

STUDIES ON INFLUENZA- AND NEWCASTLE DISEASE  
VIRUS AT THE UNIVERSITY'S INSTITUTE  
OF MICROBIOLOGY (BUDAPEST) IN 1948–50\*

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In 1946–48 the Institutes of Pathophysiology and Microbiology functioned as one faculty under the directorship of professor Sándor Belák. This marvellous old building at Hôgyes Endre street 7–9 housed previously the laboratories of Endre Hôgyes who produced the Pasteur-Roux type rabies vaccine; and those of Hugó Preisz who described first developmental forms of bacteria that were later referred to as pleuropneumonia-like growth phase (but professor Preisz called these developmental forms “Pettenkofferia”).

After professor Belák's death, a separate Institute of Microbiology was formed under the directorship of professor Ferenc Faragó. Adjunct professor dr. László Berta and I, now a newly appointed assistant professor with MD degree, joined professor Faragó in 1948.

It was Dr. Berta who initiated research in virology at the Institute of Microbiology. In the immediate postwar period he completed a one year fellowship in virology in Moscow. Professor Faragó supported our virological studies and provided space and equipment for this purpose. The first report [1] appearing from the Institute described rapidly advancing pneumonias in mice pretreated with colloidal copper and inoculated intranasally thereafter with influenza A virus strains received from C. Andrews (London) and A. Smorodintsev (Moscow). We probably blockaded the very first steps in antiviral immunity in these mice, i.e. the presentation of viral antigens in the MHC of dendritic cells to T lymphocytes. These antigen presenting cells might have been totally incapacitated by the intravenously administered colloidal copper. At that time we could

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not explain the mechanisms by which complete lack of antiviral immunity allowed unopposed viral replication in these mouse lungs.

After the tragic and untimely death of dr. Berta in 1949, professor Faragó appointed me to the rank of adjunct professor and soon Erzsébet Molnár and Ilona Szeri joined me to continue work with viruses. Our unpublished works concerned lymphocytic choriomeningitis (LCM) virus isolated from patients (Molnár); mumps virus isolated from saliva in the amniotic cavity of chicken embryos (Sinkovics); serial passages and retitration of influenza A (PR8) and B (Lee) virus strains in the mouse lung (Szeri); the passage, purification and concentration of the Lansing poliomyelitis virus strain (Sinkovics). Published works were the isolation of fowl plague (Newcastle disease) virus (NDV) from human conjunctivitis referred to as “oculoglandular syndrome” (work initiated by dr. M. Radnót professor of ophthalmology) [2] and studies of interference between NDV and influenza viruses in the mouse lung [3, 4]. With the horrible death of professor Faragó in 1950 our work was abruptly interrupted but virus-research was resumed soon thereafter by doctors István Nász and Ilona Szeri and their associates. In the mid-50s projects conceived and/or started at the Institute but brought to completion elsewhere were published. These are reports on the eclipse phenomenon of influenza virus multiplying in the mouse lung [5]; virus neutralizing antibody production in the mediastinal lymph nodes of mice after intranasal instillation of viruses (influenza and NDV) or the lack thereof (LCM) [6, 7]; the interrelationship of mumps, NDV and influenza viruses [8]; phenotypical mixing of NDV and influenza viruses [9] and enhancement of the oncolytic properties of NDV after its adaptation to the brain of newborn mice [10]. Studies were completed on a photodynamically inactivated influenza virus vaccine using the equipment and supplies of the Virology Section of the Institute in 1951–53 [11]. Work initiated at the Institute (and continued at the Department of Virology, The State Institute of Public Health, Budapest, 1954–56), was instrumental in the publication of a textbook of virology both in Hungarian and in German [12, 13]. The lecturers (doctors Z. Alföldi, E. Farkas and G. Ivánovics) and foreign reviewers of this volume praised it highly because it dealt with theories on the origin and evolution (including genetic recombinations) of viruses; the then much debated issue of correlation of viruses with filterable forms of bacteria (a topic also discussed elsewhere) [14, 15]; the phenomena of viral interference; and the growth of viruses in tumor cells often resulting in the death of the tumor cell. It united basic science with practical issues and technologies. It revealed the hidden original Russian literature to the West for the first time in the postwar period. Both German (for example A. Marchionini and Th. Nasemann) and Russian (for example professor V. Zhdanov) reviewers gave this volume their highest scores.

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