

Canada's Topographical Surveys

The Part Played by Maps in the Development of the Dominion's Resources.

Inseparably linked up with the progress of any country is the necessity for suitable maps on which to work out lines of development. Canada, therefore, with her large extent of natural resources, has a vital need for maps. Such maps, to be of the fullest possible value, cannot be mere outlines of physical features. They must present information intimately connected with the resources in question, factors in favor of or against their economical development, and such other particulars as may be necessary. As a base for such specialized maps and as an adjunct by itself to most enterprises, it has been found that the true topographical map is of the utmost value.

Needed for Industrial Development.
Among the Canadian Government services that have carried on topographic surveying in the Dominion is the Topographical Survey of Canada. For some time the bulk of the surveying done by this branch of the service was carried on in the newer portions of Western Canada. The need for the laying out of homestead lands in advance of settlement was imperative and, consequently, these surveys were made as rapidly as was consistent with accuracy. When this side of the work was well advanced, however, the demand for maps that would show other features became pressing. In other words, the first survey was needed for agricultural settlement and the second for industrial development, and incidentally for tourist traffic now an important feature of the nation's business. As will be seen the use of this latter class of surveys is not confined to the West, but is Dominion wide. In 1919 therefore a topographic survey of the more settled districts of the West was begun and this year a similar survey was started in the Maritime Provinces.

In Other Countries.
In the majority of the more progressive countries of the world such surveys have been made. The British Isles have been entirely surveyed and the authorized normal programme of work of the Ordnance Survey of the

United Kingdom includes the revision of certain topographic maps at periods respectively of fifteen years, twenty years, and forty years. On the continent of Europe, France, Belgium, Germany, and Switzerland are particularly well surveyed. India also has carried on, for some years, an extensive surveying programme and has perfected methods now used in other parts of the world. In these countries regular programmes are followed out, various standard scales are used, and a partial return, in some cases almost the entire return, of the cost of the survey is obtained by the sale of the maps.

The uses which may be made of a topographic map, showing the shapes and elevations of land and picturing artificial features such as railroads, highways, and buildings, their relation to one another and to the land and water, are many and varied. The public utility value is evidenced in the saving of the money necessary for general surveys. The assistance of topographic maps is invaluable in the study of the general transportation needs of a district, in the development of water resources for electrical energy, the intelligent consideration of drainage and reclamation problems, and in the utilization of timber resources and all problems of forest conservation and reforestation.

The topographic map is valued in other spheres besides that of national material development. There are educational uses as in the study of physical geography in public schools and colleges and in the making of relief models. Popular use may be made of them by the motorist, the tourist, the camper, the hunter, and those who, in vacation time, seek the great outdoors. In the presentation of statistics they may be made the base for maps giving facts relating to population, industry, products, and other similar information. That they may be utilized for national defence is recognized by all countries, and there are municipal uses for taxation and other purposes.

Seeds of Great Inventions.

Every electric light in the world, from the small pocket torch to huge advertising signs, owes its existence to a little ring about six inches in diameter.

This ring, which is in the Royal Institution Museum in London, is that from which Faraday, the great inventor, obtained the first induction spark, thus making a discovery which is the basis of our modern electric lighting system.

In the same museum is another instrument from which great results sprang. This is Faraday's hand-pump used in his experiments in turning gas into liquid. To-day we accomplish the same feat with the aid of two large engines working compressors.

Equally interesting is the model from which Sir Humphry Davy constructed the famous lamp bearing his name. Everyone has heard of the Davy safety lamp, used in coal mines because it will not cause explosions of fire-damp, and so on.

This lamp was so important in the mining industry that colliery owners of Newcastle gave its inventor a silver dinner service as a recognition of his great work.

The Royal Institution was founded by Count Rumford, himself an inventor. A hundred and twenty years ago he made the first fire grate. This grate is in the museum, and it takes the attendants there a good two hours a day to keep the fire in it burning properly!

Queen Wilhelmina's Gift of Gloves.

Queen Wilhelmina of Holland, as is well known, enjoys great popularity among her subjects. The following incident, which happened recently, is a fresh proof of her good nature and simplicity of manners.

The Queen was out walking in the neighborhood of The Hague when she noticed a little girl belonging to a worker's family. She stopped and talked to the child for some time, and the latter, wanting to show her gratitude for the Queen's friendly action, soon after knitted a pair of gloves and took them to the royal palace. Touched by this attention, the Queen in her turn sent the child a pair of kid gloves, filling the right hand with caramels and the left with gold pieces. A letter accompanied the gift asking her "charming little friend" to tell her which glove she liked best.

The following answer came: "Dear Queen: Your present was beautiful, but I can't tell you which glove I prefer. You see, my father got hold of the left-hand one and my brother the right-hand one." The Queen laughed heartily on receiving the letter and renewed her present, making sure, however, that it would not fall into the hands of a covetous family.

Scottish Extraction.

"Yes, I'm a cosmopolitan. My father was English, my mother French, I was born in an American ship off Naples, and McPherson's my dentist."
"What's McPherson the dentist got to do with it?"
"Why, naturally that makes me of Scottish extraction!"



Yes, We Know

"So you found him quite sociable and lively, eh?"
"Yes; a regular hale-fellow-well-wet sort of chap, you know."

Extending Radio to North Country

Erection of Four Powerful Wireless Stations in North West Territories and Yukon Under Way.

The Dominion Government, ever alert to combine the greatest efficiency with economy in carrying on the different services of the country, has despatched a party to the Yukon to erect the first two of a series of four wireless stations, equipped with powerful receiving and broadcasting sets, which will eventually supplant the present telegraph lines. In this instance as in others the Government is taking advantage of one of the latest advances in science to effect a great saving in the annual cost of maintaining communication between far northern points and the outside world and at the same time provide a reliable and uninterrupted means of transmitting messages and news.

The Canadian Corps of Signals are to erect these wireless stations for the North West Territories and Yukon Branch of the Department of the Interior and a party is now in the Yukon territory engaged in installing the equipment at the Dawson and Mayo stations before the winter sets in. Early next spring another party will go to McMurray, northern Alberta and Simpson in the North West Territories and install radio apparatus there. Upon the completion of the stations competent operators will be placed in charge, and it is anticipated that this system will do much to assist in the development of these districts.

For many years the Yukon territory has had to depend on the telegraph line from Dawson to Hazelton, B.C., for communication with the outside world. This line was maintained at a cost of more than a quarter of a million dollars annually, and notwithstanding the undraining attention to duty of the patrols, especially in the great wilderness between Hazelton, B.C., and Whitehorse on the Yukon River, interruptions occurred in the service, resulting in losses to those engaged in development work in the territories. One of the heaviest snowfalls on the continent occurs on the eastern slope of the Rocky Mountains in the district traversed by the telegraph line, so that in the past the line patrols

have had to contend with deep snows in winter and floods and forest fires in summer. Incidentally the new service will bring means of communication to the districts in which development has made rapid strides during recent years, namely, the oil and gas fields of northern Alberta and the Mackenzie district, and the gold and silver areas of the Yukon.

Will Replace Wire Lines.
When the proposed four wireless stations have been completed and are working direct service by wire between Dawson and Hazelton will be discontinued. However, for the use and benefit of transportation companies operating boats on the Yukon River and for the residents of Whitehorse in the Yukon and of Atlin, B.C., the service will be continued between Dawson and Atlin. All telegraphic communications between the Yukon and the outer world will then be transmitted by way of Mayo, Simpson and McMurray. At the last named point connection will be made with the Government telegraph wire line to Edmonton. The new system will have a daily capacity of 5,000 words, which, although considered greater than will be required for some time, provides for future expansion. A great saving in annual upkeep of the Yukon service will be effected by the radio service. The cost of installation is estimated not to exceed \$75,000, including construction of necessary buildings and cost of operation for one year. The cost of maintenance will be much below that for the telegraphic service.

The value of radio in the far north is rapidly being recognized. For a number of years officials of the Government and others have been carrying, as part of their equipment, receiving apparatus. To surveyors, receiving sets are absolutely essential in order to secure the time from the Observatory to determine longitude, while travellers to the north in general speak with appreciation of the part being played by the wireless in the development of this great Canadian hinterland.



Had a Falling Out

"The porch swing seems to be their favorite resort—wonder how they're progressing?"
"Don't you know? They've had a falling out."

Answered.

He was one of those fresh young fellows given to the use of slang. At the breakfast table, desiring the milk, he exclaimed: "Chase the cow this way, please."
"Here, Jane," said the landlady, "take the cow down into where the calf is bawling."

Summer is like a good cook; it doesn't stay long.

A Plain Talk.

If you can make the following promises to yourself and keep them, the world will be the better for your living in it:—

To make all your friends feel that there is something in them.

To look on the sunny side of everything and make your optimism come true.

To think only of the best, to work only for the best, and to expect only the best.

To be as enthusiastic about the success of others as you are about your own.

To forget the mistakes of the past and press on to the achievements of the future.

To give so much time to the improvement of yourself that you have no time to criticize others.

To be too large for worry, too noble for anger, too strong for fear, and too happy to permit the presence of trouble.

To think well of yourself and to proclaim this fact to the world—not in words but in deeds.

To live in the faith that the world is on your side so long as you are true to the best that is in you.

Happy is the man who reverences all women because he first learned to worship his mother.—Richter.

Unexplainable Lure Led Shackleton to Arctic

It was in 1909 that Shackleton, after incredible sufferings, was compelled to turn back from his dash to the South Pole. But what mysterious urge was it that, in later years, drove him to taste again of those agonies of the Antarctic although the pole had been reached in the meantime by his rivals?

As one turns the pages of Dr. R. H. Mill's "The Life of Sir Ernest Shackleton," one finds oneself asking this question in bewilderment. It is an unanswerable question. The psychology of the born explorer is beyond the comprehension of the stay-at-home.

Shackleton might have remained at home in comfort after his trip with Scott in the Discovery. He took to journalism and became sub-editor of the Royal Magazine; then he obtained the secretaryship of the Royal Scottish Geographical Society, and, having married, lived very happily at Edinburgh. He stood—unsuccessfully—for parliament. He dabbled in business enterprises. All manner of doors were opening to him. But that strange lure, the lure of the far south, impelled him to leave home, wife and children, and vanish once more into the wastes of snow and ice, to a realm with cold so extreme that the paraffin used for

heating the cooker was of the consistency of cream.

On the return journey, when the attempt to reach the pole had failed, an incident occurred which shows us how it was that Shackleton won the worship of all who worked for him:

"Wild, who had been the first to be stricken with dysentery, was unable to eat the horse-flesh, and suffered horribly from hunger. At breakfast-time a biscuit was served out to each, which could be eaten at the time or kept till later in the day. On 31st January Wild finished his at once, and as he was starting on the march he found Shackleton's hand slipping a biscuit into his pocket. "What's that, Boss?" he asked, and the answer was, "Your need is greater than mine." He resisted; but Shackleton was irresistible and fought in silence with his hunger, for he knew his friend was more hardy put to it than himself. The other two men never knew of the incident. No one could say that Shackleton was acting the part of Sir Philip Sidney for his own glory, for until now the facts were written only in Wild's private diary. There he says, "S, privately forced upon me his one breakfast biscuit and would have given me another to-night had I allowed him. I



Sir Ernest Shackleton

do not suppose that anyone else in the world can thoroughly realize how much generosity and sympathy was shown by this; I do, and by God I shall never forget it." He never did, as the record of their great friendship abundantly proves.

The wreck of the Endurance was the wreck of all Shackleton's dreams

of a second polar triumph," writes his biographer; but the end of the Endurance was only the beginning of one of the finest episodes in maritime history—the escape to Elephant Island and the voyage in the James Caird, a boat only twenty-two feet long, over 800 miles of tempestuous sea to South Georgia.

Life on the James Caird can hardly be described, and it cannot even be imagined by those who have seen the huge waves of the Southern Ocean only from the deck of a liner. Those on board the little craft were already exhausted with the dreadful year of winter they had come through, their clothes were torn and tattered, their skin flayed at every joint with the horrible sea-blisters which salt water, cold, and the friction of rough cloth produce.

They could not stand up, except for a moment or so, holding on to the mast or stays; they could not lie down except on the rough angles of the ballast and the cases under the dripping canvas "deck"; they could not even sit, except in the open well at the stern, where the steersman on his two-hours' turn at the helm was often so cramped that he could not unbend his

knees or lift his hands when relieved.

Down in the hollow of the waves the little boat would lie a while, shut into an illusive calm between two hills of water, from the summits of which the spume flew far overhead; a moment later she would rise on the crest and be flung forward by the shrieking wind in a smother of spray; rushing down into the next still hollow only to be hurled again into the tempest.

The conclusion of that epic story is known to all. But the mystery remains as to why Shackleton yet again went south. He was, as his first skipper said of him when, fresh from school, he went to sea as an apprentice, "the most pig-headed, obstinate boy I have ever come across;" and this obstinacy remained with him to the last and took him to a lonely grave on a barren island near the rim of the Antarctic Circle.

Lady Shackleton was right when she decided that her husband's burial should take place not in England, but under the shadow of those mountains in South Georgia, which he had been the first to cross in a march described as "a miracle of mountaineering without guides or maps or resting places."

Foretelling Weather Weeks Ahead.

Foretelling the weather for weeks ahead will soon be possible, according to Henry Helm Clayton, who has just written a comprehensive book, "World Weather." Dr. Clayton was for twenty years at the famous Blue Hill Observatory in the United States, and his book was written while he was chief of the forecast division of the Argentine Meteorological Office.

While covering many angles of weather forecasting, "World Weather" lays special stress on the relation between solar radiation and terrestrial conditions. Dr. Clayton tells how he has forecast weather a week ahead with success, and adds that soon experts will be able to anticipate "weather changes so far in advance as to save much of the loss and distress following in the wake of unexpected adverse conditions."

Coming from such an authority, long distance weather forecasts would appear to be in sight.

Tommy Knew.

Grandpa—"Good. And now, can you tell me what the Epistles are?"
Tommy—"They are the wives of the Apostles!"

What is literature to the author is usually litter to the housewife.



Utterly Ruined

"I—I'm sorry mister."
"You should be sorry, young man."
"But you'll hafta buy me another banana now."

Not Up on News.

A travelling man one night found himself obliged to remain in a small town on account of a washout on the railroad, caused by the heavy rain, which was still coming down in torrents. The travelling man turned to the waitress with: "This certainly looks like the flood."

"The what?"
The flood. You've read about the flood, and the ark landing on Mount Ararat, surely?"

"Say, mister," she returned, "I ain't seen a paper for three days!"