

Aharon Katzir-Katchalsky

1914–1972

A man with a razor-sharp mind, overflowing with ideas, a man full of life. This was Aharon Katzir-Katchalsky. He was killed on May 30th, a victim of guerrilla gun fire in the airport of Lod, Israel.

I first met Aharon in 1966 at a conference on membranes in New York. He had just given a talk on nonequilibrium thermodynamics. I, as everyone at the talk, had been spellbound: intricate ideas came over crystal-clear, the equations on the blackboard came to life, the historic and philosophic perspective was elegantly interwoven, a spicing of superb wit, his enthusiasm sparking the audience; all understood, or at least thought they understood, even the esoteric points. Then we met at dinner for further discussion. An idea took hold of him, his eyes shone, his remarkably expressive face lit up, and with unbridled enthusiasm one thought after another came over even more irresistibly than in the lecture hall. We met many times thereafter and became friends. Each time was a new experience, each time he had a new idea to give—whether on the mode of action of the calcium ion or on information theory—each time revealed a new facet of his remarkable intellect and personality.

Aharon Katchalsky was born in Lodz, Poland in 1914. He spent his early childhood in Poland and in Kiev, USSR. At the age of eleven he emigrated together with his family to Israel. He studied at the Hebrew University of Jerusalem and obtained his M. Sc. and Ph. D. there. Except for a brief stay at Kuhn's laboratory in Basel in 1946–47, his work was done in Israel. He was an Assistant at the Hebrew University from 1940–1946 and became Professor of Physical Chemistry in 1948. Since 1952 he directed the Polymer Department at the Weizmann Institute, Rehovot.

As a young Assistant at the Hebrew University in 1940, it occurred to him that an interesting way of changing the shape of polymeric molecules would be to vary their degree of reaction with chemical reagents. He came to the conclusion that, because of their strong electrostatic fields, charged macromolecules may undergo marked changes in shape by de-ionization. Thus began his interest in the chemical dynamics of macromolecules which became his life-long pursuit leading him into the fields of direct mechanochemical conversion and of biological membranes. With his brilliant intuition, he foresaw the development of a molecular biology and prepared the way for an understanding of the functioning of macromolecules. His Polymer Department at the Weizmann Institute became a place where scientists from all parts of the world came to study and work.

An important part of his work was devoted to the mechanisms of biological transport. This was a natural outgrowth of his original interest; the membranes which serve as framework for the transport are essentially charged macromolecules. He became widely known for his introduction, together with Ora Kedem, of nonequilibrium thermodynamics to biology. Nonequilibrium thermodynamics, a theory of coupled flows, became in his hands a powerful tool for describing transport phenomena that are coupled to chemical processes. A new variant, network thermodynamics, which he began to explore during his last years, promised to make further inroads. His fertile mind dealt also with the question of the origin of life; he and his colleagues showed that amino acid poly-

merization takes place under prebiotic conditions in the presence of certain inorganic materials.

His pioneering theoretical and experimental works have earned him many honors. He was President of the National Academy of Sciences and Humanities of Israel, President of the International Union of Pure and Applied Sciences, and president of many international congresses. He became an Honorary Foreign Member of the American Academy of Arts and Sciences, Foreign Member of the U.S. Academy of Sciences, Honorary Fellow of the New York Academy of Sciences. He received honorary doctorates from the University of Bern, Free University of Brussels, and Clarkson College of Technology. He was in great demand as a lecturer at congresses. His advice was sought by scientists, scientific journals and societies. He was a frequent visitor of the United States where only recently he was a Visiting Professor at Harvard, Berkeley, and Columbia University.

One cannot write about Aharon Katchalsky without mentioning his special relationship to his country. He was deeply involved in the creation of the State of Israel and its survival. He and Rattner started Hemed, the forerunner of the Science Corps of the Israel Defence Forces which played an important role in Israel's war of Independence. After the war he served as an advisor to his government and was continually searching for ways to achieve peace in the Near East. He was well known in this regard by his countrymen; people on the street would often recognize him and greet him with respect.

He was a true humanist, deeply concerned with human beings and with the interactions between society and science. In recent writings he addressed himself to the question of the role of the scientist in society and asked whether the new generation, freed from drudgery by cybernetic tools, will attain the level of ethics demanded by a scientific society. He expressed his belief that there can be no existence without moral values and that a synthesis of scientific method and human method must be achieved. All who knew him have felt his human warmth. Friends or total strangers could approach him; he found time for them all. What he was he gave, gave with such ease and exuberance that wherever he moved he radiated vitality and charm.

Aharon Katchalsky was one of the Founders of the Journal of Membrane Biology and among the first to join its Board of Editors. The initial direction of the Journal owes much to his foresight and wisdom. He has been snatched away in the full tide of a creative life. We all have lost an unforgettable friend.

Werner R. Loewenstein