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THE MECHANISM OF ENZYME ACTIONS[1]

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IN making up the program of the symposium on enzymes for this meeting, the speaker was asked to discuss the mechanism of enzyme actions. The ground to be covered was not further specified. In thinking over the possible topics to be considered, it was soon evident that everything related to an enzyme action might be included, but this would make the treatment a hopeless one. Perhaps it would be as well not to attempt an exhaustive review, but rather to present some personal conclusions and relations based upon the experimental and theoretical work and study over a considerable period of time, as time is reckoned by the individual.

Ten years ago, in a monograph on enzyme action, the speaker wrote a chapter on the mechanisms of such actions. The conclusions presented there in rather elementary fashion have been supplemented since, but unfortunately, the relations have not been simplified. Rather the complexities of the problems have become more generally recognized, and while the simpler relations may still be said to hold, they furnish only the beginnings of the real study of the problem of the mechanisms of such actions.

It would be rather easy to present a number of facts of enzyme actions and to draw conclusions limited to the cases in point from them. To such an audience as this the facts of enzyme actions are known. To repeat them is unnecessary and also boring. To present some more general relations and views may perhaps be useful, more for the purpose of raising questions than of answering them.

[1] Presented at the Symposium on the Chemistry of the Enzymes held by the Divisions of Agricultural and Food Chemistry and of Biological Chemistry of the American Chemical Society, Cleveland, Ohio, September 11, 1934.