

*are again found, whose simplest manifestation we, perhaps, follow with the least difficulty in the lowest organisms.*

We are thus brought to a definite unity in the original chemical structure and processes of living existence, a point which the microscopico-anatomical investigation of the morphological development has already reached. The chemical characters are, however, much more within our ken than the microscopic, since the latter take cognizance of the simplest forms of existence, as plastic, variable, or irregularly formed little masses.

When the chemical components of the cells or the protoplasm, or any formed organ of animals or plants, is spoken of, it is, of course, to be observed that we yet have no right to speak of the constituents of living cells, but only of the products of their chemical decomposition. A series of observations of different kinds points in the direction of the conclusion that the change which simple protoplasm, as well as complicated organs, undergoes on the entrance into the death state, arises from the chemical addition of water. If the water essential for all life-processes be removed, life is indeed suspended, but death does not, in consequence of this alone, follow. Plants, insects, amphibians (e. g., tritons), and frogs can for a long period remain hard frozen; their life is thereby fully suspended; after being slowly thawed out, the organs take on again all their life-functions. The noses, ears, hands, and feet of men act similarly when frozen by a degree of cold not too intense. But such frozen organs die at once if thawed out too quickly, inasmuch as the melting ice-crystals injure the cells in juxtaposition to them. Carefully dried seeds of plants—e. g., peas—can be kept heated for hours at 100° C. without their vitality disappearing. They sprout, after cooling, when placed in water or moist earth just as quickly as undried and unheated peas, and develop to perfectly healthy plants. If the seeds are not