The Engineer's Library

HYDRAULIC AND PLACER MINING

REVIEWED BY J. B. TYRRELL

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By **Eugene B. Wilson.** Published by John Wiley & Sons, Inc., New York; Canadian sales agents, Renouf Publishing Co., Ltd., Montreal. Third edition (1918), 5 x 7¼ ins., 434 pp., 90 figures, cloth, $3 net.

In 1898 the rush of people of all classes to the new placer mines of the Klondike, in the far north-western corner of Canada, was at its height, when 28,000 people, very few of whom had ever seen a gold pan, crossed the mountains to the source of the Yukon River and descended that stream in 7,124 boats of various kinds.

All hoped to win fortunes by extracting and collecting gold from the gravel and bed-rock into which it had been concentrated by stream action through the ages since middle tertiary times. During the previous year, some mining claims, or portions of claims, had been found to be marvellously rich, and stories about them had been magnified a hundred fold by constant repetition. Creeks had been given such names as "All Gold" and "Too Much Gold," for the prospectors, when recording discoveries on them, had stated that "you had to mix gravel with the gold to sluice it."

At first the Argonauts bound for the new gold fields considered that no previous knowledge was necessary to enable them to make fortunes from such ground as they were certain to be able to stake or acquire, but after arriving in the Klondike many of them realized that they did not know what to do, and that there were many things about placer mining which it would be useful for them to know. Mr. Wilson's book, first published in that year, supplied a manual of information which was of much assistance to these miners, while, at the same time, it told people who contemplated going "inside," what they would need to do when they got there, and the laws by which they would be governed. It was, therefore, a welcome contribution to the literature of placer mining at that time.

In 1907 a second edition was issued, with 116 more pages than the first, and now we have a third edition, 68 pages larger than the second, or 410 pages in all, with an index.

The increase in size of the book has been largely in space devoted to a discussion of the capacity and transporting power of water and the proper methods of construction of ditches, flumes, sluices with their riffles, etc.

Many additional pages are also devoted to hydraulic mining. With reference to this method of removing earth and separating it into its various constituent parts, the author states in his preface: "The Giant has expanded from its original field, that of disintegrating gold-bearing gravel beds, to dislodging different kinds of minerals and materials from their resting places. Within the past ten years very able mountains of wasted coal that covered the landscape in the vicinity of anthracite mines in north-eastern Pennsylvania have disappeared, washed away by streams of water issuing from nozzles."

An interesting chapter gives a brief account of the development of placer mining, and at the end of the book are a number of useful hydraulic tables.

The chapter on prospecting placer ground gives various methods of estimating its value by drilling, etc., but the author does not rise above purely mechanical ideas in valuation, and gives no consideration to a knowledge of the structure or of the formation of the deposits, to the presence or absence of pay-streaks, or in fact to any data which might be gathered by a careful study of the history or mode of formation of the valleys in which the placers occur.

In some places, in matters of measurement, too, he slips into error, as on one page he speaks of an ordinary American gold pan holding from 15 to 25 lbs. of gravel, while on another page he speaks of material (sand or gravel) running 40 and 70 pans to the yard, which would make the contents of these pans weigh respectively 43 and 75 lbs., quite impossible weights.

In the chapter on geology, the writer has not kept in touch with a knowledge of the geology of the Klondike, as shown by a statement that "Ice rivers were the factors that disintegrated and transported the gold to those places where it is now found in Siberia and the Klondike," whereas "ice rivers," or glaciers, played no part in the formation of the placers of the Klondike.

Chapter 14, purporting to give the Canadian Yukon Mining Laws, is misleading, for the laws cited are those of 1898, which were repealed many years ago. At the present time *the Yukon Placer Mining Act*, first passed in 1906 and subsequently amended on three different occasions, is in force. A copy of this Act, which is quite different from the old Mining Regulations of 1898, may be obtained by a letter to the Department of the Interior, Ottawa.

PUBLICATIONS RECEIVED

NOVO ENGINES.—Catalogue No. 50, issued by the London Concrete Machinery Co., Ltd., London, Ont., who are the agents in Canada for Novo engines. Forty pages and cover, 6 x 9 ins., coated paper. Illustrating Novo gasoline engines, pumps, air compressors, etc.

LONDON CONCRETE MIXERS.—New catalogue issued by the London Concrete Machinery Co., Ltd., London, Ont., 6 x 9 ins., 60 pages and cover, coated paper, well illustrated. Covers line of concrete mixers, hoisting engines, elevators, barrows, carts, tile machines, block machines, cement working tools, etc.

WATER POWER.—Reprint of statement made by Sir Adam Beck, chairman, Hydro-Electric Power Commission of Ontario, to the Committee on Waterpower of the House of Representatives, second session of the sixty-fifth Congress of the United States, at Washington, April 15th, 1918. 72 pages and cover, 6 x 9 ins., no illustrations.

STEAM TURBINE PROGRESS.—Circular 1591, published by the Westinghouse Electric & Mfg. Co., Pittsburgh, Pa. Written by Francis Hodgkinson. The early history of steam turbine engineering is described and the early machines installed in America are illustrated. From 1899 to 1917 each year's development is recorded. The booklet is well illustrated with views of various types of impulse and reaction turbines.

AMERICAN ENGINEERING BEHIND THE BATTLE LINES IN FRANCE.—By Robert K. Tomlin, Jr., foreign correspondent for the McGraw-Hill Publishing Co., New York. McGraw-Hill Book Co., Inc., selling agents. 91 pp., illus., 12 x 9 ins., ¼ cloth, $2. Nineteen articles, reprinted from the McGraw-Hill periodicals of the past year, describing various phases of the engineering work accomplished by the American Army. Gathered together, they form an interesting account of the problems and the methods used to solve them.

FARM WATER SUPPLY AND SEWAGE DISPOSAL.—Bulletin 267 of the Ontario Department of Agriculture, written by Prof. W. H. Day. Prof. D. H. Jones, R. R. Graham and H. L. Fulmer, all members of the staff of the Ontario Agricultural College. Eighty pages and cover, 6" x 9", illustrated. Subjects covered are:—Why Pure Well Water Pays; Wells, Pumps, Power Pumping and Water Systems; Bacteria and the Water Supply; Chemistry of the Farm Water Supply; Farm Sewage Disposal; Bacterial Action in the Septic Tank System of Sewage Disposal.

ASSOCIATION OF MUNICIPAL ELECTRICAL ENGINEERS OF ONTARIO.—Advance copy of two papers to be presented at meeting to be held in Toronto to-day and to-morrow, January 30th and 31st. "Bare vs. Weatherproof Covered Wires for Potentials Above 750 Volts," by A. S. L. Barnes, of the engineering staff of the Hydro-Electric Power Commission of

(Concluded on page 188)