

that light readily penetrates it to considerable depths. As for color, landscape and modern chemical industry alike testify to the availability of carbon compounds as its source.

A final test of thoroughness may be based upon a consideration of other compounds and elements. Accepting the decision that no other properties can be so important to an active, complex, and regulated mechanism as those possessed nearly or quite as maxima by water, carbonic acid, and the compounds of the three elements, what are the possibilities of obtaining the same characteristics from other substances?

So far as chemical substances are now known, the only compound which can be even considered on this score as a substitute for water in the environment is ammonia, and in many respects, no doubt, ammonia might serve as well.¹ However, chemical processes

¹ A full discussion of the properties of ammonia which qualify it as a substitute for water in the rôle of solvent and otherwise will be found in the article by E. C. Franklin, "The Ammonia System of Acids, Bases, and Salts," *American Chemical Journal*, Vol. 47, p. 285, 1912. In this paper the results of a long series of investigations are brought together. Especially important for the present purpose are the introductory remarks. "The many striking analogies between liquid ammonia and water as electrolytic solvents have been emphasized by the writer and his co-workers in papers which have appeared from time to time during the past decade. In