

Editorial

The energy which drives every living system on earth comes in the form of photons from the sun and, after driving the whole enormous range of biological activities, is finally degraded into heat. One must ask why the photon energy absorbed by a plant is not immediately degraded into heat. This question is posed at every step along the pathways of plant and animal metabolism. Why is the available energy not degraded into heat? How is it channelled in such a way as to drive the living systems? This is the fundamental problem which the JOURNAL OF BIOENERGETICS will investigate.

The study of biological energy coupling and transduction was first called Bioenergetics by Professor Szent-Györgyi. Professor Szent-Györgyi first called my attention to the problems of biological energy coupling and transduction, and he gave the field of Bioenergetics its name. Professor Calvin has postulated that the role of the structure of the photosynthetic unit is spatial separation of the photochemically-produced oxidizing and reducing agents, thus preventing the back-reaction. Dr. Mitchell's chemiosmotic hypothesis postulates a similar role for the mitochondrial membrane. Electron microscopy, as exemplified by the beautiful photomicrographs by Professor Green and his coworkers, shows that, far from being the "bag of protoplasm" imagined by early biologists, the cell has an intricate structure. We can predict that during the next ten years, the structure-function relations in biological energy transducing systems will be understood. It is a privilege to serve on this exciting and fundamental project, under a staff of editors which includes many of the great pioneers of Bioenergetics, and I will try to serve you well.

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