

It is difficult to see by what process of reasoning Mr. Ashworth comes to the conclusion that we are of the opinion that "real natural gas is or should be pure methane." There is not a word in our criticism which would directly justify any such conclusion. The fact that Bulletin 42, to which we refer as an authority, gives a great number of analyses nearly all of which show methane should be indirect proof enough that we hold no such opinion.

In the last paragraph of Mr. Ashworth's article he states that "analysts of mine gases have failed to look for other hydro-carbon gases but have included them under the general term methane, which would appear to be the accepted conclusion of the writer of the editorial to which I have referred." There is absolutely not one word in the editorial Mr. Ashworth objects to about the composition of mine gases, any more than there was about the nature of artificial gas, although we are aware that both hydrogen and carbon monoxide are found in artificial gas in large quantities.

In 1883 the Canadian Pacific Railway reached the Sudbury region, and the stretch of flat plain in the interior of the nickel basin attracted the railway engineers, who brought the line by a steep grade up from Sudbury to what later became the Murray mine, from which the railway descends to Azilda between hills belonging to the acid edge of the eruptive. It is said that at this time Dr. Howie discovered on the summit of the pass a low hill of pyrrhotite with some chalcopyrite. Specimens shown to Dr. Selwyn, then Director of the Geological Survey, were pronounced valueless, since pyrrhotite from Canadian localities had not hitherto been found to contain more than a fraction of a per cent. of nickel.

Early in 1884 the railway reached this deposit and a cutting disclosed copper pyrites at what was afterwards known as the Murray mine. Other discoveries soon followed at what became the Lady Macdonald, Evans, Copper Cliff, Stobie and Blezard mines; all taken up for copper, the presence of nickel being at first overlooked. The Creighton mine was rediscovered not long after by another land surveyor, John McAree, who surveyed an adjoining township, though



Pouring furnace slag, Copper Cliff

THE DISCOVERY OF COPPER-NICKEL ORES IN SUDBURY DISTRICT.

According to Professor A. P. Coleman nickel was first reported from the Sudbury region by Wm. Murray, in 1856. The well known land surveyor, Salter, had found a disturbance of the compass on a meridian line north of Whitefish lake, and suggested that Murray should examine the place. He found "an immense mass of magnetic trap," specimens of which were sent to Sterry Hunt for analysis. Magnetic pyrites was found disseminated through the rock and the analysis showed the presence of some nickel and copper. Salter's line is now the boundary between Creighton and Snider townships, and the rock with pyrrhotite was obtained a little west of the famous Creighton mine, the greatest nickel mine in the world. However, the discovery attracted little attention, since at that time the metal nickel was a rarity of little practical importance and the region was a wilderness without roads, where canoes were the only practicable means of travel.

the mine was not opened up till several years later owing to its difficulty of access.

Prospectors swarmed over the region searching everywhere for the gossan which showed the presence of ore, and men like Thomas Frood, Henry Ranger, William McVittie, A. McCharles and others quickly learned that gossan and ore accompanied only one kind of rock, then called diorite, but now known to be norite. In a short time almost all the main deposits had been located, and two ranges, a southern or main range, and a northern, began to be distinguished.

The first important mining was done in 1886 at the Copper Cliff, where an open cut was made against the side of a steep gossan covered hill, the work being carried on by the newly formed Canadian Copper Co., which soon opened up also the Stobie and Evans mines. The first ore mined was supposed to be simply copper ore, as the name of the mine and company suggest; and until 3,000 tons were shipped to Constable Hook for treatment, the presence of nickel was not suspected. There, however, difficulties were met in smelting the ore, and assays showed that nickel was the disturbing element.