

PROFESSOR JÁNOS HOLLÓ SEPTUAGINTA ANNORUM

Professor János Holló, member of the Hungarian Academy of Sciences, professor of the Department of Agricultural Chemical Technology and member of the Editorial Board of *Periodica Polytechnica Chimica* has been attached to our Technical University for forty years of his life.

He was born in Szentes on August 20, the holiday of our king St. Steven, 1919, an equally complex and difficult period of the history of our country. His family was attached to the railway. His grandfather was a railway employee and met his death in a railway accident, his father was a railway engineer. His maternal grandfather became, after the devastations of the phylloxera, one of the pioneers of introducing viticulture on sandy soil. After his high-school studies, János Holló immatriculated at the Faculty of Mechanical and Chemical Engineering of that time at our University. It is this university he graduated from in 1941 as chemical engineer. He started his professional career in the aluminium industry but this was interrupted, after a few months already, by the world war. In 1946 he entered the services of the brewery Polgári Sörfőzde in Kőbánya, a Budapest district, as research engineer and it is from that time on that his further career became linked to agricultural chemical technology. In 1947 he obtained the title of dr. eng. and in 1950 he became privat-docent. In 1948 he was appointed technical director of the nationalized and merged Kőbányai Sörgyárak (Kőbánya Breweries). He was one of the founders of today's Hungarian Scientific Society of the Food Industry whose co-chairman and chairman, respectively, he has been since 1964 and he was one of the starters of the journal *Élelmezési Ipar* (Food Industry) as well. On March 15, 1952, he was appointed head of the Department of Agricultural Chemical Technology of the Technical University, first as associate professor, then, from January 1st, 1956, as professor. He performed the duties of head of department until 1972 when, appointed director of the Central Chemical Research Institute of the Hungarian Academy of Sciences, he resigned his post of head of department. However, he has pursued his activities as professor of this department of our Faculty ever since. For the first time he was dean of the Faculty in the period 1955–57. He stood his ground on his post well and humanely, during this further critical period of Hungary and the Technical

University. During his second deanship (1963–1972) he was the inspirer of an up-to-date reform of the plan of tuition and it was related to this that the three-year training of chemical plant engineers was launched beside the traditional training of certificated chemical engineers.

Beside all these activities in scientific public life he kept on with his successful scientific research work without interruption. This has been laid down till today in several books and about 500 papers. His work has been recognized, in our country and abroad, by numerous distinctions. 1967 he was elected correspondent and 1976 ordinary member of the Hungarian Academy of Sciences. He is an external member of the Finnish Technical Academy of Sciences and the Academy of Sciences of the GDR, honorary doctor of the technical universities of Vienna and Berlin–Charlottenburg. He has been awarded the Hungarian State Prize, the Palm Order of the French Academy, the Copernicus Prize of the Polish Academy of Sciences, the memorial medal of the Technical University Budapest and another number of professional awards in Hungary and abroad. He holds leading offices in several domestic and foreign scientific societies and is on the editorial board of many professional journals.

Professor Holló's activities are related to engineering problems in the fields of the food industry and biotechnology, including the physical and chemical properties of raw materials, the theoretical and practical problems of enzymes, the application of unit operations to living matter, the instrumentation, optimization and mathematical modelling of fermentation processes, etc. A technology for the production of fibre-free feed of high biological value from green plants (the VEPEX process) has been developed, patented, and applied on an industrial scale.

His research work comprises target-oriented basic research with a view to industrial scale realization, leading—often through new pathways—to more extended and economic utilization of the biomass produced.

The characteristics of starch, this basic raw material of agriculture, have been the primary subject of his investigations. As a result of these, a series of new fundamental scientific statements could be made in relation to the biosynthesis, acid hydrolysis, the iodine reaction of starch, the mechanism of gelification and retrogradation as well as to the structure of the components and the degradation of starch. His activities in starch enzymology (fundamental operation and economic establishments based on the mechanism and kinetics of degradation, study of the active site, functional groups, and immobilized enzymes) opened up new vistas towards more extensive utilization of this important biological material. E.g., brewing beer with enzyme preparations, high fructose sugar syrup and alcohol production with flexible technologies, production of retarded NPN animal feed on starch base, low-calorie and baby food, affinity chromatographic application of starch derivatives.

The study of the theory of sludge flocculation and of the kinetic conditions of activated sludge as well as fundamental research into biological denitrification and the removal of heavy metals led to the development of novel technologies in waste water treatment. His investigations in the field of molecular distillation may set future trends for procedures to be applied in the vegetable oil industry.

He put into operation the large scale production of protein concentrates from leaf proteins, applicable both as feed product for monogastrics as well as in human nutrition. This is of particular significance in ensuring the future supply of wholesome nutrition. Professor Holló and his co-workers were among the first to deal with mathematical modelling, optimization and on-line and off-line application of an instrument-computer-fermentor system which permits of safe operation and economic efficiency in this important branch of biotechnology. He also recognized the significance of system-engineering and pattern recognition in food analysis, offering a solid basis for securing the quality of foods.

The Faculty of Chemical Engineering wishes Professor János Holló further successful work on the occasion of his seventieth birthday.

Prof. Lajos Fodor