EDITORIAL

In his Koranyi Memorial Lecture, given in Budapest on March 21, 1941, Albert Szent-Gyorgyi expressed a general dissatisfaction with contemporary biology because it seemed to provide no hope for answering certain fundamental questions about living things. Szent-Gyorgyi speculated that the answers might lie in the study and understanding of the dynamics of the electron. In the ensuing years, the idea that reactive, mobile electrons had a fundamental physiological role gained some support, although progress was slow and the ion did not easily concede room on center stage. The early work dealt with the electrical properties of biological tissue, and there was progress towards understanding the nature of electrical conduction in tissue. Then, physical effects that were well understood when manifest by inanimate nature, such as piezoelectricity or photoconductivity, were shown to exist in biological tissue. These observations raised still unanswered questions concerning the physiological significance of such electrical properties. Interest was also rekindled in the measurement and analysis of the slowly-varying electrical potentials that can be measured on the surface of essentially all living organisms. Early work had suggested that these biopotentials could be controlling factors in various physiological processes—not merely unimportant by-products of cellular activity—and new studies suggested that these biopotentials might be correlated with growth and disease. In the 1960s, bioelectricity expanded to its present dimensions when investigators began exposing living organisms to various electromagnetic environments with the aim of producing physiological changes.

From the activity in the field of bioelectricity during the last 40 years there has emerged a set of questions which can be formulated as follows:

1. Are living organisms regulated, in part, by intrinsic electromagnetic signals?
2. Can externally applied electromagnetic signals be used therapeutically?
3. Under what conditions can environmental levels of electromagnetic energy constitute a public-health risk?
4. What are the physical mechanisms by which electromagnetic energy interacts with living tissue?

Although we seem to have the questions, we clearly don't have the answers; when they are obtained they promise to strongly alter our perceptions of how living things work.

In 1980, interest in the field of bioelectricity led to creation of the International Society for Bioelectricity[*], and subsequently to an arrangement with Marcel Dekker to publish the *Journal of Bioelectricity*. The aim of the Society is to further interest an inquiry into all areas of bioelectrical phenomena. We hope that the *Journal* will help to shape and define the relevant questions, and facilitate the availability of high-quality research devoted to the quest for their answers. Because bioelectricity is a new scientific discipline, it must be expected that, in certain of its aspects, it will give rise to concepts and ideas that challenge orthodox scientific thought. But we believe that the path to truth lies in a conflict and resolution of the old and the new. Hence,

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the quality of data, soundness of reasoning, and significance of the endeavor will be our guiding editorial principles. In this way we hope to make the *Journal* an indispensible tool in the study of bioelectrical phenomena.

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