Photosynthesis Research **31**: 165–166, 1992.
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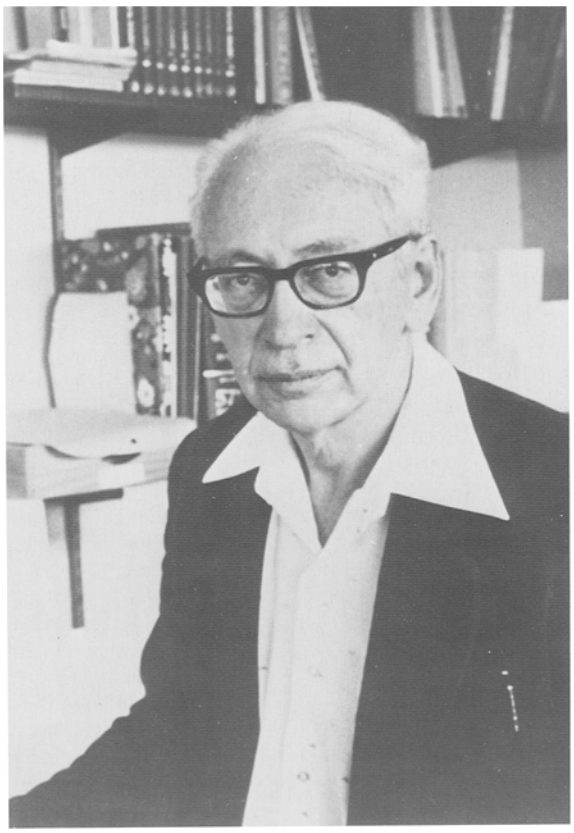
Obituary



Efraim Racker (1913–1991)

Efraim Racker was born on 28 June 1913 in Nue Sandez, Poland. When he was still an infant the family moved to Vienna. As a youngster he dreamt of becoming a painter. When the time came he applied and was accepted to the prestigious Vienna Academy of Art. Ef used to tell the story of how Adolph Hitler had applied several times to the same academy and was turned down. He would end his story by saying 'Just imagine how the world might have looked if I had been rejected from the academy and he had been accepted'.

Ef left the academy after a short time and went to the medical school in Vienna, from which he got his medical diploma. As a Jew he had to flee Vienna when Austria became a part of the Third Reich and arrived in the United States through England in 1941. Here he developed a brilliant scientific career being one of the central figures in Biochemistry. Ef's strive for understanding the energy metabolism of cells drove him to be also engaged in photosynthetic research. Initially, he studied enzymes involved in carbon metabolism. Then he realized that similar mechanisms underlie respiration and photosynthesis and embarked on studying electron transport and coupled phosphorylation in both systems (see Racker 1976). Even though most biochemists associate his name with the discovery of the mitochondrial ATPase (F_1), Ef has had major contributions in the field of photosynthesis. One of the highlights of his studies was the isolation of the chloroplast ATPase (CF_1) and the elegant proof that it serves as a coupling factor in photophosphorylation (Vambutas and Racker 1965, McCarty and Racker 1966, 1967,

1968). He introduced the revolutionary concept of dual function for CF_1 having a catalytic activity of ATP formation and at the same time a structural role in gating the proton leak through the membrane. His belief in uniformity of fundamental processes in nature led him to the discovery of a latent ATPAse activity in CF_1 and the involvement of one of its subunits in this property (Vambutas and Racker 1965, Nelson et al. 1972). This belief had led him to the first reconstitution of photophosphorylation in proteoliposomes containing only bacteriorhodopsin and mitochondrial F_1–F_0 complex (Racker and Stoeckenius 1974). Ef played a major role in the introduction of the 'third dimension' in biochemistry and transforming the field from handling mainly scalar processes into involvement in studying vectorial reactions. His studies of the sidedness of the mitochondrial and chloroplast membranes had generated fierce opposition but proved to be correct and instrumental in understanding photosynthetic electron transport and photophosphorylation (Hauska et al. 1971, Racker et al. 1972, Carmeli and Racker 1973).

Efraim Racker is famous not only for his scientific contributions but also for his philosophy of resolution and reconstitution of membrane components, with which he actually established a whole school of followers. Ef's vast knowledge and intelligence, his warm but challenging personality, his wisdom and curiosity, his wit and humor, his talent and strive for excellence, and above all his belief in science and in scientists – shine throughout his works. Throughout his life, Ef retained a boyish enthusiasm for science and a firm belief in the value of human reason. The death of Ef left us – his followers – with a grave emptiness which we hope to fill by implementing his philosophy.

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