

GAS AND OIL FIELDS IN THE WEST

INCREASING difficulty in securing fuel supplies for domestic and industrial use makes a report on investigations in the gas and oil fields of Alberta, Saskatchewan and Manitoba, just issued by the Geological Survey of the Department of Mines, valuable at the present time. These fields are already extensively utilized in Alberta, and the distance of Manitoba and Saskatchewan from any coal mining area makes the investigation of local possibilities very desirable. Power, or fuel to produce it, has always been necessary for the upbuilding of great manufacturing industries and in late years has become necessary also to the industries connected with the production of food. By the introduction of internal combustion engines and the rapid development of their use in transportation and traction as a substitute for animal power, the tilling of large areas on the plains has been made possible without a corresponding increase of man-power. The increase in the use of these engines in agriculture and for war purposes has made great demands on the store of light oils and has made the search for new oil fields a matter of national importance. The presence of natural gas in Alberta led to the exploration of that field for oil reserves and numerous exploratory wells were drilled. Unfortunately, many of these were located on badly selected sites; but a few were so placed that they have demonstrated large extensions to the known gas fields of the plains.

In the early history of the plains little value was attached to the presence of gas unless it was so situated that it could be piped to centres of large population to be used as fuel to replace coal; but the importance of these gas reserves and, therefore, of the areas in which they may be found is now constantly increasing as new ways are discovered of utilizing the gas at the wells.

Natural gas was accidentally discovered more than twenty years ago in a well drilled for water at Alderson (Langevin) on the Canadian Pacific railway and another well was bored at Cassils; but the flow at these wells was not important. Small seepages of gas in the bed of the Saskatchewan River led to the putting down of shallow wells near Medicine Hat and in the report of the Geological Survey for 1900 it is stated that the gas from two wells with a pressure of 115 pounds was being used for lime-burning. These wells were comparatively shallow, with small flows. Deeper drilling was undertaken and a better supply of gas was obtained at a depth of 1,000 feet. By 1904 there were six wells producing gas and the industrial development of the town began. Two wells were bored at Langham and three at Edmonton about 1905, but these proved unproductive. Wells in which a little gas was found were also bored at Calgary. Greater success attended boring on the anticline south of Langevin and Cassils, where the Bow Island well gave an enormous flow. This well was completed in the latter part of 1908 and interest was again aroused in the Calgary field, but the Geological Survey advised against drilling at the city, recommending rather that the western edge of the syncline be tried. The next well, unfortunately, was not located near the edge of the syncline, but very near Calgary, and was unsuccessful. In 1913, an anticline was located at the western edge of the syncline, on the south branch of Sheep Creek, and in accordance with advice previously given, wells were bored on it by Calgary interests. Oil of high grade was struck over the small area which constitutes the present Sheep Creek oil field.

The oil boom of 1914 will long be remembered on account of the indiscriminate locating of oil leases without reference to the structure of the underlying rocks and the consequent very large useless expenditure in drilling. The general absence of favorable structure areas in the disturbed belt of the foothills has directed attention to the plains, where the formations are only gently folded, and a little oil has been obtained in the Peace and Athabaska valleys and the presence of gas proved at various places. A more extended study of the general structure, than has yet been

made, is necessary before the extent of the new fields can be predicted.

In the general geological study of this very large area, dependence has had to be placed very largely on information gained from the beds out-cropping at the surface; and existing geological maps have been prepared with the view, mainly, of showing the possibilities of the occurrence of coal within reach of the ordinary mining operations. It is true that, from careful observation of the attitude of the beds at the surface, the attitude of the beds beneath can be inferred, since a great thickness of apparently quite conformable strata underlies the plains; but, as perfectly evenly deposited beds are rare, variations in thickness must be looked for and the only absolute check on the thickness must be got from drilling records. Consequently the aid of the drillers was sought, who, although at first reluctant to furnish the information, have now come to realize the benefit that follows the collection and correlation of these records and are more readily responding. Although the records contain details of a large number of wells, the deep wells are too few to permit of deductions being made with certainty in regard to the structure of the lower horizons.

TAXATION OF PUBLIC PROPERTY

RADICAL changes in industrial life make radical legislation necessary to conform to the new conditions. During the past ten years utilities have been acquired wholesale by the provinces and municipalities of Canada, with substantial loss to municipal revenue. To cease exempting such public property from municipal taxation would be a reform fully justified by this new situation. In the case of a municipal utility such taxation would merely mean crediting the municipal treasury at the expense of the utility department, and would, therefore, be a simple matter of accounting, where the property was owned by the federal or provincial government it would be new revenue for the municipality. In either case it would mean that the publicly owned utilities would have to be self-supporting, as they are intended to be, and services would not be rendered partly at the expense of the general taxpayer.

Such a reform has been proposed by C. F. Swayze, M. P.P., labor member for Niagara Falls, of the Ontario legislature. The main clause of the bill presented by Mr. Swayze, and now before the House, provides: "Notwithstanding anything in the Assessment Act, the Power Commission Act, or any Act contained, all the real or personal property owned or leased or controlled by or vested in the crown in a municipal corporation or commission or in trustees or in any person or body acting for or on behalf of a municipal corporation or on behalf of the Crown and operated as or used, controlled or held in connection with the operation of a public utility shall be liable to assessment and taxation for municipal and school purposes including local improvement purposes in the municipality in which it is situated as if the said property belonged to a private person."

"With the public ownership principle being more widely applied, as it should be," says Mr. Swayze, in support of his measure, "it is desirable that the principle that municipal taxes should be paid, be adopted. The federal Government is taking over the C.N.R., and the G.T.R., and may lease some of the lines to the Hydro, but full taxation should be paid, as now. The Associated Chambers of Commerce have recommended this change in the law. A number of members on the Opposition side have promised me their support."

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Compensation to injured workmen, payable under the Ontario Workmen's Compensation Board, is to be increased from 55 per cent. to 75 per cent., with a minimum of \$12.50 per week, according to plans of the provincial government. Increased burial expenses are also to be allowed, and provision made for supplying artificial limbs and eyes to disabled workmen. A pension of \$40 per month for widows and \$10 for each child is also planned.