EXPERIMENTS IN OIL SMELTING IN BRITISH COLUMBIA.

The annual report of the Minister of Mines of British Columbia for 1911 contains some notes by Wm. Fleet Robertson, Provincial Mineralogist, on attempts to smelt with oil as fuel. For the past two years the Dominion Oil Smelting Company, Ltd., in Vancouver, has been conducting a series of experiments in the old Van Anda smelter, in an attempt to perfect or render practicable an oil-fired furnace for smelting ores, and has achieved a degree of success such as to render the process worthy of serious consideration. The particular form of furnace being experimented with is covered by Canadian patents granted to J. J. Anderson, and acquired by the company. More recently, March, 1912, Mr. Anderson has taken out United States patents for a new furnace, which is a modification of the Van Anda furnace, designed along lines suggested by Mr. Thomas Kiddie after the latter had made a test at the Van Anda plant.

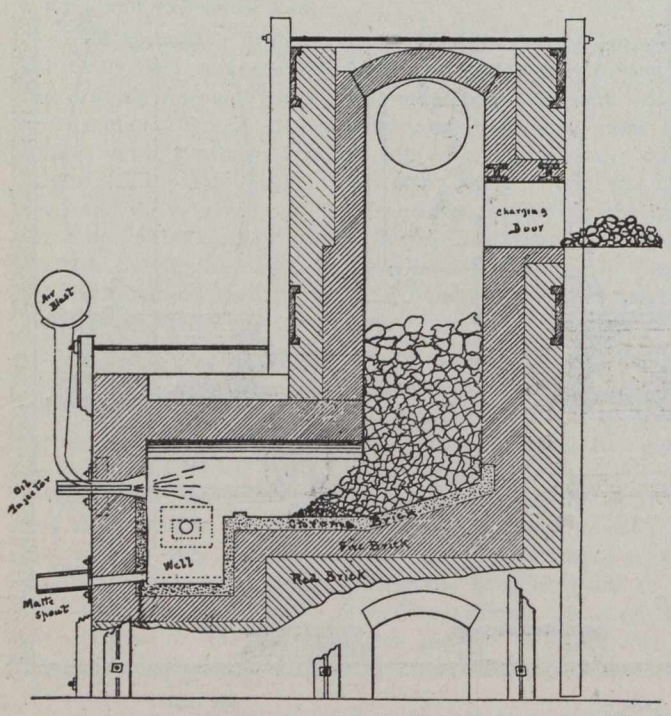

Fig. 1.—Dominion Oil Smelting Co., Oil Furnace Blast Furnace at Van Anda, B.C.

The Van Anda furnace, of which a rough sketch is given in Fig 1, is essentially a shaft furnace superimposed above one end of a reverberatory furnace or combustion chamber. In operation, the ore with suitable fluxes is fed into the shaft from the charging floor, passing down onto one end of the reverberatory hearth. The shaft thus serves as a feeding hopper for the reverberatory. The latter is fired from four injectors which squirt vaporized oil into the front of the chamber, the flame impinging on the foot of the ore column in the shaft. The products of combustion pass upward through the charge, thereby heating it to near the melting point, and escape through a suitable flue and stack. The melted ore flows down over the inclined hearth of the reverberatory into a well or sump, in which the matter and slag separate by gravity, each being tapped through holes placed at suitable levels. The injectors are operated under steam pressure, and the proper amount of air is supplied by a pressure blower.

The furnace undoubtedly requires and will receive considerable modification before it is commercially successful; but that a considerable advance has been made toward that goal is indicated by the results of a test made by Mr. Thomas Kiddie, a metallurgist of British Columbia, who has had previous experience with oil-fired furnaces at the works of the Orford Copper Company, New Jersey.

MANAGEMENT OF TRACKLAYING ON NEW RAILWAY WORK.*

In the discussion of the methods employed to obtain the best and most economical results with tracklaying on construction work, the committee has limited itself to the consideration of the following points: (1) Should the building of new yards and main lines (which are not let to contractors) be handled exclusively by the engineering departments? (2) Should such work be handled by the maintenance-of-way department? (3) Should such work be placed under the direct supervision of a practical track man?

In regard to the first point, the plans, specifications, etc., should be prepared by the chief engineer, but the actual supervision of the work should be in charge of a practical track man. There should, of course, be a resident engineer on the ground to lay out the work in accordance with the specifications.

The man in charge can best ascertain the proper kind of material to be selected and the manner in which it should be placed on the subgrade in order to eliminate the possibility of soft spots which so frequently develop in tracks under the pressure of heavy traffic and which form the most serious drawback in the maintenance of a first-class track in the future. He can also provide good drainage, sufficient ballast under the ties, and proper spacing and placing of ties in accordance with the size and condition of ties provided, all of which are essential to the construction of good, substantial tracks. The construction of all new track work or such tracks as come under the head of "construction work" should be completed in detail at the cost of construction before being turned over to the maintenance department.

As to the second point, such work should not be handled by the maintenance-of-way department, for the reason that the average roadmaster has as much maintenance supervision as can be properly looked after, particularly during the working season.

As to the third point, work of this character should be in charge of a practical track man, selected by the proper officials, together with a resident engineer.

A saving in cost and time can be obtained by the use of a tracklaying machine in laying the first track, depending largely (of course) on good organization. Second and other additional tracks can best be constructed by unloading the necessary material from the existing track; this applies also to yard tracks. All necessary grading can be done by train to very good advantage when the material is not at hand to be hauled by teams.

The advantage in making fills by train lies in the fact that better material can be obtained and used after the material is unloaded from the train with a side plow and leveled back to the full depth and width for an additional track. If gravel ballast is to be used it can also be unloaded and spread on the grade with a spreader to the width and height required before tracklaying, so that when the steel is laid there is no lifting to be done beyond surfacing or a light lift.

* Abstract of a committee report presented at the annual meeting of the Roadmasters and Maintenance-of-Way Association, Buffalo, N.Y., Sept. 10-13.