THE PALLISER SURVEY : 1857-1860

Accepted

April 19, 1950

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS
IN THE DEPARTMENT OF HISTORY AT THE UNIVERSITY OF
BRITISH COLUMBIA

JAMES J. DENHOLM

APRIL, 1950
Captain John Palliser and Dr. James Hector in 1860
PREFACE

---

The pages of history are dotted with the names of men who have made only a small contribution to the sum of human knowledge. Often only a name, linked with a brief mention of some achievement, are all that remain to remind us that a man did exist. This thesis is an attempt to save one such man from near-obscurity.

Much of Captain John Palliser has already been forgotten—his early life, his background, his character, are at least veiled if not completely obscured. All that remains is the record of his achievement; the report of the surveying expedition which, between 1857 and 1860, he led across the plains and mountains of what is now western Canada. Many historians and agriculturalists have consulted this report, but in my opinion only a few demonstrate more than a superficial knowledge of the document, and most have misinterpreted the conclusions there set down. This thesis is an attempt to reassess the Palliser survey.

The report prepared by Captain John Palliser is well-written, very detailed, and comprehensive; in short, a perfect hunting ground for the research student. On the surface the study of this report is an integral unit falling within easily definable limits, but in reality, a complete reappraisal of its contents would require the combined skills of scholars in many fields, from anthropology through to astronomy. The problems of the scientist have been largely dropped in this study; a criticism of the geological, botanical, meteorological, and other similar observations has been left to the specialists in those particular fields. Except where it has been necessary to draw upon the knowledge of the agronomist or economist, this thesis is an attempt to study the Palliser survey from the point of view of the historian.

It has already been noted that the Palliser surveying expedition was in the field from 1857 to 1860. Between 1860 and the opening decades of the twentieth century, many other surveying parties traversed the plains and mountains of western Canada. This thesis is not an attempt to compare the Palliser survey with surveys conducted in the late nineteenth and early twentieth centuries, it is an attempt to evaluate Palliser's observations in the light of present-day knowledge.

Finally, I would like to thank the members of the Faculty without whose assistance this thesis would not have been completed. The advice of Dr. M.Y. Williams and Dr. J.L. Robinson of the Department of Geology and Geography was invaluable in the preparation of the final chapter. Nevertheless, the opinions expressed in this thesis are my own.

J.J. Denholm,
April 11, 1950.
Table of Contents

---

Frontispiece: Captain John Palliser and Dr. James Hector in 1860 ........................................ II

Preface ........................................................................ III


Chapter II: THE SURVEYS OF 1857 ......................... 39

Chapter III: THE SURVEYS OF 1858 ....................... 85

Chapter IV: THE SURVEYS OF 1859 ....................... 124


Appendices:
Appendix I - Instructions to Captain John Palliser from Rt. Hon. H. Labouchere, H.M. Sec. for the Colonies ................. ii
Appendix II - Instructions from Captain Palliser to Dr. Hector ........................... v

Maps:
#1 - Physical Map of Manitoba, Saskatchewan, and Alberta.................. vii
#2 - Natural vegetation ................................................................ viii
#3 - Generalized Soil Map of the Prairie Provinces ............................... ix
#4 - Main Types of Farming ................................................. x
#5 - A General Map of the Routes in British North America Explored by the Expedition Under Captain Palliser, during the years 1857, 1858, 1859, 1860 .......... (see envelope)

Bibliographical Note ......................................................... xii
During the first half of the nineteenth century the exploration of the great plains and Rocky Mountain region of British North America ground on at a slow pace. The great voyages of discovery had long since been made, but a vast expanse of territory between the North Saskatchewan River and the forty-ninth parallel remained virtually unexplored. There was a similar void of information regarding passes through the Rockies south of the Hudson's Bay Company Athabasca-Boat Encampment Pass. New surveys were needed to bring the findings of the early explorers up to date, preferable in the form of careful scientific coverage of the area.

In 1857 the British Government, influenced by the Royal Geographical Society and the government of the two Canadas, commissioned an expedition under Captain John Palliser to explore this western region. By its instructions from the Colonial Office the Palliser expedition was: to ascertain whether the existing canoe routes through British territory to the Red River might be shortened and improved at reasonable outlay; to obtain information about the almost unknown territory between the Canadian Shield and the Rocky Mountains, with particular reference to the agricultural potentialities of the region and the possibility of improving internal transportation; and to determine whether any practicable pass existed through the southern Rockies within British territory.

Between 1857 and 1860 Palliser, together with Dr. James Hector, E. Bourgeau, and Lieutenant Thomas W. Blakiston, a geologist, botanist, and meteorologist respectively, conducted an extensive survey of western British North America between the forty-ninth and fifty-fifth parallels. In 1857 they surveyed the lakes and rivers between Lake Superior and Lake Winnipeg and what is now southern Manitoba and Saskatchewan. In the following year the expedition traversed the valley of the North Saskatchewan, the foothill region of the Rockies, and several passes through the southern portion of that range. During 1859 and the spring of 1860 Palliser completed the surveys of what is now southwestern Saskatchewan and southeastern Alberta, and of the passes of the Rockies. Thus Captain Palliser and his associates were the first to conduct careful, detailed, and scientific surveys of western British North America.

In the introduction to his report to the Colonial Office, a document which contains the detailed journals and observations of the expedition, Palliser summarizes his conclusions. With regard to the first of his instructions, Palliser advised against any expenditure to improve transportation facilities between Lake Superior and the Red River settlement. Second, his discussion of the agricultural potentialities of the prairie region was a strange mixture of pessimism and optimism. He condemned much of the southern prairies as an arid desert, a region which has since been referred to as the "Palliser triangle," but he could only find words of praise for the land to the north in the valley of the North Saskatchewan. Palliser has often been criticized for his appraisal of the southern prairies, but many of those who scoffed at his condemnation attempted to farm in the region succeeded only in proving the accuracy of his evaluation. Finally, with regard to the possibility of forcing a road or rail link through the Rockies within British territory, Palliser's conclusion was both definite and discouraging.
He acknowledged the existence of several practicable passes but he felt that the Pacific coast possessions of Great Britain had been outflanked by American expansion, and for that reason construction of a transportation link entirely through British territory to the Pacific would be both unwise and uneconomical.

It is obvious that Palliser made mistakes in many respects, particularly with regard to the construction of a transportation link through British North America to the Pacific coast, but for the most part time has shown the wisdom of his judgements. It is doubtful if any other explorer or early surveyor of western British North America made so accurate an appraisal. In condemning the southern portion of what is now Alberta and Saskatchewan as an arid desert, unfit for cultivation, Palliser offered advice which if studied and followed would have saved inestimable amounts of time and money, and he may be justly counted among the foremost figures in the early western Canadian scene.
Chapter I

The Area and the Problem

And the Lord spake unto Moses, saying, send thou men, that they may search the land of Canaan ..............

Numbers XIII : 1-2

Man is inquisitive by nature, as are most animate beings. Since the dawn of recorded time, and no doubt before it also, he has urgently desired to lift the veil that covers the unknown, discover what lay beyond, and bring back the tales of his discoveries to his fellows. Eve reaching for the apple, and the one last glance of Lot's wife, after it had been forbidden her, are Biblical epitomes of this trait, and even the tale of the foolish fly and the spider's parlor may be interpreted as a caricature of man's endless inquiry. Despite the often disastrous consequences of such investigations, curiosity has invariably triumphed over fear, and the fate of those who made a mistake has been forgotten.

Until the modern era, the inquiring curiosity of mankind found one ready means of concrete expression in voyages into those portions of the globe which lay beyond the boundaries of the voyager's own immediate environment or civilization. Today the same tendency to delve more deeply into the mysteries of our environment is centered on science. This process of inquiring into the unknown we call "exploration", 
regardless of the field to which it is applied, whether it be in the realm of mental processes or physical processes, of science or of geography. For the present, it is the latter with which we are primarily concerned.

In the second century B.C., Hero of Alexandria devised a toy, for it was little more, operated by steam, but not until the nineteenth century A.D. did man effectively harness this power which was known to exist. This is probably the most striking example of the lapse of time between initial discovery and utilization, the double facets of exploration. Similarly, the discovery of a medieval manuscript is an important event, but is in itself meaningless. It will acquire true meaning only when the scholar has examined the content of the manuscript and arrived at some estimate of the concrete addition it will make to the sum of human knowledge. Again, the double meaning of the word is illustrated. Webster defines exploration as the "act of exploring, as for geographical discovery; examination". This definition further exemplifies the dual nature of the term; the essential difference between initial discovery and later examination to determine the significance and possible utility of the discovery.

The great pioneers of modern geographical discovery are well known. The mere mention of "discovery" calls to mind

such names as De Gama, Columbus, and Magellan, and a moment's reflection will reveal why. The fact that these men were discoverers or pioneers is in itself unimportant, for they are not the only men to deserve such identification. Their contribution and the source of their greatness was to make the original discovery and make it known, to set the scene for later investigations, for the man whose name is synonymous with the discovery of an entire continent, or even of the world as a whole, could not be concerned with detailed investigation of the regions which he discovered. The pages of history are dotted with the little-known names of those men who followed in the footsteps of the original discoverers and concerned themselves with detailed or at least more specialized investigation. These were the men who charted the bays and reefs, followed the rivers to their headwaters and crossed the mountain ranges, and then added their discoveries to the map. We are to be primarily concerned with the men who filled in one small portion of the map of North America; the men who explored that portion of what we now call Canada lying west of the Great Lakes and Lake Winnipeg to the valley of the Columbia River, and between the north branch of the Saskatchewan, the headwaters of the Athabasca, and the forty-ninth parallel.

Who were the men to first push into this region? They were of two races, the French and the English, for both had access to the area, the former through the St. Lawrence valley
and the latter by way of Hudson Bay. They, like De Gama, Columbus, and Magellan, were discoverers and pioneers, but they were in effect digesting only a portion of the original great unit of discovery. Among the French, Jacques de Noyen, Zacharie Robutel de la Noüe, Pierre Gaultier de Verennes Sieur de La Vérendrye, and Joseph Boucher Chevalier de Niverville are the names to remember. Between 1668 and 1751, together with innumerable coureurs-de-bois and a few Jesuit missionaries, they pushed westward from the Great Lakes toward the Rockies, rolling back the curtain which covered the unknown.

While their French competitors pushed energetically westward, the great English trading organization, the Hudson's Bay Company, confident in its monopoly and its communication route, did not venture beyond the margin of Hudson Bay.

---

2. The Royal Charter of May 2, 1670, incorporating the Hudson's Bay Company, defined its territories as follows:
The company is to have "... the sole trade and Commerce of all those Seas Streights Bayes Rivers Lakes Creekes and Sounds in whatsoever Latitude they shall bee that lie within the entrance of the Streights commonly called Hudsons Streights together with all the Lands and Territoryes upon the Countryes Coastes and confynes of the Seas Bayes Lakes Rivers Creekes and Soundes aforesaid ... And that the said Land bee from henceforth reckoned and reputed as one of our Plantacions or Colonyes in America called Ruperts Land".

(Charter, Statutes, Orders in Council, etc. Relating to the Hudson's Bay Company, London, Hudson's Bay Company, 1931, p.11)

3. The first thoroughfares of Canada were her waterways. From the head of Lake Superior to the Lake of the Woods explorers and traders followed several routes:
1. The Fond du Lac route to Rainy Lake.
2. The Grand Portage route which followed what is now the international boundary to Rainy Lake.
3. The oldest was the Kaministikwia route from the mouth of that river to Rainy Lake.
4. The Lake Nipigon route by way of English river.
From Hudson Bay to the interior one of three routes were used via the Churchill, Nelson, or Hayes river.

(L.J. Burpee, "How Canada was Revealed", Royal Society of Canada Proceedings and Transactions, vol. 31 (May, 1937), p. LCI.)
In the last quarter of the seventeenth century, however, the Company posts on the Bay were harried by French attacks from both land and sea, the most notable being those under the ubiquitous d'Iberville who for several years held the English posts on James Bay. To offset the loss of these forts, the Company looked to new fields for furs. Accordingly, a young employee, Henry Kelsey by name, was sent out "to the country of the Assinae Poets [Assiniboines] to invite the remoter Indians to trade". He left York Factory in June, 1690, and penetrated the plains of the Saskatchewan as far west as the Touchwood Hills and the present city of Saskatoon. Unfortunately, Kelsey's discoveries were never followed up, for the Treaty of Utrecht returned the Bay forts to the Company and it relapsed into its former policy.

To the south and west, the French were spurred on in their exploration and trade expansion by a double motive; first, the omnipresent quest for a route to the western ocean, and second, the desire to straddle the Indian trade routes to Hudson Bay and tap the flow of furs to the warehouses of the Hudson's Bay Company. By 1750, La Vérendrye's forts, La Corne, Paskoyac, Bourbon, La Reine, Rouge, and Maurepas, had restricted the trade of the English company to the almost-exhausted fur country between Lake Winnipeg and Hudson Bay, and the Company was being strangled in the noose of its own "hug the Bay" policy.

Thus in the spring of 1754 when Anthony Henday, a servant of the Company at York Factory, offered to journey to the interior and do what he could to entice the Indians to the Bay, the Company was only too happy to underwrite the journey. In the space of one year, less six days, Henday journeyed to Lake Winnipeg, up the Saskatchewan to the forks, then out on to the plains to the south. Continuing westward he crossed the Eagle Hills and the Battle River, and pushed on until he reached the North Saskatchewan near the spot where the North West Company's Rocky Mountain House later stood, in full view of the Rockies. Henday drifted northward for several weeks, trapping and hunting as he went, then turned east and returned to York Factory by the North Saskatchewan. He largely failed in his attempts to draw the Indians of the plains to the Bay, for as they said, "we are conveniently supplied from the French House". The only alternative was for the Company to establish posts inland and meet the French competition on the spot.

Before the Company had had time to establish posts inland, developments in the east and in Europe removed the French traders from the field. After the fall of Quebec in 1759 and the British acquisition of New France by the Treaty of Paris, French competition all but disappeared from the field and

5. The name is variously spelt Henday, Hendey, and Hendry. Henday, the spelling preferred by Arthur S. Morton, the leading authority in the field, has been followed. (cf. Morton, A History of the Canadian West, p. 244, and A.S. Morton, "L.J. Burpee, The Search for the Western Sea: a review", Canadian Historical Review, vol. 17 (June, 1936), pp. 200-201).

further exploration and discovery were left entirely to the English traders. Within a decade the French posts west of the Great Lakes, so laboriously established by La Vérendrye and his successors, fell into decay and the discoveries of their founders were forgotten. The Hudson's Bay Company lapsed into its former ways, again alone in the field, but only for a short time.

The British flag had hardly been raised in New France before independent traders from Montreal were pushing out on to the plains in much the same manner as their French predecessors had done, and with similar effect. This time it was Mathew Cocking, the accountant at York Factory, who was sent inland to analyze the situation and report to the Company. Cocking left York Factory on June 27, 1772, and followed Henday's route up the Saskatchewan to the vicinity of the later Fort Carlton. He then turned south on to the plains, where he met bands of Cree and Gros Ventre Indians, who demonstrated no inclination to bring their furs to Hudson Bay. On his return to York Factory Cocking recommended that posts be established in the interior, but before his report reached England this very step had been decided upon. Samuel Hearne, newly returned from his exploration of the Coppermine and Slave Rivers, undertook the construction of the first such post. In 1774 Hearne built Cumberland House on Pine Island, lying between Cumberland Lake

8. V. infra., p. 10
and the Saskatchewan. This move committed the Hudson's Bay Company to a policy of active competition for the interior trade, and began the chain reaction of exploration and discovery which within two decades was to culminate in Alexander Mackenzie's voyage to the Pacific.

Now let us follow an earlier portion of Samuel Hearne's career. During the third quarter of the eighteenth century, numerous and persistent reports reached Fort Churchill of rich alluvial deposits of copper along the banks of a great northern river. By 1768 these reports had multiplied to such an extent that the factor at the post decided that they were worthy of serious investigation. Samuel Hearne, a young Company employee, volunteered to search for the river, and first embarked for the Coppermine in November 1769. This and a second attempt the following year failed because Hearne neglected to include a few squaws in his party. On both occasions, the Indian guides went only a few miles and then refused to continue without women to do the menial labour of the camp. In December, 1771, he set out again, this time accompanied by a few squaws, for as he said:

... though they do everything they are maintained at a trifling; for as they always stand cook, the very licking of their fingers in scarce times is sufficient for their subsistence.

This time Hearne succeeded in reaching the mouth of the Coppermine River and on his return journey traded with the Indians around Great Slave Lake. The fact that Hearne did not find a great deposit of copper is in itself unimportant; what is

important is that he was commissioned to find such a deposit, for Hearne's explorations represent the first departure of the Hudson's Bay Company from a purely fur-trading economy, and this expedition is the first which may be termed "scientific", if only in a minor sense. The most important discovery of Samuel Hearne's expedition was geographical rather than geological. Since he passed from Fort Churchill to the mouth of the Coppermine River without encountering a salt-water strait, the Strait of Juan de Fuca and the chain of lakes and rivers supposedly discovered by de Fonte were proven to be non-existent and disappeared from succeeding maps. To the contrary, Hearne states:

... when I was at my greatest western distance, upward of five hundred miles from Prince of Wales's Fort, the natives, my guides, well knew no end to the land in that direction; nor have I met with any Indians, either northern or southern, that ever had seen the sea to the westward .... I have seen several Indians who have been so far west as to cross the top of that immense chain of mountains which run from north to south of the continent of America. Beyond those mountains all rivers run to the westward.

Thereafter the search for the northwest passage was directed to the west rather than to the north, for hope of finding a practicable northwest passage by water was all but obliterated.

As the more adventurous of the traders pushed farther and farther west they left behind them a vast expanse of unexplored territory. Scores of traders contributed in some small way to the survey of this territory, but only a few made any appreciable contribution to the survey of that region west of Lake Winnipeg and south of the Saskatchewan with which

---

we are primarily concerned. By limiting the discussion to this latter group it is possible to pass over the surveys of James Finlay, George Charles, Philip Turnor, and the two Frobishers. Furnor's pupil and successor, Peter Fidler, is not so easily ignored. During his early years with the Company Fidler restricted his activities to the region west of Lake Winnipeg, but 1792 found him at Buckingham House near the forks of the North Saskatchewan and Vermilion Rivers, then the most westerly Hudson's Bay post. From 1792 almost until his death Fidler crossed and recrossed the country between the two Saskatchewans, mapping it for the Company. It was Fidler who in 1800 founded Chesterfield House, the only fort ever established on the bend of the South Saskatchewan, but it was soon abandoned. In later life Fidler conducted similar surveys in what is now southern Manitoba, along the valleys of the Red and Assiniboine.

Soon after Samuel Hearne completed the construction of Cumberland House, he returned to York Factory, leaving the new post under Mathew Cocking. Cocking had hardly had time to take stock of his new duties before his post was overrun by an invasion of traders from the Great Lakes, among whom were Alexander Henry and Peter Pond. In the years which followed, these two travelled over much of the country east of the Rockies.

In 1776, Henry traversed the country between the branches of the Saskatchewan, and in the following season turned his attention northward, ascending the Churchill River to Lac Ile-a-la-Crosse. Henry was unfortunately a fur trader above all
else, and could see no material reason to continue westward, otherwise he might have anticipated the momentous discoveries made a few years later by Alexander Mackenzie.

Henry's early companion, Peter Pond, is better known and rightly so, for he was a much keener and more intelligent observer than his friend. In 1776 Pond ascended the Saskatchewan to the forks, wintered there, and in the following season traversed the Saskatchewan country. In the spring of 1778, Pond descended the river to Sturgeon Lake, north of the Saskatchewan, and there met a group of independent traders, all burdened with surplus trade goods. These men pooled their stock and entrusted it to Pond, instructing him to found a post in the Athabasca country. He paddled north to the Churchill River and ascended it to Lac Ile-a-la-Crosse; Henry's point of farthest penetration. Continuing in a northwesterly direction, Pond portaged across the divide between the Churchill and Athabasca basins to the Clearwater, a tributary of the Athabasca. This portage, Methy Portage as it came to be called, became the gateway to the vast north country. Pond founded a post near the mouth of the Athabasca and made it his headquarters for the next six years, ranging to the north and west. Peter Pond's chief contribution to the opening of the west and north country was his maps, the product of an intelligent and inquiring mind. In their day, they were matched only by those of David Thompson. 11

Peter Pond's successor was Alexander Mackenzie, a young Scot, with too vivid an imagination to make a good trader,

11. V. infra., p. 15.
but with the natural curiosity of an explorer and man of science. Taking up where Pond had left off, Mackenzie began his first great voyage of discovery in 1789 from his base at Fort Chipewyan on Lake Athabasca. He made his way to Great Slave Lake, and down the river which was later to bear his name; but he was thwarted in his main purpose: to find a route over the mountains to the Pacific. Mackenzie determined to set out on a different tack, and in October, 1792, again left Fort Chipewyan. He ascended the Peace River to the mouth of the Smokey and there passed the winter. Early in May of the following year he continued up the Peace to the forks of the Parsnip and Findlay rivers, and on the advice of an old Indian followed the south branch, the Parsnip. From the headwaters of the Parsnip he portaged to a tributary of the Fraser, followed it for some distance, and then struck out overland for the coast along a well-defined Indian trail. He reached tidewater on Bella Coola Inlet, where he painted on a rock: "Alexander Mackenzie, from Canada, by land, the twenty-second of July, one thousand seven hundred and ninety-three!" 12 He had conquered the continent, being the first white man north of Mexico to cross it from ocean to ocean.

Twelve years after Mackenzie's voyage to the ocean, another Scot, Simon Fraser, crossed the Rockies by the trail which his countryman had blazed, and established a trading post on the upper waters of the Parsnip. In the following year, 1807,

he built a second fort, Fort George, at the confluence of the Fraser and Nechaco Rivers, and it was from there that he began one of the most daring canoe voyages in history. In May he set out to descend the Fraser River, which he mistook for the Columbia, to its mouth. The difficulties of his descent are obvious or at least easily imagined, by anyone who knows the Fraser canyon. On June 31, Fraser reached the mouth of the river which later bore his name, and was disappointed to find that it was not the Columbia. His observations placed him on the forty-ninth parallel, three degrees north of the known latitude of the Columbia's mouth.

With the blazing of a trail through the Rocky Mountains to the Pacific the age of initial discovery drew rapidly to a close. This closing phase was dominated by the personality and achievement of one man, David Thompson, whose career of exploration and discovery spans twenty-eight years of the late eighteenth and early nineteenth centuries. There was not a year in those twenty-eight in which he did not add something to the sum total of geographical knowledge.

Young Thompson entered the service of the Hudson's Bay Company in 1784 at the age of fourteen, and from then until his virtual retirement twenty-eight years later he kept an orderly series of journals. As he had had some early education in mathematics, Thompson was apprenticed to Philip Turnor, and from him learned the principles of surveying. In 1797, when his contract with the Hudson's Bay Company

13. V. supra., p. 10.
expired, Thompson decided to throw in his lot with the North West Company, apparently as a result of the growing antagonism between himself and his fellow-pupil, Peter Fidler. During his first twelve months with the North West Company he conducted a careful survey of the Assiniboine to its source, crossed the prairie to the Missouri River, returned to the Assiniboine and so to the Red River, and ascended the Red to Pembina. All this region he mapped with great care and relative accuracy. In the years 1798 and 1799 Thompson turned to the northwest, traversing the Athabasca and its tributaries and exploring the headwaters of the North Saskatchewan River. March, 1800, found him at Rocky Mountain House on the North Saskatchewan, then the most westerly post of the North West Company and consequently the jumping-off place for any party planning to cross the Rockies, and this was Thompson's intention.

During the summer of 1800 Thompson made two false starts across the Rockies, first up the Red Deer River and then up the Bow, searching for a practicable pass. He then abandoned the scheme temporarily, and during the next six years he returned to his surveys in the north and east. In 1807 Thompson was back at Rocky Mountain House and during the next five years he was almost continuously on the Pacific watershed. In the spring of 1807 he crossed the Rockies to the Blaeberry River by a pass which he named Howse Pass. He descended the Blaeberry to the Columbia, and then trekked to Lake Windermere,

its source, where he built a small post, Fort Kootenay. During the next five years Thompson surveyed and mapped the Kootenay River and the Columbia River from source to mouth, and discovered yet another route through the Rockies, Athabasca Pass, from the Athabasca river to Boat Encampment at the mouth of the Canoe River, a tributary of the Columbia.

In May, 1812, David Thompson left the Pacific watershed for good and returned to Montreal, where he spent the next two years preparing his great map of western British North America, which was to remain the best map of the northwest for over half a century. A quotation from A.S. Morton's History of the Canadian West perhaps best sums up David Thompson's achievements.15

David Thompson will always stand out beyond his fellows in the eyes of the historian and geographer .... None ... saw the beauties of the North-West landscape as he did. Not only did he survey its rivers and observe the physical features of the land in detail; he noted its trees and the manner of their growth; he studied its animals and its fish, and he has left us vivid pictures of their habits, and of the ways of the savages in catching them .... His greatness as a surveyor and geographer is attested by his Journals and his Courses and by his "Map made for the North West Company in 1813 and 1814", which marks his last connection with that "concern". It embraces, it is true, the surveys of Philip Turnor, and of Sir Alexander Mackenzie, and of John Stuart of New Caledonia, Fraser's companion on his journey to the coast, but its main feature is that it embodies his own life work as a surveyor.

Alexander Mackenzie's dash to the Pacific and David

Thompson's surveys along the Columbia marked the completion of the first phase of exploration. The initial burst of discovery had run its course and the second phase began: the careful scrutiny and evaluation of the discoveries.¹⁶

The first men to augment the bare facts of discovery by the collection and tabulation of scientific data, were those associated with Sir John Franklin and his quest for the north-west passage. In fact, Franklin's name dominates the period between 1820 and 1857. On his first overland expedition in search of the north-west passage, begun in 1819, Franklin's party included John Richardson, a man of considerable scientific attainments. The expedition landed at York Factory in August, 1819, and journeyed to Fort Chipewyan on Lake Athabasca. In May of the following year Richardson trekked southward to the plains, studying the plant and animal life in the vicinity of Fort Carlton, but the majority of his surveys were made in the far north, beyond the scope of the present study.

Franklin's second land expedition, in the field between 1825 and 1827, was more important from the point of view of this discussion. The assistant naturalist, Thomas Drummond, was detached from the main party at Cumberland House, and during the latter months of 1825 he collected specimens of the plant and animal life, and made astronomical observations along the North Saskatchewan to Fort Edmonton.

¹⁶. A clearly defined interregnum between the two phases obviously does not exist, but for the sake of clarity this is the most convenient point of division.
He then crossed the Red Deer River and journeyed through the Rockies to the Columbia valley and the headwaters of the Athabasca River. In April, 1826, he turned north to the headwaters of the Peace, then back to Fort Edmonton and Fort Carlton, and so to England.\textsuperscript{17}

While on the upper reaches of the Columbia, Drummond met a young Scottish botanist named David Douglas, on commission from the Horticultural Society of London and the Hudson's Bay Company to study the flora of the country between northern California and the headwaters of the Columbia.\textsuperscript{18} For four years (1823-1827) Douglas travelled through the valleys of the Rockies, amassing not only botanical information but also several volumes of lunar, magnetic, meteorological, and geographical observations.\textsuperscript{19}

At this point Sir John Franklin enters the picture once more, but in a more tragic role. In May of 1845 Franklin sailed from England, again in search of the north-west passage, but this time by sea. From his own findings on the two previous overland expeditions, and from the cumulative discoveries of John and James Ross, William Edward Parry,

\begin{itemize}
  \item \textsuperscript{17} Introduction to Sir John Richardson, ed., \textit{Fauna Boreali-Americana}, London, John Murray, 1839, vol. 1, p. XIV.
  \item \textsuperscript{18} The Douglas Fir (\textit{pseudotsuga taxifolia}), native to the northwest coast of North America, was named after David Douglas (E.S. Harrar, "Douglas-Fir", \textit{Encyclopaedia Britannica}, 1945, vol. 7, p. 555).
\end{itemize}
George Back, Thomas Simpson, Peter Warren Dease, and Edward Belcher, Franklin felt that he could sail his two ships, the Erebus and the Terror, through the long-sought-for north-west passage. The tragic fate of Franklin and his men is well known. His two ships were last seen off Lancaster Sound on May 26, 1845, by the whaler, Prince of Wales.

Early in 1848 plans were made to send three parties out to search for the Franklin expedition, two by sea, from the east and west coasts respectively, and one overland under Sir John Richardson. It will be remembered that Richardson had been attached to both Franklin's overland expeditions, and was therefore admirably suited to conduct a search for his former commander in the Mackenzie delta region, for that was his commission. Richardson travelled to the Mackenzie via the Great Lakes, Lake Winnipeg, and the Saskatchewan, and despite the urgent nature of his task wrote a most interesting account of the country through which he travelled. A keen

20. Between 1818 and 1842 these men gathered a considerable body of information about the Arctic waters from both land and sea investigation.


22. V. supra, p.16.


observer, with considerable scientific insight, his journal is a mine of contemporary knowledge of the west. In a lengthy appendix he summarizes his knowledge of the geology, terrain, climate, vegetation and so on of the country he traversed, although it must be admitted that his survey was limited to the eastern and northern section of the plains.\textsuperscript{25}

The sources of accurate material concerning the plains of British North America readily available to the scientist or scholar of that day may be briefly and simply surveyed. Geographically, the best and in many cases the only maps available were those prepared in 1813 and 1814 by David Thompson. Knowledge pertaining to the physical sciences, such as it was, could be found in the appendix to Sir John Richardson's \textit{Arctic Searching Expedition}.\textsuperscript{26} The natural scientist had a better reference work in the four-volume \textit{Fauna Boreali-Americana}, edited by Sir John Richardson and published between 1829 and 1837. It was a tabulation of all the then available information on the plants and animal life of northwestern North America.\textsuperscript{27} All these sources were far from adequate and there

\begin{itemize}
\item \textsuperscript{25} Sir John Richardson, \textit{Arctic Searching Expedition}, London, Longman, Brown, Green, and Longmans, 1851, appendix to volume 2, pp. 161-416.
\item \textsuperscript{26} \textit{Loc. cit.}
\item \textsuperscript{27} Introduction to Richardson, ed., \textit{Fauna Boreali-Americana}, vol. 1, pp. XI-XII.
\end{itemize}
appeared to be no immediate hope of improving them.  

Previous to the embarkation of his second expedition, Sir John Franklin asked the Hudson’s Bay Company to instruct its factors to aid in the collection of scientific information. Many co-operated, notably at the posts on James Bay, the Columbia, and in New Caledonia, but no mention is made of co-operation from the plains posts, in a region about which little was known. Even if the factors at the interior posts had made careful and accurate observations, and it is doubtful if any were qualified for such a task, an extensive area southward to the forty-ninth parallel and beyond would have remained unsurveyed. The posts were situated on a ganglion of waterways in two chains running west from Lake Winnipeg. First, the Ile-a-la-Crosse, Methy Portage, Athabasca chain;  

28. Reference might also be made to the writings of Sir George Simpson, particularly the narrative of his journey around the world in 1841-1842 (see Sir George Simpson, Narrative of a Journey Around the World, London, Henry Colburn, 1847, vol. 1). On this journey he crossed the Rocky Mountains by Simpson Pass on the headwaters of the Bow River, but his account of the country is sketchy at best. The travels and discoveries of James Sinclair and Father De Smet in the Rocky Mountain region have also been omitted for the simple reason that neither of these men left records of their travels. Sinclair led two parties of emigrants from the Red River settlement to Fort Colville in 1841 and 1854, but the route by which he crossed the mountains has not been definitely established. It is believed that he used Whiteman Pass (between Simpson Pass and Kananaskis Pass). In 1845, Father De Smet, an Oregon missionary, crossed the Rockies to Rocky Mountain House, and like Sinclair, probably used Whiteman Pass (see J. N. Wallace, The Passes of the Rocky Mountains Along the Alberta Boundary, The Historical Society of Calgary, 1927, p. 3).  

and second, the Saskatchewan, North Saskatchewan chain, each with a mountain pass as a final link, the former through the old North West Company Howse Pass, virtually abandoned after union in 1821. Neither had the establishment of Selkirk's Red River colony encroached upon this vast unknown territory. It must be remembered that Selkirk's original grant of 1811 did not give him title to the land west of the 104th meridian, and the settlement itself was limited to the Red River basin. What was known about this region in 1820 is candidly summed up by Sir John Richardson, and the situation was little different in 1850.  

Between the limestone district immediately west of Lake Winnipeg and the foot of the Rocky Mountains, there is an extensive tract of what is termed Prairie Land. It is in general level, the slight inequalities of surface being imperceptible when viewed from a distance, and the traveller in crossing it must direct his course by the compass or heavenly bodies, in the same way as if he were journeying over the deserts of Arabia. The soil is mostly dry and sandy, but tolerably fertile, and it supports a pretty thick sward of grass, which furnishes food to immense herds of bison .... They are partially intersected by some low ridges of hills, and also by several streams, the banks of which are wooded, and towards the outskirts of the plains were many detached clumps of wood and picturesque pieces of water, disposed in so pleasing a manner as to give the country the appearance of a highly cultivated English park. In the central parts of the plains, however, there is so little wood that the hunters are under the necessity of taking fuel with them on their journeys, or in dry weather making their fires of the dung of the bison.


It was not only the British Government and the Hudson's Bay Company which were interested in the exploration of the vast wilderness beyond the Great Lakes. To the east the two Canadas and the Maritimes were experiencing a tremendous trade boom during the 1850's. Their economy had suffered a sharp set-back in 1846 after the victory of free trade in the mother country, but recovery was rapid. The low point was reached in 1849 when the Annexation Manifesto was circulated in Montreal, but once the initial burst of enthusiasm had passed, it speedily collapsed. The advocates of annexation were partially appeased (at least those who signed the petition from purely mercenary motives) by the boom of the early 1850's and the negotiation of the Reciprocity Treaty with the United States in 1854. The next decade was one of great prosperity for Canada, maintained by three main factors: reciprocity with the United States, which was also experiencing an economic boom; the market for Canadian goods created by the Crimean War; and closer to home, her own railroad building program. Trade flourished and much capital flowed into the country. The Canadas dreamt that they would become the trade channel to the booming American west, linked by rail, road, or canal. The Maritimes envisaged themselves as the eastern terminus for the

32. Mileage increased from two hundred in 1853 to over eighteen hundred in 1859 (Oscar D. Skelton, "Canada Under Responsible Government, 1854-1867", in J. Holland Rose and others, eds., Cambridge History of the British Empire, Cambridge University Press, 1930, vol. 6, p. 338.)
traffic of North America flowing from the west. It was a marvelous dream but far from realization.

By the decade of the 1850's the first and most important link necessary for the realization of the dream, the Intercolonial Railway, was still far from completion. The Grand Trunk Railway was financially unable to undertake the task and there was little or no hope that private capital would push through the line without public aid. Negotiations with the British government for an imperial guarantee invariably fell through. Completion of the second link, an all-Canadian transportation route between Canada West and the plains of British North America, was an even more forlorn hope. North of Lake Superior lay the vast expanse of the Canadian Shield, for obvious reasons a formidable barrier to even road or canal construction and an almost insurmountable obstacle to a railroad.

The mid-century economic boom was accompanied by a steady and increasing flow of settlers into the few unoccupied arable regions of the united Canadas, mainly in Canada West. In 1854 alone, fifty thousand immigrants landed at Quebec and seven thousand more came from the United States. Unfortunately, by the 1850's the agricultural frontier in Canada West had reached its limit and only poor marginal land remained. The omnipresent barrier of the Canadian Shield limited agrarian settlement to the east in much the same manner in which the

Appalachian Barrier had limited American expansion almost a century before. The Americans had long since surmounted this obstacle, opening the Mississippi and Ohio valleys to settlement, and it was to this region that many of the British North American immigrants and even long established Canadian settlers turned. Beyond the Shield, however, lay thousands of square miles of territory inhabited only by Indians, a few Hudson's Bay Company traders, a handful of Scottish settlers in the Red River settlement, and millions of buffalo. Here lay the obvious solution to the land problem, but the territory had the serious disadvantage of being readily accessible through the United States, and the few immigrants who did set out for the British northwest could not resist the obvious advantages of the American agrarian frontier which presented themselves along the way.

In reality, there were two possible routes to the western plains of British North America during the 1850's which the traveller or immigrant might follow, the first impractical and the second undesirable. The oldest was of course the Hudson Bay route, but the navigation season on the Bay was so short and the route from the Bay to the plains so difficult that it could not handle a large volume of immigration and trade at reasonable cost. In any case, it by-passed the Canadas, and therefore was not considered worthy of development. The second route was relatively good, but it lay through United States territory, taking advantage of the American rail and
steamboat service as far as the headwaters of the Mississippi, but from its terminus there still remained a long trail even as far as the Red River settlement. From the point of view of defence, construction of Canadian communication lines tributary to the American route around the Canadian shield was out of the question (for example, south from the Red River settlement). Commercially, such a policy would probably do more harm than good to Canadian and Maritime business, draining the trade of the plains to American rather than Canadian centers. The only solution to the problem of transportation was to press through the Canadian Shield, linking east to west by rail, road, or water.

On the domestic scene during the 1850's, Canadian internal politics were rapidly moving toward a deadlock. In the preceding decade Canada West had been content with the 1841 terms of union with Canada East granting equality of representation in the legislature to both provinces, but by the middle fifties the population of the western province had surpassed that of its eastern neighbor and the demand arose within the growing province for a proportional increase in representation. French Canada naturally objected to such tampering with the balance of power, and with some reason, for when the union had been consummated in 1841 the population of Lower Canada exceeded that of Upper Canada in the proportion of three to two and they had been at a disadvantage.  

34. John Lewis, George Brown, Toronto, Morang and Co., 1910, p. 82.
friction, the idea of federating the two Canadas was advanced on several occasions, particularly by the Reform or "Clear Grit" party and their leader, George Brown. The members of this group were also the most vehement advocates of Canadian expansion to the northwest and the construction of some communication route between the two. Although it is not definitely conceded, it is highly probable that the Reform party looked to the addition of northwest British North America to Canada West as a means of obtaining economic advantage and particularly political supremacy. Such an acquisition would add strength to its demands for increased representation and if federation did come about give them a decided advantage over French Canada.

Aside from purely political considerations, this Canadian version of "manifest destiny" expressed the conviction of the hard-pressed agrarian frontier, from which George Brown and his Reformers drew the majority of their support. These were the people who first realized that the good lands of Canada were occupied, and that the only remaining frontier lay far away in the territory of the Hudson's Bay Company. Brown made reference to the future of the northwest as early as 1851 in his maiden speech in the Assembly, and in 1854 and again in 1856 he gave notice of a motion for a committee of inquiry, but on both occasions it was shelved to make way for other business. In 1852 he published an editorial in his paper the Toronto Globe which epitomizes his attitude and that of

the Reform party.  

It is a remarkable circumstance that so little attention has been paid in Canada to the immense tract of country lying to the north of our boundary line, and known as the Hudson's Bay Company's Territory. There can be no question that the injurious and demoralizing sway of that company over a region of four millions of square miles, will, ere long, be brought to an end, and that the destinies of this immense country will be united with our own. It is unpardonable that civilization should be excluded from half a continent, on at best but a doubtful right of ownership, for the benefit of two hundred and thirty-two shareholders .... Here is a field for Canadian enterprise .... Let one look at the map, and if he can fancy the tenth part that is affirmed of the wide region of country stretching westward to the Rocky mountains, he may form some idea of the profitable commerce which will soon pass through Lake Superior. Independent of the hope that the high road to the Pacific may yet take this direction, there is a field for enterprise presented sufficient to satiate the warmest imagination.

From then on the Globe led a vigorous campaign for the opening up of the territory to settlement and the establishment of communications with Canada, and in 1857 a convention of Reformers inserted a plank advocating just such a step in their party platform. It was resolved

... that the country known as the Hudson Bay Territory ought no longer to be cut off from civilization, that it is the duty of the legislature and executive of Canada to open negotiations with the imperial government for the incorporation of said territory as Canadian soil.

Here was a plank for the coffin of American "manifest destiny" and a tombstone for James Polk's "fifty-four forty or fight".

In reality, Canadian expansion westward was not merely limited by the lack of adequate transportation facilities. Before the dream of expansion could be realized the Hudson's Bay Company would have to be pried out of Rupert's

Land and the Northwest Territory, and American expansion forestalled. One ray of hope lay in the fact that the Company's twenty-one year trade monopoly in the Northwest Territory was due to expire in 1859. By 1859 the imperial government had begun to question the wisdom of leaving this Territory under Company control in view of frequently expressed dissatisfaction with the system in Canada, the Red River settlement and Vancouver Island. In 1857, two years before the monopoly was due to expire, a select committee of the imperial House of Commons was appointed to consider the future of the Hudson's Bay Company Lands. The Canadian government was glad that the enquiry was to be made, and promptly appointed Chief Justice W. H. Draper to represent Canadian rights and interests before the select committee. Nominally, the committee was to consider only the quality of Company rule as a reason for discontinuing its monopoly, but in reality discussion centered on the ability of the Company to forestall American infiltration and even military attack. Anxiety for the maintenance of British sovereignty throughout the west was the primary reason for the hostility of many Canadians to the Company and its monopoly. American settlement had already spanned the continent to Oregon in one gigantic leap, and the railways were not far behind. In 1852 steel had reached Chicago, and in 1854 had touched the Mississippi. By 1857 a branch had been completed as far north as Crow Wing, approximately one hundred miles northwest

of St. Paul and pointed directly at the Red River settlement. Accordingly, Draper was instructed to press strongly for the securing of the Northwest Territory against American pressure by the extension of the boundaries of Canada to the Pacific.\footnote{39} The committee sat for several weeks, examining representative witnesses from the Hudson's Bay Company, the Canadian government, the Grand Trunk Railway, and other interested parties, and then submitted its report. As is often the way with such bodies, it dodged the point of law at issue and did not recommend any immediate settlement of the dispute. It did recommend, however, that\footnote{40}

... it is essential to meet the just and reasonable wishes of Canada to be enabled to annex to her such portion of the land in her neighborhood as may be available to her for the purposes of settlement, with which lands she is willing to open and maintain communications and for which she will provide the means of local administration.

This threw the whole problem back into the lap of the Canadian government. Several other recommendations of the committee were acted upon, including the termination of the Company's connection with Vancouver Island, and in 1859 the Island became a Crown Colony. In further conformity with the committee's suggestions, the Company's exclusive monopoly in the Northwest Territory was extended for twenty-one years, on condition that territory which Canada might require for settlement would be released by the Company whenever a road or other means of communication had been built to the territory required.\footnote{41}

\footnote{41} Trotter, \textit{ibid.}, p. 243.
To these recommendations the Hudson's Bay Company had little choice but to concede, and so it continued to govern the Territory until 1863 when the Company was sold to a group of shareholders with avowed colonizing objectives, but in 1857 Canada was anxious to establish a line of communication with western British North America and so extend her boundaries under the terms of the select committee's recommendations.

Canadian action centered on three closely related exploring expeditions under George Gladman, Simon J. Dawson, and Henry Youle Hind. In the summer of 1857 the Lake Superior-Red River settlement expedition under George Gladman was dispatched with orders from Governor-General Sir Edmund Head to survey the waterways between the head of the lakes and the Red River valley to assess the navigability of the various lakes and rivers connecting the two places. The expedition wintered at Fort Garry and in 1858 two separate parties were formed under two of Gladman's associates of the previous year, Dawson and Hind. Dawson continued the surveys of the Lake Superior-Red River settlement expedition, while Hind was placed in charge of the Assiniboine and Saskatchewan exploring expedition, commissioned to survey the Saskatchewan, North Saskatchewan, and Assiniboine rivers with a view to determining the navigability of the rivers and estimating the agricultural

43. See *Journals of the Legislative Assembly of Canada*, loc. cit.
potentialities of the plains. 44

In the mother country, the 1850's marked the opening of what Ramsay Muir terms "the era of self-complacency". 45 Britain dominated the world's commerce without a single major rival. The economic policy of the empire was in turn dominated by the Manchester School and politically by Lord Palmerston and his Liberals who held office throughout the 1850's, except for a few months in 1852 and again in 1858-1859. Economic prosperity and political placidity led quite naturally to general indifference to colonial affairs. The growing school of "little Englanders" found multitudes of easy converts to their narrow philosophy of empire. 46 British complacency received a slight jolt during the Crimean War (1854-1856), but it was a conflict of politics rather than principles, and a long way off at that.

44. See Reports of the progress together with a preliminary and general report on the Assiniboine and Saskatchewan exploring expedition, by Henry Youle Hind, Journals of the Legislative Assembly of Canada, 1859, vol. 17, appendix #36.


46. They maintained essentially that the colonies were not paying their way and therefore should be detached to fend for themselves.
Despite the prevalent indifference to empire, the British government and the Colonial Office recognized their responsibility to the colonies and did not attempt to shirk or ignore it. The majority of the colonies had been allowed to acquire self-governing institutions by the 1850's but Britain wanted to maintain economic primacy. In the British North American colonies Britain was rapidly losing economic supremacy and the people were becoming more and more dependent upon the United States. It has already been pointed out that this dependency was showing signs of becoming political, as well as economic,\(^{47}\) and this tendency Britain felt she must forestall. Two alternate solutions presented themselves, both ramifications of the same basic solution, an increase in British North American independence based upon larger political units capable of standing up to American expansion: first, the creation of three independent regional units in the Maritimes, the Canadas, and the northwest, including British Columbia and Vancouver Island; second, an over-all federation of British North America from sea to sea. The end result of either plan would be the same, to outflank American expansion.

In 1818 the United States and Great Britain had agreed to accept the forty-ninth parallel as the boundary line from the Lake of the Woods to the Rockies, and a few details were settled by the Webster-Ashburton Treaty of 1842. The Oregon Treaty (Treaty of Washington) of 1846 extended this line to the Pacific, cutting off Britain's last continental foothold south

\(^{47}\) V. supra, p. 28.
of the forty-ninth parallel in western North America. Despite this agreement, "manifest destiny" was still in the forefront of American politics and it was impossible to predict where its advocates might next direct their sights. If they should turn to the plains of British North America, which was exceedingly probable, the treaties might well go by the board. This possibility added the problem of outright military defence to the already pressing economic and political considerations, and the Colonial Office was in a quandary. Next to nothing was known about the British territory west and north of the Canadas and if it remained unsurveyed and unsettled it would fall easy prey to American attack or less obvious infiltration.

Only by chance did the British government obtain a stop-gap solution to their problem through Sir Roderick Murchison, then President of the Royal Geographical Society. Murchison was a social and intellectual lion, well-acquainted with the prominent members of the government and aristocratic society, and thereby had ready access to the officials of the Colonial Office and other government offices. His interest in geography and geology led him to active participation in the activities of the various learned societies associated with these sciences. He was president of the geographical and geological sections of the British Association more than once, and of the Association itself, twice president of the Royal Geological Society, and for fifteen years president of the Royal Geographical Society. In fact, Murchison was the prime
mover behind the organization of many of the exploring expeditions dispatched by the latter two organizations during the 1850's and his name has attained a kind of immortality thereby. On the present world map two capes, three Australian counties, one waterfall, one glacier, two goldfields, one range of hills, two islands, five mountains, four mountain ranges, two rivers, and two towns, the majority in Australia, New Zealand, or South Africa, now bear the name Murchison, and presumably were named after Sir Roderick. 48

Murchison was acquainted with an Irish country gentleman named John Palliser who was planning a trip to western British North America at his own expense, to hunt on the plains and explore the southern Rockies. Knowing of the government's desire to strengthen the claim to British North America and to survey the waterways, explore the Rockies, and discover the general nature of the country, Murchison wrote to Henry Labouchere, the Colonial Secretary, on January 6, 1857, suggesting that Palliser be placed in charge of an expedition to explore the western portion of British North America. 49

After a further exchange of letters the Colonial Office agreed to commission a British North American exploring expedition, and Captain John Palliser was duly appointed its leader. 50 The Lords

50. Ibid., p. clxxxi.
of the Treasury agreed to submit to Parliament a vote of £5,000 to finance the expedition, on the understanding that all the collections and discoveries of the party be placed at the disposal of the government.\textsuperscript{51} The Royal Geographical Society, for its part, undertook to supply the scientific instruments which the expedition would require.\textsuperscript{52}

Captain Palliser was a man well-suited to lead an exploring expedition on the plains of British North America. Although he had never been on the lands of the Hudson's Bay Company, during 1847 Palliser had hunted on the great plains of the United States, travelling from New Orleans to the headwaters of the Missouri, and from Turtle Mountain on the forty-ninth parallel to California.\textsuperscript{53} He was an Irishman by birth, born in 1817 at Comragh, county Waterford, in southern Ireland. His father was a country squire, and after the custom of the family, John Palliser had been magistrate, deputy lieutenant,

\begin{flushleft}
\textsuperscript{51.} Journal of the Royal Geographical Society, 1857, vol. 27, p. clxxx. The total cost of the expedition was actually £6,300, a sum which was voted by the House of Commons on April 20, 1860 (Great Britain, Journals of the House of Commons, Jan. 24, 1860 - Jan. 3, 1861, vol. 115, p. 488). The day to day expenses of the expedition were met with letters of credit to the Hudson's Bay Company.

\textsuperscript{52.} Such interest in exploration and the increase of geographical knowledge is typical of the Royal Geographical Society, and in fact, of the age. The Royal Geographical Society invariably had several expeditions in the field, financed by the members of the Society. Was this not the age of Wallace and Bates on the Amazon, Burke and Wills in Australia, Barth, Burton, Speke, and above all David Livingstone in Africa? (See Leonard Outhwaite, Unrolling the Map, New York, John Day Company, passim, and Sir Percy M. Sykes, A History of Exploration, New York, Macmillan, 1936, passim.)

\textsuperscript{53.} See John Palliser, Solitary Rambles and Adventures of a Hunter in the Prairies, London, John Murray, 1853.
\end{flushleft}
and finally high sheriff of Waterford. He had also served as a militia officer in the Waterford artillery under his father, who was lieutenant-colonel of the regiment. A typical country gentleman of his age, Palliser had little economic or political interest in the colonies, but rather regarded them as places of diversion for the sportsman or adventurer. His interest was sufficient, however, to draw him to the Royal Geographical Society, of which he was a Fellow. 54

To assist Palliser, and do the actual work of the expedition, three "scientific gentlemen" were appointed by the Colonial Office. Dr. James Hector, Lieutenant Thomas Wright Blakiston, and E. Bourgeau. Dr. Hector was perhaps the most distinguished member of the expedition, despite the fact that he was only twenty-three years old on his appointment. A Scot, born and educated in Edinburgh, he obtained his medical degree in 1856, and then turned his attention to the study of geology and related natural sciences. He was appointed surgeon and geologist to the expedition, like Palliser, recommended by Sir Roderick Murchison. 55 Lieutenant Blakiston was a young officer of the Royal Artillery, born in 1832. At

twenty-five he had seen considerable action, having served in England, Ireland, North America, and the Crimea. On the recommendation of Sir Edward Sabine, the treasurer of the Royal Geographical Society, Blakiston was appointed meteorologist to the expedition. Bourgeois was a Frenchman, an assistant to Sir William Hooker, the director of the Royal Botanical Gardens at Kew, on whose recommendation he was appointed to the expedition as botanist. A fourth associate was appointed secretary to the expedition, a very obscure person named Sullivan. Neither his qualifications nor his duties are very clear, but he was apparently a friend of Palliser's.

On March 31, 1857, Palliser received his instructions from Henry Labouchere, the Colonial Secretary. He was directed...

... to explore the country between the two branches of the Saskatchewan River, and south of the southern branch, and thence proceeding westward to the headwaters of that river, you will endeavour, from the best information you can collect, to ascertain whether one or more practicable passes exist over the Rocky Mountains within the British territory, and south of that known to exist between Mount Brown and Mount Hooker Athabasca Pass.

The instructions continued:

It being the desire of Her Majesty's Government that the Expedition should, as far as practicable, be made available for extending general as well as specific scientific

---


knowledge, I have to impress upon you the importance (in addition to maintaining a regular series of instrumental observations) of regularly recording the physical features of the country through which you will pass, noting its principle elevations, the nature of the soil, its capability for agriculture, the quantity and quality of its timber, and any indications of coal or other minerals.

The completion of the appointments filled out the complement of the British North American exploring expedition, and the instructions outlined their task for them. By the first week in May, 1857, all was ready for the departure of the expedition.
Chapter II

So they went up, and searched the land from the wilderness of Zin unto Rehob .........................
Numbers XIII : 21

Chaucer once wrote that "everything must have a beginning", and for all practical purposes the British North American Exploring Expedition "began" on May 16, 1857, when Captain John Palliser, accompanied by Dr. James Hector, John W. Sullivan, and E. Bourgeau, sailed from Liverpool on the S.S. Arabia, bound for New York. Lieutenant Thomas Wright Blakiston remained in England with many of the expedition's scientific instruments, leaving about six weeks later for Fort Carlton on the Saskatchewan via Hudson Bay. ¹ Blakiston did not actively participate in the surveys conducted by the expedition until the fall of 1857, when he arrived at Fort Carlton. On May 28 the Arabia docked in New York. Palliser had some difficulty in passing his scientific instruments through the American customs, but with the aid of two chance acquaintances they were soon cleared, unopened and duty free.

A few days later the party began the trip to the head of the Great Lakes. At Detroit they were again delayed, this time by ice on the lakes, but the steamer bound for Sault Sainte Marie finally arrived and the journey was resumed. At Sault Sainte Marie they were met by the Hudson's Bay

¹. On the suggestion of Sir Edward Sabine, Treasurer of the Royal Geographical Society and expert on terrestrial magnetism,
Company agent who had made arrangements to provide the expedition with two large voyageur canoes, together with crews of eight men each. These canoes were much larger than the Indian type, being about thirty feet in length and five in beam, built of birch bark and cedar. From the earliest days of the fur trade canoes of this type were used to freight trade goods from seaport depots to inland trading posts. Palliser's voyageurs were all experienced woodsmen in the tradition of the coureurs-de-bois, mostly half-breeds or Indians, with one notable exception, a man named James Beads. He had been attached to Palliser's party by Governor Sir George Simpson of the Hudson's Bay Company who had passed westward through Sault Sainte Marie only a few days before on his annual trip of inspection. Beads proved to be one of Palliser's most valuable employees, remaining with the expedition until the conclusion of its surveys almost three years later.

At Sault Sainte Marie the entire party and its equipment were loaded aboard the American lake steamer Illinois, chartered to transport the expedition to Isle Royale in Lake Superior, opposite the mouth of the Kaministikwia [Kaministaquoia] River. The Illinois sailed through the Sault
Sainte Marie Canal from the St. Marie River to Lake Superior, then bucked rotten lake ice for two days, sighting Isle Royale at daybreak on June 12. The canoes were at once lowered over the side of the Illinois and loaded. The expedition paddled the remaining distance to Fort William, passing the heights of Thunder Mountain, and crossing Thunder Bay entered into the Kaministikwia River, arriving at the Fort late in the evening.

Fort William had once been the main trading post of the North West Company, but after the union of the North West and Hudson's Bay Companies in 1821 it was supplanted by York Factory on the latter company's trade route through Hudson Bay. It established the standard for the many trading posts which Palliser later visited, for they were all singularly and monotonously alike. Perhaps Fort William was a little larger than the usual stockaded factory, possibly rendered more memorable by the nauseating odor of fish and fish oil which rose from the Ojibwa [Chippewa] village nearby.

The following day was spent in reorganization of the expedition and repacking of the supplies to facilitate portaging. Palliser obtained three light canoes from the Hudson's Bay Company, which were packed at once, and during the evening the expedition pushed off up the Kaministikwia River, bound for Fort Garry.

An early start was made on the morning of June 14, and by mid-afternoon the expedition had passed the minor rapids

4. Difficult ice conditions so late in the season are very unusual on the Great Lakes. The long term average opening date for navigation on Lake Superior is April 23.
of the lower Kaministikwia and pitched camp opposite the mouth of the White Fish River, flowing from the west. Preparations were begun at once to carry out the first specific order in Palliser's instructions: to "... ascertain the precise geographical position of the point at which the White Fish River falls into the Kaministaquoia [sic]..." and "... to explore the country to the westward towards the height of land". No sooner had these preparations been completed than rain began to fall. The rain continued throughout the day and the weather remained generally bad until June 20, some five days later. Despite bad weather, Palliser, Dr. Hector, and James Beads, together with five voyageurs, set out to explore the White Fish River in the three small canoes hired at Fort William. They had not gone many miles before they realized that the White Fish would be useless for steam navigation. During the first afternoon they passed twenty-six rapids.

A series of accidents on the sixteenth and the continuing rain finally compelled Palliser to abandon the White Fish River exploration. First, Dr. Hector's canoe was caught in a rapid, swept several miles back down the river, and almost wrecked. The remaining canoes were pulled in to shore while Hector was trying to navigate the rapids successfully. As Palliser's men waited they cut down a tree for fire-wood, and it fell across a canoe, which was completely smashed. Late in the evening the inescapable third in the series of accidents

5. See Appendix I.
occurred. One of the two remaining canoes was swept away in the torrent of the rising river, and was recovered only by the daring of one of the voyageurs who waded into the swollen river to retrieve it.

At sunrise the next morning, as the rain continued to fall heavily, Palliser determined to send the two remaining canoes back down the White Fish to the Kaministikwia while he and Dr. Hector went overland on foot to Kakabeka [Kakabeca] Falls on the Kaministikwia, a few miles above its junction with the White Fish. Palliser first questioned three of his Ojibwa [Chippeway] paddlers as to the nature of the White Fish River above the region explored. From their statements and his own observations Palliser concluded that the White Fish River would be impassable to steam boats, and this he set down in his report.6

Palliser, Dr. Hector, and two Indian voyageurs set out in a north-easterly direction toward Kakabeka Falls. They traversed some twenty miles of undulating, heavily timbered country, intersected by many streams and swamps, reaching the Kaministikwia just below the falls. When they arrived at the lower end of the portage around the cataract they were met by the main body of the expedition which had pushed on from the White Fish River with the arrival of the voyageurs in the two canoes.

6. The journals, detailed reports, and observations relative to the exploration, by Captain Palliser, of that portion of British North America, which, in latitude, lies between the British boundary line and the height of land or watershed of the Northern or Frozen Ocean respectively, and in longitude, between the western shore of Lake Superior and the Pacific Ocean during the years 1857, 1858, 1859, and 1860, Parliamentary Papers, 1863, XXXIX [3164], p. 26, hereafter referred to as Journal.
The portage around the falls was completed on June 18, and there the expedition camped for two days until the rain finally ceased, making travel again possible. They then pushed forward rapidly, aided by the excellent weather, in marked contrast to the previous five days. Between June 20 and June 23 the expedition continued up the Kaministikwia to Dog Lake. The upper reaches of the river were found to be broken by numerous rapids, necessitating as many as ten portages in one day. On the 23rd they reached the Dog River leading to the watershed dividing the rivers which flow to Hudson Bay from those which flow to the Gulf of Mexico or the Great Lakes. Consequently, this divide also marked the boundary of Hudson's Bay Company territory. 7

So far the expedition had passed through only a few miles of the rugged pre-cambrian shield which skirts the northern shore of Lake Superior. The country at the head-waters of the Kaministikwia was found to be equally barren, broken only by low glaciated knolls, divided by dreary swamps. Most noticeable to the white members of the expedition, however, was not the quality of the scenery, but the oppressive silence. Fortunately they were not alone on the water-ways, and frequent meetings with Indians, Hudson's Bay Company employees, and other travellers served to break the silence and monotony. The trip might even have been enjoyable had it not been for the myriads of

7 "Divide" here indicates the summit or highest point between the regimes of two drainage systems, whereas "watershed" will be used to isolate all the land lying within the drainage regime of a single river system.
mosquitoes and flies which appeared with the good weather. These insects were to plague the expedition throughout all its surveys and remained the perpetual curse of Palliser and his men.

The so-called prairie portage across the continental divide was passed on June 24. It was some five thousand feet in length; the longest the expedition had to traverse, though not the most difficult. This brought them to a small lake, and a second short but arduous portage brought them to the Savannah River. This latter portage crossed a deep swamp, rotten and stinking, through which the voyageurs had to wade, burdened as they were with two hundred pound packs. Once passed, however, the comparatively easy descent to Lake Winnipeg was begun.

The trip down the Savannah River to Lac des Mille Lacs, Pickerel Lake, Sturgeon Lake, and across Rainy Lake to Fort Frances was completed by July 1, 1857. It was begun on an intensely hot day, the thermometer registering 101°. By evening thunderheads were piling up to the southwest, and during the night the expedition had to weather its first violent thunderstorm. Passing through Lac des Mille Lacs and so to Perch Lake the weather continued dull with an intermittent drizzle of rain, which was a blessing in that it kept away the mosquitoes and sand flies. The topography of the country changed little, but the vegetation appeared more luxuriant, the pines being almost as magnificent as those at the mouth of the

Kaministikwia. Bourgeau's work consequently increased and he was incessantly engaged in gathering specimens of the flowering plants.

On Sunday, June 28, camp was made on Sturgeon Lake, near the mouth of the Sturgeon River, and in accordance with the expedition's instructions Palliser and Dr. Hector set out to explore back in a southeasterly direction toward the White Fish River. They paddled up the Sturgeon River, which soon widened into a large lake. This lake was crossed and a channel discovered which led to yet another lake, not quite as large as the first. This lake was also crossed and an outlet discovered, but it was obstructed by falls and rapids. Palliser and Hector beached their canoe and climbed to the heights above the falls. From this vantage point the country around was seen to be a wilderness of lakes, better explored in winter over the ice. The trip back to camp was completed by sunset. Palliser had intended to spend several days exploring this region in an attempt to find a feasible route to the headwaters of the White Fish River, but supplies were running short and he was forced to break camp and press on to Fort Frances.

In contrast to the country farther east, the Rainy Lake district was found to be intersected by many deep lakes

10. See Appendix I.
11. These were probably the Russell Lakes, although it is difficult to pinpoint two small lakes among the thousands of the district, from the fragmentary information contained in Palliser's Journal, and on his maps.
and water courses, necessitating only a few minor portages. Here the expedition passed through areas which appeared to be suitable for agriculture, the first noted by Palliser.\(^{12}\) He also notes its similarity to rural England, the shrubs, oak, and ash clumps appearing to have been laid out by a landscape gardener.\(^{13}\) Two days of easy and enjoyable travel brought the expedition to Fort Frances on July 1, 1857.

The Fort, situated on the Rainy River, was built in the usual style of a Hudson's Bay Company post, surrounded by a stockade about twelve feet high. The factor gave Palliser a letter from Sir George Simpson placing the resources of the Hudson's Bay Company at the disposal of the expedition. As a point of interest, the post had originally been named after Sir George's wife, Frances.\(^{14}\)

At Fort Frances Palliser and his men had an interesting encounter with a band of about two hundred Ojibwa Indians who were camped nearby. Palliser had passed among their teepees on the way to the Fort, shaking hands with a few of them. Soon after the freight consigned to Fort Frances had been unloaded and stored, a beating of drums called an assembly of the Indian encampment. The sound of the drums came closer and the men of the tribe filed into the stockade. They were dressed in full ceremonial regalia, and all were armed except the principal chief who carried a pipe of peace. The

---

principal men of the tribe seated themselves on five long benches arranged in the form of a pentagon, and the younger men stood behind them. The drums ceased and the old chief came forward to demand an interview with the new arrivals. Palliser consented, and he and his four white companions were seated on five chairs arranged for them in the center of the pentagon. The usual long silence which precedes Indian ceremonial speeches passed, and the chief launched into his harangue which was interpreted for the whites.

The old chief began by assuring Palliser that he had not come to beg from his white brothers. He told of the former glories and extent of his tribe, which had shrunk to a small band; how the woods had been rich in game but were barren. Then, even though he admitted the exhaustion of his tribe's hunting ground, he made it clear that he did not want those lands stolen by the whites. He finally asked Palliser point blank if the Great White Queen intended to take their lands from them.

Palliser opened his reply by pointing out the advantages of agriculture and a fixed mode of life. He further stated that the object of the expedition was not to barter for the lands of the tribe, nor was the Great Queen harboring designs on their lands. At this point an Indian who had apparently come from the United States stepped forward and said, "Make him put that on paper, I say; make him put that on paper!" The old chief declined, stating that he trusted

the Great Queen, and she had never lied to them. The chief also asked Palliser to inform the Great Queen of the poverty of his tribe, that she might have pity on them. Finally he asked Bourgeau to refrain from taking any specimens in their country for fear that people in far off lands might think his dominions valuable and seize them. Palliser again assured the chief that the Queen would guard their lands against evil men who might attempt to steal them. He then gave the old chief a gun, and the other principal chiefs some tobacco, and the assembly broke up after more than two hours of discussion, much to the relief of the Hudson's Bay Company factor.

The same evening the expedition set off down the Rainy River bound for Fort Alexander at the mouth of the Winnipeg River. The passage of Rainy River, Lake of the Woods, and the Winnipeg River was accomplished rapidly and easily, only a few portages causing delay, but there were myriads of mosquitoes to be endured. On the morning of July 6, they met Sir George Simpson and his party, already returning from the annual tour of inspection and general meeting at Norway House at the north end of Lake Winnipeg. Simpson told Palliser that horses had been procured for the expedition, and that they were pasturing near Lower Fort Garry. Soon they entered the lower reaches of the Winnipeg River, and passed through the flood deposits of silt and mud at its mouth, to arrive at Fort Alexander late on the evening of July 9, eight days out of Fort Frances.
The last lap of the trip to Fort Garry proved to be the easiest portion of the journey. The expedition negotiated the swampy areas along the southeastern shores of Lake Winnipeg, and by noon on the second day out of Fort Alexander they entered the mouth of the Red River. By early evening the banks of the river were beginning to show signs of human habitation, and a few log cabins came into view. About 7.30 they passed an Indian settlement, and a few miles farther on an Indian mission village. The striking difference between the two, the latter being a tidy settlement and the former a collection of dirty shacks, demonstrated the beneficial effect of proper guidance among the Indians. Just before nightfall the expedition arrived at Lower Fort Garry, or the Stone Fort as it was usually called, where they were met by the Hudson's Bay Company factor.

Lower Fort Garry consisted of a house, stores, and other company buildings, all surrounded by a stone wall built in the form of a square; thus its name, the Stone Fort.

On Sunday, July 12, the members of the expedition attended a service at a little church about four miles up the Red River. This was the church of Archdeacon Hunter, who had translated the scriptures into the Cree language. Here Palliser had the good fortune to meet a man named Herriott, who for many years had been a Hudson's Bay Company factor at Old Bow Fort on the Bow River in the foothills of the Rockies, before the Fort was abandoned. From him Palliser learned much
about the country to the west, and of the character of the Blackfeet Indians. In all there were about three hundred people at the service, most of them Scottish or half-breeds of varying degrees.

Early next morning the two canoes which had brought the expedition from Isle Royale, together with their crews, left the Lower Fort, one bound for Norway House at the north end of Lake Winnipeg, and the other for the Mackenzie River district in the service of the Hudson's Bay Company.

Palliser found near the Lower Fort the twenty horses purchased for the expedition; all in very bad condition due to the severity of the winter. They had to be used, however, as they were the only animals available. The best horses in the Red River settlement were already out on the buffalo hunt. Palliser's men saddled and mounted these horses and started for Upper Fort Garry, about nineteen miles up the Red River at its confluence with the Assiniboine. They passed along a road lined with farmsteads, and by noon they reached Fort Garry, where they were royally welcomed by the Hudson's Bay Company factor. Exactly one month before, on June 13, 1857, the Palliser expedition left Fort William, arriving in Fort Garry at noon on July 13. Today, less than a century later, travellers can have a late breakfast in Fort William and lunch in Winnipeg, or if they wish to travel by train, less than eleven hours in a comfortable coach will bring them to their destination.
On July 14, preparations were begun for the trip westward; a task which kept Palliser and his men busy for the better part of a week. Palliser determined to push across the plains by cart and on horseback, rather than by canoe, heading south along the Red River to the boundary near Pembina, thence along the boundary to Turtle Mountain south of the present city of Brandon, and north to Fort Ellice at the forks of the Assiniboine and Qu'Appelle rivers. Altogether, the expedition now consisted of Palliser, Dr. Hector, Bourgeau, Sullivan, James Beads (who had remained with the expedition), the first guide John Ferguson, and eleven men, together with twenty-nine horses, six Red River carts and two American wagons. Palliser bought the two wagons against the advice and much to the disgust of the Hudson's Bay Company employees, nevertheless they were found to be very efficient and serviceable vehicles. From this group a party was detached to travel direct to Fort Ellice, under the expedition's second guide, Henry Hallett. It consisted of ten horses and four carts, loaded with the heaviest provisions which would not be needed by Palliser's party on the journey south. It was intended that Hallett should remain at Fort Ellice, resting his horses, to provide the expedition with fresh mounts for the latter part of the exploring season.

17. Palliser to Colonial Secretary, July 27, 1857, Parliamentary Papers, 1859, XXII [2542], Papers relative to the exploration by Captain Palliser of that portion of British North America which, in latitude, lies between the British Boundary line and the height of land or watershed of the Northern or Frozen Ocean respectively, and in longitude, between the western shore of Lake Superior and the Pacific Ocean.
On Monday, July 20, Hallett and his party set out for Fort Ellice. Palliser ferried his equipment across the Assiniboine on the same day, returning to Fort Garry for the night. Early next morning he recrossed the Assiniboine with the main body of the expedition, and began the ride up the Red River. There were now thirteen very unsuperstitious men in the expedition. Five of them were mounted and eight drove the carts and wagons, while five horses were led bare as a reserve. Each of the wagons carried eleven hundred pounds, and was drawn by two horses, while the carts (of the famous indestructable Red River type) carried four hundred pounds apiece.¹⁸ They were loaded mainly with flour, tea, sugar, and pemmican, plus a considerable quantity of ammunition and sundry supplies. Palliser did not expect that the expedition would consume all these supplies, but the surplus was taken for use in trade with the Indians so that emergency needs might be met.

During the first few miles march south from the Assiniboine the expedition passed through light thickets of poplar and oak. When they had crossed the Sale (stinking) River, a tributary of the Red River about ten miles south of the Assiniboine, the trees thinned out and were replaced by the rich grass of a flat plain stretching from the Red River west to the marshes from which the Sale flowed. They travelled over the plain on a road of sorts, which at least indicated

that they were not traversing virgin ground. The first night was spent at a well-sited camp, prepared by two men sent ahead from Fort Garry the previous day.

The Morris River [Rivière qui Grate] was reached early next day, and crossed on a ferry operated by an enterprising half-breed. They were now on open prairie, broken only by a few bluffs at the bends in the Red River. The road, such as it was, became progressively worse, running through hollows and across numerous creeks. Nevertheless, there were signs of successful settlement in the area. New sod shacks were passed at intervals, and many mowers were seen at work in the meadows of natural hay which grew one and a half to two feet in height.

The remaining distance to the American border was covered in a short day and a half of travel, but not without some difficulty and inconvenience. The plague of flies and mosquitoes forced Palliser to delay his start from 4 a.m. to 7 a.m. in order to give the horses time to feed after dawn, when the insects disappeared. The horses of the expedition were becoming noticeably weaker from loss of blood owing to the insects. The intense heat of the day also inconvenienced the expedition, and on the evenings of July 23 and 24 thunderstorms drenched the entire party. At noon on the latter day they arrived at a very small and dilapidated Hudson's Bay

2. The writer has seen horses so covered with mosquitoes that a hand drawn down their flanks will become covered with blood.
Company post only a few hundred yards from the border.

Next morning Palliser and Sullivan took the meridian altitudes of the sun so as to accurately locate the forty-ninth parallel, and consequently, the border. Their calculations placed it about 370 yards south of a post driven by the Americans as a border marker. Palliser later erected a post to mark the forty-ninth parallel as determined by their calculations.

The expedition crossed into the United States, unmolested by the customs and immigration officers of a later era, to the American settlement of Fort Pembina. The town was about two miles within American territory, at the juncture of the Red and Pembina rivers, near the present town of Pembina, North Dakota. It proved to be an even more wretched establishment than the Hudson's Bay fort on the Canadian side. Here the post office for Rupert's Land and the Red River settlement had been established, inefficient though it might be, situated at least fifty miles from the majority of its patrons. The postmaster was absent when Palliser arrived, and an Indian woman who spoke only her own language had been left in charge of the mail. Palliser reluctantly entrusted his reports to the Colonial Office and the Royal Geographical Society to her, on the assurance of a seemingly intelligent half-breed that the post office was a "very lucky one".

On Tuesday, July 27, the expedition headed south and west toward the American town of St. Joseph. By a forced march they managed to traverse the rolling prairie between Pembina and St. Joseph in one day, reaching their destination about two hours after sunset. It was not without some misgivings that Palliser led the expedition into this region, the hunting ground of the Sioux. Only a year before, an English traveller, Sir George Gore, had been lured into a conference with the Sioux of this region and literally robbed of everything.\(^{23}\)
The town of St. Joseph had also been attacked in 1856, and a man and a woman killed.\(^{24}\)

The expedition remained at St. Joseph for two days, nominally to have some harness altered, but also to escape therein which began to fall on the evening of their arrival. The wagon harness had originally been made for mules, so it was taken to the harness-maker in St. Joseph for the necessary alterations. The members of the expedition found the town to be new and relatively small, but well laid out with an eye to future expansion. Unfortunately, the railroad builders of a few years later forgot to build a line to the town, so the foresight of the townspeople was in vain and St. Joseph has all but disappeared. The inhabitants of Palliser's time were for the most part Red River half-breeds who were buffalo hunters rather than farmers, despite the obvious fertility of the land.

\(^{23}\) Palliser to Col. Sec., July 16, 1857, Parl. Paps., 1859, XXII [2542].
\(^{24}\) Palliser to Col. Sec., December 8, 1857, ibid.
The town was situated at the foot of an abrupt rise in the prairie, which Dr. Hector correctly estimated to be the escarpment of the first prairie steppe. The slope rose about three hundred and fifty feet above the plain, or, according to Dr. Hector's calculations, four hundred and fifty feet above Lake Winnipeg. The base of the rise was noted to contain characteristic lake-shore formations of coarse, loose sand, rounded shingle, and gravel, very similar to the east bank of the Rainy River near Fort Frances. From this evidence, and from the nature of the Red River plains, Palliser concluded that the whole region had once been lake bottom.

Two days later the weather showed signs of clearing, so the men loaded their carts and left St. Joseph behind. They skirted the rise of the prairie steppe throughout the day, and early in the evening camped at the foot of the escarpment, now considerably lower than at St. Joseph. The country around was more wooded and rolling, and when the expedition turned westward the next morning, the terrain became undulating, dotted with boulders and intersected with numerous sloughs.

On August 1, the expedition reached the valley of the Pembina River. The men had considerable difficulty in guiding the wagons and carts down the steep banks of the valley, and hauling them across the heavily-wooded pine plain. The river itself, only about ten yards wide, was easily forded.

27. *Journal*, p. 41.
The ascent of the western valley face proved to be much simpler than the descent of the opposite side. This valley proved to be the line of demarcation between the eastern wooded and irregular terrain and the bare prairie of the second steppe, for the summit of the western slope rose sixty-five feet above the eastern level. On the advice of one of the guides, a supply of wood sufficient for two days was cut in the Pembina valley. He told Palliser that they would not see trees for two days travel, except in creek beds. It was later found that the available wood supply could be augmented by buffalo dung, an excellent if unsavory cooking fuel. From this point on the expedition found it necessary also to carry a supply of fresh water at all times.

As the party struck out over these level plains, a cloud appeared in the northwest, attracting the attention of the men as it rapidly approached them. It appeared to be a thundercloud, replete with flashes of lightning, but when it arrived overhead the cloud disgorged grasshoppers rather than rain. The insects fell as thickly as snow, covering everything, then were swept off to the southeast as rapidly as they had come. This was the expedition's first encounter with grasshoppers, or "locusts" as Palliser called them; the little insect which has since played a role so important, if infamous, in our economy that it might well be placed beside the beaver in the Canadian coat-of-arms.

The night of August 1 was marked by an amusing incident, one of many which made the surveys of the expedition something more than just work. After dark, two of the men came to Bourgeau, the expedition's botanist, and asked him to note the mysterious noise issuing from a nearby slough. They asserted that it was made by a poisonous plant possessing mystical powers. All the half-breeds seemed to share this belief, so Bourgeau and Dr. Hector took up the challenge and set out to disprove their story. Taking a lantern, they waded into the slough, first toward one spot from which the sound proceeded, and then toward another, but the strange murmuring always stopped before they could reach it. Finally they covered the lantern and stealthily waded toward the sound - then uncovered the lantern and interrupted a frog in the midst of his croaking.

The start next morning was delayed by a thunderstorm; a phenomenon to which the members of the expedition had become accustomed. The soil of the plain which they were crossing was very poor, mostly rocks and sand. Here and there, particularly near small valleys and creeks, scattered boulders of detached granite were found. The sides of these were polished smooth, and around them the buffalo had worn deep trenches as they circled the boulders to scratch themselves.

As the expedition moved westward during the days which followed, they entered country more rolling and irregular, dotted with sloughs, assuming the aspect of moorland
rather than prairie. The slopes of the small knolls which rose intermittently from the plain were covered with rounded boulders, some of considerable size. Game was also found to be plentiful, but no buffalo were seen. One of the expedition did, however, succeed in killing a wolf. Progress was impeded only by the odd thunderstorm, and early on August 5 the foot of Turtle Mountain was reached, lying astride the forty-ninth parallel just east of the present Saskatchewan-Manitoba boundary. The next few days were spent in a slow march along the base of Turtle Mountain ("mountain" in name only), a gentle swell about thirty miles long and ten wide, rising five to six hundred feet above the prairie. The northern slopes were found to be heavily wooded, but devoid of the game which had once made Turtle Mountain a great Indian hunting ground. Two cranes were shot, however, providing the expedition with some fresh meat.

On Monday, August 10, the expedition struck out in a northwesterly direction through the sloughs near the base of Turtle Mountain, and across barren, rolling plains to the Souris River. Early next morning the expedition crossed the river and happened on a deserted Hudson's Bay post set among the sand dunes above the flood plain of the river. Here Dr. Hector made an important discovery. Fragments of coal were found protruding from the bed of shingle underlying the dunes; the expedition's first such discovery. Two days later, they

30. Canada, Department of Mines and Resources, Hydrographic and Map Service, Indian Head - Brandon sheet, 1939.
emerged from the swamps north of the Souris River and headed northwest again, crossing rich prairie lands, dotted with bluffs of good timber. On August 13 they reached the south trail from the Red River settlement to Fort Ellice, which roughly coincides with the present Canadian Pacific Railway line north from Virden, Manitoba, and another two days march brought them to Fort Ellice.

Even though it was only the second week of August, during the trip from St. Joseph to Fort Ellice the temperature often sank below freezing at night, and in the Souris River region dense fogs hung over the swamps at dawn. Both these phenomena are unusual for this region, especially so early in the fall. In marked contrast, the hours of daylight were characteristically hot, relieved only by occasional thunderstorms. The night frosts did, however, free Palliser and his men from the scourge of mosquitoes and flies.

Fort Ellice was situated a few miles below the juncture of the Assiniboine and Qu'Appelle [Qui Appelle] rivers. Like most Hudson's Bay posts, it was built of wood and surrounded by a pallisade. The Fort had once been an important frontier trading post, but by 1857 it had become a depot for trade goods directed farther west, and a base of operations for many buffalo hunters.

Palliser found Hallett's band of horses awaiting him at Fort Ellice, in much better condition than those which had

31. V. supra, p. 52.
carried the main body of the expedition from Fort Garry. To these ten, Palliser added five more, bought from half-breed hunters resting at the Fort, giving him fifteen good animals for the remainder of the season.

During the expedition's short stay at Fort Ellice, a party of Red River emigrants arrived from Fort Colville on the Columbia River. They were a few of a larger party which had left the Red River settlement in 1855 under the leadership of James Sinclair. Unfortunately Sinclair was killed in a skirmish with some Indians soon after their arrival in Oregon, and without his leadership many of the emigrants became discouraged. This group of ten adults and a few children had decided to return to their former homes on the Red River, and had already spent three and a half grueling months on the trail. Twice in three years they had trekked half-way across the continent, through country infested with hostile Indians; a journey which even Palliser's experienced plainsmen hesitated to attempt.

The expedition rested for a few days, then on August 17, Palliser, Dr. Hector, James McKay, the Hudson's Bay Company factor at Fort Ellice, and four men, set out to explore the region between the Fort and the border. They travelled to the west of Moose Mountain, a long ridge running in a northwesterly direction, very similar to Turtle Mountain. For the second time the expedition was advised to carry fire-wood, naturally supplemented by the always-available buffalo dung, even though none of the animals had been sighted. There were many buffalo
hunters in the region who informed Palliser that there were small herds to the south. On August 20, two bulls were seen, which Palliser ran down and killed. Later the same day the upper reaches of the Souris River were sighted, and on its north bank the expedition pitched camp.

Next morning it was discovered that a large band of Indians were camped on the opposite shore. They proved to be a band of Stony Indians (a branch of the Assiniboines) from the so-called Grand Coteau, whose summit marks the Missouri-Saskatchewan divide. Indians of this tribe were the greatest horse thieves of the plains, taking great pride in this occupation. In his journal Palliser comments that if they had bred horses with the same diligence they exhibited in stealing them, they should have found it much more profitable. The members of the expedition wisely hid their fear for the safety of their horses, and instead made a present of some tea, sugar, and flour to the band, asking them to guard their horses overnight in return. The Indians regarded this as a compliment and faithfully discharged their part of the bargain, much to the relief of the owners of the horses.

While camped on the banks of the Souris River, Dr. Hector explored the region of Roche Percee [La Roche Percée], a few miles to the west, in search of coal, signs of which he had already found on the lower reaches of the river. The "pierced rock" itself was merely one of many sandstone pillars

32. Journal, p. 43.
in the area, sculptured by the weather into weird and
grotesque shapes, and held in high regard by the Indians.
Hector found some traces of lignite, but of inferior quality
and apparently not in sufficient quantity to be commercially
valuable.

When Dr. Hector had completed his survey of the Roche
Perceee area, a supply of wood was gathered, and on August 22
the trip back to Fort Ellice was begun. On the way Dr. Hector
and James McKay explored Moose Mountain, confirming its
similarity to Turtle Mountain, and at noon on the second day
they re-entered Fort Ellice.

At least a month of good weather remained to the
expedition before the onset of winter. Palliser intended to
make use of this month in exploring the South Saskatchewan
River, but he found that none of the horses left at Fort
Ellice had sufficiently recovered to set out at once. The
expedition was therefore forced to remain at the Hudson's Bay
Company post until the animals were in condition for another
long trip. During this enforced sojourn, John Ferguson,
Palliser's chief guide and interpreter, made it known that he
was afraid to travel southwest into the country of the Black-
feet. Palliser had to dismiss Ferguson at once, before his
fear spread to the other men, leaving the expedition without
an interpreter. James McKay, the Fort Ellice factor, was
willing to take Ferguson's place, but had to obtain permission
to leave the post from his superior at Fort Pelly [Pelley].
a new post built the previous year about a hundred and ten miles to the north.

A messenger was dispatched at once to request McKay's release, and while awaiting his return the main party of the expedition, with the exception of Palliser himself, started for the Blackfoot country. The expedition, under Dr. Hector, passed through alternating belts of prairie grass land and light timber south of the Qu'Appelle River, crossed the series of hills forming the northward extension of Moose Mountain, then wound through innumerable lakes and sloughs teeming with wild fowl. The expedition was seldom short of fresh meat, at least not in the summer months, although until the exploring seasons of 1858 and 1859 it was usually in the form of fowl rather than larger game.

On the evening of September 12, 1857, Hector's party arrived at the Qu'Appelle trading post, a few miles south of the Qu'Appelle River. This was the most westerly Hudson's Bay post in the territory. Here they waited for Palliser, who arrived the following day, accompanied by James McKay, who had received permission from Fort Pelly to accompany the expedition. While at the trading post, they met a Church of England missionary named Pratt. Although a full-blooded Cree, Pratt had been educated at the Red River settlement, and had then returned to his people, attempting to improve their lot with true missionary zeal. At his mission on the banks of the Qu'Appelle River he had been successful in growing wheat, corn,
and a few vegetables, but only in garden size patches. Nevertheless, he was the only man met by Palliser west of the Red River settlement who might have been called a "farmer".

Palliser's expedition was not the only transient group at the post. A large band of Cree Indians was also camped nearby to trade, among them a man with whom James McKay was acquainted, an Indian called the "Peace-Maker". Twice within three years he had entered the Blackfoot country alone and unarmed. Each time he had offered them the pipe of peace, with the alternative of killing him, and each time he had negotiated a peace treaty and received a present of horses. In short, Palliser engaged this "Peace-Maker" to guide the expedition to the elbow of the South Saskatchewan.

At noon on September 14, the expedition left the Qu'Appelle trading post and started westward into the unknown country of the South Saskatchewan. For a few hours they passed through fertile land, well watered, with a considerable stand of timber and tall grass. As they moved westward the country became more barren, and next morning their new guide, christened Nichiwa, advised them to cut a supply of wood as they would be passing over bare plains for at least two days. Palliser regarded this as the eastern boundary of the "desert country, or northern extension of the North American arid basin". Early on the afternoon of September 16, they arrived at Moose Jaw Creek, a tributary of the Qu'Appelle

River, not far from the site of the present city of Moose Jaw. Here Nichiwa again advised them to cut a supply of wood from the bluffs near the creek as they would see no more to the elbow of the South Saskatchewan.

Next morning, Dr. Hector, McKay, and a small party were detached from the main body of the expedition to explore southward while Palliser continued on to the elbow. Hector was to rejoin Palliser the same evening, but not until two days later did he return. Both parties fell in with bands of Cree Indians, all very friendly, warning the whites to stay out of Blackfoot country. When Dr. Hector rejoined Palliser, he was accompanied by a band of Crees who had lost seventeen men the previous spring in an engagement with the Blackfeet; stark proof of the wisdom in their advice.

Nevertheless, Palliser continued the monotonous journey westward over bare, rolling, prairie land. This region would appear even more desolate to a present day traveller, after two generations of farmers have mined the land for wheat. Early on September 20, the routine was broken; two buffalo were sighted and the men knew that the main herds could not be far off. Early the following morning the herds were sighted and for the moment exploring was forgotten. The chase lasted through the day, leading in a northwesterly direction, and evening found them camped on a small tributary.

34. An interesting sidelight on Hudson's Bay Company business methods: Some of the Indians carried certificates of identification issued by the company, one of which ran as follows: "This is to certify that Awakasoo (The Red Deer) is a good Indian, and a man of some influence in his tribe, ... he has once traded with the opposition traders, but promises never to do so again". (Journal, p. 53).
of the South Saskatchewan enjoying a meal of fresh buffalo meat. Next morning they continued on to the river itself, camping on the brink of the valley several miles below the elbow. Here Palliser camped for two days to hunt buffalo while Dr. Hector and a small party followed the river to the elbow, then westward along the valley below the Eyebrow Hills. It was hoped that some easy portage from the South Saskatchewan to the Qu'Appelle would be found.

For the time being, Palliser was more interested in the sport at hand than the business of the expedition, but game was so plentiful that it is easy to forgive him. The region of the South Saskatchewan valley was something of a no-man's-land between the Cree and Blackfeet, consequently it teemed with game of all kinds. Buffalo, elk, deer, antelope, bears, wolves, geese, prairie hens, and ducks were encountered in large numbers, and were killed in like measure.

Hector's party rejoined Palliser in September 23, and next day the expedition broke camp and descended into the valley in search of a fording place. For three days they followed the valley south and west. Palliser compares the South Saskatchewan to the Missouri in size, and also noted that, like the Missouri, it was subject to seasonal floods. On the 27th they found a practicable crossing place.

One of the wagons was converted to a skiff by lashing oilskins around it, and by this means a line was carried across the river. All the carts and baggage were towed across in this makeshift ferry, but the second wagon was irretrievably lost in twenty feet of water when the rope parted. Camp was pitched on the western bank, and here the expedition remained for two days to rest the horses and work over their equipment. Several attempts were made to recover the lost wagon, but they all failed.

Palliser had intended to follow the South Saskatchewan westward to Chesterfield House, an abandoned Hudson's Bay Company post at the forks of the South Saskatchewan and Red Deer Rivers on the present Alberta-Saskatchewan boundary. Unfortunately, the majority of his men coveted their scalps too greatly to journey any farther into Blackfoot territory. Palliser consulted James McKay, who was quite willing to continue, but he admitted that the men would probably refuse to follow. The projected trip to Chesterfield House was grudgingly abandoned, and the expedition turned north to its winter quarters at Fort Carlton. The area west of Chesterfield House was, however, explored during the third season (1859).

The expedition struck out northeast along the river valley on September 30. They followed the South Saskatchewan north to the elbow, where the river is confined to a crescent-shaped valley about ten miles in length. It was
noted that the western slopes of the valley were composed of drift strewn with boulders, while the opposite bank was loose sand.  

North of the elbow, Palliser left the river valley to follow the escarpment of the Coteau [Coteau des Prairies], or third prairie steppe. Again they were in desolate, barren country, devoid of timber except in a few ravines of the Coteau. Buffalo dung became the standard cooking fuel, much to the disgust of the four Europeans. Water was also scarce, and several times the expedition was forced to camp by some stagnant slough, which Palliser continually refers to as "swamps". At the Anerley [Red Deer] Lakes Palliser again broke the routine of the expedition for a few hours of hunting, which he obviously enjoyed more than calculating compass variations and degrees of longitude and latitude.

As they moved northward, a change came over the prairie. The barren plains and alkali sloughs were left behind, replaced by rolling grassland, dotted with bluffs of scrub poplar. The change of terrain was first noticed a few miles south of the present city of Saskatoon. This Palliser regarded as the northern limit of the arid plains.

The trek to Fort Carlton was the most uncomfortable period of travel experienced by the expedition during the first exploring season. On October 4, the men noticed the smoke of a prairie fire to the north east. The cloud grew throughout

38. Journal, p. 56.
the afternoon, and next morning the air was heavy with smoke, and the sky glowed from north to east. Such fires were apparently quite common, usually set by the Indians for the most trifling of reasons, with devastating effect. Throughout October 6 the expedition passed over rolling ground, blackened by fire (hence the name "Blackfeet" for the native tribe). 39 The men suffered considerable discomfort from the heat and stifling dust which blew in clouds across the scorched prairie, herald of a later era. Camp was finally pitched beside a slough on a small patch of ground which had somehow escaped the fire.

Next morning, Palliser awoke to find the half-breeds cleaning up and putting on their best clothes for the arrival at Fort Carlton. Palliser was somewhat amazed at their confidence, as his observations showed Carlton to be at least thirty-five miles away, 40 but the men persisted and completed their crude toilet. For two days they ran ahead to the summits of each succeeding knoll to look for the Fort, and they always came back shaking their heads. To further dampen their spirits the first snow fell on October 7, and turned to sleet the next day, but at noon, Fort Carlton came into sight.

39. Diamond Jenness, The Indians of Canada, Ottawa, The King's Printer, 1932, p. 319: "The word Blackfoot (a translation of the Indians' own name for themselves, Simsikauwa) refers to the moccasins, either because they were painted black, or besmirched by prairie fires."

The elaborate preparations made by the men three days earlier had deteriorated considerably, and they dolefully conceded the superior powers of the sextant.

The expedition arrived at the post not a day too soon. The hoofs of their horses were badly worn. One disabled animal had been left behind, but McKay later went back, snatching it from a pack of wolves which had gathered at the prospect of a meal. Palliser had good cause to be thankful that he had not continued westward to Chesterfield House, as the trip might have cost him at least some, if not all, of his horses.

At Fort Carlton, the men were cordially welcomed by Richard Hardisty, the Hudson's Bay Company factor. Palliser found that the Fort had been prepared to receive them and was adequately supplied to winter the expedition. Fort Carlton was a depot for buffalo hunters, like Fort Ellice, and also something of a half-way house to Fort Edmonton.

On October 11, 1857, Captain Palliser, accompanied by James McKay and the men hired in the spring at the Red River settlement, left Fort Carlton bound for Fort Garry. Palliser had contracted to return these men to the place at which they were hired, while he intended to continue through the United States for the winter. They travelled to Fort Garry in cold, snowy weather, via the Touchwood Hills trading post, Fort Pelly on the upper reaches of the Assiniboine, and Fort Ellice, arriving at the Upper Fort on November 1. Here
Palliser made arrangements for the 1858 exploring season, buying five horses and hiring twenty men contracted to leave for Fort Carlton on March 10, 1858. He felt more men would be needed to deter Indian attack during the next season's explorations of the Blackfoot country. For this reason Palliser also instructed Dr. Hector, before leaving Fort Carlton, to travel to Fort Edmonton some time during the winter and there hire a second group of men, more familiar with the country. For his own trip to the head of transportation at Crow Wing in Minnesota, (at least of "public" transportation as we know it), Palliser hired two voyageurs as guides, Robert Tate and Pierre Beauchamp, together with three horses and a cart. On November 4 the three men started for Crow Wing. Palliser's horse was killed at Pembina, and as the other two were needed for the cart, he trudged on foot 450 miles with his companions, arriving at Crow Wing on November 16, eleven days out of Fort Garry. The three men must have set a very fast pace indeed. Before leaving his two voyageurs, Palliser engaged them for the return journey, arranging to meet them at Crow Wing on April 1 of the next year. The remainder of the trip to Montreal was accomplished in comparative ease and luxury. Palliser travelled by stage coach to Prairie Le Chien, and thence by rail to Chicago, Detroit, and Montreal.

41. Palliser to Col. Sec., Dec. 8, 1857, Parl. Paps., 1859, XXII, [2542].
As far as Palliser was concerned, the first exploring season was over. He had led the expedition from the head of the Great Lakes to Fort Carlton, over more than fifteen hundred miles of trackless territory. Admittedly, they did not explore an entirely new area, but once west of Lake Winnipeg and the Red River Palliser attempted to survey and explore those great blocks of land seldom traversed by white men. This aim does not draw attention to itself during the first exploring season, but in those which followed the expedition surveyed what is now southwestern Saskatchewan, southern Alberta, and southeastern British Columbia; territory through which few whites had ever journeyed.

Meanwhile at Fort Carlton, Dr. Hector, Sullivan, Bourgeau, James Beads, Hallett, and three employees of the expedition prepared to pass the winter. They did not remain within the Fort to enjoy the relative comfort it provided, but rather began to explore the North Saskatchewan region, in so far as the weather and the continual search for food would allow. In fact, on the day of Palliser's departure for Montreal, Sullivan set out for Fort Pitt with some Hudson's Bay Company horses destined for that post. A few days later, Dr. Hector, Hallett, Beads, and a voyageur, left the Fort and travelled northwest, leaving Bourgeau to play with his plants. Dr. Hector ostensibly wished to explore the Thickwood Hills, but from his entries in the journal of
the expedition, it would appear that he was equally anxious to get away from Fort Carlton. The Indian and half-breed hunters had returned from the plains, and the Fort was in a turmoil, overrun with rum-crazed men. For a week Dr. Hector tramped about among the lakes and hills west of Fort Carlton, returning on October 27. He notes the fertility of the flat lands between the hills, the soil being enriched by a considerable thickness of vegetable mould, deposited by the groves of trees which grew around the base of the hills, an uncommon and valuable asset in that region.

On his return to Fort Carlton, Dr. Hector found Sullivan and Captain Thomas Blakiston waiting for him. As planned, Blakiston had come via York Factory. He remained with the expedition as meteorologist until October, 1858.

Winter was now closing in rapidly. Snow fell throughout the trip to the Thickwood Hills, and ice was beginning to form on the Saskatchewan. The expedition's twenty-five horses had been left in the care of the Hudson's Bay Company, but on his return Dr. Hector found that they had deteriorated considerably. He consequently removed them from the company's charge, and located a good feeding spot for the animals about five miles south of the river. Here they remained until the snow deepened, and then they were moved to the river bank about nine miles from Carlton. A

42. Journal, p. 64.
43. Ibid., p. 65.
44. Promoted to the rank of Captain before leaving England.
daily routine was established for checking on the condition of the horses and for making hourly astronomical observations under the direction of Captain Blakiston. By the second week in November winter had descended in earnest; the Saskatchewan was frozen over and the snow lay permanently, if not deeply about the Fort.

Early in December Dr. Hector began to make preparations for his trip to Fort Edmonton. Two teams of four dogs each and two sleds were hired, and by the middle of December preparations were complete. On December 14, 1857, Dr. Hector, Foulds his personal servant, and two men set out for Fort Edmonton. The small party followed the North Saskatchewan for several miles, then struck out across country for Fort Pitt, their immediate objective. Dr. Hector found winter travel relatively simple, and enjoyed the trip more for its novelty than anything else. They traversed the base of the triangle formed by the elbow of the North Saskatchewan, arriving three days later at a temporary Hudson's Bay post on the western shore of Jackfish Lake, near the present summer resort of Meota. The company had been forced to establish many such temporary posts to meet the competition of free traders operating out of the Red River settlement. They would have been justified in meeting the competition by strict enforcement of their monopoly, but saw fit to meet it with better service. Before leaving next morning, Dr. Hector engaged several of the men at the post to serve with the
expedition during the 1858 season. Their route led them well to the north of the North Saskatchewan until they reached the Red Deer Hills. They followed the base of the escarpment for a few miles, then crossed it to the North Saskatchewan. On the western face of the hills Dr. Hector again found signs of coal, but he did not pause to investigate in detail. The river was crossed, and a few more hours of travel brought them to Fort Pitt on December 20, 1857.

Fort Pitt was a small but important post, located on the south bank of the North Saskatchewan not far north of the present town of Lloydminster. Both Crees and Blackfeet traded at the post, often making it a battle ground, but the quality and quantity of goods brought in by the Indians made the maintenance of the post well worth the risk. As was the custom, the Fort raised its own vegetables, but wheat had been a failure. Here too, men and horses were engaged for the spring.

Hector and his companions rested at the Fort for several days, and on December 24, started for Fort Edmonton, accompanied by the factor of Fort Pitt. They followed the river for a few miles, then headed due west to avoid the northern sweep of the North Saskatchewan. Christmas day passed unnoticed, but on December 26 they encountered immense buffalo herds moving northward in search of food. Dr. Hector had seen small herds between Fort Carlton and Fort Pitt, followed by the usual bands of Indians, but never before had
he encountered herds so large. On the same day they came upon a large Indian encampment. The men of the tribe had succeeded in driving about a hundred buffalo into their pound, and were busy slaughtering the animals as they milled around in the enclosure. They then skirted the chain of lakes at the headwaters of the Vermilion River, made a detour north of the Beaver Hills to the valley of the Saskatchewan, which they followed to Fort Edmonton, arriving on December 30.

Dr. Hector found Fort Edmonton to be at least as large as Fort Garry, although built entirely of wood. It stood on the edge of the deep valley, characteristic of the North Saskatchewan in the Edmonton area, on the spot where the Alberta Parliament Buildings now stand. It also had a mill of sorts, the only one between Fort Garry and the Rockies, and a small farm of about thirty acres. The average population of the Fort at that time was about 150, a third of whom were in the employ of the Hudson's Bay Company. Many of these were tradesmen, carpenters, shipwrights, etc., engaged in the construction of bateaus for use on the Saskatchewan, turned out at the rate of ten or twelve a year. These barges, for they were little more,

45. A corral or stockade built of tree trunks in the manner of a split rail fence. They were usually located in a ravine or old buffalo wallow into which the herds were lured or driven, then slaughtered.
47. Journal, p. 72.
were about thirty feet long, built of white spruce timbers and capable of carrying between three and four tons of freight. They drew only two and a half feet of water, making them excellent craft for navigating the often shallow North Saskatchewan. It seems rather incongruous that the main industry of Edmonton in the 1850's was barge building. Near the Fort, on the banks of the river, were several outcroppings of coal of varying quality.

The main purpose of Dr. Hector's trip to Fort Edmonton was to hire men for the explorations of the coming summer. Few of the men at the Fort were interested, but he was told by the factor that there were many half-breeds at Lake St. Ann [St. Ann's], to the west, who would be willing to join the expedition. Unfortunately, these men were out on the plains following the buffalo, but instead of waiting at Edmonton for their return, Dr. Hector decided to visit Rocky Mountain House, about six days journey up the North Saskatchewan.

On January 9, 1858, Dr. Hector, together with three companions, left Fort Edmonton. They followed the river for a few miles, then struck out across-country to the southwest. They traversed a region frequently broken by ridges and frozen streams, following a well-travelled trail through the snow. As the days passed the landscape became more heavily timbered with pine and poplar, standing thicker than any Dr. Hector had seen since leaving the Rainy Lake district. Unfortunately,

the weather became cold and stormy, the temperature sinking well below zero, intensified by a howling wind. On January 14, the party reached the North Saskatchewan and late in the afternoon arrived at their destination.

Rocky Mountain House was a winter post of the Hudson's Bay Company which was abandoned during the summer months. It was little more than a collection of roughly-constructed huts, all in an advanced state of decay and disrepair. The woodwork was rotten, and appeared ready to surrender to nature and collapse about the heads of the inhabitants.

Dr. Hector remained at Rocky Mountain House for twelve days, passing the time in numerous short trips into the surrounding country. He travelled a few miles to the west where he could view the Rockies, about forty-five miles distant, and explored the valley of the North Saskatchewan for several miles in both directions. Close to Rocky Mountain House Dr. Hector found several outcroppings of coal, apparently of a superior quality to that at Fort Edmonton. The Hudson's Bay men told him that the coal occurred only locally, and that the seams were not of any great extent. While at the House, Dr. Hector first experienced the famed chinooks of southern Alberta. The warm west wind raised the temperature above freezing almost every day.

On his return from one of these short trips, Dr. Hector found that a large band of Blackfeet had arrived at
the House to trade. They soon obtained rum, although well watered (eleven to one) and the post was overrun by Indians in various stages of inebriation. When the Indians had recovered from their debauch they began to take notice of Dr. Hector and his men, and word went around among them that they were the advance party of a much larger expedition. At first they eyed the whites suspiciously, but Dr. Hector met with the principal chiefs and explained the peaceful intent of the Palliser expedition. The chiefs listened patiently, and when Dr. Hector had finished they promised not to molest the explorers. After considerable pipe-smoking and oratory, Hector gave the chiefs papers of identification and friendship, which the Indians accepted with great dignity, promising faithfully to aid Palliser whenever possible. Among the recipients of these papers were: Ki-en-och-in-ass (the bear's hip bone), O-nis-teh-ta-mi-soo (the white calf that ran up the hill), and a no doubt sedentary chief named Cut-teh-saks-se (the one that sits in the tent and never goes out).

Dr. Hector describes the Blackfeet as a finer and more powerful race than the Crees. They appeared to be a more sanitary people, and probably more trustworthy. He also notes that the Blackfeet women were as a rule prettier, or at least less repulsive, than those of the Cree tribe.

For the return trip to Fort Edmonton, Dr. Hector

49. Journal, p. 76.
50. Ibid., p. 77.
decided to follow the North Saskatchewan, as the snow on the prairies was too thin for easy travel by dog sled. Accordingly, he and his companions left Rocky Mountain House on January 26. They made rapid progress over the ice, although the thermometer again registered well below zero, and three days later, early on the morning of January 29, they arrived back at Fort Edmonton.

Dr. Hector remained at the Fort for almost two weeks, treating as best he could the many cases of goiter and influenza among the inhabitants. On February 12, together with a Hudson's Bay Company employee bound for the Mackenzie country, Dr. Hector set out for Lake St. Ann, about fifty miles to the west. The first night on the road was extremely cold, the temperature falling to 47° below zero. At the mission of Lake St. Ann Hector was dismayed to find that the men were still out on the plains, but were expected back at any time. He rested a day and then went back to Fort Edmonton with an Indian guide from the mission in one day's fast march. They did not stop at the Fort, but continued across the North Saskatchewan and out onto the plains. They travelled in a southwesterly direction, and on March 8 located the half-breeds from Lake St. Ann camped near Big Hay [Hay] Lake.

Dr. Hector's most difficult task was to win the confidence of their old chief, Gabriel Dumont, and get him to agree

51. The same night (February 12) at Fort Carlton, the thermometer registered 54° below zero. (Journal, p. 78).
52. Not the Gabriel Dumont who was adjutant-general of the métis rebel forces in the rebellion of 1870.
to act as guide to the expedition. When he finally consented, many of the men volunteered to follow him. From these Dr. Hector chose twelve, instructing them to be at Fort Carlton late in May. His task finally completed, Dr. Hector returned to Fort Edmonton and began to prepare for the trip back to Fort Carlton before the spring thaw.

Dr. Hector, Foulds his personal servant, and a Hudson's Bay Company employee left Fort Edmonton on March 15. They followed the river as far as Fort Pitt, and although Foulds and the Hudson's Bay man had trouble keeping a footing on the ice, Dr. Hector had the foresight to borrow a pair of skates at Fort Edmonton, and literally skated rings around his men. The trip to Fort Pitt was not difficult, but spring was showing signs of breaking. The snow turned to slush underfoot and the river ice was becoming rotten and unsafe, so it was decided to strike out across country for Fort Carlton. Two days out of Fort Pitt the snow failed them completely and the sleds were discarded. Following the approximate route of their fall journey, they arrived at the temporary post on Jackfish Lake on April 1. Here Dr. Hector found Sullivan and James Beads, who had been forced to leave Fort Carlton soon after Dr. Hector's departure because of a shortage of supplies. The party, now increased to five, crossed Jackfish Lake on the ice, and reached the North Saskatchewan opposite Fort Carlton on April 8. They crossed the rotten ice of the river (a ticklish job) and found
Bourgeau and Blakiston well and awaiting their return.

The men spent the remainder of April and most of May preparing for the coming exploring season. Toward the end of May, Dr. Hector went back to Fort Pitt to head off the men from Lake St. Ann, directing them to a rendez-vous in the Eagle Hills to the south. Hector descended the North Saskatchewan in one of the bateaus constructed at Fort Edmonton. In this way he completed a survey of the North Saskatchewan valley from Rocky Mountain House to Fort Carlton. Back at Fort Carlton preparations were completed for the coming season, and on June 2, Dr. Hector and Hardisty set out along the Red River trail to meet Captain Palliser returning from Montreal.
Chapter III

And they ascended by the south, and came unto Hebron; where Ahiman, Sheshai, and Talmai, the children of Anak, were.............................. Numbers XIII : 22

Captain Palliser passed the winter in Montreal and New York, ostensibly conducting the business of the expedition, but also taking advantage of the various diversions of the two cities. It must not be assumed however that Palliser's main concern was personal amusement. On his arrival in Montreal he visited Sir George Simpson and settled the accounts of the first season, drawing on the Paymaster-General to the extent of two thousand pounds.¹ What was more important, he wrote to the Colonial Office asking that the time allotted for the completion of the surveys be extended until the autumn of 1859.² According to his original instructions from the Secretary of State for the Colonies Palliser was to disband the expedition at the conclusion of the 1858 season,³ but he felt that an additional year would be needed to conduct a thorough survey of the southwestern prairies and the passes of the Rocky Mountains.⁴

Late in March Palliser began the return trip to Fort Carlton, again via St. Paul and Crow Wing. At the latter town he met Robert Tate, his guide of the previous fall, who kept his contract to the letter, even though it meant trek-

2. Loc. cit.
3. See Appendix I.
-king through 450 miles of muskeg and lake, made almost impassable by the spring thaw. Palliser, Tate, and William Slater, a young half-breed companion of Tate's, left Crow Wing on April 1 by canoe. Palliser had bought a very old and leaky craft for the trip, but he felt that it would hold together as far as Fort Garry. Before their departure he hired two Indian women to plug the numerous holes in his newly acquired canoe with a mixture of grease and gum. The holes were plugged, but with gum alone, for the women could not resist the temptation to eat the grease. The three men had only paddled a few miles when their canoe sank beneath them. The gum had become brittle on contact with water, and without the grease to bind it soon cracked open. Unwittingly, the two Indian women had added their mite to the perpetuation of April Fool's Day. Once the canoe had been salvaged and repaired they pushed on rapidly, even though it was spring in name only and the weather was by no means warm. They arrived at Fort Garry without further mishap on May 3, 1858.

Palliser remained at the Fort for over a week, leaving on May 12 with three men, three carts, and four horses. They travelled slowly westward, delayed by the spring thaw. In any event, it was still too early in the season to begin large-scale exploration, so Palliser could see no reason for forcing the horses and possibly ruining them for the coming season. On June 4 they met Dr. Hector and Hardisty, who had come from Fort Carlton with fresh horses to meet Palliser,
and next day they crossed the South Saskatchewan together to Fort Carlton. The party remained at the Fort for ten days until the plains had dried sufficiently to support the carts. During this delay, Captain Blakiston\(^5\) was dispatched to Fort Edmonton with a small party. There he was to await the arrival of supplies ordered the previous year from Norway House and possibly dispatches from the Colonial Office, and then meet the main body of the expedition at the forks of the Medicine and Red Deer Rivers.

On June 15, 1858, the expedition left its winter quarters at Fort Carlton, following the North Saskatchewan toward the Eagle Hills and the rendez-vous with the men from Lake St. Ann. Next day they were overtaken by Nichewa, who had conducted the expedition from the Qu'Appelle Lakes to the South Saskatchewan during the previous season. Palliser tried to induce him to join the expedition on its projected trip into the Blackfoot country, but Nichewa's Cree tribesmen were again at war with the Blackfeet, and the old Indian declined. They continued in a southwesterly direction, across prairie land which had apparently supported a considerable stand of timber at one time. All the trees had been burned off, however, and only a few stunted willows and poplars grew in their place. On June 18 they crossed Eaglehill Creek [Eagle Hill] Creek, and camped the following night at Lizard Lake in the Eagle

---

5. Palliser seemed unwilling to concede Blakiston's newly acquired equality in military rank, and continued to refer to him as "Lieutenant Blakiston".
Hills, the appointed rendez-vous.

For two days Palliser's party waited anxiously for the St. Ann's brigade. Supplies were running low, as there were no buffalo in the region, and the men wished to move on to better hunting grounds and better meals. Only a few deer, wolves, and beaver were seen around Lizard Lake, but ducks and geese were plentiful. While camped at the rendez-vous, a Cree brave, his squaw, and a child, wandered into the camp. They brought news of an Indian war to the south. As usual, it had been started by Cree horse-stealing, and true to form, the Crees were now being soundly beaten by the Blackfeet. This particular Cree had gambled away all his possessions, so in order to live he had set out on foot, armed only with a bow and arrow, to hunt buffalo and recoup his fortunes. Although such wars gave rise to much suffering among the Indians, as personified rather whimsically by this brave, they were advantageous to the fur trade, for the Indians worked all the harder to obtain the means to kill their enemies.

On the evening of June 21, they were joined by the St. Ann's brigade, and the following morning the journey westward over the Eagle Hills was resumed. The countryside was devoid of all vegetation and even the horses had difficulty in finding patches of grass. The whole area was dotted with

6. The high escarpment at the eastern face of the Eagle Hills also marks the eastern limit of the third prairie steppe or "La Grande Priaarie" as the hunters called it. (Hector to Palliser, Dec. 14, 1857, Parl. Paps., 1859, XXII, [2542]).
salt lakes and marshes which lengthened the march of the expedition, adding to the already numerous difficulties. A further detour had to be made to avoid a Cree encampment on the plains between the Eagle and Ear Hills, near the present town of Wilkie, Saskatchewan. A wandering Indian told Palliser that this band intended to intercept the expedition and demand a long list of gifts, naturally headed by firewater. The plain between the two low ranges of hills was found to be barren and uninviting. Some buffalo were sighted, however, and a few killed, so fresh meat was not scarce. This plain was crossed in three days and camp was made on the evening of the third day on the shores of a lake below the Ear Hills.  

Next day, the low hills were crossed, bringing the expedition to a deep coulee running north and south. Palliser was forced to camp at this spot for several days. While hunting buffalo, one of the horses had bolted and in the ensuing attempt to recapture the animal four of the hunters were forced to spend the night on the open prairie in a wind and rain storm, so typical of the region at that time of year. One of the men took sick as a result of his exposure to the storm, and to facilitate his recovery Palliser camped in the coulee for a week until June 2. The time consumed by the delay, although somewhat of an inconvenience, gave Bourgeau an excellent opportunity to collect botanical specimens in the surrounding area. The countryside was not quite as

1. Probably Ear Lake or Muddy Lake.
barren as that to the east of the Ear Hills, but obviously fertile places were still few and far between. Many bluffs of trees grew on the northern exposures, but those slopes which faced south were desolate wastes of blown sand.

On July 2, the expedition moved out onto a broad plain, apparently very fertile, for the soil was rich, black, vegetable mould. Hundreds of buffalo roamed the grassland in herds of up to two thousand, the largest the expedition had encountered. They travelled in a very leisurely fashion, camping early and starting out well after dawn. This portion of the exploration would have been thoroughly enjoyable had it not been for the thunder and even hail storms which swept the plains almost every day. On July 4, the expedition made a detour to the south to avoid a Cree war party discovered by Dr. Hector while out scouting, but otherwise they followed a due westerly course. The following day, to the south were sighted the Neutral Hills, the recognized boundary between the Cree and Blackfoot tribes.

The swampy valley of the Battle River was reached in July 8, near the present town of Hardisty, Alberta, where the Canadian Pacific Railway now crosses the river. The valley was dotted with groves of spruce and fir, much as it is today, and had once been a great Indian hunting ground, but years of incessant slaughter had greatly depleted the supply

9. The town was named after Richard Hardisty, the H.B.C. employee who was attached to the expedition. (G. H. Armstrong, The Origin and Meaning of Place Names in Canada, Toronto, Macmillan, 1930, p. 139).
of game. Rather than follow the river, Palliser decided
to ford it at this point and cut off the base of the triangle
formed by its southern elbow, recrossing farther west. Next
morning, Palliser and the main party forded the Battle River,
only a shallow stream about fifty yards wide, while Dr.
Hector with two men and a pack-horse set out to follow the
river. During July 9 Palliser crossed the intervening plain,
again forded the river, and camped to await the arrival of
Dr. Hector and his two companions.

The triangle of land formed by the Battle River was
at that time the hunting ground of the Sarcee [Sursee] Indians,
allies of the Blackfeet. Palliser did not fall in with any
of the Sarcees, but when Dr. Hector rejoined him on July 11,
he brought a deputation of seventy men of the tribe. They
were all attired in their ceremonial best, the chiefs wearing
robes ornamented with porcupine quills and trimmed with
ermine. These men remained with the expedition over-night,
and next morning Palliser traded horses with them; a business
requiring a great deal of skill, coupled with a low standard
of ethics. The expedition consequently took hurried leave
of the Sarcee deputation, and during the next two days put
as much rolling prairie as possible between themselves and
the Battle River.

They finally bogged down on July 13. Unceasing
rain and a shortage of fresh meat compelled Palliser to camp
southeast of Buffalo Lake for a few days. Hunters were

11. It would appear that this camp was pitched where
Stettler, Alberta, now stands.
dispatched in all directions, shooting any and all game they happened upon from buffalo to wolves, and by July 17 they were well supplied with dried meat.

The following morning the expedition was again on the march for the Red Deer River. Palliser found the country very similar to the plains north of the Neutral Hills, although a bit more irregular. Timber was almost non-existent but like much of the plains the area appeared to have supported great forests at one time. Fresh water was also scarce, for most of the sloughs were brackish and saline, increasingly so as the season advanced, providing excellent breeding places for the abusive and abused mosquito. According to Palliser, this region was regarded by all who knew the land west of Lake Winnipeg as the best potential farming area on the prairies, The Rev. Father Lacombe, the famed Roman Catholic missionary at Lake St. Ann, had long contemplated transferring his mission to this region, but the plan was never carried out.

The expedition reached the Red Deer River at Haynes Creek [Dead Man's Creek] on July 19. Here Dr. Hector found the most extensive beds of coal yet discovered. Had not two of the half-breeds drawn his attention to smoke rising from the Red Deer valley, they would have passed the deposits unknowingly. On investigation, Dr. Hector found that a seam of coal, in many places fifteen feet thick, was burning spontaneously where it protruded from the valley face. This outcropping was part of what is now known as the

12. Journal, p. 88
13. Ibid., p. 89.
Red Deer coal fields of Alberta. The expedition camped in the valley of the Red Deer River for a day, a few miles above Haynes Creek, while Dr. Hector collected samples of the coal and tested its quality. He found it to be inferior to that used at Fort Edmonton, but the quantity was much greater.\(^{14}\)

While Dr. Hector was thus employed, the men built rafts, and on July 21, the Red Deer River was crossed. They followed the south branch of the river for several miles, then struck out in a southwesterly direction to the summit of the so-called Nick Hills, just south of the present city of Red Deer, Alberta. From this vantage point, on July 23, the Rocky Mountains were first sighted. The men were greatly excited at the sudden and unexpected view of the mountains, lying like a blue cloud along the western horizon, and the prospect of leaving the monotonous prairie land buoyed the collective spirit of the expedition.

Continuing southwest, the expedition followed what Palliser regarded as the boundary between the ancient forest lands and the true prairie district, south of which the soil was deemed to be too sandy and the climate too dry for farming or pasturage.\(^{15}\) Next day the expedition camped at a spot dubbed Cache Camp, a few miles below the Red Deer River, where Palliser proposed to wait for Captain Blakiston and the supplies from Fort Edmonton. For five days they camped at this spot and Palliser was just preparing to push

\(^{14}\) Journal, p. 89.
\(^{15}\) Report, p. 89.
when Blakiston arrived.

July 30 found the expedition again on the move to the southeast, travelling rapidly over sandy, arid land. Palliser's primary concern was now buffalo, rather than exploration, as supplies of meat were again running alarmingly short. Scouts were posted ahead, and on both flanks of the party, scouring the countryside for signs of the animals, and late in the afternoon they reported large herds to the west. During the evening, Palliser scouted the herd, and at noon next day, when preparations had been completed, the hunt began. The herd was a very large one, estimated by Palliser to comprise between four and five thousand animals, accompanied by the usual entourage of crows, antelope, and wolves. The run lasted throughout the afternoon, and in the evening the hunters camped on a small tributary of the Red Deer River to butcher and dress the kill, seventeen in all. This consumed the better part of two days, but Palliser considered it time well spent as he anticipated a shortage of game in the Rockies, the next objective of the expedition.

At this point, Palliser decided to divide the expedition into four parties under Dr. Hector, Bourgeau, Blakiston, and himself. He realized that searching for passes through the Rocky Mountains would be like looking for the proverbial needle in a haystack, so the best results would naturally be obtained by a division of effort. Dr. Hector and

17. Probably the Rosebud River or one of its tributaries.
Bourgeau were given carte blanche to explore as they saw fit and as they were led by their particular interest, geological and botanical respectively. Blakiston, however, was directed to explore the southern passes of the Rockies. The hunters were to remain on the prairies to kill and dry meat, caching it for the several parties as they returned from the mountains. All four parties were to rendez-vous in the autumn, if possible, at Old Bow Fort on the Bow River in the foothills of the Rockies. For his part, Palliser decided that he would first make a trip southward to the boundary, about 170 miles south of his camp, or Slaughter Camp as they named it.¹⁸

Blakiston then suggested that two men be left at Old Bow Fort to build a canoe, while the remaining members of the expedition were exploring in the Rockies. He proposed to use this canoe in a descent of the Bow and South Saskatchewan Rivers to the forks sometime during the autumn, which, if carried out, would have made it possible to map the river accurately from the foothills of the Rockies to Fort Carlton.

"This proposition seemed to be favorably entertained at the time, but on the following morning I [Blakiston] was informed that it was an unknown river; I need only further say that it is still equally unknown".¹⁹ This minor difference of opinion between Blakiston and Palliser was the cause of Blakiston's later resignation from the expedition.

By August 3, the four parties had completed their

¹⁹. Enclosure in Blakiston to C. Fortescue, Oct. 24, 1859, Further papers relating to the exploration by the expedition under Captain Palliser of that portion of British North America which lies between the northern branch of the river Saskatchewan and the United States, and between the Red River and the Rocky Mountains, and thence to the Pacific Ocean, Parliamentary Papers, 1860, XLIV [2732].
separate preparations and struck out from Slaughter Camp. Palliser with Sullivan his secretary, James Beads, three voyageurs, and thirteen horses, moved rapidly southward intending to complete the branch trip in the shortest possible time. Next morning they reached the Bow River, which was easily forded, bringing the party to a rolling plain strewn with boulders. During the days which followed, they continued to travel southward, crossing many creeks and streams, all flowing east to the Bow River. Five days out of Slaughter Camp they came in sight of Sofa Mountain [Chief Mountain], lying astride the boundary. They camped at the foot of a conical hill rising from sixteen to eighteen hundred feet above the prairie, Christened Observation Mountain. In the evening, Palliser rode to the top of this hill which commanded a fine view of the prairie for miles around. To the north and east he saw nothing but the sandy plain which they had just crossed, broken only by the Belly River and its tributaries. The view to the south was obscured by Sofa Mountain.

Next morning, August 9, the party broke camp before daylight and began the trip back to Old Bow Fort. They followed their southward track for a few miles, then struck out to the northwest on a more direct route to Old Bow Fort, bypassing Slaughter Camp. By August 11 their provision were exhausted, so camp was made atop the high sandstone ridges of the Turner Valley, while Beads and Palliser tracked deer and moose. Their meat supply replenished, the party continued to Old

Bow Fort, arriving at the hunter's camp near the ruins of the post on August 14. This post had been established by the Hudson's Bay Company to trade with the Blackfoot, Blood, and Piegan Indians, the wildest in British territory. The Fort had been subjected to frequent attack, however, and was soon abandoned as unprofitable.

On Palliser's arrival at Old Bow Fort, one of the hunters handed him the following letter from Captain Blakiston, which was in effect his resignation:

Site of Old Bow Fort, Base of Rocky Mountains, August 11, 1858.

Sir:

After our conversation on the 3rd inst., from which I infer that private matters influence you in your public duties, my position in Her Majesty's service will not allow of my considering myself any longer in any way connected with the Exploring Expedition under your command.

I shall, however, carry out to the best of my power what I had undertaken previously to our conversation above referred to, namely, to survey the Kootanie Pass, and in the event of my reaching Edmonton in sufficient time, proceed with the Red River men by water to Fort Carlton, and arrange for their transport to Red River.

I have, &c.

(Signed) Thomas Blakiston,
Lieutenant, Royal Artillery

John Palliser, Esq.,
Commanding Exploring Expedition.

Palliser's reaction was typical. When he reached Fort Edmonton on September 20, 1858, he immediately made out a bill charging Blakiston for the use of the expedition's men, horses and equipment from August 12 to September 28, 1858. The

22. Palliser to Col. Sec., loc. cit.
rift between Palliser and Blakiston was apparently much deeper than either was willing to admit in reports to the Colonial Office, for surely a difference of opinion over the construction of a canoe would not have had such far-reaching effect without some further irritation.

Palliser found that the hunters at the Old Bow Fort had failed to procure much spare meat. Fear that the Blackfoot and Blood Indians would return to the plains at any time from their summer hunting ground to the southeast had drained them of all incentive to hunt. He therefore ordered them to cache what meat they could spare, await the arrival of Bourgeau, who intended to spend only a few days in the mountains, and return to Fort Edmonton with the carts.

On August 18, Palliser completed the preparations for his own departure. He intended to cross the Rockies by Kananaskis Pass, described to him by James Sinclair when he met the Red River half-breed in 1848. At noon, with four men and nine horses, Palliser began the journey across the Rocky Mountains.

They followed the Bow River for a few miles, then forded it to the Kananaskis, a tributary flowing from the south, and within a few hours the river led them into a deep valley, walled on both sides by heavily timbered mountain slopes. The dense forest made progress slow and difficult, especially through the numerous burned-over regions where fallen trees lay in a tangled mass.

23. V. supra, p. 95
Three days out of Old Bow Fort, Palliser's party arrived on the shores of Upper Lake Kananaskis between Mount Invincible and Mount Sarrail, from which the river flows. They followed the lateral valley between the two mountains, and on August 22 they turned north, following a gradual rise to the Continental Divide. That evening they camped on the Pacific watershed beside a small stream draining into the Kootenay [Kootanie] River, making tea from water which flowed to the Pacific and boiling tough elk meat in the waters of the Saskatchewan.

The ascent to the Divide through Kananaskis Pass had been quite easy. The rise was gradual and the valley floor devoid of swamps, and fallen timber was the only serious obstacle encountered. On August 22 Palliser's party began the descent to the Kootenay River. By following the creek on which they had camped the previous night the party soon reached a larger stream, modestly christened Palliser River. Through the days which followed the party continued to descend the tributaries of the Kootenay and finally the river itself. While the Kootenay was little more than a narrow stream it was used as a road to avoid the fallen timber and tangle of vegetation which grew along its banks. As the stream increased in volume they took to the western bank, but fallen timber lay so thick that axmen had to be sent ahead to cut a trail. When the party neared the divide separating the Kootenay River from the headwaters of the Columbia, the valley became

narrow and deep. Finally, on August 27, the trail disappeared completely. The cold river was forded near the present town of Canal Flats, British Columbia, where the Kootenay River swings southeast to follow the valley between the Selkirks and the Rockies. Now on the east bank, Palliser made rapid progress down the valley.

The following day the party stumbled on an encampment of Kootenay [Kootenie] Indians. By means of a series of signs and grunts, completely unintelligible to the whites, one of the Indians told Palliser's men that the wayward Captain Blakiston had passed through their camp five days before, having left Old Bow Fort, bound for the mountains, five days ahead of Palliser. Before taking leave of the Indian band, Palliser traded horses with them, as his were by this time in very poor condition, and bought an ox for fresh meat. He noted that the Kootenays had excellent horses and a few cattle, but no other possessions of any value.25

Still following the Kootenay, a few days travel brought them to the Elk River, a tributary flowing from the east. Palliser decided to turn eastward and follow the valley of the Elk River to the plains. He had hoped to cross the mountains farther north by Crow's Nest Pass, but it had been bypassed during the descent of the Kootenay River. This more southerly route led them through the North Kootenay [Kootanie] Pass.

The ascent of the Elk River and its tributary, the

Wigwam, was begun on September 1. The party made rapid progress during the days which followed, and on September 7 they recrossed the Continental Divide. A descent of only a few hundred feet brought them to the Carbondale River, a tributary of the Old Man River. In its wooded valley they found partial shelter from the storm which blew up on September 8. Late next day they emerged from the mountains and headed north toward Fort Edmonton. The remainder of the trip was leisurely and unhurried. Palliser rode ahead or on the flanks of the main party, hunting as they travelled, killing moose, deer, grizzly bear, and even a swan to replenish their supply of meat. On September 14 they forded the Bow River and another week brought them to Fort Edmonton on September 20, 1858.

Soon after Palliser's departure from Slaughter Camp on August 3, 1858, Dr. Hector and his party also left the camp. They moved slowly westward along the Bow River to Old Bow Fort, hunting as they travelled, for the plains were dotted with buffalo. They reached the Fort on August 7, where they camped for several days, organizing the branch party under Captain Blakiston and Bourgeau.

All three parties left Old Bow Fort on August 11, Dr. Hector and Bourgeau together, bound for the upper reaches of the Bow River, and Blakiston for the North Kootenay Pass. Blakiston crossed the Rockies to the Kootenay River by the route later followed by Captain Palliser on his return to the

26. Palliser states that the first stream he reached on the Saskatchewan watershed was a tributary of the Belly River (Journal p. 97) but none of its tributaries flow from the vicinity of North Kootenay Pass.
plains in September. He then turned south along the Kootenay to the Tobacco River, a tributary flowing from the east. Returning to the plains, Blakiston followed the South Kootenay Pass which emerges at the northern end of the Waterton Lakes. Unfortunately, this pass runs through American territory for more than half its length. On his return to Fort Edmonton, Blakiston had little to add to Palliser's observations, with one important exception: he reported the existence of Crow's Nest Pass, although it was not surveyed at the time.27

Dr. Hector and Bourgeau struck out at once for the Rockies as there was little to interest the geologist or botanist on the plains. Dr. Hector's party consisted of three Red River half-breeds and a Stoney Indian who attached himself to the party at Old Bow Fort as unofficial guide. The Stoney was apparently an excellent hunter and was accordingly nick-named Nimrod by Dr. Hector, for his own name was too much for the geologist's tongue. Their baggage was carried by eight pack-horses, as the carts had been left with the hunters at Old Bow Fort to be returned to Fort Edmonton. Soon they were well within the Rockies and the peaks rose abruptly on either side of the Bow River.

On August 12, Bourgeau and Dr. Hector parted. The botanist spent more than two weeks in the region of Grotto Mountain, near the present town of Canmore, Alberta, and along the valley of the Bow, collecting specimens, and then returned to Fort Edmonton. Dr. Hector continued up the Bow River in a

northwesterly direction with the intention of crossing the Rockies by Vermilion Pass, a route recommended by Nimrod as the one used in the past by Cree war parties. Hector considered crossing by Simpson Pass, the route followed by Sir George Simpson on his trip around the world in 1841 and 1842. Unfortunately this pass was found to be very narrow and the stream which flowed through it was in flood, so it was decided to continue to the more northerly Vermilion Pass.

Nimrod soon proved his ability as a hunter and his value as a guide, scouting ahead of the main party in search of game and blazing the best trail. Mountain goat was the most plentiful game, providing the party with meat staple, and though the animal is hard to track and kill Nimrod kept them well supplied. This "wild mutton," as Hector called it, was augmented only by a few deer and moose. Travel was slow and difficult, for the valley floor, though broad and flat, was strewn with rocks and fallen timber.

Dr. Hector followed the valley of the Bow River to Mount Eisenhower [Castle Mountain], camping on the east bank of the river opposite Vermilion Pass on August 19. Up to this point his route coincided with the one later chosen for the Canadian Pacific Railway. Next morning the party forded the river at a point where it was only sixty yards wide and about four feet deep, but very swift-flowing. The immediate face of the western bank was steep and covered with shale, making

30. Ibid., p. 102.
the climb particularly difficult for the horses, but the ascent soon became more gradual. They had not gone far into the pass, over gently rising ground, before the gradient reversed itself and they began to descend. Dr. Hector back-tracked a few hundred yards and located the Continental Divide only twelve miles from the Bow River. 31

The valley itself was several miles wide and heavily wooded to the tree line. The party travelled high on the southern slope to avoid the morass of fallen cedar and dank swamp on the valley floor. On August 21, they happened on an open plain in the angle of the Vermilion River where it changes course to the southeast, following the valley between the Hawk Ridge and Vermilion Ranges. The surface of the plain was entirely covered with yellow ochre. Nimrod told Hector that during the summer the Kootenay Indians came to this spot, converted the yellow ochre to red oxide over a fire, and traded it to the Blackfeet and other plains Indians as a pigment, calling it vermilion 32; hence the name of the river, the valley, and the mountain range. Turning to the south, Hector and his men followed the Vermilion River for three days, turning westward on August 24 through a deep gorge from which the river falls into the Kootenay. Dr. Hector's journey had not been difficult, so far. Palliser, to the south, had a much harder time of it, but he pressed on more rapidly than did his geologist. Hector had avoided Palliser's difficulty with

32. Ibid., p. 103.
fallen timber to a certain extent, possibly through Nimrod's knowledge of the terrain. The weather had not been kind to them, however, and each day had brought a rain-like mist to the valleys. The temperature also varied greatly, dropping below freezing at night and rising to the seventies during the day. The inescapable dampness, coupled with the diurnal temperature variation, made it difficult for the party to keep their meat fresh. They would probably have suffered greatly had it not been for Nimrod's skill.

Dr. Hector crossed the Kootenay on August 25, and as Palliser was exploring the Kootenay valley to the southeast, he turned northwest in the hope of finding some east-west pass to the headwaters of the Columbia. In a few days they passed the swamps and lakes from which the Kootenay River flows, to the headwaters of the Beaverfoot River, a tributary of the Columbia. On August 29 they reached the point where the Kootenay valley divides around the Van Horne range, one branch running to the northwest and the other to the north. A large river flows down the latter valley, over a fall about forty feet high into the Beaverfoot River, then continues down the northwest arm of the valley. Dr. Hector decided to cross the northern river and follow its valley to the Continental Divide. While fording the swift-flowing river, one of the pack-horses slipped into a deep pool and the men

33. Kicking Horse River.
34. Journal, p. 105. Wapta Falls, two miles south of Leanchoîl on the present Canadian Pacific Railway transcontinental line.
had some difficulty in rescuing the animal. Hector records the succeeding events as follows: 35

In attempting to recatch my own horse, which had strayed off while we were engaged with the one in the water, he kicked me in the chest, but I had luckily got close to him before he struck out, so that I did not get the full force of the blow. However, it knocked me down and rendered me senseless for some time.

Consequently, the river came to be known as the Kicking Horse, and its valley, Kicking Horse Pass.

The party remained at the spot for two days while Hector recovered from his accident. Meanwhile, Nimrod and the half-breeds scoured the mountainside for game as they had only a small bag of pemmican left. As soon as Dr. Hector could walk they pushed on, more intent on hunting than exploring, as they were by this time living on wild berries. On September 2 Dr. Hector had the good fortune to shoot a grouse, which was boiled with candle ends and bits of grease; a poor meal for five. They continued to push northward through Kicking Horse Pass, though continually growing weaker from lack of food and the arduous hunting. Finally, on September 3, their fast was broken when Nimrod shot a moose. They had been almost six days without food.

Next morning as the men were finishing the tit-bits of the moose, a Stoney Indian walked into their camp. He was from an Indian encampment about six miles farther west across the Bow River, apparently only a few miles away. Hector's party had crossed the Continental Divide unknowingly and were

now on the Saskatchewan watershed. They at once packed the horses and set out to join the Indian band. After a descent of only a few hundred feet they reached the Bow River, which was easily forded. Turning to the northwest, up the valley of the Bow, they soon arrived at the Indian encampment in a very secluded spot on the shores of a small lake. The squaws at once took over the management of their affairs, and prepared Indian delicacies for them; moose nose and entrails, boiled blood, and roast kidneys. These Indians, like Hector's party, had been near starvation when they arrived in the district, but within a few days they had killed seven moose and were now camped to enjoy their good fortune.

Since leaving the Kootenay valley, Hector's route had paralleled the present Canadian Pacific Railway transcontinental line between Leanchoil and Lake Louise. To this day the place-names of the district bear evidence of Hector's visit: Hector station on the Canadian Pacific, so named because of the excellent view northward to Mount Hector, and Hector Lake which lies at the mountain's base.

Dr. Hector's party remained with the Stoney band for three days, hunting and drying meat, then on September 8 they broke camp and moved off up the valley of the Bow River. They were hindered only by an occasional snow flurry, for the valley floor, though narrow, was level and devoid of vegetation. Next day they reached Bow Lake, from which the Bow River flows. Two miles farther up the valley lay Peyto Lake with an outlet
flowing to the northwest. Thus they crossed the divide of the North and South branches of the Saskatchewan. From the head of the lake they had a magnificent view of the valley for at least twenty-five miles, running to the North Saskatchewan.  

By following the valley of the Mistaya River [Little Fork River], flowing from Peyto Lake, they came after two days to the North Saskatchewan, which Dr. Hector notes as being a large river, even so close to its source. Turning eastward down the valley of the North Saskatchewan with the intention of returning to the plains, Hector's party found travel slow and arduous. The margin between river and mountain was narrow, heavily timbered, and trackless, limiting the march to only a few miles each day. They crossed to the north bank in the hope of finding a better track, but failed to accelerate their rate of descent. On September 20, they reached Bighorn River [Big-horn Creek], a tributary of the North Saskatchewan flowing from the northwest between the Bighorn Range and the Rockies. Dr. Hector decided to camp on the river for a week to rest the horses for the last lap of the journey to Fort Edmonton.

No sooner had camp been pitched than they were joined by a band of Stoney Indians, most of whom knew Nimrod, Hector's guide and hunter, by reputation if not in person. Not until then did Hector fully realize his good fortune in having Nimrod with his party, for the Indians all held him in very high regard, treating him with great respect. Dr. Hector

37. Loc. cit.
occupied himself during this week in exploring the valley of the Bighorn River and preparing skeletons of big-horn sheep for shipment to England.

By September 27 the horses had recovered sufficiently to resume the journey, so the trip to Edmonton was begun. Before taking leave of his Indian friends, Dr. Hector presented them with suitable gifts and paid off Nimrod, who was anxious to remain with the Stoney band. The party struck out across country from the Bighorn River to bypass the southern sweep of the North Saskatchewan, and soon left the Rockies far behind. Next day they reached Shunda Creek [Miry Creek], which led them back to the North Saskatchewan and so to Rocky Mountain House on the evening of September 20.

They found the post deserted, as the traders had not yet arrived from Fort Edmonton for the winter trading season, so Hector's party made themselves as comfortable as possible in the dilapidated buildings. A fire was made with pickets torn from the rotten stockade, and they were in need of nothing but food. During the trip from the Bighorn River the pemmican which was to feed the party to Fort Edmonton had fallen unnoticed from one of the packs. With the Fort more than 180 miles away they found themselves without food and with no immediate prospect of getting any.

Next morning they left Rocky Mountain House and pushed on as rapidly as possible toward Fort Edmonton, existing on such small game as they managed to shoot. On October 3
they had the good fortune to meet a band of Stoneys who gave them a supply of venison in exchange for Dr. Hector's leather tent, so their enforced fast was broken. Food gave the men new strength, but the horses were very weak from plodding through the ever-deepening snow which had begun to fall while they were at Rocky Mountain House. Nevertheless, Dr. Hector and his three companions reached Fort Edmonton on October 7, the last of the various parties to arrive at winter headquarters.

Captain Palliser's first concern on his return from the mountains was the expedition's horses, which would be needed during the next exploring season. Two of the hunters sent back to Fort Edmonton with the carts from Old Bow Fort had been instructed to cut hay for feed. By Dr. Hector's return they had gathered seventeen stacks, more than sufficient to last the winter. The horses were picketed about eleven miles to the west on Big Lake [Big Bear Lake] and two men were assigned to care for them throughout the winter. The men hired for the season were paid off and on October 12 they left for their respective destinations, Lake St. Ann and the Red River settlement. Captain Blakiston and James Beads accompanied this latter group, Blakiston to return to England, and Beads bound for the Red River settlement with dispatches for the Colonial Office asking permission for Hector and Sullivan to return to England by way of Panama at the conclusion of the 1859 season. The gulf between Palliser and Blakiston must have been very deep in view of the fact that Palliser would not even entrust

his dispatches to him. On the other hand, Blakiston would not reveal any of his findings or even allow Palliser to use his maps.

Dr. Hector, always the most active and vigorous member of the expedition, was kept busy preparing maps and reports, and making arrangements for regular meteorological observations at Fort Edmonton throughout the winter, having assumed the function of Captain Blakiston. Once these routine tasks had been completed, Hector looked about for some new venture to occupy his attention. Accordingly, during the last week of October, he and a half-breed guide set out across country for Saddlelake Creek [Snake Portage] on the North Saskatchewan about half way to Fort Pitt. The early snow had disappeared, and the whole trip was completed during the short period of Indian summer. The journey itself was uneventful, but Hector notes that the country around the Snipe Hills [Egg Hills] was rolling and apparently fertile, admirably suited for farming. Dr. Hector and his guide returned to Fort Edmonton on October 31, 1858.

Captain Palliser, meanwhile, was preparing to go on a hunting trip on the plains south of Fort Edmonton. He was out almost a month, enjoyed himself immensely, and returned to Fort Edmonton on December 4. Within a few days he was making ready for a second trip, this time to Rocky Mountain House, ostensibly to befriend the Blackfeet, but actually to indulge in a little hunting. Early in the new year Palliser left

for Rocky Mountain House, accompanied by two new friends named Brisco and Mitchell. These men, the former an old army acquaintance of Palliser's, were affluent English sportsmen who had come west in search of adventure and big game. They found a congenial cohort in Palliser, and all three passed the remainder of the winter at Rocky Mountain House, occupying their time in frequent excursions on the prairies. It is worth noting that Palliser found Rocky Mountain House under the command of a Spanish-American man of parts named Brazeau, a shrewd, efficient trader and an extraordinary linguist, who spoke no less than six Indian dialects fluently, besides English, French, and Spanish. Unfortunately Brazeau's supply of trade goods was small and he could not make full use of his talents. His main function was to supervise the construction of bateaux for use on the North Saskatchewan. In the spring, Palliser, Brisco, and Mitchell returned to Fort Edmonton in one of the bateaux, arriving on May 9, 1859.

Back at Fort Edmonton Dr. Hector waited impatiently for the winter to set in. As soon as the rivers had frozen over and permanent snow covered the ground in sufficient quantity to permit travel by dog sled, Hector, accompanied by two half-breeds and a Cree guide, set out to explore the country in the vicinity of Devils Head [Devil's Head], north of Old Bow Fort. They left Fort Edmonton on November 26, 1858, and followed the Blackfoot cart trail due south of Bear's Hill, where they turned southeast, reaching the forks of the

40. Parallels the present Canadian Pacific right-of-way between Edmonton and Red Deer, Alberta.
41. Near the present town of Wetaskiwin, Alberta.
Blind Man and Red Deer Rivers on December 1. During the first six days the temperature fell steadily to a low point of thirty-seven degrees below zero, but as they began to ascend the Red Deer the weather improved. They were now hampered by broad, open stretches of water, and more than one member of the party fell through thin ice into the cold river. On December 7 they stumbled into a Stoney encampment, occupied by the same band with which Hector had camped for a week by the Big Horn River at the end of September. Dr. Hector learned much from them about the surrounding country, and on their advice left the Red Deer River to follow a tributary, the Little Red Deer, to its source. They travelled rapidly over wind-packed prairie snow until December 10, when they were overtaken by a typical prairie blizzard. Next morning the storm had abated and the air was still and cold. When Dr. Hector awoke he found his men and all signs of the camp hidden beneath a blanket of snow. The others soon awoke and dug themselves out, but no amount of whistling and shouting would make the dogs show themselves. Dr. Hector finally aroused them by walking in ever-widening circles around the spot where the fire had been until he had stepped on all the dogs.

Two days later, on December 13, Hector's party reached the foot of Dead Man's Hill on the Bow River, a few miles below Old Bow Fort. They did not go on to the Fort, but turned east to begin the trip back to Fort Edmonton. The party followed the Bow River for a few miles and then swung slowly northward.

42. Journal, p. 120.
cutting across country to Dogpound [Edge] Creek, a tributary of the Little Deer River. Here they met a second band of Stoney, very near starvation, so Hector directed them to the west where he had seen large herds of buffalo. They continued northward, passed the sight of Cache Camp and across the Red Deer River on December 18. They soon fell on their own track, and by forced marches reached Fort Edmonton on Christmas Eve, 1858. Dr. Hector and his party had been on the plains for twenty-nine days and had travelled an estimated five hundred and thirty-six miles.43

Throughout the festive season Dr. Hector divided his time between the merry-making at the Fort and the preparation of reports and letters for England. When these had been completed and dispatched by courier, he began to prepare for another trip, this time to Jasper House near the source of the Athabasca River and far north of any region previously traversed by any member of the expedition.

On January 12, 1859, Dr. Hector and three men set out for Jasper House. Each drove a heavily loaded dog sled as they had to carry food for twenty-eight days. The first night out they camped in relative comfort at the Horse-guard about eleven miles west of Fort Edmonton. The dogs covered the distance in four and a half hours, despite the fact that each sled carried approximately three hundred and fifty pounds of pemmican, bedding, instruments, and sundry supplies.44

44. Loc. cit.
Hector found the expedition's horses well cared for, although understandably weak due to the severity of the weather.

On leaving the horse-guard next morning, they followed the Lake St. Ann trail for a few miles, and then turned northward across the Sturgeon River, along the Sandy Lakes, and to the Pembina River. The Pembina is the southernmost river flowing to the Arctic Ocean, but it does not flow from the mountains. Thus Dr. Hector's party had crossed from the Saskatchewan to the Mackenzie watershed.

The weather was perfect during the first few days, though cold, making travel easy until they began to approach the Athabasca River. The landscape then became more heavily timbered, supporting a much finer stand than the Fort Edmonton area. These trees sheltered the men from the wind, but fallen timber made progress slow and difficult.

On the afternoon of January 16, Dr. Hector's party reached the Athabasca River, which they intended to follow to Jasper House. That night they camped at Fort Assiniboine, an abandoned Hudson's Bay Company post, where they left a cache of pemmican for use on the return trip. Hector found the Athabasca to be a larger river than the North Saskatchewan at Fort Edmonton, and apparently swifter flowing, bursting through great open holes in the ice every few miles. As they continued up-stream, intermittent snow flurries spread a twenty inch carpet of snow over the ice, forcing all four men to tramp ahead of the dogs breaking trail. Five days later they reached

the mouth of the McLeod River [McLeod's River], a tributary flowing from the southwest. In crossing a rocky point to by-pass a great bend in the Athabasca near the forks, one of the sleds was smashed, and in the confusion two dogs escaped. The load from the smashed sled was redistributed, but the two dogs were never recaptured, avoiding all attempts to snare them. As they journeyed westward, Hector deposited caches of pemmican at regular intervals for use on the return journey, carefully protecting them from the animals by means of wooden stockades.

As they continued monotonously westward, the banks of the river became steeper and more rugged, but the valley floor remained uniformly level and unbroken. By forcing the dogs, the party managed to cover about eighteen miles a day. In the valley, they happened on two Indian encampments, one of Assiniboines and another (strange as it may seem) of Iriquois - both near starvation. The latter band had been servants of the North West Company, but after union they had taken to the plains, steadily working their way west.

On January 30, the explorers camped in the foothills of the Rockies, an estimated forty miles from Jasper House. Dr. Hector decided to attempt to cover the remaining distance in one day, so next morning they set out before dawn, travelling hard almost due south. During the afternoon they crossed

Brûlé Lake [Lac à brûlé]; but by nightfall they were still several miles from Jasper House and on the opposite bank of the Athabasca, now a tumbling, ice-free torrent about a hundred yards wide. With the thermometer registering fifteen degrees below zero and a howling wind blowing from the north, they turned without enthusiasm to the task of fording the river. The dogs were thrown in first and pelted with chunks of ice until they swam for the opposite shore. Then the four men gingerly waded into the waist-deep stream, carrying the sleds through the icy water. As soon as they emerged on the western shore their clothing froze stiff and the dogs took on the appearance of animated blocks of ice. The pressed on through the woods for some two miles, reaching Jasper House about ten, where they were warmly welcomed, both literally and figuratively, by H. J. Moberly, the Hudson's Bay Company factor.

Jasper House was situated on a narrow plain about six miles long on the floor of the Athabasca valley, beside Jasper Lake. The present Canadian National Railways divisional point is about twenty miles farther up the Athabasca River from the site of Jasper House. The three buildings which made up the post, all built after the style of Swiss chalets, were set on three sides of a square. During the first half of the nineteenth century, Jasper House had been an important depot on the Hudson's Bay Company route west. In that period the

50. Loc. cit.
most-travelled course from Fort Edmonton to the Pacific coast was along the Athabasca to Jasper House, through Athabasca Pass to Boat Encampment at the confluence of the Canoe and Columbia Rivers, and so down the Columbia or Fraser on the Pacific watershed. The trip from York Factory on Hudson Bay to the Pacific usually took about three-and-a-half months.

The staple diet at Jasper House was much different from that at the prairie posts. Big-horn sheep provided most of the meat. They were supplemented by Canada lynx which were cleaned, stuffed with minced mutton, and roasted whole. These mountain sheep were lean and unappetizing during the winter months and Dr. Hector's men did not fancy the diet offered them, for they stole the last bag of pemmican from the store room and before the theft was discovered they had eaten it all. Hector had been saving this pemmican to feed the four men on the return trip to Fort Edmonton. He ordered the three culprits to leave Jasper House at once, sending them out with guns and ammunition to make their way back to Fort Edmonton as best they could.

While at Jasper House, Hector went on many hunting trips into nearby valleys with Moberly or some of the hunters, who were Iroquois. From these hunters he heard reports of broad plains and fertile lands to the north, which we now know as the Peace River country. The Iroquois claimed that they had grown barley, potatoes, and turnips in the region with great success. Dr. Hector also took routine temperature and
meteorological observations while at Jasper House, with the intention of comparing them with similar observations being made by Sullivan at Fort Edmonton.

During the second week in February, Dr. Hector went on a trip to the source of the Athabasca River with Moberly and several of the men from Jasper House. They followed the Athabasca to the Miette River, flowing from the west. This was the jumping off place for the Fraser River route to the Pacific, that river being about six days journey up the so-called Leather Pass. Dr. Hector and his companions turned southeast, up the Athabasca to the Whirlpool River, flowing from the Athabasca Pass. A few more days travel brought them to the source of the Athabasca River in the Columbia icefields. The return trip was rapid and uneventful, and the party reached Jasper House on February 16.

Dr. Hector then began to prepare for the return trip to Fort Edmonton, as he had told the men of the expedition that he would be back by the end of the first week in March. On February 19, Hector and two men, one of them an Iroquois guide, set out from Jasper House, intending to head across country to Lake St. Ann and so avoid the northern sweep of the Athabasca River. Dr. Hector's meager supplies were carried on a small sled, pulled by three dogs. The majority of his

51. Journal, p. 128. Neither of the Hudson's Bay Company routes, the Athabasca-Boat Encampment-Columbia, or, Athabasca-Leather Pass-Fraser, are used today by railways or highways. The Canadian National Railway transcontinental line parallels the Miette River for a few miles, but then follows the Yellowhead Pass to the Fraser, and so south to the North Thompson.
equipment was left at Jasper House to be sent down to Fort Edmonton with the first boats in the spring. They followed the Athabasca below the post for about forty miles, then struck out due east for Lake St. Ann. Only three days out of Jasper House the sled had to be abandoned and the supplies packed on their backs, but they continued to make good time. When they reached the McLeod River, their supply of meat had been exhausted. During the days in which they followed the river they had no food whatever, and it was not until they had turned due east again that the Iroquois guide shot a moose. The three men camped beside the carcass and did not move until all the edible portions of the animal had been devoured two days later. Fortified by this two-day feast, they soon covered the remaining distance to the Pembina River, on to the Saskatchewan watershed, and over the ice of Lake St. Ann. On March 5 they arrived at the mission and were greeted cordially by the priests and a man from Fort Edmonton, sent out with a fresh dog team to bring Dr. Hector over the last lap of his journey. Leaving his men at the mission, Hector left the same night with the man from Fort Edmonton and arrived at the Fort in time for breakfast next morning.

No sooner had Dr. Hector fully recovered from his arduous trip than he found himself on another prairie excursion, this time to the east. Word came from Fort Pitt that one of the clerks there was very ill, so at the request of the chief Hudson's Bay Company factor stationed at Fort Edmonton,

52. Journal, p. 129.
Christie, Dr. Hector agreed to travel down the North Saskatchewan and do what he could for the sick man. From this innocent beginning the trip became a major undertaking.

A party of five, including Hector and Christie, left Fort Edmonton on March 20, 1859, bound for Fort Pitt, with the intention of completing the trip in four and a half days. Three days out of Fort Edmonton, having covered half the distance to Fort Pitt, they ran into a violent snow storm. When the sky cleared, the winter trail was obliterated, and by some oversight no one had packed a compass. They travelled by instinct and argument for two days until they met a wandering band of Indians. The Indians would not believe Christie when he told them their destination. They had completely reversed their direction and were near the North Saskatchewan River, well on the way back to Fort Edmonton, much to the chagrin of Christie and Hector. They reversed their direction and reached Fort Pitt eight days out of Fort Edmonton, instead of the projected four and a half, having travelled about three hundred miles instead of two hundred. 53

At Fort Pitt Dr. Hector found the clerk and several others, employees of the Hudson's Bay Company, suffering from a "kind of mild fever;"54 so in one stroke he acquired a practice of considerable proportions. However, a new and more serious problem had arisen since news of the clerks' illness had been dispatched to Fort Edmonton. Early in the winter a party of Americans had arrived at Fort Pitt bound for the Fraser

54. Loc. cit.
River gold fields. Unequipped for winter travel, they had decided to pass the winter at the Fort, where they were employed by the Hudson's Bay Company making nets, harness, and so on. A few days before the arrival of Hector's party from Fort Edmonton, a quarrel had arisen between two of these Americans over some trifle, and during the ensuing argument they had drawn their revolvers and fired six shots at one another. The man who first drew soon died of his wounds, but the other was only scratched. Christie investigated the whole affair and wrote a complete report. He sent one copy to Norway House, a second he gave to the survivor, and a third he kept for himself. Little could be done in the way of prosecution in a country virtually without law, so the survivor was allowed to continue to British Columbia, where Christie instructed him to give himself up to the proper authorities.

Christie left two days later for Fort Edmonton, but Dr. Hector remained at Fort Pitt until April 26, caring for the sick as best he could. On the latter date, Hector borrowed several horses and a light cart from the Hudson's Bay Company, crossed the river on the ice, and set out for Fort Edmonton, only a few hours before the ice went out on the North Saskatchewan. The previous year (1858) it had gone out almost three weeks earlier on April 8. Six days' travel brought Hector to Fort Edmonton on May 3, 1859.

Farming operations were already far advanced at the Fort and apparently on a larger scale than in previous years.

Christie was attempting to make the Fort independent of the untrustworthy and indolent half-breed employees. Vegetation was noted as being farther ahead than it had been at the head of the Great Lakes in June, 1857, even though the men maintained that the season was unusually late. 56

Activity around the Fort increased as the month of May advanced and the boats began to arrive from the posts farther west. On May 9 Palliser, Brisco, and Mitchell arrived with the boats from Rocky Mountain House, bringing together all the members of the expedition with the exception of Captain Blakiston for the first time since Christmas, but not for long. On May 26 the last brigade of boats left Fort Edmonton, and with them went Bourgeau, the expedition's botanist, much to the regret of the remaining men, for according to Dr. Hector: "the Expedition will reel quite incomplete on the plains without his methodical habits and quaint drollery". Bourgeau's appointment to the expedition expired at the conclusion of the season of 1858, and he was not authorized to remain with Palliser during the third year of exploration.

57. Ibid., p. 133.
Chapter IV

And they came unto the brook of Eshcol, and cut down from thence a branch with one cluster of grapes, and they bare it between two upon a staff; and they brought of the pomegranates, and of the figs.

Numbers XIII : 23

The British North American exploring expedition had been in the field for almost two years. During that time the main party, under Captain Palliser, and later branch parties under Captain Blakiston and Dr. Hector, had explored much of the country between the head of the Great Lakes and the Selkirk Mountains. They had traversed and mapped the Red River valley, the country to the west along the boundary line, the region farther north drained by the Assiniboine and Qu'Appelle Rivers, the South Saskatchewan valley from the elbow to the forks and the valley of the North Saskatchewan between Rocky Mountain House and Fort Carlton, all during the exploring season of 1857. Throughout 1858 Palliser and the various branch parties concentrated on the country still farther west. In the early part of that season they traversed the region between the two branches of the Saskatchewan and the valley of the Battle River, and during the fall and winter surveyed the upper reaches of the Saskatchewan watershed as far south as the boundary, several passes through the Rockies, the Kootenay Valley, the headwaters of the Columbia, and the
Athabasca River from abandoned Fort Assiniboine to its source. This left a portion of the prairies in what is now southwestern Saskatchewan and southeastern Alberta as yet unsurveyed. With this in mind, Palliser wrote to the Colonial Office in October, 1858...

... acquainting them of what still remained to be done in order thoroughly to explore, completely to report on the country, and in short to exhaust the subject of those regions of British North America as far as the western slope of the Rocky Mountains, also requesting that we should be allowed not only to complete this work, but also afterwards to return home westwards, instead of recrossing the plains of the Saskatchewan.

This dispatch Palliser entrusted to James Beads, who was to carry it to the Red River settlement and there await a reply, bringing it to Fort Edmonton as soon as possible.

Meanwhile, at Fort Edmonton, supplies were running very short. By the third week in May, 1859, it became evident that the expedition would have to forage for food on the plains, despite Palliser's unwillingness to leave the Fort before Beads returned from the Red River settlement with the expected dispatches from the Colonial Office. Captain Palliser decided to leave Dr. Hector at the Fort to await the arrival of the letters and orders, while the expedition headed south to the Blackfoot, Blood, and Piegan [Pigeon] Indian country.

1. *Journal*, p. 133.
3. During the winter of 1858 there were ninety-four people living at Fort Edmonton, forty-eight of whom were children. Their average daily consumption of buffalo meat was four hundred pounds, or approximately four and a half pounds per person. This meant that the Fort's hunters had to bring in at least six tons of buffalo meat per month; a tremendous task. (*Journal*, p. 78).
The entire expedition, with the exception of Dr. Hector, left Fort Edmonton on May 26, 1859. It was a very cosmopolitan group that followed Palliser out of the Fort that day, but he had great difficulty in forming a party at all, for the country he wished to explore was almost unknown and considered very dangerous. According to Palliser, the region we now know as southern Alberta had not "... been traded in by the Hudson [sic] Bay Company since they were compelled to abandon their forts on the ... Bow River; and when they did penetrate the country it was up the Bow River with a brigade of 100 men and the outlay of 10,000". Palliser and Sullivan were the only remaining members of the original expedition, but they were accompanied by Brisco and Mitchell with Nimrod, now employed by Brisco, six half-breeds, a Blackfoot guide name Felix Petope, a French-Canadian, three Americans from the group stranded at Fort Pitt during the winter, and one notable curiosity, a negro named Dan Williams, Palliser's equivalent of Lewis and Clark's negro, York. Like Xenophon's ten thousand Greeks the party was followed by a motley collection of wives and children who hoped to scavenge a little food. The majority of the supplies, such as they were, and baggage were loaded in five carts and the remainder packed by several of the forty-seven horses in the expedition's string.

From Fort Edmonton Palliser pushed rapidly southward along the Blackfoot trail. The hunters scoured the prairie for miles around for signs of buffalo, but not until June 9, twelve days out of the Fort, did they make an appreciable kill, when five cows were shot. Next morning, as soon as the meat had been dressed, Palliser pushed on to the Hand Hills, west of the present town of Drumheller, Alberta, where a semi-permanent camp was established. The expedition remained at this camp for over a week until Dr. Hector arrived with James Beads and the dispatches from the Colonial Office.

During this week the hunters had considerable success, and the women of the expedition's entourage were kept busy slicing and drying meat. On June 15 they were visited by a small and apparently friendly Blackfoot war party, bent on attacking a band of Crees farther east. Palliser tried to dissuade them from attacking their "brothers", but he had little success. Next morning the Blackfoot chiefs returned in a very ugly mood, and without provocation threatened to wipe out the entire party. No one with the expedition understood this change in attitude, but after much speech-making and pipe-smoking Palliser managed to pacify the Blackfeet and they departed quietly.

James Beads and Dr. Hector rejoined the expedition on June 19, bringing dispatches from the Colonial Office "... directing the continuance of the Expedition through the remainder of the as yet unknown country in the neighbourhood
of the boundary line, and also granting us [Palliser, Hector, and Sullivan] permission to return home via Columbia River and Vancouver's [sic] Island". Beads had arrived from the Red River settlement on June 7, and three days later, Hector, Beads, five men, and an Indian woman, with twenty-three horses, left Fort Edmonton. At the time of their departure, the inhabitants of the Fort were near starvation, existing only on small game, eggs, and rats. Like Palliser and the main expedition, they followed the Blackfoot trail west of Buffalo Lake to the Hand Hills.

Captain Palliser read his dispatches carefully, then gathered all the men together and told them of his intention to traverse the heart of the Blackfoot country. The Americans, James Beads, and three of the half-breeds immediately agreed to follow him, but the remainder of the men refused. A few of the half-breeds later grudgingly consented to remain with the expedition, leaving Palliser with twenty men in all. Those who steadfastly refused to continue soon gathered their belongings and left, taking with them their wives and families; an encumbrance Palliser was glad to see go. Two trust-worthy men were sent to Fort Edmonton to engage six good voyageurs to replace those who had deserted, and while awaiting their return the expedition moved slowly toward the Red Deer River. The two men sent to Fort Edmonton did not return until July 4, bringing with them only four additional men. Palliser then felt ready to resume explorations, for he had already been on

the plains for a full month but had accomplished exactly noth-
ing.

As if haunted by delay and difficulty, Palliser was confronted by a near mutiny on July 6. During the morning of that day the expedition was visited by a band of Blackfeet who were more sullen than civil in their attitude. Fortunately they merely begged some tobacco and tea and rode off. Soon after their departure, one of the half-breeds came forward to declare he could go no farther, pleading the age-old excuse that he was only obeying the commands of his mother-in-law and he could not or dare not cross her will. Palliser unwisely agreed to let him go and when the other half-breeds heard of his leniency the expedition was swept by a plague of commands from mothers-in-law. Palliser fully realized that the root of the whole affair was fear of the Blackfeet so he set about to make the half-breeds fear him more than the Indians. He immediately forbade any of the men to leave, for it was obvious from past contacts with the Blackfeet that it would be too dangerous to continue with a smaller party. Palliser describes the succeeding events as follows:

"... a slight murmur of disapprobation then arose concerning this decision, and before they had time to get together or combine, I exclaimed 'who is the first man who will say that he will turn back?' upon which, one bolder than the rest stood up, and exclaimed, 'I will go back.' I rushed at him, and seized him by the throat, and shook him, and then catching him by the collar, kicked him out of the camp. I called out then to know if any other wished also to go back, but, fortunately, the retrograde movement extended no further. Started at once for Bull Pond Creek [Bullpound Creek], a tributary of the Red Deer River.

They had only travelled a few miles when they met a Blackfoot chief of very great age named Old Swan, whom Palliser had met and befriended the previous winter at Rocky Mountain House. The Indian insisted that Palliser and Dr. Hector visit his band's camp a few miles to the south across the Red Deer River. It proved to be the largest Indian encampment Palliser and Hector had ever seen, numbering about four hundred tents.\(^9\) The Blackfoot tents were also noted to be larger than those of the Crees, and much more luxurious,\(^10\) if such an adjective may be applied to a tent in any form. They remained in the camp overnight, trading leather to repair the harness of the cart horses and enjoying the open hospitality of the Blackfeet. Palliser and Hector rejoined the expedition early next morning, wondering all the while if and when the unpredictable attitude of the Blackfeet would swing from hospitality to hostility.

On July 10 the expedition was again on the move toward the Red Deer River. The men still lived in perpetual fear of the Blackfeet, despite the cordiality of the band encountered the previous day. None of Palliser's party were openly armed, but rifles were hidden within easy reach under the loose coverings of the carts.

Four days later on July 14, the expedition reached Berry Creek, a tributary of the Red Deer River. The valley of the creek soon led them to the river which they followed for two days, searching for a good ford, and finally crossing on

---

10. Loc. cit.
July 16. The Blackfoot guide then informed Palliser that the best place to cross the South Saskatchewan was more than a day's journey to the west. Palliser, however, had intended to continue east to the forks of the Red Deer and South Saskatchewan rivers, opposite the site of abandoned Chesterfield House. Rather than take the carts and the main party to the forks, he sent them on toward the South Saskatchewan, while he and three men continued eastward.

The expedition was now in the region which we know today as the bad-lands of Alberta. Between the South Saskatchewan and the Cypress Hills lie the Middle and Great Sand Hills; thousands of acres of rolling waste land supporting only cactus and brush. The recent construction of the Canadian Pacific Irrigation Canal and the Canada Land and Irrigation Company Canal has encroached upon the western fringe of this desert, but otherwise it is still as desolate and unproductive a waste as when Captain Palliser viewed it almost a century ago.

Palliser and his three companions were separated from the main party for two days, following the Red Deer River east, and the South Saskatchewan southwest to rejoin the expedition. At the forks they viewed the ruins of Chesterfield House across the Red Deer, and from the lofty, triangular plateau between the two rivers Palliser noted the great difference between their valleys. The Red Deer River follows a serpentine course over a broad, alluvial plain, while the South Saskatchewan cuts a deep and narrow valley to the east. Next

morning they overtook the main party again a few miles to the southwest.

Later the same day, one of the darts broke down while crossing a succession of sand hills. Palliser rode to the head of the column to send a man back to repair the cart, but before either could reach the vehicle a band of Blood Indians, accompanied by a Blackfoot, rode up to the rear of the column and frightened off the man left to guard it. The Bloods did not touch the cart, but the Blackfoot rifled it and stole three guns and a blanket. When Palliser arrived he shook hands with the Indians, offered them tobacco, and they all sat around in a silent circle while the men of the expedition pitched camp. When an opportunity presented itself, Palliser told the Bloods that the three rifles and the blanket stolen by the Blackfoot would have to be returned. The Indians protested, but soon sent two braves after the Blackfoot and they returned next morning with the guns but not the blanket. This was the beginning of a none too friendly and always disconcerting relationship with the Bloods.

On July 20, the expedition continued the journey, trailed by the Bloods, and the following morning reached the ford of the South Saskatchewan recommended by the Blackfoot guide. The men passed the next two days in building rafts on which to cross the river. They were continually molested in their work by friendly but unwanted grizzly bears, which appeared to abound in the region. Several were shot but
none claimed and butchered. They crossed the river without mishap on July 23, but it was very hard on the men as some of them had to swim across nine times before all the equipment was transferred.12

On the south bank of the river the expedition was met by a second and even larger band of Blood Indians, who asked Palliser to come to their camp about eight miles away.13 He had no choice but to accept, so Palliser and Hector spent the day in the Blood Camp, a large one of about three hundred tents,14 no doubt feeling very much like flies in the spider's parlour. Fortunately, for the whites at least, there was a great deal of sickness among the band and in doing what little he could for them Dr. Hector secured their friendship; a considerable victory achieved in the face of stiff opposition from the local practitioner, the tribal medicine man, who resented competition. Next day, at the request of their chiefs, Palliser came back to the Indian camp and prayed for those of the tribe who were sick, adding a few fervent prayers on behalf of the expedition. Despite Dr. Hector's popularity, Palliser feared that they might associate their presence on the plains with the appearance of sickness in the tribe.

When the expedition moved on they were followed by the entire band, which was proving to be a great nuisance. At night the young braves prowled among the expedition's horses, forcing Palliser to post strong guards. On July 25, the chief

12 Journal, p. 140
13 Loc. cit.
14 Loc. cit.
of the Bloods invited the expedition to a feast. Palliser accepted, but only took Sullivan and a few of the men with him; a wise decision, for during their absence an attempt was made to steal some of the horses. The old chief advised Palliser not to traverse the country between the Cypress Hills [Cyprus Mountains] and the South Saskatchewan, for that was the hunting ground of the Gros Ventre Indians [Assineboines of the plains] of whom the chief painted a vivid and frightening picture. Palliser was unperturbed by this tale, but the men whom he took to the feast were very frightened, much to the amusement of Sullivan, and the Blackfoot guide deserted next morning.

Soon after dawn Palliser broke camp in the hope of leaving the Bloods behind, but they followed and overtook the expedition about noon and again tried to influence Palliser to stop. Continuing due south toward the blue ridge of the Cypress Hills, they left the Bloods behind, for they were afraid to enter Gros Ventre country. It is probable that most of Palliser's men would have remained with the Bloods, had he given them the opportunity. As they approached the Cypress Hills, the country became even more desolate and uninviting. Water was very scarce, the only source being a few brackish pools.

On July 27, Dr. Hector scouted ahead of the main party and reported that they were heading too far to the west on a course which would lead them by the Cypress Hills. The men at the head of the column had slowly deflected the line of march away from the hills. Much to their distress, Palliser
gave orders to turn due east on a course which would lead
to the heart of the Cypress Hills, but which unfortunately
led them to their troublesome Indian friends again. Palliser
did his best to ignore the Bloods, but he found it difficult to
appear unaware of approximately one thousand Indians who followed every move the expedition made.

Soon they began the ascent of the Cypress Hills, naturally followed by the Bloods, who had apparently plucked up their courage. They camped by a small lake where they found excellent grass and wood, in fact, later scouting proved the whole region to be a veritable oasis in a sandy waste. During the evening Palliser rode to the highest point in the hills and enjoyed a magnificent view of the surrounding country.

Palliser found the camp in a turmoil on his return. The Bloods had apparently threatened to kill Nimrod and the poor Stoney was petrified with fear. Palliser put him in a tent, armed the men of the expedition, and stationed them in a wide circle around it. Outside this ring, the armed Bloods sat in sullen groups. The hours dragged slowly by, punctuated only by the snap of the cocking and uncocking of rifles which ran in spasms through both groups. Finally one of Palliser's men began to speak to the Bloods, telling them in essence that if they killed Nimrod they would have to kill all of them. The Indians sat in silence for a while, then rose with one accord, jumped on their horses, galloped off. The whites were

naturally relieved, but they also began to wonder how long
their luck would last.

On July 29, Palliser moved a few miles to the southeast into
the heart of the Cypress Hills. Camp was pitched on the
height of land dividing the waters which flow north to the
Saskatchewan from those which flow to the Missouri. Sullivan,
Beads, and a hunter were dispatched southward to the boundary,
while the remaining men swept the hills for game replenishing
the expedition's supply of meat for the final dash westward to
the mountains.

Next morning, soon after the hunters had left camp,
several of the Bloods galloped into camp, telling Palliser that
the hunters had been ambushed and killed by the Gros Ventre
Indians. Palliser did not know whether to believe them or
not, but the Bloods were convinced that their enemies were in
the neighbourhood. They broke camp and rode off to the north
without further investigation. Two hours later several of the
expedition's hunters returned, unharmed, reporting that they
had not seen anyone, but they had fired several volleys of
shots at a band of deer. The Bloods apparently assumed that
this firing was an ambush and had not stopped to investigate.
In any case, Palliser saw no more of the Bloods and he cer-
tainly did not miss them.

By August 2, Sullivan had returned from his trip to
the boundary and the expedition was again well supplied with
meat and ready to push on. At this point Palliser decided to
detach a party under Dr. Hector to journey to the north, up the Bow River, across the mountains to the forks of the Fraser and Thompson Rivers, avoiding the Columbia Valley. That evening, Hector, together with James Beads, Nimrod, and two others prepared to leave early on the morning of August 3, packing what few provisions Palliser could spare. Next day the expedition split up; Dr. Hector bound for the Bow River, Brisco and Mitchell south for Fort Benton on the upper Missouri, and Palliser due west for the Rockies.

Soon after the departure of Dr. Hector and the two English sportsmen, Palliser, Sullivan, and the men who remained with them, loaded the carts and struck out due west for the Rockies. They travelled rapidly over the broad flat plains, broken only by a few dry coulees and small sloughs. Unfortunately, all the carts were almost worn out, and on the second day the first total smash occurred. Like the Deacon's "wonderful one-hoss shay" one of the carts collapsed in a final spasm of broken wheels, spars, and axles. Next day a second cart followed the example of its mate and Palliser began to wonder if all the carts were due to disintegrate before his eyes. On August 7 they first sighted the Rockies and the following day the Belly River was forded. Hurried prayers and leather thongs held the remaining carts together long enough for Palliser to cross the Porcupine Hills, the first foothills of the Rockies, and camp at the entrance to the North Kootenay Pass on August 13, 1859.

16. See Appendix II for Palliser's instructions to Hector in their entirety.
17. Fort Benton, in the present state of Montana, was in 1859 at the head of steamboat navigation on the Missouri.
Palliser remained at this spot for two days, laying in a large supply of meat for the trip over the mountains. He then settled accounts with the men who were to return to Fort Edmonton, making them a present of the two best carts and paying them in horses and orders on the Hudson's Bay Company. The remaining cart was broken up and the wood used in making pack-saddles.

On August 15, Palliser, Sullivan, and the few men who remained with them, entered North Kootenay Pass to cross the Rockies by the same route used by Palliser on his return to the plains from the Kootenay valley early in September, 1858. A week of travel brought them to the valley of the Kootenay. Palliser had hoped to travel direct to the Paddler Lakes, near the present town of Bonners Ferry, Idaho, but an old Indian encountered on the trail warned them that the direct route was very difficult. He therefore decided to follow the Hudson's Bay Company trail along the Kootenay to Fort Colville and renew exploration from there. They followed the east bank of the Kootenay through a deep valley where Palliser describes the banks as the highest he had ever seen. On August 22, they built rafts and crossed the river at the point where the Kootenay turns west to dive through the Selkirks.

The remainder of the trip to the Paddler Lakes was plagued with mishap. The trail was very bad, making travel both difficult and tiring. Each night the horses strayed far from camp and invariably several hours was consumed in rounding

them up. While passing the falls on the Kootenay near the present town of Libby, Montana, the horse carrying the ammunition slipped and fell into the river. The animal was drowned, but they managed to haul it out and salvage some of the load. Finally, Palliser was forced to shoot his own horse, which had once been the finest in the expedition's band. It was too weak to go any farther, so Palliser left it on the trail and later sent one of the men back to shoot it. Much to the relief of the entire party, they arrived at the Paddler Lakes on August 29.

Here Palliser found a band of Indians, camped on the margin of the river, who willingly ferried them to the western bank. He does not identify their tribe, other than to say that they were "quite amphibious" and that "they live principally on fish, which seems to agree with them, particularly the women, who are remarkable for their comeliness, clear complexion, and symmetry of their limbs". However, he describes their canoes as being "longer at the bottom than the top", so it would appear that they were of the Shuswap or Interior Salish. Two of these Indians and a canoe were hired to carry Palliser by water to Fort Colville on the Columbia a few miles north of the present town of Kettle Falls, Washington, while Sullivan travelled across country with the men and horses.

Next morning the two men parted, Palliser paddling down the Kootenay River to Kootenay Lake [Flatbow Lake].

He followed the western shore of the lake to the West Arm

20. loc. cit.
which led him again to the Kootenay River and so to the Columbia. Palliser had some difficulty with his two paddlers, for he had no means of conversing with them other than by sign language; an art at which Palliser was very much the amateur. Try as he might, Palliser could not change the unconventional eating habits of his Indian employees. On two occasions the two men so stuffed themselves with fish and berries that they could not move for two days. On September 4, the three men finally arrived at Port Shepherd, a small Hudson's Bay Company post at the forks of the Columbia and Pend-d'Oreille [Pendoreilla] Rivers. Palliser found the post swarming with Americans, Scots, and Indians, attracted by the gold diggings along the Pend-d'Oreille River. At their request Palliser located the forty-ninth parallel, placing the gold fields well within British territory. The Americans as well as the Scots were immensely pleased to discover that they were under British law, and the Indians began cheering wildly for King George; news of changes in the monarchy was apparently slow in filtering through to the outposts of empire. They set off again early the following morning to reach Fort Colville the same evening, where they were met by Sullivan who had arrived the previous day.

One more task remained to Palliser and Sullivan. It will be remembered that on reaching the Kootenay valley during the third week in August they decided to follow the Kootenay

23. Ibid., p. 160.
24. V. supra, p. 138, Ch. IV.
River south rather than cut through the mountains to Fort Colville. Palliser now determined to return to Fort Shepherd and dispatch Sullivan to the east through the mountains to the Kootenay Valley while he explored to the west, both in search of a feasible transportation route. These trips had to be completed in the shortest possible time for the first snows were only a few weeks off.

Sullivan left Fort Colville first, on September 11. At Fort Shepherd he hired three Indians and dispatched a fourth to hire the only Indian in the district who professed to know the mountains to the east. Following the Pend-D'Oreille River they reluctantly by-passed the gold diggings. Sullivan writes enviously of an Indian, "more fortunate than I", who "picked up in the crevice of the rock a piece of gold which valued $15.6d." They soon left the Pend-D'Oreille River to follow a tributary, the Salmo [Salmon]. Sullivan and his men made very slow progress through the trackless tangle of fallen timber along the margin of the river. Five days after leaving the forks they reached the summit between the Columbia and Kootenay Rivers and began the descent to Kootenay Lake down the valley of Summit Creek. Continuing eastward, they followed the Goat River and later the valley of the Moyie River [Choe-coos River] through the Selkirk and McGillivray Ranges. On October 6, they reached Moyie Lake, a few miles south of the present town of Cranbrook, British Columbia. The Indian guides told Sullivan that they were only a day's journey from

the Kootenay River but that the trail was exceedingly difficult, blocked by a heavy stand of timber. He decided to take the Indians at their word and return to Fort Colville.

Sullivan was convinced that the route which he had followed would be practical for a wagon road or even a railway. In his report to Captain Palliser he pointed out that the only real difficulty to be overcome would be fallen timber, a relatively minor consideration when road-building through a mountain range, if the grade was gradual.

Captain Palliser, for his part, left Fort Colville three days after his secretary, on September 14. Accompanied by a Blackfoot hunter and an Indian guide, he also travelled north to Fort Shepherd, where they turned west across the Rossland Mountains to the foot of Christina [Nichilaam] Lake. From this point west, Palliser followed the grade of the present Canadian Pacific Railway Kettle valley line to the Kettle [Colville] River where it swings south across the forty-ninth parallel. On the return trip to Fort Colville, Palliser followed the Kettle River, by-passing Fort Shepherd and arriving a few days after his secretary. Palliser and Sullivan decided to remain at Colville for several days before continuing westward, on the chance that Dr. Hector might join them.

Before the division of the expedition at the Cypress Hills on August 3, 1859, Palliser had furnished Dr. Hector with a letter of instructions by which he was to govern his

---

28. *V. supra*, p. 137, Ch. IV.
exploration of the mountain passes. In effect, Hector was instructed to locate a route to the Fraser or Thompson rivers, other than by the Columbia River valley. For this purpose Hector was allotted five men, among them Beads and Nimrod, together with seventeen horses, 240 pounds of pemmican, eighty pounds of flour, and fifty pounds of sugar. This supply of food was sufficient for only twenty days, but Hector hoped to augment this with such game as Nimrod could kill.

Hector and his party struck out due west from the Cypress Hills to the forks of the Bow and Oldman rivers. They forded the Oldman River easily and turned to the northwest toward Old Bow Fort, their immediate objective.

On the evening of August 7 they had the misfortune to meet a Piegan hunter from a large band apparently camped nearby. Try as he might, Hector could not induce the Indian to remain with them overnight, and when he left Hector knew that he would soon return with his entire band. Next morning they started before dawn, travelling as rapidly as possible in the hope that they might avoid a visit from the Piegans. Within a few hours Hector could see in the distance a long line of horses coming from the north so as to cut across his line of march. Before he could decide upon his next move, a band of

30. See Appendix II.
about forty Indians rode up behind the party, led by the brave whom they had first met the previous evening, and while parleying with him the main band arrived and gathered about Hector's small party. Hector kept his men and horses on the move and attempted to ignore the Indians, insofar as it was possible to feign unawareness of the several hundred Indians who pressed about him. They had heard of the gifts Palliser had presented the Bloods and it was their intention to imitate the good fortune of that tribe, by force if necessary. They first tried to convince Hector that he should stop, but he would not, so they pressed about his men and horses, prodding at the packs and even pushing their hands into Hector's pockets. When the Indians found that the doctor would give them nothing, they gradually began to drop behind, leaving only a few of the rabble, the more evil looking at that, trailing the party. Meanwhile, Beads had struck up a conversation with one of the chiefs, and when all but a few of the more persistent braves had left, this chief advised Hector to stop and smoke with his men. Hector reluctantly agreed, but instructed all but Beads to continue slowly northwest. All the Indians gathered around to share in the tobacco which Hector distributed, but a few minutes later several arose and rode after the pack-horses. They first tried to induce the four men driving the horses to turn back, but failed. They then attempted to stop the horses and unload the packs, but Hector's men drew their guns and frightened the Indians away. Back at the parley, the

32 Journal, p. 144.
Indians pressed close about Hector and Beads, snatching at their clothing and equipment. They knew that their only salvation was to pretend indifference, "... for," as Hector wrote, "although I felt as ill at ease as ever I did in my life I knew that the only chance was to look unconcerned". They finally detached themselves from the mob and made after the rest of the party. The Piegs did not follow, and in fact were never seen again; a disappointing conclusion to a situation fraught with dramatic possibilities.

Dr. Hector continued to push on rapidly in order to outdistance any of the Piegs who might still be following them, and on August 10 they again struck the Bow River, a few miles west of the present site of Calgary. In a beautiful coulee running down to the river they found a small camp of Stoneys, all friends or relatives of Nimrod. Hector had met most of them before during his three years on the plains, so he was greeted with great warmth and hospitality. They remained with the Stoneys for two days, then traded a few horses and pushed on, accompanied by a second Stoney hunter named William who wished to join the party.

From the Stoney encampment they travelled northwest, cutting off the northern sweep of the Bow River, directly toward Old Bow Fort. Even so early in the season (mid-August) the nights were very cold, and on several occasions they awoke to find the ground covered with hoar-frost and the water covered by a thin sheet of ice. Otherwise, Hector was greatly

impressed by the beauty and fertility of the area, dotted with groves of trees and framed by the Rockies to the west. On August 16, they again struck the Bow River, which was easily forded, and a short march brought them to Old Bow Fort the same evening. Hector found the post in even worse condition than it had been on his previous visit. 34 A party of Americans, bound for the Fraser gold fields by Kananaskis Pass, had apparently stopped at the abandoned fort earlier in the summer, leaving it a shambles on their departure. Hector remained at the fort for a day, in a final search for game before entering the mountains.

When they set out next morning, the party followed the same track by which Hector entered the mountains the previous August. Within four days this trail led them to Mount Eisenhower, opposite the crossing place for the Vermilion Pass. Here Hector held council with his two Indians, for he did not want to cross the Selkirks by Vermilion Pass and risk repetition of his brush with starvation the previous year, 35 if some other route was available. William advised that they follow the Bow River farther north, then turn east along its tributary, the Pipestone River [Pipe Stone], where there would be sufficient game to support the party. Hector decided to follow the advice of his hunter and trust that they would be able to find a pass through to the Kootenay valley farther north. Time was now very important, for Hector wanted to be on the Pacific watershed by September 10, leaving

34. V. supra, Ch. III, p. 162.
35. V. supra, Ch. III, p. 106.
at least a full month of snow-free weather to make his way to the Pacific.

A few hours march on August 23 brought the party to the forks of the Bow and Pipestone Rivers, opposite the northern base of Castle Mountain. From this point Hector could see the entrance to Kicking Horse Pass, by which he had returned from the Kootenay valley the previous season, only fifteen miles from the mouth of Vermilion Pass. Turning to the north, into the valley of the Pipestone river, the party travelled rapidly toward the divide of the North and South Saskatchewan Rivers, which was reached on August 27. From the bleak and barren summit of the divide, Dr. Hector enjoyed a panoramic view of the valley of the Siffleur River [Sifleur] to the north, flowing to the north Saskatchewan. Due west rose a high, tooth-shaped peak which Hector named Mount Molar, atouch of rare humor for the serious doctor. To the northwest rose a second peak which was named Mount Murchison after Sir Roderick Murchison, President of the Royal Geographical Society, a logical but much less colorful title. Hector estimated the height of Mount Murchison as thirteen thousand feet. He also estimated that none of the Rockies rose above thirteen thousand to fifteen thousand feet, which was a shrewd guess,
for Mount Robson, the highest peak in the Canadian Rockies rises twelve thousand, nine hundred and seventy-two feet above sea level.\footnote{Canada, Department of Mines and Resources, Hydrographic and Map Service, Tete Jaune - Edson sheet, 1945.} The descent of the Siffleur River valley to the North Saskatchewan required only two days of easy travel. Thus in seven days, Hector's party had traversed the valleys between the Bow River, the main branch of the South Saskatchewan and the North Saskatchewan.

Turning again westward, along the south bank of the North Saskatchewan, Dr. Hector's party soon reached the forks of the North Saskatchewan and Howse Rivers [North Saskatchewan]. Here he decided to pay off the two Indian hunters so that they might return to the plains. Hector gave them each a horse to cover part of their wages and the remainder in orders on the Hudson's Bay Company. He asked Nimrod to stay with him for a few days, however, while William slowly descended the North Saskatchewan so that Nimrod might easily overtake him. Continuing up the Howse River, Nimrod again proved his worth by bringing in a last supply of meat. On September 4, he finally left Hector and his four companions to their own means and set out to rejoin his friend.

Dr. Hector assumed the position of guide and hunter of the party. Unfortunately he had little experience as a hunter and even less as a guide, but he went about his duties conscientiously, if not too efficiently, leading the party into several dead-end passes. Under Hector's guidance the party required twelve days, from September 5 to September 17, to
reach the Columbia River. They followed the Howse River to its source, crossed the Continental Divide to the Blaeberry River \([\text{Blueberry}]\), and followed its valley to the Columbia.

Throughout this portion of the journey, Hector invariably chose the poorest camping places imaginable. Only once, on September 7, did he find a place where there was sufficient grass for the horses, but during the night the Blaeberry River rose and inundated their camp. Neither did Hector prove to be a good hunter. They consumed the majority of the pemmican brought from the plains, augmented only by a few grouse, one of which was not shot, but clubbed to death with a stick. Under such circumstances, the joy of the party in sighting the Columbia may be easily imagined.

From the forks of the Blaeberry and Columbia Rivers, Dr. Hector descended the latter river for a few miles in search of a trail to Boat Encampment, the terminus of the Athabasca Pass route over the Rockies. He found the tracks of many horses, but no clearly defined trail, so he returned to the forks to consider their next move. An assessment of their food supply revealed that there was only six days supply of pemmican left, and the horses were very weak, hardly in fit condition for the long trip to Boat Encampment, to the Thompson, and so to the Fraser. Dr. Hector thus had three remaining alternatives: to push on regardless; to send the horses to Fort Colville while he continued on foot to the Fraser; or to abandon the entire project and head south to Fort Colville.
With great reluctance Dr. Hector decided to follow the last course, for he knew that he had accomplished nothing so far and that his real object had been to pass through the Monashee Range to the Fraser.\textsuperscript{42} With mixed feelings of defeat and frustration they turned southeast, up the valley of the Columbia, on September 18.

They had hardly broken camp before they met two Shuswap [Shunswap] Indians, the most bedraggled and dirty specimens of aboriginal humanity Hector had encountered.\textsuperscript{43} Nevertheless, Hector was happy to meet them, for they professed to know the region west of Boat Encampment. They assured him that it would be impossible to reach Fort Kamloops on the North Thompson before the onset of winter.\textsuperscript{44}

The food situation remained precarious, the only meat available being grouse, plus one skunk "... which animal Beads prepared for supper in a most skilful manner, so that it was really very good eating".\textsuperscript{45} They moved slowly up the Columbia, hampered by constant rainfall and a seemingly endless series of swamps. On October 1, they finally reached Lake Windermere [Lower Columbia Lake or Salmon Lake], where they happened on a well-worn trail, picturesquely described to them by the two Shuswaps as a "rub-a-dub"\textsuperscript{46} track, which apparently indicated that it was so good the horses could trot. Next day they passed Columbia Lake [Upper Columbia Lake or Otter Lake] and crossed the Columbia-Kootenay divide to the Kootenay River.

\textsuperscript{42} See Appendix II.
\textsuperscript{43} Journal, p. 153
\textsuperscript{44} Loc. cit.
\textsuperscript{45} Loc. cit.
\textsuperscript{46} Journal, p. 153.
During the days which followed Hector and his party moved slowly down the valley of the Kootenay along a well-travelled trail, the same one used by Palliser and Blakiston the previous summer. On October 4, they stumbled on a small encampment of Kootenay Indians, the same band met by Palliser in the fall of 1858. They were very friendly, and their old chief described to Hector the two possible routes to Fort Colville, one directly across country and a second along the Kootenay and Columbia valleys.

While with this band, the work of the Roman Catholic missionaries among the Indians was drawn to Hector's attention in an indirect and humorous fashion. The Kootenays had with them several cows, and during the evening Beads asked the chief if he might milk one of them. The old man willingly agreed and sent two Indians to rope and hold the animal while Beads set about his milking, in spite of its kicks and struggles. He was almost finished when somewhere in the distance a bell rang. The two Indians at once released the cow and fell to their knees, without any warning to Beads. The cow immediately lashed out at him, but did no damage other than upset the pail of milk. Apparently this bell was rung at frequent intervals throughout the day as a signal for prayer and was obviously obeyed most meticulously. As a result, Hector and his men left next morning without any milk, for Beads did not want to risk another ringing of the bell.

Dr. Hector decided to follow the circuitous but more
dependable route to Fort Colville along the Kootenay River, rather than attempt a journey through trackless and unknown mountain valleys. On October 7, they forded the Elk River, flowing into the Kootenay from the east, to a small trading post under a lone Hudson's Bay Company clerk. He had arrived from Fort Colville only a few days before with a stock of trade goods, so he was able to give Hector and his men a few of the luxuries they had not enjoyed for months. "Among these was tea, which we now tasted for the first time for more than two months, during which time we tried a variety of abominable substitutes for that best of luxuries to the traveller." 

Following the trail used by Palliser and Sullivan earlier in the autumn, Hector and his party soon reached the Paddler Lakes. The only notable fact about this portion of the journey was the good fortune of Hector in encountering Indians with canoes to ferry his party across the Kootenay River at various places. From the Paddler Lakes they turned south to the Pend-D'Oreille Lake and from thence westward along the Clark Fork River, through the Kallispell Mountains, and so to the American military road running to Fort Colville. Hector rode ahead of his men, reaching the Fort on October 23, 1859. There he met Palliser and Sullivan who were preparing to leave for Vancouver Island through American territory.

For all practical purposes, this marked the completion of the surveys of the British North American exploring expedition.

47. *Journal*, p. 156.
During 1859, Palliser and his companions had completed the surveys of what is now southern Alberta and Saskatchewan and discovered at least one feasible route through the Rockies to the Pacific, entirely within British territory. As Palliser observed, it was not necessarily the best route in view of the fact that Dr. Hector had been forced to abandon his explorations farther north, but they had at least established that practicable passes did exist. Now all that remained was for Palliser, Hector, and Sullivan to make their way back to England.

Together with several Hudson's Bay Company employees, the three Englishmen and James Beads left Fort Colville on November 2, bound for Victoria on the first lap of their journey home. They followed the American military road south, across the Snake River to Walla Walla, an American post garrisoned by several companies of troops. Here Palliser sold the few remaining horses of the expedition's original string, and incidentally suffered a considerable loss in the transaction. James Beads was also paid off at Walla Walla. He had been a faithful employee, having remained with the expedition from the commencement of surveys at Sault Sainte Marie in June, 1857.

Palliser rented a canoe at Walla Walla to take himself and his two companions down the Columbia as far as the John Day Rapids [Des Chutes]. The baggage of the expedition was left at Walla Walla to be brought to the mouth of the Columbia.

---

49. Old Fort Walla Walla was on the Columbia River about thirty miles west of the present city of Walla Walla, Washington.
on a schooner awaiting cargo below the post. The three men reached the John Day Rapids in two and a half days. They portaged around the rapids of Celilo Falls to The Dalles, thence by river steamer to the Cascade rapids, the present site of the Bonneville Dam. A second river steamer took them to Fort Vancouver, a Hudson's Bay post near the mouth of the Columbia. A few days later, Palliser and Sullivan set sail from Portland, across the Columbia from Fort Vancouver, on one of the regular American steamers for Victoria. Hector was left at Fort Vancouver with orders to await the arrival of the baggage from Walla Walla and then join Palliser in Victoria.

At Victoria, Palliser and Sullivan were cordially received and entertained by Governor Douglas and the officers of the Royal Navy ships stationed at Esquimalt. Palliser's description of Victoria as he saw it in 1859 and 1860 is vivid and colorful:

At Victoria we found great commercial industry, and much promise of progress. The inhabitants are English, Scotch, Americans, Chinese, and Indians, who rove about the streets; the former seeking and commencing to find employment, and the latter begging, drinking, and not likely ever to become useful to the community. A handsome serviceable wooden Bridge, James's Bay, connects the Government buildings with the town. The Hudson's Bay Company have one of their forts or picketed enclosures in the center of town, splendidly supplied with almost every kind of merchandise. Besides this, warehouses, stores, and shops carry on a good business; money is worth about 2½ per cent. per month, on good security; good tradesmen can find abundance of employment. As there is a great scarcity of women on the island, female servants are in universal demand, and obtain very high wages from 30 dollars to 50 dollars a month.

On January 5, 1860, Sullivan left alone for England

while Palliser waited for Dr. Hector and the baggage. The doctor arrived on January 16, with news that the baggage was on the schooner frozen in the ice on the Columbia, so they would not be able to leave until the spring thaw. Hector soon left for Nanaimo to examine the coal beds there, while Palliser visited New Westminster, where he was again entertained, this time by Colonel Moody and the officers of the Royal Engineers.

Back in Victoria, the expedition's baggage finally arrived on March 14, just a few hours before the steamer was scheduled to leave Esquimalt for San Francisco. By some exertion they managed to get the baggage transferred on time, and the trip to England was begun. They arrived at San Francisco on March 20, and during an enforced two week stopover there, they went on a sight-seeing tour of the interior of California. They continued together to Panama, where Palliser and Hector parted, the former travelling via Havana, New York, and Montreal, while Hector took a more direct steamer to Southampton. After three very full years in British North America, Palliser returned to England, firm in the conviction that he had fulfilled his instructions.
Chapter V
An Appraisal of the Survey

And they returned from searching of the land after forty days. And they went and came to Moses, and to Aaron, and to all the congregation of the children of Israel, unto the wilderness of Paran, to Kadesh; and brought back the word unto them, and unto all the congregation, and shewed them the fruit of the land. And they told him, and said, We came unto the land whither thou sentest us, and surely it floweth with milk and honey; and this is the fruit of it

Numbers XIII: 25-27

1

Throughout 1857, 1858, 1859, and 1860 while the British North American Exploring Expedition was in the field, Captain Palliser and his associates periodically submitted reports of progress to the Colonial Office. These papers were subsequently published in two volumes in 1859 and 1860\(^1\) respectively, but neither contained the official journals of the expedition nor the detailed observations and conclusions of its members. In the spring of 1862 Palliser received a request from the Colonial Office for the complete journals, detailed reports, and observations of the expedition with a view to their publication. Palliser was only too happy to comply with the request, and the letter he wrote to accompany these documents best describes their contents:

13, Gate Street, Lincoln's Inn, London,
4th April 1862.

\(^1\) Parl. Paps, 1859, XXII [2542]; and Parl. Paps., 1860, XLIV [2732].
My Lord Duke,

Having heard from the Colonial Office that the Government have expressed their willingness to print "in extenso" the journals containing the details of my expedition for the exploration of British North America during the years 1857, 1858, 1859, and 1860, some extracts from which have already been presented to both Houses of Parliament by Her Majesty's command, in 1859 and 1860, I have the honour of laying before your Grace these documents, which have been prepared by me, with the aid of my colleagues Doctor Hector, Mons. Bourgeau, and Mr. Sullivan.

In them will be found a complete narrative, not only of those portions of the expedition which fell to my immediate share, but also of the branch expeditions which I organized from time to time under the charge respectively of Doctor Hector and Mr. Sullivan.

To his Grace the Duke of Newcastle, K.G., I have, &c.

Colonial Office, Downing Street, John Palliser
London.

The final, general report of the expedition was published in 1863. It is a massive volume of three hundred and twenty-five quarto pages of fine print containing the journals and observations of the expedition. Bourgeau, the botanist, had classified and catalogued approximately three hundred and fifty plants, to which Dr. Hector had added over forty Alpine species. Numerous calculations of latitude and longitude had been made, some daily. Halley's Comet appeared

2. Then Colonial Secretary in Palmerston's second cabinet.
3. Reproduced in: Journal, p. 3.
4. See Parl. Paps., 1863, XXXIX [316].
6. Ibid., pp. 165-190, 197.
in magnificent splendour in the fall of 1858 and a series of careful observations had been made at Fort Edmonton recording the position of the comet during the period of its ascendancy. The quality of the land throughout the plains had been classified and the soil temperatures taken at different depths. The members of the expedition had taken daily observations of the temperature during the entire period, with the hour of observation and maximum and minimum for the day, and records of barometric pressure, direction and strength of wind, and the condition of the sky. These observations had been analyzed and notes made on the progress of the seasons. Extensive geological examinations had been made and interesting or important formations sketched. Dictionaries of several Indian languages had been obtained or complied, and appear in the report. These diverse activities had been carried on despite the fact that some of the members of the expedition were on the move continually, both summer and winter, throughout the entire three-year period.

This mass of material was gathered and tabulated with one specific purpose in mind, the fulfilment of the instructions issued to the British North American Exploring Expedition. Palliser had been instructed: to ascertain whether the existing canoe routes through British territory to the Red River might be shortened and improved at a reasonable outlay; to obtain information about the almost unknown territory between the Canadian Shield and the Rocky Mountains, with particular reference to the agricultural potentialities of the region and the possibility of improving internal transportation; and to determine whether any practicable pass existed through the Rockies within British territory between Athabasca Pass and the forty-ninth parallel.\footnote{15}

With regard to the first of his instructions concerning the possibility of improving transportation between the head of the Great Lakes and the Red River settlement, Palliser's conclusions were far from encouraging. He reported that the region was dotted with innumerable lakes, and cut by many rivers separated by low ridges of rock. Descending to the west there were some lakes suitable for navigation if the country became densely settled, but in the meantime the canoe route from Lake Superior to Lake Winnipeg, even if greatly modified, would be too arduous for immigrants or for the

\footnote{15. See Appendix I, pp. ii-iv.}
transport of heavy goods. Accordingly, Palliser wrote:

I therefore cannot recommend the Imperial Government to countenance or lend support to any scheme for constructing or, it may be said, forcing a thoroughfare by this line of route either by land or water, as there would be no immediate advantage commensurate with the required sacrifice of capital; nor can I advise such heavy expenditure as would necessarily attend the construction of any exclusively British line of road between Canada and the Red River Settlement.  

Even today, only one very poor motor road traverses the country north of Lake Superior.  

Palliser was equally gloomy in estimating the possibility of future settlement along the "canoe route", for obviously settlers would not swarm into such inaccessible country. In any case, only a few isolated spots were suitable for agricultural settlement, even on a minor scale. At present, settlement is limited to a few small towns and villages associated with the numerous mines in the region. Only far to the east in the so-called "clay belt" of northern Ontario are there agricultural areas of any significance.


17. In 1850, Louis Agassiz published a paper entitled *Lake Superior*, outlining the geological history of the territory to the north of that lake. It was he who first outlined the ice-age glaciation of the region and named it the Precambrian Shield (D.S. Jordan, "Jean Louis Rodolphe Agassiz", *Encyclopaedia Britannica*, 1946, vol. 1, p. 10). Palliser was obviously not acquainted with the discoveries of Louis Agassiz for he had no specific name for what we now call the Canadian Shield, referring to it as "the region north of Lake Superior" or in words to that effect.

18. Palliser and his associates did not conduct detailed investigations in the Shield region since the two Canadian expeditions under Gladman and Dawson were specifically commissioned for this task (*v. supra*, p. 30).
In discussing the prairie region between the Canadian Shield and the Rocky Mountains, the locale of the second stage in the expedition's surveys, Palliser first outlined the natural physical divisions of the territory explored:

Immediately to the west of the [Canadian Shield lies] a chain of lakes, the principal of which is Lake Winnipeg, which has the same altitude above the sea level as Lake Superior, viz., 600 feet. From these lakes to the Rocky Mountains the central region may be considered as a plain gradually rising until it gains an altitude of 3,000 feet at the base of the mountain chain. The surface of this slope is marked by steppes, by which successive and decided increases of elevation are effected, accompanied by important changes in the composition of the soil, and consequently in the character of the vegetation. These steppes are three in number. The first may be said to spring from the southern shore of the lake of the woods [sic], and, trending to the S.W. crosses Red River considerably south of the boundary line; thence it runs irregularly in a north-westerly direction towards Swan River to meet the North Saskatchewan below Fort à la Corne. The general altitude of this first or most easterly prairie steppe may be estimated at 800 to 900 feet above sea level.

The second or middle steppe, conterminous with the limit of the first just described, extends westward to the base of the third steppe, which may be defined by a line crossing the United States frontier not far from


20. Lake Superior is actually 602.23 feet above sea level (Canada Year Book: 1948-49, Ottawa, King's Printer, 1949, p. 3) while Lake Winnipeg is 713 feet above sea level (Canada, Department of Mines and Resources, Hydrographic and Map Service, Brandon-Winnipeg Sheet, Ottawa, 1939).
the "Roche Percée", in longitude 10° 4' W.; thence passing in
a north-westerly direction to near the elbow of the South
Saskatchewan, and northwards to the Eagle Hills, west of
Fort Carlton. The mean altitude of this second steppe is
about 1600 feet above sea level.

The third and highest steppe extends to the base
of the Rocky Mountains, and has a mean altitude of 2,700
feet. 21

Palliser's analysis of the steppe structure of the prairie
region is, with few exceptions, accurate. It should be mention­
ed at this point that the transition from level to level is
seldom clearly defined, except in the case of the southwestern
limit of the first steppe, and that geographers still differ
as to details. 22

Having determined the basic topographical structure
of the prairie region, Palliser proceeds to delineate the
fertile and infertile areas:

The fertile savannahs and valuable woodlands of
the Atlantic United States are succeeded ... on the west
by a more or less arid desert, occupying a region on both
sides of the Rocky Mountains, which presents a barrier to
the continuous growth of settlements between the
Mississippi Valley and the States of the Pacific coast.
This central desert extends, however, but a short way into
British territory, forming a triangle, having for its base
the 49th parallel from longitude 100° to 114° W., with its
apex reaching the 52nd parallel of latitude. 23

The northern forests, which in former times
descended to the frontier of this central desert, have
been greatly enroached upon and, as it were, pushed back­
wards to the north through the effect of frequent fires.
Thus a large portion of fertile country,
denuded of timber, separates the arid region from the
forest lands to the north, and the habit which the Indian

22. See Map #1, p. vii.
23. This is the famed "Palliser Triangle", often mentioned
but seldom defined.
tribes have of burning the vegetation has, in fact, gradually improved the country for the purpose of settlement by clearing off the heavy timber, to remove which is generally the first and most arduous labour of the colonist. 24

As far as Canada is concerned, this Triangle, as Palliser notes, has its base on the forty-ninth parallel stretching from a point near Turtle Mountain in what is now Manitoba, westward to a point on the international boundary near the present port of entry of Carway in Alberta. From Turtle Mountain the Triangle, which is more nearly an irregular pentagon, angles northwest through what are now the provinces of Manitoba and Saskatchewan to a point a few miles south of the present city of Saskatoon. From there the line runs mostly west by south, crossing the Alberta boundary near the site of the present village of McLaughlin and continuing to a point near Old Bow Fort on the Banff-Calgary highway. From Old Bow Fort the line angles slightly southeast again, until, just east of the foothills of the Rockies, it cuts the international boundary at Carway. 25 The importance of this division lies in Palliser's realization that the Canadian prairie region is not a single unit but at least two and possibly more units involving great variations of soil and climate.

The Palliser Triangle is now well-known to the


25. See Map #5.
prairie agriculturalist. In the last quarter of the nineteenth century and the first quarter of the twentieth, Palliser's appraisal and virtual condemnation of upwards of thirty million acres of the Canadian prairies was not taken seriously. It is indeed ironic that recent surveys have shown Palliser's analysis to be crude, but basically correct. The line which Palliser draws between the "arid desert" and the "fertile country" roughly coincides with the transition of natural vegetation from short grass to heavy grass, although he attributed the change to the recession of the northern forests rather than climatic variations. The heavy grass region Palliser judged to be the area of former forest.

The controlling factor in the growth of natural grasses, as with seeded crops, is the amount of effective rainfall, that is to say, the balance of rainfall over evaporation. This controls the amount of water available in the growing season, the nature and productivity of the soil, and consequently the luxuriance of vegetation. On the prairies, the effective rainfall increases from a center in what is now southwestern Saskatchewan, providing a corresponding increase in the growth of natural vegetation from the short grass of the semi-arid south central region, through the long grass and parkland belts to the forested areas which border the prairies.26 These gradations of climate and vegetation exert

26. See Map #2, p. viii.
considerable influence upon the properties of prairie soils, and a study of present day soil classification will simplify later discussion of Palliser's conclusions.\footnote{27}

In the southwestern short grass region the chief visible characteristic of the soil is its light brown color; hence the name of the region, the "brown-soil zone". The area occupied by these soils forms a rough triangle enclosing most of Palliser's Triangle, about 34,000,000 acres in area and of relatively low quality and productivity. Beyond the brown-soil zone, in a region ranging in width from forty to eighty miles and occupying some 30,000,000 acres, occur the soils of a dark brown color which reflect the influence of more favorable climatic conditions. Much of the best wheat-land in Canada is found in this zone. To the east and north, running diagonally across Saskatchewan from southern Manitoba to the vicinity of Edmonton, occurs a belt of black-soils. These soils, some 42,500,000 acres in extent, are characterized by a generous humus content and high fertility, and make the most fertile farm-land, though not necessarily the best wheat-land, in western Canada. Beyond the black-soil zone the soils grade off through a transitional belt to the grey-wooded soils of

\footnote{27. The first soil surveys in the Prairie Provinces were conducted by the Topographical Survey of the Federal Department of the Interior between 1919 and 1930. Similar surveys were conducted from time to time by the three provincial governments, but the real work of soil classification has been done since the inauguration of the Prairie Farm Rehabilitation Act in 1935. At the end of 1942, 140,800,000 acres had been surveyed. (E.S. Archibald and Wm. Dickson, "Research in Prairie Farm Rehabilitation", Canadian Geographical Journal, vol. 28 (February, 1944), p. 54.)}
the northern forest, again characterized by relatively low fertility.  

It might also be noted at this point that the climate of what are now the three prairie provinces of Alberta, Saskatchewan, and Manitoba is even more varied than the composition of their soils; in fact, the climate is the major controlling factor in soil composition. The physical features of the continent, the mountains on the west, and the distance of the hinterland from large bodies of water, coupled with the three general steppes or levels of the whole plain, result in wide differences in climate and extreme variations of temperature between winter and summer and even within each season.

The summer season, or more specifically the growing season, is counted from the last killing frost of spring to the first of the fall. This period is longest, amounting to between 120 and 140 days, in what is now southeastern Alberta and southwestern Saskatchewan. Generally speaking it decreases gradually to the eastward and northward, and is limited to a period of seventy-five to one hundred days in the northern-fringe areas of settlement. The disadvantage of the northern

---

areas with respect to frost-free days, however, is partly offset by the greater length of the summer days in which vegetation grows very rapidly. Over the whole area the winters are about six months long, and are very dry and often cold.

As in all continental climates, precipitation is the limiting factor in agriculture. The general range of annual precipitation on the Canadian prairies is from ten to twenty inches, but in small areas as much as thirty inches. In the western part of Saskatchewan, southeastern Alberta, and the northern settled fringe of the provinces, the annual precipitation usually ranges from ten to fifteen inches. In the more arid areas of southeastern Alberta and southwestern Saskatchewan, it is often less than twelve inches. In southeastern Saskatchewan and in most of Manitoba it ranges from fifteen to twenty inches. In the portion of the Red River valley which lies in southern Manitoba, and in the narrow strip of Alberta along the base of the Rockies, precipitation exceeds twenty and often reaches thirty inches. Of special importance, however, is the fact that about sixty per cent of the annual precipitation occurs during the growing season. This is the redeeming feature in connection with present cereal production and permits a relatively high utilization of precipitation in the semi-arid country. 29

29. This account is based upon: S.C. Hudson, R.A. Stutt, Wm. Van Vleit, and J.L. Forsyth, Types of Farming in Canada, December, 1949, Canada, Department of Agriculture, Farmer's Bulletin No. 157, pp. 5-6.
In describing the prairie country in greater detail, Palliser successively treats:

... the lands adjacent to the different large rivers, not however with a view to scientific classification, but merely for the greater facility of indicating where lands fit for settlement are to be met with. 30

Beginning in the east, Palliser describes the Red River and its basin, the only settled area in the prairie region of British North America in 1857. Selkirk's settlers had brought a few narrow strips of land near the river under cultivation, but there was a large acreage of available arable land in the lower portion of the Red River valley in what is now known as the black-soil zone. For this reason Palliser viewed this as a most important potential agricultural area. Of the land farther back from the river, Palliser conceded that it was often marshy, but he points out that it could easily be drained and settled.31

Concerning the accessibility of the Red River settlement and improvement of its communications with the two Canadas, Palliser wrote:

Its position is ... too much isolated for it to progress rapidly, unless some arrangement be made to allow of a secure system of traffic through or with the north-western United States ....32

The settler, who will always adopt the shortest and least expensive route, will undoubtedly follow the line of traverse indicated by the formation of the

31. Ibid., p. 8.
32. Loc. cit.
He will travel by steamer along the Canadian Lakes through Sault Ste. Marie to Superior City, situated at the extremity of the "Fond du Lac" or most western extremity of Lake Superior; and he will then be only 70 or 80 miles distant from Crow Wing, on the high road between St. Pauls [sic] and the Red River Settlement.

As the case at present stands all communication with the colony at Red River is through the States. Even the Hudson [sic] Bay Company ... has adopted the route via St. Pauls [sic] and Pembina, for bringing their merchandise into the country. As for the importation of horses, cows, and any other species of livestock, all such traffic would be impossible either via Hudson Bay or by the canoe route.

Palliser must not be judged too harshly for failing to foresee the burst of energy which was to span the Canadian Shield and pour hundreds of thousands of settlers on to the plains within fifty years. It must be remembered that he was writing in 1862 when only a few settlers lived in western British North America; so few that the present population of the same region would hardly notice the addition of an equal number of people. Palliser merely gave expression to a widely accepted belief of his age.

Palliser also devoted considerable space to a discussion of the climate, soil, and possible products of the area. His discussion of climate is very general, for he himself concedes the possible inaccuracy of the expedition's observations. Palliser found the winters to be shorter in the Red

33. Journal, p. 16.
34. Ibid., p. 17.
35. Ibid., p. 9.
River basin than on Lake Superior, beginning early in November, and extending to the second week in April. In autumn and spring he noted a period of from two to three weeks of light frosts sufficiently severe to stop agriculture, so he estimated the winter to be about six months long. The coldest month Palliser found to be February, when the temperature sank to 45° below zero. In spring, thaws rarely occurred before March, but when once they had come, the change of seasons invariably progressed rapidly, and by the end of May seeding began along the banks of the Red River. Even in June, however, frosts were known to occur at night, making the growth of wheat risky at best. The summer months were generally periods of great heat, which ripened fruits and cereals rapidly, the latter being cut about August 10 on the average.

36. Journal, p. 9. On a sixty-six year average taken at the Winnipeg meteorological station, the first killing frost of the autumn (29°E) occurred on September 14 and the last of spring on May 27. (Canada Year Book: 1948-49, Ottawa, King's Printer, 1949, p. 62.)

37. Loc. cit. The January mean at the Winnipeg station is -3.1° and the coldest recorded temperature is -54°. (Canada Year Book; 1948-49, p. 62.)

38. Loc. cit. Throughout the prairies seeding usually begins about the second week in April, and harvest in the second or third week of August. There are, however, great local variations. The majority of the wheat strains now seeded mature in from 105 to 125 days. (V. supra., pp. )

39. V. supra., p. 170, n. 36.

40. V. supra, p. 170, n. 38.
Palliser also concluded that the entire Red and Assiniboine basins had once been covered by water. More recent research has greatly increased the knowledge of this region and substantiated Palliser's conclusion. This is the basin of former Lake Agassiz,\(^41\) which for about a thousand years after the most recent ice age (c. 25,000 B.C.) occupied what is now southern Manitoba. Its surface is believed to have been seven hundred feet above the present level of Lake Winnipeg,\(^42\) a total of some thirteen hundred feet above sea level, which would place the western shore of the lake along the western limit of the first prairie steppe which is approximately eight hundred feet above the present level of the lake. This has bequeathed to what is now southern Manitoba an extensive and fertile plain, which Palliser described as consisting of variously proportioned mixtures of clay, loam, and marl\(^43\) with very little sand, covered by a layer from two to five feet deep of vegetable mould.\(^44\) This description is essentially true of the Red and Assiniboine valleys where the soil is heavy, black gumbo, and very fertile; but the soils on the southern fringe are light and sandy, and between Lake

\(^{41}\) Named after Louis Agassiz. (V. supra, p. 160, n. 17.)


\(^{43}\) A crumbling deposit of clay and calcium carbonate in varying proportions.

\(^{44}\) Journal, p. 9.
Finally, in an attempt to estimate the agricultural activities for which the region was best suited, Palliser concluded that horses and cattle would have the best chance for success. He wrote that, despite the rigours of the climate, "... large quantities of very nutritious grasses abound everywhere, together with hemp, flax, and hops, which grow admirably ...", and that enough feed for six or seven weeks in the spring would tide horses and cattle over the winter.

The basin of the Assiniboine, a tributary of the Red, Palliser found to be equally promising, but of a slightly different nature. It lay entirely within Palliser's "fertile belt" and consequently within what is now known as the black-soil zone, but the soils, according to Palliser, were lighter and tended to be sandy, supporting bluffs of timber and rich pasturage. "It affords land of surpassing richness and fertility, to the extent of several hundred thousand acres."^48

---


^47. See Map #3, p. ix.

Palliser then directs his attention to the North Saskatchewan valley, the basins of the two Saskatchewans providing natural subdivisions in any discussion of what is now Alberta and Saskatchewan. He describes the North Saskatchewan as a wide river, following a winding valley varying in depth from one to three hundred feet, and never more than two miles wide. He described the greater part of this valley as being occupied by alluvial flats which formed the finest quality land, often well-timbered, but wherever the banks of the valley sloped gently back to a higher prairie level, there, Palliser concluded, were the best areas for settlement.

The richness of the natural pasture in many places on the prairies of the second level along the North Saskatchewan and its tributary, Battle River, can hardly be exaggerated. Its value does not consist in its being rank or in great quantity, but from its fine quality, comprising nutritious species of grasses and carices, along with natural vetches in great variety, which remain throughout the winter sound, juicy, and fit for the nourishment of stock.

Almost everywhere along the course of the North Saskatchewan are to be found eligible situations for agricultural settlement, a sufficiency of good soil is everywhere to be found, nor are these advantages merely confined to the neighborhood of the river; in several districts, such as N.W. of Carlton, we traversed fine land fit for all purposes, both of pasture and tillage, extending towards the thickwood hills, and also to be found in the region of the lakes between Forts Pitt and Edmonton.

An accurate evaluation indeed, for the most fertile, black-

49. Two types of plants suitable for fodder.

50. Now the very productive Paddockwood-Meath Park-Henribourg triangle of Saskatchewan, northeast of Prince Albert.

51. West of the present town of Vermilion, Alberta.
soil zone lies in a broad belt along the North Saskatchewan.\textsuperscript{52}

One disadvantage which the settlers would have to overcome, according to Palliser, was the shortage of timber, especially south of the river between Forts Carlton and Edmonton where only a few aspen poplars were found. To the north, spruce, fir, pine, and birch grow abundantly, but there were no hardwoods.\textsuperscript{53} The climate he found to be more irregular than in the Red and Assiniboine basins, particularly during the winter months, and partial thaws often occurred before the actual breaking of spring. On the whole the winter was much the same in both areas, being approximately of the same duration, but the amount of snow decreased rapidly toward the Rockies.\textsuperscript{54} Palliser also saw great possibilities in future mineral development in the North Saskatchewan basin, for he reported the existence of extensive coal beds on the upper

\textsuperscript{52} See Map \#3, p. ix.

\textsuperscript{53} A serious handicap with at least one strange result. A by-law of the city of Prince Albert, on the North Saskatchewan, provides for the levying of a special property tax on all structures within the city limits which are built, in part, of hardwood. The tax is heavy enough to be prohibitive and is obviously intended to force the use of local softwoods in preference to hardwoods imported from other parts of the Dominion or from abroad. (See Map \#2, p. viii.)

\textsuperscript{54} Could it be that Palliser experienced the famed chinook winds even so far east and north as Fort Carlton? This would appear to be the only explanation for the noted irregularity of the winter along the North Saskatchewan and the decrease in the observed depth of the snow toward the Rockies. A glance at recent meteorological statistics reveals that the decrease in snowfall between Winnipeg and Calgary is very slight (on the average, 53.6" and 50.0" respectively). The average snowfall is approximately the same along the North Saskatchewan, but it decreases by one third to one half on the southern prairies. (Canada Year Book : \textit{1948-49}, Ottawa, King's Printer, 1949, p.62)
reaches of the river fit for smelting"... iron from the ores of that metal, which also occur in large quantities in the same strata." 55 The deposits of coal are obviously those examined by Dr. Hector at various points along the North Saskatchewan, particularly around Fort Edmonton and Rocky Mountain House, but this is the first mention of iron ore by any member of the expedition. The source of Palliser's information is unknown and must remain so, but it goes without saying that there are no deposits of iron ore along the North Saskatchewan. The coal deposits south of Edmonton at Canmore and on the Red River at Drumheller, both reported by Dr. Hector, 56 have since been of some importance to the western Canadian economy, but the output of the mines has been largely devoted to domestic purposes.

Of the south Saskatchewan, Palliser noted that the volume, size, and general direction of the river were very similar to the northern branch, but that it flowed through very different country:

After leaving the eastern limit of the country that is within the influence of the mountains, ... the South Saskatchewan flows in a deep and narrow valley, through a region of arid plains, devoid of timber or pasture of good quality. Even on the alluvial points in the bottom of the valley trees and shrubs only occur in a few isolated patches. The steep and lofty sides of the valley are composed of calcareous marls and clays that are baked into a compact mass under the heat of the parching sun. The sage and cactus abound, and the whole

55. Journal, p. 11.

56. V. supra, pp. 80, 92-93.
of the scanty vegetation bespeaks an arid climate. The course of its large tributaries, Red Deer River and Belly River, are through the same kind of country, except in the upper part of the former stream, where it flows through rich and partially wooded country similar to that on the North Saskatchewan ....

Below the elbow the banks of the river and also the adjacent plains begin to improve rapidly as the river follows a northeast course and enters the fertile belt. 57

This general rule is broken only in a few isolated patches, the Hand Hills east of the Red Deer River and the Cypress Hills being the major exceptions, where an increase in altitude has altered the climate to the advantage of natural vegetation. The soil surveys of the last decade have revealed that the South Saskatchewan flows through the brown or poorest soil zone of the Canadian prairies. Palliser's condemnation was perhaps too sweeping, but it was basically accurate. The South Saskatchewan basin was apparently experiencing a cycle of drought when the British North American Exploring Expedition traversed the region in 1859.

Finally, Palliser describes a narrow strip of fertile country between the central arid plains and the Rockies, varying from twenty to thirty miles in width and running from the forty-ninth to the fifty-second parallel of latitude. This area is the southern extension of the dark brown and black-soil zones running along the base of the Rockies in what is now southwestern Alberta 58.

57. Journal, p. 11. See Map #3, p. ix; note that the boundary between the brown and dark-brown soil zones passes through the elbow.

58. See Map #3, p. ix.
The whole of this land ... may be compared to the similarly situated lands of Switzerland and the Tyrol, known to be fertile, and especially valuable for the nutritious grasses which they produce ....

The whole of this region of country would be valuable not only for the agriculturalists but also for mixed purposes of settlement. To the north it stretches considerably to the westward, enlarging in proportion as the Rocky Mountains recede to the westward, and comprising the upper portions of the Saskatchewan and their numerous tributaries. In the first place, along this region of country, the first quality of land is not merely confined to the river valleys, but much of the third steppe is abundantly watered, and probably its greater elevation obtains for it increased moisture and consequently a superior class of soil. The snow here is not so deep as it is further to the eastward, the winters are more open and the springs are earlier.

The land exhibits great diversity of surface and are rolling and well adapted for sheep; the timber is abundant and more substantial in bulk than that to the eastward, and therefore better suited for building purposes; lime-stone exists in great quantity, and the beds of some rivers afford argillaceous clay capable of being converted into bricks, and coal of fair quality was found and possibly exists in considerable quantity.

Having treated what he considers to be the natural regions of what are now the three prairie provinces, Palliser summarizes "... the natural facilities offered to agricultural settlement". First, he comments upon the abundance of fish and game upon which the settler might support himself while bringing the land into production. Of greater importance was:

... the abundance of good food for cattle growing throughout the region, such as goose-grass, pease-grass, vetches, astragalous and other plants, which preserve their

59. V. supra, p. 174, n. 54.

60. Journal, p. 12.

61. Loc. cit.

62. These are four types of plant suitable for fodder.
nutritious quality through the winter season. Horses and horned cattle would resist the rigour of winter well and continue in good condition, if not poor when turned out at its commencement, and if provided with artificial food in the very early spring when the partial thaws during the day cause a coating of ice over the herbage which the animals find difficult to remove in order to feed.... There would be no difficulty in providing hay [for this purpose] before the fall of the year. 63

A great inducement to settlement in the fertile region, particularly in the valley of the North Saskatchewan, would be the lack of heavy timber, eliminating the clearing problem which had increased the settler's difficulties in the east. The frequent fires which continually traverse the prairie have denuded the territory of large forest trees ..., and the result of these fires is that the agriculturalist may at once commence with his plough without any more preliminary labour. 64

Turning to the agricultural potentialities of the region, Palliser continues:

The capabilities of this country and its climate, for the success of cereals, have hardly been sufficiently tested. But I have seen first-rate specimens of barley and oats grown at many of the forts. Wheat has not been so successful, but I am hardly prepared to say that this was because of the unfitness of the climate to produce it. 65 I have much reason to believe that the seed has been bad, and the cultivation neglected, and the spots chosen not of suitable aspect....

Harvest would commence early in September and its


64. Ibid., p. 13.

65. "In Western Canada, wheat is the main kind of grain produced for sale in the open plains area, while oats and barley are of greater relative importance on the parkland Black soils and the Grey Wooded soils. Oats and barley occupy a more important position on the average farm in Manitoba and in sections of Alberta than in the major portion of Saskatchewan." (S.C. Hudson, R.A. Stutt Wm. Van Vleit, and J.L. Forsyth, Types of Farming in Canada, December, 1949, Canada, Department of Agriculture, Farmer's Bulletin No. 157, p. 43.)
operations would not be seriously interrupted by three or four wet days in that month, taking that as a fair average of the rain that falls in the spring and in the autumn, but even then it is inconsiderable.

The only principal disadvantage accruing from the greater altitude of the region approaching the Rocky Mountains, is the almost continual night frosts during the summer, not severe during that season, but so frequent as to be almost of nightly occurrence; these would probably prove prejudicial to wheat; barley and oats, however, would do well.66

With regard to the winter temperatures in the same region, Dr. Hector noted that the seasonal average was fifteen degrees higher and the winter precipitation totals were much less than farther east.67 The alternative to grain farming, limited by the summer frosts, would be the raising of sheep and pigs, but they would have to be protected from wolves, "... which roam everywhere through wood and plain ...".68

How is the land utilized in the prairie region today and what are its main products? Field crops obviously dominate prairie agriculture; in 1941 they occupied 58 percent of the improved land, and of the remainder 35 percent lay in summer-fallow. Wheat, oats, and barley are the most important cereal crops, and although statistics are often misleading they perhaps best illustrate cereal distribution.

67. V. supra, p. 174, n. 54. At Calgary the average January temperature is 13.1°, at Saskatoon -1.2°, at Regina -0.7°, and at Winnipeg -3.1°. (Canada Year Book: 1948-49, Ottawa, King's Printer, 1949, p. 62.)
The average wheat acreage per farm in 1941 was eighty-eight in Saskatchewan as compared with sixty-six in Alberta and forty-three in Manitoba. The acreage of oats per farm was twenty-three in Manitoba and twenty-nine in Alberta and Saskatchewan. On the average, Manitoba had twenty-six acres of barley per farm in 1941, while Alberta and Saskatchewan had sixteen and twelve respectively. The production of livestock is also of considerable importance to the present-day prairie agriculturalist, especially in the province of Alberta where in 1941 the numbers of cattle, sheep, and swine were higher than in either Saskatchewan or Manitoba. In Alberta there were an average of thirteen cattle, seven sheep, and seventeen swine per farm; as compared with nine cattle, two sheep, and seven swine in Saskatchewan; and twelve cattle, four sheep, and nine swine in Manitoba. This indicates the general agricultural trends on the Canadian prairies: a well-balanced, mixed-farming economy in Manitoba, a definite dominance of cereal crops, particularly wheat, in Saskatchewan, with Alberta somewhere between the two.

In summary Palliser concluded that there were millions of acres of potential agricultural land in what are now the three prairie provinces. For the Red River and Assiniboine basins he recommended what amounted to mixed-

farming and the raising of cattle. This has since been a region of diversified farming with no great emphasis placed on a single crop. The western extremity of the plains - what is now the foothill region of Alberta - Palliser visualized as a grazing area, emphasizing the rearing of sheep. This is now the ranching region of western and southern Alberta in the short-grass and foothill areas, although the emphasis is on cattle rather than sheep. Here beef-cattle production is a grazing or range affair and the scale of operations is relatively large and extensive.

The central region of the Canadian prairies, in what is now Saskatchewan and eastern Alberta, requires special attention, for the southern portion of this territory is Palliser's "arid desert". Before the construction of the Canadian Pacific Railway and the subsequent influx of settlers, three reports were made on the suitability of the southern prairies for agriculture. Palliser and his contemporary, Henry Youle Hind, condemned the region as an "arid desert", basing their opinion on an investigation of the climate, soil, and natural vegetation of the territory. Fifteen years later, in a period of unfortunately heavy rainfall, John Macoun

70. V. supra, pp. 171-172.
71. V. supra, p. 177.
73. V. supra, p. 30.
reported enthusiastically to the Dominion Government that there were 200,000,000 acres of land in the southern prairies suitable for settlement and farming.\textsuperscript{75} This is about half the total area of the present prairie provinces.

When the Canadian Pacific Railway pushed through the heart of this region in the late 1880's, the locus of future settlement was established. Immigrants flowed into Palliser's "arid desert". They paid little attention to the relative adaptability of soils, and sufficient consideration was not given to variations in climatic conditions. Between 1910 and 1920, encouraged by high prices for wheat, a favorable climatic cycle, and rapid construction of railways, some wheat farmers ("miners" might be a better term) even competed with ranchmen for the occupation of the arid southwest. When the arid seasons began to recur about 1918, and when wheat prices fell in 1920, followed by a continuation of the drought, large numbers of wheat farmers abandoned the drier lands, either moving north to the more fertile dark brown and black-soil zones or to the cities. The favorable climatic cycle of the late twenties and early thirties buoyed up the hopes of those who had remained

\textsuperscript{74} A botanist with the Canadian Geological Survey, Macoun made several botanical excursions on to the Canadian prairies, Peace, and Mackenzie country. A botanist of high reputation, his opinions carried considerable weight, and even today his name is well known in the field.

\textsuperscript{75} Conservation of Soil, Royal Bank of Canada Monthly Newsletter, Montreal, August, 1946, p. 1.
on the land in the south. The inevitable, recurring cycle of
drought in 1937 and after brought another crash and a second
migration to the cities and to the north.\textsuperscript{76} In 1941 there were
more than four million acres of abandoned farm-land in the
prairie provinces, nearly all of it in the brown-soil zone.\textsuperscript{77}
A region which receives only ten to twelve inches of precipi-
tation per year can not hope to exist on an economy of wheat,
a cereal which requires at least twelve inches of annual
precipitation in the brown-soil zone to yield enough to meet
expenses.\textsuperscript{78}

To illustrate the change in prairie agriculture and
trace the northward movement of its epicenter, it is again
necessary to revert to the use of statistics. In 1939, proceeds
from wheat sales provided 63 per cent of the prairie farm
income; in 1942 only 30 per cent; in 1944,\textsuperscript{44} per cent. Receipts
from livestock provided 19.6 per cent of the total cash income
in 1939, 38.5 per cent in 1942, and 31 per cent in 1944. Also
from 1939 to 1944 cattle receipts trebled, while receipts from
hog sales increased six-and-a-half times. In fact, in 1942 and
1943 in Alberta cash income from hogs was greater than that

\textsuperscript{76} In 1928, a year of bountiful rain, Saskatchewan produced
a total of 321,215,000 bushels of wheat, an average of 23.3
bushels per seeded acre. In 1937, the same province produced
36,000,000 bushels of wheat or an average of 2.6 bushels per
seeded acre. In the same period the average for the three
prairie provinces dropped from 27.5 to 6.4 bushels per acre.
(\textit{Conservation of Soil}, Royal Bank Newsletter, p. 1.)

\textsuperscript{77} \textit{Conservation of Soil}, Royal Bank Newsletter, p. 2.

\textsuperscript{78} A.W. Currie, \textit{Economic Geography of Canada}, Toronto,
from wheat. In 1929 hog receipts were 8 per cent of the cash income, while in 1944, 17.5 per cent. It must be admitted that the main factor in the decline of the prairie farmer's cash income from wheat has been the great increase in the market value of other farm produce, but it has also been influenced by the northward movement of settlers to the pioneer zone, particularly in northern Saskatchewan, where the soil is not suited to a wheat economy. In fact, thirty-one per cent of the farmers in this pioneer region migrated northward from the southern "dried-out" area of the province. This is primarily an area of mixed-farming, wheat comprising only one third to two fifths of the seeded crop and providing only 12.8 per cent to 27 percent of the farm cash income, depending on the particular soil zone, grey wooded, black, or dark brown. The nature of the soil and the effect of annual precipitation, annual temperature, and seasonal evaporation during the period of May to September generally favor a


81. Ibid., p. 42.

82. Ibid., p. 48.
wider range of crops in these northern parkland regions of each province.

This brief survey of the present state of agriculture on the Canadian prairies leads the observer to admire rather than to condemn Palliser, as so many did before the "hungry thirties". It would appear that the brown-soil zone, with a few notable exceptions, particularly in the Cypress Hills region, is not suited to the production of cereal grains. Of the $34,000,000$ odd acres in the brown-soil zone, $15,560,000$ have been classified as unsuitable for cultivation, and a further $16,890,000$ acres in both the brown and dark brown soil zones have been classified as marginal for cultivation, yet much of this land has been brought under the plow. The obvious answer is to turn at least the portion of the brown soil zone classified as unsuitable for cultivation over to ranching, supporting cattle as it supported buffalo in Palliser's day. Within this area there would be a minimum of $15,000,000$ acres and a maximum of $32,000,000$ acres available as grazing land to augment the $20,000,000$ acres already devoted to this purpose in southwestern Saskatchewan and southeastern Alberta. On the surface this is an obvious and

---


84. C.W. Vrooman, G.D. Chattaway, and Andrew Stewart, Cattle Ranching in Western Canada, February, 1946, Canada, Department of Agriculture, Agricultural Bulletin No. 55, p.9.

85. Loc. cit.
simple solution, but two generations of wheat-farming have done irreparable damage to this land and it would have to be returned to natural grasses before it could be used for grazing. The basic problem, however, would be the dispossessing of the farmers who have remained in the region. Nevertheless, these conclusions have basically substantiated Palliser's condemnation of the brown-soil zone as a grain-farming region.

As to the development of transportation within the prairie region, Palliser wrote:

In the event of railway communication being extended as far as Pembina, it would not be unreasonable then to entertain the prospect that the Imperial Government might feel justified in encouraging the extension of such railway on the British side of the line to the northward and westward, through the southern portion of "the fertile belt" to the Rocky Mountains; at all events as soon as the country showed symptoms of becoming sufficiently populated to warrant such an effort.

It is interesting to note that Palliser recommended construction of a railway "through the southern portion of 'the fertile belt' ... as soon as the country showed signs of becoming sufficiently populated to warrant such an effort", while the Canadian Pacific Railway actually traversed the heart of his "arid desert" at a time when there were only a handful of settlers on the plains.

Palliser was, however, enthusiastic about the possibility of improving and utilizing prairie waterways. He reported that both the Red and Assiniboine could be navigated for a great distance. Even then, the Hudson's Bay Company

86. Journal, p. 17.
barges forty-two feet in length and drawing three feet of water were used on the Assiniboine as far as Fort Ellice.\textsuperscript{87}

To extend this route westward Palliser suggested utilizing the Qu'Appelle River and the construction of a canal from the headwaters of the Qu'Appelle to the elbow of the South Saskatchewan, which would create a very direct water route from the Red River settlement to the foothills of the Rockies. A far-fetched plan; but in 1857 Dr. Hector had noted that only a narrow portage separated the Qu'Appelle from a stream flowing west to the South Saskatchewan,\textsuperscript{88} and Palliser based his conclusions on the report of his geologist.\textsuperscript{89} The North Saskatchewan he also regarded as navigable at least to Rocky Mountain House, for the Hudson's Bay Company bateaus used the river freely below the post. A few paddle steamers did operate on the Assiniboine and Saskatchewan in the closing decades of the nineteenth century, but they were soon overwhelmed by railway competition. Palliser makes no reference to the possibility of road construction on the prairie - apparently he assumed that it would be simple - but he does make frequent reference to the comparative simplicity of winter travel which was much the easiest, and he also mentions that it was the best season for transporting heavy goods overland.

\begin{flushright}
\textsuperscript{87} \textit{Journal}, p. 9. \\
\textsuperscript{88} \textit{Ibid.}, p. 54. \\
\textsuperscript{89} \textit{Ibid.}, p. 57.
\end{flushright}
Turning now to the third major objective of the expedition, the discovery of a practical pass through the Rockies within British territory, Palliser claimed that at least four suitable passes existed: Kananaskis, Vermilion, North Kootenay, and Kicking Horse. He concedes the existence of others but these four he judges to be the best "... available for horses, and by which, with reasonable outlay, a road could be made, connecting the Kootanie[sic] and Columbia valleys with the plains of the Saskatchewan".90 Palliser continues:

Of all the passes traversed by our Expedition, the most favorable and inexpensive to render available for wheel conveyances would appear to be Vermilion pass, as the ascent along it to the height of land is the most gradual of them all.91

There are now known to be at least sixty passes through the Rocky Mountains along the Alberta-British Columbia boundary.92 Of these sixty, the British North American Exploring Expedition traversed seven - South Kootenay, North Kootenay, Kananaskis, Vermilion, Kicking Horse, Howse, and Athabasca - and Captain Blakiston reported the existence

91. *Loc. cit.*
of an eighth, Crow's Nest. Of the sixty odd passes now known to exist, something more than half are above 6,000 feet in altitude at their summit. Of the four which Palliser chose as practicable, two are less than 6,000 feet at their summit, Vermilion and Kicking Horse, 5,376 feet and 5,320 feet respectively, while the other two, Kananaskis and North Kootenay, are 7,682 feet and 6,774 feet respectively. Palliser's calculations of altitude for these four passes are the despair of the student of his report. Vermilion Pass he reported to be 4,903 feet in altitude at its summit, 473 feet below the actual height; Kananaskis he reported to be 5,700 feet in altitude at its summit, 1,982 feet below the actual height; North Kootenay he reported to be 6,300 feet in altitude at its summit, 474 feet below the actual height; and Kicking Horse he reported to be 5,200 feet above sea level at its summit, 120 feet below the actual height. It must be noted, however, that all Palliser's calculations of altitude were

---

94. Ibid., part I, p. 35.
95. Ibid., p. 27.
96. Ibid., p. 122.
97. Ibid., p. 75.
98. Journal, p. 276
made by barometric means, with instruments which had not been checked for many months when these calculations were made. Nevertheless, these errors are important, and it is probable that the error of 474 feet made in calculating the summit altitude of Vermilion Pass was partially responsible for Palliser's recommendation of it as the best route in preference to Kicking Horse Pass, which is in fact a few feet lower.99

Surveys conducted since 1860 have revealed that the lowest pass through the Rockies is Yellowhead at 3,700 feet100, one which Dr. Hector unfortunately overlooked in his explorations on the headwaters of the Athabasca. There are only five passes below 5,000 feet in altitude; two in the watershed of the Old Man River, namely Crow's Nest and Tent Mountain passes, two in that of the Athabasca River, Yellowhead and Fortress, and one on the divide between the Smokey and Fraser rivers. The next lowest, Howse Pass, 5,023 feet,101 is the

99. It should be remembered that the characteristics which constitute a pass vary according to the use which is to be made of it. To a mountaineer a pass may mean little more than an exceptionally easy route from one watershed to another. At the other extreme are the railway engineers who require the most exclusive definition of all. To them a pass means not only a place where a divide can be crossed by a locomotive, but also to which there is a feasible approach from each side of the range.


101. Ibid., p. 15.
only pass in the watershed of the North Saskatchewan. There are only eleven passes lower than Kicking Horse Pass, which is 5,320 feet in altitude at its summit.\textsuperscript{102}

To recapitulate, according to Palliser construction of a road through the first range of the Canadian Cordillera to the Kootenay or Columbia valley would be not only possible but relatively simple. This did not dispose of the entire problem, for to the west of this valley lay a further expanse of mountainous territory, and Palliser was not so optimistic about the possibility of continuing a road through to the Pacific entirely within British territory:

A ride from the Columbia Lakes to the boundary line sufficed to show me that the difficulties to be overcome in crossing the continent to the westward, without passing to the southward \textit{of the forty-ninth parallel} were far from being overcome. [After crossing the first range of the Cordillera] a formidable tract of country \textit{would still remain} to be traversed before a connexion with British Columbia could be effected.\textsuperscript{103}

This was the large region isolated by the Columbia and Kootenay rivers.

Late in 1859 Palliser and Sullivan, working separately, did establish a route entirely within British territory connecting the upper Kootenay valley with British Columbia.\textsuperscript{104} It ran a few miles north of the forty-ninth parallel to a junction with the old Hudson's Bay Company supply trail from

\textsuperscript{102} Report of the Commission, \textit{ibid.}, p. 27.

\textsuperscript{103} \textit{Journal}, p. 14.

\textsuperscript{104} \textit{V. supra}, pp. 141-142.
Fort Colville to the Fraser near Hope. This long-established trail had been traversed in the previous year by Lieutenant H.S. Palmer of the Royal Engineers and judged by him as quite impractical for development. Thus Palliser felt justified in writing:

... the knowledge of the country on the whole would never lead me to advocate a line of communication from Canada across the continent to the Pacific, exclusively through British territory. The time has now forever gone by for effecting such an object, and the unfortunate choice of an astronomical boundary line has completely isolated the central American possessions of Great Britain from Canada in the east, and also debarred them from any eligible access from the Pacific coast on the west.

This is perhaps the major flaw in Palliser's conclusions, but it is only one pea among the pearls. It has already been noted that Palliser could not have been expected to foresee the burst of energy which was to carry an all-Canadian railway to the Pacific, yet it will always dull the luster of his achievements elsewhere. On the other hand, Palliser must be admired for the courage of his convictions, for this was the age of optimism and progress, and many regarded the construction of a transcontinental railway through British North America as inevitable. Take for example the observations of the Earl of Carnarvon, who, in a speech to

105. Enclosure in James Douglas (Governor) to Colonial Secretary, January 9, 1860, Papers relative to the affairs of British Columbia, part III, Parliamentary Papers, 1860, XLIV [2742].


107. V. supra, p. 169.
the Royal Geographical Society in May, 1859, lauded the Palliser expedition on the assumption that it had found the sought-for all-British route to the Pacific:

Whilst the tide of emigration in the United States rolls westward some 200 or 300 miles every year, we have not been altogether idle north of the 49th parallel. It may now be almost said that three links have been forged in the great chain of regular communication from the Atlantic to the Pacific, stretching across some 3000 miles of continent.\textsuperscript{108}

It is now reasonable to look forward to the establishment of a regular system of transit, commencing from Nova Scotia and the shores of New Brunswick, passing through Canada, touching upon the Red River settlement, crossing the prairies of the Saskatchewan, passing through Vermilion Pass, where we know that the inclination is so moderate that nature has placed no insurmountable obstacles to the construction of a railway,\textsuperscript{109} till it reaches the gold-bearing colony of British Columbia, creating fresh centers of civilization and consolidating British interests and feelings.\textsuperscript{110}

John Palliser chose the rocky path when he met such popular optimism with pessimism, always unpopular, and such a choice is at least a compliment to his honesty.

5

When the British North American Exploring Expedition began its surveys in 1857, practically nothing was known about

\textsuperscript{108} Refers to the Dawson, Hind, and Palliser surveys.

\textsuperscript{109} The dispatches which Palliser and his associates sent periodically to the Colonial Office were in turn transmitted to the Royal Geographical Society to be read before its regular meetings. By this means the members of the Society were kept well informed on Palliser's movements and discoveries.

the western prairie region of British North America and the southern passes of the Rocky Mountains. With the publication of Palliser's report to the Colonial Office in 1863 a vast quantity of completely new and comparatively reliable material was made available to the scientist and scholar. Thus the expedition marks the beginning of our scientific knowledge of the great plains and adjacent portion of the Rocky Mountains. This report reveals that Captain John Palliser was a resourceful and self-reliant explorer. Dr. Hector, his surgeon and geologist was perhaps the better observer, for in the portions of the journal which he wrote there is frequent reference to landmarks which can still be identified so that the course of his journeys can be accurately mapped even today, but Palliser too was a writer and diarist of unusual skill. The daily journal of the expedition makes fascinating reading even one hundred years later. It is indeed unfortunate that Palliser and his work have been all but forgotten.

In conclusion, it must be repeated that Palliser made mistakes in many respects, but for the most part time has shown the wisdom of his judgements. It is doubtful if any other explorer or early surveyor of western British North America made so accurate an appraisal. It is even more surprising when it is remembered that Palliser was an Irish country gentleman, Hector a young and inexperienced geologist, and Bourgeau an unknown botanist. Captain John Palliser offered advice which if studied and followed would have saved inestimable amounts of time and money, and he may be justly counted among the foremost figures in the early western Canadian scene.
Appendix I

Instructions to Captain John Palliser from Rt. Hon. H. Labouchere, H.M. Sec. for the Colonies.

[Parl. Paps. 1863, XXXIX [3164], pp. 4-5.]

Downing Street, 31st March 1857

Sir,

With reference to the letter which, by my direction, was addressed to you on the 28th inst., I have now the honor to communicate to you special instructions for your guidance in the conduct of the Expedition for exploring that portion of British North America which lies between the northern branch of the River Saskatchewan and the frontier of the United States, and between the Red River and the Rocky Mountains.

Having completed all preliminary arrangements necessary for the future safety and success of the Expedition, it is the desire of Her Majesty's Government that you should proceed by the Soult [sic] St. Marie, on Lake Superior, to Fort William, and from thence by the Kaministaquoia [sic] as far as Kakabeka falls, and that you should ascertain the precise geographical position of the point at which the White Fish River falls into the Kaministaquoia [sic]. From thence it is desired that a party should be detached to explore the country to the westward towards the height of land, and, as far as may be practicable without long delay, to determine the height and direction of the watershed for some distance on either side of the line due west from the White Fish River.

If this preliminary exploration should lead you to think such a measure practicable, it would be desirable that you should detach a small party, lightly equipped, and supplied with provisions for a few days' march, who should pursue a line directly to the westward, meeting the ordinary canoe route either at Cross Lake or Sturgeon Lake.

From the point at which this party shall rejoin the rest of the Expedition you will proceed by the ordinary route to Fort Garry on the Red River.

In regard to the entire region lying between Lake Superior and Lake Winnipeg, it is desirable that in addition to the ordinary observations upon the physical features and geology of the country, the attention of all the members of the Expedition should be directed, to ascertain the relative levels of all the points which can be recorded and laid down with topographical accuracy; as, for instance, the height of the falls and rapids on the streams which lie along the canoe route, and the relative height of the several points in the watershed between the above-mentioned lakes which may be visited by the Expedition. In case, as is probable, the botanical collector should not accompany the separate exploring party, information should, nevertheless, be obtained as to the nature and quality of timber which may be found on the
line of march.

From Fort Garry you will start, as soon as you have organized your party, in a westwardly direction, taking such a course as you shall consider most advisable for acquiring additional knowledge of the country on either side of the Bow River, or south branch of the Saskatchewan River, during the remainder of the season of 1857; and you will make arrangements in advance for wintering the Expedition at Carlton House, where you will meet Lieutenant Blakiston.

At the commencement of the season of 1858 you will start, as soon as the weather is sufficiently open and favorable, to explore the country between the two branches of the Saskatchewan River, and south of the southern branch, and thence proceeding westward to the head waters of that river, you will endeavour, from the best information you can collect, to ascertain whether one or more practicable passes exist over the Rocky Mountains within British territory, and south of that known to exist between Mount Brown and Mount Hooker.

Great care must be taken that the Expedition shall return to Fort Garry in sufficient time to allow them to reach England, via Fort Pembina, and the United States, in the fall of 1858.

In the event of you yourself desiring to proceed westward from the Rocky Mountains to Vancouver's Island, Her Majesty's Government consent to you doing so, only under the express conditions that the homeward conduct of the Expedition can, with perfect prudence, be entrusted to the charge of Lieutenant Blakiston or Dr. Hector, and that the expenses of your travelling from Vancouver's Island are defrayed from your own resources, and further, that the Indian war now raging in the country west of the Rocky Mountains shall have terminated.

It being the desire of Her Majesty's Government that the Expedition should, as far as practicable, be made available for extending general as well as specific scientific knowledge, I have to impress upon you the importance (in addition to the maintaining of a regular series of instrumental observations) of regularly recording the physical features of the country through which you will pass, noting its principal elevations, the nature of its soil, its capability for agriculture, the quantity and quality of its timber, and the indications of coal or other minerals.

Separate instructions will be furnished by Major General Sabine, Sir Roderick Murchison, and Sir William Hooker, for the guidance of the scientific gentlemen attached to the Expedition.

The result of your surveys and observations should be embodied in a journal of the Expedition, to be kept with the utmost practicable regularity. A duplicate of that journal, and of any special observations and reports on the geology and natural history of the country, should be completed at all convenient stations, and forwarded at every favorable opportunity to England, addressed to Her Majesty's Principal Secretary of State for the Colonies, Downing Street, London.

In full reliance upon your ability and discretion. Her Majesty's Government have not hesitated to entrust to you
the conduct of the Expedition, with the express understanding that the scientific gentlemen of your party will consider themselves subject to your authority, and bound to be guided implicitly by the orders which your experience may suggest for the safety of the Expedition, and for the complete success of the objects for which it is undertaken.

In the event of any unforeseen accident which might deprive the Expedition of your services as leader, the command of the party may be entrusted by you either to Lieutenant Blakiston or to Dr. Hector, and you will furnish a duplicate copy of these instructions to whichever officer you may select for that purpose.

In conclusion, I cannot too earnestly impress upon you the necessity for the utmost caution in the selection of the line of route to be taken by the Expedition, and in avoiding all risk of hostile encounters with any native tribes who might inhabit the country through which you may pass.

I have to request that you will communicate to me, for the information of the Lords Commissioners of the Treasury, the mode in which the expenditure incurred by you while in the territories under the control of the Hudson's Bay Company is to be defrayed; and you will understand that the limits of expense prescribed for the Expedition cannot be exceeded, unless under the circumstances of urgent necessity, which you will at once report for the information of Her Majesty's Government.

I have, &c.

E. Labouchere.
Appendix II
-------------

Instructions from Captain Palliser to Dr. Hector.

[Parl. Paps., 1863, XXXIX [3164], p. 142.]

Cypress Hills, August 1st, 1860 [sic]

Dear Hector,

1. You will proceed from this to the Old Bow Fort, enter the mountains again by the pass you explored last year, and endeavour to explore a route practicable for horses to the westward, as far as ever it lies in your power, proceeding by the valleys of the Fraser and Thompson's Rivers, and avoiding the valley of the Columbia.

2. You will bear in mind, however, that you are to run no unwarrantable risks, or jeopardize the safety of your horses, companions, or yourself.

3. Should the work be too severe for your horses to endure (for they are even now very far from being in as fit condition for such a trip as I would wish), you are immediately to turn back, and to make the best of your way to Fort Colville, where you will receive further instructions from me on your arrival.

4. In case, however, you do succeed in effecting your western route, you will proceed to the forks of Fraser and Thompson's Rivers, where I shall endeavour to have instructions also awaiting you.

5. In the event, however, of these instructions failing to reach you, you will proceed onward to Fort Langley.

6. In the event of your requiring to purchase horses or any necessary supplies, I now furnish you with a few bills of exchange upon the Paymaster-General, with the clear understanding, however, that you are not to avail yourself of them in any purchases you might make from the Hudson [sic] Bay Company or any of their servants.

I am, &c.

J. Hector, Esq., M.D., Geologist, &c.

John Palliser, Captain Commanding British North American Exploring Expedition.
MAPS: 
----
Fig. 3—Natural vegetation (based on published map by National Development Bureau, Department of the Interior, Ottawa). Key to numerals: 1, prairie vegetation (grassland), distinguished by short grass and almost devoid of trees, except fringes along some of the rivers and lakes; 2, park or grove belt; 3, northwestern coniferous forest, merged with sub-Arctic forest (northeast of the dotted line) and western coniferous forest; 4, semi-open coniferous forest; 5, treeless.
For the purpose of constructing this map the National Development Bureau defined the agricultural system in areas where wheat acreage was greater than the combined acreage of all other field crops as "Wheat farming"; where wheat acreage was less than that of all other field crops, as "Mixed Farming"; where the value of dairy products was equal to or greater than that of wheat, as "Dairying"; and where grazing leases predominated and wheat acreage constituted less than 16 per cent of the total land area, as "Grazing." The details of the boundaries were carefully adjusted in the light of local topography and checked against the dot maps for cereals, live stock and animal products.
Bibliographical Note

The basic source for this thesis was obviously the journals, detailed reports, and observations of the British North American Exploring Expedition. These are contained in:

The journals, detailed reports, and observations relative to the exploration, by Captain Palliser, of that portion of British North America, which, in latitude, lies between the British boundary line and the height of land or watershed of the Northern or Frozen Ocean respectively, and in longitude, between the western shore of Lake Superior and the Pacific Ocean, during the years 1857, 1858, 1859, and 1860, Parliamentary Papers, 1863, XXXIX [3164]. The title of this volume of Parliamentary Papers indicates the nature of its contents. It was of only minor use in the preparation of Chapter I; but Chapters II, III, and IV were based almost entirely on pages 21-164, which contain the day-by-day journals of the expedition. The observations and conclusions of those who wrote the report, on pages 3-21 and 165-325 of this volume, were the basis of Chapter V. Previous to the publication of the journals, detailed reports and observations of the expedition in 1863, two volumes of preliminary papers were published: Papers relative to the exploration of that portion of British North America which lies between the northern branch of the river Saskatchewan and the frontier of the United States; and between the Red River and the Rocky Mountains, Parliamentary Papers, 1859, XXII [2542]; and Further papers relating to the exploration by the expedition under Captain Palliser of that portion of British North America which lies between the northern branch of the river Saskatchewan and the United States; and between the Red River and the Rocky Mountains, and thence to the Pacific Ocean, Parliamentary Papers, 1860, XLIV [2732]. These two volumes contain Palliser's correspondence with the Colonial Office, and essentially parallel the contents of the final volume, published in 1863. In general, the 1863 volume is much the most detailed, except that it does not contain the maps and observations of Lieutenant Thomas Wright Blakiston, which may be found in Parl. Paps., 1860, XLIV [2732]. The majority of this preliminary correspondence may also be found in Shaw, Norton, ed., Journal of the Royal Geographical Society, London, John Murray, 1857-1860, vols. 27-30, passim, augmented by the comments of the members of the Society who made frequent reference to the expedition.
Most of the material for that part of Chapter I which deals with the early exploration of what is now western Canada was drawn from four secondary sources: Crouse, Nellis M., *In Quest of the Western Ocean*, London, J.M. Dent and Sons, 1928; Burpee, Lawrence J., *The Search for the Western Sea*, Toronto, Macmillan, 1935, 2 vols.; Brebner, John Bartlet, *The Explorers of North America, 1492-1806*, London, A. and C. Black, 1933; and Morton, A.S., *A History of the Canadian West to 1870-71*, London, Thomas Nelson and Sons, 1939. Arthur S. Morton's work, as the title implies, is very broad, being concerned with much more than exploration and discovery, while Nellis Crouse abruptly terminates the quest for the western ocean with Samuel Hearne's voyage to the Coppermine. Burpee's *The Search for the Western Sea* is often regarded as a basic work in the field, but it was found to be inferior to both the other studies. J.B. Brebner's volume on the explorers of North America is very broad and general, and is only of slight value for the purposes of this thesis.

Two periodical articles were also of some use in the preparation of this section: Burpee, Lawrence J., "How Canada Was Revealed", *Royal Society of Canada Proceedings and Transactions*, vol. 31 (May, 1937), pp. LIII-XCV, for material on the canoe routes from Lake Superior and Hudson Bay to the interior; and Morton, Arthur S., "L.J. Burpee, *The Search for the Western Sea*: a review", *Canadian Historical Review*, vol. 17 (June, 1936), pp. 200-201, consulted in an attempt to determine the correct spelling of the name "Henday".

One primary source, *Charter, Statutes, Orders in Council, etc., Relating to the Hudson's Bay Company*, London, Hudson's Bay Company, 1931, was referred to for the exact delineation of the Hudson's Bay Company lands in the original charter of that Company.

The section of Chapter I on the more detailed exploration of what is now western Canada during the second quarter of the nineteenth century was based upon three primary sources, augmented by several others, both primary and secondary. The three basic works are all products of Franklin's famous quest for the northwest passage. Franklin, John, *Narrative of a Second Expedition to the Shores of the Polar Sea in the Years 1825, 1826, and 1827*, London, John Murray, 1828, is exactly what the title implies, and was of minor use in the preparation of this section. Richardson, Sir John, *Arctic Searching Expedition*, London, Longman, Brown, Green, and Longmans, 1851, 2 vols., is the journal of the party under Sir John Richardson commissioned in 1846 to search for Sir John Franklin. It contains an outline of the "physical geography" of northern and eastern British North America in a lengthy appendix to the second volume. Richardson, Sir John, ed., *Fauna Boreali-Americana*, Norwich, Josiah Fletcher, vol.
1, 1829; vol. 2, 1831; vol. 3, 1836; vol. 4, 1837, is an exhaustive cataloguing of plants, animals, birds, fishes, and insects taken by Richardson while he was surgeon and naturalist to Franklin's first and second expeditions, plus all the information of a similar character then available to the naturalist and botanist. The introduction to the entire work is particularly useful as a survey of the then available scientific information on western and northern British North America.


Two minor sources, a journal and a pamphlet, were very useful in the preparation of the concluding portion of this section: Simpson, Sir George, Narrative of a Journey Around the World, London, Henry Colburn, 1847, vol. 1; and Wallace, J. N., The Passes of the Rocky Mountains Along the Alberta Boundary, The Historical Society of Calgary, April, 1927. Wallace presents the best brief history of the various passes through the Rockies along the Alberta boundary used by the early fur traders and explorers, while Simpson's account includes only the description of Simpson Pass, traversed by him in 1841 on his journey around the world.

Finally, two general surveys of the history of exploration were consulted for preliminary orientation in the preparation of this section: Outhwaite, Leonard, Unrolling the Map, New York, John Day Company, 1935; and Sykes, Sir Percy Molesworth, A History of Exploration from the Earliest Times to the Present, London, G. Routledge and Sons, 1933. There is little to choose between these two works, although Outhwaite, Unrolling the Map, contains several excellent maps.

The section of Chapter I describing conditions in the two Canadas and the Maritimes in the 1860's and their attitude toward the western portion of British North America was also based largely on secondary sources: Lewis, John, George Brown, Toronto, Morang and Co., 1910(The Makers of Canada, vol. 19); and Trotter, Reginald G., Canadian Federation, London, J. M. Dent and Sons, 1924. The biography of George Brown, the prophet of Canadian expansion, was the source for several quotations illustrating the views of Brown and his Reform party, while Trotter's work is the best survey of conditions in the two Canadas and the Maritimes in the two decades prior to Confederation. The best contemporary account of this period is Watkin, Sir Edward William, Canada and the
States: Recollections, 1851 to 1886, London, New York, Ward, Lock and Co., [1887?]. In fact, this is perhaps the best account of the Confederation era by a man who was a prominent figure on the Canadian scene during the second half of the nineteenth century. Several other works were of some value: Creighton, Donald G., Dominion of the North, Boston, Houghton Mifflin Co., 1944; Glazebrook, George Parkin de Tweneboker, A History of Transportation in Canada, New Haven, Yale University Press, 1938; Skelton, Oscar D. "Canada Under Responsible Government, 1854-1867", in J. Holland Rose and others, eds., Cambridge History of the British Empire, Cambridge University Press, 1930, vol. 6, pp. 335-353; Wittke, Carl, A History of Canada, Toronto, McClelland and Stewart, 1935; but none were used as basic references, nor would their character have warranted it.

Three primary sources were also used in the preparation of the last part of this section: Report from the House of Commons on the Hudson's Bay Company, Parliamentary Papers, 1857, XV [2597]; Report on the exploration of the country between Lake Superior and the Red River settlement, by Simon J. Dawson, Journals of the Legislative Assembly of Canada, 1859, vol. 17, appendix no. 36; and Reports of the progress together with a preliminary and general report of the Assiniboine and Saskatchewan exploring expedition, by Henry Youle Hind, Journals of the Legislative Assembly of Canada, 1859, vol. 17, appendix no. 36. The first was consulted for material on the attitude of the Hudson's Bay Company toward western settlement, and on the conclusions and recommendations of the committee appointed to investigate the Company's tenure of the territory beyond the watershed of Hudson Bay, and the remaining two on Canadian action to increase the knowledge of western British North America and to link it with the two Canadas.


graphical nature. The final work is Palliser's own narrative of his hunting trip on the plains of the United States in 1847. It might be noted that Palliser's family in County Waterford, Ireland, had, until, 1924, many of his personal papers, but they were destroyed in a fire in that year. Much more biographical material is available on Dr. James Hector, but for the purposes of this thesis two were sufficient: J.W.G., "Sir James Hector, F.R.S.", Nature, vol. 77 (November 14, 1907), pp. 37-38; and Woodward, H.B., "Sir James Hector", in The Dictionary of National Biography, second supplement, vol. 2, pp. 236-237. In later life, Hector emigrated to New Zealand where he built up an admirable reputation as a geologist and was later knighted for his achievements in the field. Bates, H.W., ed., Proceedings of the Royal Geographical Society, London, 1891, vol. 13, pp. 728-729, contains the obituary of Captain Thomas Wright Blakiston and is the only available source of biographical material on that officer. Finally; Great Britain, Journals of the House of Commons, January 24, 1860 - January 3, 1861, vol. 115, p. 488; and Shaw, Norton, ed., Journal of the Royal Geographical Society, London, John Murray, 1857, vol. 27; provided the remaining material on the initiation, cost, and dispatch of the British North American Exploring Expedition.

It has been noted that Chapters II, III, and IV of this thesis were based almost exclusively on the journals of the British North American Exploring Expedition, augmented by the preliminary papers. Several other sources were used, none extensively: Armstrong, G.H., The Origin and Meaning of Place Names in Canada, Toronto, Macmillan, 1930; Bell, Charles, The Old Forts of Winnipeg (1738-1927), Winnipeg, Dawson Richardson Publications, 1927, The Historical and Scientific Society of Manitoba, Transaction No. 3; Hughes, Katherine, Father Lacombe, Toronto, McClelland and Stewart, 1920; Jenness, Diamond, The Indians of Canada, 1932, Canada, National Museum of Canada, Bulletin No. 65; Morice, Adrien Gabriel, Dictionnaire des Canadiens et des Métis français de L'Ouest, chez l'auteur, Kamloops, 1908; Simpson, Sir George, Narrative of a Journey Around the World, London, Henry Colburn, 1847, vol. 1; Voorhis, Ernest, Historic Forts and Trading Posts of the French Regime and of the English Fur Trading Companies, Ottawa, Department of the Interior, 1930; and Watson, Robert, Lower Fort Garry, Winnipeg, Hudson's Bay Company, 1928. It is not necessary to comment at length on these works. Those containing material on the various forts were used to augment Palliser's brief discussion of their history. The Diamond Jenness volume was used to check Palliser's treatment of Indian tribes, and the remaining references were used for a similar purpose in checking men
The sources upon which the final chapter was based, apart from Palliser's own observations and conclusions which may be found in *Parl. Pap.* 1863, XXXIX [3164], pp. 3-21, and 165-325, fall into two groups; first, the sources containing material on what are now the three prairie provinces, and second, material on the Rocky Mountains.

Government publications were the most valuable sources of the first group: *Canada Year Book*: 1948-49, Ottawa, King’s Printer, 1949; Hudson, S.C., Stutt, R.A., Van Vliet, William, and Forsyth, J.L., *Types of Farming in Canada*, December, 1949, Canada, Department of Agriculture, Farmer’s Bulletin No. 157; Hurd, W. Burton, and Grindley, T.W., *Agriculture, Climate, and Population of the Prairie Provinces of Canada*, Canada, Bureau of Statistics, 1931; Stobbe, P.C., and Leahey, A., *A Guide for the Selection of Agricultural Soils*, July, 1944, Canada, Department of Agriculture, Farmer’s Bulletin No. 117; Stutt, R.A., and Van Vliet, H. *An Economic Study of Land Settlement in Representative Pioneer Areas of Northern Saskatchewan*, 1945, Canada, Department of Agriculture, Technical Bulletin No. 52; Vrooman, C.W., Chattaway, G.D., and Stewart, Andrew, *Cattle Ranching in Western Canada*, February, 1946, Canada, Department of Agriculture, Technical Bulletin No. 55; plus one other pamphlet, *Conservation of Soil*, Royal Bank of Canada Monthly Newsletter, Montreal, August, 1946. The *Canada Year Book* and the pamphlet by Burton and Grindley were valuable sources of statistical information. The latter also contains several maps, two of which have been reproduced. Previous numbers of the *Canada Year Book* contain many articles on the topography, climate, and economy of the prairie region of Canada, but all have been superseded by more recent periodical or pamphlet publications. Farmer’s Bulletin No. 157 and Technical Bulletin No. 55 outline the distribution of agricultural pursuits on the prairies, while the Stobbe and Leahey Farmer’s Bulletin No. 117 contains the best analysis of the soils upon which this industry is based. The only source which contains any information on the northward migration on the prairies during the last decade is the pamphlet by Stutt and Van Vliet, Technical Bulletin No. 52. It also contains an outline of the more diversified type of agriculture along the northern settled fringe.

Several periodical articles were also of considerable value: Archibald, E.S. and Dickson, William, "Research in Prairie Farm Rehabilitation", *Canadian Geographical Journal*, vol. 28 (February, 1944), pp. 52-63; Johnson, Charles W., "Relative Decline of Wheat in the Prairie Provinces of Canada", *Economic Geography*, vol. 24 (July, 1948), pp. 209-216; Lloyd,

For preliminary orientation several sources were of considerable value, although they were of little use in the preparation of a final draft: Currie, A.W., Economic Geography of Canada, Toronto, Macmillan, 1945; Mackintosh, W.A., Economic Problems of the Prairie Provinces, Toronto, Macmillan, 1935 (Mackintosh, W.A., and Joerg, W.L.G., eds., Canadian Frontiers of Settlement, vol. 4); Morton, A.S., History of Prairie Settlement, Toronto, Macmillan, 1938 (Mackintosh, W.A., and Joerg, W.L.G., eds., Canadian Frontiers of Settlement, vol. 2); Murchie, R.W., Agricultural Progress on the Prairie Frontier, Toronto, Macmillan, 1936 (Mackintosh, W.A., and Joerg, W.L.G., eds., Canadian Frontiers of Settlement, vol. 5); and Taylor, Griffith, Canada, London, Methuen and Co., 1947. Morton's half volume in the Canadian Frontiers of Settlement was perhaps the best and most valuable of the sources in this group. He attacks his topic in his usual exhaustive and exhausting style.

Material for the portion of Chapter V on the Rocky Mountain region was more difficult to obtain. For preliminary reading, two general works by Wallace Atwood were studied: Atwood, Wallace, The Physiographic Provinces of North America, Boston, Ginn and Company, 1940; idem., The Rocky Mountains, New York, Vanguard Press, 1945.

More detailed material was drawn from three sources: Bostock, H.S., Physiography of the Canadian Cordillera, Canada, Department of Mines and Resources, Geological Survey, Memoir No. 247, 1948; Report of the Commission Appointed to Delimit the Boundary between the Provinces of Alberta and British Columbia, Ottawa, Office of the Surveyor General, part I, 1917; part II, 1924; and Wallace, J.N., The Passes of the Rocky Mountains along the Alberta Boundary, The Historical Society of Calgary, April, 1927. The Report of the Commission Appointed to Delimit the Boundary between the Provinces of Alberta and British Columbia was unquestionably the most valuable of the three. Unfortunately the library has only two of the three volumes in the set, but H.S. Bostock's pamphlet, though less detailed, provided the required information on the passes
to the north approaching the fiftieth parallel which are the topic of the missing third volume. The Report of the Commission is also accompanied by three atlases containing maps of the entire Rocky Mountain chain along the Alberta-British Columbia boundary, but they proved to be of little value. The J.N. Wallace pamphlet, also used in the preparation of Chapter I, contains a précis of the Boundary Commission Report. Wallace was one of the three commissioners who wrote the final paper for publication and it would appear that he prepared the section on the history of the various passes through the Rockies.

Two other references of minor value were also consulted: Enclosure in James Douglas (Governor) to Colonial Secretary, January 9, 1860, Papers relative to the affairs of British Columbia, part III, Parliamentary Papers, 1860, XLIV [2742], containing the report of Lieutenant H.S. Palmer on the Hope-Fort Colville trail; and Shaw, Norton, ed., The Journal of the Royal Geographical Society, London, John Murray, 1859, vol. 29, containing the Earl of Carnarvon's speech to the Royal Geographical Society on the Palliser survey, read in May, 1859.

Finally, it is interesting to note that there have been only four recent publications containing any major discussion of the Palliser surveys. Two are periodical articles: Patterson, H.C., "On the Trail of Palliser", The Beaver, outfit 267 (March, 1937), pp. 49-54, 66; and idem., "A Letter From John Palliser", The Beaver, outfit 269 (December, 1938), pp. 39-41. The other two are contained in the introduction to Gard, Robert E., Johnny Chinook, Toronto, Longmans, Green and Company, 1945; and in the first portrait in MacEwan, Grant, The Sodbusters, Toronto, Thomas Nelson and Sons, 1949.

A series of map sheets issued by the federal Department of Mines and Resources, Surveys and Engineering Branch, Hydrographic and Map Service, on the scale of eight miles to one inch, were very valuable in the preparation of the entire thesis. These are probably the best maps of Canada available. The following sheets were used: Ignace-Fort William, 1940; Kenora-Fort Francis, 1948; Brandon-Winnipeg, 1939; Broadview-Dauphin, 1940; Indian Head-Brandon, 1939; Saskatoon-Prince Albert, 1940; Moose Jaw-Watrous, 1940; Swift Current-Regina, 1943; Wainwright-Battleford, 1940; Hanna-Kindersley, 1940; Medicine Hat-Maple Creek, 1940; Whitecourt-Athabasca, 1942; Red Deer-Edmonton, 1940; Banff-Bassano, 1940; Cranbrook-Lethbridge, 1938; Grande Prairie, 1944; Tete Jaune-Edson, 1943; Vernon-Golden, 1943; and Okanagan-Kootenay, 1939.