there is a considerable extent of hay marsh or hay meadow on each side, but the country is not liable to be flooded. Wood fuel is plentiful everywhere, and no indications of coal were seen. There are no water-powers, stone-quarries nor minerals. The climate is the same as that of Edmonton and there were no summer frosts. Bears, foxes, ducks and chickens were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.—*Continued.*

Tp. 84 The best route into this township is by wagon road from Peace River Crossing to Last Lake, thence northerly by wagon trail which runs right through the township; the road is good all the year round. The soil is a black loam from two to six inches in depth with a clay subsoil, and is very suitable for grain growing, and mixed farming. The surface is gently rolling, and was burnt over a few years ago; it is covered with small poplar and willow except for a few small clumps of spruce and some patches of prairie in the south-east corner. There is no timber of any size in this township. There is an abundance of upland hay in the south-eastern portion of the township, consisting chiefly of vetch and peavine. Fresh water is plentiful in the creeks and lakes, but the land is not liable to be flooded. There are no water-powers, stone-quarries or minerals. Wood fuel is plentiful everywhere, but no indications of coal were seen. The climate is the same as that of Edmonton, and there were no summer frosts. Bears, chickens and ducks were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 85 (*East outline.*)—This line is entirely on the southerly slope of a range of hills separating the watershed of Whitemud River from that of Burnt Creek. The south three miles have been burnt over, leaving scarcely any timber except small poplar and willow. There are several small water-courses rising in the hills to the north-west which have gradually worn out deep ravines and coulées towards the south-west down to the watershed. The northern three miles lies in more broken country with a thick growth of spruce and poplar and some birch. The soil is not deep, ranging from three to twelve inches of loam on clay subsoil. The height of land is about half way in the south half of section 1, township 86, range 1; from this point a view can be had along the meridian over the Whitemud River Valley to a point about a mile and a half south of the north-east corner of township 88, range 1.—*Henry W. Selby, D.L.S., 1904.*

The best route into this township, from Peace River Crossing, is by wagon trail to Last Lake and from there northerly an old pack-trail has been opened up as a wagon road. This road is good all the year round. The soil consists of a few inches of black loam with a clay or a clay loam subsoil and will be suitable for mixed farming when the timber has been cleared. The surface is rolling; most of the southern third has been burnt over and is covered with small timber, underbrush and windfall; the northern two-thirds is more heavily rolling and is nearly all covered with heavy timber, consisting of spruce, poplar, balm of Gilead, tamarack, birch and jack pine, and will average about fourteen inches in diameter, though some of the trees will reach thirty inches. It is mixed with small timber which would be suitable for making railroad ties, though, as the timber is rather scarce in the townships south of this one, it might be left for the use of settlers. There is practically no hay in this township, but feed for stock is plentiful in the southern third. Fresh water is plentiful everywhere in the numerous small creeks, and the land is not flooded during the heavy rains. Wood fuel is plentiful everywhere, but no indications of coal were seen. There are no water-powers, stone-quarries nor minerals. The climate is the same as that of Edmonton and there were no summer frosts. Moose, bears, foxes, partridges and ducks were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 86 (*East outline.*)—Along this outline the country descends gradually to the creek entering Whitemud River, a short distance east of the north-east corner of township 86, and while it does descend it rises and falls over rolling ground between water-courses trending north-easterly from the height of land. The timber is mainly small poplar and scattered spruce of good size. The soil improves from the height of land to the river.—*Henry W. Selby, D.L.S., 1904.*

Tp. 87 (*East outline.*)—Along this line the timber is chiefly small poplar, with a few small belts of spruce on dry muskeg, and here and there burnt slash areas. The surface is mostly gently rolling ridges, gradually ascending to the north. Whitemud River is crossed in section 12. Along this river are small areas of prairie, increasing in size to the east. The soil is loam on a clay subsoil except in the depressions where the muskeg is from ten to eighteen inches deep on clay.—*Henry W. Selby, D.L.S., 1904.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.—*Continued.*

Tp. 88 (*North outline.*)—The land along the north boundary of sections 36 and 35 of this range is rolling; the drainage is to the north-east. A range of hills from two hundred to three hundred feet high extends in a south-easterly and north-westerly direction crossing the base line in section 34. Beyond this the drainage is to the south. In sections 36 and 35, township 88, and sections 1 and 2, township 89, is a belt of heavy green timber, principally spruce and poplar; sections 34 and 33, township 88, and sections 3 and 4, township 89, are covered with a burnt slash. The soil in sections 36 and 35, township 88, and sections 1 and 2, township 89, consists of loam on a clay subsoil. In sections 34 and 33, township 88, and sections 3 and 4, township 89, the loam has been practically all burned, leaving only clay.—*Henry W. Selby, D.L.S., 1904.*

(*East outline.*)—The east boundary of this township gradually rises to the north until in section 25 the height of land is reached and a descent of two hundred feet brings us to the north-east corner of section 36. The timber on sections 1 and 2 is mixed spruce and tamarack, and a few poplar of little value, the remainder of the line running through a thick burnt spruce slash, which in section 36 is thick slash and almost impassable windfall.—*Henry W. Selby, D.L.S., 1904.*



Photo by J. S. Galletly, D.L.S.

Part of Experimental Plot at Fort Vermilion

RANGE 2

Tp. 68 (*North outline.*)—For the first three miles in this township the line runs through undulating country dotted with many lakes, ponds and hay marshes, most of which are connected at high water. The western half of the line runs through high sandy ridges with many small lakes surrounded by muskies.—*A. Saint Cyr, D.L.S., 1906.*

Tp. 71 The route followed in reaching this township was by trail from Sturgeon Lake to Grande Prairie, and it was fairly good for winter travel. The soil of the township consists of from three to six inches of black loam, with a clay subsoil on the uplands, and is good farm land. On the flats and benches it is lighter and more gravelly. The surface is gently rolling on the uplands, but is very much broken up along Simonette and Smoky Rivers, where the valleys are nearly five hundred feet deep, and the banks in many cases very steep. It is mostly covered with willow and poplar scrub, but there is some scattered jack pine on the benches and some spruce in the valleys along the rivers. The timber is not plentiful but there is enough

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 2.—Continued.

for the settlers. The pine is from six to eight inches, and the spruce from six to eighteen inches in diameter. Hay is scarce but some can be cut in the sloughs on the uplands and benches. It is rather coarse in quality. Water is fresh and plentiful in Simonette and Smoky Rivers and in sloughs on the uplands. Smoky River is from fifteen to thirty chains wide and from six to fifteen feet deep and runs about four miles an hour. Simonette River is from two to five chains wide and from two to eight feet deep with a current of five miles an hour. The land is not liable to be flooded, and there are no water-powers. The climate was mild and fine in the spring with very little snow and not much rain. The only fuel is wood which is plentiful everywhere. No stone-quarries nor minerals were found. The only game seen consisted of bears, ducks and geese.

—*W. G. McFarlane, D.L.S., 1910.*

(*Partial.*)—Only the east half of the north two-thirds of this township was surveyed. The Edson-Grande Prairie Road enters the township in section 36 and leaves in section 35. This road is used all the year round. The surface is rolling and in places hummocky, the western portion sloping to the valley of Smoky River, while the southern portion slopes to the valley of Simonette River. As the creeks approach these valleys they run through rapidly deepening and widening valleys, making portions of the township extremely rough. The soil consists of vegetable loam from two to four inches in thickness overlying a sandy clay subsoil, and where not too rough should be suited for agriculture. The surface is covered with patches of timber, chiefly poplar and spruce, with a heavy growth of willow and alder. No timber of any value was found. Windfall and brulé occur throughout. Fuel is plentiful. A small quantity of gypsum was found along the Simonette Valley. No coal was seen. Sandstone cliffs also occur along Simonette River, but none were found in this township. No game was seen. The climate is similar to that of the Grande Prairie district, with perhaps more storms as the immense valley of Smoky River has the tendency to draw these along its course.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 72 (*West half.*)—The western half of this township is badly cut up by Smoky River. The valley of this river is about five hundred feet deep, and there are a number of deep coulées running into it from each side. The banks are mostly very steep and in places cut banks occur. The surface is generally rolling on the uplands and the soil consists of from three to six inches of black loam with a clay subsoil. Sandy loam, sand, clay and gravel are found along the river valley. Nearly all the high land and part of the valley is good farm land. The country is mostly covered with scrub, but some stretches of prairie are found on the uplands. There are some scattered clumps of spruce from six to eighteen inches in diameter and a few poplar of about the same size in the valley. There would probably be enough timber for the settlers' needs. Hay is not plentiful but what is available is mostly of excellent quality. Water is fresh and plentiful in Smoky River and in sloughs on the uplands. Smoky River is from fifteen to thirty chains in width and from six to fifteen feet in depth with a current of about four miles an hour. Rapids occur in the river at different places, but they would be difficult to dam for water-power. The weather was fine and generally mild for the season, but we had some frost. The only fuel is wood, and that is not plentiful. No stone-quarries nor minerals were found. The game seen consisted of moose, bears, prairie chickens, partridges, ducks and geese.—*W. G. McFarlane, D.L.S., 1910.*

(*East half.*)—The Edson-Grande Prairie Road enters this part of the township in section 3 and leaves in section 10. This road is used all the year round, but during the summer it is all but impassable. Throughout this township, however, it is first class. The surface is inclined to be hummocky, and is dotted with innumerable small sloughs. The western portion is broken by the valley of Smoky River. The soil consists of from two to four inches of vegetable loam overlying a sandy clay subsoil, and were it not for the many hollows which are usually filled with water, it would be suitable for agriculture. Grass is abundant although but little could be cut for hay. While formerly heavily timbered with poplar, spruce and jack pine, fires have destroyed all the best timber and at present there is a heavy growth of small poplar, willow and alder with windfall and brulé. Water is plentiful, although there are no creeks. No minerals, coal nor stone in place were found. No game was seen. Fuel is plentiful.—*G. W. MacLeod, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 2.—*Continued.*

Tp. 80 From the Green Island Road a good road leads to the north-east corner of section 31 of this township and thence to section 23. The soil is fine black loam six inches deep on a clay subsoil. The north third is lightly wooded with poplar and willow with patches of green prairie. The remainder is more thickly wooded, especially on the south side of Peace River, with poplar and a few spruce. Some upland hay can be cut on the prairie patches. Burnt River flows through sections 24, 25 and 36. Its valley is a quarter of a mile wide and two hundred to four hundred feet deep. The river is twenty feet wide, one foot deep and flows five miles per hour. The valley of Peace River is from one to two miles wide and about eight hundred feet deep. The banks are rough and precipitous with numerous cut banks. The river is a quarter of a mile wide and has a current of three miles per hour. Numerous small streams flow into Burnt and Peace Rivers, but they are not permanent. No water-power can be developed in the township. The days in April were bright and clear with frosty nights. Sandstone can be quarried along the banks of Peace River, but no minerals were noticed. Wolves, bears and deer were the only game seen.—*A. G. Stewart, D.L.S., 1912.*

Tp. 81 The soil consists of black loam from three to five inches deep, with a good clay subsoil, and will make excellent farm land. The surface is nearly level, partly prairie and partly covered with large bluffs of poplar and willow, but with no timber of any value. Hay, except in a few places on the prairie, is very scarce. Water is fresh and plentiful in Little Burnt River and in several creeks. Stone-quarries, minerals and water-powers do not occur. The climate is fine and warm. Wood fuel is plentiful and game consisting of bears, jumping deer, ducks and prairie chickens, is found in the township.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 82 (*Partial.*)—The road from Peace River Crossing to Dunvegan crosses the south part of this township. The soil consists of about seven inches of black loam on a clay subsoil, and although rather dry makes good farm land. The portion subdivided, the south two-thirds, is mostly prairie with scattered bluffs of poplar and willow. Fires have burned a great amount of timber in the central part, but in sections 18, 19 and the north parts of 20 and 21 spruce and poplar is found up to twenty inches, while smaller timber up to ten inches grows in sections 22, 24 and the north parts of 23, 15 and 7. Some upland hay grows, but the amount could not be determined as fires had destroyed it all. Water is scarce, the only supply being obtained from wells, pot-holes in the creek and a few small lakes along the north chord. Wood fuel is plentiful, but no coal, stone-quarries nor minerals were observed. Good crops were raised on lands adjacent to this township, which seems to prove that the climate is not severe. Prairie chickens were the only game seen. A portable saw-mill in section 1 supplies lumber to the settlers. The northern portion of this township is covered with heavy timber.—*G. A. Tipper, D.L.S., 1912.*

(*North third.*)—The best route into this township is from Peace River Crossing along the Dunvegan wagon road as far as the Blue Sky Settlement, thence northerly by a wagon road, cut by the settlers into this township. The road is good all the year round. The soil consists of a few inches of black loam or muck, with a clay subsoil, and will be suitable for farming when the timber is cleared. The surface is rolling and is covered with large timber and underbrush. The timber consists of spruce, poplar and jack pine with tamarack in the swamps, and reaches thirty inches in diameter; the timber is of first-class quality and the whole of this northern third of the township should be reserved as a timber berth. There is a saw-mill situated in section 34, which is operating under a saw-mill permit to cut timber on one hundred and sixty acres. There is no hay or feed for stock, and the lakes and sloughs, with the exception of one small creek, provide the only fresh water. There are no water-powers, stone-quarries nor minerals. Wood for fuel can be obtained everywhere in small quantities, but no indication of coal was seen. The climate is the same as that of Edmonton and there were no summer frosts. Bears, moose and ducks were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 2.—*Continued.*

Tp. 83 (*North outline.*)—This line, as far as it has been run, lies entirely in muskeg, which in summer is very wet, but which was frozen at the time of the survey; the timber is very small scattered spruce and tamarack. To the north of the line in sections 6, 5, and 4, township 84, it is a burnt slash. In sections 21 and 32 of this township there is a small lake.—*H. W. Selby, D.L.S., 1904.*

The best route into this township is from Peace River Crossing by the Dunvegan wagon road to Blue Sky Settlement, thence northerly by a fairly good wagon road cut right into this township. The soil consists of a few inches of black loam with a clay subsoil, with peat in the swamps and muskegs. The soil will be suitable for farming when the timber is cut. The surface is nearly level and is covered with dense timber, underbrush and some windfall; there is also a considerable amount of muskeg, chiefly in the northern portion of the township. The timber consists of spruce, poplar and jack pine, with tamarack in the swamps, and reached thirty inches in diameter; it is of very good quality and is situated in sections 1 to 12 and 16 to 21 inclusive; these sections should be set aside as a timber berth. The timber in the remainder of the township will reach twelve inches in diameter and will be useful for settlers for building purposes. The only hay in the township is situated in sections 22 and 23, though horse feed is plentiful all along the creek which runs easterly through the middle of the township. Fresh water can be obtained in the small creeks and lakes, and the land is not liable to be flooded. There are no water-powers, minerals or stone-quarries. Wood fuel is plentiful everywhere. The climate is the same as that of Edmonton, and there were no summer frosts. Moose, bears and ducks were the only game seen.—*R. V. Heathcott, D.L.S., 1915.*

Tp. 84 The Battle River trail, which is in fair condition, leads into this township. The soil is a rich black loam, with clay subsoil, but in some portions of the township the top soil has been burnt off. The surface is rolling in the north and east, and a high range of hills runs along the east boundary. The south and west parts are flat with many lakes and muskegs. Although there is no prairie in the township, there is very little valuable timber except some small patches of spruce in the muskegs and around the lakes. Some poplar grows up to ten inches in diameter. A strip of brulé runs along the south part of the township. Hay is scarce, but some could be cut in sections 8 and 28 and water of good quality can be obtained from the creeks. Cottonwood Creek averages seventy-five feet wide and has a current of one mile per hour. No water-power is available and no land is liable to be flooded. The climate was favourable and at the time of survey (May) summer frosts did not occur. No stone-quarries nor minerals were found, but wood fuel is plentiful. Numerous ducks and a few partridges comprise the game of the township.—*G. A. Tipper, D.L.S., 1912.*

Tp. 85 The Battle River trail, which is in good condition, runs diagonally across this township. The soil is black loam with clay subsoil. The surface is covered with timber except about one thousand acres in the south-west which is open hay meadow. The timber is mostly poplar, growing as large as twelve inches in diameter. In sections 27 and 34 spruce grows up to twenty inches. Hay is plentiful in sections 21 and 28 and several creeks furnish water for the township. No areas are liable to flooding nor are there any available water-powers. The climate was fine and no frosts were experienced during the survey (May and June). Wood fuel is plentiful, but no coal, stone-quarries nor minerals were noticed. Partridges and prairie chickens constitute the game of the country. A high range of hills running across the north-east part of the township is densely wooded. Recent fires, which have lately swept over the township, have probably cleared a considerable area.—*G. A. Tipper, D.L.S., 1912.*

RANGE 3

Tp. 68 (*North outline.*)—The country here is undulating with occasional ponds and lakes. Running across this township from east to west, and extending to Smoky River in range 4, is a large depression probably once occupied by a stream which now joins the river three or four miles south of the line.—*A. Saint Cyr, D.L.S., 1906.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 3.—*Continued.***Tp. 71**

The soil is black loam, six inches deep, with a clay subsoil, and would make good farm land. The surface is gently rolling, but is broken by a deep ravine running easterly from the north boundary of section 19 to section 22, then southerly to Wapiti River and thence along the valley of the Wapiti where it reaches a depth of four hundred feet. The surface is covered for the most part with willow and poplar scrub, but there is a little scattered timber, and a few open spots occur on the banks of the Wapiti and towards the north-west corner of the township. The timber consists chiefly of spruce, from six to twelve inches in diameter, found mostly in small clumps on the banks of the Wapiti. There are, however, a few scattered poplar from six to eight inches in diameter, and in section 18 a few jack pine from six to ten inches in diameter. Hay is not abundant, but some of fair quality is found in sloughs, chiefly towards the eastern side of the township. Water, fresh and fairly plentiful, is found in a number of sloughs, in one lake on the western boundary of sections 18 and 19, and in Wapiti River. This river is about fifteen chains wide, from two to fifteen feet deep and has a current of five miles per hour. It runs through the southern part of the township. There is no water-power and the land is not liable to be flooded. The climate is variable. No stone-quarries nor minerals were found and the game seen consisted of partridges and deer. Wood for fuel is everywhere abundant.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 72

The land in this township is gently rolling and the surface is mostly wooded. The east and north sides of the township are covered with scattered poplar up to eight inches and small clumps of spruce, while the remainder is mostly covered with poplar and willow scrub, broken by numerous sloughs and small open patches, with stretches of prairie towards the west. The soil consists of about four inches of black loam on a clay subsoil, and will make good farm land. Hay is plentiful in the western half of the prairie, but only slough hay of inferior quality grows towards the east. Numerous sloughs extend throughout the township and several small streams flow easterly across the east boundary towards Smoky River, furnishing a plentiful supply of water. No available water power was found and no land is liable to be flooded. Wood fuel, consisting of poplar, spruce and tamarack, was plentiful, but no coal nor mineral was found. A few moose tracks were the only indications of the presence of game.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73

The soil of this township consists of four to twelve inches of black loam with clay subsoil, and is excellent farm land throughout. The surface is gently rolling and cut by a deep ravine across the northerly third of the township, through which Kleskun Creek flows towards Smoky River. A few stretches of prairie occur in the northern part, but the surface is mostly wooded with poplar and willow scrub, especially to the east and south where poplar up to ten inches in diameter, spruce up to twelve inches in diameter, small tamarack and a few birch are found. Some upland hay of good quality and a little slough hay can be harvested. Water is fresh and fairly plentiful in creeks and sloughs, but is not sufficient to cause flooding or to develop water-power. Kleskun Creek, a small stream having one or two tributaries from the north, flows across the northern part of the township, but will probably run dry in summer. The weather this spring was in general quite mild. There may be some light summer frosts. Wood is the only fuel, but it is very plentiful. No stone-quarries nor minerals were found and the only game seen consisted of moose and partridges.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74

The soil is a black loam six to ten inches deep, with a clay subsoil, and is excellent farm land. The surface is gently rolling, and covered mostly with poplar and willow scrub, but small prairie openings are found here and there over the whole of the southern third. Although poplar wood is found in quantities sufficient for fuel there is very little green timber. Considerable dead wood is met with, chiefly poplar about four inches in diameter. Hay is rather scarce, but a little of both upland and slough hay is available. Water is fresh and scarce, and likely to be scarcer in midsummer when the one or two creeks in the township will probably be dry. The climate is mild, and generally fine. No stone-quarries nor minerals were found, and the only game seen was moose, ducks and partridges.—*W. G. McFarlane, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 3.—*Continued.*

Tp. 77 (*Outlines.*)—This township can be reached by the Egg Lake wagon trail. Two-thirds of the township is thickly timbered with spruce, jack pine and poplar, while birch and willow are found on the Birch Hills. Rising in these hills are a number of creeks which flow until the middle of the summer. The southern third of the township is mostly prairie and bluffs. The soil is very good. Bears and moose are very plentiful.—*J. B. Saint Cyr, D.L.S., 1907.*

Tp. 78 This township can be reached by the Egg Lake and Spirit River wagon trail. With the exception of sections 1, 2, 3, 4, 5 and 6, where patches of prairie are met with, this township is thickly timbered with poplar, spruce and large willow. The country north of the wagon trail is level, and the surface soil is very thin, overlying a clay and hard subsoil. In sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18 spruce suitable for lumbering purposes is plentiful. Brulé River, running in a deep ravine, crosses this township about three miles south-east of the north-west corner of section 31. There are no water-powers nor stone-quarries, and water outside of Brulé River is rather scarce. Bears and moose seem to be plentiful in that district. Oxide of iron has been found in the cut banks along the river at different places and principally in the neighborhood of the mouth of Spirit River. Hay is not very plentiful but can be procured in some sloughs towards the north-east corner of section 36. The north-east portion of this township is rolling and the land adjoining Brulé River is very hilly. A few settlers could find enough open land in the first row of sections in the south of this township to make good farms. The climate is the same as at Spirit River and early summer frosts are not very frequent.—*J. B. Saint Cyr, D.L.S., 1907.*

Tp. 79 (*East and west outlines.*)—This township lying south of Peace River is all thickly timbered with poplar, large willow and spruce. The soil is comparatively poor. Brulé and Spirit Rivers cross this township through its south portion. The hills of Brulé River are from three hundred to four hundred feet in height and those of Spirit River are about two hundred feet high. There is no way of reaching this township at present unless by Peace River, but even by this way a road would have to be made up the hills.—*J. B. Saint Cyr, D.L.S., 1909.*

(*North outline.*)—The surface is timbered with poplar, spruce and large willow; it is nearly level through the northern half but rolling and hilly towards the south portion. The soil is black loam varying from four to six inches in depth overlying a clay subsoil. Brulé River crosses this township near the south-east corner, and Spirit River, a tributary of Brulé River, passes at a short distance north of the correction line. Spruce from six to eighteen inches in diameter is found in large quantities along those two streams. There is no road to communicate with this township. The game found in the country is moose, bears, marten, coyotes and foxes. The climate is good, with no early summer frosts.—*J. B. Saint Cyr, D.L.S., 1908.*

The trail from Dunvegan to Spirit River Settlement passes through range 5 and from it a trail runs easterly to this township. The soil is composed of black loam two to twelve inches deep on a clay subsoil and would be suitable for mixed farming when the land is cleared. The surface is timbered with poplar and spruce up to twenty inches in diameter scattered over the whole township, the best spruce being found on sections 31 to 36. The yield in this locality would be over two million feet, board measure, per square mile. No hay meadows of any value were seen. Spirit River flows through the south part of the township. It contains fresh water, is about twenty-five feet wide, one and one-half feet deep and flows three miles per hour. Burnt River flows through the south-easterly part. It is about forty-five feet wide, two and one-half feet deep and flows three miles per hour. Good water, though not of a permanent supply, is furnished by the sloughs and small creeks. The rivers run in valleys from two hundred to three hundred feet deep and no land even in the valleys is liable to be flooded. Water-power might possibly be developed on Burnt River and Spirit River. The climate is similar to that of Edmonton. Summer frosts occur, but these will probably disappear when the land is cultivated. Poplar and spruce timber furnish an abundance of fuel but no stone-quarries nor minerals were noticed. Game consisting of moose, bears and partridges is plentiful.—*J. H. Smith, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 3.—Continued.

Tp. 80 (*Outlines.*)—The surface in this township is prairie and bluffs. The soil is good. Wood for fuel is plentiful and timber for building purposes can be procured almost everywhere. There are a few creeks flowing to Peace River nearly all summer. This township can be reached by Peace River Crossing and Dunvegan wagon road. Settlers will find there good locations when the subdivision of this township is made.—*J. B. Saint Cyr, D.L.S., 1910.*

This township can be reached by the Green Island Road connecting with Peace River Crossing and Dunvegan wagon road. The soil is suitable for farming purposes as it is composed of black loam varying in depth from four to five inches overlying a clay or sandy clay subsoil. The surface is prairie and bluffs, and the country is undulating with the exception of the neighborhood of Peace River and the different creeks draining the township where it is hilly. Timber such as spruce and poplar for building and fencing purposes is plentiful. Fuel can be procured on almost every section of this township. Prairie and slough hay is also plentiful all through this country. Most of the creeks were dry at the time of the survey and those which were running contained hard alkaline water. The settlers intending to stay in that country would have to dam the creeks in order to keep a supply of water to last them all the year round. This can easily be done as the bottom of those ravines is very narrow. There are no water-powers, and no minerals of any description has been found during the subdivision of the township. The climate is good with no early summer frosts. There is a limestone quarry on section 6. There is also an Indian reserve, No. 152A, in this township; it is partly situated on sections 4, 5, 8 and 9. The hills on the south side of Peace River are densely covered with spruce, averaging fifteen inches in diameter and suitable for lumbering purposes. The water of Peace River is very good and clear and the current is about four miles an hour. With the exception of a few coyotes and foxes, no game has been seen here.—*J. B. Saint Cyr, D.L.S., 1908.*

Tp. 81 The soil in this township consists of three to six inches black loam with a clay subsoil, and will make excellent farm lands. The surface is almost level and mostly prairie, but scattered bluffs of poplar and willow occur. There is no timber. Hay is scarce but a little may be cut on the prairie. The water is fresh, but rather scarce; some is found in holes in the bed of a creek running south-westerly from near the centre of the township. The weather was fine and warm with light showers of rain. No frosts were noticed. Wood for fuel is fairly plentiful. No stone-quarries nor minerals were found and the only game seen consisted of prairie chickens.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 82 The trail from Peace River Crossing to Fort St. John passes through the township to the south, and furnishes access to this township. The soil is good, consisting of seven inches of black loam on a clay subsoil, and some good homesteads adjoin the Indian reserve. The surface is fairly level and is mostly open around the reserve, but back half a mile the surface is well wooded, chiefly with poplar from two to eight inches in diameter. Recent fires have destroyed a large amount of it, especially along the north boundary where spruce is the predominating timber. Some prairie in section 14 furnishes hay, and water can be obtained from the lakes and from wells. No land is liable to be flooded and no water-powers, stone-quarries nor minerals were seen. The climate was favourable and at the time of survey (October and November) frosts and light snowfall occurred. Wood fuel is plentiful. Ducks were the only game seen.—*G. A. Tipper, D.L.S., 1912.*

Tp. 83 (*North outline.*)—The land adjoining this line is gently rolling and muskegs are numerous. The timber is small poplar, spruce and willow. Muddy Creek crosses the north boundary of section 33.—*Henry W. Selby, D.L.S., 1904.*

(*East outline.*)—The character of the country adjoining this line is similar to that of township 84; muskegs continue to be very numerous. The timber in sections 31, 30 and 19, township 83, range 2, and in sections 36, 25 and 24 of this township is small spruce, tamarack and poplar, but in section 18, township 83, range 2, and in section 13 of this township, a belt of heavy spruce, poplar and tamarack is found extending in an east and west direction. This extends also south into section 7, township 83, range 2, and section 12 of this township. The soil is principally clay.—*Henry W. Selby, D.L.S., 1904.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 3.—*Continued.*

The route to this township is either by the Battle River trail to the north or by a surveyors' trail which branches from the trail between Dunvegan and Fort St. John. The soil is good, consisting of a fair depth of black loam on a clay subsoil. The surface is generally level and covered with heavy poplar and spruce up to fourteen inches in the south part, but only light bush in the north and along Hines Creek. A large area of hay is located in section 29. Water is plentiful in the lakes and in Hines Creek. This creek (formerly called Island Creek) is about seventy feet wide, four feet deep and has a sluggish current. Wood fuel is plentiful but no coal, stone-quarries, minerals nor water-powers were found. A few moose and some partridges were the only game seen.—*G. A. Tipper, D.L.S., 1912.*

Tp. 84

(*East outline.*)—The land adjoining the east boundary of this township may be described as gently rolling. The timber is mostly small, though a small quantity of spruce, poplar and tamarack from twelve to twenty inches in diameter is to be found in section 30, township 84, range 2, and section 25 of this township. A number of muskegs covered with small spruce, tamarack and willow are to be found. Muddy Creek crosses the east boundary of section 24, flowing in a south-easterly direction. A few prairie spots covered with a luxuriant growth of grass are to be found along the creek. The soil is mostly loam on a clay subsoil.—*Henry W. Selby, D.L.S., 1904.*



Indians at Fort St. John

Photo by L. Brenot, D.L.S.

The Battle River trail runs across the south-eastern corner of this township, and is the route followed to reach the township. The soil consists of eight inches of black loam on a clay subsoil. The surface is gently rolling, the north-west portion being rather hilly and covered with poplar up to twelve inches. Recent fires have destroyed a large amount of timber. Hay in small amounts can be cut on the flats along Hines Creek. Water is fairly plentiful in this creek and its tributary from the north and also in muskegs. Hines Creek has very little current, the water lying in low sections about four feet deep and forty feet wide. No water-powers, stone-quarries, minerals nor coal were found, but wood fuel is plentiful. Frosts were experienced in August. Partridges were the only game seen.—*G. A. Tipper, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 3.—*Continued.*

Tp. 85 The best route by which to reach this township is by the Battle River trail to a point near the twenty-second base line where it intersects a surveyors' trail, which is then followed into this township. Both trails are in good condition except for some muskegs on the Battle River trail near the twenty-second base line. The soil is mostly clay with a light covering of black loam. The surface is generally level except for some valleys along the north chord in the western part of the township. Some spruce up to twenty-four inches grows in the north part of section 31 and in sections 7 and 8, but poplar is the predominating timber growing up to eight inches. No hay can be obtained in the township except a small amount along a creek and around a small lake in section 31. The only good water obtainable is in a creek running south-easterly across the township. It is two feet wide and contains very little water except during the spring freshet. No minerals, stone-quarries nor available water-powers were found and no land is liable to be flooded. During the survey (June to August) the weather was wet and some frosts were experienced. Wood fuel is plentiful. Partridges were the only game seen.—*G. A. Tipper, D.L.S., 1912.*

RANGE 4

Tp. 68 (*North outline.*)—Smoky River crosses this line at the north-east corner of section 32. At this point the river is one hundred and thirty yards wide and flows between precipitous banks alternating with flats once well wooded with large spruce. The valley is two miles wide. The bed of the river is three hundred and fifty feet lower than the bench lands on the west side of the channel. This channel, which is very tortuous, is frequently filled with large boulders, causing dangerous rapids. The bench land on the west of the river for the first half mile consists of very poor soil.—*A. Saint Cyr, D.L.S., 1906.*

Tps. 69 & 70 (*East outlines.*)—The country along these lines is gently rolling in character, but broken by the large ravines and valleys of Smoky River and a large tributary, which crosses the line at the east boundary of section 12, township 69, and recrosses at the east boundary of section 13 of the same township. Smoky River crosses the east boundary of section 36. On the line the valley of this river is two miles wide from rim to rim and is four hundred and fifty feet deep. The timber, which south of the river has been largely fire-killed, consists of spruce, tamarack and jack pine, with a few belts of poplar and appears to be of little commercial value. Windfall is excessive. No trails were found approaching the line. Several small sloughs were seen but none of them seemed suitable for hay production. The soil in the uplands is generally too sandy for agriculture. No minerals were noted nor was any game seen.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 70 (*North two-thirds.*)—This township was reached by a pack-trail which leaves the Sawmill Road leading from Grande Prairie in section 15, township 71, range 4. This pack-trail continues south to Wapiti River, and although very hilly it is fairly good for pack animals. The township is heavily rolling and in some places extremely rough. Wapiti River Valley is from one to two miles in width from rim to rim and averages four hundred and fifty feet in depth. The river bed is about ten chains in width but the volume of water fluctuates a great deal. Bear River joins Wapiti River in section 36, and has a valley three hundred and fifty feet in depth where it crosses the north boundary of section 34. The joining of these valleys makes the north-east corner of the township very rough. Small lakes were found in sections 13, 14 and 24, which are unsuitable for hay production. The soil is from two to four inches of black loam overlying a subsoil of clay or sand. South of Wapiti River the country is heavily timbered with spruce, poplar, jack pine and tamarack with patches of brulé and windfall, and seems little suited for agriculture. North of the river poplar predominates and where the land is not broken by ravines it should be fairly suitable for farming. Upland grass, peavine and vetches are fairly abundant. Firewood is plentiful. No minerals were found. The swiftly-flowing Wapiti River should produce some power as there is a rapid

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—*Continued.*

fall and considerable head could be developed. Bears, moose, grouse and prairie chickens were the only game seen, bears being very plentiful. Several kinds of trout and jackfish were found in Wapiti River—*G. W. MacLeod, D.L.S., 1913.*

Tp. 71 The soil of the north half of the township consists of five to ten inches of black loam with a sandy clay subsoil, and is excellent farm land, but toward the south boundary muskegs and jack pine ridges, not of much value, are prevalent. The surface is covered mostly with poplar, and willow scrub; but there are some large patches of prairie toward the north, as well as jack pine ridges and muskegs from about the centre south to Wapiti River. Poplar, tamarack, spruce and jack pine are abundant for fuel, but the only timber of importance is in the south, where there are jack pine eight inches and tamarack six inches in diameter. Hay is very scarce. Water is fresh and quite plentiful in the muskegs and in Bear Creek, which crosses sections 18 and 17, although probably a little scarce in summer. The land, except in the muskegs, is not liable to be flooded, and there is no water-power. The climate, although usually mild, is subject to very sudden changes. Summer frosts occur at present, but will probably disappear when the land is all under cultivation. No stone-quarries nor minerals were found. The game consists of only ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

(*South third.*)—The so-called Sawmill Road from Grande Prairie runs easterly through sections 16 and 15 of this township. In section 15 a pack-trail leaves this wagon road running southerly to sections 10 and 3. These trails make this portion of the township readily accessible. The surface generally is gently rolling. Sections 1, 2, 3, 4, 5, 8 and 9 are badly broken by the valleys of Bear and Wapiti Rivers. The latter stream, however, does not enter the township. Bear River, a stream about forty feet in width with a steadily deepening valley as it approaches Wapiti River, enters in section 9 and leaves in section 3; its valley averages two hundred feet in depth and from one-half to one mile in width. The soil on the uplands is from two to four inches of loam overlying a clay or sand subsoil. Large areas of swamp, however, occur, and generally this portion of the township is not good agricultural land. The timber consists of poplar, spruce, tamarack and jack pine, and while heavy it is not large enough to be of any commercial value, although small patches would be of use for rough lumber. No minerals nor water-powers were seen. Hay could be cut around portions of some of the small sloughs and lakes in a dry year. No stone in place was found. Bears, moose, grouse, prairie chickens and ducks were seen and Bear River abounds with jackfish.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 72 The soil in this township consists of from three to six inches of black loam with a heavy clay subsoil, and is nearly all good farm land. The surface is gently rolling prairie varied by many scattered bluffs of poplar and willow scrub, except near the centre of the township where Kleskun Hill runs east and west. The southern slope of this hill is gradual and is cut by several rather steep creek beds or short ravines. On the northern slope, especially on the north boundary of sections 21 and 22, the descent is very abrupt and in places almost a cut bank. Timber is scarce, but poplar sufficient for fuel is found almost everywhere, and especially near the centre of the north boundary of the township. Hay is scarce but some is found on the uplands towards the north-east corner. Some small streams which give a plentiful supply of fresh water in spring, flow north and south from Kleskun Hill. These are probably dry in summer. The weather during April was generally mild but subject to sudden changes. Summer frosts are likely to occur. No minerals were found and no game was seen.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 This locality is readily accessible from either the Edson-Grande Prairie Road or the Spirit River-Grande Prairie Road. The township consists of Kleskun Lake with marsh land surrounding it occupying from one-third to one-half of the township, and rolling park-like country to the north and south. Kleskun Lake is a shallow body of open water, the limits of which are more or less indeterminate. It is simply a patch of open water in a marsh. The marsh land is dotted with open depressions and is practically impassable. Surrounding this marsh is a strip varying from one-quarter to a mile and a half in width and carry-

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—*Continued.*

ing a growth of slough hay. In dry seasons considerable hay can be cut. This flat of hay marsh is quite distinct from the marsh described above. Surrounding the hay flat and on the same level is a strip of light woods, consisting of poplar, willow, alder and an occasional spruce. An escarpment varying from twenty to forty feet in height encloses this flat on all sides except the east. Above this escarpment the country is generally rolling prairie dotted with clumps of poplar, willow and alder. The upland soil consists of from four to six inches of black loam overlying a clay or sandy clay subsoil and is quite suitable for agriculture. The hay flat provides hay in fair quantities every year. At or near the foot of the escarpment on the north side of the lake are found many so-called mud springs which are exceedingly treacherous. Apparently the lake and surrounding marsh could be easily drained by the opening up of Kleskun Creek, which at present has a sluggish current due to vegetable growth; this would greatly increase the hay production. No minerals were seen. Fuel is scarce. No water-powers occur. Ducks, geese and swans are very plentiful. Prairie chickens are found in the uplands.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 74 The soil in this township is mostly black loam from three to six inches deep with a clay subsoil, but near the middle of the south boundary there is some heavy clay with little or no loam. It is mostly excellent farm land. The surface is gently rolling and slopes toward the south. There are some scattered bluffs of willow and poplar scrub, but it is mostly prairie to the south and west and almost continuous bush north of the centre of the township. Wood for fuel is plentiful but there is little timber of value in the part surveyed except along the north boundary, where there is some good spruce, from six to sixteen inches in diameter, and some six-inch poplar. Hay is very scarce. Fresh water is to be found in several small creeks, also in sloughs and in springs. The weather was mild and warm with western winds prevailing. There are no stone-quarries nor minerals and the game consists of moose, ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*

(*North third.*)—The old and the new trails from Spirit River Settlement to Grande Prairie pass through the township to the west and in dry weather both are good. The soil consists of two to ten inches of black loam on a clay subsoil. About four-fifths of the surface is covered with poplar, spruce, jack pine and willow, though none of it is of commercial value. The remaining one-fifth is covered with larger timber up to ten inches in diameter. No hay meadows were seen and the only water obtainable was in sloughs. This is good, however, and is fit for domestic use. No water-powers are located within this township. Summer frosts occur, but when the land is cleared and settled these will probably disappear. Wood fuel can be obtained throughout the township, but no stone-quarries nor minerals were noticed. Game consisting of moose, bears and partridges is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 75 The trail from Sturgeon Lake to Spirit River Settlement passes south of Kakut Lake which lies about six miles north of this township. From this trail a wagon road leads to this township. The soil consists of two to twelve inches of black loam on a clay loam subsoil and will make suitable mixed farming land when the timber is cleared off. The surface is covered with poplar, spruce and a few jack pine, but none of it is of commercial value. No hay meadows were found in the township. Bad Heart River and a number of smaller streams furnish an abundant supply of good fresh water. This river is eight feet wide, one foot deep and flows about one mile per hour. No water-powers were found. The climate is similar to that of Edmonton, and although summer frosts occur they will probably disappear when the land is cultivated. Poplar, spruce and jack pine furnish an abundance of wood fuel, but no stone-quarries nor minerals were seen. Bears, moose, partridges and beavers are plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 76 Kakut Lake, lying in this township, is connected by a good trail with Spirit River Settlement. The soil consists of black loam, one to eight inches in depth, on a clay loam subsoil and is suitable for mixed farming. The timber consists of scattered poplar, spruce and jack pine, but the only timber of commercial value is found on sections 20, 29,

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—*Continued.*

21, 19, 17, 8 and 7, where the spruce and jack pine grow to twenty-six inches in diameter, and on sections 16, 9, 10 and 11, where the timber attains a diameter of thirty-four inches. The yield would average over four million feet per square mile. No water-powers were found. The meadows around Kakut Lake are liable to be flooded to a depth of two to twelve inches in a wet season. Numerous small lakes and creeks furnish a supply of water suitable for domestic use, but in dry years the supply would not be permanent. The only hay found grows in the meadows, comprising about one hundred acres, along the shore of Kakut Lake. The climate is similar to that of Edmonton and although summer frosts occur they will probably disappear when the land is cultivated. Wood fuel can be obtained in abundance from the poplar, spruce and jack pine timber, but no stone-quarries nor minerals were found. Game consisting of moose, bears, beavers and partridges is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 78 The trail from Spirit River Settlement to Egg Lake Settlement crosses the southerly part of this township. The soil consists of black loam from two to twelve inches deep on a clay loam subsoil and is suitable for mixed farming. Some first-class timber, consisting of poplar and spruce up to twenty inches in diameter is found on sections 2, 3, 4 and 5, but on the remainder of the township it is fairly well scattered and is not commercially valuable. The whole surface of the township is covered with poplar, spruce and willow, which could be easily cleared off and the land made suitable for farming and grazing. No hay lands of any extent were found. Burnt River, flowing through the southerly part of the township, is about forty-five feet wide, two feet deep and flows about three miles per hour. It runs in a valley one hundred and fifty to two hundred and fifty feet deep and would never flood any land even at the period of high water. Water-power might be developed on this river, but the amount would be uncertain as the flow varies so much in dry and wet periods. The climate is similar to that at Edmonton and although summer frosts occur these will probably disappear when the land is cultivated. Wood fuel can be obtained in abundance from the poplar and spruce scattered over the township. Game, consisting of moose, bears, partridges and ducks is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 79 This township can be reached from the trail running from Dunvegan to Spirit River Settlement which crosses the township to the west. The soil is black loam from two to twelve inches deep on a clay loam subsoil and will be suitable for mixed farming when the land is cleared. Spruce and poplar timber up to twenty inches is found on sections 31 to 36 and would average over two million feet per square mile. The remainder of the township is practically covered with scattered poplar, spruce and willow. No hay meadows of value were seen. Spirit River flows through the south part of the township. It is about twenty-five feet wide, and one and one-half feet deep and flows three miles per hour. The sloughs also contain good water fit for domestic use, but the supply would not be permanent. Water-power might be developed on Spirit River, but the amount is uncertain, as in dry years the river almost ceases flowing. The climate is similar to that of Edmonton, and though summer frosts occur they will probably disappear when the land is cultivated. The poplar and spruce timber furnish an abundance of wood fuel. No stone-quarries nor minerals were seen. Moose, bears and partridges are plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 80 (*Section 18.*)—The Dunvegan flat is not extensive, while the country north of the river is prairie with bluffs of poplar and spruce along the creeks.—*C. C. Fairchild, D.L.S., 1902.*

Very little of this township is surveyed. The westerly half is thickly timbered with poplar, spruce and large willow, while the remaining portion consists of prairie and bluffs. The soil appears to be fairly good. In the western portion the land is hilly and rolling, and in the easterly half nearly level. There are a few good sections here and there. The climate is very favourable all through this district, and early summer frosts are not frequent.—*J. B. Saint Cyr, D.L.S., 1907.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—*Continued.*

The Peace River Crossing and Dunvegan wagon road crosses this township from section 34 to section 18, and is a very good road. The soil is black loam varying from four to eight inches in depth, resting on a clay or hard clay subsoil. The surface is prairie and bluffs, with the exception of the north-easterly portion of the township which is timbered with poplar, spruce and large willow. The country is generally level or undulating, but the land adjoining Peace River, Muddy Creek and Boucher Creek is hilly and broken. Timber for building and fencing is plentiful in this township and fuel can be procured in large quantities on nearly every section. Hay is plentiful in the numerous sloughs scattered all through the township; there is also a large quantity of prairie hay. Muddy Creek flows all the year round, but the water is very muddy. Boucher Creek was nearly dry at the time of the survey (August) and its water was hard and alkaline. Both creeks flow in very deep ravines. There are no water-powers and no mineral of economic value has been found. There is a limestone quarry on section 7 west of Rat Creek. This creek was also nearly dry at the time of the survey and its water was alkaline. A great quantity of spruce averaging sixteen inches in diameter is found in the ravines of Rat Creek, Muddy Creek, Boucher Creek, and also on the side-hills bordering Peace River. There is a current of about four miles an hour in Peace River and the water is very clear and good. All the southern portion of this township, situated south of Peace River, is thickly timbered with poplar, spruce and large willow. With the exception of a few coyotes, foxes and marten, no game was seen in this township.

(*Dunvegan Settlement.*)—Besides the two Hudson's Bay Company's reserves in Dunvegan, I subdivided the north-west quarter of section 8 into lots, viz., lot 1 and lot 2, and on the south side of Peace River east, adjoining the Hudson's Bay Company's reserve, lot 3, a small parcel of land where the Roman Catholic mission has a building. The front road on the north side of Peace River was surveyed through the Hudson's Bay Company's reserve, going east as far as the east boundary of section 8.—*J. B. Saint Cyr, D.L.S., 1908.*

Tp. 81 The wagon road from Peace River Crossing to Dunvegan, which is very good, passes through the south part of the township. The soil is good for farming purposes, and consists of seven inches of black loam with a clay subsoil. The surface along the eastern part is open, with small bluffs of poplar. The westerly half is badly cut up by ravines of Muddy Creek and its tributaries. The timber is mostly poplar, four inches in diameter, which grows on the bluffs. Spruce six inches in diameter grows in the valleys and along the south part of the west outline. The only hay seen was a small quantity in section 17. The creeks furnish water, but most of them dry up in summer. Hines Creek (known also as Island Creek) is one foot deep, seven feet wide, and flows about one and one-half miles per hour. Muddy Creek is eighteen inches deep, twelve feet wide, and flows about one and one-half miles per hour. The volume of these creeks in spring is very large, but they possess no available water-powers. The climate is good, and during the past season crops were not injured by frost. Wood fuel is plentiful in the bluffs, but no minerals nor stone-quarries were noted. Prairie chickens were the only game seen, but signs of deer were noticed.—*G. A. Tipper, D.L.S., 1912.*

Tp. 82 The westerly branch of Hay Lake's trail through the Indian reserve gives access to this township. The land when cleared is good, the soil consisting of eight inches of black loam on a clay subsoil. The surface is gently rolling, the south being partly open country, but the north densely timbered with many muskegs. The land in the Indian reserve is good, mostly open, but it is not cultivated. The timber consists of poplar ten inches in diameter with small patches of spruce in the central portion. A dense growth of spruce yet untouched by fires extends along the central part of the correction line. Hay can be obtained in a hay marsh at the north-east corner of the township. Recent fires have burnt the sod in portions of this area and on these portions no hay will grow. Water can be procured from muskegs in the northern part and from a creek running through the central portion, but this latter dries up in mid-summer. No water-powers, minerals nor stone-quarries are found and no land is liable to be flooded. Wood fuel can be easily obtained. The only portion of the township which has suffered from the recent fires is the small part north of the Indian reserve. Game consists of partridges, rabbits and prairie chickens.—*G. A. Tipper, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—Continued.

Tp. 83

The trail from Dunvegan to Fort St. John runs through this township and is in good condition. There are sand hills along the south and west boundaries but the remainder of the township has a layer of black loam eight inches deep over a clay subsoil. The surface is generally rolling, except in sections 27, 28 and 29 where Lake George (sometimes called Island Lake) is located, surrounded by hay meadows. There is very little timber which has not been fire-killed, but some jack pine ten inches in diameter grows in sections 5, 6, 7 and 8. Hay is abundant around Lake George. Fairly good water can be obtained in the creeks, but water in Lake George is not good in summer as the lake has no outlet, except at high water. Hines Creek is about four feet deep and has a current of one mile per hour, but it has no available water-powers. There are no stone-quarries nor minerals. The climate was dry and forest fires were raging while we were in the township. Wood fuel is plentiful.—*G. A. Tipper, D.L.S., 1912.*

Tp. 84

The road to Fort St. John, which is in good travelling condition for wagons, leads to this township. The soil is six inches of black loam on clay subsoil and would make good agricultural land. The surface is rolling, but there are fairly high ranges of hills on both the east and west outlines which are well wooded with poplar up to twelve inches. Along the north outline there is also some timber, but the central part of the township is open. Hay could be cut around a lake in the north-east part of section 4 and along Jack Creek. This creek, which with some muskegs in the south furnishes the only water in the township, is nine feet wide, three feet deep and in late summer has water only in holes. No land is liable to be flooded and there are no water-powers. Wood fuel is fairly plentiful, but no stone-quarries nor minerals were noticed. Partridges and prairie chickens were the only game seen. During the past season forest fires swept practically the whole township.—*G. A. Tipper, D.L.S., 1912.*

RANGE 5

Tp. 68

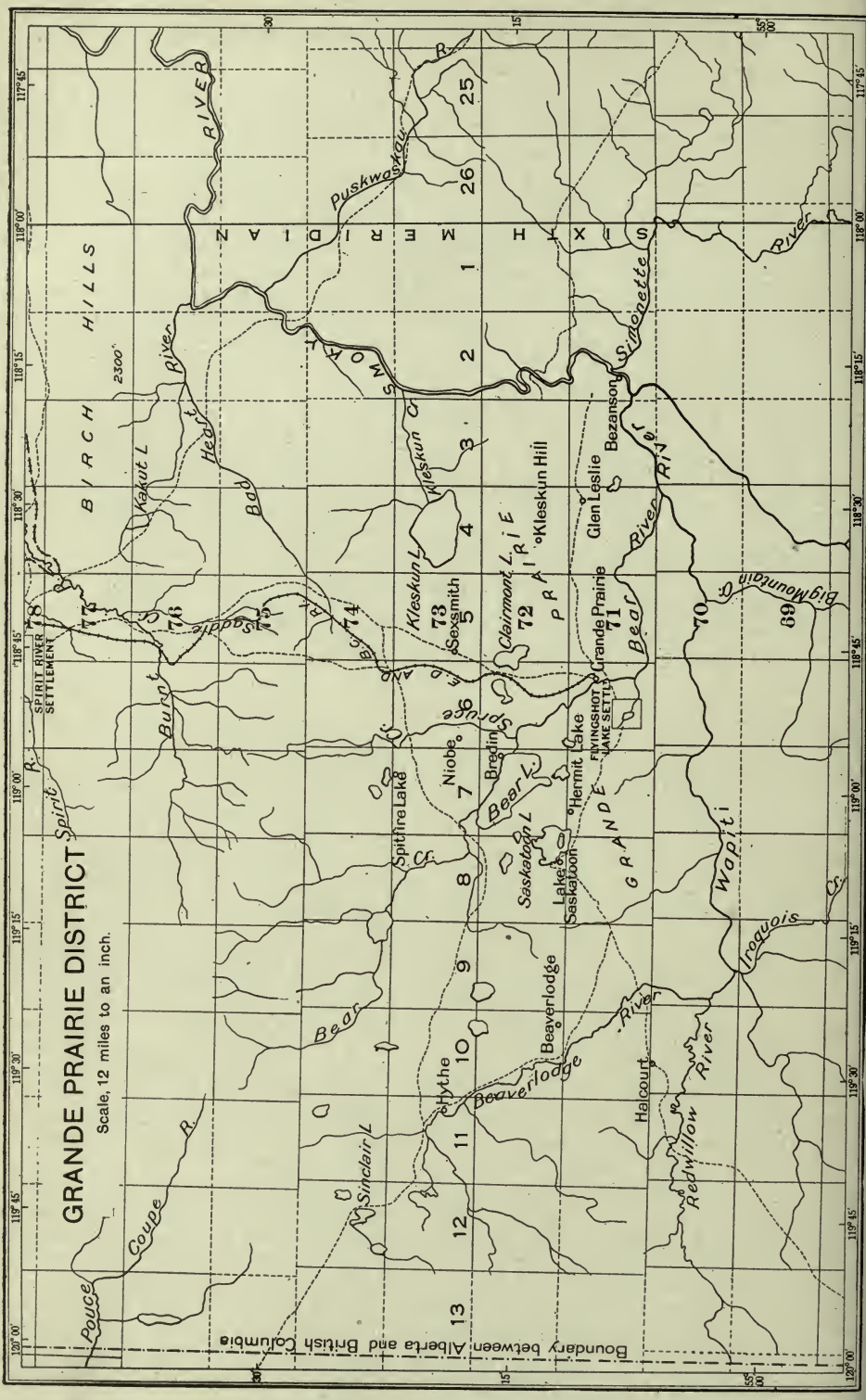
(*North outline.*)—Big Mountain Creek crosses the line in this township. At the time of survey it was simply a succession of large and deep pools connected by small rivulets, but there were indications along its banks that when it is in flood the water reaches a high level and the stream must be a regular torrent. Six miles south of the base line a range of hills was noticed, two thousand six hundred and fifty feet above sea-level. One mile north of the line a tributary flows into Big Mountain Creek. Its valley runs nearly parallel to the base line and contains a muskeg.—*A. Saint Cyr, D.L.S., 1906.*

Tp. 69

(*East outline.*)—This line runs through a gently rolling country which is covered generally with a growth of spruce and jack pine. The surface has been fire-swept with the result that patches of excessively bad windfall occur. Large areas of spruce and tamarack swamps and muskegs are found along the line. No timber of commercial value was seen. The soil on the ridges is largely sand. Near the north-east corner of section 36 the country becomes drier, and spruce and poplar up to twelve inches in diameter were found. The country on either side of the line seems little suited for agriculture as it is difficult of access and the soil is poor. There are no trails in this territory. No game was noticed, although no doubt bears, moose and deer frequent the neighbourhood.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 70

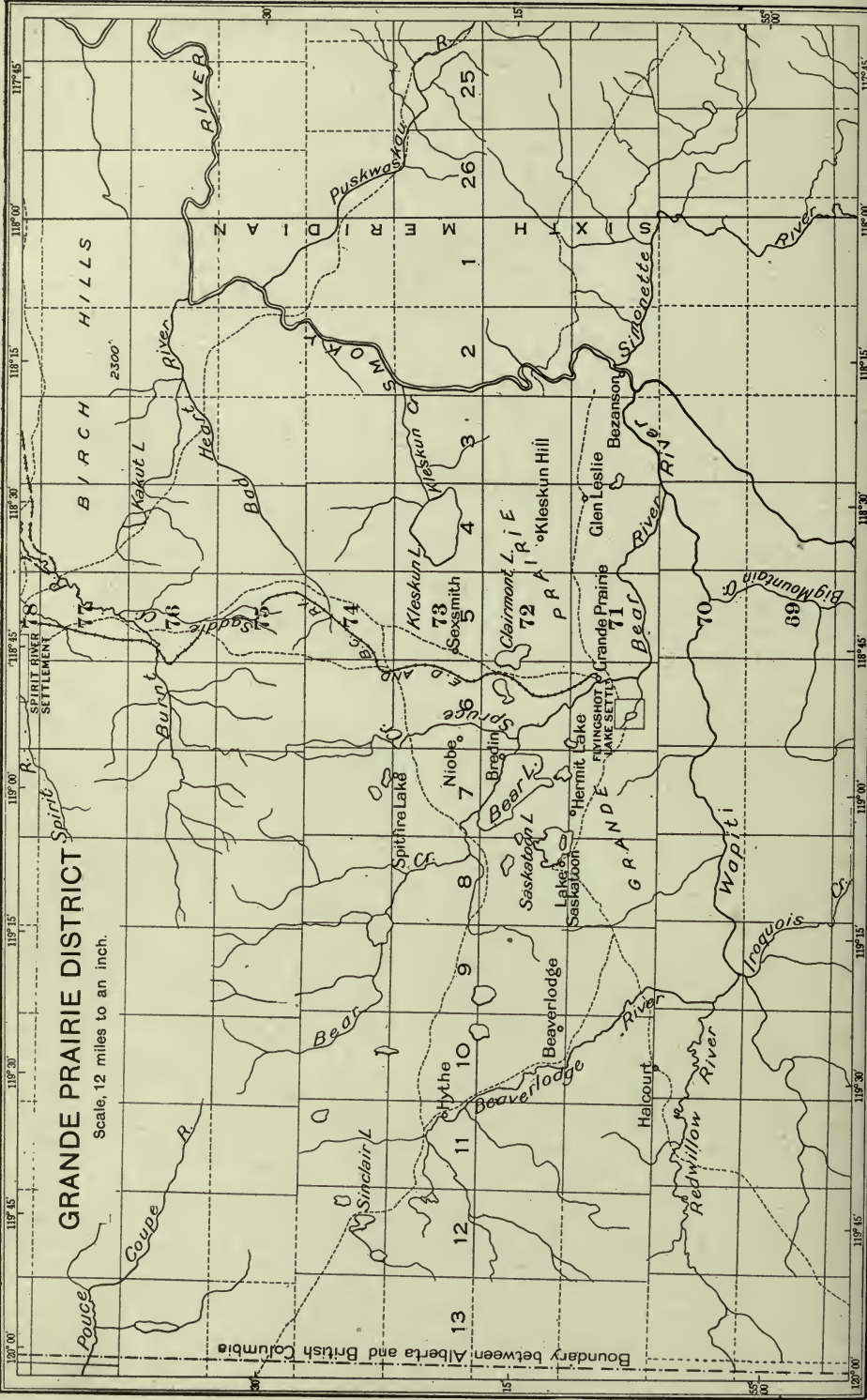
(*North two-thirds.*)—This township can be reached from Flyingshot Lake Settlement either by wagon or by pack-trail. The wagon road touches Wapiti River just west of the west boundary of section 30. Numerous pack-trails follow along the valley of this river which runs generally east through the township entering in section 19 and leaving in section 24. The river can be forded near the east boundary of section 15 opposite the mouth of Big Mountain Creek, a stream averaging about four feet in width and flowing from the south. The top-soil is generally a layer of from two to four inches in depth of loam, sandy loam or sand and is underlain by clay, gumbo or, in a few instances, sand. It would generally be of little agricultural use. North of Wapiti River sand predominates. Wapiti River bed



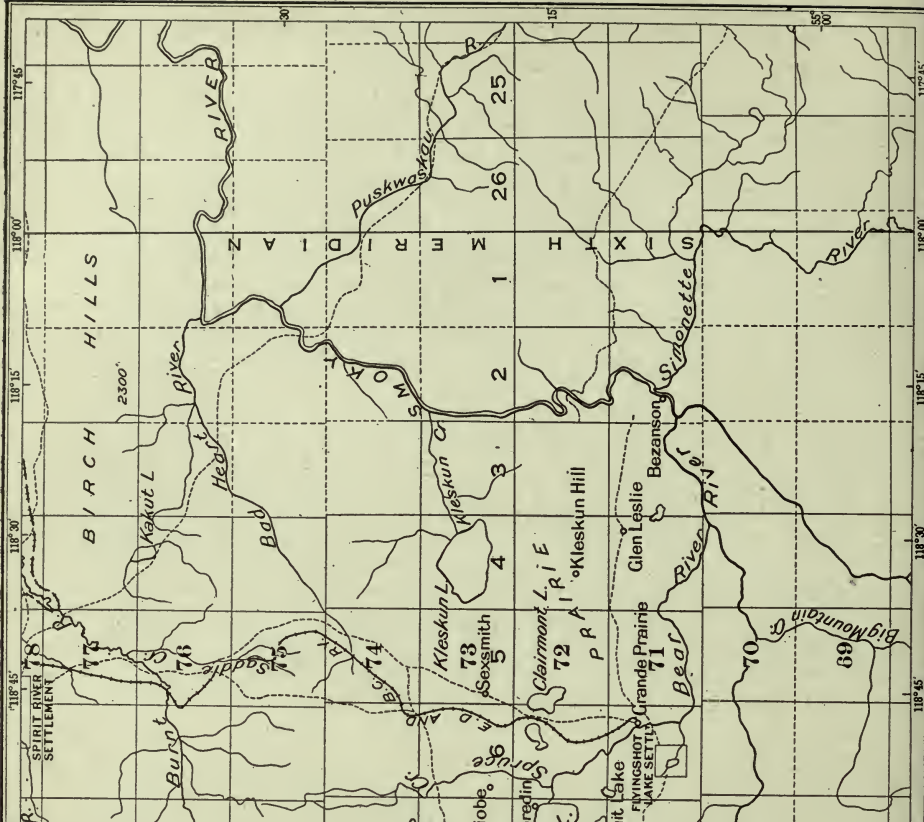
GRANDE PRAIRIE DISTRICT

Scale, 12 miles to an inch.

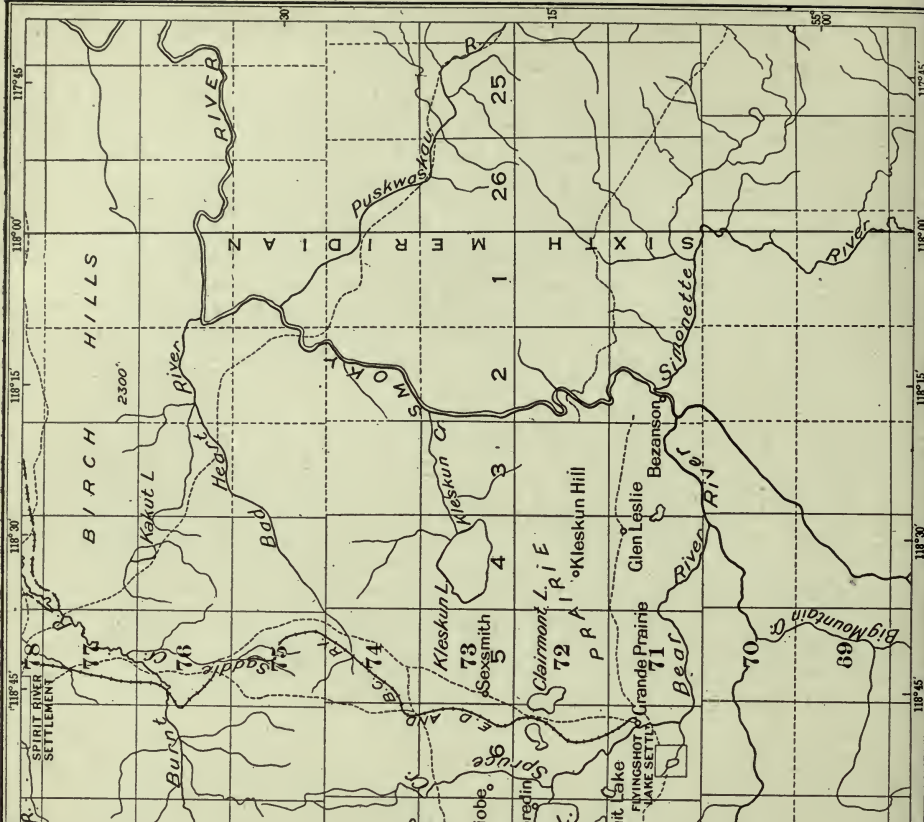
Boundary between Alberta and British Columbia



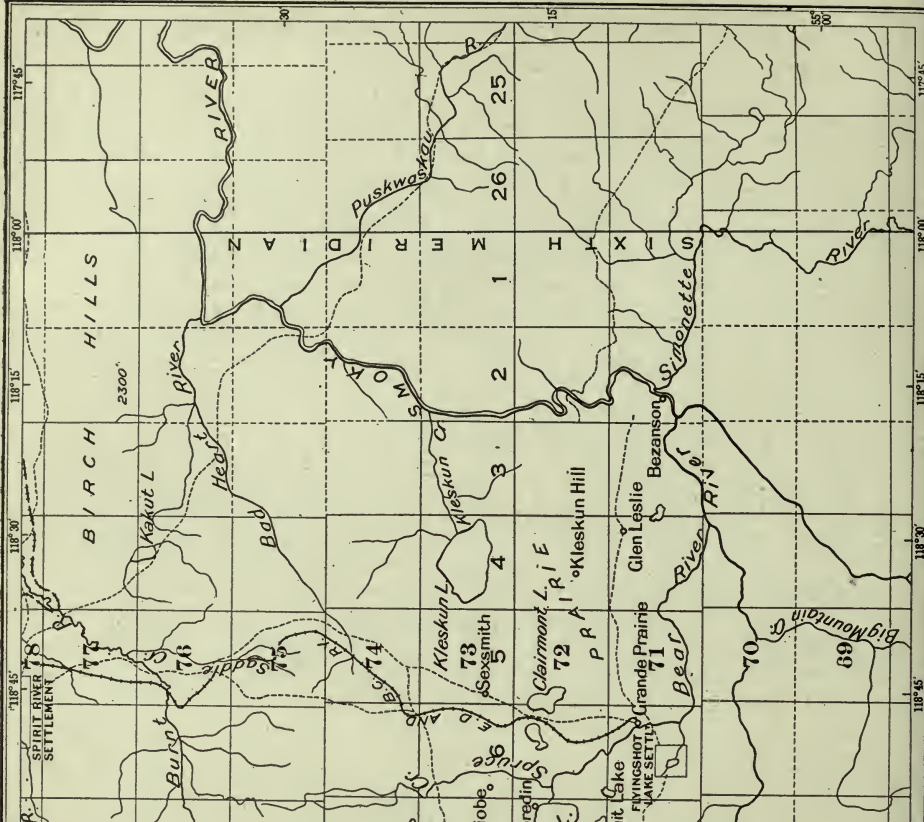
Spirit River Settlement



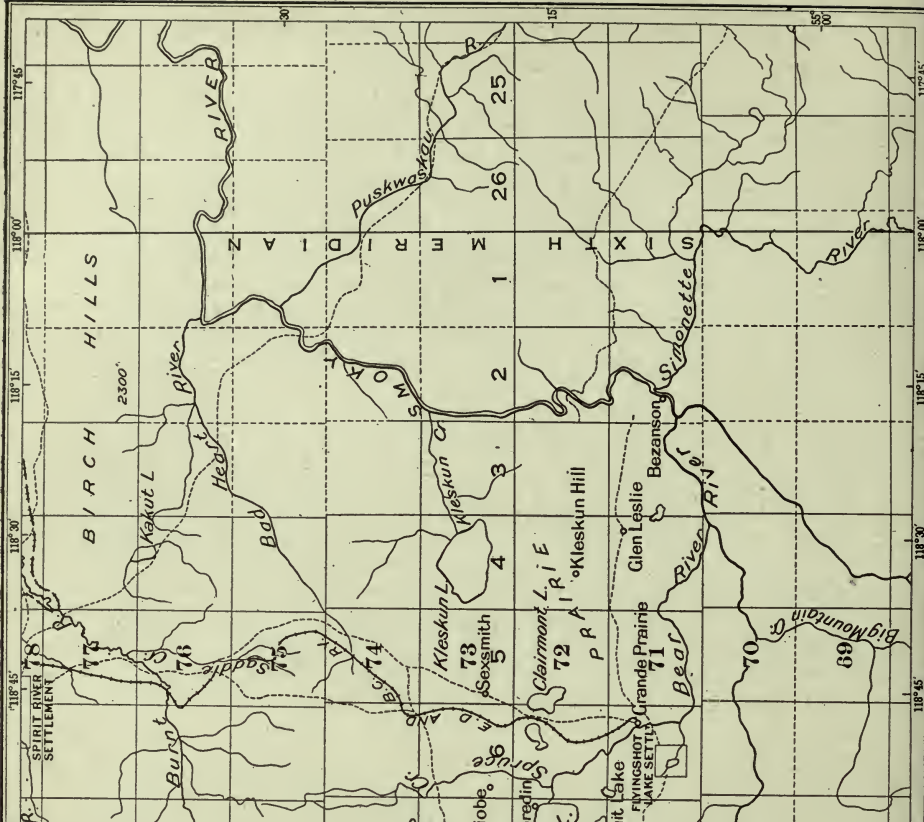
Birch Hills



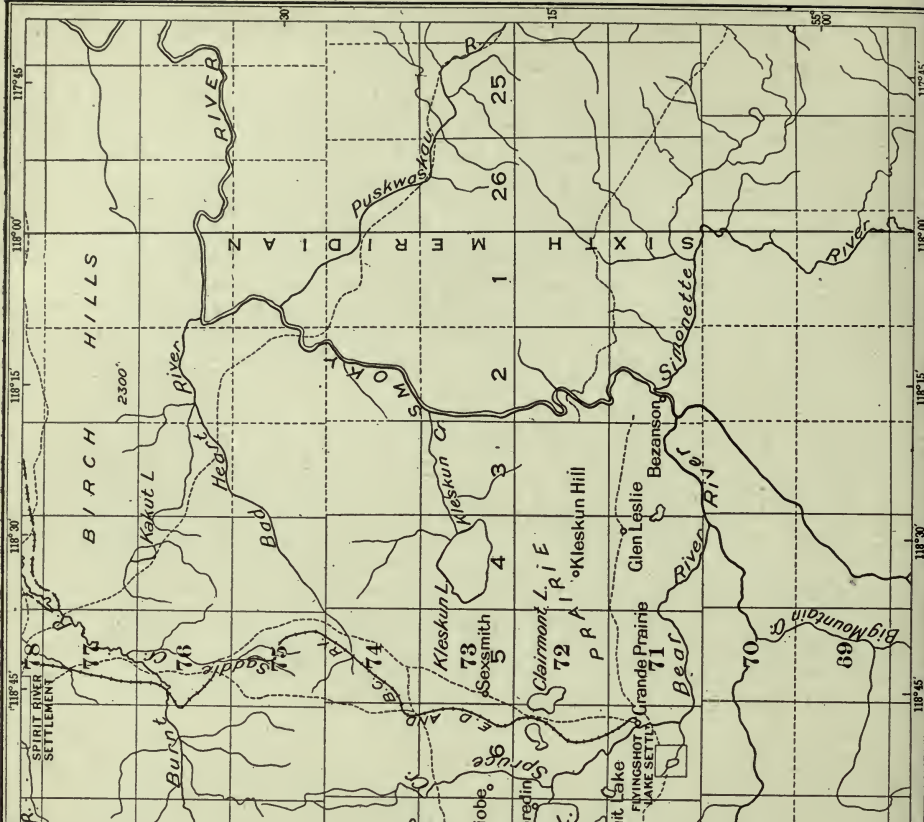
Keskun



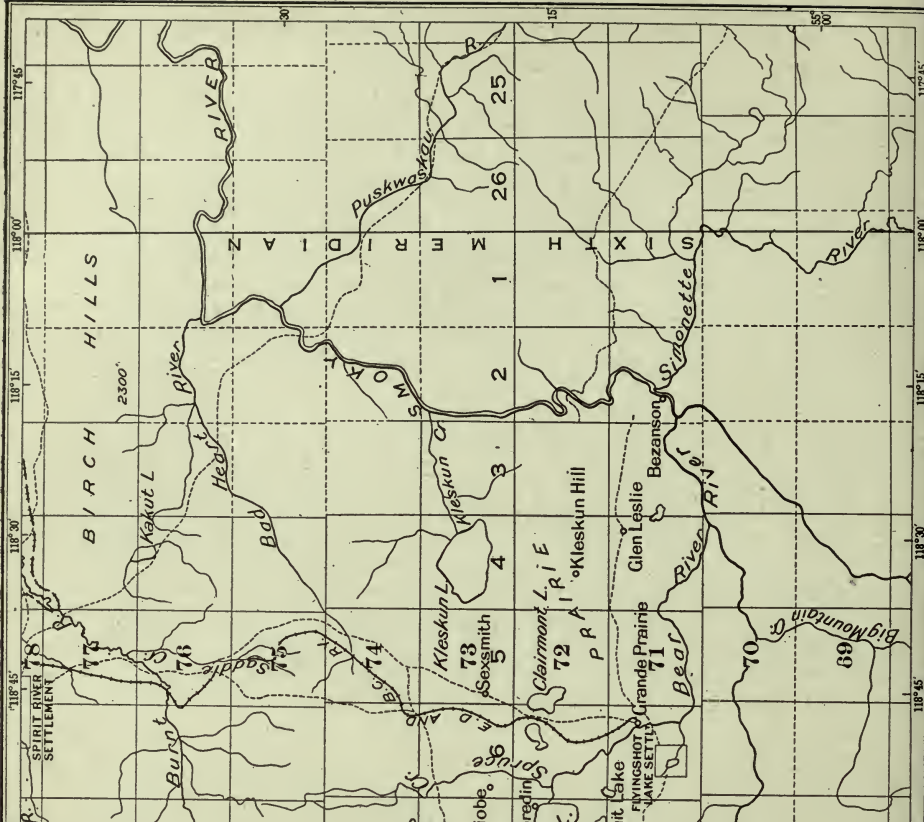
Keskun Hill



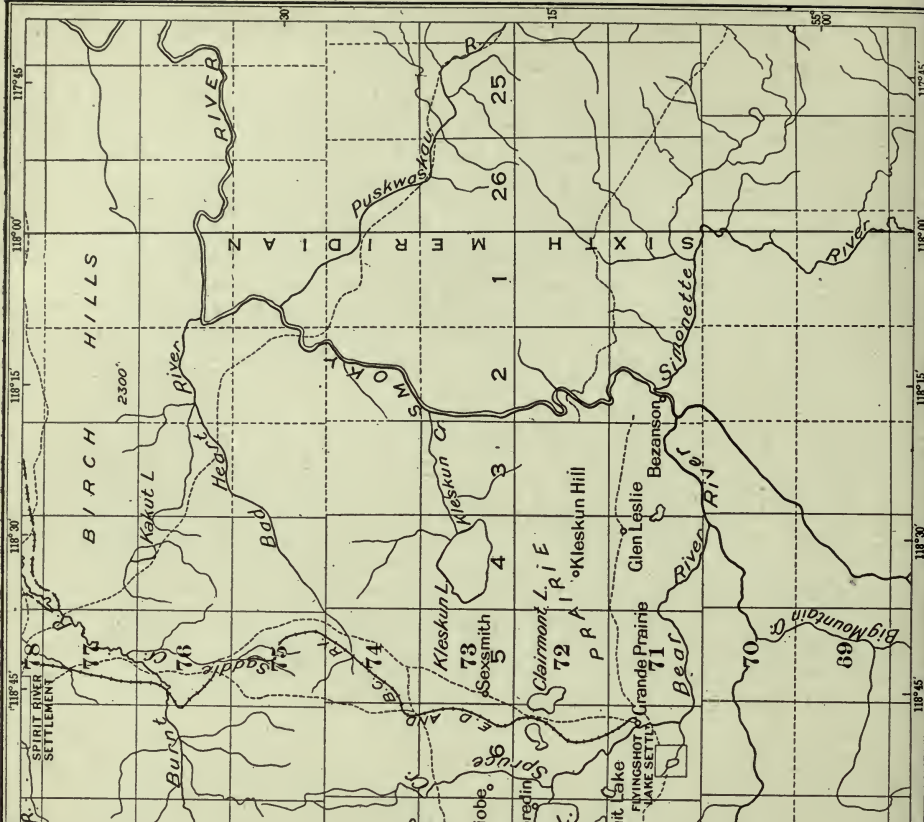
Spirit River



Grande Prairie



Spirit River



Spirit River

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

averages ten chains in width. When running full, this stream has a current of six miles per hour, and as extremely sudden rises occur, it is a dangerous river. Its valley is from one-half to one and a half miles in width from edge to edge and averages four hundred and fifty feet in depth. It is very broken as each creek has worn down deep gorges along the valley, the valley of Big Mountain Creek being nearly as deep and as rough as that of the Wapiti. Many small sloughs occur and probably in a dry year hay could be cut. The growth of upland grass and peavine is good, but owing to the sandy soil it is not as luxuriant as elsewhere in the Wapiti Valley. Lignite exposures occur along the Wapiti and Big Mountain Creek, seams being three feet thick in places. This coal is used by blacksmiths and others in Grande Prairie and is reported as excellent. A few small deposits of marl were noticed around the lakes in the northern part of the township. Game was plentiful, consisting of moose, bears, deer, grouse, prairie chickens and ducks. In Wapiti River were found several varieties of trout, grayling, pike, pickerel, perch and sucker.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 71 The soil is a black loam, from six to twelve inches deep, with a clay subsoil, and is excellent farming land. The surface is gently rolling, and covered with almost continuous bush to the south, but there is considerable prairie with stretches of poplar and willow scrub to the north. Timber is not plentiful but some poplar and scattered spruce from six to twelve inches in diameter were seen. There is an abundance for settlers' needs, but not enough for a limit. A small quantity of upland hay of good quality is found on the prairie to the north, also a little slough hay. The land is not liable to floods and there is no water-power, although water is fresh and plentiful in Bear Creek, in two other creeks, and in numerous lakes and sloughs. The weather was mild and warm (June) with a fair amount of rain and occasional light frosts. No stone-quarries nor minerals were seen, and the game consists of ducks, geese and bears.—*W. G. McFarlane, D.L.S., 1909.*

(*South third.*)—This township can be reached directly from the Grande Prairie Road by wagon, sleigh or pack-trail. The surface is rolling, being broken by the valley of Bear River, a tributary of Wapiti River. It enters the township in section 7 and leaves in section 13, the valley steadily increasing in depth but averaging one hundred feet deep and half a mile in width. The river itself is about forty feet in width. The soil is from two to six inches of loam or sandy loam overlying a sandy clay or sand subsoil, and should generally be suited for agriculture, although rather heavily timbered with poplar, spruce and jack pine. In a dry season small quantities of hay could be cut around many of the small sloughs which were found throughout this portion of the township. While there is little timber of merchantable size and quality, firewood is plentiful. Bear River has a considerable fall, and some power could probably be developed if a suitable site were found. No minerals were seen. Ducks, geese, grouse, prairie chickens and bears were plentiful, and pike were found in Bear River.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 72 The surface of this township is gently rolling, the greater part being prairie, but numerous bluffs of poplar and willow of no merchantable value stretch across it. The soil consists of three to nine inches of black loam with a gravelly subsoil toward the south-east and west, and a clay subsoil over the remainder, the whole making good farming land. Hay of excellent quality is found in the north half of the township, but it is rather scarce towards the south. Clairmont Lake on the west boundary and several sloughs furnish a plentiful supply of fresh water, and no land is liable to be flooded. Although the weather was mild and warm (June) with a fair amount of rain, slight frosts were noticed, and west winds generally prevailed. Wood fuel is plentiful, but no coal, stone-quarries nor minerals were found, while game of the feathered variety consisting of ducks, geese and swans was seen.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 The surface of this township is mostly gently rolling prairie, with a few poplar and willow bluffs scattered throughout, but there is no timber. The soil is five to eight inches of black loam with a clay subsoil, and makes excellent farm land. Hay is scarce, but some slough hay could be cut towards the north and west of the township.

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

A few small creeks flowing down from the hills to the north, into Kleskun Lake, and some sloughs and small lakes furnish a supply of water. No land is liable to be flooded, and there are no available water-powers. The weather during June was mild and warm with an average amount of rain, but the nights were cool and several frosts occurred, the severest being on June 3. Wood fuel is plentiful, but no coal, stone-quarries nor minerals were found. Ducks were the only game seen.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The soil in this township is black loam from two to ten inches deep, with a clay subsoil and is good farm land. The surface is hilly. Natanal Hill just south of the south boundary rises to a height of about two hundred feet above the surrounding country and overlooks the prairie to the south and west. The southern part of the township is mostly covered with willow and poplar scrub, the west with scattered spruce, and the east and north with large timber. There is some splendid spruce along the northern parts of sections 23 and 24 and farther north. It is tall, straight, with but few branches and ranges from six to fifteen inches in diameter. Hay is very scarce. The water is fresh, but not very plentiful. There is one stream running north and east from Natanal Hill. It is small but would probably run all summer. The weather was mild and warm (May) with occasional showers and some frosts. No stone-quarries nor minerals were found, and no game was seen, but moose tracks were numerous.—*W. G. McFarlane, D.L.S., 1909.*

(*North third.*)—The township is crossed by both the old and the new trails from Spirit River Settlement to Grande Prairie. The soil is black loam from two to ten inches on a clay loam subsoil. About eighty per cent. of the surface is covered with spruce, poplar, willow and jack pine of no commercial value, but the remainder has some large timber of the same kind running up to ten inches. No hay meadows were noted. Bad Heart River, flowing through the township, and several sloughs furnish a permanent supply of fresh water. No land is liable to be flooded, and no water-power could be developed. The climate is similar to that of Edmonton and although summer frosts were noted they will probably disappear when the land is cultivated. Wood fuel can be obtained throughout the township, but no stone-quarries nor minerals were seen. Bands of wild horses were seen north of Kleskun Lake; they were in excellent condition. Game consists of moose, bears and partridges.—*J. H. Smith, D.L.S., 1911.*

Tp. 75 Both the new and the old trails from Spirit River Settlement to Grande Prairie pass through this township and are in good condition in dry weather. Black loam from two to eight inches covers a clay loam subsoil, and the land when it is cleared will be suitable for mixed farming. Poplar, spruce and jack pine timber up to eighteen inches in diameter cover almost the whole township, but it is nowhere commercially valuable and should be reserved for settlers' use. No hay meadows were found. Saddle River and several other small streams furnish a supply of good water. No water-powers nor minerals were seen. Wood fuel may be obtained in abundance. The climate is similar to that of Edmonton and although summer frosts occur they will probably disappear when the land is cultivated. Game consisting of moose, bears, beavers and partridges is plentiful.—*J. H. Smith, D.L.S., 1911.*

Tp. 76 The trail from Spirit River Settlement to Grande Prairie passes through this township and in dry weather it is very good. The land, when cleared, will be suitable for mixed farming as it consists of black loam two to twelve inches deep on a clay loam subsoil. The surface is covered with poplar, spruce and jack pine, but none of it is commercially valuable. No hay meadows of any extent are found. Burnt River flowing through the northerly part of this township is thirty feet wide, three feet deep and has a current of two miles per hour. The sloughs and creeks also furnish water fit for domestic use, but the supply is not permanent. Water-power might be developed on Burnt River, but the amount is uncertain, as the stream almost ceases flowing during dry periods. The climate is similar to that at Edmonton, and the summer frosts which occur will probably disappear when the land is cultivated. Wood fuel is abundant, but no stone-quarries nor minerals were found. Bears, moose, beavers and partridges were the only game seen.—*J. H. Smith, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.***Tp. 77**

The only route for reaching this township is the Spirit River and Grande Prairie wagon road, passing through sections 32, 29, 28, 21, 16, 9 and 4. It is a very good road as far as Brulé River. The soil is a deep black loam and in places a black sandy loam overlying a clay and sandy clay subsoil; it is suitable for farming and ranching purposes. With the exception of sections 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17 and 18, the surface, which is undulating, is prairie and bluffs timbered with poplar and large willow with a few scattered spruce. There is in that portion of the township enough timber for building and fencing purposes and fuel. Spruce varying from twelve to eighteen inches and poplar from ten to fifteen inches in diameter thickly cover the slopes of the hills bordering Brulé River, and also sections 1, 2, 3, 4, 8, 9, 11, 14, 16 and 17. The spruce suitable for lumbering purposes is in such large quantities that it is advisable to keep those sections as timber berths. Saw-mills and dams could be erected along Brulé River at different points, namely on sections 4, 15 and 25. This river, with an average width of one hundred and thirty feet and having from five to eight feet of water in the spring, has a very swift current owing to a great number of small rapids met with on its course. The water is clear and fresh and there is a good supply all the year round. Logs could be floated down this stream in the spring. Swamp Creek, a tributary of Spirit River, dries up only late in the fall, and it could be dammed at certain points to retain enough water for the needs of the settlers. Fresh water is also permanent in some of the sloughs and in the ponds situated in the western portion of the township. River lots have been laid out along both streams to give the settlers access to the water. The climate is good and there are no early summer frosts. No minerals of any economic value are known to exist in this township and there are no stone-quarries. The scarcity of game within the territory is due to the constant travelling of the Indians and half-breeds looking for food, and the scarcity of fur-bearing animals is due to the nearly complete disappearance of the rabbits. A few coyotes and bears are the only game seen. Hay is plentiful in the prairie and on the sloughs.—*J. B. Saint Cyr, D.L.S., 1909.*

Tps. 77 & 78

(*East outlines.*)—The country adjoining the east boundaries of these townships can be reached by the Dunvegan, Spirit River and Grande Prairie wagon road and also by the Spirit River and Egg Lake Road.

The greater portion of the surface is prairie and bluffs. The remaining part is timbered with spruce, jack pine and large willow. The largest quantity of spruce and jack pine is found north of the twentieth base line and along Brulé River, which crosses in a north-easterly direction townships 77 and 78, ranges 4 and 5. The water of Brulé River is very clear and good; the current is very swift but there was very little water in it at the time of survey (November). Swamp Creek, a tributary of Brulé River, has also good water. The soil in the above mentioned townships is a black loam varying from five to six inches in depth with a clay or hard clay subsoil. Besides the streams draining that country, I believe that water can be procured by boring deep enough.—*J. B. Saint Cyr, D.L.S., 1908.*

Tp. 78

The Grande Prairie, Spirit River and Dunvegan wagon road crosses this township on sections 5, 6, 19, 30, 29, 32 and 33. A second road passes through sections 19, 20, 29, 28, 27 and 34, and the Egg Lake trail crosses sections 8, 9, 4, 3, 10, 11 and 1. The soil is deep black loam, and in places black sandy loam resting on a clay subsoil, and is suitable for farming land. Sections 13, 24, 25, 26 and part of sections 35 and 36 are thickly covered with poplar and large willow. The surface of the remaining portion is prairie with scattered poplar and willow bluffs. The land is undulating in the south half of the township and rolling towards the north. The valley of Spirit River is timbered chiefly with large cottonwood, poplar and enough spruce for building purposes. Wood for fencing and fuel is also plentiful. Spirit River and Swamp Creek are the only streams draining this township, the former running in a ravine which has an average depth of forty feet, while the banks of Swamp Creek are from ten to fifteen feet high. This stream with an approximate width of twelve feet is from eight to ten feet deep in the spring, while Spirit River is about thirty feet wide and six or eight feet deep at high water, with a swift current. The water of both streams is clear and fresh nearly all summer.

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

As those streams are said to dry up once or twice about every ten years, I believe that in order to obviate this and to provide for a sufficient supply of water all the year round, it would be wise to construct small dams in them. The timber needed for such construction can be easily procured. River lots have been surveyed along the two streams to facilitate access to the water to a greater number of settlers. Prairie and slough hay is plentiful. The climate is very good and there are no summer frosts. No stone-quarries and no minerals of economic value are known to occur. A few coyotes were the only game seen. Barley, oats and wheat grown by a few scattered squatters of this country this summer have ripened well; potatoes, carrots, turnips, onions, etc., have also given a good crop. Herds of horses and cattle were seen every day grazing on the prairie, all appearing to be in excellent condition. The aspect of the country is beautiful. Settlers will find in this township all to meet their requirements. Great improvements have been made in the roads, and communications are much better than a few years ago.—*J. B. Saint Cyr, D.L.S., 1909.*

Tp. 79 (*East outline.*)—The country adjoining the east boundary of this township can be reached by the Dunvegan and Spirit River wagon road. The soil is a black loam varying in depth from six to seven inches overlying a clay subsoil, and is well adapted for farming purposes. The south half of this township is prairie and bluffs and the remaining portion is covered with poplar and spruce averaging fifteen inches in diameter, with clumps of large willow here and there. The country is undulating with the exception of the south part, where it is rolling. Spirit River crosses the township in sections 12, 1 and 2. In the ravine of the river as well as on the sidehills there is a good quantity of spruce from eight to eighteen inches in diameter. The township is also crossed from the north-east to the south-west by the deep ravine of Rat Creek. This stream is a tributary of Peace River. Spruce of good dimensions is plentiful on both sides of that creek, which was nearly dry at the time of the survey (September). There are no water-powers in the district.—*J. B. Saint Cyr, D.L.S., 1908.*

This township can be reached by the Dunvegan and Spirit River wagon road, which enters the township a little south of the north-east corner, leaving it in sections 3 and 4. The soil is a deep black loam overlying a clay subsoil, and is suitable for farming and ranching. The south half of this township is prairie and bluffs, while the north portion is a dense forest of poplar, spruce and large willow. The poplar is from ten to fifteen inches in diameter and the spruce from ten to twenty inches, and both are suitable for lumbering purposes. The country is drained by Ksituan River and its tributaries towards the north-west corner of the township by a creek flowing in a north-easterly direction through the centre, and by Spirit River, which crosses the township in sections 1 and 2. Ksituan River is the largest stream, having an average width of one hundred and thirty feet, a depth of five to eight feet in May and a very swift current, probably six miles an hour at high water. The general fall of the river is from forty to fifty feet to the mile, and the water is permanent. Dams and saw-mill sites can be located in many places along Ksituan River. Though the current is also very swift in the creek, the volume of water is much smaller and the stream dries up about the middle of summer. The hills adjoining the creek vary in height from two to four hundred feet, but Ksituan River flows in a ravine four to six hundred feet deep. The slopes of this ravine, as well as those of the creek, are thickly timbered with poplar, cottonwood and large spruce suitable for lumbering purposes. It would be advisable to keep as timber berths sections 19, 29, 32, 33 and parts of sections 14, 18, 20, 23, 26, 30, 31, 34, 35 and 36. Timber for building, fencing and fuel is plentiful all through the township. There are no stone-quarries and no minerals of any description were found during the survey. A few bears and coyotes are the only game seen. The soil in this township is somewhat superior to that of the adjoining townships, as it contains and keeps more moisture. There are no early summer frosts. The days are so long during the warm summer season that the grain and vegetables have time to ripen well. Some of the best grazing land is met with in this township, as pea-vine, vetch and prairie hay is plentiful. Slough hay can also be procured in large quantities.—*J. B. Saint Cyr, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.* **Tp. 80**

The portion of this township to the north of Peace River is reached from Dunvegan by the old Fort St. John trail, while the part to the south of the river is reached by a pack-trail branching from the Dunvegan-Spirit River wagon road about a mile south of the river. The soil consists of black loam from two to four inches deep overlying a clay subsoil. Vegetables of good quality have been grown during the past summer (1915). The surface is generally undulating and timbered with poplar and spruce from four to fourteen inches in diameter. Most of the spruce is found in the valleys of Peace and Ksituan Rivers. There is very little hay. The water is fresh and the supply is both sufficient and permanent in the vicinity of Peace River, but throughout the remainder of the township water was difficult to find. Peace River averages, approximately, twenty chains in width. At time of low water it is from fifteen to eighteen feet deep and flows at the rate of four miles per hour, while during high water it rises about fifteen feet and has a current of about seven miles per hour. There are no rapids in this township. Ksituan River usually averages one chain and a half in width, but at the time of survey (September) the water was found only in pools. During time of high water this river must be very swift, in fact one continuous rapid. The land is not liable to be flooded. Summer frosts occur. Wood for fuel is plentiful. There are no coal nor lignite veins, stone-quarries nor minerals of economic value. The game consists of moose, bears, deer, foxes, coyotes, rabbits and partridges.—*T. A. Davies, D.L.S., 1915.*



Farm at Peace River Crossing

Photo by Burke, Edmonton **Tp. 81**

This township can be reached by a pack-trail leaving the Dunvegan wagon road in section 3 of the township to the east. The soil consists of black loam averaging four inches in depth overlying a clay subsoil. The surface of the western two-thirds of the township is undulating, while the remainder is rough, and broken by the valley of Muddy Creek. The township is timbered throughout with poplar from four to fourteen inches in diameter, scattered spruce and jack pine. There is no hay other than that contained in a few prairie patches. The water is fresh but cannot be said to be sufficient and permanent as there are no lakes and as Muddy Creek, the only stream of importance, very often practically dries up. Muddy Creek, during high water, is approximately twenty-five feet wide, from three to five feet deep and has a current of about five miles per hour. Ordinarily it is only about a foot deep and flows about two

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

miles per hour. Summer frosts occur. Wood for fuel is very plentiful. There are no coal nor lignite veins, stone-quarries nor minerals of economic value. The game consists of moose, deer, bears, foxes, coyotes, rabbits and partridges.—*T. A. Davies, D.L.S., 1915.*

Tp. 82 This township may be reached by a pack-trail which leaves the Dunvegan wagon road in section 3, township 81, range 4, and runs in a north-westerly direction. It may also be reached by the Fort St. John wagon road which leaves the Dunvegan Road in township 81, range 3, and runs in a northerly direction, crossing Hines Creek near the centre of township 83, range 4. From here the old Fort St. John pack-trail runs westerly through township 83, range 5, from which township another pack-trail leads in a southerly direction to this township. The soil throughout the western half is a black loam of four inches in depth with a clay subsoil, while the remainder of the township is occupied by sand-hills and moss swamps. The western part is broken by the rough valley of Muddy Creek and its tributary coulées and is timbered with poplar and spruce from four to twelve inches in diameter, while the eastern part of the township is rolling and covered with spruce and jack pine of inferior quality. There is no hay. The water is fresh but the supply cannot be said to be sufficient and permanent owing to the absence of lakes and to the small quantity of water in the main stream of the township during part of the year. Muddy Creek, during high water, is approximately twenty-five feet wide, from three to five feet deep, and flows at the rate of about five miles per hour. Ordinarily it is only about one foot deep and has a current of about two miles per hour. Summer frosts occur. There are no falls but small rapids are found on Muddy Creek. Wood for fuel can be obtained in any part of the township. There are no coal nor lignite veins, and no stone-quarries nor minerals of economic value were discovered. The game consists of moose, deer, bears, foxes, coyotes, rabbits and partridges.—*T. A. Davies, D.L.S., 1915.*

Tp. 83 This township may be reached from the Fort St. John wagon road which leaves the Dunvegan wagon road in township 81, range 3, and runs in a northerly direction, crossing Hines Creek near the centre of township 83, range 4. From this point the old Fort St. John pack-trail runs westerly through this township. The greater part of this township is suitable for farming, the soil consisting of about four inches of black loam overlying a sandy clay subsoil. In sections 1, 2, 3, 10, 11 and 12 there is about two inches of black loam overlying a sand subsoil. The surface is generally undulating, although broken by the valleys of Jack and Muddy Creeks. The township is covered mostly with second-growth poplar, willow and scattered spruce. Hay may be found in limited quantities in sections 27, 28, 33 and 34. The water is fresh and the supply is both sufficient and permanent. Jack Creek varies considerably in size owing to old beaver dams. The average width is about six feet, the depth about fifteen inches and the current about half a mile per hour. No land is liable to be flooded. Muddy Creek averages thirty feet in width, and at time of high water is four or five feet deep and flows at the rate of four miles per hour. Ordinarily Muddy Creek is only a foot deep and has a current of about two miles per hour. There are small rapids along the creek. Summer frosts occur. Wood for fuel can be obtained in any part of the township. There are no coal nor lignite veins, stone-quarries nor minerals of economic value. The game consists of moose, deer, bears, foxes, coyotes, rabbits and partridges.—*T. A. Davies, D.L.S., 1915.*

Tp. 84 This township can be reached by the Fort St. John wagon road as far as section 2 of the township to the east and thence by a fairly good wagon trail running in a westerly direction. Most of the township is suitable for farming, the soil consisting of from four to six inches of black loam overlying a clay subsoil. The surface is undulating and covered with second-growth poplar and willow. There are several large patches of prairie where hay may be obtained, although not in any large quantity. Jack Creek contains the only water in the township. It is fresh and the supply is both sufficient and permanent for the south third of the township. This creek varies in size owing to old beaver dams. The average width is three feet, the depth about fifteen inches and the current about one-half mile per hour. No land is liable to be flooded. There are no falls nor rapids. Summer frosts occur. Wood for fuel is

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

readily procured in any part of the township. There are no coal nor lignite veins, stone-quarries nor minerals of economic value. The game consists of moose, deer, bears, foxes, coyotes, rabbits, prairie chickens and partridges.—*T. A. Davies, D.L.S., 1915.*

Tp. 85 By travelling over the Fort St. John trail from Island Lake we arrived at our first camping ground which is located where the trail crosses Montagneuse River. For the most part the trail is good but permanent bridges are badly needed. The soil throughout the township is excellent and is most suitable for agriculture. The surface is generally covered with poplar and willow with a few scattered willow swamps. These swamps are very wet, but could generally be drained at small expense. In some places there are small clumps of spruce, but not in sufficient quantity to be of any commercial value. There is no hay of any importance but the pasture is excellent wherever the brush and timber is not too dense. The water is fresh and during this season there has been an abundance of it. The main source is Montagneuse River which is almost fifteen feet wide and has an average depth of four feet and a current of three miles per hour. The land is not liable to be flooded as the river banks are fairly high. No waterfalls nor rapids exist and very little power could be developed by erecting dams. The climate is much the same as that of southern Alberta except that summer frosts are frequent. This is accounted for by the many small swamps, and in my opinion the frosts were more frequent this year on account of the wet season. There were no signs of coal either on the surface or along the beds of the streams and therefore wood is the only available fuel at present. No stone-quarries nor minerals were found. The game consists of a few moose, bears in large numbers, fur-bearing animals and several species of grouse and ducks.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 86 We reached this township by the Fort St. John trail which crosses the south-west corner of the township. This portion of the trail is very bad in the summer on account of the swamps and sloughs which are caused principally by beaver dams. There is a summer trail however, which is much better; it passes east of most of the swamp and joins the main trail farther north. A wagon road was cut from the Fort St. John trail to our camp in the south-east quarter of section 28, the junction of the two trails being situated in the north-east quarter of section 18. This road is all located on high land and is in excellent condition. The soil in this township is black loam with a clay subsoil and is very suitable for agriculture. The surface for the most part is timbered with poplar up to one foot in diameter with an occasional spruce. As the altitude rises to the north, spruce becomes more in evidence until section 36 is reached, the west half of which is heavily timbered with spruce up to two feet and a half in diameter. There are open spots scattered here and there throughout the township, but no large tracts of prairie exist. Most of section 4 is low and the greater portion of it is covered with a willow swamp. There is also a large willow swamp which covers the west halves of sections 1 and 12, the east halves of sections 2 and 11, the south-west quarter of section 13, portions of the east half of section 14, and a portion of the south half of section 23. There is very little hay, but the pasture is exceptionally good in all the open places, and in most of the timbered parts where the undergrowth is not dense. The water is fresh. There are no falls and no water-power can be developed since the streams are all small and would dry up in a dry season. The climate is much the same as that in the more southerly portions of the province but at present summer frosts are frequent. There are no surface indications of coal so at present wood is the only available fuel. No stone-quarries were found and no minerals are in evidence. Game consists of moose and bears in large numbers, several species of grouse and quite a number of fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tps. 87 & 88 (*East outlines.*)—These townships are rough and have a gravelly soil which is not suitable for agriculture. They are heavily timbered with poplar, spruce and jack pine running as high as twenty inches in diameter. The water supply is dependent on small creeks and in all probability is not permanent. There are no falls nor rapids, and no power could be developed by the erection of dams. There

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

is no hay. The climate is much the same as that of other parts of the province except that summer frosts are frequent. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. The game consists of a few moose, bears and several species of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

RANGE 6

Tp. 68 (*North outline.*)—This township contains much high rolling land. The greater part is covered with scrub willow, and is thinly wooded with a second growth of poplar and birch. There is also some partly open country. The west half of the range is stony in places. All the brooks, large and small, crossed by the line were dry (August) and the water for the use of the camp had to be drawn from wells dug in the muskegs which had not been overrun by fire. Later on, however, a flowing spring, which was discovered near the centre of section 31 supplied us with the only running water we had since leaving Big Mountain Creek. This spring feeds a creek which flows to the south-east, where it is reported to join Big Mountain Creek. Another creek which crosses the line in section 32 runs northward and empties into the west branch of Big Mountain Creek.—*Arthur Saint Cyr, D.L.S., 1906.*

Tp. 69 (*East outline.*)—No trails were found crossing this line but the adjoining country can be reached from Flyingshot Lake Settlement, there being numerous wagon roads from that point to Wapiti River. South of the river pack animals were required. The country along the line is nearly level and is generally wet. The timber consists of jack pine, tamarack and poplar, most of which is fire-killed resulting in heavy windfall. Several small creeks tributary to Wapiti River cross the line, the largest being about twelve feet in width crossing the east boundary of section 13. The soil consists of sand or clay and is not suitable for agriculture. Fuel is abundant. Grass and hay are scarce. No minerals were found nor was any game seen.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 70 (*North two-thirds.*)—Many wagon roads run from Flyingshot Lake Settlement to Wapiti River, thus making this township readily accessible. The surface is gently rolling but badly broken by the valley of Wapiti River which enters in section 18 and leaves in section 24. This valley is from one to two miles in width and would average four hundred and fifty feet in depth. The soil generally is too sandy for agriculture, although the northern tier of sections contains some very good land. Hay is at present cut in sections 33, 34 and 35 around small lakes and sloughs. South of these sections the growth is not so luxuriant. The timber consists of poplar, spruce and jack pine, much of which has been fire-killed and except in small patches is of little commercial value. Water is plentiful and of good quality. Fuel is abundant. Lignite is mined in section 24, where a small outcrop occurs on the river. Several exposures of soft sandstone and shale occur along the river. Trout of several varieties, jackfish and sucker are found in Wapiti River. The game, however, has largely been exterminated, although a few evidences of moose and bears were found. Prairie chickens and ducks are fairly plentiful.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 71 This township can be reached by the Spirit River and Dunvegan wagon road. As in township 72, the country is undulating and the soil is a deep black loam or sandy loam resting on a clay or sandy subsoil. The surface in that portion surveyed is prairie and bluffs. Lake No. 2 situated on the east boundary of section 36 is very small. Bear Creek crosses this township from section 33 to section 11. The supply of water furnished by the lakes and streams is permanent, but the best water of all is found in Bear Creek. There are no water-powers and no stone-quarries. No mineral of any description has been found during the progress of the work. Hay can be procured in good quantities all through this township. Wood for fuel is plentiful and timber for building purposes can be procured along Bear Creek and towards the south-east portion of this township. Ducks and geese are plentiful, in the spring and autumn, on the lakes. The climate is very good all through Grande Prairie. Last summer

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

there were two frosts in August, but the people of the place say that generally there are no early frosts in the summer. Grain and vegetables are successfully raised on Grande Prairie. Flying-shot Lake Settlement is included in this township and lies in a low place mostly surrounded by timber. This settlement comprises sections 9 and 16, with the easterly halves of sections 8 and 17, and the westerly halves of sections 10 and 15, nearly two miles square. In the middle of this settlement is a small lake called Flyingshot Lake, which is shallow and contains water of poor quality. The surface consists of bluffs and prairie and the soil is composed of a deep black loam resting on a sandy clay subsoil. About three-quarters of the surface covered by the settlement is thickly timbered with poplar and large willow with a few spruce here and there. A small quantity of hay is cut around Flyingshot Lake, but most of the hay is cut outside of the settlement. Potatoes are raised successfully every year and this summer small fields of oats were looking very fine. Wood for fuel is plentiful in the settlement. There are no water-powers, and no minerals of any description have been found there. As at Spirit River and all through the West two frosts were felt in August at Flyingshot Lake Settlement, but the people of the place say that the frost comes always later than that. The supply of water is permanent and more than sufficient for the needs of the settlement. Ducks and geese are plentiful in the spring and autumn around the lake. The climate is good and the autumn is generally long and fine. The country around the lake is undulating and rolling. There are no stone-quarries. The people of Flyingshot Lake Settlement communicate with Saskatoon Lake, Bear Creek Settlement of Spirit River by two fairly good wagon roads in the prairie country, but through the timber between Grande Prairie and Spirit River the road is in very bad condition. These roads will improve with time and I was told in the fall that the government had men opening a new one with a better location. The country is much better north of the settlement and near Bear Creek.—*J. B. Saint Cyr, D.L.S., 1907.*

(*Partial.*)—This township can be reached from Flyingshot Lake Settlement. The soil consists of four to twelve inches of black loam with clay subsoil and makes excellent farming land. The surface is gently rolling, but most of the north part is prairie, with poplar and willow bluffs, while the south has considerable scrub. Upland hay of good quality is fairly plentiful, while slough hay can be obtained in abundance north-west of Flyingshot Lake. There are no water-powers, and no land is liable to flooding except the slough north-west of the lake. The weather was fine and warm with occasional showers and cool nights, but no summer frosts were noticed. Wood for fuel can be obtained in abundance, but no coal, stone-quarries nor minerals were noticed. Game consists of ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*

(*South third.*)—Flyingshot Lake Settlement is located in this portion of the township, and is approximately four miles from Grande Prairie. Wagon trails are plentiful, radiating from Flyingshot Lake Settlement. The surface is gently rolling and covered with poplar, willow, jack pine and spruce. The soil consists of from two to six inches of black loam overlying a sandy clay subsoil and, as a whole, is not unsuitable for agriculture. Small open patches occur. Hay is plentiful. Fuel is sufficient. No minerals nor stone in place were seen. Bear River flows through sections 11, 12, and 1, its valley being thirty chains in width and up to one hundred feet in depth. This stream runs nearly dry in some seasons, but at the time of survey it was found to be thirty feet in width and two feet in depth. Water is plentiful and of good quality. The only game seen was prairie chickens and ducks. Jackfish are found in the river.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 72

This township can be reached by the Spirit River and Dunvegan wagon road which crosses the township from section 36 to section 1. The country is undulating and the surface is prairie and bluffs. The soil is a deep black loam resting on a clay or sandy clay subsoil. Hay is plentiful, a large quantity being procurable around Clairmont Lake on the east boundary of the township and around Ferguson Lake in sections 27 and 22. There is also a large hay slough or marsh on sections 20, 21, 28 and 29, and hay can be obtained in good quantity near a lake in section 6, and in section 19. Bear Creek crosses sections 19, 20, 17, 8, 9, 4 and 3. Spruce Creek, which empties into Bear Creek in section 19, coming from the north, is a fairly large stream. The water in the lakes and streams of this township is permanent

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

and good. Wood for fuel is plentiful. There are no water-powers, and no mineral of any description has been found. There are no stone-quarries. Ducks and geese abound in the spring and autumn on the lakes and streams of the township. This summer Grande Prairie has a fine appearance; better grazing land cannot be seen anywhere. Settlers will find there everything to meet their requirements. Frosts were felt last summer, but generally there are no early summer frosts. The climate is very good and grain and vegetables are raised with success by the few scattered settlers of Grande Prairie.—*J. B. Saint Cyr, D.L.S., 1907.*

A good trail runs from Bear Creek through the east half of this township. The soil consists of about six inches of black loam on a clay subsoil and is excellent farming land. The surface is gently rolling and nearly all prairie, but there are some poplar and willow bluffs scattered over the prairie, though the timber is not of merchantable value. In the north half of the township hay is very plentiful, and a large quantity of slough hay could be cut around Ferguson and Clairmont Lakes, while between these lakes and to the south some upland hay grows. There are no streams nor available water-powers, but water is fresh and plentiful in the two lakes mentioned above. At the time of survey (June) the weather was fine and warm with occasional showers, but no summer frosts were noticed. The poplar which grows in the bluffs furnishes abundance of fuel. No stone-quarries nor minerals were found and the game seen consisted of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 The soil consists of six to twelve inches of black loam with clay subsoil, and would make excellent farm land. The surface is rolling and mostly prairie, especially to the south and west, but scattered bluffs of poplar and willow scrub are found over the whole of the township, being thickest to the north-east. There is no timber of value, but some six-inch poplar poles can be found in some of the bluffs to the north-east. Hay is not very plentiful but some upland hay of good quality can be cut almost anywhere on the prairie. The water is fresh and fairly plentiful in Pine Creek, and a small creek to the east and also in a few small lakes to the north. Pine Creek flows southerly near the centre of the township. It is about twenty links wide and from two to four feet deep, with a current of three miles an hour in the early summer, but nearly stops running later on. The other streams to the east are very small and dry up in the summer. The land is not liable to be flooded, and there is no water-power. The weather was warm and fine with some rain and cool nights, but no frosts. The only fuel is poplar wood, but it is fairly plentiful. There are no stone-quarries nor minerals and the only game seen was ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The soil in this township is a black loam, about six inches deep with a clay subsoil, and it would make excellent farm land. The surface is gently rolling, the greater part covered with poplar and willow scrub interspersed with numerous patches of prairie. There is scarcely any timber, but small poplar and spruce are available for fuel. Hay grows sparsely on the prairie patches. Water is fresh and fairly plentiful in Pine Creek which crosses the south-west corner, and in some sloughs to the north and east. There is no water-power and the land is not liable to floods. The weather was warm and fine (July) with no summer frosts. No stone-quarries nor minerals were found and no game except ducks was seen.—*W. G. McFarlane, D.L.S., 1909.*

The road from Spirit River Settlement to Grande Prairie passes through this township, and is good for travelling except at the creek crossings. The soil consists of six inches of black loam on a clay subsoil and is good farm land. The surface varies from open at the south to scrubby bush at the north and is rolling and rough in places. A few scattered spruce of small dimensions are found, but the amount of timber is small. Hay is plentiful in beaver meadows to the south, but none grows towards the north. Water is fresh and plentiful in sloughs and numerous small streams running southerly. No water-powers are found and no lands are liable to be flooded. Wood fuel is plentiful everywhere, but no minerals nor stone-quarries were found. A few bears were the only game noticed.—*W. G. McFarlane, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

Tp. 75 The land in this township is not very good for farming as the black loam over the clay subsoil is very shallow. The surface slopes north and is all covered with brush or timber consisting of spruce, jack pine and poplar up to twenty-four inches, the greater part of which is killed. Some good green timber grows near the south chord, and some clumps are found throughout the township. Such an immense amount of windfall is piled up that one can walk for miles on trees sixteen inches in diameter without touching the ground. No hay grows, but water is fresh and plentiful in early summer; the supply may not be permanent as the streams are small. No water-power is available nor are any lands liable to be flooded. Wood fuel is plentiful but no minerals nor stone-quarries were seen. Bears, the only game seen, were very numerous.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 76 The route used to reach this township is a pack-trail which was cut along the central meridian, and which runs along the central meridian of the township to the north. This pack-trail is not very good on account of the heavy brulé encountered. The soil is mostly a good loam with subsoil of clay, but owing to fires, the soil in many places has been almost burned off. This would make good land for agricultural purposes if the timber were cleared. There is little timber of value left in this township, the old fires having destroyed a great deal which was of a good size, but now the dead timber has fallen, especially south of Brulé River, where it is almost impassable. There is a small quantity of good spruce about eighteen inches in diameter along the lines between sections 7 and 8, 17 and 18, and 8 and 17, but it is not in commercial quantities. The remainder of the township is mostly poplar up to eight inches with some spruce here and there. Many places have been well burned off and only scrubby poplar is left. North of the river the fires seem to have made a more complete destruction of the timber and little is left. There is no hay in any quantity throughout the township. Good feed is obtained anywhere but in no place can it be cut for hay on account of brulé and timber. Water is good and is supplied by the many creeks and Brulé River, but the creeks are mostly small. Brulé River runs through the central portion of the township from west to east and has a channel of about one hundred feet wide and twenty feet deep. The water becomes quite low in summer and perhaps would average four feet in depth, many places being deep and sluggish. The rate of flow would be one mile per hour. With heavy rains, the river floods its banks, but not to any great extent on account of the deep channel. The water is always colored by the clay along its banks, but otherwise it is of good quality. There would be little water-power available here on account of the small volume of water in ordinary times. The climate is rather cool and summer frosts of no great severity were recorded along the valley of the river. Wood fuel is abundant, but no coal seams were observed. No stone-quarries, minerals nor game were seen. The surface is not broken very much only along Brulé River, which has a valley of about half a mile wide and a depth of fifty feet. In the southern portion of the township the valleys of the creeks are quite prominent.—*G. A. Tipper, D.L.S., 1915.*

Tp. 77 This township is well supplied with wagon roads going in all directions. The surface of the north part is prairie and bluffs, while the south half is a thick forest of spruce, cottonwood, poplar and large willow. There is heavy windfall from section 1 to section 6, along the base line and also on sections 29, 31 and 32. The soil is fairly deep black sandy loam resting on a sandy clay subsoil. The climate is better than in any of the surrounding townships. The frost seems to come two or three weeks later than in Spirit River Settlement. Hay is plentiful, and permanent fresh water can be procured in a lake on section 28, and in ponds scattered through this township. A few coyotes were the only game seen. Timber for building and fencing and wood for fuel is plentiful. Spruce, found in large quantities in the middle of the township and suitable for lumbering purposes, measures from ten to thirty inches in diameter. Sections 7 to 24 should be reserved. There is on sections 19, 20 and 21 a remarkable hill called "Old Ranch Mountain," having an approximate height of one hundred and fifty feet above the country half a mile away. A bed of soft coal about six feet deep exists on the south side of the hill.—*J. B. Saint Cyr, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

(*South two-thirds.*)—The route to this township is by a fairly good wagon road leading from Spirit River in section 34. The soil is good for agricultural purposes, but the most of this portion of the township is heavily wooded and so not of immediate use as such. In sections 21, 22, 23 and part of 24, large openings occur and all are of use for immediate settlement. There are settlers on the north of these sections. The remainder of the township is unfit for settlement in its present state. Sections 19, 20, 18, 17, 16, 15, 14 and 13 are fairly well timbered with poplar and spruce of good merchantable size and in fact a portable saw-mill is operating in this district and much of the good timber is now cut. In sections 18 and 17 nothing has been done as yet, but reports are that the mill will move in that direction for this coming winter. The western part is rather hilly as what is known in the vicinity as "White Mountain" commences in the western part of section 21 and runs west as a range of hills. Section 18 is also hilly, but the remainder is fairly level. Water of good quality is supplied by the creeks running through the southerly part, and these are of fair size, being about three to four feet wide and from one to three feet deep the greater part of the season. The lake in section 2 contains a good supply of water, and as no outlet is noticeable a reservoir of water is maintained. The wild horses roaming in this vicinity have many trails leading to this body of water, thus showing that it is the only place where water is always to be had. A few springs are found on the hills, and one good spring is utilized in section 21 for the ranch. No floods exist of any extent and no water-power is available. The climate is good and no summer frosts were recorded. Fuel in the shape of dry wood is quite plentiful throughout. An indication of lignite was seen on White Mountain in section 21, but it does not seem to be of any account and of a very poor quality, crumbling very easily. No stone-quarries, minerals nor game were noticed. This country affords good wintering quarters for horses, as shown by the few horses which have strayed from the settlers and gathered here, where they seem to be able to obtain food and water at all seasons. No hay of any account could be cut, but there seems to be plenty of feed in scattered parts.—*G. A. Tipper, D.L.S., 1915.*

Tp. 78

(*Spirit River Settlement.*)—Spirit River, which is a very small stream, crosses the settlement from west to east. The soil is of good quality, being composed of a black loam resting on a sandy clay subsoil. The surface is prairie and bluffs. The country is level with the exception of that portion of the settlement situated south of Spirit River. Wheat, oats and vegetables have been successfully raised there for a few years. The prairie furnishes good pasture. The people here cut their hay mostly outside of the settlement and wood for fuel is plentiful. There is no water-power and no mineral of any kind was found during the progress of the survey. The settlement comprises fifty-nine lots of different sizes, nearly all those bordering on Spirit River being occupied by squatters. There are three good bridges on Spirit River, one on lot 16, one on lot 12A and one on lot 9. Spirit River flows between high banks, varying from fifteen to forty feet in height, and the water, though not permanent, is fairly good in the spring, but towards the fall is alkaline, owing to the alkaline springs coming out of the banks in different places. The climate is good with generally no early frosts, but last August there were two frosts which injured the grain a little; they were felt all over the West, I believe, and I was told also that the frost comes generally later than that. The country around Spirit River has a fine appearance. Every traveller who came there last summer appeared to like the country and to have great faith in the future of that district. I never before witnessed such fine weather as we had up to late last fall. Some of the residents of the place are making arrangements with firms in Edmonton to procure a saw-mill, and also a boring outfit to reach water, the lack of which is the only drawback to that country during dry years. Mr. James Brooks and others say that they will certainly find good water at a comparatively small depth. The boring will begin next spring. From this settlement there is a wagon road to Grande Prairie, and one to Dunvegan and Peace River Crossing. There are no stone-quarries. Game is not so plentiful as it used to be around here. Between Spirit River and Dunvegan lies a tract of very good land, undulating and rolling in some places.—*J. B. Saint Cyr, D.L.S., 1907.*

This township can be reached by two wagon roads, coming from Spirit River Settlement, one following Spirit River and the other running in a north-westerly direction. The surface is prairie and bluffs, with the exception of sections 5, 6, 7, 18 and 19, which are timbered with poplar,

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

spruce and large willow. The country is undulating. The soil is a deep black loam overlying a clay and sandy subsoil. Hay is plentiful all through the township. There are no early summer frosts. Permanent fresh water is found in Spirit River, in a lake in sections 17, 18, 19 and 20, and in a few ponds throughout the township. No stone-quarries and no minerals of economic value were found during the survey. A few coyotes were the only game seen. Settlers will find in this township all to meet their requirements.—*J. B. Saint Cyr, D.L.S., 1909.*

(*North third.*)—The subdivided part of this township is easily accessible by a good wagon road from Spirit River Settlement leading to and connecting the various farms situated on the outskirts of this subdivided area. Its surface is slightly rolling and, excepting a narrow rim of willow and fire-killed poplar along the north boundaries of sections 31 to 36 is mostly open. The soil is a rich black loam of an average depth of six inches overlying a clay subsoil. It may be rated as second class and is well adapted to farming. No hay marshes of any extent were noted but the productive qualities of the soil are such that one can always harvest a good supply of fodder to tide over the winter months. Owing to the total absence of water-courses the only source of supply is from a few scattered marshes, and when procured it is soft and free from alkali. Judging from appearances water could be obtained by digging at a very few feet beneath the surface. A limited supply of fuel consisting of fire-killed poplar is at present available along the north boundary of the township. No coal has been found, and before many years fuel will have to be drawn from township 79, range 7. The climatic conditions in this vicinity are rather changeable and from the information received it is evident that although summer frosts are not of yearly occurrence, nevertheless the district is not entirely free from them. No water-powers, stone-quarries nor minerals of economic value have been noted. Regarding game, prairie chickens and partridges are the only species worth mentioning.—*L. E. Fontaine, D.L.S., 1913.*



Photo by O. Rolfson, D.L.S.

Fort St. John in 1911

Tp. 79 (*South third.*)—This portion of the township is easily accessible by a good wagon road leading from Spirit River Settlement to the northern part of township 78, range 6, and thence by either of three wagon trails which are used by settlers of adjoining townships to haul hay from various parts of this township. The surface is traversed by three deep ravines; the first crosses section 34 and part of section 35 in a south-easterly direction, the second intersects the west boundary of section 18 bearing easterly, while the third crosses

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

section 7 and the west part of section 8 in a course a little north of east. Apart from these ravines but including the intervening area between them, the surface is generally slightly rolling, and in the subdivided part it is mostly open with a few scattered bluffs of poplar and willow. There are numerous marshes of variable extent where hay of good quality and in quantity can be had. The soil is generally a layer of black loam averaging six inches in thickness overlying a clay subsoil. It is chiefly rated second class and is suitable for farming. Apart from the small streams flowing into the above-mentioned ravines, an abundant supply of soft water free from alkali can be had in the several marshes. Wood for fuel as well as for building can be obtained in the north part of sections 7 and 8. The climatic conditions are those generally prevailing in the adjacent townships. Summer frosts, while not unknown, are not, however, of yearly occurrence. No coal, stone-quarries, minerals of economic value, or water-powers were noted. A few partridges appear to be the only game in the locality.—*L. E. Fontaine, D.L.S., 1913.*

Tp. 80

(*North outline.*)—The east boundary of this township falls in the easterly limit of a belt of large timber consisting of poplar and balsam of Gilead thickly interspersed with small poplar and willow, which continues westerly to the top of the bank of Peace River Valley in section 36, thence southerly forming a fringe to the valley, and then northerly about three miles. The bank of Peace River on the twenty-first base line is about eight hundred and ten feet above the water of the river, and is indented with ravines, landslides and washouts, which are continually changing their position, owing to the presence of alkaline clay in layers, upon which the upper layers keep moving under pressure from any direction. The first two miles west of the river is through large spruce, poplar and birch, and growth of willow; this extends for several miles both north and south of the line. The soil is chiefly leaf mould on clay. Section 33 appears to be a basin, dry this year, except for one or two sloughs, which may be considered as on the height of land and draining in a north-easterly direction. In section 32 ravines are found which empty into Bear Creek at a depth of seven hundred feet below the surface of the country; very heavy poplar and spruce are found here on both sides of the line and extending westerly to the west slope of the ravine in section 31. Fire has evidently destroyed the timber on the west slope, and only thick scrub poplar and willow are found.—*Henry W. Selby, D.L.S., 1904.*

(*East outline.*)—This township can be reached by Peace River which crosses it from west to east. A dense forest of poplar, spruce and large willow covers that portion of the township situated south of Peace River. There is a large quantity of spruce suitable for lumbering purposes along Ksituan River, Rat Creek, and in the ravine of a small stream emptying into Peace River near the east boundary of the township. I found a seam of soft coal about six inches thick in the bottom of the creek. With the exception of Peace River, hills and deep ravines crossing this township where the country is hilly and broken, the surface is level. On the north side of Peace River the timber is of poor quality, and the soil is a fairly deep black loam overlying a clay subsoil. The climate is good and similar to that of Spirit River Settlement. A few coyotes and bears were the only game seen.—*J. B. Saint Cyr, D.L.S., 1909.*

This township was reached from Dunvegan by crossing Peace River at this point and then following the Spirit River wagon road for a distance of about one mile. From here a rough pack-trail leads to the south boundary of township 80, range 5, crosses Ksituan River and then runs north-westerly into this township. Another pack-trail which is probably somewhat better leaves the Spirit River Road at a point a few miles farther south. The soil in the east half of the township consists of black loam of about four inches in depth overlying a clay and sandy clay subsoil, while in the west half it is mostly moss and peat loam. The surface back from the valley of Peace River is undulating and timbered with poplar and spruce from four to fourteen inches in diameter. In the coulées leading to the Peace River Valley in sections 23, 24, 25 and 26 there is a considerable quantity of spruce up to sixteen inches in diameter. No hay was noted. The water is fresh, but apart from Peace River the supply is not sufficient and permanent. No land is liable to be flooded. The creeks were mostly all dry at the time of survey (October). There are no falls nor rapids. Summer frosts occur. Wood which is the only fuel is available everywhere in the township. There are no coal

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

nor lignite veins, stone-quarries nor other minerals of economic value. The game consists of moose, deer, bears, foxes, coyotes, rabbits and partridges.—*T. A. Davies, D.L.S., 1915.*

Tp. 81 The route to this township is from Peace River Crossing to Vanrena by stage and thence by wagons. Another route is by boat from Peace River Crossing. The soil consists of humus or black loam over clay or sandy clay. The surface is wooded, north-east of Peace River, by poplar and willow, and south-west of the river, poplar, birch and spruce grow up to twenty inches in diameter. Small hay meadows are numerous especially on the north-east side of Peace River. Water can be obtained from Peace River, and from several creeks, the largest of which is Bear Creek. This creek averages fifteen links wide, except during flood season, when its width is one hundred links. The current varies from four to eight miles according to the stage of the water. Water-power could be developed on this stream, but the flow in summer is so small that scarcely any power could be secured. The rainfall is sufficient, and though summer frosts occur they are so slight that no harm is done by them. Wood fuel is plentiful, but no stone-quarries or minerals were found. Some beavers were seen, but moose, bears and foxes are plentiful.—*H. S. Day, D.L.S., 1915.*

Tp. 82 From Peace River Crossing a good stage route leads to Vanrena and from there a wagon road and pack-trail lead to the township. Access can also be obtained by boat along Peace River. The soil consists of humus or black loam on a clay or sandy clay subsoil. The surface is covered with poplar and willow on the east side of Peace River, except a narrow strip of open land along the top of Peace River Valley. On the west side of the river the growth of timber is mostly spruce, poplar and birch, some of which grows to a diameter of twenty-four inches. Hay sloughs are found throughout the township, and water can be obtained from Peace River and in some cases from the sloughs, though the slough water is poor and not permanent. No water-powers are found. The climate is good, and summer frosts are not severe enough to damage vegetation. Wood fuel is plentiful, but no stone-quarries or minerals were found. Game consisting of bears, moose and foxes is plentiful.—*H. S. Day, D.L.S., 1915.*

Tp. 83 A stage runs from Peace River Crossing to Vanrena and from there a wagon trail and pack-trail lead to the township, both of which are in good condition. The soil consists of humus or black loam over a clay or sandy clay subsoil and is suitable for general farming. The surface is covered mostly with brush, except a small open strip along the top of Peace River Valley. Hay sloughs are numerous, and besides Peace River and Montagneuse Creek, furnish the only water supply. No water-power could be developed, and no land is liable to be flooded. The rainfall is plentiful and slight summer frosts occur, but no serious damage is done. Wood fuel is plentiful, but no minerals or stone-quarries were seen. Game consisting of moose, bears and foxes is plentiful.—*H. S. Day, D.L.S., 1915.*

Tp. 84 This township can be reached from township 83, or by boat on Peace River to the mouth of Montagneuse River. The soil is humus or black loam over clay or sandy clay subsoil, and is suitable for general farming. The surface is covered with poplar, willow, spruce and cottonwood up to twenty-four inches in diameter. The only open part is on the top of Peace River Valley in sections 6 and 7. Small hay sloughs are scattered throughout the township. Water is supplied by Peace and Montagneuse Rivers and the sloughs. Montagneuse River is eighteen inches deep and in places forty links wide. It flows from six to eight miles per hour, and owing to its deep valley no land is liable to be flooded. Power could be developed on Montagneuse River, but as its source is in swamps the permanence of the stream is doubtful. Wood fuel is plentiful but no stone-quarries or minerals were seen. Bears, moose and foxes are plentiful. The rainfall is sufficient, and though summer frosts occur they do not affect vegetation.—*H. S. Day, D.L.S., 1915.*

Tp. 85 We reached this township from township 86, range 5, by travelling along the Fort St. John trail to its junction with a wagon road we had cut out. This junction is located in the south-west quarter of section 33, township 85, range 5, and the wagon road bears westerly, crossing the east boundary of the south-east quarter of section

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

36 of this township and thence in a south-westerly direction to our camp, located in the south-west quarter of section 15. Portions of the road pass through swamps and in these places the road was bad. The soil is black loam with a clay subsoil and is suitable for agriculture. However, practically the whole portion included in the westerly two tiers of sections is low, the greater portion of it being muskeg and swamp. The timber is generally poplar up to ten inches in diameter, except in the muskegs and swamps, where scrubby spruce and tamarack is found. There are scarcely any open patches in the township, and therefore no hay areas of any importance are found. The water is fresh, but the creeks are small and the only permanent supply is in the swamps and muskegs. No land is liable to be flooded. No falls nor rapids exist and no power can be developed. The climate is much the same as that of southern Alberta with more frequent summer frosts. The only available fuel is wood, and no stone-quarries nor minerals are found. The game consists of bears, moose, partridges and some small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 86 From the south-west quarter of section 31, township 85, range 5, situated along the Fort St. John trail, we travelled in a north-westerly direction along a wagon road which we had cut out to our camp located in the north-east quarter of section 4 of this township. This road for the most part is good, but a few small swamps had to be crossed. We also located a camp in the south-east quarter of section 21 which was reached by travelling along the Fort St. John trail and by cutting a short wagon road south from the main trail down to a small slough or lake. The soil of this township is mostly a black loam with a clay subsoil, and is excellent from an agricultural standpoint. It is for the most part covered with small poplar and bunch willow brush. There are, however, prairie patches here and there as well as quite a number of sloughs. There is no timber of any commercial value. Hay could be cut in many open places and possibly along some of the sloughs in a dry season. The upland hay is of good quality, being composed of prairie grass and peavine while that around the sloughs is the ordinary slough grass. A creek furnishes the principal water supply. It is from sixteen to twenty feet wide and about four feet deep. The water is fresh and the current is about three miles per hour. In the northern part of the township, however, there are a number of beaver dams which cause the stream to be sluggish, and a great many acres of land, which would otherwise be high and dry, are flooded. The water supply, judging from this season, is permanent. There are no falls nor rapids and no water-power could be developed. The climate is similar to that of the more southerly portions of the province, except that summer frosts are rather frequent. Wood is the only fuel, there being no surface signs of coal. No stone-quarries exist and there are no minerals in evidence. The game consists of bears, a few moose and a number of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 87 (*East outline.*)—The soil of this township is black loam with a clay subsoil and is suitable for agriculture. A portion in the north-easterly corner of the township is timbered with poplar and scattered spruce up to fifteen inches in diameter, but the remainder is covered with scrub poplar and willow with small scattered prairie spots. The creeks are all small and the water supply is not permanent. No falls nor rapids exist. There can be no power developed by the erection of dams. A limited amount of hay could be cut in the small prairie patches. The climate is warm with occasional summer frosts. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. The game consists of bears, a few moose and several varieties of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 88 (*East outline.*)—The soil of this township is gravelly and covered with moss almost everywhere, and may be said to be very poor for agriculture. About two-thirds of the surface is rough and timbered with spruce, poplar and jack pine running as high as twenty inches in diameter, while the remainder is covered with scrubby timber. The water is supplied by numerous small streams which may or may not be permanent. There is, however, a larger stream crossing the east boundary of section 25, which is twenty feet wide,

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

three feet deep and has a current of two and a half miles per hour. There are no falls nor rapids, and no power can be developed by the erection of dams. There is no hay. The days are hot and the nights are cool. Summer frosts occur. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. A few moose and bears and numerous small fur-bearing animals are to be found.—*J. A. Buchanan, D.L.S., 1913.*

RANGE 7

Tp. 68 (*North outline.*)—In this township the surface varies from rolling in the east half to undulating in the west half. Here also the recent fires have cleared the land of much of the dead timber with which it was covered. From the north-east corner of section 32 the surface slopes down to the valley which cuts that section diagonally and where there are still bluffs of green timber. These bluffs, being surrounded by swamp, have so far escaped the ravages of the fires. In the south-west of this township some high ridges were noticed. Running streams are scarce, only two small creeks, five miles apart, crossing the north boundary of the township.—*Arthur Saint Cyr, D.L.S., 1906.*

Tp. 70 (*North two-thirds.*)—The soil in this township is mostly black loam from four to six inches deep with clay subsoil. Along the top of the banks of the Wapiti there is some sand, but the greater part of the township is good farm land. The surface is mostly gently rolling, but is badly broken by the valley of the Wapiti which runs across the southern part of the township, and by two coulées which run down to this valley, one on the west and one on the east side of the township. The Wapiti Valley is five hundred feet in depth and the banks of the coulées are mostly very steep. North of Wapiti River the country is mostly covered with willow and poplar scrub and scattered spruce and poplar from six to twenty inches in diameter. South of the river there is some spruce from six to thirty inches in diameter. Some jack pine occurs along the tops of the banks and some poplar and spruce are found in the coulées. Wood for fuel is very plentiful and there is sufficient good timber for the settlers' use. Hay is not plentiful but some could be cut around the sloughs and in the openings to the north. Considerable fresh water is to be had in scattered sloughs and muskegs, in Spring Creek which runs south along the east side of the township and in Wapiti River. There is no available water-power. The weather was fine and mild (July) with some rain, but no frosts. No stone-quarries nor minerals were found, and the only game seen consisted of bears, ducks and geese.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 71 The soil in this township is black loam three to eight inches deep with clay subsoil, and will make excellent farm land. The surface is rather hilly. A ridge runs from the north side of section 13 north-westerly nearly as far as the north boundary of the township, then westerly south of Saskatoon Lake, while a spur runs down into sections 20 and 21. The slopes, however, are gradual and could be cultivated easily. The township is mostly prairie interspersed with bluffs of willow and poplar scrub. There is no timber of value but there is plenty of poplar for fuel. Upland hay is plentiful and of excellent quality. Some slough hay might also be cut around the lakes. Fresh water is obtainable in Saskatoon Lake at the north-east corner of the township, and in three other small lakes. The weather was warm and fine (June) with occasional showers. No frosts were noticed. No stone-quarries nor minerals were found and no game was seen with the exception of ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

(*Partial.*)—The soil is black loam, from three to six inches deep, with a good clay subsoil, and is excellent farm land. The surface is gently rolling, and nearly all prairie with occasional poplar and willow bluffs, especially along the south side. There is no timber. Hay is scarce, and water is available only in a few small streams which dry up in the summer. The weather was fine and warm with no summer frosts. No stone-quarries nor minerals were found and no game was seen.—*W. G. McFarlane, D.L.S., 1910.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—*Continued.*

Tp. 72 The surface of this township is rolling to the west and gently rolling to the east, while the soil consists of six inches of black loam on a clay subsoil, making excellent farm land. Bluffs of poplar and willow are found, but the surface is mostly prairie. A few poplar up to six inches in diameter grow at the east end of Bear Lake, which covers most of the township but there is no merchantable timber. Upland hay of good quality is plentiful almost everywhere, and north-west of Bear Lake slough hay can be had in abundance. Bear Creek runs out of the east end of Bear Lake; it is fifty links wide, two to four feet deep, and has a current of four miles per hour. There is no available water-power, and there is no land liable to be flooded. Wood for fuel is fairly plentiful, but no coal, stone-quarries nor minerals were found. The only game seen was ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 The greater part of this township is prairie although many bluffs of poplar scrub and willow are found. The surface of the south half is almost level, but the north is more rolling. The soil of the north-west half is six inches of loam on a clay subsoil while the remainder is about three inches of loam on a heavy clay subsoil, but the whole would make fair farming land. There is no timber of any account, but some spruce and poplar logs could be cut along Bear and Buffalo Creeks near the west side. Slough hay is abundant along Bear Creek at the south-west corner and upland hay can be cut almost everywhere. Buffalo Creek is liable to run dry in summer, but water is fairly plentiful in Bear Lake and other lakes to the north. Bear Creek is about forty links wide, four feet deep and has a current of about one mile per hour, but has no available water-powers. Two very heavy rains fell during the survey (July) and although the nights were cool there were no frosts. Poplar wood for fuel is plentiful everywhere, but no coal, stone-quarries nor minerals were seen. Game of the feathered variety consisting of ducks, geese and prairie chickens, was the only kind seen.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The soil in this township is black loam from three to eight inches deep with a clay subsoil, and will make good farm land. The surface is gently rolling and is more than half prairie. The remainder consists of scattered patches of willow and poplar scrub. There is no timber of value, but there is plenty of spruce and poplar for fuel. Hay is scarce, but some upland hay may be cut on the prairie. Fresh water can be obtained in lakes in sections 3, 4, 9 and 10, and in Buffalo Creek. This creek probably dries up in the summer. The weather was warm and fine (July) with occasional showers of rain. The nights were cool, but no frosts were noticed. No stone-quarries nor minerals were found and no game was seen with the exception of ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*

About five inches of black loam on clay subsoil renders this township adapted for farming. The surface, rolling and rough in places, varies from open at the south to thick scrub bush and windfall at the north. Good spruce up to twenty inches grows on section 33 and small amounts are scattered through the township. Hay is not plentiful, but some of good quality could be cut on the prairie. Water is fresh and plentiful in several small streams, but there are no available water-powers nor are any lands liable to be flooded. Wood fuel is plentiful, but no stone-quarries nor minerals were noticed. A few moose constitute the game of the township.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 75 The old trail from Grande Prairie to Spirit River Settlement runs along the west side of this township, and it is in fair condition for travelling. The soil consists of about three inches of black loam on clay subsoil and is only average farming land. The surface, almost completely covered with brush, falls to the north and the south. The southern portion is timbered mostly with poplar, willow and scattered spruce with windfall throughout. In sections 10, 11 and 12, and in the north half of the township good spruce up to twenty-four inches grows. This timber is surrounded by a dense windfall of trees up to twenty inches, with poplar and willow scrub. No hay grows, but water is abundant in early summer. No falls or rapids were noticed from which water-power could be developed. Wood for fuel is plentiful, but no minerals nor stone-quarries were noticed. Bears and moose constitute the game.—*W. G. McFarlane, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—*Continued.*

Tp. 76 (*East half.*)—The route used to reach this township is the pack-trail from Spirit River Settlement crossing sections 12 and 2 in township 77, and entering this township in section 35. This trail is in fair condition. The soil consists of about five inches of black loam on a heavy clay subsoil. After clearing, the soil should be suitable for agriculture. With the exception of sections 3 and 27, the east half of the township is covered with willow scrub, small poplar and brulé, with scattered groves of heavier poplar which escaped the fires. Section 27 is covered with poplar up to twelve inches, and scattered spruce up to sixteen inches. The amount of timber is negligible. Section 3 has a good growth of poplar, spruce and jack pine. There is roughly one million feet of timber on this section, mostly spruce. The country slopes very gently towards Brulé River. This river has a valley about eighty feet deep and one-quarter mile wide. Creeks flow from both north and south, in the eastern part of section 15, with deep valleys. On the north the valley commences at the north of section 34 and on the south at the north of section 3. Otherwise the country is comparatively flat. There is no hay in this township. The water is all fresh and Brulé River furnishes a permanent supply for the central sections, but all the other creeks are dry during dry seasons. The creeks are all very variable in their flow. During the week of rainy weather, about July 12, they were all small torrents, some three feet deep, ten feet wide and flowing about two miles an hour. At the end of August all these streams had ceased to flow. Brulé River has an average width of ten feet, a depth of one foot and flows about one mile an hour. Its flow is permanent. During the rain above mentioned much of the willow scrub country was flooded to a depth of six inches to one foot. No water-power is available in the township. Considerable rain fell while working on this township and cloudy weather made observing difficult, but no frosts occurred. Burnt timber is available for fuel over the whole township. No coal, stone or other minerals are in evidence. Traces of moose and bears are plentiful. Beavers have a dam on the creek where it crosses the east boundary of section 21. Fox burrows are plentiful.—*G. A. Tippèr, D.L.S., 1915.*

Tp. 77 (*East outline.*)—There is no road leading into this township but one could easily be made. "Old Ranch Mountain" crosses the township from east to west. The surface is undulating. The timber is chiefly poplar, spruce and large willow. Spruce suitable for lumbering purposes grows in large quantities on sections 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30. It would be advisable to reserve the township as a timber berth. Heavy poplar and spruce windfall cover the south portion. Spirit river, flowing in a north-easterly direction, is the principal stream draining this country, and contains permanent fresh water in the upper part.—*J. B. Saint Cyr, D.L.S., 1909.*

The route to this township is by a pack-trail entering the township at the north-east corner of section 33, thence northerly to the Pouce Coupé sleigh trail, or else by an old trail to the saw-mill west of Spirit River. Both Pouce Coupé trail and this pack-trail come out of the bush near Spirit River at the same place. These trails are in fairly good condition when used for packing. The soil is fairly good and with a little clearing along Spirit River, good agricultural lands are available, but the southern and eastern portions of the township are hilly and heavily timbered with large spruce or brulé. All along the northerly side of Spirit River the land is fairly lightly timbered by small poplar or aspen and willow. Sections 19, 20 and 21 are lightly timbered, but all south and east is unfit for settlement. A large range of hills cross the southern part and are cut up by creek valleys. These hills are covered with poplar and very bad brulé, midway across the township. In the eastern half is spruce and poplar up to eighteen inches in diameter. Along the base line and closely adjoining it the timber has all been burned off, some sections having burned off more completely than others. Spruce of good marketable value can be cut in sections 13, 14, 23, 24, 25 and 26, and will average eighteen inches in diameter; the ground there is fairly clean from windfall. There is no hay available in any part at present. Water of good quality is supplied mostly by Spirit River, which runs through the north-western part of the township. This river has a width of four to five feet and a depth of about one foot, with a current of one mile in four hours. In summer this river becomes rather low and some depressions in the bed return a water supply. The creeks dry up, but many small

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—*Continued.*

springs are found in the northern slope of the hills. Flooding of slight nature occurs in this township but not of any serious character on the surrounding lands. No water-power is available. Climatic conditions were good and no summer frosts were recorded. Fuel in the shape of wood is available in many places, but no stone-quarries, minerals or game were to be found. As the hills described above are almost impassable, a route to reach the southern part beyond the hills and adjacent to the base line is a pack-trail entering the township near the north-east corner of section 12 and this runs over the hills in a rather bad route. Great difficulty was experienced in this township making trails to the different portions of the work, having to go out of the township to the west to get a feasible route to pass the hills and brûlé.—*G. A. Tipper, D.L.S., 1915.*

Tp. 78 (*East outline.*)—This township can be reached by a narrow belt of prairie south of the correction line, connecting with Spirit River prairie to the east, and then by Dunvegan wagon road. The township is thickly covered with poplar, spruce and large willow. Spirit River prairie ends at the east boundary. The country is rolling in the northern half of the township and undulating in the remainder. There is no prairie and there are no streams of any importance. The country north of the correction line is windfall for eight or ten miles.—*J. B. Saint Cyr, D.L.S., 1909.*

There is a sleigh road cut all across the central portion of this township leading from Spirit River to Pouce Coupé, and entering the township from Spirit River near the corner of section 13. This trail is newly cut and is rough and quite soft; loaded wagons could not use it. The soil is very good, but on account of the timbered conditions in almost the whole surface of the township, is unfit for use. The south-east quarter of section 18 is good for settlement at present, there being large openings. The timber is spruce and poplar, varying from small to thirty inches in diameter, and grows in about the whole of the township. About ten tons of hay was cut this year in section 18, on the open high lands. Spirit River runs across the extreme south-east corner of the township, being a stream of about five feet wide, one foot depth and a current of one mile in four hours. It has quite a valley but no great volume of water. The creek running diagonally across the township and easterly is known by old settlers as Beaver Dam Creek. This has a constant flow, which is slight in dry weather. It is about four feet wide and one foot deep, the current being usually one mile in four hours. It has quite a depth of valley, increasing as it runs northerly, and being the cause of the Pouce Coupé trail swinging south to avoid the banks about fifty feet in height. This creek has its origin in section 18, from a pond which is supplied by springs from the hills in the south-west corner of the township. Generally speaking, this township has little water supply and with the exception just noted is very dry in summer. There are no water-powers, rapids or falls and no flooding of land. No coal veins, minerals nor stone-quarries were noted. The climate is good with no summer frosts recorded. Wood fuel is found in most parts, but no game was seen except a black bear; many signs however, were noted of moose and bears. While mineral claims were staked on the side of the hills standing out abruptly at the south-west corner of the township, no sign of anything valuable was noted in the township. The stone of the hills is colored by iron elements but no prospecting was done.—*G. A. Tipper, D.L.S., 1915.*

Tp. 80 (*North outline.*)—This township is mainly scrub poplar and willow growing up in burnt slash and fallen timber. Bear Creek Coulée is met with in sections 34 and 35, and is from six hundred to seven hundred feet deep. Very little water was flowing in this coulée this season. The coulée runs easterly from near the north-west corner of township 80, range 7, and nearly parallel to the base line to section 35, thence northerly about one and a half miles, and thence north-easterly into Peace River, township 81, ranges 6 and 7, being very much cut up by it and its many ravines or arms. The soil is loam on a clay or gumbo subsoil.—*Henry W. Selby, D.L.S., 1904.*

Tps. 83 & 84 (*East outlines.*)—These townships can be easily reached from Peace River Crossing. The soil is humus and black loam over clay or sandy clay. The surface is timbered with scrub, and hay sloughs are numerous. Peace River and various small streams supply fresh water, but there are no water-powers. The

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—*Continued.*

rainfall is abundant and though light summer frosts occur they do not cause any damage. Wood fuel is plentiful, but no stone-quarries or minerals were seen. Moose, bears and foxes are numerous.—*H. S. Day, D.L.S., 1915.*

Tp. 85 (*Outlines.*)—The soil of this township is black loam with a sandy clay subsoil and is very suitable for agriculture. The whole surface is densely wooded with poplar up to twelve inches with scattered spruce and jack pine running as high as fifteen inches in diameter. No hay is found. The creeks which pass through the township are all small with deep ravines towards the south boundary. The water is fresh, but the supply is not permanent. The land is not liable to be flooded. There are no rapids nor waterfalls, and no power could be developed by the construction of dams. Summer frosts are frequent. No coal, stone-quarries nor minerals were found. There is an abundance of poplar and spruce for fuel. The game consists of a few moose and bears with a number of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 86 From our camp which was located in the north-east quarter of section 4 of the township to the east, we travelled along a wagon trail which we had cut out to our next camp in the north-east quarter of section 9 of this township. This trail is rather bad on account of a number of sloughs and swamps that had to be crossed. We also located a camp in the north-west quarter of section 34 which was reached by cutting a trail south from the Fort St. John trail. The soil is black loam with a clay subsoil and is very good for agriculture. The surface is covered with small poplar and willow. A few prairie spots occur here and there, and there are many willow swamps and sloughs. No timber of any commercial value exists. There was very little hay, but this was an exceptionally wet season, and possibly in a dry year hay could be cut around some of the sloughs. The water supply is dependent on a large stream which flows westerly across the southern sections, and has a few small tributaries. The water is fresh and the supply seems to be permanent. The streams flow at a rate of about two and a half to three miles per hour, but there are no waterfalls nor rapids and no power can be developed. The large stream mentioned above is about sixteen or twenty feet wide and five feet deep, while all the other creeks are small. The climate is warm in summer with cool nights and summer frosts are frequent. The poplar furnishes the only available fuel, and from surface indications there is no coal. No stone-quarries nor minerals are found. The game consists of bears, a few moose, beavers and other fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 87 From our camp located in the south-east quarter of section 33, township 87, range 8, we moved south along our wagon trail to a point in the north-west portion of section 15, from which we cut a wagon trail in a north-easterly direction and located another camp in the south-east quarter of section 28, township 87, range 7. We also cut a wagon trail south to the Fort St. John trail. These trails were for the most part high and dry. The soil is a good black loam with a clay subsoil and is most suitable for agriculture. The surface is covered with small poplar and willow, with scattered prairie spots. Portions of sections 11 and 12 are covered with spruce and tamarack swamps, caused by beaver dams. There is a small amount of timber in these sections consisting of some spruce and tamarack running as high as two feet and a half in diameter. Some high grade upland hay could be cut in the prairie patches. There are two main creeks running through the township and these, with their many branches, furnish a plentiful supply of fresh water. In a very dry season, however, these creeks may go dry. Each of the main creeks is about twelve feet wide and four feet deep, and has a current of about two and a half miles per hour. There are no falls nor rapids and no power can be developed. The climate in summer is hot with cool nights and summer frosts are rather frequent. There are no indications of coal, and wood is the only fuel available at present. There are no stone-quarries nor minerals of economic value. The game consists of bears in large numbers, a few moose and deer, and various kinds of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—*Continued.* **Tp. 88**

(*East outline.*)—The soil of this township is for the most part gravel and sandy clay and not well suited for agriculture. The surface is densely wooded, the north-easterly part being a second growth of small jack pine and spruce, while the south-westerly portion is heavily timbered with poplar, spruce and jack pine up to eighteen inches in diameter. Numerous small creeks, of which the permanency is doubtful, furnish the water supply. There is also a lake in section 30. There are no waterfalls nor rapids and no power can be developed. No hay can be cut. The days are warm with cool nights, and summer frosts are frequent. No stone-quarries, coal nor minerals were found, but there is an abundance of wood for fuel. The game consists of a few moose, bears and a number of small fur-bearing animals. *J. A. Buchanan, D.L.S., 1913.*

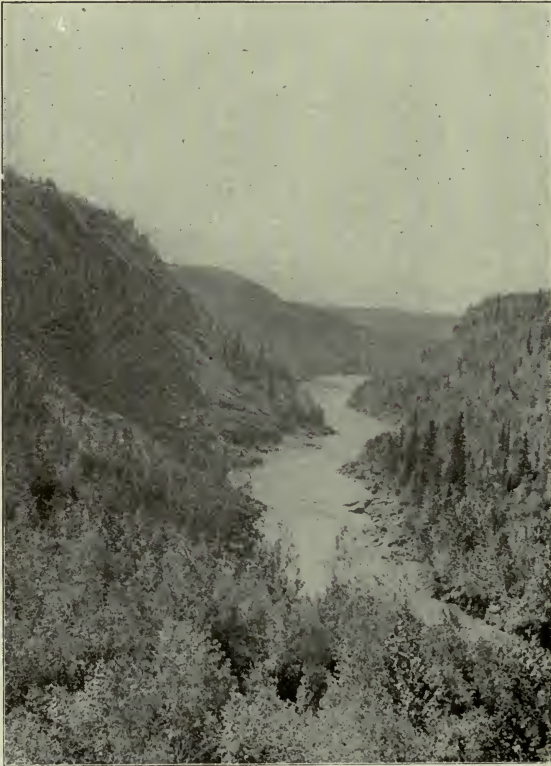


Photo by J. R. Akins, D.L.S.

Looking down Pine River Canyon

RANGE 8

 Tp. 68

(*North outline.*)—The surface of this township is frequently broken by narrow sandy ridges running, in general, east and west, with many muskegs between. The soil is fairly uniform in quality, being a clay covered with about six inches of light soil. Stones were seen at different places in this township. There is a small hay meadow near the north-east corner of the township.—*A. Saint Cyr, D.L.S., 1906.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 8.—*Continued.*

- Tp. 70** The soil consists of a black loam, about four inches deep, with a clay subsoil, and, although some of the loam has been burnt off in places, the whole is good farm land. The surface of the upland is gently rolling but badly broken by a deep ravine, running through sections 32, 33, 29, 28, 21, 22 and 14 to the Wapiti Valley five hundred feet deep. The surface is nearly all covered with poplar and willow scrub, except in the east where there is some muskeg. Along the Wapiti there are spruce trees eighteen inches in diameter and south of the Wapiti some more timber is found. Hay is very scarce, although some of good quality is available in sections 31 and 32. Water is plentiful and found in muskegs, in the coulées and in the Wapiti, a stream five to ten chains wide, and from six to fifteen feet deep, flowing about five miles per hour, and having high and precipitous banks. There is no danger of floods, and the development of water-power would be expensive. No stone-quarries nor minerals are known, and game is scarce. The weather was fine and warm (June).—*W. G. McFarlane, D.L.S., 1910.*
- Tp. 71** (*Partial.*)—The soil is a black loam from four to six inches deep, with a good clay subsoil and will make excellent farm land. The surface is gently rolling and largely prairie, but there are scattered bluffs of poplar and willow, especially to the south. Hay is fairly plentiful and of good quality on the prairie, and the water is fresh but not plentiful, being found only in very small streams. Stone-quarries, minerals and water-powers do not exist. The climate is fine and warm (June). Wood is of sufficient quantity for fuel.—*W. G. McFarlane, D.L.S., 1910.*
- Tp. 72** The soil in this township is loam from two to ten inches deep with clay subsoil, and it will make excellent farm or grazing land. The western half is almost continuous bush, while the eastern half is mostly prairie with scattered bluffs and willow. The surface is gently rolling to the east but rises gradually toward the south-west. There is no valuable timber but scattered spruce and poplar from six to ten inches in diameter are found throughout the western half. Hay is scarce and is found only on the prairie. Plenty of fresh water is obtainable in the lakes in the eastern half and in small streams to the north-east. A few small springs are found on the high land to the south-west. The weather was fine and warm (August) with frequent rains and no frosts. The only game seen consisted of ducks and geese.—*W. G. McFarlane, D.L.S., 1909.*
- Tp. 73** The soil consists of about six inches of black loam with clay subsoil and would make good farm land. The surface is gently rolling and cut up by the deep ravine of Bear Creek. The northern third of the township is mostly covered with poplar and willow scrub, but there is some poplar from six to eight inches and scattered spruce from six to ten inches in diameter. The remainder of the township is chiefly prairie with a few scattered bluffs of poplar and willow. Hay is rather scarce but some upland hay can be cut on the prairie. The water is fresh and abundant in the lakes and in Bear and Pine Creeks. Bear Creek runs south-easterly across the township. It is about thirty links wide, from one to three feet deep, with a current of about two miles per hour. It is joined by a smaller creek in section 27, and by Fish Creek in section 2. Fish Creek runs across the south end of the township, but was almost dry at the time of survey. The land is not liable to be flooded and there is no water-power. The weather was fine and warm (July) though some rain fell and there were cold nights with slight frosts. No stone-quarries nor minerals were found and no game was seen except ducks, geese, swans, prairie chickens and partridges.—*W. G. McFarlane, D.L.S., 1909.*
- Tp. 74** The soil in the township is black loam from three to eight inches deep over a clay subsoil, and will make good farm land. The surface is gently rolling and nearly half covered with scattered bluffs of poplar and willow scrub. Some six-inch poplar scattered over the township and some six to eight-inch spruce in the south-west comprise the only timber to be found. A small amount of upland hay might be cut on the prairie. Fresh water

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 8.—*Continued.*

is found in a lake at the west side of sections 6 and 7, and a creek running south into Bear Creek through sections 10 and 3. This creek is about twenty links wide, two feet deep and has a current of about two miles an hour. It may dry up later in the summer. The weather was warm and fine (July) with occasional showers and some slight frosts. No minerals were found and the only game seen consisted of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

A good road across the prairie leads to this township. The land is well suited for farming purposes, about five inches of black loam over a clay subsoil. The surface is rolling and open, except some scattered bluffs and thick scrub brush along the east, west and north sides. A good supply of medium quality hay can be cut in the beaver meadows along the creeks near the center of the north part. A small creek running south near the centre of the township, another one at the west boundary and a lake on the north boundary of section 20 furnish a fairly plentiful supply of fresh water. No water-power could be developed nor are any lands liable to flooding. Wood for fuel is plentiful, but no minerals were found.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 75 This township can be easily reached from the township to the east through which the old trail to Spirit River Settlement runs. The surface is nearly all covered with scrub, slopes south and west and is very rolling. Spruce and poplar up to twenty inches grow along the north side, and surrounding this area is a dense windfall with dry spruce and poplar. A small amount of hay grows in the prairie openings near the south boundary. Water is fresh and fairly plentiful in sloughs and several streams running south. The streams have no available water-powers and do not flood any land. Wood fuel is plentiful. No minerals of economic value were found and no stone-quarries were noticed.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 76 (*North outline.*)—Along this line the land is undulating. It was devastated by fire some fifteen years ago, and is now covered with much standing and fallen burnt timber. There are a few isolated patches of scorched green timber. The fallen logs are so large and numerous that travelling is only possible with pack-horses, and even then a trail must be first cut out.—*J. N. Wallace, D.L.S., 1904.*

Tp. 80 (*North outline.*)—This township is mostly covered with poplar and willow scrub growing up in a burnt slash of heavy fallen timber. Bear Creek Coulee is crossed in sections 35, 34 and the east half of section 33, and is about six hundred feet deep. Many landslides have occurred in the valley and the timber is lying in all directions and is piled ten feet high in places. In section 34 the line crosses an alkaline bog containing iron which may be of value. In section 31 the line crosses another ravine which joins Bear Creek Coulee. The soil is loam over a clay or hardpan subsoil. Vegetation is very good.—*Henry W. Selby, D.L.S., 1904.*

Tp. 85 (*Outlines.*)—The soil of this township is a black loam with a sandy clay subsoil and is very suitable for agriculture, but the whole township is densely wooded with poplar, jack pine, spruce and willow. The southern portion is very rough and covered for the most part with poplar and spruce up to eighteen inches in diameter, the greater portion of which, however, is dead. As one goes north the timber gets smaller. All the creeks are small with deep ravines, the largest one which crosses section 5 being sixteen feet wide and a foot and a half deep. The water is fresh but the supply is not likely to be permanent. There are no waterfalls nor rapids and no power can be developed by the erection of dams. The climate is much the same as that of the more southerly portions of the province but summer frosts are frequent. No coal, stone-quarries nor minerals were found, but there is an abundance of dead spruce and poplar for fuel. The game consists of a few moose and bears with small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 8.—*Continued.***Tp. 86**

From our camp, located in the north-east quarter of section 9 of the township to the east, we cut a wagon trail to our next camp which we located in the south-east quarter of section 22 of this township. This trail followed along the valley of quite a large stream for the most part and was therefore rough and hilly. The trail leading to our camp in the north-west quarter of section 27 also had some very bad hills. The soil is a black loam with a clay subsoil and is most suitable for agriculture. There is very little prairie and most of the surface is covered with light poplar and willow. However, the southern part of the township for a mile and a half north of the south boundary is densely wooded with poplar, spruce and jack pine up to twelve inches in diameter. A large willow swamp covers most of sections 33 and 34. Hay may be cut only in the small prairie spots which are few. The large creek mentioned above with its tributary streams furnish the water supply. It varies from about twenty feet in width at the east outline to about fifty feet at the west boundary. Two creeks flow into this stream from the north, one in section 20 and the other in section 21, each being about ten feet wide and four feet deep. The current of these streams varies from three to three and a half miles per hour. The water is fresh and the supply seems to be permanent. No land would be flooded because of the deep ravines. There are no waterfalls nor rapids but a small amount of power might be developed by the building of dams in the creeks flowing from the north. The climate is warm with cool nights, and summer frosts are frequent. There is no coal, wood being the only available fuel at present. No stone-quarries nor minerals of economic value were seen. The game consists of bears, moose, deer and a few small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 87

From our camp, located in the north-west quarter of section 27, township 86, range 8, we travelled northward across a large willow swamp for about a mile and then over a level country covered with willow brush to a point on the Fort St. John trail in the south-east quarter of section 10 of this township. We also cut a trail north and located a camp in the south-east quarter of section 33. Both these trails were good with the exception of the portion of the former which passed through the willow slough. The soil is a black loam with a clay subsoil and is most suitable for farming. The south portion of the township is wooded with willow and small poplar. The portion north of the north chord, however, is more heavily wooded with poplar and spruce running as high as two feet in diameter. In the southerly part quite a few small prairie spots exist, and in these a good quality of hay could be cut. The township depends for its water supply on three creeks flowing from the north. Each creek is about eight feet wide and three feet deep with a current of about two and a half miles per hour. The water is fresh, but it is a little doubtful about the supply being permanent in a dry year. No land is liable to be flooded. There are no waterfalls or rapids from which power could be developed, nor would it be feasible to build dams for this purpose. The climate is much the same as that of the more southerly portions of the province, but summer frosts are frequent. There is no coal and wood is the only fuel available at present. No stone-quarries nor minerals of economic value exist. The game consists of bears, moose, a few deer and several kinds of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

Tp. 88

(*East outline.*)—The soil of this township is black loam with a clay subsoil in certain places, but a great deal of the soil is gravel on stony clay and is therefore very poor for agriculture. The northern portion is chiefly muskeg while the southern portion being in the Clear Hills, is very rough. The surface is fairly heavily wooded, and in the hills spruce, poplar and jack pine run as high as eighteen inches in diameter. There is no hay. The small creeks from the hills furnish the water supply and some of these may be permanent springs. There is also a lake in section 25 which covers the greater portion of the east half of the section. There are no falls nor rapids and no power can be developed. Summer frosts are frequent. No coal, stone-quarries nor minerals were found, but an abundance of wood for fuel may be obtained. The game consists of bears, moose and small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 9

Tp. 68 (*North outline.*)—This range comprises a series of low ridges and small muskegs. The soil is clay and sand with the loam burnt off. Grass and fresh water are abundant. There remains no timber of any value except in the valley of Wapiti River where there are some good spruce and poplar. One branch of the Jasper trail crosses the base line on the north boundary of section 34.—*Geo. McMillan, D.L.S., 1909.*

Tp. 69 This township can be reached by a pack-trail which leaves the Beaverlodge trail in section 5, township 71, range 9, runs south-westerly to the mouth of Redwillow River. At this point Wapiti River can be forded, and the trail, crossing the north boundary of section 33 of this township, continues southerly along Iroquois Creek. While not good, this trail is passable for pack-horses. The eastern and northern portions of the township are broken by the valleys of Iroquois Creek and Wapiti River; the remainder is gently rolling and heavily timbered with spruce, poplar, jack pine and dense willow. The level nature of the uplands causes large areas of wet country, the soil seeming to hold the water. The soil consists of from two to six inches of vegetable loam overlying a clay, sandy clay or sand subsoil, but it is generally too wet for agriculture. Iroquois Creek is a stream about thirty feet in width with a steadily deepening valley as it approaches Wapiti River which it enters in section 33. Wapiti River is from six to ten chains in width and its valley is from one to one and a half miles in width and averages four hundred and fifty feet in depth. Numerous small creeks are tributary to these streams. Upland grass and peavine are fairly abundant, but no hay sloughs of any practical value were found. Fuel is abundant. Exposures of sandstone and shale occur along Wapiti River. Several outcrops of coal or lignite were also noted. The climate is similar to that of the Grande Prairie country, the long summer days offsetting the shortness of the season. The only game seen was bears and moose, and in Wapiti River several varieties of trout, jackfish and sucker were found. Many varieties of snakes were seen along the banks of the river.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 70 The soil is a black loam, from two to six inches deep with a clay subsoil, and it would make excellent farm land, except near the south chord where there are numerous sand ridges and some small muskegs. The surface is covered mostly with poplar and willow scrub, and a large stretch of brulé at the east side; but in the centre and along the Wapiti there is some fine dry spruce from six to eighteen inches in diameter. Hay is scarce although a little might be cut in sloughs, but water is fresh and plentiful and found in Beaverlodge, Redwillow and Wapiti Rivers, in muskegs, and in sloughs. There is no water-power, although by very expensive dams some could be developed on Redwillow and Wapiti Rivers. Stone-quarries and minerals are not known, but wood fuel is plentiful everywhere. Game, consisting of moose, bears, swans, geese, ducks and prairie chickens is found. The weather was fine and mild (June) with light frosts.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 71 The route followed in reaching this township was the trail from Saskatoon Lake to Beaverlodge which we found in good condition. The soil consists of two to six inches of black loam with a good clay subsoil, and is excellent for both farming and grazing. The surface is gently rolling and on the northern part has considerable bluff on it, with stretches of prairie intervening. The southern part is more than half prairie. Most of the bush is small poplar and willow, but a few scattered spruce and poplar from eight to twelve inches in diameter can be found. Hay is very plentiful on the prairie and is of excellent quality. The water is fresh but is not very plentiful, being found in some small creeks, which run southerly, but dry up in the summer, and in several springs and a few sloughs. Beaverlodge River crosses section 18. The weather was fine and warm (October) with occasional showers, and a few days were very hot. One frost was noticed but it was local. No stone-quarries nor minerals were found and the only game seen consisted of ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 9.—*Continued.*

(*Partial.*)—The soil is black loam from four to eight inches deep with a clay subsoil and will make excellent farm land. The surface is gently rolling and mostly prairie, but there are numerous bluffs of poplar and willow scrub. Timber is very scarce, only a few spruce and poplar from six to ten inches in diameter being found along Peaverlodge River. Hay is abundant on the prairie and water is plentiful in Peaverlodge River, though not sufficient to flood the land nor develop water-power. No stone-quarries nor minerals are known, and game is scarce, but the climate is fine and warm (May) and fuel is plentiful.—*W. G. McFarlane, D.L.S., 1910.*

Tp. 72 The soil in this township is black loam from three to seven inches deep with a clay subsoil and is good grazing or farm land. The surface is mostly covered with bush with the exception of a few prairie patches in the south-west corner. It is generally rolling but Saskatoon Ridge extends from the east through sections 13, 14 and 15, the crest ending about the west boundary of section 15. The land falls away rather abruptly to the south and west but more gradually to the north. Some scattered spruce and poplar from six to twelve inches in diameter are to be found throughout the township. There has been some excellent spruce about three feet in diameter on Saskatoon Hill, but it has long since been burned down. Hay is scarce except on the prairie at the south-west corner. Water is fresh but not very plentiful, except in the lake on the north boundary. There are several springs which feed small creeks running south-westerly from the centre of the township and also one or two creeks flowing into the lake on the north boundary, but these stop flowing in the summer. Only one summer frost was noticed (August) and it was local. No stone-quarries nor minerals were found, and the only game seen consisted of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 The soil in this township is a black loam from two to nine inches deep with a good clay subsoil, and is good for either farming or grazing. The surface is gently rolling and nearly all covered with poplar and willow scrub, with some small patches of prairie along the north boundary. The only timber of value is some six to ten-inch spruce and poplar scattered over the township. This is most plentiful in sections 14, 15, 22 and 23. Hay is scarce but some can be found around a lake in section 14, and some on the prairie to the north. The prairie hay is of good quality. There is very little water except in the large lakes. The weather was fine and warm (September) with occasional showers. No frosts were noticed. The only game seen consisted of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The surface of this township is gently rolling prairie, with scattered patches of poplar, willow and spruce from six to ten inches in diameter. The soil is four to ten inches of black loam with a clay subsoil, and is excellent farm or grazing land. Hay is fairly plentiful on the prairie, and also around a large slough in section 4; the prairie hay is of excellent quality. Water is fairly plentiful in the large lake on the east boundary and in the creeks running into it, though they are small and almost stop running in the summer. There are no streams on which water-power could be developed, and no land is liable to be flooded. The climate was fine and warm (September) with frequent rains, but although the nights were cool there was no frost. No stone-quarries nor minerals were found, and settlers must depend on wood for fuel, but it is plentiful everywhere. The only game seen was of the feathered variety and consisted of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

Five inches of black loam on a clay subsoil makes this township favourable for farming. The surface, gently rolling, is mostly covered with scrub, but some prairie is found along the west and south. Hay of good quality is plentiful on the prairie, and the small creeks running south furnish a good supply of water. No flooded lands nor sites for water-power development were noticed. Wood fuel is plentiful, but no economic minerals nor stone-quarries were found.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 75 The soil of this township consists of two inches of loam on a clay subsoil. The north part has very little loam and would not be very good for farming, but the south part is fairly good. The surface is gently rolling and nearly all covered with scrub, but some small prairie openings occur at the south-west corner. No timber is found. A small

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 9.—*Continued.*

quantity of good hay could be cut on the prairie openings. A good supply of water is furnished by small creeks running southerly across the township. No available water-powers are found and no land is liable to be flooded. Fuel in the form of wood is plentiful, but no stone-quarries nor minerals were found. A few moose were seen.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 80 (*North outline.*)—This township is mostly covered with poplar and willow scrub growing up in a burnt slash of fallen timber. Vegetation is quite rank. The soil consists of loam over clay or hardpan subsoil. In section 35 the line crosses an arm of Bear Creek Coulee and in section 33 it crosses Bear Creek Coulee where we found a few spruce and cottonwood trees of fair size. We also found some good water here, but it is scarce elsewhere.—*Henry W. Selby, D.L.S., 1904.*

RANGE 10

Tp. 68 (*North outline.*)—This township comprises a series of low ridges and small muskegs. The soil is clay and sand with the loam burnt off. Grass and fresh water are abundant. In section 33 the base line crosses Dead Pinto Creek. This creek rises in the muskeg south of the seventeenth base, and like many streams in northern Alberta it has a strong current and deep banks of at least three hundred feet. Coal crops out in several places, but the seams are thin. There is considerable spruce in the flats of this creek.—*Geo. McMillan, D.L.S., 1909.*

Tp. 69 This township can be reached from the pack-trail which continues south from the wagon road described in the report on township 70, range 10. While the upland in this township is gently rolling, it is badly broken by the valley of Wapiti River which enters in section 7 and leaves in section 25. This valley is from one to one and a half miles in width and would average nearly four hundred feet in depth, in many places being precipitous. The river bed averages ten chains in width but the flow of the river is very erratic due, no doubt, to the burnt-over nature of its water-shed, any rainfall being accompanied by sudden rises. Nose Creek enters the Wapiti from the south in section 16. Its valley which is nearly as deep as that of the Wapiti cuts up the south-east corner of the township badly. The many small creeks entering the Wapiti have cut out large valleys for themselves as they approach the river. The soil consists of vegetable loam from two to four inches deep overlying a clay, gumbo, sand or gravel subsoil, and is generally quite unsuitable for agriculture. Fires have in places entirely destroyed the top-soil, leaving the unproductive subsoil exposed. The timber, which consisted of jack pine, spruce and poplar, has been largely destroyed by fire, only that of a few small muskegs having escaped. The country as a whole seems very wet, the soil holding water in places. Feed for horses is not plentiful. Heavy willow, small poplar and spruce are found. No hay sloughs of any consequence were seen. Small seams of lignite are found along Wapiti River. Sandstone occurs practically all along the river, although in many places it is covered with detritus. Game is scarce, having probably disappeared after the fires. Fish are plentiful in the river. The climate is probably more extreme than that of Grande Prairie and many storms apparently occur here which do not strike that district.—*G. W. MacLeod, D.L.S., 1913.*

Tps. 69 & 70 (*East outlines.*)—The trail to these townships crosses Redwillow River about four miles west of the east outline, and then runs south-easterly through the brûlé. The surface is rolling, and broken by the deep valleys of Wapiti and Redwillow Rivers. It is covered with jack pine, poplar, willow and small spruce, but the only timber of any value is a small quantity of spruce up to twenty-four inches in diameter along the Wapiti. The soil is mostly sand, but there is some good black loam suitable for agriculture when cleared. A large muskeg is situated west of the line in township 69. Hay is scarce, a small quantity being found in section 1, township 70, range 9, and in section 36, township 70, range 10. Wapiti River crosses the east boundary of section 25, township 69. It is about five chains wide, two and a half feet deep, and has a current of four miles per hour. Red-

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 10.—*Continued.*

willow River crosses the east boundary of section 13, township 70. It is two chains wide, one to six feet deep, and has a current of three and a half miles per hour. Power could be developed on these rivers by means of dams, as their banks are high and suitable locations for dams could be easily found; no land is liable to be flooded. The climate is very cold in winter and the snowfall medium. Wood fuel is plentiful everywhere, consisting of jack pine and poplar. No minerals were noticed, but sandstone appears in the banks of Wapiti and Redwillow Rivers, and could be easily quarried. The only game seen consisted of moose, jumping deer, foxes, weasels and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 70 The surface of this township is gently rolling, but is badly broken by Redwillow River which flows across it. The banks are from one hundred to two hundred and fifty feet high. There is a considerable amount of prairie near the north boundary, but none is found south of the north chord, and the greater part of the township is covered with poplar, willow scrub and small spruce, although there is no valuable timber. The soil consists of two to six inches of black loam, on a good clay subsoil, and is excellent farm or grazing land. Hay is plentiful, and that found on the prairie is of good quality. The weather was very cold in November, the thermometer registering thirty degrees below zero about the middle of the month. There was about eighteen inches of snow, a little falling every day, and one Chinook wind with heavy rain occurred on November 27. A good quality of soft coal is found along the banks of Redwillow River, but no stone-quarries nor minerals were seen.—*W. G. McFarlane, D.L.S., 1909.*

(*South two-thirds.*)—A wagon road from Halcourt and Lake Saskatoon runs to Redwillow River in section 21 and is generally in fair condition. From this point a pack-trail runs due south. Redwillow River, a stream about one hundred feet wide, runs easterly through this township, entering in section 19, and leaving in section 13. The valley of this river averages three hundred and fifty feet in depth. The elevation of the upland north of the river is considerably less than that to the south, the latter forming a divide between this river and the Wapiti. The upland away from the edge of the valley is gently rolling. The soil north of the river consists of from two to eight inches of vegetable loam overlying a clay or sandy clay subsoil, and is quite suitable for agriculture. South of Redwillow River fires have destroyed the timber and much of the vegetable soil, leaving exposed the unproductive subsoil consisting of clay, sand or gravel; this portion is unsuitable for agriculture. North of the river the country is fairly heavily wooded with poplar and willow, and a good growth of grass and peavine is found, while south of the river the timber consisting of spruce, jack pine and poplar, has been nearly all fire-killed and the surface is now covered with a second growth of poplar, jack pine and willow. Coal is mined from small outcrops along Redwillow River and is used locally. Sandstone and shale occur along the river valley, the sides of which in places are precipitous. Large game has been practically exterminated. Prairie chickens and grouse are plentiful, and the river is well supplied with fish.—*G. W. MacLeod, D.L.S., 1913.*

Tp. 71 The surface of this township is gently rolling and the eastern half is mostly prairie with scattered patches of scrub. The western half is mostly scrub with some prairie at the south-west corner. The soil is black loam from two to ten inches deep with a clay subsoil, and will make excellent farm land. Hay is plentiful on the prairie, and is of good quality. Water is fresh and abundant in sloughs, springs and in Beaverlodge Creek. This creek enters the township about the middle of the north boundary, and, flowing south-easterly, goes out across the east boundary of section 13. It is about fifteen feet wide, two feet deep and has a current of about three miles an hour. A small amount of power might be developed by damming, but as the stream gets very low in the autumn the supply of power might not be continuous. The weather was fine and warm (October) and no summer frosts were noticed. No stone-quarries nor minerals were found and no game was seen except ducks and moose. There are quite a number of settlers in this township.—*W. G. McFarlane, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 10.—*Continued.*

Tp. 72 (*North outline.*)—Along this line the land is undulating. For the first two miles the timber is irregular. West of that it is very heavy, consisting of a heavy growth of green spruce and jack pine, with scattered poplar extending as far as range 11.—*J. N. Wallace, D.L.S., 1904.*

The surface along the central part of the township from north to south and most of the south-east corner is prairie, but it contains some poplar and willow bluffs. The north-east corner and the west third are nearly covered with poplar and willow scrub. A small quantity of spruce up to twelve inches in diameter grows along Beaverlodge River, but it will scarcely supply the needs of settlers. Prairie hay is plentiful and slough hay of good quality grows in section 35. Beaverlodge River, which runs across the township from section 31 to section 4, is about fifteen feet wide, two feet deep, and flows about three miles per hour. No available water-powers were seen, nor is any land liable to be flooded. Wood for fuel is plentiful everywhere, but no coal, stone quarries nor minerals were found. Game consists of ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 The eastern half of this township is mostly covered with poplar and willow scrub, while the western half is mostly prairie and occasional bluffs of poplar and willow. The only timber in this township consists of a few scattered spruce but wood for fuel is plentiful everywhere. The soil is black loam from two to ten inches deep, over a clay subsoil, and will make excellent farm land. Hay is abundant on the prairie, and of excellent quality. Water is plentiful in the lakes and creeks and is mostly fresh, but several alkaline springs were found running into Beaverlodge River. A small stream courses through sections 28, 20, 18, 7 and 6 into Beaverlodge River, but it dries up in the summer. The weather was fine and warm (September) and no summer frosts were noticed. No coal nor minerals were found and the only game seen consisted of ducks, geese, swans and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The surface of this township is gently rolling and nearly all covered with poplar and willow scrub, although timber is very scarce. The soil consists of three to ten inches of black loam with clay subsoil and is excellent farm land. Hay is very scarce, but water is plentiful in a lake and small sloughs. No water-power is available and no land is liable to be flooded as there are no streams. The weather, generally, was fine and warm (September) with no frosts, but there was one cold rain. No stone quarries nor minerals were found, and the only game seen was ducks, geese and swans.—*W. G. McFarlane, D.L.S., 1909.*

(*North two-thirds.*)—This portion of the township can be reached by wagon trails from either the township to the east or from the one to the south both of which are fairly well settled. Although several creeks have to be crossed these trails are usually in good condition. The surface is gently rolling and consists of semi-open prairie with clumps of poplar and willow. Excellent building material can be obtained from the western tier of sections which is heavily timbered with poplar and spruce. The soil consists of from four to eight inches of black loam overlying a clay or sandy clay subsoil, and as a whole seems well adapted to agriculture. Hay can be cut in fair quantities around some of the small sloughs and lakes. The growth of upland hay is luxuriant. Water is fairly plentiful. Bear Creek flows through this township. Several of the squatters have found good well water at moderate depths. The creeks are likely to overflow their banks. No water-power is available. The climate is similar to that of Grande Prairie. Light frosts occurred late in June this year (1914). Firewood, while not plentiful, is in fair quantity. No minerals, coal nor stone in place were found. The game consists of prairie chickens and ducks. This portion of the township as a whole is well adapted to mixed farming.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 75 This township can be reached from either Beaverlodge or Lake Saskatoon, as there are wagon trails which are at present used by the settlers in the township to the south. Although these roads lack bridges they are nevertheless quite practicable. The southern third of the township consists of gently rolling country covered with clumps of poplar and willow. To the north of this portion the land rises, and a divide crosses the

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 10.—*Continued.*

township in a north-easterly direction. This ridge is heavily timbered with poplar, spruce and jack pine, and forms the divide between Bear Creek and Pouce Coupé River. The soil in the southern portion consists of from four to eight inches of black loam overlying clay or sandy clay, and is well adapted to agriculture. On account of the many small sloughs producing excellent hay, mixed farming should be undertaken. Upland grass is luxuriant. Although the remainder of the township is fairly heavily timbered, portions of it should also be suitable for farming. Timber is found principally in the northern third and in sections 6, 7, 18 and 19, and consists of spruce, tamarack and jack pine in fair quantity and of size suitable for building. It should, however, be reserved for the settlers. The water is fresh and plentiful. No water-power is available. The climate is similar to that of Grande Prairie. Frosts occurred late in June this year. Wood for fuel is plentiful. No minerals, coal nor stone in place were found, and no game was seen.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 80 (*North outline.*)—The timber is mainly spruce, poplar and cottonwood in quite large belts, among which the fire has burnt deep bays, leaving the timber lying in all directions and it is now growing up with poplar, willow and rank grass. The soil is loam over clay and hardpan and in ordinary years would have a good deal of water lying on it on account of the gumbo and hardpan not letting it through. The water-shed or height of land crosses the line west of the north-west corner of range 10, and extends north-east and south-west; a ravine falls northerly across the line in section 35 and there is a sharp descent to the west in section 31. In section 32 there is a large belt of fairly large birch timber not met with elsewhere.—*Henry W. Selby, D.L.S., 1904.*

Tp. 87 (*Exploration survey.*)—This township is ideal for ranching having a fine stream of water flowing from north to south through it and two small lakes on the east side. A considerable part of this township is open and grows good grass though the soil is not deep and has gravel for subsoil. The trail to Fort St. John passes through the middle of it, running east and west.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—The eastern side of this township is covered with green timber, the southern part has scrub and small poplar, and the north-western part has brûlé and some second-growth jack pine. The northern part on the top of the Clear Hills is of very little value being muskegs and jack pine ridges.—*J. R. Akins, D.L.S., 1911.*

RANGE 11

Tp. 68 (*North outline.*)—This range is quite rolling to the south and to the north as far as Wapiti River. This river crosses the base line in section 32. The water level is four hundred feet below the upper level, the west bank is abrupt and the valley is about one hundred and twenty chains wide. After crossing the river a thick poplar scrub is entered and the soil is deep and rich. This condition prevails and improves as Grande Prairie is approached. Some small patches of green timber remain in this range. They are surrounded by marshes and so escaped the fire. A branch of the Jasper trail crosses the north boundary of section 33.—*Geo. McMillan, D.L.S., 1909.*

Tp. 69 (*East outline.*)—A pack-trail enters this township at the north-east corner and runs south-westerly to Wapiti River. The surface is gently rolling, and south of the river is covered with green spruce and windfall, but north of the river it is mostly brûlé. Some patches of fine timber are found along the river consisting of spruce and black poplar from six to forty-two inches in diameter. South of the river spruce from two to ten inches in diameter grows thickly and there is some dead poplar near the south bank. The soil north of Wapiti River consists of two to four inches of black loam with clay subsoil, and would make good farm land, but south of the river it is mostly muskeg. Hay is not very plentiful, but the sloughs

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 11.—*Continued.*

contain a fair supply. Water is fresh and fairly plentiful in several sloughs, one or two small streams and in Wapiti River which crosses the east boundary of section 12. This river is about five chains wide, from two to five feet deep and has a current of about four miles per hour. Water-power could be developed by building dams across the river. The only available fuel is wood, but there is a plentiful supply everywhere. No stone-quarries nor minerals were found and the only game seen consisted of beaver, muskrats, weasels and partridges.—*W. G. McFarlane, D.L.S., 1909.*

This township can be reached from Halcourt by way of the Jasper Park trail which enters in section 36 and leaves in section 4. This trail could easily be made into a wagon road as far south as Wapiti River. The surface of the township, except where it is broken by the valleys of Wapiti River and its tributary creeks, is gently rolling and while formerly heavily timbered with spruce, poplar and jack pine, has been largely fire-swept so that now there are stretches of windfall and brûlé with willow and young poplar. Along the south side of Wapiti River in sections 10 and 11 there is spruce up to twenty-four inches in diameter with large poplar; this is the only large timber in the township. The valley of Wapiti River varies from half a mile to one mile in width, and from three hundred and fifty to four hundred and fifty feet in depth. The river averages five hundred feet in width and the current is about five miles per hour. The run-off, however, is very erratic. Several large creeks enter the river and their valleys on approaching the river are very steep. The water in Lakes Alpha and Beta is very offensive to both taste and smell. Throughout the township, however, water is plentiful. Upland hay is luxuriant, although no workable hay sloughs were found. The climate is similar to that of the Grande Prairie district. Fuel is abundant. Coal occurs along the creeks, a seam of three feet in thickness being noticed. Sandstone of a very soft variety is found along Wapiti River. No game with the exception of grouse was seen. Evidences of moose and deer were noted.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 70

The surface of this township is gently rolling, but is cut by the deep valley of Redwillow River. There is some prairie land in the north-east corner, but for the most part the township is covered with poplar and willow scrub. The only timber of value is some scattered spruce in the northern part. The soil consists of two to eight inches of black loam on a clay subsoil, and is very suitable for farm land. Although hay is rather scarce some of good quality can be cut on the prairie. Water is plentiful in the sloughs, and in Redwillow River, which runs easterly across the township near the north chord. This river is about two chains wide, three feet deep and has a current of about four miles per hour. There are no waterfalls, but power could be developed by the construction of dams. Wood fuel is very plentiful and soft coal is found in small seams along Redwillow River. No stone-quarries nor minerals were found and no game was seen.—*W. G. McFarlane, D.L.S., 1909.*

An old pack-trail from the north side of Redwillow River leads to this township. The land is good for farming and consists of six inches of black loam on a clay subsoil. The surface is nearly level except the valley of the Redwillow along the north chord, and is nearly covered with poplar and willow scrub, but no timber of value is found. A few prairie openings occur on which good hay grows. Water is fresh and a plentiful supply is furnished by Redwillow River and the small creeks running into it. The river is about one hundred feet wide, eighteen inches deep, and flows four miles per hour. Its source is in the mountains and, in the spring of the year, its current and volume are very much increased, but no land is liable to be flooded. Power could be developed by the construction of dams below the rapids on the river. Wood fuel is plentiful and coal is found on Redwillow River in township 70, range 10. No stone-quarries nor minerals were noticed.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 71

The surface of this township is gently rolling and mostly covered with willow and poplar scrub, but there is a fair amount of prairie at the south-east corner. The timber consists of a few scattered spruce and jack pine, six to ten inches in diameter. The soil consists of three to ten inches of black loam with clay subsoil and would make excellent farm land. Hay is very scarce, but some can be cut on the prairie and in the sloughs. Water

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 11.—*Continued.*

is fresh and fairly plentiful in the lakes to the north, but the small streams in the south half generally stop running in summer. No water-power could be developed and no land is liable to be flooded. Wood fuel is plentiful everywhere, but no coal, stone-quarries nor minerals were found. No game was seen except ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 72 The surface of this township is gently rolling and covered mostly with dead poplar and willow scrub, although no timber is found except some spruce up to ten inches in diameter. The soil consists of two to six inches of black loam on a good clay subsoil and would make good farm land. Hay is very scarce, but it will soon grow among the brulé. Water is fresh and plentiful in lakes and in several small streams which flow north-easterly joining near the centre of the township to form a large stream six feet wide and one foot deep with a current of three miles per hour. This stream flows north-easterly, towards Beaverlodge River, but it has no waterfalls for developing power. The weather was fine and bright (October) with sunny days and frosty nights. Wood fuel is plentiful everywhere, but no coal, stone-quarries nor minerals were found. The only game seen was ducks.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 73 This township is reached by the Beaverlodge to Pouce Coupé trail which runs a little north of west across the centre of the township. The soil is black loam from four to ten inches deep, with a good clay subsoil, and is good farm land. The surface is gently rolling and a considerable part of it is prairie interspersed with scattered bluffs. That part of the township south of Beaverlodge River has all been burned over. The north third is mostly covered with green poplar and willow scrub. The only timber of value is a few scattered spruce from six to eight inches in diameter in the northern part of the township. Hay is plentiful on the prairie and is of excellent quality; it will soon be plentiful on the brulé. The water is fresh and abundant in streams and sloughs. Several small streams flow in from the south and west and join near the centre of the township to form Beaverlodge River. This river is about twelve feet wide, two feet deep, and flows about three miles an hour. The weather was fine and bright (September) with occasional showers and cool nights. The only fuel is wood and it is plentiful everywhere. No stone-quarries nor minerals were found, and no game was seen.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 74 The soil in this township consists of three to ten inches of black loam with a good clay subsoil, and, although there is a small amount of gravel with some stones, it would make good farm land. The surface is gently rolling, and is nearly all covered with willow and poplar scrub. Some spruce from six to eight inches in diameter is found throughout, and there is a small block of excellent timber on the north half of section 25, and the east half of section 36, but it is scarcely large enough for a timber limit. This tract contains poplar from two to ten inches and spruce from six to eighteen inches in diameter, standing close and straight and free from limbs, but there is a lot of dry windfall around the south and north-west. Hay is scarce, but a small amount could be cut in the sloughs. Water is fresh, but not plentiful, the supply consisting of a lake in section 26 and two small streams, which stop running in the summer. There is no available water-power and no land is liable to be flooded. The weather was fine and bright (September) with occasional showers and cool frosty nights. Wood fuel is plentiful everywhere, but no coal, stone-quarries nor minerals were found. The only game seen consisted of moose, ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

Tps. 75 & 76 (*East outline.*)—The soil along these outlines is mostly sand with clay subsoil and is suitable for mixed farming, while the surface is rolling and mostly timbered. Some spruce near the north of township 76 measures twenty-four inches in diameter. Hay is not plentiful but some could be obtained in the small sloughs. The supply of water consists of a small lake in section 23 and a creek flowing south-easterly from it. There is no available water-power and the land is not liable to be flooded. The weather was cool and mostly fine except for a snowstorm on October 19 when six inches of snow fell. Wood fuel is plentiful on every section, but no coal, stone-quarries nor minerals were found. The game consisted of moose, partridges and rabbits.—*W. G. McFarlane, D.L.S., 1909.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 11.—*Continued.***Tp. 80**

(*North outline.*)—In sections 36, 35 and 34 bluffs of large and healthy-looking timber occur, with dense willow flats intervening. The scrub is so tangled and matted in these flats that it has to be pulled out of the way when being cut. All surface water flows towards the north-west. Several small water-courses rise in the ravines to the south-east and flow through a large area of burnt and fallen timber. The soil is loam over clay subsoil, and vegetation is very rank. Very little can be said of the country away from the line, as the willow was so thick that travelling off the line was out of the question.—*Henry W. Selby, D.L.S., 1904.*



Photo by J. R. Akins, D.L.S.

The 23rd Base Line, between Townships 88 and 89, Range 14,
West of the Sixth Meridian

Tp. 87

(*Exploration survey.*)—This township is rolling, has good soil and is wooded with small poplar and scrub. There is a branch of Clear River flowing southerly through it.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 11.—*Continued.*

Tp. 88 (*North outline.*)—The northern part of this township is hilly and of very little value as in it the Clear Hills begin. The southern part is wooded with small poplar, willow and scrub with a few muskegs. The main branch of Clear River takes its rise in the north part.—*J. R. Akins, D.L.S., 1911.*

RANGE 12

Tp. 68 (*North outline.*)—In this township the country is high and rolling. The soil is rich and deep and the vegetation quite rank. There are some open patches and some small areas of green timber. The loam has not been burned away as is the case farther east. Callahoo Creek crosses the base line six times in this township. There is coal along this creek almost everywhere and in several places the bottom of the creek is a bed of coal.—*Geo. McMillan, D.L.S., 1909.*

Tp. 69 This township can be easily reached from Halcourt by way of the Callahoo Lake trail. This trail is in good condition, and enters this township near the north-east corner of section 35 and leaves near the south-west corner of section 6. The surface of the township is gently rolling, and while formerly heavily timbered with poplar, spruce and jack pine of fair size, has been fire-swept with the result that there is at present a thick growth of young poplar and willow. In the low-lying parts, however, spruce and tamarack up to ten inches in diameter are found. The soil has suffered from former fires, the vegetable loam having been largely destroyed. The subsoil is generally sandy clay with gravel and boulders at varying depths. The water is of excellent quality and the supply is permanent. The southern half of the township drains into Wapiti River, while the northern portion slopes to Redwillow River. Hay sloughs, formed by old beaver dams, are found along the many creeks, and while none of them are large enough to warrant special mention considerable hay could be cut. The climate is similar to that of the Grande Prairie district. Winds blow continually from the south-west during the day, but the nights are usually calm. The ice on the creeks and rivers in this locality broke up about April 13. Fuel is fairly abundant. No minerals, coal nor stone in place were noted. The game consists of moose, bears, grouse, prairie chickens, geese and ducks.—*G. W. MacLeod, D.L.S., 1914.*

Tps. 69 & 70 (*East outlines.*)—The surface of these townships is gently rolling, and mostly covered with dead and green poplar and willow. The greater part has been burned over and could be easily cleared for agriculture, for which it is well adapted as the soil is a black loam with clay subsoil. Timber is scarce, and the amount of hay is small. A small creek crosses the east boundary of section 12, township 69, and another crosses the east boundary of section 1, township 70, both of which contain fresh water. Redwillow River crosses section 25 of the latter township; it is from two to three chains wide, one to four feet deep and has a current of four miles per hour. The banks of this stream are not suitable for the construction of dams for power purposes, and the rapids have no great fall. The climate was fine and dry except for occasional snow flurries. Wood fuel is available everywhere, but no coal, stone-quarries nor minerals were found. Game consists of moose, foxes, partridges and prairie chickens.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 70 This township can be easily reached from Halcourt by using any of the several wagon trails in the valley of Redwillow River, which enters the township in section 18 and leaves in section 25. The surface is rolling and generally lightly timbered with poplar and willow. While no large blocks of timber are found, there is a small quantity of spruce suitable for building at nearly every bend of the river. The southerly tiers of sections and also sections 31 and 32 are occupied by ridges covered with thick young poplar. Between these ridges lies the valley of Redwillow River, which is from one to two chains in width and from one to eight feet deep, and has a current of three miles per hour. The immediate valley varies from fifty to seventy-five feet in depth and from half a mile to one mile in width. The soil in the valley

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 12.—*Continued.*

consists of from two to five inches of vegetable loam overlying a sandy clay or gravel subsoil. On the ridges where the top-soil has been burned off boulders are found. Hay sloughs are numerous although no particularly large ones were noted. There is a luxuriant growth of upland grass. Water is abundant. Fuel is fairly plentiful. Coal is found along the rivers and creeks. The climate is similar to that of Grande Prairie, and as a whole the township is quite suitable for agriculture or grazing. No game was seen.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 71 This township can be reached by several wagon trails running through the valley of Redwillow River, which flows a few miles to the south. Halcourt is at present the nearest post office. The surface of the township is, as a whole, gently rolling.

A ridge forming the divide between Redwillow and Beaverlodge Rivers crosses the township in a north-easterly direction. This ridge was formerly heavily timbered but as the district has been largely swept by fire there is now a large amount of windfall; approximately fifty per cent. of the township is thus affected. A heavy second growth of small poplar and willow is found amongst the windfall, making travel very tedious. In sections 16, 17, 20 and 21 there is a small block of large jack pine, spruce and poplar. Fair agricultural land is found in sections 1, 2, 3, 4, 9, 10, 11, 12 and also in sections 27 to 36. The soil in these sections consists of from three to five inches of vegetable loam overlying a clay, gravel or sandy clay subsoil. In many places, however, the top-soil has been destroyed by fire. The township is well watered, there being several small lakes and also small sloughs. There are no water-powers. Hay can be cut in sections 15, 22, 23, 26 and 33 in dry seasons. No minerals, coal nor stone in place were noted. The climate is similar to that of the Grande Prairie district. Frost was experienced on June 1. Game consisting of moose, beavers and muskrats, is fairly plentiful.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 72 (*North outline.*)—In the eastern half of this township the line runs through low rolling hills and wide valleys with a growth of tangled willow and alder and scattered patches of poplar. In the western half the hills continue but patches of heavy timber are more common.—*J. N. Wallace, D.L.S., 1904.*

This township may be reached from the Pouce Coupé trail either from Beaverlodge or from section 21, township 73, range 11. From the former point there is a wagon trail which runs in a westerly direction and enters this township in section 24, while from the latter point a pack-trail runs south-westerly, entering the township in section 33 and leaving in section 30. These trails are both rather unsatisfactory on account of the many creeks. The surface of the township is rolling and generally covered with a fairly heavy growth of poplar and willow, not, however, of any commercial value. This township was formerly heavily timbered but as the land has been fire swept there are now many patches of brulé and windfall. Much of the loam soil has been burned away, although in places there is a depth of four inches. The subsoil varies from clay to sandy clay, and as a whole the soil should not be unsuitable for agriculture. Grass and peavine grow luxuriantly. Hay could be cut around several sloughs. There is an abundant supply of fresh water. No water-power can be developed. The climate is similar to that of the Grande Prairie district. Wood for fuel is plentiful. No minerals, coal nor stone in place were noted. No game was seen.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 73 The road to Pouce Coupé furnishes a means of access to this township. Six inches of black loam soil over a clay subsoil makes good farm land. Scrub covers nearly the whole surface, which is gently rolling. Small prairie flats extend along Pouce Coupé trail, and on these flats hay of medium quality is fairly plentiful. Water is fresh and plentiful in a few lakes and some creeks running easterly. No land is liable to flooding and no sites were noticed where power could be developed. Wood for fuel is abundant, but no minerals nor stone-quarries were found.—*W. G. McFarlane, D.L.S., 1912.*

Tp. 74 The surface of this township is gently rolling and nearly all covered with scrub, with a few clumps of spruce six to fourteen inches. The soil consists of four inches of black loam on a clay subsoil. Hay is scarce, but water is fresh and fairly plentiful in small creeks and numerous lakes. No water-powers are found nor are lands liable to flooding.

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 12.—*Continued.*

The weather was cool and dull (October), rain and snow falling occasionally, while severe frosts were experienced. Wood fuel is plentiful, but no stone-quarries nor minerals were found, nor was any game seen.—*W. G. McFarlane, D.L.S., 1912.*

Tps. 75 & 76 (*East outlines.*)—The land in these townships is suitable for mixed farming as it is black loam on a clay subsoil, while the surface is mostly rolling and covered with burnt timber. There is some good timber on section 25, township 76, consisting of spruce, poplar and jack pine up to twenty-four inches in diameter, but the greater part of it is fire-killed. Along the south boundary there are also some jack pine and poplar up to ten inches in diameter. Water is not very plentiful except in a creek crossing the east boundary of section 24, township 76, which is about twelve feet wide, eight inches deep and flows about one mile per hour. There are also a number of springs near the north boundary of township 76. Hay is not very plentiful. The climate was fine and dry, except for a snowfall of about six inches on October 19. Wood fuel is plentiful everywhere, but no coal, stone-quarries nor minerals were found. Game consists of moose, bears, porcupines and partridges.—*W. G. McFarlane, D.L.S., 1909.*

Tp. 80 (*North outline.*)—The soil seems to improve in this range while the timber is smaller and the large trees are very much scattered, except in sections 34, 33, 32 and 31, in which deep gullies occur, and the timber is larger and of better quality.—*Henry W. Selby, D.L.S., 1904.*

Tp. 87 (*Exploration survey.*)—The surface is rolling and wooded. The north part of the township has not very good soil, but the south part is good. It is traversed by several streams, all branches of Clear River.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—This township is cut by ravines. The soil is sandy and not suitable for agriculture. The surface is hilly and is wooded with scrub and jack pine.—*J. R. Akins, D.L.S., 1911.*

RANGE 13

Tp. 68 (*North outline.*)—In this township the land is high and rolling and quite densely timbered. There is a good pack-trail crossing section 36, which leads to Saskatoon Lake.—*Geo. McMillan, D.L.S., 1909.*

Tp. 77 This township was reached by a fairly good pack-trail near the south chord leading into section 16. The soil is from two to five inches of black loam with clay subsoil and some stones, and it would make fairly good farm land. The surface is covered with poplar and willow scrub and is rather rough. There are plateaux to the north and south with the deep valley of the east branch of Pouce Coupé River running westerly near the south chord. Timber is scarce, but some scattered six to ten-inch spruce is found along creeks, sloughs and small lakes. Hay is very scarce, but water is fresh and plentiful in small lakes, sloughs and creeks. The east branch of Pouce Coupé River runs westerly near the south chord. It is about one and a half chains wide, one to four feet deep, and runs about five miles per hour. The land is not liable to be flooded and no water-powers were seen. The weather was mild (May) with considerable rain and some frost. Wood fuel is plentiful, but no stone-quarries nor minerals were found. Game seen consists of bears, moose, ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 78 Our pack-trail from township 77 was the only way to reach this township. The soil is from two to three inches of black loam with clay subsoil and some gravel and clay. It would make only fair farming land. The surface is nearly all covered with poplar and willow scrub. There is a high range of hills along the south and east of the town-

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 13.—*Continued.*

ship, while here and there ledges of rock crop out near the top of the hill. There is very little timber but a little six to ten-inch spruce is found near the east end of the north chord and a few scattered ones throughout the township. Hay is very scarce but water is fresh and fairly plentiful in small streams throughout the whole township. The land is not liable to be flooded and there are no water-powers. The weather was fine and mild (August) with considerable rain and no summer frosts were noticed. Wood fuel is plentiful but no stone-quarries nor minerals were found and no game was seen.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 79 The Spirit River pack-trail from township 79, range 14, is the best route to this township. The soil is from three to six inches of black loam with clay subsoil and would make good farming land. The surface is nearly all covered with poplar and willow scrub, but there are scattered prairie openings. It is badly broken up by Pouce Coupé River and by the valley of a creek which runs westerly across the township near its centre. There is no timber of any account in this township. The water is fresh and fairly plentiful in Pouce Coupé River and in small creeks. The river is about three chains wide, from two to eight feet deep and flows about six miles per hour. The creek mentioned above is about twenty links wide, six inches deep and flows about five miles per hour. Numerous little streams flow into this and into the Pouce Coupé. The land is not liable to be flooded and there are no water-powers. The weather was fine and warm (August) with considerable rain. Wood fuel is plentiful but no minerals nor stone-quarries were found and no game was seen except bears, ducks, geese and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 80 (*North outline.*)—Bear Creek is crossed in section 36, about eight hundred and ten feet below the general level of the land, and is at present a very small stream, but the banks show that at times there is a deep and wide body of water flowing therein. Along the cut banks there are narrow seams of soft coal outcropping. The timber is of very little commercial value, there being only a few spruce of any size. Section 35 is on the bank of Bear Creek and partly cut by it and very much cut by ravines and landslides; the timber here is of no value except for firewood. Section 34 is gently undulating with a good growth of poplar and spruce and the soil shows some improvement, with a rank vegetation. Section 33 is cut by a coulée four hundred feet deep and several smaller ravines which are quite heavily wooded, but little of the timber is of value. Section 32 is gently undulating with soil and timber similar to that of the foregoing section.—*Henry W. Selby, D.L.S., 1904.*

(*North outline.*)—Half a mile west of the north-east corner of this township is Pouce Coupé River, otherwise known as Bear River, a swift stream about one hundred and ten feet wide. It rises in Sucker Lake and flows into Peace River about twelve miles north. It has high and rocky banks, and in some places alternating flats with a valley about two miles wide, and five hundred and fifty feet deep, all the way to Peace River. The soil is principally clay, the vegetable loam having been burnt away, and nearly all the timber is fire-killed. This dead standing timber consists of jack pine, spruce and poplar, varying in size from four to sixteen inches in diameter. There is hardly any fallen timber, as the trees are not dead long enough to fall. This range is the roughest part of the base line, there being two deep valleys, that of Pouce Coupé River and another one three miles west, almost as deep, although the stream in the latter can be stepped over.—*Geo. McMillan, D.L.S., 1911.*

The soil in this township consists of two to six inches of black loam with clay subsoil and will make good farming land. The surface is mostly covered with poplar and willow, but there are some prairie openings at the south-west corner. It is badly cut up by Pouce Coupé River which runs north-easterly through the east half of the township. The valley is from five hundred to six hundred feet deep and in many places consists of sheer cliffs and cut banks. Numerous small coulées run into it and the district in general is very rough. There is very little timber in this township but scattered six to eight-inch spruce and poplar are found. Hay is not plentiful but some of good quality could be cut on the prairie. Water is fresh and plentiful in Pouce Coupé River, in small streams and in sloughs. The Pouce Coupé was about three chains wide and from four to ten feet deep at the time of survey (July). It was high on account of the heavy

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 13.—*Continued.*

rains, and very swift, especially in canyons, where the banks were solid rock or immense boulders. The rate of the current was about twelve miles per hour. A creek about eight links wide, two feet deep and flowing about five miles per hour crosses the north-west corner of the township. The other streams dry up in the summer. Water-power might be developed by damming the Pouce Coupé. The weather was fine and warm (July) with considerable rain and some hard frost. Wood fuel is plentiful but no stone-quarries nor minerals were found, and bears were the only game seen.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 81 (*East outline.*)—This township is very much broken by Bear Creek and its branches and also many ravines and coulées. The timber is generally small poplar with small bunches of spruce of fair size; the soil is clay loam on clay. A pack-trail follows the bed of Bear Creek at low water from Peace River to Fort St. John trail, but is very rough for the northern six miles with stones and boulders. The meridian crosses Bear Creek in sections 12 and 36 where the banks are from seven hundred to eight hundred feet high.—*Henry W. Selby, D.L.S., 1904.*

Tp. 82 (*East outline.*)—The east boundary of this township rises slightly to the north in section 12 where it gradually descends to Peace River in section 25, passing through small belts of poplar and spruce and prairie spots to the north-east corner of section 36. This extends up the north bank of the river to the general level of the country.—*Henry W. Selby, D.L.S., 1904.*

Tps. 83 & 84 (*East outline.*)—This line runs almost immediately into a spruce and tamarack swamp, extending for over two miles. From here to the correction line the country traversed by this outline, with the exception of one or two small areas which have been burned over several times and are now grown over with poplar, is covered with heavy windfall and standing dead timber, with young poplar and jack pine springing up everywhere. All along the jog the timber is mostly poplar. The country is undulating and well watered by good fresh-water streams.—*O. Rolfsen, D.L.S., 1911.*

Tp. 84 (*North outline.*)—This line through ranges 13 to 17 inclusive, passes through undulating country, the surface of which is covered with spruce, jack pine and poplar with occasional openings of scrubby prairie. This scrubby prairie and light poplar country is the result of fires destroying the original timber. The soil is a good clay loam with grass, wild vetch and peavine.—*O. Rolfsen, D.L.S., 1911.*

Tp. 87 (*Exploration survey.*)—The soil in this township is fair, the country rolling and wooded with scrub and small poplar. In the south-west corner is some good timber, spruce growing up to twelve inches in diameter.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—The soil is very poor and the surface is hilly and covered with brûlé and second-growth jack pine with some small poplar.—*J. R. Akins, D.L.S., 1911.*

RANGE 14

Tp. 68 This is a fractional township and is greater in elevation than township 68, range 12. It is also more rolling and more densely timbered. There is a good pack-trail crossing section 36 in range 13 and leading to Saskatoon Lake.—*Geo. McMillan, D.L.S., 1910.*

Tp. 76 (*North outline, Ranges 14 to 17.*)—This base line was reached by following the trail by way of the western branch of Stinking Creek, two lakes, Nose Creek and Jasper trail to Grande Prairie. Ranges 15 and 16 contain some poplar, spruce and jack pine timber suitable for building, ties or lumber. Range 17 is hilly and largely covered

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 14.—*Continued.*

with fallen timber and jack pine scrub. Pouce Coupé prairie begins in range 14 about eight miles north and runs in a north-westerly direction to Kiskatinaw River. The prairie is rolling and scrubby, and appears to be the result of forest fires. The soil is a rich clay loam with a white clay subsoil. It comprises hay lands, and sufficient timber for fuel and building purposes, but surface water is scarce. There is a community of five families of half-breeds and eleven white settlers on the prairie, now located in and around township 78, range 14. In June and July the thermometer registered from sixty to eighty degrees in the day time, but the nights were cool. August was very wet, and mists and fogs were prevalent. A snowfall of one foot occurred on August 22 and 23 and the leaves were shed by September 1. On October 11 the ponds were frozen over and there was an inch of frost in the ground and four to six inches of snow. Real winter began on November 2. Snow fell almost every day during the month, and the thermometer varied from 0 to —40 degrees. December was fine but in the last of January —60 degrees were registered. Fresh water is abundant everywhere, no bad water being met with all season. There were no mosquitoes nor kindred pests. No minerals were seen, but many of the boulders scattered over the district carry iron. Springs in the vicinity of Nose Mountain deposit a white solid building stone like lime, but the water is tasteless and colourless. There is considerable building stone along the tributaries of Porcupine River. Moose are plentiful everywhere, and grizzly and black bears roam in great numbers south of Red Deer River. Foxes, martens and lynx are almost extinct. Muskrats are numerous but there are no beavers. Ducks and partridges are rarely seen while whitefish are plentiful. In Pouce Coupé the following animals are to be found although none of them are numerous: Moose, black bears, grizzly bears, wolves, foxes, lynx, minks, martens and coyotes. Jack fish are caught in Bear Creek. All streams have sufficient natural fall for the development of water-power but the volume of water is not always sufficient. Porcupine and North Creeks have sufficient volumes at all times and Nose Creek and Capton Creek at high water would furnish power. The building of dams would not be expensive as the banks are high and often approach the water's edge.—*Geo. McMillan, D.L.S., 1911.*

Tp. 77 The Pouce Coupé trail runs through this township. The soil is from two to eight inches of black loam with clay subsoil and some gravel and would make fairly good farming land except in some places where the surface is too rough. The surface is gently rolling on the plateau, but is badly cut up by Pouce Coupé River and Bisette Creek which empties into the Pouce Coupé in section 32. The surface is mostly covered with poplar and willow scrub but some poplar up to eight inches in diameter are found. There is a little prairie at the north-west corner of the township. No timber of any account grows in this township, but a little six to ten-inch spruce is found along the creeks. Hay is very scarce but the water is fresh and plentiful in Pouce Coupé River which flows north-easterly through the township and also in several small creeks running into it. Pouce Coupé River is about two and a half chains wide, one to six feet deep and flows about five miles per hour. The land is not liable to be flooded and there are no water-powers. The weather was mild (August) but there was considerable summer frost and a heavy rainfall. Wood fuel is plentiful, but no stone-quarries nor minerals were found and the only big game seen consisted of bears, numerous moose, ducks and geese.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 78 The Pouce Coupé wagon trail is the best route to this township. The soil of this excellent farming land is mostly from four to eight inches of black loam with clay subsoil, while some gravel appears in places. The surface, gently rolling on the upland, is mostly prairie west of Pouce Coupé River and mostly bush, poplar and willow, to the east. The district is badly cut up by the valley of this river and also that of Dawson Creek in sections 7 and 8. There is very little timber in this township, but some scattered spruce is found to the south and east from six to twelve inches in diameter. Hay of good quality is plentiful

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 14.—*Continued.*

on the prairie. The water is fresh and plentiful in Pouce Coupé River and Dawson Creek. The former flows northerly across the township, is about three chains wide, from two to six feet deep and flows about five miles per hour. Dawson Creek stops running in the summer. There are no water-powers. The weather was fine and bright (August) with cold nights and some rain and frost. Wood fuel is plentiful. No stone-quarries nor minerals were found and no game was seen except bears, ducks, geese, prairie chickens and partridges.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 79 The soil of this township consists of three to six inches of black loam with clay subsoil and makes excellent farming land. The surface is gently rolling and mostly bare prairie, but it is cut up by the coulée of Saskatoon Creek, flowing easterly mostly between the chords and also by Pouce Coupé River which cuts the south-east corner of the township. There is no timber but hay is very plentiful and of the best quality all over the prairie north of Saskatoon Creek. Water is fresh and fairly plentiful in Saskatoon Creek and another small creek which flows into it from the north. Saskatoon Creek which dries up in summer is about ten links wide, one foot deep and flows about four miles per hour. The other creek is very small and also stops running in the summer. Pouce Coupé River runs through sections 1 and 12. The land is not liable to be flooded and there are no water-powers. The weather was fine and warm (September) during the day and cool at nights. Some rain fell. Wood fuel is plentiful around the township, but no stone-quarries nor minerals were found and no game was seen except prairie chickens and ducks.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 80 (*North outline.*)—The surface of this range is undulating with no ravines and the soil and timber are more thoroughly burned than in range 13. The north limit of Pouce Coupé prairie is about three miles south and runs in a south-westerly direction, the timbered area widening to the south of the line as far west as Kiskatinaw River in range 16. Peace River is about nine miles north, and Kiskatinaw River flows into it about the middle of this range. For two miles north there is a series of beaver meadows, and then heavy green spruce up to thirty inches in diameter to Peace River.—*Geo. McMillan, D.L.S., 1911.*

This township is easily reached by travelling across the prairie. The soil is excellent farming land and consists of four to eight inches of black loam with clay subsoil. The surface is gently rolling and the greater part of the north half is covered with poplar and willow and a little scattered spruce, while the south is bluffly and open. Timber is scarce in this township but some four to twelve-inch spruce and three to eight-inch poplar is found along the north side. Hay is plentiful and of the finest quality all over the prairie while the water is fresh and fairly plentiful in two small creeks that run easterly across the township, one near the north side and the other near the south chord. These creeks both stop running in the dry part of the summer. The land is not liable to be flooded and there are no water-powers. The weather was fine and warm (September) during the day with cool nights and some frosts. Considerable rain fell. Wood fuel is plentiful, but no stone-quarries nor minerals were found, while the game seen consisted of bears, moose, ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 84 (*North outline.*)—See report for township 84, range 13.—*O. Rolfsen, D.L.S., 1911.*

Tp. 87 (*Exploration survey.*)—This township is covered with good timber consisting of spruce, poplar and jack pine up to twenty-four inches in diameter. The soil is fair.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—The country is gently rolling. The western part is covered with good timber, consisting of spruce, jack pine and poplar up to twenty inches in diameter. The soil is fair.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 15

Tp. 76 (*North outline*).—See report for township 76, range 14.—*Geo. McMillan, D.L.S., 1911.*

Tp. 77 We made a good pack-trail to section 22 through sections 25 and 26. The soil of this township, consisting of two to six inches of black loam over a clay subsoil and some gravel and stones in places, would make fair farming land. The surface is nearly all covered by thick poplar and willow scrub, but there is a little prairie at the north side, and some high plateaus and deep creek valleys with ledges of rock jutting out of the banks in places. There is no timber of any account but a little six-inch jack pine and scattered six to ten-inch spruce is found throughout the south and west two-thirds of the township. Hay is very scarce except in the north-west corner on the north slope of a hill where it is fairly abundant and of good quality. The water is fresh and fairly plentiful in small creeks running north-easterly across the township, but these would stop running in a dry season. The land is not liable to be flooded. There are no water-powers. The weather was generally fine and mild with considerable rain and some summer frosts. Wood fuel is plentiful but no stone-quarries nor minerals were found and bears were the only game seen.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 78 This township was reached by crossing the prairie. The soil consists of three to eight inches of black loam over a clay subsoil and makes good farming land. The surface is gently rolling and bluffly and is cut up somewhat by Dawson Creek. There is very little timber in this township except some scattered six to ten-inch poplar and spruce. Hay is abundant and of good quality on the prairie, while water is fresh and fairly plentiful in Dawson Creek and its tributaries which flow easterly across the township. These are all small and stop running in the summer. The land is not liable to be flooded and there are no water-powers. The weather was fine and fairly warm with some rain and a little frost. Wood fuel is plentiful but no stone-quarries nor minerals were found and no game was seen except ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 79 This township is good for farming, the soil being from three to six inches of black loam with clay subsoil. The surface is rolling and mostly covered with poplar and willow, but it has open prairie stretches to the east and south. Timber is scarce in this township, but some scattered six to eight-inch spruce is found. Good hay is plentiful on the prairie and the water is fresh and fairly plentiful in Saskatoon Creek and in a small creek near the north side of the township, as well as in a lake on the north boundary of section 24. The creeks stop running in the summer. The land is not liable to be flooded and there are no water-powers. The weather was fine and mild with some rain and a little frost. Wood fuel is plentiful but no stone-quarries nor minerals were found and the only game seen consisted of ducks and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 80 (*North outline*).—The soil and surface of the east half of this range resemble that of range 14. In section 33 a forest of spruce, jack pine, balsam and poplar commences and extends with one interruption to Pine River. This forest comprises about two hundred square miles of timber up to forty inches in diameter, and is accessible to Kiskatinaw and Pine Rivers. No other streams between these two rivers are large enough for rafting logs, and it is doubtful if they do not dry up in summer. The soil in this forest is a sticky clay loam covered with a thick green living moss, which holds the moisture and which must have protected the timber from destruction when fires destroyed so much surrounding it.—*Geo. McMillan, D.L.S., 1911.*

The soil in this township consists of two to six inches of black loam with clay subsoil and will make fair farming land. The surface is mostly covered with poplar, willow and alder to the south and east, with clumps of dry spruce north of the south chord. There is some fine spruce and poplar eight to thirty inches in diameter in sections 17, 18, 19, 20, 29, 30, 31 and 32, and this

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 15.—*Continued.*

runs north and west and should be reserved for a timber limit. The township is rather rolling with a valley running through it in a north-easterly direction. Hay is very scarce. The water is fresh and fairly plentiful in small creeks running north-easterly, which stop running in the summer. The land is not liable to be flooded and there are no water-powers. The weather was fine and warm with cool frosty nights in August. Wood fuel is very plentiful but no stone-quarries nor minerals were found and no game was seen except bears and prairie chickens.—*W. G. McFarlane, D.L.S., 1911.*

Tp. 81 (*Partial.*)—The pack-trail following the twenty-first base line passes through section 6. The only part of this township which was surveyed is the south half of section 6, and this is included in T. B. No. 2052, block No. 1, and is covered with good marketable timber. The remainder of the township, as far as could be seen, is undulating country that has been swept over by fire. Some of the timber is still standing. The fallen timber is piled so high that it makes access very difficult. The soil is chiefly hard clay covered with a few inches of moss. The only water to be found is in small sloughs, so that there is no water-power and no land is liable to be flooded. The weather was cold at the time of survey (October). No minerals nor stone-quarries were noticed. Indications of moose were very numerous, and partidges were the only small game seen.—*L. Brenot, D.L.S., 1913.*



Photo by L. Brenot, D.L.S.

Looking down Peace River, near West Boundary of Peace River Block

Tp. 84 (*North outline.*)—See report for township 84, range 13.—*O. Rolfson, D.L.S., 1911.*

Tps. 87 & 88

These townships are covered with good timber, spruce, jack pine and poplar up to twenty inches in diameter. The country is gently rolling and the soil is good.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 16

Tp. 76 (North outline.)—See report on township 76, range 14.—*Geo. McMillan, D.L.S., 1911.*

Tp. 77 There is no wagon road into this township and it would be extremely difficult to make one as the Bear Hills, with an elevation of about eight hundred feet above the surrounding valleys, enter the township near the north boundary of section 25, and swing in the form of the letter "U" from this point to the north-east corner of section 34, the bottom of the "U" resting upon the north boundary of section 14. The valley lying between the arms of the "U" and comprising sections 26, 35 and the north half of 36, is good farming land and easily accessible by the road from Pouce Coupé passing through the southern portion of township 78, range 16. This valley is well watered by small creeks. The west boundary of Bear Hills follows the east boundaries of sections 32 and 29, then turns south-east to the east boundary of section 16 and runs approximately south along the east boundary of sections 16, 9 and 4. The summit contour is often marked by rocky ledges of conglomerate sandstone from fifty to eighty feet high and is frequently broken by deep ravines. From the summit there is, at first, a heavy westward slope for one-half mile to the upper level of Kiskatinaw River Valley, and from the foot of this steep slope to the muskegs near the Kiskatinaw, the land is well watered and suitable for the production of grains and vegetables. This area occupies sections 5, 8, 17, 20 and 31, the western halves of sections 29 and 32, and the northern half of section 30. Sections 6, 7, 18 and 19 are largely muskeg, but they can easily be drained into the Kiskatinaw. At present they are valuable on account of the water they conserve. There is no valuable timber in this township. Poplar, spruce, jack pine and birch up to fifteen inches grow on the summit of Bear Hills, but the trees are mostly of a scrubby nature, and of no commercial value. The two western tiers of sections are covered mainly with second-growth poplar and willow, with some small open patches. Small hay sloughs are found between the base of Bear Hills and the muskegs above the Kiskatinaw, where a fair amount of good hay may be obtained. Fresh water may be obtained almost anywhere in the township from the numerous small creeks which rise in the muskegs on Bear Hill's plateau, and these will usually furnish water throughout the year except in a very dry season. The land is not liable to flood. There are no falls or rapids in the township and so no power can be developed. On account of the height of Bear Hills all clouds coming from the Rocky Mountain slopes, break over this township and, as a consequence, rains are quite frequent, but otherwise the climate is very agreeable. Severe summer frosts may be expected about once in every four years. Fuel may be obtained anywhere in the township, but no coal or lignite veins were seen. The Bear Hills are composed largely of conglomerate sandstone which crumbles very easily so that the stone is of no use for building purposes. We observed no minerals of economic value in the township. Large game is scarce, but a few moose and deer could likely be obtained in the rolling uplands above the Kiskatinaw, which passes through the south-west part of section 6. The nearest post office is at Pouce Coupé, about sixteen miles distant, and from that place there is telegraphic communication with Peace River Crossing.—*S. D. Fawcett, D.L.S., 1915.*

Tp. 78 This township can be reached from the adjoining settled township to the east. The Pine Pass wagon road which enters in section 12 and leaves in section 18 is good under ordinary conditions. The surface is heavily rolling, and with the exception of sections 1, 2, 10, 11, 12, 13, 14, 15, 24, 25 and 36 is covered with an exceptionally heavy growth of alder, willow, birch, poplar and jack pine. The soil consists of from two to four inches of black loam overlying a clay subsoil, and would seem to be rather light for agriculture. In section 5 the land rises rapidly to an elevation of approximately eight hundred feet above the surrounding country. This hilly portion is densely covered with alder. In the more open parts the growth of grass and vegetables is luxuriant. No hay sloughs were found, but upland hay can be easily obtained. Rock in place is exposed in many places along the south boundary of the township. Water is not very plentiful. However, there are several small streams originating on the hillsides which lie along the south boundary. These streams form a branch of Dawson Creek. As elsewhere in the Pouce Coupé district lack of water is a great handicap to successful farming and stock-raising. Wood for fuel is abundant, and also timber for building purposes.

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 16.—*Continued.*

No minerals nor coal were found. Summer frosts seem to occur at irregular intervals, and in certain localities more than in others. No game was seen. This township as a whole is not adapted to agriculture, although certain sections are probably as good as any in the district, and some of these are already squatted upon.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 79 The Pouce Coupé-Fort St. John pack-trail enters the township in section 13 and leaves in section 34, and throughout this township is generally in fair condition. Several logging roads which are used by the settlers of Pouce Coupé enter the southerly third of the township. The surface is generally heavily rolling and was formerly heavily covered with a heavy growth of large jack pine, spruce and poplar. This large timber was destroyed by fire and as a result in many places the vegetable soil has disappeared. Sections 1, 2, 11, 12, 13 and 14 have apparently recovered from former fires and in these sections some good agricultural land is found, the soil consisting of from one to three inches of vegetable loam overlying a hard clay or sandy clay. Large boulders and gravel are found in many places. There is no timber of merchantable value and what green timber there is, is difficult of access on account of windfall. No hay sloughs were noted, but the growth of upland hay, peavine and vetches is good. The central portion of the township forms the divide for waters tributary to the Pouce Coupé and Kiskatinaw Rivers. Water is not plentiful, but where found is of good quality. No water-powers are available. The climate is similar to that of Pouce Coupé district. The summer of 1914 was particularly subject to frosts during July and August. Wood for fuel is abundant. No coal nor minerals were found. A few foxes were the only game seen. As a whole, this township is not suitable for agriculture, although some quarter-sections have already been squatted upon. Excellent grazing land is available and under ordinary conditions there should be enough water to support considerable stock.—*G. W. MacLeod, D.L.S., 1914.*

Tp. 80 (*Partial.*)—This township is rugged and broken by the deep canyon-like valley of Kiskatinaw River, along which landslides are of frequent occurrence. Sections 13, 24, 25 and 36, and the east half of section 35, comprise part of T. B. No. 2052, block No. 1, and are the only portions of the township subdivided. The surface is rolling and covered extensively with spruce and tamarack swamps. The soil is poor for agricultural purposes, being for the most part clay underlying a few inches of moss. There is no available water-power, and there is no danger of floods in any part of the township. The weather in October was cold. Neither mineral deposits nor stone-quarries were found. Fresh signs of moose were frequently seen. Partridges were the only small game noticed.—*L. Brenot, D.L.S., 1913.*

A good wagon road from Pouce Coupé to Fort St. John, passes through this township, and can be travelled at any time of the year excepting when Kiskatinaw River is in flood, generally in July. The river cannot be forded at this time. The soil throughout the township is composed of three to five inches of black loam or humus, underlying which is a subsoil of clay, sometimes mixed with sand and resembling hardpan. This soil is suitable for the production of wheat, oats and vegetables. The surface, where not broken by the deep valleys of Coal Brook and the Kiskatinaw, is, in general, rolling. Spruce, jack pine and poplar up to thirty inches in diameter cover sections 36, 25, 24, 13 and the east half of section 35. This has already been surveyed as a timber berth. The remainder of the township was, at one time, covered with a forest of spruce, jack pine and poplar up to twenty-four inches in diameter, but it has been destroyed by forest fires and now remains as piled up windfall or tall wind-dried rampikes. The surface of sections 1, 2, 11 and 12 is formed of criss-crossed windfall. North of the Kiskatinaw the wood is mostly green poplar and spruce of second growth up to eight inches, while to the south, excepting the timber berth and the brûlé-strewn sections mentioned above, the surface is covered with small poplar and scrub. There are no hay marshes in the township, but on some of the upland flats above the Kiskatinaw and Coal Brook, good hay can be cut with a considerable percentage of peavine intermixed. The creeks supply fresh water throughout the year and the supply is sufficient and permanent. Coal Brook is the largest of the creeks. It averages twenty-five feet in width and has a mean depth of two feet although in the autumn it seldom exceeds three or four inches in depth. It has a very deep narrow valley, and the sections through which it passes are too rough and broken for farming. Kiskatinaw River flows through the north-western portion

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 16.—*Continued.*

of the township. It averages three chains in width, has a mean depth of about four feet and a current of two and one-half miles per hour. The slopes forming the valley of the river extend almost to the water's edge, so the land is not subject to flooding, as the immediate valley is at least four hundred feet deep and a mile wide. There are small riffles in the stream in low water, and along the north boundary of section 20 the river banks are formed of rock walls. Water-power could be developed here by damming. The climate is agreeable and not subject to sudden changes. The autumn weather is very pleasant and bracing. Severe summer frosts sometimes occur on the Pouce Coupé prairie, the nearest point where farming is undertaken. Large quantities of dry wood can be found anywhere over the township, but more especially in sections 1, 2, 11 and 12. Pieces of lignite were found in the bed of Coal Brook but we did not find any seam. A settler from Pouce Coupé yearly collects a load of this lignite which he uses for his forge and pronounces it of good quality. A hard sandstone suitable for building purposes is to be found in section 22 in the bed of Coal Brook. Moose, bear and deer are not very numerous and only a few partridges or prairie chickens were seen. Small fish such as pike, pickerel, sucker, grayling and chub can be caught in the Kiskatinaw after the flood, which usually comes in July, subsides. Foxes and mink can be trapped, and from reports are quite numerous. The nearest post offices are at Rolla and Pouce Coupé, each about thirty-five miles distant, and at the latter places there is telegraphic communication with Peace River Crossing.—*S. D. Fawcett, D.L.S., 1915.*

Tp. 81 (*Partial.*)—This township is reached by a pack-trail leading from Fort St. John to Pouce Coupé prairie and passing about half a mile east of the south-west corner of the township. The trail which was cut at the time of the survey of the twenty-first base line passes through sections 1, 2, 3, 4, 5 and 6, and joins the Pouce Coupé-Fort St. John pack-trail. The only portion surveyed in this township are the boundaries of T. B. No. 2052, blocks Nos. 1 and 2, which comprise sections 3, 4, 5, and the south half of section 1. The soil consists chiefly of sand, gravel and clay to a depth of eighteen inches, which is useless for agricultural purposes. The country in the interior of the township is undulating and covered with wind-fall and a second growth of poplar, alder and willow, except sections 9, 10, 11, which are covered with marketable spruce. Kiskatinaw River, flowing through section 2 in a deep valley with rough slopes, broken by landslides, provides the only water supply. There is no available water-power, and no land is in danger of flooding. The weather was cold during the survey (October). Drift lignite in considerable quantity was found in the bed of Kiskatinaw River, but no other mineral deposits nor stone-quarries were noticed. Moose tracks were the only indication of big game. Partridges were plentiful.—*L. Brenot, D.L.S., 1915.*

Tp. 84 (*North outline.*)—See report for township 84, range 13.—*O. Rolfsen, D.L.S., 1911.*

Tp. 87 (*Exploration survey.*)—This township has Osborn River running through it in a south-westerly direction. It is gently rolling, mostly wooded with poplar and willow scrub and ground birch scrub. The soil is good.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—Doig and Osborn Rivers flow southward through this township. It is wooded with poplar willow and some jack pine. The soil is good.—*J. R. Akins, D.L.S., 1911.*

RANGE 17

Tp. 76 (*North outline.*)—See report for township 76, range 14.—*Geo. McMillan, D.L.S., 1911.*

Tp. 77 (*East outline.*)—This locality can be reached from the Pine Pass wagon road which crosses the east boundary of section 13 of the township to the north. The country along this outline is situated on the east slope of the valley of Kiskatinaw River which crosses the line near the south-east corner of section 1. This stream is from one hundred

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 17.—*Continued.*

to one hundred and fifty feet in width and of varying depth. The current is very sluggish and the water is very muddy. Its immediate valley is probably half a mile in width and one hundred feet in depth. Patches of spruce and tamarack swamp and small poplar and willow are found along this line. To the east the country rises sharply, forming the eminence known locally as Bear Mountain, the summit of which is probably eight hundred feet above the line. To the west the surface slopes gently to Kiskatinaw River which is about four miles distant. The soil where not swampy consists of from two to four inches of black loam overlying a clay subsoil, and in certain localities is not unsuitable for agriculture, although clearing would be necessary. Grass and peavine grow luxuriantly. Wood for fuel is abundant. Stone in place is found on the escarpments of Bear Mountain. Water is plentiful and of good quality. This locality is subject to summer frosts. No game was seen.—*G. W. MacLeod, D.L.S., 1914.*

A good wagon road coming from Pouce Coupé for Moberly Lake passes about two miles north of this township. This road may be travelled at any time of the year except when Kiskatinaw River is in flood. It is then impossible to cross the river by the gravel ford, which in low water is about two feet deep. From this road there is a good pack trail leading south into township 77, range 17, which may be easily opened up into a wagon road. The soil is composed of three to six inches of black loam with a subsoil of clay, and is suitable for the production of grain and vegetables. The surface is heavily rolling and covered generally with thick second-growth poplar and willow. Sections 5 and 6 are covered with brulé and windfall, and the humus soil on sections 5, 6, 7 and 8 has been practically all burnt by forest fires. No timber of commercial value is left and there are no hay sloughs, but good upland hay can be cut along the valleys of Buffalo Creek in sections 19, 30, 29 and 32, and in the valley of a large creek flowing through section 31. The township is well watered by numerous creeks, the largest of which is Buffalo Creek flowing north-easterly through sections 19, 30, 29 and 32. This creek averages twelve feet wide and two feet deep, with a current of two miles per hour. The lands bordering it are especially valuable for either ranching or farming purposes and the immediate valleys of the creeks are so steep that the land is not liable to flooding. The Kiskatinaw is unnavigable and runs through sections 1, 12, 13, 24, 25, 26 and 35. It averages two chains in width, six feet deep and flows about two miles per hour. In flood (July) it rises as much as twenty feet over night, has a tremendous current, and the river is very dangerous to cross at this period, being filled with driftwood from bank to bank. The river banks are generally thirty feet in height and are formed of sandy clay. The water supply for this township is sufficient and permanent, but there is no place to develop water-power either from rapids or damming. During June and July we experienced considerable wet weather, but the changes from fine to wet weather were not sudden. A frost occurred on August 13, but it was not severe enough to damage crops. Some years, however, frosts are severe enough on the Pouce Coupé prairie to damage crops severely. Wood for fuel can be obtained anywhere in the township, but no coal or lignite veins were seen. There are no stone quarries nor minerals of economic value. Moose, deer and bear tracks were seen. Moose can be found during the summer months in the dense willow along Buffalo Creek and along the Kiskatinaw where they go to rid themselves of flies. Bears can be found in the spring among the windfall in the south-west part of the township where they live on ants among the windfall. Later when the strawberries ripen, they are found on the hillsides. Beaver, mink and fox could be trapped. The nearest post office and general store is at Pouce Coupé, about thirty miles east, and here there is telegraphic communication with Fort St. John, Hudson Hope and Peace River Crossing.—*S. D. Fawcett, D.L.S., 1915.*

Tp. 78

A good wagon road coming from Pouce Coupé, and cut out a portion of the way towards Moberly Lake, enters the township on the east boundary of section 13.

It crosses the Kiskatinaw by a ford two feet deep in low water in section 10, then keeps a south-westerly course to the east boundary of section 4, where it swings to the north-west and leaves the township near the north-west corner of section 18. The surface is, in general, rolling and the soil throughout the township is composed of four inches of black loam under which is a subsoil of clay. This land is suitable for the production of grains and vegetables. Sections 5, 6, 7 and 8, are covered with small poplar and willow and a few scattered poplar up to ten inches,

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 17.—*Continued.*

and patches of prairie up to twenty acres in extent. The remainder of the southern two-thirds of the township is covered with second-growth poplar and willow, and there are small areas of spruce muskeg above the slopes of Buffloa Creek and Kiskatinaw River. The northern third is covered with a mixture of green and brulé spruce, poplar and birch and dense underbrush and windfall, about sixty per cent. being brulé. There are no hay meadows or marshes, but good hay with peavine intermixed can be cut on the rolling uplands, and along the gently sloping valley of Buffloa Creek in the south-west sections of the township. Buffloa Creek and Kiskatinaw River provide fresh water throughout the year, and the supply is sufficient and permanent. The creek averages fifteen feet wide and two feet deep, and has a current of probably two miles per hour. It runs through sections 5, 4, 9, 8 and 16, and the lands bordering it are especially well suited for farming or ranching purposes. The Kiskatinaw runs through sections 2, 3, 10, 15, 16, 21, 17, 20, 29, 30, 32 and 31. Where it enters the township its banks are about thirty feet high and are formed of sand and clay. Then they grow steeper, and at intervals cut banks one hundred and fifty feet high are to be found. The valley is a half mile to a mile in width. The river averages two chains in width, and four feet deep, but shoals occur, and in low water there are only a few inches of water running over these bars. The numerous creeks and the Kiskatinaw lie in deep narrow valleys and the land is not subject to flooding. There is no water-power available. The climate is on the whole very agreeable, and not subject to sudden change. Summer frosts may be anticipated, and are severe enough to damage crops, but this is a feature peculiar to newly settled districts and may disappear in the course of time. Wood for fuel may be obtained almost everywhere over the township. There is considerable lumber for building purposes to be obtained in the north-eastern sections, where small isolated patches of good spruce have escaped the forest fires. Here, also, a plentiful supply of dry wood is to be found. There are no stone-quarries in the township. Moose, deer and bears are apparently numerous from the tracks observed. Beaver, mink and foxes may be trapped on the larger creeks and along the Kiskatinaw. A few small fish, such as pike, pickerel, chub, grayling and sucker, may be caught in the Kiskatinaw in the late summer months, after the floods of July have subsided. The nearest post office is at Pouce Coupé twenty-five miles east, and at this point there is telegraph communication with Fort St. John, Hudson Hope and Peace River Crossing.—*S. D. Fawcett, D.L.S. 1915.*

Tp. 80 (*North outline.*)—See report on township 80, range 16.—*Geo. McMillan, D.L.S., 1911.*

(*East outline.*)—The Fort St. John-Pouce Coupé pack-trail which crosses the east boundary of section 25 is in fair condition. The country along the outline is heavily rolling, and is broken by the valley of Kiskatinaw River and its tributary creeks. The valley proper crosses the east boundary of sections 25 and 36, and is from one to one and a half miles in width and about three hundred feet in depth. The river is approximately one hundred and fifty feet in width and varies considerably in depth; in August, 1914, the river-bed was nearly dry. The surface was formerly heavily timbered with a growth of poplar, spruce and jack pine, but this was destroyed by fire some years ago and at present there is a fairly heavy growth of small poplar and willow with windfall. A good growth of grass and peavine is found, but the soil as yet is unsuitable for agriculture owing to the absence of vegetable soil. Gravel and boulders are exposed in many places. No minerals were discovered. No coal was seen, but wood for fuel is abundant. There are no water-powers. Water is not plentiful, but where found is of good quality. The lack of water seems to be the only drawback to this district as a good stock country. The climate during this year was very dry and subject to possibly more frosts than usual. Generally speaking, the district is not suited to grain-growing.—*G. W. MacLeod, D.L.S., 1914.*

There is no trail as yet into the suitable farming sections of this township, but a good wagon road, coming from the Pouce Coupé prairie country, crosses the north-east corner of the township, and from this road a wagon road could easily be opened up into the southern portion of the township by following the west bank of Coal Brook. The soil throughout the township is composed of four to six inches of black loam or humus, underlying which is a subsoil of clay. The land is well suited for either ranching or farming. The whole township was originally covered with good spruce and poplar up to fifteen or twenty inches in diameter, but fires have practically destroyed

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 17.—*Continued.*

all this timber and now none of commercial value remains. In the southern sections the fires have made a clean sweep, and the surface is now covered with a second growth of poplar and willow with scattered clumps of *brulé*. There is a beaver meadow in section 10, from which large quantities of good hay can be cut, and the uplands, when cleared, will furnish good hay with a fair percentage of peavine intermixed. Coal Brook in the south, will provide fresh water throughout the year, but the smaller creeks dry up toward the end of August. Kiskatinaw River flows through sections 28, 21, 22, 27, 26, 23 and 24. It is subject to sudden changes in volume as the country it drains is mainly clay, and the rainfall runs off very quickly, causing a rapid rise in the river. An average mean depth would probably be about four feet and the current about two miles per hour. The river averages three chains in width and the slopes forming the valley extend almost down to the water's edge, with small narrow benches at sharp turns in the river. The depth of the immediate valley is probably four hundred feet and the width about a mile. The slopes are very steep and are often formed of almost perpendicular cliffs of clay based by rock walls. The land encompassed by the river and its steep valley slopes is worthless either for ranching or farming purposes. The township is not subject to flood, and where the river runs through rocky canyons, water-power can be developed by damming. The climate is on the whole agreeable, but summer frosts may be anticipated at least once in four years, and these have been severe enough in the Pouce Coupé prairie country to damage crops severely. Large quantities of fire-killed spruce and poplar can be utilized for fuel and can be procured anywhere throughout the township. We observed a vein of lignite of good quality where the Kiskatinaw crosses the west boundary of section 19. There are no stone-quarries in the township, and we observed no minerals of economic value. Signs of moose, bear and deer are numerous in the south-east part near Coal Brook where there is "a salt lick" in section 11, and here these animals have beaten a path much resembling a well-beaten cow-path. Fish, such as pickerel, pike, sucker and grayling of small size, and in limited numbers are caught in the Kiskatinaw when the waters clear up. Foxes, beaver and mink are plentiful and a trapper could do well in this township. The nearest post offices are at Rolla and Pouce Coupé, and at the latter place there is telegraphic communication to Edmonton. The distance from this township to Pouce Coupé or Rolla is nearly forty miles.—*S. D. Favcell, D.L.S., 1915.*

Tps. 81 to 84

(*East outlines.*)—The pack-trail leading from Fort St. John to Pouce Coupé prairie runs across the southern portion of township 81. The surface of this township is rolling and broken by the deep valleys of two large creeks flowing north-easterly and their numerous tributaries, and is timbered mostly with scrub poplar, willow and scattered spruce with windfall throughout. The soil is poor and there is very little vegetation. The Peace River flows easterly across the centre of township 82 in a valley from one to two miles wide and from seven hundred to eight hundred feet deep. The bottom land in section 13 on the south side of the river is heavily timbered with spruce and cottonwood up to thirty inches in diameter. The remainder of the township to the south of the river has been cleared of timber by the numerous fires which have swept through the country, and is now covered with a small scrubby growth of poplar and willow. The soil is poor, the top-soil having been burnt off, leaving the clay exposed in places. The surface is rough and broken, and almost devoid of grasses and other vegetation. The surface of the portion of this township to the north of Peace River, with the exception of the banks of the river which are rough and broken, is undulating and is covered with numerous tamarack swamps and marshes and alternate patches of prairie and poplar bluffs. Vegetation, although better than in the southern portion of the township, is not very good. The surface of the south two-thirds of township 83 is nearly level and almost open, the only timber being patches of small poplar and willow. The soil is very rich, all kinds of grasses growing luxuriantly. Mixed farming would be a success. The north third slopes towards North Pine River which intersects at the township corner between townships 83 and 84. The banks of this stream are rough and broken by numerous landslides, and are over seven hundred feet in height. The valley varies in width from one to three miles. The north two-thirds of township 84 is suitable for mixed farming. The soil is fairly good, and fresh water is to be found in North Pine River, Cecil Lake, in section 35, and in several creeks

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 17.—*Continued.*

and springs. As this survey was carried on in the autumn, frosts were frequent. No stone-quarries, minerals nor water-powers were found. Moose, bears and fur-bearing animals were noticed, and game of the feathered variety is plentiful.—*L. Brenot, D.L.S., 1913.*

Tp. 82 (*North third.*)—Peace River runs easterly across the middle of this township, and many islands are situated between its two shores. These islands are covered with merchantable spruce up to thirty inches in diameter. A fertile flat, covered with small poplar and willow scrub, extends across sections 28, 29 and 30. The surface in sections 27 and 34 is mostly rough and broken on account of the steep irregular banks of a small creek flowing southerly. The remainder of the north third is rolling and covered with light poplar and willow scrub. The soil is loam on clay subsoil and is well adapted for agricultural purposes. Peace River furnishes easy access to this township, and settlers' effects may be landed anywhere along the bank. Frosts were frequent and severe at the time of survey (October). Dry poplar and spruce can be secured for fuel, but no coal, lignite, stone-quarries or minerals were noticed and very little hay grows. Peace River and its numerous tributaries furnish an abundance of water, but no water-power could be developed. Foxes and coyotes were numerous, and a few moose and bears were seen. Signs of beaver were observed along Peace River.—*L. Brenot, D.L.S., 1915.*



Photo by J. R. Akins, D.L.S.

Looking South-west across Cameron River

Tp. 83 (*Sections 6, 7, 18 and 19.*)—The surface of these sections is undulating and covered with alternate patches of prairie and bluffs of poplar. The soil is rich, consisting of from two to eight inches of loam overlying a clay subsoil. There is a luxuriant growth of peavine and vetches. The squatters located in this township have good cabins, but only small gardens as yet. Water was scarce this summer but during an average season there is a sufficient supply of fresh water from the creeks. Summer frosts were frequent, but no serious damage was done. There are no water-powers. No stone nor minerals were noted. Bears were numerous and there were also many partridges and prairie chickens.—*L. Brenot, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 17.—*Continued.*

(*Partial.*)—The surface is gently rolling, except in sections 5 and 6, where it is so broken by deep ravines and the banks of Peace River, as to be unfit for agriculture. Numerous fires have swept over the township, destroying all the large timber, and now a light growth of poplar up to four inches in diameter covers the surface. The soil is clay loam on a sandy clay subsoil which supports a rank growth of peavine, vetch and other grasses. An abundant and permanent supply of fresh water is obtainable from the many small creeks and sloughs. A supply of dry poplar is obtainable for fuel, but no coal, lignite, stone-quarries or minerals were found. Although no hay meadows were seen the many kinds of grasses growing through the scrub make excellent grazing. A pack-trail from Fort St. John leading to the mouth of North Pine River crosses the township from section 31 to section 13. This pack-trail could be easily converted into a wagon road. North Pine River, at low water, is two chains wide, two feet deep and flows about five miles per hour. The valley is from one to two miles wide and seven hundred to nine hundred feet deep. Frosts occurred frequently during the time of survey (September), but none of the crops were damaged. Coyotes and foxes were numerous, feathered game was scarce, and signs of moose were plentiful.—*L. Brenot, D.L.S., 1915.*

Tp. 84 (*South two-thirds.*)—The surface is rolling and interspersed with poplar bluffs, and patches of prairie which are covered with luxuriant growth of peavine and other grasses. The soil consists of an excellent quality of loam and is well adapted for agricultural purposes. The wagon road from Dunvegan to Fort St. John passes through this township, entering on section 18 and leaving on section 25. Trails were cut from this wagon road to the north and south parts of the township. Cecil Lake and several small sloughs provide a permanent supply of fresh water. Hay of fair quality may be obtained at the southern end of Cecil Lake. Wood fuel is plentiful, but no coal, lignite, stone-quarries or minerals were seen, and no water-power could be developed. Frosts were frequent, and very severe about the latter part of September. Foxes, coyotes, ducks and geese were plentiful, but partridges and prairie chickens were scarce.—*L. Brenot, D.L.S., 1915.*

(*North outline.*)—See report for township 84, range 13.—*O. Rolfson, D.L.S., 1911.*

Only four sections of this township, sections 18, 19, 30 and 31, were subdivided. The north half of section 18 and sections 19, 30 and 31 are open undulating land. The only timber is small second-growth spruce and in section 31 a few scattered jack pine. The soil is black loam up to ten inches on a clay or sandy clay subsoil and is suitable for agriculture and stock-raising. North Pine River flows through the south-west quarter of section 18. It is four chains wide, four feet deep and flows through a valley from one to two miles wide and nine hundred feet deep. The wagon road from Fort St. John to Peace River Crossing also passes through section 18. With very little expense this road could be made into a good highway. No land is liable to be flooded and no minerals of economic value were noticed. Game of the feathered variety was the only kind seen. At the time of survey (November) the weather was exceptionally mild and Chinook winds were prevalent.—*L. Brenot, D.L.S., 1912.*

Tp. 87 (*Exploration survey.*)—A large muskeg covers several sections of this township near the centre. The remainder of the township is good. In the south-east corner Osborn and Doig Rivers meet and North Pine River flows through the south-west corner.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—On the eastern part of this township is a large muskeg covered with black spruce and tamarack. The western part is good, having a light growth of poplar with good soil.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 18

Tp. 77 (*South outline.*)—The surface of this township is rolling with the valleys sloping north-east. A pack-trail from Pouce Coupé furnishes the only means of reaching the township. The north-west part is brûlé, but the remainder is lightly wooded with poplar and willow with a few open patches. The soil is fertile. Two creeks flow across the township from east to west about five feet wide and two feet deep.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—The north-east corner of this township has some good spruce up to twenty-four inches. The surface is gently rolling and slopes to the east. The eastern portion is wooded with poplar and willow while the western part is covered with young jack pine and windfall.—*J. R. Akins, D.L.S., 1912.*

Tp. 80 (*North outline, Ranges 18 to 20.*)—The district from the Fort St. John pack-trail to Pine River comprises part of the green forest referred to in the description of range 15. It is from four to nine miles wide and about twenty-four miles long, including ranges 18, 19, 20 and four miles in range 21. To the north and south of this green timber the surface is rolling and covered with thick large poplar and willow scrub and patches of second-growth poplar, jack pine and spruce. Pine River is intersected by the base line in section 32, range 21. It rises in the mountains and is the second largest stream in the Peace River block. It has a stony bottom, is from ten to twenty chains wide and twenty feet deep at high water, with a valley two miles wide and seven hundred feet deep. There are some prairie flats along its course, where much hay can be procured, and back of these flats are high bare hillsides, producing peavine and other grasses excellent for pasturage.—*Geo. McMillan, D.L.S., 1911.*

Tps. 81 to 83 (*East outlines.*)—The surface of township 81 is rolling. The south third is heavily timbered with spruce from twelve to thirty inches in diameter, which is well protected from the fires which have swept the surrounding country by a large swamp. The timber in the remainder of the township consists of small poplar and willow with windfall throughout. The soil is poor, the clay being exposed in most places. In a dry season there is no water to be found except in the swamps. In section 13 the pack-trail leading from Fort St. John to Pouce Coupé prairie was intersected by another going northerly to Peace River. The southern portion of township 82 is cut by Pingel Creek, the banks of which get very deep when nearing Peace River. The surface is rolling and the soil is poor. Fire has burnt most of the timber and the top-soil. Peace River is crossed in section 25, about one mile east of its confluence with Pine River. To the north of Peace River there is a large flat about one and a half miles wide and from four to five miles long. The soil here is very rich and suitable for agricultural purposes; a large part of this flat has already been taken up by squatters. A pack-trail leading from Fort St. John to this flat was crossed at the south-east corner of township 83. The surface of this latter township from the top of Peace River Hills in section 1, northerly, is undulating and comprises an area of the finest farming land in the district; a large portion of this land has already been taken up. The soil is very rich, being from eight to ten inches of loam over a clay and sandy clay subsoil. Summer frosts occur, but not frequently. No minerals were noticed. Wood for fuel is plentiful. No water-power could be developed. Bears, foxes, prairie chickens and partridges are plentiful. Fish abound in Peace River.—*L. Brenot, D.L.S., 1913.*

Tp. 82 (*Partial.*)—Sections 25, 26, 35 and 36 were the only sections subdivided in this township. The remainder of the township which lies to the south of Peace and Pine Rivers is not of much value for agricultural purposes, and is not likely to be required until the country is much more settled. The trail which was cut in a southerly direction along the east outline to join the Pouce Coupé trail ten miles south of Peace River affords the easiest overland route to this township, and as the slopes of Peace River Hills on this trail as well as on the Fort St. John trail on the north side of the river are fairly easy, there is every

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 18.—*Continued.*

reason to believe that it will be made into a wagon road and a ferry put in at the crossing of Peace River in the near future. However, even when the road is completed, the easiest and best route into the country is by Peace River, by steamboat in summer and over the ice in winter. Sections 35 and 36, together with portions of the townships to the north and east, form an extensive bench, the surface of which is nearly level and covered with patches of prairie and poplar bluffs. The soil is excellent and has been tilled for several years by the squatters who occupy most of the surveyed portions. Crops have always been successful here and even this year when crops elsewhere in the district suffered by frosts they were uninjured. Pine River which flows into Peace River in sections 25 and 26 has an average width of eight chains, a depth of five feet and a current of from three to six miles per hour. The valley of this stream is from half a mile to two miles wide and from seven hundred to nine hundred feet deep, and on the south side is heavily timbered with spruce and poplar, while on the north side there are alternate patches of prairie and poplar bluffs. No water-power can be developed. No stone-quarries nor minerals were discovered. Bears, foxes and coyotes are fairly plentiful, and there is also game of the feathered variety.—*L. Brenot, D.L.S., 1913.*

Tp. 83 (*Partial.*)—Fort St. John, an old Hudson's Bay post, is situated on Peace River in this township. The only business carried on here is fur-trading. A mail service is established from Beaverlodge, and it is expected to have telegraphic communication established next summer. The settlement may be reached by three routes, the wagon road from Dunvegan, the pack-trail from Pouce Coupé prairie or by Peace River. Steamers ply on Peace River from Hudson Hope to Fort Vermilion and in winter the ice is safe for travel from the middle of January to the end of March. The mail is carried over the pack-trail from Pouce Coupé and this is likely to be opened out into a wagon road as it is the route the telegraph line will follow. The wagon road from Dunvegan passes through sections 19, 30, 31 and 32. The Mounted Police in 1905 graded this road up the banks of Peace River in section 19, but even yet it is too steep for practical use. A natural grade runs westerly up the bank into the next township, and it would be advisable to reserve this for public use before the lands through which it passes are fenced. Along the north side of Peace River the flats are only about twenty chains wide and extend westerly into the next range. On the south side the flats are more extensive, but the Government and Hudson's Bay reserves in section 17 and 18 occupy all that is good for agriculture. Two pack-trails lead from section 17, one to Pouce Coupé prairie and the other to Pine Pass and Moberly Lake. The trail to Fort Grahame branches from the Dunvegan wagon road in section 30 and runs in a north-westerly direction. The north half of section 19 and sections 29, 30, 31 and 32 are nearly level, open country, sloping gently towards Peace River, and are suitable for agriculture or stock raising. In sections 30 and 31 great quantities of upland hay can be cut. Sections 28 and 33 are not so open, but the timber is light, being chiefly second-growth poplar up to six inches and a few scattered spruce up to eight inches. A few small spruce and tamarack swamps lie in the north parts of sections 32 and 33 and supply good drinking water in abundance the year round. Peace River enters the township in section 18, and flows about three miles per hour. The banks vary in height from seven hundred and fifty to eight hundred and fifty feet. The water is slightly hard, but always cool and good to drink. No timber of value grows and even wood for fuel is scarce, but abundance can be had from the township to the west. The soil on the top of the bank is generally black loam and humus from four to eight inches deep overlying a clay and sandy clay subsoil. In the hills, the soil is gravelly and in the flats it is of alluvial origin. On the flats at Fort St. John vegetables and all kinds of grain have been successfully grown. No stone-quarries nor minerals of economic value were noticed and no water-power could be developed. The only game seen was of the feathered variety.—*L. Brenot, D.L.S., 1912.*

(*Partial.*)—Only that part of the township suitable for settlement lying on the north side of Peace River was subdivided. The portion to the south of the river although fairly level and partly open is too gravelly to be fit for agricultural purposes. The surface of the portion surveyed is undulating and has been almost cleared of the timber by recent fires. Unfortunately these fires have burned considerable rich soil which is found in this vicinity. Several squatters

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 18.—*Continued.*

were already located in this township. The country has a great future as a farming district as there are five or six townships containing good agricultural land. Grain-growing, although not tried here as yet, should be as successful when the country is more opened up as in the district in the same latitude around Peace River Crossing. Summer frosts were frequent but these will disappear as the country becomes settled. There are no water-powers. No stone in place nor minerals were discovered. Large game is scarce, only a few signs of deer being noted. Partridges and prairie chickens are plentiful.—*L. Brenot, D.L.S., 1913.*

Tp. 84

(*North outline, Ranges 18 and 19.*)—North Pine River is crossed in section 36 of range 18. At low water this river is twenty feet wide and about two feet deep, but at high water it is three hundred feet wide and more than eight feet deep with a current of four miles per hour. The valley is over six hundred feet in depth and averages one mile in width. Sandstone of good quality was noticed in the cut banks of this river. Through ranges 18 and 19 the country is rolling and the timber is almost all poplar with willow and scrub. A large prairie lies to the north of the line and much of the country south as far as Peace River is scrubby prairie. Charlie Lake, crossed in the western two miles of range 19, extends for about seven miles north-westerly and south-easterly. It is drained from the south by Fish Creek, which runs into North Pine River.—*O. Rolfson, D.L.S., 1911.*

This township is easily reached from the wagon road between Dunvegan and Fort St. John. In 1905, the Royal North-west Mounted Police made this a wagon road, as it was formerly only a pack-trail. The country crossed by this road is mostly open and easily travelled except at the crossing of North Pine River in this township. The valley of this stream is from seven hundred to nine hundred feet deep and the hills are so steep that it is impossible to take loads up or down. The wagons must be taken down empty, and the loads packed across, but a fair grade could be made with very little expense. The soil of the township is very rich, consisting of six to eight inches of black loam on a clay or sandy clay subsoil. In places the black and sandy loam is eighteen inches deep. Good pasture extends all over the township as peavine and vetch grow thickly on the uplands and bunch grass on the sides of the valleys. The surface is badly cut up by three streams with deep valleys. North Pine River is four chains wide, four feet deep, and has a current of three miles per hour. Stoddart Creek is twenty links wide, one foot deep and flows in a valley from two hundred to seven hundred feet deep. A branch of Stoddart Creek is twenty links wide, two feet deep and flows through a valley from four hundred to seven hundred feet deep. The valley of Stoddart Creek begins to fall rapidly near the west boundary. The great depth of the valleys might give the impression that the bottom was waste land, but such is not the case. They form ideal ranching or mixed farming districts as each quarter-section contains enough land for agricultural purposes. As the hills are bare of timber very little snow lies on them and vegetation starts as soon as the spring weather begins. Good water can be obtained the whole year from the streams. Sections 27, 28, 29, 32, 33, 34 and parts of 30, 31 and 35 are gently rolling, nearly open country, and suitable for agriculture or stock-raising. Access to these sections is difficult except by pack-trail owing to the deep valleys surrounding them. The south third of the township is gently rolling prairie, and, except for a few open patches, is lightly wooded with small poplar and a few spruce up to ten inches in diameter. An abundance of good water can be obtained from the spruce and tamarack swamps. Section 24 and parts of sections 23, 25 and 36 are nearly level. The soil is rich and suitable for either agriculture or stock raising as peavine, vetch and grass grow luxuriantly. No summer frosts occurred before the middle of June, the date on which the survey was completed. A dam could easily be built on North Pine River to develop water-power, but the stream is very small in summer. No land is liable to be flooded and no timber of value grows, though abundance of wood for fuel can be obtained. Feathered game is plentiful, but large game is scarce. Fish are plentiful in North Pine River.—*L. Brenot, D.L.S., 1912.*

Tp. 87

(*Exploration survey.*)—This township is good, having open patches and the remainder wooded with poplar, willow and ground birch. North Pine River flows through the north-east corner of it. The country is gently rolling.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 18.—*Continued.*

Tp. 88 (*North outline.*)—The soil in this township is good. It is lightly wooded with poplar, willow and a few jack pine. The country is gently rolling and North Pine River flows southerly through the eastern part of the township.—*J. R. Akins, D.L.S., 1911.*

RANGE 19

Tp. 77 (*South outline.*)—A high ridge covered with second-growth jack pine and windfall runs east and west through the centre of this township. The surface slopes to the west, and a creek runs across the township about two miles from the south boundary. Along the south side of this creek, willow and small poplar grow and close to the south boundary some good spruce up to eighteen inches are found. Along the east side of the township are windfall and jack pine.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—The north part of this township has been burnt, and the timber, mostly jack pine, is small. The surface is rolling and slopes toward the west. A few small lakes lie in the south-east corner. A pack-trail leads from these lakes westerly to Pine River. Considerable windfall lies in the southern part.—*J. R. Akins, D.L.S., 1912.*

Tp. 80 (*North outline.*)—See report for township 80, range 18.—*Geo. McMillan, D.L.S., 1911.*

Tps. 81 to 83 (*East outlines.*)—The surface of township 81 is rolling and broken by numerous creeks with valleys varying in depth from two hundred to six hundred feet. From the twenty-first base line northerly to the centre of section 13, the country is heavily timbered with spruce, jack pine and cottonwood from twelve to thirty-six inches in diameter. Throughout the remainder of the township the timber has been destroyed by fire and the country is now covered with second-growth poplar and jack pine and considerable windfall. The soil is poor, being light and sandy in most places. Township 82 is rough, the line crossing several coulées varying in depth from three hundred to five hundred feet. In section 24 the country begins to fall to Pine River which crosses the line in section 36. The valley of this stream is from seven hundred to nine hundred feet deep and varies from one to two miles in width. The slope to the river on the south side is formed by benches, and each bench is heavily timbered with good spruce. The slope on the north side is steep and about half open. In township 83 only the two southern miles were surveyed. The east boundary of section 1 is on a plateau between Peace and Pine Rivers. The surface is undulating and covered with poplar up to six inches in diameter, with numerous sloughs and marshes. The soil is not very good, being chiefly clay and sandy clay. In section 12 the country slopes northerly to Peace River. The descent is steep and broken by landslides. There are no available water-powers, and no land is likely to be flooded. No stone-quarries nor minerals were found. Game, consisting of moose, bears and partridges is plentiful.—*L. Brenot, D.L.S., 1913.*

Tp. 83 (*Partial.*)—The north-east portion of this township contains nearly all the agricultural land on Peace River Hills. A wagon road from Fort St. John runs westerly through the south part of section 24, following the river flat, which rises gradually. The road turns north in sections 23, and passes out of the township on the east boundary of section 24. On the flats, the soil is alluvial deposit, and on the higher parts it is black loam two to six inches deep on a clay subsoil. Sections 13 and 14 are fairly open, and are suitable for agriculture, but more so for stock-raising, as the timber affords good shelter for cattle, and peavine, vetch and grasses grow on the hills in abundance. Sections 25, 26, 27, 34, 35 and 36 all lie on the top of the bank of Peace River, and are nearly level with a slope to the south. A few sloughs and spruce and tamarack swamps lie in sections 26 and 27 and supply an abundance of good drinking water. The remainder of this district is high and not liable to be flooded. The timber is light second-growth poplar up to six inches and a few spruce up to twelve inches. Dry poplar and spruce for

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 19.—*Continued.*

fuel is plentiful. The soil is generally four to eight inches of black loam on a subsoil of clay or sandy clay. Only once did summer frost occur and it was not severe. No stone-quarries, minerals nor water-powers were found. Fish are plentiful in Peace River, and partridges, prairie chickens and rabbits are plentiful, but no large game was seen.—*L. Brenot, D.L.S., 1912.*

Tp. 84 (*North outline.*)—See report for township 84, range 18.—*O. Rolfson, D.L.S., 1911.*

From Fort St. John a wagon road, following the North-west Mounted Police trail to Fort Grahame, passes through sections 1, 2, 3, 10, 9 and 8 to Tea Creek in section 7. From the creek westerly there is only a pack-trail. Another road, which is only a pack-trail leading to Fort Nelson, branches from the Fort Grahame trail and passes through section 1, 2, 11, 14, 23, 26, 25 and 35. The soil is generally three to six inches of black loam on a sandy clay subsoil. Sections 16, 17, 18, 19, 21, 28, 30, 31 and 33 slope gently towards Charlie Lake and are lightly timbered with second-growth poplar up to four inches. Charlie Lake lies in sections 16, 17, 19, 20, 21, 29, 30, 31 and 32. The shores are sandy and the water is clear and good to drink. About fifty tons of hay could be harvested at the south end of the lake. Parts of sections 4, 5, 8 and 9 are heavily timbered with poplar and spruce up to twelve inches. The western parts of sections 6 and 7 are unfit for settlement being cut up by the deep valley of Tea Creek, which runs only in early spring. Sections 13, 14 and 15, the portions of sections 10, 11 and 12 north of Stoddart Creek and the south halves of sections 22, 23 and 24 are nearly level but too heavily timbered for settlement while more open lands are available. Poplar up to fourteen inches and spruce up to ten inches constitute the timber. Sections 26, 27, 34 and 35, the north parts of sections 22, 23 and 24 and the west halves of sections 25 and 36, are gently rolling open prairie and well adapted for agricultural purposes. The eastern parts of sections 25 and 36 slope eastward to a large creek and are too rough and broken for settlement. Sections 1, 2 and the east half of 3 are nearly level and have alternate patches of prairie and poplar bluffs. Great quantities of upland hay can be cut in these three sections. Stoddart Creek is the outlet of Charlie Lake, flowing easterly through sections 16, 19, 10, 11, 2 and 12. It has an average width of ten feet and a depth of one foot, but no water-powers could be developed on the stream nor are any lands liable to be flooded. One small swamp is located in sections 3 and 4. No stone-quarries nor minerals were noticed. Partridges, prairie chickens and ducks are plentiful, and fish abound in Charlie Lake. No summer frosts were experienced in July, the time of survey.—*L. Brenot, D.L.S., 1912.*

Tp. 87 (*Exploration survey.*)—This township is lightly wooded with poplar, willow and a few jack pine. There are some open patches in the south. A creek flows through the south-west corner of it. The soil is clay.—*J. R. Akins, D.L.S., 1911.*

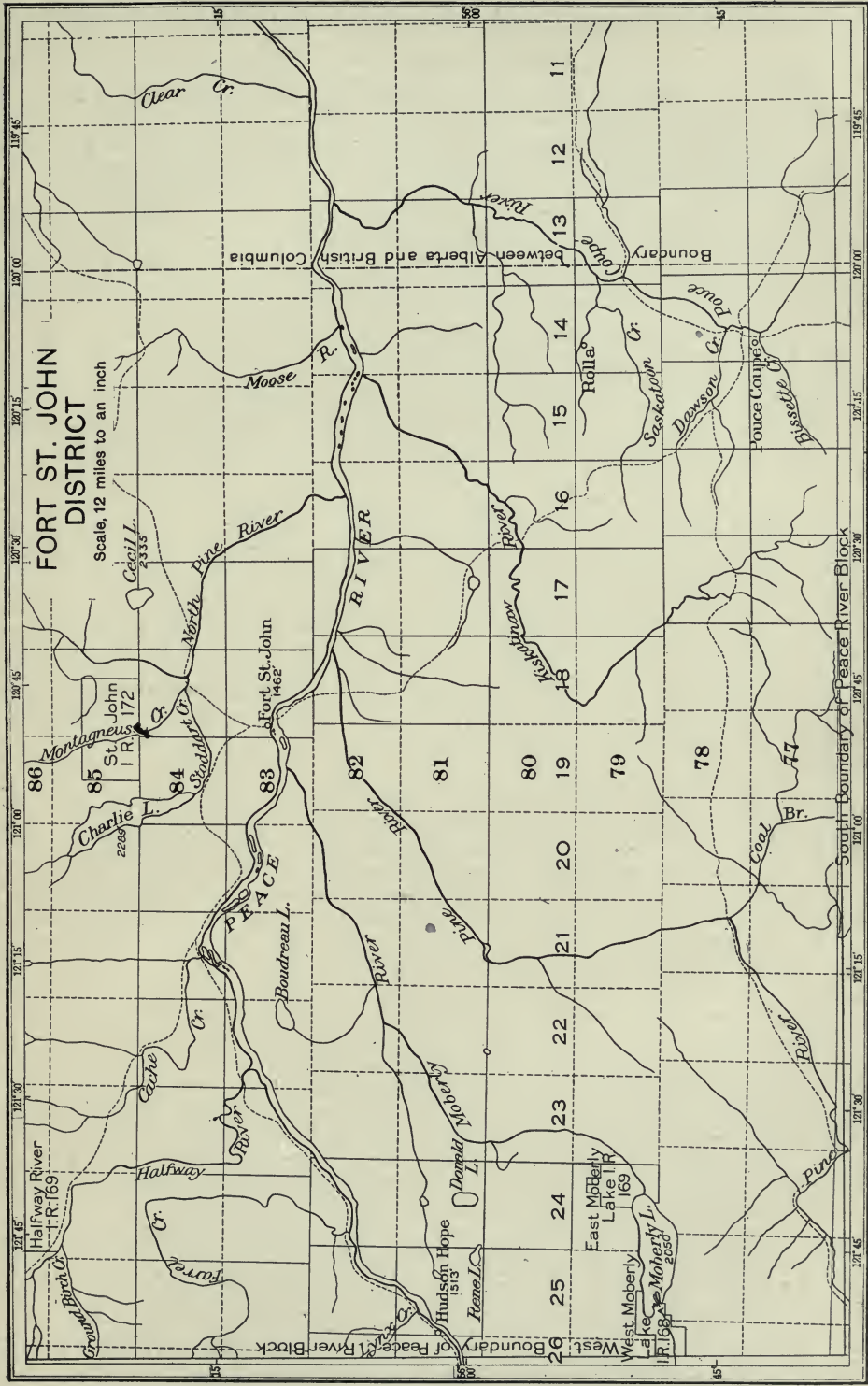
Tp. 88 (*North outline.*)—This township has clay soil and is gently rolling. It is wooded with small jack pine, spruce, poplar and willow. An Indian trail passes southward through it near the middle.—*J. R. Akins, D.L.S., 1911.*

RANGE 20

Tp. 77 (*South outline.*)—Coal Brook flows north-west through this township entering the south boundary of section 2, and leaving from the north boundary of section 31. It is about fifty feet wide and five feet deep, and along the stream are some very good flats. A high hill is situated in the centre of the township, and the whole surface is covered with poplar, willow and spruce.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—A branch of Coal Brook which flows south-westerly through this township has high cut banks. The surface is rolling and covered with poplar, spruce and jack pine.—*J. R. Akins, D.L.S., 1912.*

Tp. 80 (*North outline.*)—See report for township 80, range 18.—*Geo. McMillan, D.L.S., 1911.*



FORT ST. JOHN DISTRICT

Scale, 12 miles to an inch

86

85

84

83

82

81

80

79

78

77

Halfway R. I.R. 169

Charlie L. 2208

Montagneus Cr.

St. John I.R. 172

North Pine R.

Fort St. John 1462

Peace R.

Moose R.

Boundary between Alberta and British Columbia

Peace Coulees

Coal Br.

Peace R.

Boundary of Peace River Block

West Moberly Lake I.R. 169

West Moberly Lake I.R. 169

East Moberly Lake I.R. 169

West Moberly Lake I.R. 169

East Moberly Lake I.R. 169

West Moberly Lake I.R. 169

East Moberly Lake I.R. 169

West Moberly Lake I.R. 169

East Moberly Lake I.R. 169

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TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 20.—*Continued.***Tp. 83**

(*North third.*)—This township may be reached by the pack-trail leading from Fort St. John to Fort Graham which passes through sections 32, 33, 28, 27, 34 and 35.

Peace River also furnishes access in both summer and winter. One squatter was found on a small flat which occupies part of sections 27, 28, 33 and 32, and accordingly only the northern third of the township was subdivided. The flat lies on a bench about one hundred feet above Peace River and is covered with from four to eight inches of good loam, gravelly in places, overlying a clay subsoil. Vegetables of all kinds have been successfully grown here for the last two years, and although summer frosts occur, the settler located in this part states that they have not been severe enough to cause damage. Sections 36 and 35 and the part of sections 34 and 33 lying on top of Peace River Hills are undulating country covered alternately by patches of prairie and poplar bluffs. Rich grasses grow luxuriantly on these prairie patches and considerable quantities of hay could be obtained. The soil is good, being from two to eight inches of loam overlying a clay and sandy clay subsoil. Mixed farming could be carried on successfully. Horses have been wintered on these hills for the past two seasons, and with no other feeding than that mentioned they were in fair condition in the spring. During the rush to the Klondike some of the prospectors, overtaken in this vicinity by the cold weather, chose this place to winter their stock. Deep Creek, which is about seven feet wide and two feet deep cuts through sections 27 and 34 in a deep, gorge-like valley of from half a mile to a mile wide. The northern part of sections 25 and 26 are occupied by Peace River Hills and are too steep to be of much use. Peace River, which flows easterly through sections 31, 32, 29, 28, 27, 26 and 25 in a valley from seven hundred to one thousand and one hundred feet deep and from one and a half to two and a half miles wide, has an average current of four miles per hour, a depth of about eight feet, and an average width of twenty-five chains. The width varies greatly and in some places where islands are numerous it is as wide as one mile. There are several large islands in this township, and these are well timbered with spruce from eight to thirty inches in diameter. No land is liable to be flooded except the islands, most of which were completely submerged by the exceptionally high water this season. There are no water-powers, and no stone-quarries nor mineral deposits were discovered. Game of the feathered variety is plentiful, and fish abound in Peace River.—*L. Brenot, D.L.S., 1913.*

Tp. 84

(*North outline.*)—In range 20 the line passes through a belt of good heavy spruce with a few strips of poplar, many of the trees being three feet in diameter and perfectly sound. With the exception of a few small areas of poplar and jack pine this belt extends about one mile south and eight miles north of the line. The timber, moreover, could be marketed without great expense as it could be rafted to Peace *via* Charlie Lake, Fish Creek and North Pine River. The country is hilly and well watered by fresh streams, while the soil is black loam and clay. From the hills west of Charlie Lake one can see the mountains in the distance.—*O. Rolfson, D.L.S., 1911.*

The old pack-trail leading from Fort St. John to Fort Grahame passes through sections 1 and 6 of this township. This was formerly an old Indian trail, but it was improved by the Royal North-west Mounted Police during the rush to the Klondike, and still serves as the main trail to Fort Grahame though it passes through very rough country and crosses numerous deep valleys. This township being partly in Peace River Hills is rough and broken by the deep gorge-like valley of Deep Creek in sections 9, 10 and 3, Tea Creek in section 12, and a small creek passing through sections 6 and 7. The land between these creeks, however, is excellent. A fire which passed over the district some years ago, has left good agricultural prairie land alternating with patches of small poplar. The soil throughout is very rich, consisting of from four to twelve inches of loam overlying a subsoil of clay and sandy clay, and is covered with a luxuriant growth of vetches, peavine and other grasses. A great quantity of upland hay could be cut in this district, and mixed farming should be very successful. With the exception of Peace River, which flows through the south-west corner of section 6, and a spring in section 9, which is always running, the permanency of the water supply during a dry season cannot be relied upon. All the springs and creeks noticed were fresh. There are no water-power sites, and no land is liable to flooding. Spring was very early this year and vegetation began on the hills facing the south before the end

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 20.—*Continued.*

of April. The days were fine and warm (May) with occasional frosts at night. Dry poplar is the only available fuel and this is not very plentiful. Neither stone, coal nor minerals of economic value were found. Feathered game was fairly plentiful, and fur-bearing animals, such as minks, martens, fishers and lynx, were trapped in this township during last winter, but large game is very scarce though a few signs of deer were noticed.—*L. Brenot, D.L.S., 1913.*

Tp. 87 (*Exploration survey.*)—The country is rolling. The soil is good and covered with a light growth of willow and poplar. In the south-west corner are some spruce, but they are not large.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—This township has a heavy growth of spruce and poplar which in the northern part of the township is up to sixteen inches in diameter and in the southern part up to twenty-four inches in diameter. The soil is good and the country rolling.—*J. R. Akins, D.L.S., 1911.*

RANGE 21

Tp. 77 (*South outline.*)—Pine River enters this township on the south boundary of section 2. After a circuitous course it leaves the township on the east boundary of section 25, flowing almost due north. The east part of the township is badly cut up by the river banks which are steep and high and the western part is covered with a growth of fairly good timber, spruce, jack pine and poplar up to twelve inches.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—This township is wooded with spruce and poplar. The slope is to the south, and the middle branch of Pine River flows from the west through the south part.—*J. R. Akins, D.L.S., 1912.*

Tp. 80 (*North outline, Ranges 21 to 23.*)—From Pine River to Moberly River, a distance of about thirteen miles, the surface is rolling and scrubby, with occasional patches of large spruce. There are some small swamps, which can easily be drained, some of which yield hay and grass in many places. The soil is suitable for stock raising and farming. Water is abundant, and there is plenty of timber for fuel and other requirements. Moberly river was crossed in section 32, range 23; its banks are low, resembling those of eastern rivers, and the water is of a light brown colour. It has a swift current, is about one hundred feet wide and two feet deep in the rapids, and can be forded almost anywhere. It has its source in Moberly Lake about twelve miles south of the base line and flows north-east into Peace River.—*Geo. McMillan, D.L.S., 1911.*

Tp. 84 (*North outline, Ranges 21 and 22.*)—Through range 21 and the east half of range 22, the country is hilly, and the timber consists of poplar and scrub with an occasional small belt of spruce. The soil is clay and clay loam, and the underlying rock appears to be limestone. Through the middle of range 22 flows Cache Creek, while just beyond the west boundary of the range is its west branch. Between these two streams is a level stretch of country extending to the streams themselves, while the country to the north is hilly. Part of the surface is prairie and the remainder is covered with poplar.—*O. Rolfson, D.L.S., 1911.*

Peace River, flowing through sections 3, 4, 5, 9, 10, 11, 12 and 1 of this township, furnishes easy access by boat in summer and by sleigh in winter. Furthermore, the pack-trails leading from Fort St. John to Fort Grahame and to Hudson Hope, cross the township, the latter branching off from the main trail in section 15. Peace River has an average width of twenty-five chains and a current of about four miles per hour. The depth is very difficult to ascertain on account of the swift current, but the shallowest place at normal height of water is eight feet deep. During the summer months the river is susceptible to great

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 21.—*Continued.*

changes. Unlike other streams it does not begin to rise at the break-up of the ice, but only in the latter part of May when the warm weather commences to melt the snow in the mountains. Towards the end of June the water has usually reached its normal level again. This season, however, was an exception, as the continuous downpour of rain kept the river not only at its high-water mark but higher than the old settlers of this country remember having seen it before. A flat on the east side of Cache Creek in section 10, about fifteen feet above the normal level of the river, was covered to a depth of about three feet. This flat is the only part of the township that is liable to be flooded. Cache Creek, which is from twenty to forty feet in width as well as another small stream flowing through sections 21 and 16 and joining Cache Creek in the latter section, became impassable, raging torrents. The water in this tributary of Cache Creek has a slight taste of iron, and is unfit for use, but apart from this stream there is a good permanent water supply in almost every part of the township. Peace River Valley is about two miles wide and from seven hundred to one thousand one hundred and fifty feet deep, and with the exception of undulating flats of fertile land in sections 4, 5, 6, 8, 9 and 10, is too rugged and broken to be of any value for agricultural purposes. The portions of sections 2 and 3 not included in the valley are covered with old brulé and windfall; numerous sloughs were encountered and the soil is light and stony. Parts of sections 13, 14 and 15 and sections 21, 22, 23 and 24, lying on a level with the top of Peace River banks, comprise a half-open, rolling country, timbered in places with poplar and cottonwood up to fourteen inches in diameter and a few spruce. The soil consists of from four to eight inches of loam overlying a subsoil of clay and sandy clay and in some places gravel. Peavine, vetches and other grasses grow luxuriantly, and the country is well watered. Mixed farming should be successful. Section 7 and parts of sections 8, 17 and 18 form a thickly wooded plateau about seven hundred feet above Peace River. The timber consists of poplar up to eight inches in diameter with a heavy undergrowth of willow scrub. Although the soil is good this portion of the township is too heavily timbered to be required for agricultural purposes in the near future. One squatter was found on a flat in section 15. He has had great success with all kinds of vegetables and, though grain has not been tried, there is no doubt but that it would also prove a success. No summer frosts were noticed at the time of survey (June and July). Around the borders of a tamarack swamp in section 5 there are extensive meadows in which several hundred tons of hay could be cut. The only timber of value in the township is on the island in Peace River in sections 4, 9 and 10, where some of the spruce is as large as thirty inches in diameter. Large bluffs of sandstone are found in sections 13 and 14, but they are almost inaccessible. No minerals of economic value were found, although very strong indications of iron were noticed in sections 11 and 14. There are no water-powers. Large game is very scarce, but feathered game is quite plentiful.—*L. Brenot, D.L.S., 1913.*

Tp. 87 (*Exploration survey.*)—The surface is rolling and the soil is good. It is covered with poplar, willow and some spruce clumps.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—Blueberry River flows through the northern part of this township in an easterly direction, crossing the north boundary in section 35. The country is rolling and covered with jack pine, poplar and some clumps of spruce up to eighteen inches in diameter. The soil is good.—*J. R. Akins, D.L.S., 1911.*

RANGE 22

Tp. 77 (*South outline.*)—The middle branch of Pine River crosses about the middle of the west boundary flowing north-easterly. South of the river the surface is heavily wooded and very rough. Table mountain in the south-east corner rises about two thousand feet above Pine River. The portion north of the river is neither so rough nor so heavily wooded as the south part.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—The surface is all wooded with spruce, poplar and jack pine, except the portion around a few small lakes near the centre of the township.—*J. R. Akins, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 22.—Continued.

Tp. 80 (North outline.)—See report for township 80, range 21.—*Geo. McMillan, D.L.S., 1911.*

Tp. 83 (North outline.)—The surface is undulating and covered with dry spruce and poplar. Numerous sloughs and muskegs were encountered. The soil consists of five inches of black loam on a subsoil of clay or sandy clay.—*L. Brenot, D.L.S., 1912.*

(Partial.)—The pack-trail from Fort St. John to Hudson Hope crosses the flat in sections 28, 29 and 33. Up to this season there were two fords over Halfway River, one of which was destroyed by high water at the confluence with Peace River, and the other in section 30. The latter is a very good ford under ordinary conditions, the water being not more than three feet deep. Access is also to be had to this township by Peace River. There is a good landing in section 28 and steamers call here every trip. Sections 28, 29, 32 and 33 contain all the land suitable for agricultural purposes in this township, and were the only parts subdivided. Halfway River occupies nearly all the south-west quarter of section 29. At normal height this stream has an average width of from four to five chains, a current of about five miles per hour and a depth of about four feet. Its bed, however, averages fifteen chains in width, and in some places is as much as half a mile. This river, being a mountain stream, rises very rapidly after a rainstorm, fills its bed from bank to bank, and is converted into one of the most dangerous streams in the country; very few seasons pass without the loss of lives of men attempting to cross at high water. Peace River flows through sections 20, 21 and 28, with an average width of twenty-five chains and a current of about five miles per hour. The north-west quarter of section 20 is heavily timbered with merchantable spruce up to thirty inches in diameter. There is also some good spruce in the west half of section 29, north of Halfway River. That part of sections 28 and 29 north of Peace and Halfway Rivers, and the southerly part of the south half of section 33, comprise an open flat, or rather three benches with a rise of about fifty feet between each. Five squatters were located on this flat, and vegetables and grain have been successfully grown here for several years, the grain being untouched by frosts. Furthermore, there were no signs of any frosts at the time of the survey (July). Good upland hay is plentiful. The soil is very rich, being from six to eighteen inches of loam overlying a clay loam subsoil, and only in the north-west quarter of section 28 does the land become stony and unproductive. The lowest of the three above-mentioned benches is the only one in danger of floods, and even here the danger is remote as was seen when the very exceptionally high water in Peace River this season was still a few feet below the level of the bench. Peace River Hills in sections 32 and 33 are open, steep, rugged and broken, and are of use only for grazing purposes. That part of these sections lying on the top of the hills is rolling, semi-open country containing numerous sloughs, where great quantities of good hay could be cut. Fires have overrun this portion so often that the topsoil is completely burnt in most places and the clay is left exposed. Almost to the top of the hills on the south side of Peace River, a height of nearly eight hundred feet, the country presents a rugged appearance of almost continuous cut-bank, after which it becomes rolling and covered with dry standing spruce. In places the windfall is piled to a height of ten feet. There are no water-powers, and neither stone-quarries nor minerals of economic value were discovered. Partridges and prairie chickens are fairly plentiful, but foxes are the only species of fur-bearing animals to be found in any number. The large game has retired a considerable distance north.—*L. Brenot, D.L.S., 1913.*

Tp. 84 (North outline.)—See report for township 84, range 21.—*O. Rolfson, D.L.S., 1911.*
(East outline.)—The country along the north half of this outline slopes toward Cache Creek; the pack-trail between Fort St. John and Fort Grahame crosses the east outline of section 24. Cache Creek flows through section 13 in a valley three-quarters of a mile wide and six hundred feet deep. South from the creek the surface is undulating in section 12 and rolling in section 1. The soil is two to six inches of black loam on a sandy clay subsoil. The north half of the township is cut up by the valleys of Cache Creek and its branches, and does not appear well suited for settlement. The south half is covered with sloughs and muskegs, but they

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 22.—*Continued.*

could be drained without much difficulty. Fires have frequently overrun the district and in many places the top-soil has been burnt off. No stone-quarries nor minerals of economic value were seen. Fur-bearing animals, partridges and prairie chickens constitute the game of the township.—*L. Brenot, D.L.S., 1912.*

(*South third.*)—The south part of this township is comprised of the plateau between Peace River and Cache Creek. This plateau is about eight hundred feet above the river level; it has a rolling surface covered with second-growth poplar up to eight inches in diameter, and a profuse growth of peavine and other grasses. It affords at present, grazing land for the settlers to the south. The soil is well adapted for agricultural purposes being generally comprised of clay loam on a clay subsoil. The Fort St. John and Hudson Hope pack-trail, which was converted into a wagon road during the summer, passes about a quarter of a mile south of sections 1, 2 and 3, thus providing an easy route by which the townships may be reached. An abundant and permanent supply of fresh water is obtainable from the lakes and small sloughs throughout the plateau, but no power could be developed. In sections 1 and 2 considerable hay of a fair quality may be obtained from the marshes around the lakes. Dry poplar may be readily obtained for fuel, but no coal, lignite, stone-quarries nor other minerals were observed. Bears, foxes and coyotes are numerous and a few signs of moose were noticed but game of the feathered variety is scarce.—*L. Brenot, D.L.S., 1915.*



Camp on Halfway River

*Photo by O. Rolfson, D.L.S.***Tp. 87**

(*Exploration survey.*)—This township is rolling and covered with a growth of small poplar, with a few clumps of large spruce up to twenty inches in diameter. The soil is good.—*J. R. Akins, D.L.S., 1911.*

Tp. 88

(*North outline.*)—Blueberry River flows eastward through this township. The surface is rolling and covered with a growth of jack pine and poplar from four to ten inches in diameter. The southern part has some large spruce and poplar up to twenty inches in diameter. The soil is good.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 23

- Tp. 77** (*South outline.*)—Pine River enters this township in section 3, and flowing north-east, leaves on the middle of the east boundary. The surface near the river is broken with steep banks, but the north part is more regular and is wooded with spruce, poplar and jack pine.—*J. R. Akins, D.L.S., 1912.*
- Tp. 78** (*Exploration survey.*)—The surface is rolling and lightly covered with spruce, poplar and jack pine.—*J. R. Akins, D.L.S., 1912.*
- Tp. 80** (*North outline, Ranges 23 to 26.*)—From Moberly River to the western boundary of range 26, the soil becomes more sandy and is timbered with spruce, poplar and jack pine of medium size, except in the valley of Peace River in range 26, where the trees reach thirty and forty inches in diameter. The soil is of the very best quality with two feet of vegetable loam in some places. The pack-trail from Moberly Lake to Hudson Hope is encountered near the north-west corner of section 32, range 25. It is a very old and well-beaten trail, and is in good condition.—*G. McMillan, D.L.S., 1911.*
- Tp. 83** (*Partial.*)—Halfway River flows through the north part of this township in a valley ranging from seven hundred to nine hundred feet deep, and from one to two miles wide. It is a tortuous stream three to five feet deep, eight chains wide, and flows with a current of four to six miles per hour. Clay landslides occur on the steep hillsides, and with the exception of a few fertile flats in the bottom lands the township is useless for agriculture. Some of these flats are covered with a light growth of poplar and have rich productive soil. Peavine and vetch grow luxuriantly, and sections 33 and 34 are covered with a heavy growth of merchantable spruce timber. A triangular plateau between Peace and Halfway Rivers, four miles in width at the western end of the township and narrowing to a point in section 25, presents an undulating surface covered with poplar, spruce and jack pine. The soil, in general, is good, being comprised of sandy loam, but sand on a sandy clay subsoil appears in places. The numerous sloughs as well as the spruce and tamarack swamps provide an adequate and permanent supply of fresh water. Peace River flows north-easterly through sections 4, 10, 14 and 24. On the north side of the Peace and about one hundred and fifty feet above the river level, a flat is situated varying in width from ten to forty chains. A fertile soil is found on some parts of this flat, but on other parts which are covered with jack pine, sand and gravel appear. Two squatters were found on this flat in section 9. The Fort St. John and Hudson Hope pack-trail, which has been improved sufficiently to allow the passage of wagons, runs parallel to Peace River along the northerly side of this flat, and the Government Telegraph Line between Fort St. John and Hudson Hope, which was completed in the early autumn, is established along this road. Some extensive sloughs are situated in the central parts of the township from which considerable hay of fair quality could be obtained. Dry poplar and tamarack may be readily obtained from fuel. Water-power could be developed on some of the numerous rapids of Halfway River by dams, but this would cause the bottom lands above to be flooded. Other than these no lands are liable to flooding. No stone-quarries, coal or lignite veins, nor other minerals were observed. Moose and deer are fairly numerous. Many bears were seen, some of which were bold enough to come into camp and cause trouble. A few otter and beaver were seen as well as other small fur-bearing animals. Partridges and prairie chickens are not very plentiful.—*L. Brenot, D.L.S., 1915.*
- Tp. 84** (*North outline.*)—The country through this range is rolling, the surface being covered with small brûlé, spruce and tamarack swamps and small strips of jack pine and poplar. The soil near the line is very sandy, but a good area of farming land lies about six miles to the north. Halfway River flows southerly through the middle of section 31 in a valley five hundred feet in depth and varying from half a mile to a mile in width. At low water the stream is about three hundred feet wide and four feet deep, with a current of five miles per hour, but in some places the river narrows to straight rock walls with a very swift current, while

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 23.—*Continued.*

in others it has wide gravel bars strewn with driftwood and even whole trees. At high water it is over a quarter of a mile wide in places and at least ten feet deep in midstream.—*O. Rolfson, D.L.S., 1911.*

(*East outline.*)—Cache Creek, thirty links wide and flowing in a valley four hundred feet deep crosses the east boundary of section 36. Sections 24 and 25 are nearly level and covered with dry spruce and poplar. Along the south half of the outline sloughs and muskegs are encountered. The soil is rich, consisting of twelve inches of black loam on a subsoil of heavy clay.—*L. Brenot, D.L.S., 1912.*

Tp. 87 (*Exploration survey.*)—The sections along the north boundary of this township have mostly been burnt. But south of this to the middle of the township is some good timber, consisting of spruce and poplar up to twenty inches in diameter. The southern part is covered with small poplar. The soil is good and the surface rolling.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—The country is heavily rolling and the northern part covered with poplar and a few big spruce up to twenty inches in diameter. The southern part has been burnt. The soil is good. Blueberry River just enters the township at the north-east corner.—*J. R. Akins, D.L.S., 1911.*

RANGE 24

Tp. 77 (*South outline.*)—A branch of Pine River enters this township at the south-west corner and after flowing north for about two and a half miles, swings south and leaves the township in section 2. South of the river, the surface is hilly and is heavily wooded with spruce and jack pine up to fifteen inches. The portion north of the river is also more lightly wooded with spruce, jack pine and poplar and cut up by ravines.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—The surface of this township slopes to the south. The township is wooded with poplar, spruce and jack pine and has good soil.—*J. R. Akins, D.L.S., 1912.*

Tp. 79 Access to this township is fairly easy. A trail from Fort St. John, in township 83, range 18, enters this township in section 24 and continues southward through sections 14, 15 and 10. There are three pack-trails running to Hudson Hope. The main trail follows the shore of Moberly Lake through sections 9 and 8, and continues in a westerly direction to the west end of that lake, and thence it turns northward to Hudson Hope. This trail, although it lengthens the journey by nearly ten miles almost fully compensates for its length by its good condition and easy travelling. Of the other two pack-trails to Hudson Hope the centre trail, which branches from the Fort St. John trail in section 14, passes through sections 23, 22, 27, 28 and 33 and leaves the township in section 32, is a good summer route, but in the spring or after a wet season it becomes very soft and is extremely difficult to travel. In this respect the east pack-trail by way of René Lake is much better. This latter trail which branches from the centre trail in section 14 and then passes through sections 23, 26 and 35, follows around the foot of a range of foothills known as the Moberly Hills, and is comparatively dry, although there is a considerable amount of windfall. Besides the above three pack-trails there is also a sleigh trail which was cut to Hudson Hope, starting from section 26 and passing through sections 25 and 36. This sleigh trail was cut while there was deep snow on the ground, and consequently before it could be used again more work would have to be done in order to reduce the logs and stumps to the level of the ground. Moreover, in summer this trail is not of much use for packing over, as numerous sloughs and swamps render progress too difficult. The agricultural land in this district has been squatted upon by a settlement of enterprising half-breeds. Between them the total amount of stock is thirty head of cattle and sixty head of horses. In addition to stock

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 24.—*Continued.*

all the squatters have good fenced gardens and have raised some excellent crops of vegetables. The soil suitable for homesteading averages eight inches of black loam overlying a good subsoil of sandy loam, and in the best quarters, namely in section 23 and the adjoining quarter-sections on the north-east, the black loam is as deep as twelve inches. In this part the country is level and almost entirely open, and there is a luxuriant growth of grass; as much as one hundred tons of upland hay was cut last year. In the southern halves of sections 13 and 14 the surface is covered with scrub willow and scattered jack pine, and the soil is light and stony. Moberly Hills which run approximately along the east boundary of section 36, across section 26 to the middle of the north boundary of section 23, thence roughly to the north-east corner of section 15 and across to the middle of the north boundary of section 10, mark the boundary of good farming land; they afforded also an admirable grazing ground for a considerable number of stock. Apart from the fresh water obtainable in Moberly River and Moberly Lake there is an excellent creek running through sections 28, 27, 22, 23 and 24, and into this numerous small springs flow, especially in sections 22 and 24. There are no available water-powers. The nights are nearly always cool, and at the time of the survey (May) frosts were frequent, but according to reports summer frosts are not severe enough to damage the crops. There are large supplies of timber suitable for fuel in the western half of the township, and just east of the eastern boundary there is much fairly large spruce. No minerals were discovered. Stone was found in sections 15 and 16, but as access would be very difficult it cannot be said to be of much economic value at present. Game is rather scarce and consists of bears, partridges, grouse and ducks. Whitefish and trout are very plentiful in Moberly Lake and River.—*L. Brenot, D.L.S., 1913.*

Tp. 80 (*North outline.*)—See report on township 80, range 23.—*Geo. McMillan, D.L.S., 1911.*

The sleigh trail which was cut from Hudson Hope to Moberly Lake enters this township in section 34 and runs south-easterly to section 24 and thence southerly along the east outline. From section 24 a trail was cut northerly along the east outline of this range through township 81 and through part of township 82. The pack-trail known as the "middle trail," which is the shortest route between Hudson Hope and Moberly Lake, passes through sections 5, 6, 7 and 18. Moberly Hills which rise to a height of one thousand, two hundred feet above the surrounding country occupy all of the southern third of the township except sections 1 and 12. The last two named sections and also sections 13 and 24 are the only portions suitable for agricultural purposes. The surface of this tract is undulating and covered with alternate bluffs of small poplar and prairie patches, and in places a few jack pine. The soil is generally from four to eight inches of loam over a clay and sandy clay subsoil. The surface of the remainder of the township, with the exception of Moberly Hills, is undulating and covered with large spruce and tamarack swamps. The numerous springs flowing from the hill-side form the headwaters of Maurice Creek, which crosses the western outline in section 19. Moberly River passes through sections 25 and 36. There are no available water-powers. Spring was late in this locality; although the surveyors were here at the beginning of June, the vegetation was not very well advanced. No stone-quarries nor minerals were discovered. Fish abound in Moberly River. Bears are fairly numerous in the south-western part of the township, but other game was scarce.—*L. Brenot, D.L.S., 1913.*

Tp. 81 (*East outline.*)—A sleigh trail was cut to this township from the Hudson Hope-Moberly Lake trail which runs through the township to the south. The surface of the first two miles north of the base line is rolling and wooded with small poplar up to six inches, while the remaining portion is covered with spruce from twelve to thirty-six inches in diameter. This timber extends for a distance of over six miles on either side of the outline. In section 13 a creek, the outlet of René Lake and a chain of other small lakes, was crossed. The land on both sides of this creek is the only portion of the township suitable for farming. The soil throughout the township is chiefly from two to four inches of moss over a clay subsoil. The weather was mild at the beginning of April, but the snow was still about three feet deep. Game of all kinds was scarce. No stone in place nor minerals were noticed, and no available water-powers were seen.—*L. Brenot, D.L.S., 1914.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 24.—Continued.

Tp. 82 (Partial.)—Peace River flowing easterly across the township affords the easiest route into this country. Steamboats ply the river between North Vermilion and Hudson Hope from June to September, and in winter a sleigh trail is sometimes broken on the ice from Peace River Crossing to Hudson Hope. There is also the Fort St. John-Hudson Hope pack-trail running on the north side of Peace River. This river has an average width of twenty-five chains, a current of from three to five miles per hour and a minimum depth of eight feet. The valley is over two miles wide in this township, and there is a large area of fertile bottom land on the north side of the river. Brenot Creek, a small stream with an average width of one chain, a depth of three feet and a current of three miles per hour, enters this township in section 33 and empties into Peace River in section 19. The height of the banks of this stream are about the same as those of Peace River, namely, from seven hundred to nine hundred feet. The surface of the bottom land above mentioned is level and fertile, the soil being from two to eight inches of loam over a clay and sandy clay subsoil, and in few places light and sandy. Dry wood is scarce; fires have swept this country so often that the portions that are not open are lightly wooded with a small growth of poplar and jack pine. The surface of the plateau in sections 26, 27, 28, 33, 34 and 35, is undulating and lightly covered with small poplar, and in some places windfall. The soil is very rich, the growth of peavine, vetches and other grasses being very rank. That portion of the township to the west of Brenot Creek and on the plateau is too swampy to be of any agricultural use before draining. No land is liable to be flooded. Frosts were frequent this season but the settlers claim that this was the first time for several years that crops were damaged. There are no available water-powers. No stone-quarries nor minerals of economic value were discovered. Moose, bears and deer were seen, and partridges and prairie chickens were numerous.—*L. Brenot, D.L.S., 1914.*

Tp. 83 (Partial.)—Farrel Creek, formerly known as Red River, fifty to seventy-five links in width and from one to two feet in depth, flows in a tortuous course through a valley ranging from forty to eighty chains in width and from seven hundred to nine hundred feet deep. The banks of this valley are steep and broken in such a way as to render the land useless for agricultural purposes. The country lying to the west of Farrel Creek has a gently rolling surface covered with light growth of small poplar. The soil is good, especially in sections 6, 7, 18 and 19, which lie on a gentle slope facing the south-east, and which is covered with a rank vegetation. Sections 1, 12, 13 and 24, lying to the east of Farrel Creek, are covered with a heavy growth of poplar up to twelve inches in diameter, interspersed with spruce. The soil is good being loam and sandy loam on a clay subsoil. A pack-trail, which joins the Fort St. John trail, passes through sections 5, 8, 17 and 20, thus affording an easy route to the township. From a point on this trail in section 8, a pack-trail runs easterly across sections 9, 10, 11 and 12, and joins in section 12 another pack-trail. Farrel Creek and its many tributaries furnish an abundant and permanent supply of fresh water. Dry poplar may be readily obtained for fuel, but no coal, lignite, stone-quarries nor other minerals of value were observed. No water-power could be developed, and no hay grows in the township. Bears, coyotes and foxes were the only game seen. *L. Brenot, D.L.S., 1915.*

Tps. 83 & 84 (East outlines.)—A pack-trail commencing in section 35 of township 82 was cut northerly along these lines to section 12 of township 84. The surface of township 83 in the vicinity of the outline is undulating and covered with large spruce and tamarack swamp separated by jack pine ridges. Brenot Creek, a small stream of about one chain in width, runs southerly across the centre of the township, cutting up the country with its deep valley and those of its numerous tributaries. The country along the east outline of township 84 is very rough and it is broken for a considerable distance by the banks of Halfway River. These banks are clay and from seven hundred to eight hundred feet high and are broken by numerous landslides. Halfway River, being a mountain stream, rises at a certain time of the year to a height of fifteen feet above normal level, and at such times the bed of the stream is from fifteen to twenty chains wide and the current about four miles per hour. The soil on the plateau between Brenot Creek and Halfway River is very poor and almost devoid

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 24.—*Continued.*

of vegetation. Summer frosts were frequent. The timber where not burnt off consists of spruce, jack pine and poplar. Dams could be constructed on Halfway River and power developed. No stone in place nor minerals were discovered. Bears were numerous, and also game of the feathered variety.—*L. Brenot, D.L.S., 1914.*

Tp. 84 (*North outline, Ranges 24 to 26.*)—From the valley of Halfway River, in range 23, to the west boundary of the block, the country is mostly undulating and the surface is covered with jack pine, spruce, poplar, willow, alder and spruce and tamarack swamps, while the creeks are few until nearing the west boundary. About six miles south of the line in range 24, there is an area of about forty square miles of good farming land, in which the soil is clay and clay loam. About one mile south of the line in the middle of range 24 and turning south into Peace River, a stream about forty feet wide and one foot deep flows through a valley three-quarters of a mile wide and nearly three hundred feet deep. Grayling are found in North Pine River, grayling, speckled trout and pike in Halfway River, and rainbow trout in the stream running through range 24. In the spring, ducks, geese, partridges and prairie chickens are plentiful, while rabbits are numerous at all times. Black bears and moose are seen occasionally. Most of the fur-bearing animals and large game, however, are exterminated. Potatoes, carrots, beets, cabbages, parsnips and lettuce of excellent quality are raised at Fort St. John, and one settler there states that in addition to the above, he has ripened tomatoes, rhubarb, squash, and on one occasion watermelons. Wheat has never been tried here, but we were informed that as a general rule there is no serious frost in the valley before October, although along the line, frost was noticed on July 13, 20, 21 and 23, and on August 6.—*O. Rolfson, D.L.S., 1911.*

Tp. 87 (*Exploration survey.*)—A fine creek flows southward through the middle of this township. The country is hilly and the northern part is burnt, with the burnt timber still standing. The southern part is partly wooded and partly burnt. The soil is fair.—*J. R. Akins, D.L.S., 1911.*

Tp. 88 (*North outline.*)—This township is heavily rolling, the ridges running north and south. All except the north-west corner has been burnt and the timber remains standing. The unburnt part is covered with small spruce, poplar and jack pine. The soil is good.—*J. R. Akins, D.L.S., 1911.*

RANGE 25

Tp. 77 (*South outline.*)—This township is rough and hilly, (and on the north bank of Pine River the hills are not wooded. Good feed grows along the river flats, but back from the river the surface is wooded.—*J. R. Akins, D.L.S., 1912.*

Tp. 78 (*Exploration survey.*)—The surface of this township is rough and hilly, and wooded with small jack pine and poplar.—*J. R. Akins, D.L.S., 1912.*

Tp. 80 (*North outline.*)—See report for township 80, range 23.—*Geo. McMillan, D.L.S., 1911.*

Tp. 81 (*Partial.*)—The west third of this township and sections 28 and 33 embrace all the land suitable for settlement. Hudson Hope is situated in the north-west quarter of section 18. It is located on an unbroken flat five miles long and about two miles wide. At the north end of this flat Lynx Creek runs through a gorge-like valley one hundred and fifty feet deep. On the north side of this creek another flat one and one-half miles wide extends about seven miles along Peace River. On the south side of the river opposite Hudson Hope two large flats lie, one on each side of Maurice Creek. Hudson Hope is important as it is situated at the head of navigation on Peace River and extensive coal lands lie immediately to the west. Water-power in unlimited amount can be developed from the Peace River canyon west of the

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 25.—*Continued.*

settlement, and rich agricultural lands lie west of the Peace River block. Hudson Hope is reached by trails on the north and south sides of Peace River, and by steamers on Peace River, during June to September inclusive. The settlement may also be reached from Fort George by canoe except for two short portages of eight and twelve miles. This trip can be made in ten days. Peace River flows across this township in a north-easterly direction passing through sections 18, 19, 20, 29, 28 and 33. The average width is about thirty chains and the current is about four miles per hour. Sections 5, 6, 7 and 8 are heavily timbered with jack pine and some merchantable spruce ten to thirty inches. The soil is humus or moss two to four inches deep on a subsoil of sand and stones, and is not suitable for agriculture. Sections 17, 18 and 20 form a flat, lightly timbered with scrub jack pine and poplar. Maurice Creek, flowing in a deep ravine, cuts across sections 8, 17 and 18, and empties into Peace River in the north-west quarter of section 18. Sections 19, 29, 30, 32 and parts of 31 and 33 form a large undulating flat all timbered with jack pine up to six inches, except a narrow strip of nearly open country, about half a mile wide, stretching across sections 19, 30, 31 and 32. The soil in this strip is rich being four to eight inches of loam on a clay loam subsoil. Vegetables were grown successfully by the squatters, but grain crops which were tried, proved a failure, as they were sown too late. The soil in the remainder of the flat is not suitable for agriculture, being sand to a depth of over eighteen inches. Lynx Creek flows across the northern part of section 33 in a deep ravine. Good water can be obtained from Peace River, Lynx Creek, Maurice Creek and a spring running all year in section 18 on the north side of Peace River. The east outline of this township crosses René Lake in section 1 which is fed principally by muskegs. The east boundaries of sections 12 and 13 are undulating and timbered with jack pine up to ten inches while an old *brulé* with much fallen timber extends along the north half of the east boundary of the township. This *brulé* extends for about two miles west of the outline. Several limestone claims are staked in section 18, but no other rock in place was noticed. Game consists of bears, foxes, mink, marten, ermine, partridges and prairie chickens. Trout abound in Lynx and Maurice Creeks, and many other kinds of fish are caught in Peace River. Frosts were frequent and the weather was cool when we left this township in October.—*L. Brenot, D.L.S., 1912.*

Tp. 82

(*Partial.*)—Only a portion of the township in the vicinity of Peace River was subdivided. The remainder is a plateau on the top of the river banks with a gently rolling surface and lightly timbered with small poplar, except when broken by the deep ravines of the creeks. Peace River has an average width of twenty-five chains, a minimum depth of eight feet and a current of from three to five miles per hour. The banks of the valley are over six hundred feet high; on the south side of the river they rise abruptly, while on the north side there is a flat or bottom-land of from half a mile to one and a half miles in width and timbered chiefly with jack pine and scrub poplar. The soil is light and sandy in most places. Several industrious squatters are located here and vegetables of all kinds were grown successfully. Although summer frosts are frequent, they are not very injurious to crops. A pack-trail leading from Hudson Hope to Fort St. John crosses the township along this flat. Dry poplar for fuel is plentiful, but timber of value is scarce, except the wooded islands in Peace River. There are no available water-powers. No stone nor minerals were noticed. A few coyotes and foxes were the only game seen.—*L. Brenot, D.L.S., 1914.*

(*Partial.*)—A good pack-trail running from Hudson Hope to Halfway River enters this township in section 5 and leaves it near the north-west corner of section 30. There is an abundant supply of fresh water in Peace River and the numerous streams flowing into it, the largest of which is Lynx Creek, flowing in a southerly direction through sections 18, 7 and 6. It is situated in a valley ranging from seven hundred to eight hundred feet in depth and from thirty to fifty chains in width. This renders the western portions of these sections useless for agricultural or grazing purposes. A large spruce and tamarack swamp extends throughout the greater part of sections 26, 27, 28, 33, 34 and 35. The remaining part of the township is undulating country covered with a light growth of poplar up to eight inches in diameter, willow scrub and scattered fallen timber. The soil in general is good, being comprised of loam from two to six inches in depth on a clay and sandy subsoil. Industrious settlers are located in the southern part of the township, who have

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 25.—Continued.

made considerable improvements, and have successfully grown wheat, oats and a large variety of vegetables. A few light summer frosts occurred but no damage was done to the crops. A plentiful supply of dry poplar is readily obtainable for fuel, but timber of value is scarce. There is a fall of about twenty feet on Lynx Creek, which could be developed as a water-power. No stone-quarries, coal, lignite nor other minerals were observed. Coyotes, foxes and bears are numerous, but game of the feathered variety is scarce.—*L. Brenot, D.L.S., 1915.*

Tps. 83 & 84 (*East outlines.*)—The southern half of township 83 is wooded with poplar up to six inches in diameter and willow scrub. Considerable water is found in the scattered sloughs and marshes; hay is plentiful in the latter. The soil is good and the surface is gently rolling. Mixed farming would be a success. The northern half of the township is composed of spruce and tamarack swamps separated by jack pine ridges. Brenot Creek which crosses the east outline of township 84 in section 25 has an average width of one chain, a depth of three feet, and a current of three miles per hour. The valley is about two hundred feet deep and from half a mile to one mile wide. There are large stretches of fertile bottom-land on either side of the river and with the exception of these flats the township is not suitable for farming, being composed of muskegs separated by jack pine ridges. The weather was warm and mild, but summer frosts are likely to be experienced. No stone-quarries, minerals nor coal were found, but wood for fuel is plentiful. Moose, bears and foxes were fairly numerous, and there are also many partridges and prairie chickens.—*L. Brenot, D.L.S., 1914.*

Tp. 84 (*North outline.*)—See report for township 84, range 24.—*O. Rolfson, D.L.S., 1911.*

Tps. 86, 87 & 88 (*West outline.*)—All of township 86, except section 35, in which Halfway River is crossed, is too broken to be suitable for settlement. It is timbered chiefly with jack pine and spruce from four to fourteen inches in diameter with a thick undergrowth of willow scrub. Halfway River at low water has an average width of three chains, a depth of four feet and a current of three miles per hour. Its source is in the Rocky Mountains, and like all mountain streams, it rises very quickly. At high water the average width is about ten chains. On the north side of the river the country rises by benches up to the centre of township 87, there being an extensive flat after each rise. These flats are mostly prairie with a few scattered bluffs of poplar and some spruce. The soil is very fertile, in fact, it is the best that was seen along this line, being composed chiefly of clay or sandy loam to a depth of eighteen inches. In the southern part of township 87, the outline intersects the Royal North-west Mounted Police pack-trail from Fort St. John to Fort Grahame, about a quarter of a mile east of a wooden post marked "62E." In the northern part of section 19, township 87, the country begins to fall gently to the north branch of Halfway River. The timber is chiefly jack pine and spruce, but there is also a great amount of deadfall. The north branch of Halfway River is a small stream about two chains in width, two to three feet deep, with a current of about two to three miles per hour. It flows in a south-easterly direction and empties into Halfway River about fifteen miles in an easterly direction from the intersection of the latter stream with the boundary. The country to the north rises gradually to a height of about seven hundred feet above the river. In the first three miles the land greatly resembles that north of Halfway River, but in the last two miles it slopes gently to the north and is timbered with heavy spruce and poplar from six to twenty-four inches in diameter. During the summer months the heat is generally tempered by cool breezes blowing from the Rocky Mountains, which lie about ten miles west and almost parallel to the west boundary of the block. There was no frost that would injure grain before September 18. The game consists of moose, bears, partridges, prairie chickens and almost all species of fur-bearing animals, but ducks and geese are scarce.—*L. Brenot, D.L.S., 1911.*

Tp. 87 (*Exploration survey.*)—Cameron River flows in a south-easterly direction across this township. The surface is heavily rolling and covered with windfall and a second-growth of willow and poplar. The soil is clay and is fairly good.—*J. R. Akins, D.L.S., 1911.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 25.—*Continued.*

Tp. 88

(*North outline.*)—The country is heavily rolling and covered with light poplar with a thick undergrowth. The soil is clay. The south-east corner has been burnt over.—*J. R. Akins, D.L.S., 1911.*

RANGE 26

Tps. 76, 77, 78, 79 & 80

(*West outline.*)—Adjoining the west boundaries of these townships from the twenty-first base line south, there is no land suitable for settlement except a strip about a mile wide along Moberly River in section 27, township 78. The strip is good as far east as Moberly Lake, a distance of about three miles. The surface of the remainder is hilly and the soil swampy or stony. In township 80 there are some spruce up to thirty inches in diameter, but through townships 79, 78, 77 and 76 no valuable timber was seen. These townships are largely covered with willow scrub of large size and so thick that the tops and branches have grown together in such a manner that they have to be pulled to the ground after being chopped off. There is also considerable small poplar, jack pine and spruce which are valueless. There is a small lake near the north boundary of township 79, and about two miles east. This lake is about one hundred



Looking up Halfway River

Photo by L. Brenot, D.L.S.

chains long and forty chains wide, and is surrounded by a floating muskeg. Moberly Lake, which is about fifteen miles long and four miles wide, situated in township 78, ranges 24 and 25, is the most important lake in the Peace River block. It contains large numbers of whitefish, jackfish and trout, and there are also innumerable geese and ducks about it. On the west and north sides there are ridges about half a mile from the lake, and the intervening space is scrubby prairie. On this prairie are found wild fruit, such as cherries, strawberries, raspberries, saskatoon berries and blueberries, and there are also potatoes, turnips and radishes, which matured without injury from frost and equalled in size similar vegetables grown in Ontario. The south-west corner of the block is a bare sidehill, sloping down to the west branch of Pine River and about one hundred and twenty chains from it. Shale rock and thin seams of coal appear in the banks of the rivers, but no other minerals were seen. The game of the Peace River district consists of

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 26.—*Continued.*

moose, deer, partridges and prairie chickens, and the fur-bearing animals are black bears, grizzly bears, lynx, otters, beavers, martens, mink, foxes and weasels. The spring season was cold and backward in the timber lands and the snow remained till May 1. The first summer frost occurred on July 19 and frequently after that date, while four inches of snow fell on September 12.—*Geo. McMillan, D.L.S., 1911.*

Tp. 80 (*North outline.*)—See report for township 80, range 23.—*Geo. McMillan, D.L.S., 1911.*

Tp. 81 (*West outline.*)—For the first mile and a half north of the base line the country is sloping towards Peace River, which the boundary intersects at about half a mile below what is known as "Peace River Canyon." On the south side of the river there is no flat, the hill ending abruptly at the edge of a cut bank about one hundred and twenty feet above the water level. This cut bank greatly facilitated the triangulation of the river, as there are inaccessible wooded islands on the line, and the south bank is covered with a heavy growth of small poplar. Down the river and about the south-east quarter of section 13 is situated Hudson Hope, which comprises only the fur-trading posts of the two companies, Revillon and Hudson's Bay. There is a good place to swim horses across Peace River opposite the post. On the north side of the bank there is a small flat, which is heavily timbered with spruce, and from the top of the bank which is about eight hundred feet above the level of the river to a little beyond the centre of the township, there is a heavy growth of small poplar. The soil to this point is chiefly light sandy loam and not very good for agricultural purposes, while the country northwards to the north-west corner of the township is timbered with small spruce and jack pine. There is no vegetation as the surface is covered with moss. In section 23 a pack-trail is crossed known as the "Rocky Mountain Portage," connecting Hudson Hope with Custs House at the head of "Peace River Canyon."—*L. Brenot, D.L.S., 1911.*

This fractional township may be reached by boat on Peace River, by a pack-trail on the north shore of the river branching at Cache Creek from the trail to Fort Grahame, or by a pack-trail south of the river branching at Moberly Lake from the Pine Pass pack-trail. Access is also possible by canoe from Fort George in British Columbia by going north to the headwaters of Peace River and then down that stream, except for a portage of twelve miles at Peace River Canyon which neither small nor large craft can navigate. This portage, known as the Rocky Mountain Portage, passes through sections 23, 24 and 13. Peace River flows through sections 11, 12 and 13. Its width varies from ten to thirty chains and the current is about three and one-half miles per hour. During the spring floods the river rises about sixteen feet, but does no damage as the banks are high. The valley is about three miles wide at the west boundary of the township, but it becomes narrower towards the east where a flat extends through sections 13, 24 and 25. Sections 1 and 2 are on the slope of Peace River banks and are heavily timbered with merchantable spruce from ten to thirty inches and a few poplar and willow scrub. The soil is not suitable for agriculture as it consists of two to eight inches of moss on a sand and sandy clay subsoil, stony in places. Section 12 forms part of a marshy level and partly open flat. The soil is poor for agricultural purposes, being mostly stones and gravel to a depth of over a foot. The timber is mostly scrubby jack pine and poplar up to eight inches. Section 13 and the eastern halves of sections 24 and 25 form part of an undulating flat timbered with jack pine up to eight inches and poplar to ten inches. The soil is mostly sand eighteen inches deep and in a few places sandy clay and sandy loam. The west halves of sections 24 and 25 and section 36 are on the steep slopes of Peace River banks and are not even suitable for grazing. Fractional sections 14, 23, 26 and 35 are all on the top of the bank and are not suitable for farming as they are composed of jack pine ridges separated by muskegs. Eight squatters were found in the township, but none had any improvements beyond a cabin and a few acres of bush land cleared. A limestone claim was staked out along Peace River in the north-east quarter of section 13. No coal nor other minerals were noticed, but extensive coal-fields are adjacent to the west. Dry wood for fuel is plentiful as a fire passed over this district last spring killing most of the trees. No water-powers could be developed. Bears, foxes, coyotes, prairie chickens and partridges are plentiful. Fish abound in Peace River.—*L. Brenot, D.L.S., 1912.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 26.—Continued.

Tp. 82 (*West outline.*)—This township is fairly open, scattered second-growth poplar and willow scrub being the only bush. It is perfectly level except sections 11 and 26, which are crossed by deep ravines, through which flow Lynx Creek, and its north branch; both these creeks furnish an abundant supply of good clear water throughout the summer. The soil, like that in the township to the south, is not very suitable for agricultural purposes, and there is very little vegetation except at the bottom of the two ravines mentioned above.—*L. Brenot, D.L.S., 1911.*

Tp. 83 (*West outline.*)—The southern part of this township is rolling country and is timbered with poplar from three to eighteen inches in diameter and alder and willow scrub, while the northern half is covered with many hay meadows, from which hundreds of tons of wild hay could easily be cut. The soil is of a much better class than that in the two townships to the south being generally from three to twelve inches of humus overlying a subsoil of clay loam and in some places sandy loam. There is a good pack-trail leading from this township to the mouth of Halfway River.—*L. Brenot, D.L.S., 1911.*

(*East outline.*)—The pack-trail from Hudson Hope to Halfway River intersects this outline in Section 13. The surface is rolling and in the southern half covered with light poplar, willow and alder. The soil of this half is suitable for agricultural purposes being comprised of loam from six to ten inches in depth on a clay subsoil. The northern half is covered with poplar, spruce and jack pine. The soil is chiefly sand and gravel. Some large hay meadows were observed but no water-powers, stone-quarries, coal or lignite veins, nor other minerals of value were observed. Signs of bear, moose and deer were fairly plentiful.—*L. Brenot, D.L.S., 1915.*

Tp. 84 (*North outline.*)—See report for township 84, range 24.—*O. Rolfson, D.L.S., 1911.*

(*West outline.*)—A small river, known to the Indians as Red River, and having an average width of one chain, flows in a south-easterly direction through this township to Peace River. In its valley are numerous patches of open prairie, some being over a hundred acres in area, and the soil is very fertile. A luxuriant growth of peavine is seen throughout these patches of prairie. This would be an ideal place for ranching as both banks of the river, which are over two hundred feet high, afford good shelter for stock and the river furnishes an abundant supply of water. The water, although red in colour, is tasteless. Brook trout and grayling abound in this stream.—*L. Brenot, D.L.S., 1911.*

(*East outline.*)—Farrel Creek, formerly known as Red River, crosses this outline in section 13. This stream has an average width of eighty links and ranges from one to five feet in depth. It flows through a valley twenty chains in width, from two hundred to three hundred feet in depth, and has a current varying from three to five miles per hour. With the exception of small flats in the valley of this stream the land is not suitable for agricultural purposes being chiefly composed of sand and gravel, clay appearing in a few places. The surface is rolling and in general devoid of vegetation other than moss. Jack pine two to six inches in diameter with some poplar and birch is the only timber to be found. No stone-quarries, water-powers, coal or lignite veins, nor other minerals were observed. Signs of moose and bear were seen as well as some of the smaller fur-bearing animals, but partridges and prairie chickens were scarce.—*L. Brenot, D.L.S., 1915.*

Tp. 85 (*West outline.*)—Through the centre of this township flows Ground-birch Creek, a stream from thirty to sixty links wide and from two to three feet deep at low water, but being a mountain stream it rises very quickly and to a great height; the marks of the high water show that it rises about ten feet above its normal level. A fine prairie, the soil of which is very good, being chiefly humus from three to six inches, overlying a subsoil of sandy loam, extends about one and a half miles on each side of this creek. The northern part of this township is timbered with heavy spruce and poplar from six to eighteen inches in diameter.—*L. Brenot, D.L.S., 1911.*

Tp. 86 (*West outline.*)—See reports for townships 87 and 88, range 25.—*L. Brenot, D.L.S., 1911.*



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