

Introduction

“Life”, as such, does not exist. What we know is the “living state”, a peculiar state of material systems. We know this living state by its characteristics: motion, nervous activity, excretions, or proliferation. The first three are actually energy transformations, a transduction of chemical energy into mechanical, electrical or osmotic work. The mechanism of these transformations is still unknown, and constitutes the most exciting and fundamental problem of biology. This field of energy transformations, which also involves the transformation of solar energy into chemical energy, can be fairly sharply delineated and seemed to deserve a name of its own. It was this which prompted me to publish my first book in this line under the name of “Bioenergetics”.¹ Shortly after the appearance of this book the AEC organized a conference under the same name at Brookhaven,² which was then followed by Lehninger’s book³ of the same title.

Bioenergetics involves not only a vast number of phenomena, but also many basic principles. It seems very likely that the biological reactions cannot be described completely in the language of classical chemistry and may involve quantum phenomena. The domain of bioenergetics stretches from solid state physics to wave mechanics, from the supramolecular to the submolecular. The key to a deeper understanding of “life” may well lie in this field, and it is therefore opportune that this journal has been started. It will not only focus the attention on these central problems of biology but will, at the same time, create a forum for their discussion.

I trust that many workers in this field will join me in congratulating the Editor of this enterprise, wishing him good luck in the service he is rendering to the biosciences.

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References

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2. *Bioenergetics*, L. G. Augenstein (ed.), Academic Press, New York, 1960.
3. A. L. Lehninger, *Bioenergetics*, W. A. Benjamin, Inc., New York, 1965.