

during the contraction and consolidation of the originally soft substances of the rocks themselves; and more frequently into fissures produced by the fracture and dislocation of the solid strata. Segregation of this kind may have taken place from electro-chemical agency, continued during long periods of time.*

The total quantity of all metals known to exist near the surface of the Earth (excepting Iron,) being comparatively small, and their value to mankind being of the highest order, as the main instruments by the aid of which he emerges from the savage state, it was of the utmost importance, that they should be disposed in a manner that would render them accessible by his industry; and this object is admirably attained through the machinery of metallic veins.

* The observations of Mr. Fox on the electro-magnetic properties of metalliferous veins in Cornwall, (Phil. Trans. 1830, &c.) seem to throw new light upon this obscure and difficult subject. And the experiments of M. Becquerel on the artificial production of crystallized insoluble compounds of Copper, Lead, Lime, &c. by the slow and long continued reaction and transportation of the elements of soluble compounds, (see Becquerel, *Traité de l'Electricité*, T. i. c. 7, page 547, 1834,) appear to explain many chemical changes that may have taken place under the influence of feeble electrical currents in the interior of the earth, and more especially in Veins.

I have been favoured by Professor Wheatstone with the following brief explanation of the experiments here quoted.

“ When two bodies, one of which is liquid, react very feebly on each other, the presence of a third body, which is either a conductor of electricity, or in which capillary action supplies the