

strongly to the same conclusion; and experiments had even been made with a view to ascertain whether a pile in a state of excitement might not manifest a disposition to place itself in the magnetic meridian; but the essential condition had been omitted, that of allowing the pile to discharge itself freely, a condition which assuredly never would have occurred of itself to any experimenter. Of all the philosophers who had speculated on this subject, none had so pertinaciously adhered to the idea of a necessary connection between the phenomena as Oersted. Baffled often, he returned to the attack; and his perseverance was at length rewarded by the complete disclosure of the wonderful phenomena of electro-magnetism. There is something in this which reminds us of the obstinate adherence of Columbus to his notion of the necessary existence of the New World; and the whole history of this beautiful discovery may serve to teach us reliance on those general analogies and parallels between great branches of science by which one strongly reminds us of another, though no direct connection appears; as an indication not to be neglected of a community of origin.

(377.) It is highly probable that we are still ignorant of many interesting features in electrical science, which the study of the Voltaic circuit will one day disclose. The violent mechanical effects produced by it on mercury, placed under conducting liquids which have been referred by Professor Erman to a modified form of capillary attraction, but which a careful and extended view of the phenomena have led others* to regard in a very different light, as pointing out a primary action of a dynamical rather than a statical character, deserve, in this point of view, a further investigation; and the curious relations of electricity to heat, as exhibited in the phenomena of what has been called thermo-electricity, promise an ample supply of new information.

(378.) Among the remarkable effects of electricity disclosed by the researches of Galvani and Volta, perhaps

* See Phil. Trans. 1824.