

Hooked dagger.....	8.66
Fragment	8.58
Native copper.....	8.92
Pure copper.....	8.78 8.96

The small differences between these numbers would lead to the conclusion that the implements were made of pure copper.

The fragment was completely dissolved by nitric acid; and the solution, on being tested for silver by hydrochloric acid, gave a scarcely perceptible opacity, indicating the presence of an exceedingly minute trace of silver. The copper having been separated by hydro-sulphuric acid, the residual liquid was tested for other metals. A very minute trace of iron was detected.

The native copper from Lake Superior was tested in the same manner, and was found to contain no trace of silver, but a minute trace of iron, the quantity being apparently about the same as in the fragment.

From this, it appears that the implements are composed of copper almost pure, differing in no material respect from the native copper of Lake Superior, and not of an alloy of that metal, with any other substance.

It is not by any means probable, from the conclusions resulting from the experiments detailed above, that these implements could have been hardened by any mechanical means; and no process is known at present by which copper can be rendered harder, although its density may of course be increased to a small extent by pressure and hammering.

ECONOMY OF FUEL FOR STEAM MACHINERY.

BY ALFRED BRUNEL, C. E.

Read before the Canadian Institute, March 29th, 1856.

Few questions attract so much attention among practical men at the present moment as that of economising fuel in Steam Machinery especially as relates to the motive power of Railways,—it is indeed a question of vital importance to many of the older Roads in the United States, and though wood for fuel can at present be obtained on the Canadian Railways at rates which do not render it an item of the first importance in the working expenses, yet it is one of sufficient