

done more cheaply, but also on ore in more concentrated form. Among the methods referred to are included a water concentration, or separation of certain portions of the ore, and a separation by oil of certain values more effectually to be recovered by this medium. So far the experiments made—for the plants are only so considered, although on a large scale—have given promise of satisfactory results."

Mention is made of experimental tests for the magnetic separation of zinc from lead ores, and the Provincial Mineralogist expresses his conviction of the wonderful possibilities of the process as applied to a number of British Columbia ores, the concentration of which by any water method is impossible. Reference is made to numerous other developments, but only three of these will here be noted. In the Similkameen District very extensive and satisfactory development on its property by the company owning has been made by the Nickle Plate group, the ore of which is chiefly iron sulphides carrying gold. A milling plant has been erected for the treatment of these ores and preparations are in progress for putting in a smelter later. At Mt. Sickler, Vancouver Island, the Tyee Mining Company, which started active operations about the beginning of 1903, during the year produced and sold mineral containing values to more than half a million dollars. The Crow's Nest Pass Coal Company added to its former extensive operations by opening a number of previously undeveloped seams of coal and did a commensurate amount of construction work, which new developments alone are sufficient to constitute a large coal mining centre.

The field work done by the Provincial Mineralogist during the year included visits to mining camps at Windermere, in North-East Kootenay; Perry Creek, Kimberley, and Bull River, and to the Crow's Nest Pass coal and Flathead oil districts, all in East Kootenay; and to Poplar Creek, Trout Lake, Ferguson and Camborne camps, in the Lardeau district of West Kootenay.

The report also contains a summary of the work of assay office, as reported by Mr. Herbert Carmichael, provincial assayer, a description of the Quatsino Sound mining district of Vancouver Island, also by Mr. Carmichael; much interesting information concerning the various mining divisions, supplied by gold commissioners, mining recorders and others, conspicuous among the official reports of the gold commissioners being those of Mr. John Bowron (Cariboo), Mr. John Kirkup (Rossland), and Mr. W. G. McMynn (Greenwood), all of which contain especially useful particulars of mining operations in the respective districts they deal with, and a new departure in the shape of an appendix giving the petrography of rock samples from British Columbia. The official statistical tables, prepared by the Department of Mines, contain much valuable data relative to the increasingly important mining industry of the Province, and diagrams and maps contribute to the general usefulness of the report. The map showing a portion of the coal lands of South-East Kootenay will be of much service to those interested in that section. The re-

production from the 1902 report of the minister of mines of New Zealand of illustrations showing a table for saving fine gold from dredging is also timely. The remaining illustrations, most of which, as a matter of course, relate to districts visited by the Provincial Mineralogist during the year, are excellent, well finished and printed and a decided credit to the government printing office.

A GOLD DREDGE AT ATLIN.

THE accompanying illustrations (two) of the British-America Dredging Company's gold dredge on Gold Run Creek, Atlin, will serve to convey some idea of the enterprise of this company in undertaking gold dredging operations in that district. In his official report for 1903 on the Atlin Mining Division the Gold Commissioner for the Cassiar District gives the following information relative to the British-America Dredging Company, Ltd., of which Mr. O. T. Switzer is general manager:

"This company has acquired a large number of hydraulic leases, comprising a considerable extent of alluvial ground, and is still acquiring more, so that already it controls a very large aggregate area, some portions of which are known to be rich. Among other properties acquired are the leases on Gold Run and Pine creeks known as the Ophir, Earth and Cosmopolitan Groups.

"The company brought in a Keystone drill, with which it operated for upwards of three months, prospecting its various properties, at an aggregate expenditure of about \$20,000, with unqualified success and satisfaction. A Bucyrus dredge and an electrical power plant capable of producing 500 h.p. were also brought in. The dredge was placed upon one of the Ophir Group of leases on Gold Run creek and the power plant a short distance below the Falls on Pine creek. In conjunction with the construction and installation of the dredge and power plant, this company excavated over one and a half miles of ditch, laid 1,800 feet of 30-inch steel pipe, built 400 feet of wooden flume, erected 6 miles of pole line equipped with 5 wires, using over 25 miles of copper wire, built a transformer house near the dredge site, together with dams, pressure box and the camp buildings, etc., necessary for the work and to accommodate its employees, at an aggregate expenditure of about \$300,000.

"Notwithstanding that the utmost diligence was manifested and a large force of men employed, the delays consequent upon the transportation of the heavy plant and timber, upwards of 700 tons of which had to be imported, in addition to such local timber and lumber as could be utilised, besides other causes, retarded the completion of the dredge and power plant until about the close of the season, and the management had to reluctantly content themselves with having everything ready for commencing operations with the opening of the season of 1904. The progress of this work was watched with unusual interest and its