Since the maxima of Rotifera and Entomostraca were coincident with or followed closely those of the chlorophyll-bearing organisms upon which they fed, the author reaches the conclusion that the factors which controlled the periodic growths in the food organisms would account for the rhythmic phenomena in the total plankton. If some observations made by Knauthe which seem to indicate that moonlight increases the photosynthetic activities of chlorophyllaceous organisms, and consequently their growth, be accepted, then Professor Kofoid thinks that this recurrent factor of the environment may account for the rhythmic growth of these organisms which results in the production of maxima each month at or near the time of full moon. It may be said, however, that the effect of moonlight on photosynthesis must receive further confirmation before it can be regarded as a factor of appreciable importance in the production of these phenomena.

These studies show that the Illinois River possesses an abundance of plankton material which will serve as food for the higher organisms, and this abundant supply of food material doubtless bears a very important relation to the large production of food fishes for which this stream is noted. It is also interesting to know that plankton work was recently resumed on this river after an interruption of ten years.[1]

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The Theory of Valency. By J. Newton Friend. London and New York, Longmans, Green & Co. Pp. xiv + 180; crown 8vo, cloth. Price, $1.60.

This little volume is the latest addition to the series of "Text-books of Physical Chemistry" edited by Sir William Ramsay. The first thirteen pages are of the nature of an historical introduction. This is followed by thirty-eight pages devoted to the theory of valency, valency and the periodic law, the valency of carbon, and Thiele's theory. Ten further chapters covering sixty-nine pages are then devoted to a somewhat detailed discussion of the valency of the elements contained in each of the groups of the periodic system. Finally, forty-three pages are taken up in the consideration of Werner's theory, electrochemical theories, and the physical cause and nature of valency. The chapters on the valency of the elements of the various groups of the periodic system are rather tedious reading, and frequently lack completeness and adequacy. Many of the statements and explanations they contain would certainly be challenged by chemists. But it must be remembered that the subject of valency has ever been warmly debated, and it is hardly to be expected that a brief résumé of it would meet general approbation. In the study of the compounds of carbon and also in the investigation and correlation of many other compounds, particularly the simpler ones, the theory of valency has been of inestimable value, and the book does give the reader this impression correctly. On the other hand, in the discussion of variable valency, and the matter of partial valencies, the author has not always been clear. The reader is here left with the idea that these portions of the subject are rather more hazy and indefinite than they actually are. The introduction and the discussion of the various theories of valency form by far the best portions of the book. It is somewhat peculiar that the theory of valency should have been chosen as the subject of a volume of a series of books on physical chemistry, for valency has always been considered as belonging to chemistry proper. As Dr. Friend's book is the only attempt of an exhaustive, systematic treatment of the subject of valency, it will no doubt be useful to mature readers who can read it critically. The various references given, though they are far from complete, will nevertheless serve very well to introduce students to the literature of the subject.

The print, paper and binding of the book are excellent, these features being similar to those of the other volumes of the series.

Louis Kahlenberg

[1] Science, Vol. XXX., p. 55.