

This process greatly resembles the preceding one; it is founded, like, it upon the great affinity of chlorine and the property which it possesses of displacing bromine from its combinations. It also includes the employment of the mother-waters of iodine, which without it are useless. Take the mother-waters of kelp, after having separated the iodine by chlorine as above described. These mother-waters contain a metallic bromide, when care has been taken to avoid the use of more chlorine than sufficient to precipitate all the iodine. Add to 1250 parts of these mother-waters, thirty-two parts of powdered peroxide of manganese, and twenty-four parts of sulphuric acid of sp. gr. 1.848: the whole is to be put into a tubulated glass retort, to which a tubulated receiver is to be adapted; and to this a tube which is immersed in a test tube. The retort and the receiver, as well as the receiver and the tube, ought to fit sufficiently well without the use of lute or corks, as they would be inevitably destroyed by the action of the chlorine. All being thus arranged, the retort is to be heated, so as to boil the liquid; the bromine condenses in the receiver in the form of red oily strise, with a small quantity of water; the operation is to be discontinued when red vapours cease to be produced. On heating the receiver gently, without dismounting the apparatus, the bromine will pass into the test-tube, where it will condense on cooling.

The mother-waters which have been made use of may be rejected, on ascertaining, by the addition of a fresh quantity of sulphuric acid and peroxide of manganese that they contain no more bromine.—*Journal de Pharmacie*, January 1837.

Ibid.

On the Extraction of Copper from Poor Ores, as practised successfully in Germany.

This process was first suggested by M. Karsten's observations in his "System of Metallurgy," in which he says:—"Very poor ores of oxydized copper, which could not be brought with advantage to the furnace, may be roasted, if mixed with pyrites of iron, or submitted in any way to the action of sulphuric acid gas, and will then form sulphates under the influence of the humidity of the atmosphere, or with water. Another method of extracting from similar ores, or even from the refuse, or scoria, is employed at Rheinbreitenback; and consists in mixing the old scoria of copper with old ores, and placing them in frames or boxes with numerous small holes in the bottom. A mixture of nitrous and sulphurous gas is injected into the centre of these boxes, with steam at certain intervals. As soon as the sulphuric acid is formed, it acts upon the metallic oxides by producing vitriol and copperas; besides which, the sulphuric acid acting only on the oxide of copper, a *sulphite* of this metal arises, which is speedily transformed into a sulphate, and the metallic salts being separated in the usual manner, they are again concentrated, and the copper is precipitated with heat by means of old iron; the copper thus obtained is afterwards mixed with flour of sulphur, then heated in a reverberating furnace; the result is the formation of sulphate of copper, which being dissolved with water and crystallized, is fit for the purposes of commerce. The liquid from which this copper is procured, is used for obtaining sulphate of iron."—*Annales des Mines*.

Mining Jour.

Whiting's Patent Sashes.*

Your correspondent A. W. S. very justly complains of the annoyance oc-

* ——— Whiting, Esq., architect and county surveyor, Ipswich.