

Nickel.....	41.96
Iron.....	15.57
Silica.....	1.02
Copper.....	.62
Sulphur.....	40.80

These figures give approximately the formula $\text{Ni}_3 \text{FeS}_{10}$. Neither cobalt nor arsenic could be detected. If we deduct silica together with the copper reckoned as admixed chalcopyrite and re-calculate the remainder of the analysis to 100%, we get the following figures:—

Nickel.....	43.18
Iron.....	15.47
Sulphur.....	41.35

In short the mineral has the composition of $\text{Ni}_4 \text{S}_5$ with about $\frac{1}{4}$ th of the nickel replaced by iron, which seems to agree with Laspeyres polydymite of which it is doubtless a ferriferous variety. Probably in most cases the niccoliferous constituent of pyrrhotite is millerite, but other sulphides like polydymite may occur too. The polydymite which was selected for the above analysis came from the mass in which the average of 35.39 % nickel and 5.20 % copper had previously been found.

The mass weighed several kilograms and was remarkably free from quartz. The same mass, with two smaller pieces resembling it, were also examined for platinum. The results were as follows, "A" representing the large mass in which the polydymite was determined:—

A....	2.55 oz.	platinum per ton, or	.0087 %
B....	1.8 oz.	" " "	.0060 %
C....	7 oz.	" " "	.024 %

Probably the platinum exists in the ore as sperrylite, although this point was not proved. The amount of platinum in the mass most thoroughly examined would require to form sperrylite only about .007 % of arsenic, which is too small a quantity for detection by ordinary analysis. That platinum should exist in appreciable quantities in an ore of such a character is something quite extraordinary, but whether it could be profitably extracted is an open question. Sperry-