MINE TUNNELING.

DURING the past few years great progress has been made toward safer, more efficient, and more economical tunneling methods. This advance is partly due, no doubt, to the recent increase in the number of tunnels and adits driven for developing and draining mines and transporting ore. The United States Bureau of Mines, during 1911 and 1912, made a special examination of this phase of mining operations, in connection with an investigation of mining methods and means for preventing accidents. The details especially studied were the provisions for the safety of employees, the kinds of equipment, the methods of driving, and the cost of construction. The results and conclusions obtained from that investigation are discussed and summarized in Bulletin 57, of the Bureau. It is entitled "Safety and Efficiency in Mine Tunneling."

This bulletin is confined chiefly to a discussion of tunnels and adits for mining purposes, such as drainage, transportation, or development, but it also discusses those used to carry water for power, irrigation, or domestic use, in which essential features are practically identical with mine tunnels.

Most tunnels of the sort discussed are driven through rocks at least fairly hard in contrast to ordinary soil, quicksand, and other heavy material of a treacherous nature, and practically none is driven through recent river-bed deposits. Therefore, descriptions of the special methods and equipment for tunnel work in such materials are omitted. A distinction is made between tunnels or adits for which the excavation is wholly or in a large part in material containing no ore and those that follow a vein. As far as possible, the discussion is limited to the former, because the methods employed in driving along a vein are usually more akin to the distinctive operations for removing ore and are, therefore, not so apt to be good examples of tunnel practice.

It has been suggested by prominent authorities that the word "tunnel" be restricted to the designation of such nearly horizontal passageways as extend completely through a mountain or hill from daylight to daylight, and the words "adit" and "drift" be used only for nearly horizontal galleries that enter from the surface and serve to drain a mine or furnish an exit from the workings but do not continue entirely through the hill. Such definition is eminently desirable from strict technical consideration, and would contribute to precision of usage, but, although the suggestion was made over thirty years ago and has been repeated several times since, such usage is not widely established. The American practice of referring to any horizontal gallery as a tunnel, without regard to whether it extends completely through a hill, is so firmly fixed in mining literature and among mining men in this country, even being embodied in the United States mining laws, that the use of a more precise definition has been thought scarcely justifiable in this report.

AMERICAN INSTITUTE OF CONSULTING ENGINEERS.

A meeting of the Institute will be held at 55 West 44th Street, New York City, Thursday evening, June 11th, 1914, at 8 p.m. The special order of business will be the question of "A Memorial to Alfred Noble"; also Consideration of Changes in the Constitution and By-laws, recommended by the Special Committee appointed at the last annual meeting.

Coast to Coast

Montreal, Que.—Towards the end of the last week in False Creek have been practically completed.

Liscombe, N.S.—The cost of construction of the lightship, Halifax No. 19, which was recently wrecked off Liscombe, N.S., was $175,000. The contractors were Bow, McLaughlin & Co., of Glasgow, who were under contract to deliver the vessel complete at Halifax.

Montreal, Que.—The thirteenth annual report of the Montreal Light, Heat and Power Company shows substantial gains in gross revenue and net earnings. The gross revenue was $6,245,697, an increase of $736,141, and net earnings amounted to $3,467,246, an addition of $286,130.

Victoria, B.C.—It has been stated by Mr. D'Arcy Tate, vice-president of the P.G.E. Railway Company, that contracts have been awarded for the grading of that line from Fort George to Lake La Hatch, which means that construction will now be carried on from the coast to Fort George.

Ottawa, Ont.—The Dominion House of Commons passed estimates on May 24 for the department of public works amounting in all to approximately $25,000,000. Appropriations for public buildings amounted to $15,250,000. Of the sum, $4,500,000 was for buildings in Ontario. All the estimates for river and harbor improvements with the exception of those in Ontario and Quebec were passed.

Montreal, Que.—Towards the end of the last week in May, it was expected that the "break up" or excavation of the upper part of the C.N.R. tunnel at Montreal would be completed in that part of the work actually under the mountain; and a new stage in the construction reached. Excavation work will still have to be completed, however, in the portion of the tunnel underlying the city streets and for about 700 feet at the west portal. The site for Mount Royal Heights station is also being excavated.

Trent Canal, Ont.—The estimated cost of the new work on the Trent Canal for which tenders are now being called, e.g., Section 3, is placed at $1,500,000. The section to be enlarged lies between Peterboro' and Lake Simcoe. It has been announced by the minister of railways and canals in the Ottawa House that the entire canal will be finally completed at the increased depth within 4 years. The present contracts are all under way; the lower sections between Hastings and the Bay of Quinte will be opened for traffic this autumn.

Fredericton, N.B.—It is stated that the I.C.R. freight sheds at Fredericton are among the best along the entire system, both in size and equipment. The building is a wooden structure, 304 feet in length and 30 feet wide, and can accommodate 10 cars at once. Seven switches run into the sheds with a possibility of more being constructed. The equipment at the new freight sheds is entirely new. There are two excellent loading and unloading platforms and one machinery platform, the last being used to load and unload heavy machinery.

The Pas, Man.—Work commenced on May 25 on the grade upon which steel is to be laid to the terminal grounds of the Hudson Bay Railway. Beginning at a point south of the big bridge across the Saskatchewan river, at The Pas, two tracks will be laid, one to the round-house to be located at the foot of Eighth street, and another to connect with the C.N.R. about a mile south of the present station of that road. By June 1, steel is to be at the site of the proposed round-house and active work is to be continued until winter. The plans call for 14 tracks with a capacity of 1,600 cars. Eight of these tracks will be laid at once. As necessity requires the others will be installed.