SCIENCE

FRIDAY, NOVEMBER 23, 1917

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ELECTROMERISM, A CASE OF CHEMICAL ISOMERISM RESULTING FROM A DIFFERENCE IN DISTRIBUTION OF VALENCE ELECTRONS[1]

RECENT advances in our knowledge of the structure of matter have made it possible for an organic chemist to address a group of non-organic chemists and of physicists upon this subject without apologizing. During a period which is not far behind us in the past, not only the validity, but, possibly, even the utility of employing structure conceptions requiring atoms and their arrangements was brought into question; so that the organic chemist, who has maintained an abiding faith in atoms and a confidence in his ability to decipher something of their arrangements in molecules, became aware of an indulgent smile whenever he broached this subject except in the company of his own confrères.

With this inheritance, it is natural to expect that the organic chemist would welcome any discoveries which make our conception of atoms and of the mechanism by which atoms combine to form molecules more concrete; and that he would be among the first to seek to apply these concepts to special problems in his own field.

With a feeling of keen satisfaction, therefore, we learn through the work of Bragg that, in a diamond crystal, each carbon atom is surrounded by four other carbon atoms placed equidistant from it. These atoms are grouped around the central carbon atom as the four corners of a

[1] An address prepared for the symposium on the "Structure of Matter," held at the meeting of the American Association for the Advancement of Science in New York City, December, 1916.