

reviewer, strained in many places, it nevertheless has an important function in the arrangement of material, and inherent interest of its own as the matured expression of opinion of one of the makers of modern biology; but one can not say that it has promise as a working program; it represents the biological conceptions of the nineteenth rather than of the twentieth century.

The book is full of interest, and may be profitably consulted by working biologists of all grades and laymen alike.

F. R. L.

Chemical Phenomena in Life. By FREDERICK CZAPEK, M.D., Ph.D., Professor of Plant Physiology in the University of Prague. New York and London, Harper and Brothers. 1911. Pp. ix + 151.

We have before us bearing the above title an extremely interesting and valuable little book included in Harper's "Library of Living Thought." This book should prove to be of great interest to all those interested in the chemistry of life. And I take it that there are no students to-day interested in biology who are not insensibly drawn into the consideration of those varied chemical phenomena so highly characteristic of living things. To the botanist who is familiar with Czapek's "Biochemie der Pflanzen" in the German this little book (really a condensation of that great work) comes with particular interest. It was indeed a most difficult task, as the author admits, when it was attempted to put in condensed and rather *popular* form the subject matter with which he has busied himself for so many years. But it seems that this has been accomplished in a most admirable manner. However, it must not be supposed that this little volume is easy to read and understand; it is far from being adapted to the beginner in biology. The author states in the preface that "a fair knowledge of physics and chemistry, both organic and physical, is required, besides the great number of biological facts which must be remembered when we try to obtain a satisfactory survey of the general physiology of the plant." Consequently this

book will be of most value to those who have had a university training which included the above requirements.

With Czapek's well-known contributions to this field of botany all that is necessary to do to portray the value and scope of this book is to indicate the chapter heads as follows: Biology and Chemistry; Protoplasm and Its Chemical Properties; Protoplasm and Colloid-chemistry; the Outer Protoplasmatic Membrane and Its Chemical Functions; Chemical Phenomena in Cytoplasm and Nucleus of Living Cells; Chemical Reactions in Living Cells; Velocity of Reactions in Living Cells; Catalysis and the Enzymes; Chemical Actions on Protoplasm and its Counter-actions; Chemical Adaptation and Inheritance.

Certainly every student of botany should have a copy of this book, and should read it again and again, not only for the considerable amount of subject matter here precipitated from a mass of bewildering details, but also because of the broadening of the point of view that is certain to result from its careful study.

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STANDARDIZATION OF THE ACCOUNTS OF LEARNED SOCIETIES

THE United States is now supporting somewhere between 100 and 200 societies of which the object is the extension of learning, the promotion of science and common action in some field of intellectual endeavor. In a country so rich and so generous as the United States, it is not difficult to obtain support for such enterprises, and new ones are added every year. Still many of them find it hard to make both ends meet; a few are able to accumulate a permanent fund.

The accounts of these societies are almost all reported, and in most cases printed, every year; and it might be supposed that institutions founded for the inculcation of truth, exactness and efficiency would give to their supporters a detailed, analytic statement of receipts and expenditures. This is, however, far from being the case. The accounts of the societies are in general brief and far from self-