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REPORT
of the
ORE DRESSING AND METALLURGICAL LABORATORIES

Test No. 183

The Low Grade Ore from the Murray Mine.

by H. C. Mabee.

This test was made on a low grade sample of ore from the Murray Mine, British America Nickel Corporation, Nickelton, Ont., and was conducted with the object of determining if the precious metal values were concentrating with the nickel and copper in the process of flotation, or in which of the products they were reporting. Attention was not paid so much to obtaining the best flotation results, as this had been done in former tests on the ore (See Summary Report of the Mines Branch 1921, Test no. 160), but to the getting of sufficient of the different flotation products for assaying.

To obtain this a number of flotation tests were run, using in all 13 kilos of the ore, and the different products combined.

The assay results of these products, as well as the percentages in the products, appears below.

Product	Weight grams	A S S A Y S						Value of precious metal content
		Copper %	Nickel %	Gold oz-ton	Platin. oz-ton	Palladm. oz-ton	Rho.Irid, etc. oz-ton	
Concentrate	1635	2.90	6.40	0.027	0.032	0.043	0.005	\$ 7.40
Middling	1418	0.27	1.65	0.013	0.016	0.015	0.003	3.54
Tailing	9947	0.05	0.21	0.0009	0.0011	0.0026	---	0.30
Feed	13000	0.43	1.14	0.0055	0.0067	0.0009	0.0009	\$ 1.55

* Results are no doubt low due to oxidation and volatilization in fusing and scorifying
1. Figured from December 1922 quotations on these metals

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Product	Percentages in products							Precious metal values
	Weight	Copper	Nickel	Gold	Platin.	Palladm.	Rhod.Irid. etc.	
Concentrate	12.6	84.4	70.3	61.8	60.9	60.0	---	60.5
Middling	10.9	6.8	15.7	25.7	26.4	18.0	---	24.9
Tailing	76.5	8.8	14.0	12.5	12.7	22.0	---	14.8
Feed	100.0	100.0	100.0	100.0	100.0	100.0		100.0

On this grade of ore the test shows that 60% of the precious metal values are recovered in the concentrate, 25% in the middling, and 15% remains in the tailing. The middling product representing 10.9% of the original feed would be reground and refloated, producing a total recovery of 75% of the precious metal values from this grade of ore.

The result of this test demonstrates fairly conclusively that the gold and the platinum group metals are following the nickel-copper concentrate in the flotation process.