Obituary for Christian Kunz, 1927–2020

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On Easter Sunday 12 April 2020 Christian Kunz died in his 93rd year. He was both the founder and long-serving head of the Institute of Virology at the Vienna University Faculty of Medicine (today's Medical University of Vienna) and he will go down in history as a pioneer and influential figure in the development of virology in Austria and the father of the tick-borne encephalitis (TBE) vaccine.

Christian Kunz was born in Linz on 13 October 1927. After the Second World War he studied medicine in Vienna and Innsbruck, and after acquiring his doctorate in 1954, he was affiliated with the Hygiene Institute of the University of Vienna. He first worked as an unpaid visiting doctor, then as a research assistant. To young Christian Kunz in the 1950s, virology was an upcoming research field with many technological innovations and pioneering developments, e.g., the use of cell cultures for virus propagation and the development of polio vaccines. His scientific interest in virology was supported by his superior Richard Bieling, who enabled him to attend study visits to the German strongholds of virology at the time and their distinguished researchers in Freiburg, Tübingen and Marburg. As a result, Kunz became acquainted with contemporary state of the art virus research and returned to Vienna with tremendous enthusiasm (and equipped with cell cultures for his research work). That was exactly the time when the Vienna Institute succeeded in isolating a virus as the pathogen of the initially mysterious, so-called Schneider's disease,

which had been frequent in the south of Vienna. The virus was then termed TBE and it was to become the focus of his research life.

Christian Kunz's publications soon met with international acclaim and he was invited to continue his research work at the Rockefeller Laboratories in New York with a grant from the Rockefeller Foundation. Consequently, in 1961–62 he joined a research institute that was excellently staffed with prominent virologists of the time. His new acquaintances included Max Theiler, who in 1951 had been awarded the Nobel Prize in Medicine for developing the yellow fever vaccine. That research stay and contact with outstanding scientists had a major influence on the rest of his career.

Back in Vienna, Christian Kunz was commissioned by Hans Moritsch, the new head of the Hygiene Institute, to manage a newly established virus department, and with the knowledge that he had acquired in the USA, he set up a focus of research in the field of viruses transmitted by arthropods (arboviruses). The TBE virus also played a key role in that phase. Techniques of specific diagnostics that were innovative at the time were developed, the cycle of the virus in nature was researched, and the locations of human infection in Austria were identified (tick map).

After the death of Hans Moritsch, Heinz Flamm became the head of the Hygiene Institute and it was he who enabled the founding of a separate institute specializing in virology, of which Christian Kunz became the head in 1971 in his capacity as professor of virology (Fig. 1). His work concerning the epidemiology of TBE clearly revealed to him the severity of TBE, i.e. that it was by far the most frequent viral disease of the central nervous system in the endemic areas, and prompted him to use his knowledge to develop a vaccine. This effort, initially in collaboration with an English research institute and then later with

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Fig. 1 Christian Kunz 1971. © Franz X. Heinz

Fig. 2 Christian Kunz 2006. © Franz X. Heinz

an Austrian pharmaceutical company, Immuno, was crowned with enormous success and led to the production of a highly effective vaccine. Its widespread use brought about an impressive decline in TBE in Austria. By way of an anecdote, it is worth mentioning that he and his colleague at the time, Hanns Hofmann, administered the first experimental vaccine to each other and, several weeks later, were quite relieved to confirm its good tolerance.

The development of the TBE vaccine is probably the achievement with which the name of Christian Kunz is most closely associated; however, his importance for the development of virology in Austria and in Europe is much more extensive, especially on account of his dedicated work in the field of virus diagnostics and medical virology. In 1975, he was a founding member and subsequently a long-serving chairman of the European Group for Rapid Virus Diagnosis, a cooperative group of leading virologists from several European countries, who particularly devoted themselves to the development of novel methods for the early detection of viral infections. As a result, virus diagnostics acquired a new level of importance and relevance for the clinical supervision of patients. The quality of impetus provided was so outstanding that this association (which was to become the European Society for Clinical Virology in 1997) succeeded in playing a pioneering role throughout the world at the time. For several years, Christian Kunz was chairman of the Austrian Society for Hygiene, Microbiology and Preventive Medicine and on numerous na-

tional and international bodies, a highly respected expert who made his expertise available to health policy decision-making. For example, in the mid-1980s, he made a major contribution towards ensuring that the approach ultimately adopted to address the problem of HIV infections in Austria, which was a new issue at the time, was evidence-based and not fear-based.

Emeritus status was conferred on Christian Kunz in 1996, and in 2006, he was awarded the Loeffler Frosch Medal by the international Society for Virology for his outstanding contributions to the development of virology in the German-speaking area (Fig. 2). In appreciation of his special achievements, he had already been awarded the Gold Medal of Honour by the federal capital of Vienna back in 1988, and he was also an honorary member of various national and international scientific societies. One of his major skills was to bring about a symbiosis between medical/virological research, virus diagnostics and basic molecular research at his institute, which proved fruitful for all those involved. As a leading personality, he did so in such a way as to almost always make work a pleasure for his staff. That was particularly due to his always kindly disposed, supportive and encouraging basic attitude of placing confidence in the capabilities of his staff, and to his—even in difficult times—never-failing, contractible sense of humour. Along with many others who were fortunate enough to work with him, I am truly grateful not only for his scientific achievements but also for his generosity, human greatness and friendship.