

smelting works are nearing completion. The trestle work over the roast heaps is fully two thirds of a mile in length, and is now ready for track laying. Twelve hundred tons of ore are now in process of roasting. Dr. Peters, an able copper metallurgist, is general manager. Captain Frank Andrews is the general superintendent, and his extensive practice serves him well in mining and handling the deposits of this district. Mr. John Grigg, late master mechanic of the Tamarack mine, fills the same responsible position here. Mr. Frank L. Sperry, late of Yale College, is the chemist and assayer. Each department appears systematic and orderly.

The Vermillion mine closed down on the 1st ult. This is said to be "a weak invention of the enemy," or, in other words, a game of "freeze out," it being well understood that the discoverer cannot meet the necessary assessments levied upon him. This is an ore deposit comprising a great variety of minerals, and two analyses resulted in five ounces of platinum to the ton. Nuggets of gold have also been extracted from this interesting deposit, while the amount of nickel in the ore, from special tests made in Toronto for your correspondent, resulted in from 17 to 30 per cent. of nickel. But, notwithstanding all this rare combination of the "economic and ornamental," work is shut down, *pro tem*, and the poor prospector is left to reflect on the possibility of his having too much of a good thing.—*Engineering and Mining Journal*.

A late despatch reports that the Canadian Copper Company has purchased the interests of the original shareholders of the Vermillion Company.

ONTARIO.—We hear that negotiations for the sale of the Frontenac mica mine to English capitalists are in progress.

Through the kindness of Doctor Honeyman we are enabled to lay before our mining friends a most interesting and instructive paper on the "Origin and mode of occurrence of gold-bearing veins and of the associated minerals," by Jonathan C. B. P. Seaver, C. E., F. G. S.—read before the Royal Society of New South Wales, on the 7th September, 1887, and published in vol. xix. of the Journal of said Society. In a number of instances references are made to plates of sections and cross-sections of the mines referred to, and in these cases we have taken the liberty of omitting the matter, which would be unintelligible without the plates.

"The origin of metalliferous veins and lodes has given rise to many conjectures and theories from time immemorial, and great have been the differences of opinion held by scientific men of all ages as regards the question. In modern times, however, the large amount of information that has been collected, and is yet in course of collection, bearing on the different modes of occurrence of metals and minerals, their chemical and physical properties, and their geological and geographical positions, has placed certain theories regarding the origin of lodes and veins upon a more solid basis from which to reason, and has at the same time relegated others almost to oblivion.

In the following notes my remarks will be confined more particularly to auriferous veins and deposits: not that I believe they have peculiarities in their modes of occurrence distinct from all our metalliferous lodes, but because this essay is understood to be one on veins and deposits containing gold in such quantities as to be principally worked or prospected for that metal. I propose, moreover, to confine my description chiefly to the gold deposits of Australasia. I not only believe that most of the peculiar phenomena connected with the occurrence of gold veins and other auriferous deposits, may be better studied in that country than anywhere else, but also because a large amount of authentic information has been collected in Australasia regarding these deposits, and I have, personally, had considerable experience there in this class of mining, and so can speak in most cases with a certain amount of authority as to the actual phenomena connected with the mode of occurrence of gold and the associated minerals.

It has generally been conceded, that by whatever means the veins have been filled, the process of opening the fissures, cavities or crevices in which they exist has been to some extent independent thereof, and so these two branches of the subject ought to be considered separately, but it must be borne in mind that gold also occurs under conditions which cannot be classed as belonging to veins at all, being in fact impregnations through certain rocks.

As regards the origin of quartz veins and the minerals occurring in them, much has already been said by those who have advocated one or other of the theories of igneous injection, sublimation, lateral secretion, etc., to account for their forming, and perhaps it will be best to endeavour in these pages to see which of these may be most applicable to the phenomena observed in connection with the auriferous quartz veins of Australasia.

It is in Victoria that auriferous quartz mining has been carried on upon the largest scale in the colonies, and we find that the veins, or "reefs," as they are logically called (which name is synonymous with the term "ledge" used in America), may be sub-divided under two or three classes, which embrace most, if not all, of the special features of the gold veins in the colony."

(To be Continued.)

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