

in their molecular structures the more favorable are the conditions for producing electricity.

If instead of using copper and zinc for the two elements we should simply use two pieces of copper or two pieces of zinc, we should get no electrical effect. This statement supposes of course that the metals are perfectly homogeneous.

If we set up an ordinary galvanic battery and connect wires to the two poles of the battery, these two poles will be in a state of strain with reference to each other,—the strain existing in the ether.* If we bring the two wires together, the energy in the form of electricity begins to fall from the metal possessing the higher "potential" (possible electrical energy) in proportion as it is released by the action of the acids.

In the case of zinc and copper, or zinc and carbon, the fall is from the zinc toward the carbon or copper. All metals possess a certain potential, which in this case we will call energy of position. When they are dissolved by the action of acids this energy will be given out, and if opportunity is afforded there will

* The ether is a substance supposed to exist throughout the universe—between atoms as well as between stars—and to be the medium through which radiant heat, light, and ether-waves created electrically are transmitted, as sound is transmitted through the air. It will be more fully treated in future chapters.