

VIII.—*Note on the Artificial Formation of Pyrolusite.*

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IN a paper read before the Chemical Society* I gave a detailed account of a curious reaction of Manganese salts, and showed that Manganese dioxide resembling pyrolusite could be obtained by the reaction. I have since made many samples, and have obtained nodules so like the natural mineral, that I thought that an account of the method might have some interest for mineralogists. When manganous nitrate is dissolved in strong nitric acid and warmed, and a few chips of potassic chlorate added, there is precipitated in the liquid black oxide of manganese in the form of flat plates which, when very thin, are of a beautiful purple, but when thicker are of a red colour. The whole of the manganese is precipitated in this form, but when the strength of the acid and the temperature are made to vary, the distribution of the plates may be changed. When the acid is very concentrated and the temperature only about 20°, and the mixture allowed to stand for some days, the dioxide of manganese is precipitated in plates (and sometimes needles), radiating from a centre, and arranged so that when fractured, and viewed with a low microscopic power they look exactly like natural pyrolusite. The specific gravity is also the same, being 4.935. When the re-action is allowed to proceed more rapidly, loose plates are always formed. When a salt of iron is present, it is partially precipitated in the form of a double manganate of manganese and iron, but it contains too much oxygen to be identical with any of the forms of Wad.

* Chem. Soc. Jour., June, 1878.