

the operation of a general law. It is worthy of remark that many of the large veins of hæmatite, and other varieties of the oxide of iron found in Cornwall, have nearly a N. & S. bearing. I am not prepared to say whether there are any exceptions, or not; but it is curious to find decided iron veins nearly coincident with the mean magnetic meridian."

M. Becquerel has recently made a most important application of some electro-chemical apparatus, to the immediate reduction of the ores of silver, lead, and copper, without the intervention of mercury, and is now occupied with further researches on the extraction of metals from their respective ores. *L'Institut*. March 21, 1836. *Phil. Mag.* February, 1837.

The practical results of these researches are noticed in the following terms by Mr. Wheatstone, in a letter I have recently received from him upon this subject. "The value of Mr. Fox's interesting experiments consists in the exact analogy they bear to the circumstances which actually take place in mineral veins; still more important are the long-continued researches of M. Becquerel, on the permanent action of feeble currents in effecting chemical combinations and decompositions; a very full account of these instructive experiments has recently been published in the the third part of Taylor's *Scientific Memoirs*, and deserves the attention of every geologist who desires to penetrate into the mysteries of mineral formations. Neither are these investigations without practical value; M. Becquerel has recently shown a mode by which the precious metals may be separated from their ores, in a perfectly pure state, without the aid of mercury; and we understand that the process is now actually working in some of the mining establishments of France. The electro-chemical apparatus for this purpose, consists simply of iron, a concentrated solution of sea salt, and the ore of the metal properly prepared. Thus that mighty agent, which nature has hitherto exclusively employed in her extensive laboratory, is beginning to be the obedient servant of man; and it requires not the tongue of a prophet to foretel that the voltaic pile will hereafter create as great a revolution in our chemical manufactories, as the steam-engine has already effected in the mechanical arts."