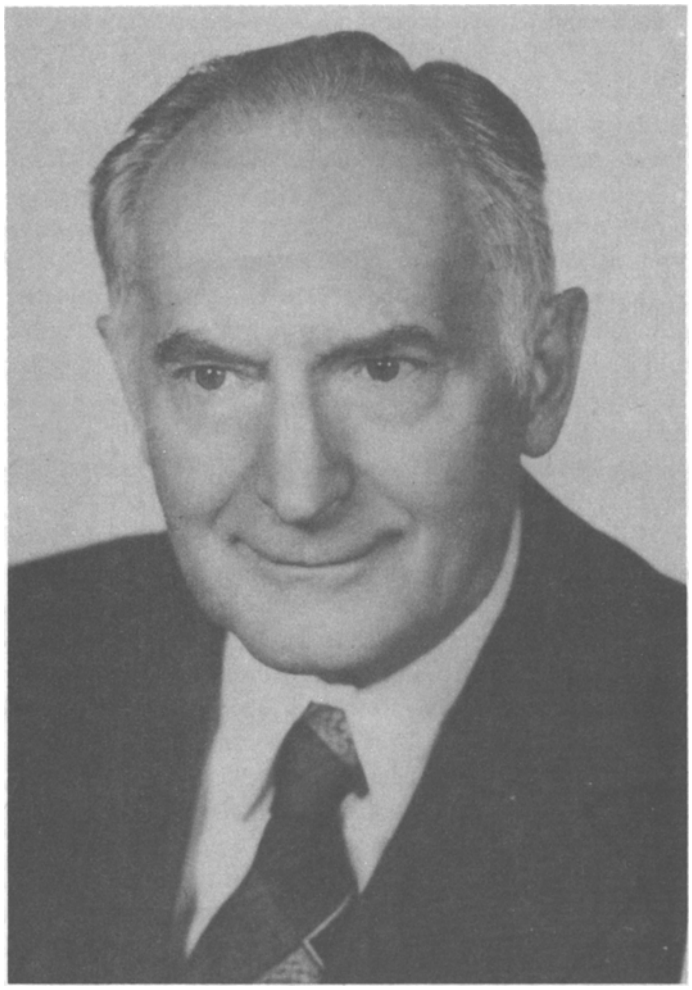

70TH BIRTHDAY OF PROFESSOR IMRE TARJÁN

On 26th July 1982 Professor Imre Tarján, Member of the Hungarian Academy of Sciences and President of its Section for Mathematical and Physical Sciences, celebrated his 70th birthday.

Professor Tarján is a scientist who has achieved outstanding results in two apparently largely different fields; moreover, in both fields he founded scientific schools. One of his fields is solid state physics, or more precisely, crystal physics; the other is molecular biophysics. Professor Tarján was among the first to recognize and to carry out pioneering work in order to develop the idea that in biological

macromolecular systems as well as in solids a basic understanding of the physical properties and biological functions can be achieved only by a thorough knowledge of the atomic and molecular order and of the structural defects acting against this order.

While still a student of Zoltán Gyulai, in the thirties he began to investigate structural defects generated by ionizing radiation, especially by X-rays, in alkali halide crystals. Developing these studies he made conclusions concerning the mechanism of generation and the structure of crystal defects, their interaction with other lattice defects (dislocations, impurities), and he pointed out the role of the defect structure in bringing about some macroscopic properties. He was successful together with his co-workers in producing extremely pure alkali halide crystals; this success became the starting point for obtaining further interesting results both in Hungary and abroad.

One of his outstanding results was realized in the early fifties, when, together with Zoltán Gyulai, he was among the first in the world to grow artificial quartz crystals. At about the same time he and his co-workers produced NaI(Tl), anthracene, naphthalene and other single crystals for the detection of nuclear radiation.

In the mid-sixties he extended methods and approaches usually applied in solid state physics to the investigation of biological macromolecular systems, e.g. he was one of the first to use stochastic models to characterize processes of photodamage in the nucleoproteins of bacteriophages and also to describe the interaction between ions or antibiotics and the membranes of bacteria. One of the conclusions of this work was that the protection against photodimerization of a nucleic acid having a double-helix structure is linked with particularities of this structure.

Professor Tarján always considered the application to practical purposes of results obtained in basic research as a most important aspect of his work. He is one of the first representatives, on an international scale, to advocate application-oriented crystal growth. He contributed towards the foundation of nuclear medicine in Hungary and has been responsible for many of its developments. Two prime examples of the latter were the transfer to industry of the technology developed together with his co-workers for producing NaI(Tl) single crystals for gamma-ray detection, and the elaboration of models for a number of instruments in nuclear medicine. A result of particular importance obtained in recent years by him and his team in applied biotechnology is represented by a process developed for fast quantitative characterization of the mutagenic activity of chemicals and automatic equipment for its realization; this is applicable in environment protection in the pharmaceutics industry, in the food industry and in agriculture.

Scientific workers and physicians have good reason to be grateful to Professor Tarján for his outstanding role in their education. He founded one of the bases of crystal physics in Hungary, the Research Laboratory for Crystal Physics of the Hungarian Academy of Sciences; the leading scientific staff of this laboratory know him as one of their former teachers. In the field of biophysics he had a pioneering role in the organization of interdisciplinary teams and in finding and shaping the ways and the attitudes in the collaboration of variously trained research workers. He was

responsible for the founding of the Research Laboratory for Biophysics of the Hungarian Academy of Sciences where the leading scientists — experts in biology, physics and chemistry — were also his students. In the field of medical education he not only participated in the training of generations of physicians by inspiring an exact scientific way of thinking but also developed an internationally accepted system and textbook for the biophysical education of medical students.

Professor Tarján's 70th birthday should be seen purely as a milestone, since his rich oeuvre is continually being augmented by his activities in biophysical education, in the research of biological macromolecules (as partly ordered systems) and in scientific public life.

His colleagues and students, Hungarian physicists and biophysicists, together with the Hungarian scientific and medical communities wish him good health and creative activity in the coming years.

Györgyi Rontó *Rudolf Voszka*