

"M. Teschemachet found in the mass of the black oxide at Copper Harbour, nine regular cubic crystals of that oxide. Those crystals shew that the ore is not metallic, copper stained by earthy matters as it had been supposed. A specimen of this ore in a state of purity, being analysed in my laboratory, gave 79.86 of copper."

Caloric is known to be a species of fluid which in certain bodies generates electricity, and the smallest friction produces heat, and therefore generates electricity. Electricity produces magnetism. Metals are distributed in the direction of the electric and magnetic currents as they assume a position in relation to each other depending on their specific gravity, their bulk and the force to which they are subjected being the same.

As the terrestrial globe turns from west to east, and the sun's rays therefore travel from east to west, the friction of the atmospheric air the production of electricity, and the generation of the magnetic fluid towards the north and south poles, cause minerals to assume a direction consentaneous to the influence of these several forces. Taking for granted the earliest epoch of the globe, when its nature must have been homogeneous, all mineral matters must necessarily, after certain periods of electro magnetic action, assume a position which is the result of the perpetual action of these two forces; and in those periods the globe must have undergone a decomposition more or less homogeneous according to the intensity of these forces, when once the different kinds of matter have found their relative positions according to their power of attraction or repulsion under the influence of the electro-chemical, magnetic and other fluids.

The body of the globe has therefore undergone a change in its mode of resistance in certain directions, and it is probable that mountains must have been formed either by the force of expansion in gases produced by internal heat, occasioned by the action of electricity and evolved during the combination and decomposition of bodies, or in other places by the action of depressing causes, sometimes even by their own weight, owing at one time to the disappearance of certain bodies, at another to a certain condition of atomic separation, previously incident to rocks; and the formation of mountains must therefore have their greatest dimension of length in the same direction; nothing could turn them aside; for the matters which offered the greatest power of resistance must have also been the most homogeneous possible, at the period when the revolution of the terrestrial globe on its axis was first established.

The displacement of bodies, depending on their adaptation to the action of fluids (*la nature qu'ils possèdent pour l'action des fluides*) must have produced some effect in changing the centre of gravitation in the globe. This being changed, the direction of the poles must also have been altered; but in its constant rotation the rays of the sun communicating to the terrestrial globe the generative action of the fluids; the metals must have undergone a new arrangement differing from that of the first era, but ever conformable to the combined result of the forces, *viz*: from east to west, from north to south and occasionally from pole to pole (*celle des polanisation's.*) But the fluids meeting in their transit bodies endowed with various degrees of fitness as conductors, the direction of the aggregate power of the active forces, to effect the combination and decomposition of bodies, must necessarily have undergone modification, and have effected combinations, greatly varying in their nature.

As an effect of the various revolutions which the territorial globe has undergone, whether by the alteration of the centre of gravitation and the formation of mountains, by earthquakes, the result of an accumulation of fluids arrested in their transit by an obstruction (*digue*) composed of bodies of various degrees of fitness as conductors, or finally, by the partial action of volcanoes, or by an inundation of greater or less duration contemporaneous with the primitive forma-