

## PEACE RIVER DISTRICT: ITS RESOURCES AND OPPORTUNITIES

UNDER the above title, an interesting little booklet has been published by the Department of the Interior, Ottawa. The author is Franklin H. Kitto, D.L.S., and the booklet was prepared under the direction of the superintendent of the Natural Resources Intelligence Branch of the Interior Department.

Assistance by various other government officials is acknowledged. Charles Camsell, of the Geological Survey, and C. H. Attwood, of the Dominion Water Power Branch, prepared the chapters dealing with mineral deposits and water powers, respectively. The Director of Forestry and the Commissioner of Dominion Parks revised those portions of the booklet relating to their work.

The booklet contains 46 pages and cover and a map of the Peace River drainage basin, in the provinces of Alberta and British Columbia. There are eleven reproductions of photographs secured in various parts of the district. The booklet includes paragraphs on the Peace River, Climate, Soil, Timber, Mineral Deposits, Fur, Fish and Game, Waterpowers, Transportation, Communication, Education and Social Life, British Columbia Section, Great Agricultural Sections, High Prairie, McLennan, Dunvegan, Spirit River, Grande Prairie, Pouce Coupé, Fort St. John, Hudson Hope, Fort Vermilion, and other publications and information available.

### Transportation

The Peace River District may now be reached in comfort and despatch by modern means of travel, being connected by rail with Edmonton, the capital of Alberta. Peace River, Spirit River and Grande Prairie are served by the railway and further construction is in progress. In addition, those districts adjacent to the river have the benefit of a steamboat service during the months of navigation.

The Edmonton, Dunvegan and British Columbia Railway runs northerly from Edmonton to Smith, the first divisional point, where the Athabaska River is crossed. Swinging westerly, it follows the Lesser Slave River and skirts the southern shore of Lesser Slave Lake, famous for its yields of whitefish.

High Prairie is on the line of steel at the westerly end of this lake, and marks the approximate divide between the Athabaska and Peace watersheds. The railway then runs more northerly to the next divisional point, McLennan. From McLennan the Central Canada Railway runs northerly to Peace River, reaching the edge of the valley at a point overlooking the junction of the Peace and Smoky Rivers and affording the traveller an excellent bird's-eye view of the town nestling in the valley several hundred feet below. A long descent on a side-hill grade brings one into the valley and to the edge of the waters of the Peace itself.

From McLennan the main line of the Edmonton, Dunvegan and British Columbia extends westerly, crossing the Smoky River and continuing to Spirit River settlement. Location has been carried still west as far as Pouce Coupé, and it is only a matter of time until the steel will be laid across this prairie and thence through the mountain passes to give an outlet to the Pacific Coast.

From Spirit River a branch runs southerly to Grande Prairie, a new town which has sprung up in the heart of the great prairie whose name it bears, and which has been settled so rapidly in recent years.

At present a train service is maintained on all these lines, from Edmonton and return, twice a week. Traffic

is already becoming so heavy that a daily train service is probably not far distant. Stockyards and elevators are in evidence, and an efficient freight service is maintained.

Following is the chapter on water powers, prepared by Mr. Attwood, who is chief engineer in charge of the Alberta and Saskatchewan power surveys, under the Dominion Water Power Branch:—

### Water Powers

Many misleading statements have been published relating to the vast amount of power available on the Peace River. This river, from the canyon in British Columbia to Vermilion Chutes in Alberta, a distance of approximately 500 miles, is a wide, swift river flowing over a sand or gravel bed, generally shallow, and through a deep valley, with gently sloping sides. The river is a mountain stream, as are many of its tributaries, and as a result the flow is very irregular, varying as much as 50 to 1 between high and low water, with the floods occurring during the summer months and the low flow during the winter.

On the Peace River there are two possible power sites: one in the headwaters at the canyon, and the other at Vermilion Chutes.

The canyon site has not yet been investigated by the department's power engineers, and while the total fall through the canyon, which is about 18 miles in length, is reported to be between 225 and 275 feet, it is not known how much of the total head can be developed. In any event, a power development at this site will be an expensive undertaking, and can only be accomplished when a market for the power is available close at hand.

The Vermilion Chutes site has been surveyed and investigated by the department's power engineers. The river at this site averages one mile in width, and takes a drop of 30 feet in a distance of two miles. The fall is concentrated chiefly at two points; the first or upper fall being in the form of a rapid, half a mile in length, with a total drop of 11 feet. The second drop is situated one and a half miles below the rapid, and is an abrupt drop of 13 feet over a limestone ledge, and is commonly called the "chutes."

At the "chutes" both river banks are low, and an effective head of 30 feet is about all that can be obtained. The continuous 24-hour power available, based on one season's discharge records, amounts to 19,100 horse-power. For nine months of the year possibly 27,300 horse-power can be developed.

The possibility of developing small blocks of power on the tributaries of the Peace has not been definitely investigated by the department's engineers. Of these tributaries, the Pine, North Pine, and Smoky Rivers have their sources in the mountains and foothills and are fed by the melting snows in the mountains during the summer months and have only a small run-off during the winter. The Moberly, Pouce Coupé, and Bear Creek, together with the tributaries below Peace River Crossing, depend upon the precipitation, are subject to floods during the spring and summer months, and have a very small flow during the winter. Further investigations may, however, reveal the possibility of storing and conserving the flood waters on many of these streams. In such an event, these streams will be capable of producing sufficient power to operate small mills, and in some cases supply the power demands of a small municipality.

The inherent disadvantages of the Peace River and its tributaries as a source of power at the present time are the irregularity of flow, the high cost of development and the absence of market.