T O R S T E N T E O R E L L

The advance of science depends to a by no means inconsiderable extent on the impact on the general level of knowledge made by some outstanding individuals.

Torsten Teorell, former professor in physiology in Uppsala, belongs to this group of outstanding individuals, who has had a most remarkable influence on international science in numerous physiological fields. In neurophysiology, muscle physiology, kidney physiology, heart physiology and in practically all other branches of physiology one is more and more becoming aware of the role of charged membranes for the proper function of ion and water transport, excitability and rythmicity.

Life is not merely a matter of chemical composition but also organization. At phase boundaries reactions and transport are organized and given dimension, direction, speed and sequence without which spontaneous processes would lead to disorganization incompatible with life. The most important types of phase boundaries are the biological membranes which are found in organs, tissues, cells and subcellular organelles. Knowledge about their properties and fundamental functions is therefore one of the most important physiological needs.

It was Teorell, who already in 1935, recognized the charged groups within the membrane which together with the diffusion potential in the membrane create

the total membrane potential. This finding is fundamental to much of subsequent electrophysiology. Teorell continued his leading role within the field and among his contributions should be mentioned his proposal that for excitability and rythmicity not only are an electrical potential and a chemical potential needed but also a driving pressure. This theory has been difficult to prove experimentally but recently evidence has been accumulating to support it (this volume).

There are also other fields in which Teorell has made well known pioneering contributions i.e. gastric physiology, red blood cell haemolysis and pharmacokinetics.

As Teorell is without doubt one of the internationally most respected Swedish scientists we felt honored in being able to celebrate his 75-th birthday last summer with a symposium on "ION AND WATER MOVEMENTS IN MEMBRANES" to which some of his closest scientific colleagues were invited to present their latest achievements within the field. This volume is the proceedings of this symposium and is dedicated to Torsten Teorell with our best wishes.

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