

tions were possible the country rock, as it neared the ore bodies, was found to be progressively more schistose.

Under the above hypothesis, the occasional narrow bands of dark green schist seen in No. 1 body may represent a rock variety that more strongly resisted the replacing action of the ore bearing solutions. The apparently basic composition of these bands, and the occurrence of schistose diabase along the western walls of the ore body, suggest that they may represent dikes of diabase.

As regards the quartz veins, in the case of a thin section of ore charged with small reticulated and crenulated quartz veins, it was seen that the alternating microscopically fine lines and extremely narrow bands of quartz, quartz impregnated with iron ore, and nearly pure iron ore, conformed as nearly as possible to the intricate folding exhibited by the quartz veins. On the assumption that the ore and its structure are due to the replacement of schistose rock, the minutely corrugated forms exhibited by the ore represent a corrugated structure previously existing in the now replaced schist.

The appearance of the ore in thin section did not seem to indicate that the ore would fracture along the old corrugation planes, and so permit the formation of later quartz veins following similar crenulated courses, and, therefore, it is concluded that the veins did not originate after the formation of the ore.

The appearance in the thin sections of the bands or zones of quartz veins, and of the ore body as a whole, does not warrant any supposition that the quartz veins were bent after the formation of the ore.

It is true that the veins might have been formed contemporaneously with the ore, but, on the other hand, the puckering and bending of the veins in the ore are duplicated over a part of the exposures of country rock on the foot-wall of No. 1 body. This would indicate that the original rock had been twisted and bent, that quartz veins were introduced either before, during, or after the folding, and that after this the rock had been replaced by ore that still retains many indications of the original crenulations, as well as many or all of the quartz veins.

THE MINERALS SEPARATION DECISION.

The complete opinion of the United States Circuit Court of Appeals at San Francisco in the matter of James M. Hyde vs. Minerals Separation Ltd. and Minerals Separation American Syndicate Ltd., which decision was favorable to Hyde, covers 16 pages of type-written matter. The bulk of this constitutes a review of the case tried in the lower court and references to other processes apparently similar or somewhat the same.

The finding itself, as rendered by Circuit Judge Gilbert, follows in full:

"We hold that to sustain the appellees' (Minerals Separation) patent would be to give to the owners thereof a monopoly of that which others had discovered. What they claim to be the new and useful feature of their invention, as stated by their counsel, is 'agitating the mixture to cause the oily coated mineral to form a froth.' As we have seen, that feature was clearly anticipated by the prior art, and when the elements of the appellees' claims are read one by one, it will be found that each step in their process is fully described in more than one of the patents of the prior art, with the single exception of the reduced quantity

of oil which they use. The patentees of the appellees' patent made a valuable contribution to the art in discovering the smallest quantity of oil which would produce the desired result. In doing so they pursued the course which all skilful metallurgists would be expected to pursue. They made a series of experiments to determine how small a quantity of oil could be used successfully. They found, as all must find who use the oil flotation process, that certain oils are adapted to use with certain ores, and that a larger quantity of oil is necessary for one kind of an ore than for another. The appellees admit that for some ores they use four times as much oil as for others. Their discovery that a small fraction of 1 per cent of oil is sufficient to produce flotation of the metalliferous matter cannot, as we have seen, be made by itself or in combination, the subject of a patent.

"The appellees cannot take from others the right to use oil economically. This was evidently the ruling of the patent office on their application for the patent. One of their claims in the original application was 'the process of concentrating powdered ore, which consists in separating minerals from gangue by coating the minerals with oil in water containing a fraction of 1 per cent of oil on the ore, and recovering the oil coated minerals.' This was rejected in view of the Cattermole patent 'as expressing merely a difference of degree as to the proportion of oily matter employed.' Counsel for appellees admit that the claim was properly rejected for the reason that it leaves out the agitation and froth and says 'our invention is something else than the mere reduction of oil.' The decree (of lower court favoring Minerals Separation) is reversed and the case is remanded with instructions to dismiss the bill."

The lower court had sustained letters patent No. 835,120 issued to Sulman, Picard and Ballot on Nov. 6, 1906, and assigned to the Minerals Separation Ltd. The appellant denied that these men were the first inventors of the process, or that there was any invention described in the patent.

The decision referred to the British patent to Haynes issued in 1860 and the United States patent issued to Everson in 1886. Miss Everson, the opinion reads, was the first to make the important discovery that the affinity of the oil for the metal was increased by the addition of an acid.—Boston News Bureau.

Notwithstanding that the Tyee Copper Co.'s smeltery and that of the Britannia Mining and Smelting Co., both situated on Vancouver island, only four or five hours' steaming distance from Vancouver, have been idle for years, an agitation is being worked up to try and secure the establishment of smelting works at that city.

The suitability of parts of Quesnel river, Cariboo district of British Columbia, for gold dredging is being claimed and an effort is being made to attract the attention of dredge operators to the possibilities of successful gold dredging in that part of the province.

Ore receipts at the Consolidated Mining and Smelting Company of Canada's smelting works at Trail, B.C., during the current year to April 23, totalled 111,250 tons, of which 87,040 tons came from the company's own mines in East and West Kootenay districts, and 24,210 tons was custom ore from various parts of the Province and the neighboring State of Washington.