

tire mine; pyrite mirrors and slickensides are common.

The new exploration work of 1907 developed a second, but smaller, orebody of low and very irregular grade in the north leg of the inverted saddle.

PRODUCTION AND COSTS.

With wages \$3.50 per day for miners, \$4 a day for shaft work and \$7 per foot for cross-cuts, mining costs have averaged \$2.40 per ton. Up to May, 1904, the company had produced 59,338,099 lb. copper. The production since has been approximately 20,000,000 lb. more. The mine water all comes from the surface and only extends downward 200 to 300 ft. The deep workings are dry—even dusty—except where the fault slips are channels for descending surface waters. The country is dry in summer and the mine boilers are supplied by water from the Chemainus River, pumped up against a 1,300-ft. head.

ORIGIN OF THE ORES.

The Tyee orebody resembles in features and occurrence the lenticular bodies of iron ore of the Lake Superior ranges, the origin of which has been so clearly disclosed by Van Hise, Leith and others. The hypothesis that the copper is a concentration by shallow ground-water circulations of material extracted from sparsely disseminated particles of chalcopyrite and pyrite of the schists, liberated during gradual erosion of the country, gathered in shear-zone cracks or trunk channels and precipitated by graphitic matter with coincident replacement of crushed material, appears at first sight to be an adequate explanation for this and many other deposits. The chief objection to this, and apparently an insuperable one, is the fact that the Tyee deposit consists largely of barium sulphate, while the surrounding rocks are entirely free from it; showing that lateral moving waters have not furnished the ore. It is, therefore, evident that we must look to deep-seated waters as the source of the ore in this deposit.

The Ottawa correspondent of the *London Mining Journal* lately wrote: "Mr. John W. Astley, the 63-year-old Yukon civil engineer, who this fall walked over 400 miles of the territory north and east of Lake Nipigon, Ontario, taking nearly the three months to tramp over a good section of that portion of the Transcontinental Railway survey, has returned to Ottawa, and in a conversation says that the American men who have had an eye on the north country of Canada for some years, freely admit that Canada contains to-day in the north country, in an undeveloped state, more wealth than they have ever had, among the principal being gold, with coal, oil, and timber in plenty. With an experience of more than 20 years in the North, through the Peace River country and the Yukon, Mr. Astley says that the Americans are pretty nearly right in their summary of the hidden wealth of Canada."

ANNUAL MEETING OF THE CANADIAN MINING INSTITUTE.

A Numerously Attended and Successful Gathering.

AT OTTAWA, ONTARIO, on Wednesday, March 4, and two following days, was held the tenth annual meeting of the Canadian Mining Institute. The gathering of members was large and the proceedings were interesting and decidedly successful. The following report of the meeting, with the exception of the Report of the Council, which latter was kindly supplied by the secretary of the institute, has been taken from the *Engineering and Mining Journal*, of New York, represented at the meeting, as has for years been its custom, by Frederick Hobart, one of its associate editors and a highly esteemed member of the institute. The *Journal's* account of the meeting and the report of the council follow:

The attendance at the opening meeting was large, and was increased considerably the second day. As a number of members were reported as delayed in reaching Ottawa by the heavy snowstorm of the preceding day, it was decided to postpone the business meeting until Thursday morning.

THE FIRST DAY'S MEETING.

The president, Frederic Keffer, of Greenwood, British Columbia, opened the meeting with a few well chosen words. Hon. W. Templeman, Dominion Minister of Mines and Inland Revenue, then made an address welcoming the members of the institute and showing the work which his department had begun, its new organization and what it hoped to accomplish. He spoke of the importance of the institute, complimented it on the good work it was accomplishing, and assured it that it had the support of the department of which he was the representative.

After appropriate responses had been made, the reading of papers was begun, and was continued, with only a brief recess, during the afternoon. The principal papers read were: "The Classification of Coal," by D. B. Dowling, Ottawa; "The Carbon Minerals of New Brunswick," Dr. R. W. Ells, Ottawa; "Secondary Mining Education," H. H. Stock, Scranton, Penn.; and "Compilation of Mining Statistics," J. McLeish, Ottawa.

Mr. Dowling's paper called out a long and interesting discussion, in the course of which Prof. J. B. Porter described the tests of Canadian coals which had recently been begun at the mining laboratory of McGill University under the auspices of the Dominion Government. The discussion turned largely to the best methods of coal analysis, and the value of such determinations. Dr. Ells' paper was also discussed at length. In the discussion on mining statistics several plans were suggested for securing better co-operation among the Dominion and provincial mining departments in the collection and statement of statistics.