



**Gernot H. Bergold (1911-2003)**

SIP members recently learned that on February 5, 2003, Dr. Gernot H. Bergold passed away in Caracas, Venezuela, at the age of 91. He is one of the founding fathers of insect virology and deserves to be remembered for his investigations of the structure of baculoviruses and the pivotal observation that the occluded virions are the infectious entities of these viruses.

Born in Austria in 1911, he graduated at the University of Vienna in 1935. His thesis was entitled 'Die Ausbildung der Stigmen bei Coleopteren verschiedener Biotope'. He moved to Germany in the early 1940s to take up research in insect virology. In 1942 he joined an interdisciplinary team of researchers at the Kaiser-Wilhelm-Institut für Biologie in Berlin-Dahlem and Oppau to further advance in virology in Germany. During the war his lab was moved to Tübingen, where he continued to work there until 1949<sup>1</sup>.

In 1943 Bergold published a seminal paper on the structure of baculoviruses, in which he described the rod-shaped nature of baculovirus virions and contended that 'polyhedral bodies were a crystalline accumulation of the virus'<sup>2</sup>. He exploited novel technologies such as ultracentrifugation, developed by The Svedberg (Nobel Laureate 1927), and electron microscopy, developed by Ernst Ruska (Nobel Laureate 1986), and showed that the rod-shaped virions were the infectious agents for insects<sup>3</sup>. The earlier papers, written in German, went unnoticed until 1947, when he made contact with fellow researchers in the US and Canada. He also found that multiple capsids are located in virions.

He wrote many (>20) papers on the structure of insect viruses until the late 1950s. In post-war Germany there was little opportunity for Bergold and he was recruited by the Laboratory of Insect Pathology in Sault Ste. Marie, Ontario, Canada, in 1949, where he met with Tom Angus, Art Heimpel and Ted Bird, among others, and continued to work on baculoviruses.

He introduced electron microscopy to the institute and studied the spruce budworm baculovirus<sup>4</sup>, which is ‘the Canadian prototype baculovirus’ to the present day. He also tutored ‘young’ scientists such as Peter Faulkner, who remembered the ‘German boxes’ in the attic of the building as remnants of Bergold’s European past, and encouraged many others to follow his path.

In 1953 Bergold published a major review on the biology and biochemistry of baculoviruses, which still is a hallmark in baculovirus literatures. Bergold had been active in the early days of baculovirus taxonomy (1954-1959) and *Bergoldia* Steinhaus was even proposed as a genus. In Sault Ste. Marie, Bergold, with his European background, provided important stimulation and critiques to others’<sup>6</sup>. He was the 1985 Honoree of the SIP Founders Lecture during the annual meeting in Sault Ste. Marie, where Tom Angus highlighted Bergold’s scientific achievements. I do not know whether or not he was present in person.

In 1957 he was invited to give lectures on insect viruses in Venezuela at the Venezuelan Institute of Scientific Research (IVIC) and took up another career there in arbovirus research until his retirement. He founded the Center for Virology at the IVIC. He was an expert on Venezuelan equine encephalitis virus and wrote an authoritative review on Arenaviruses<sup>7</sup>, which is still referenced.

In Venezuela, he was also attracted by the natural beauty of orchids. The last 30 years of his life Bergold devoted his time entirely to the description and conservation of these plants. He described many new species and one even carries his name (*Coryanthes gernotii*).

Gernot Bergold died while writing his memoirs, which hopefully surface at some point. With Bergold passed away, our scientific community has lost one of his pioneers, who moved insect virology into higher gear.

*Just M. Vlák*

1 Butenandt, A. 1977. Med. Immunol. 164: 3-14

2 Bergold, G. 1943. Biol. Zentralbl. 63: 1

3 Bergold, G. 1947. Z. Naturforsch. 2b: 122-143

4 Bergold, G.H. 1951. Can. J. Zool. 29: 17-23

5 Bergold, G.H. 1953. Adv. Virus Res, 1: 91-132

6 Wyatt, G. 2004. Gen. Soc. Canada Bull. 35: 30-32

7 Pfau, C.J. et al. 1974. Intervirology. 207-214