Review

Is the Concept of Photosynthetic Units Verified?

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In memory of Otto Warburg, Birgit Vennesland and Helmut Metzner

The cornerstones of the first fundamental concept of photosynthetic machinery, *i.e.* the concept of photosynthetic units, are reconsidered and a new logically and experimentally well sustained interpretation of the crucial observations of this hypothesis is presented. The results obtained lead to the conclusion that under low irradiances all chlorophyll molecules are in a state to perform charge separation (photochemical) reaction, while under increased irradiances the essential part of the reaction centres are blocked and only one reaction centre from 500–600 remains in functionally active state, *i.e.* in the range of the value obtained by the founders of the widely accepted concept of photosynthetic units.

Key words: Principles of Photosynthesis, Concept of Photosynthetic Units