



FIG. 7. Spectrum of the respiration ferment. (Crosses, x, - catalytic action on illumination with lights of equal quantum intensity).

XI

On closer examination of the spectra of the respiration ferment and of the known hemin compounds a difference is revealed. The maximum of the blue band for the respiration ferment lies at 436μ and at 408μ for CO-hemin. The spectra of none of the known hemin compounds coincide completely with that of the respiration ferment, the latter being displaced towards the red in respect to the former.

It must be recalled here that the respiration ferment is not in solution in the cell but is embedded in the solid cellular components of the surfaces. The spectrum of the respiration ferment which I have shown is not of the dissolved but of the solid ferment, whereas the spectra of the other hemin compounds were taken from solutions. It is known that a displacement of the spectrum of a pigment would be associated with a fixation of the pigment upon the cellular substance. Thus the spectrum of chlorophyll bound to the (solid) cellular phase is displaced to 20μ towards the red in relation to the spectrum of chlorophyll in solution. This corresponds to the direction and order of magnitude of the displacement shown by the ferment-hemin in relation to the dissolved hemin. This does not mean that the state of aggregation alone determines the displacement, for the effect may also be due to chemical differences.

In concluding, I wish to acknowledge the credit due for a great part of the above described investigation to my coworkers, Mr. Negelein and Mr. Krebs.

BERLIN-DAHLEM

OTTO WARBURG

EUGEN AMANDUS SCHWARZ

ALL entomologists will be saddened by the news that Dr. E. A. Schwarz died in Washington, of pneu-

monia, on October 15. He was born at Liegnitz, Silesia, on April 21, 1844, and was therefore more than eighty-four years of age when he died. In his early years he studied in the Universities of Breslau and Leipzig, and came to America in 1873, taking a post in the newly founded Museum of Comparative Zoology at Cambridge. On the death of the elder Agassiz, he joined his friend, Henry G. Hubbard, in the establishment of a scientific association at Detroit, Michigan. Alone or with Hubbard he made expeditions to Florida and to the Lake Superior region, and in 1877 was sent by John L. Leconte to Colorado on a collecting trip. In the summer of that year he became connected with the entomological service of the U. S. Department of Agriculture and remained under the federal government until the time of his death. Dr. Schwarz was a coleopterist by choice, but had a very wide range of knowledge concerning insects in general. He was not only a very learned man, but a most kindly one, and possessed a remarkable sense of humor. Some of his clever sayings will be quoted for years to come.

It has been said that he was the most learned entomologist in America; to his quiet influence is doubtless due much of the great advance which has been made in this country in sound and fine work. He was one of the founders of the Entomological Society of Washington, and for some years before his death he had been its honorary president. The *Proceedings* of this society for the first thirty years or more of its existence are replete with short notes and longer articles from his pen covering a vast field of biological observation.

In a way, he shunned publicity, but nevertheless was known and appreciated by a wide circle, not only of entomologists, but also of people engaged in other kinds of work. To respect for his learning were added admiration and affection for his other characteristics.

Dr. Schwarz was also one of the founders of the Biological Society of Washington. He joined the American Association for the Advancement of Science at the first Detroit meeting in 1875. I think that the published record which shows him first as a member at the first Boston meeting of 1880 must be wrong.

L. O. HOWARD

U. S. DEPARTMENT OF AGRICULTURE

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

HEADQUARTERS HOTELS AND HOTEL ARRANGEMENTS FOR THE FIFTH NEW YORK MEETING

THE following information concerning hotel arrangements for the fifth New York meeting (December 27, 1928, to January 2, 1929) is supplied by