

That the very elements which make up water and carbonic acid, and apparently they alone, should possess this wonderful property is, when taken together with the physical properties of water and carbonic acid and their place in cosmic evolution as constituents of the atmosphere, a fact which cannot lightly be set aside.

Not less valuable for the organism than the multiplicity of organic substances, and the diversity of their properties, are the great variety of chemical changes which they can undergo, and that characteristic instability which renders such great complexity of chemical behavior easily attainable. In short, organic substances are uniquely fitted not only to provide complexity of structure to the organism, but also, through their instability and manifold transformations, to endow it with diverse chemical activities, with complexity of physiological function.

One factor in determining the complexity of chemical changes which organic chemical substances manifest is the enormous number of simple structural relationships which every substance bears to others. This may be readily illustrated by the formulas of some of the derivatives of propane which possess biological importance: —