

# Two early 'general microbiologists'

## Emmy Klieneberger-Nobel

Emmy was born in Frankfort in 1892. She studied mathematics, with botany, zoology and philosophy, in 1913–1914 at the University of Göttingen. She returned to Frankfort on the outbreak of the First World War and studied at the University from 1914 to 1917, graduating in botany with zoology and mathematics. After a period as a teacher she worked on diagnostic bacteriology and carried out research at the Frankfort Public Health Institute, producing 25 papers. She was dismissed in 1933 on the advent of the Nazis and moved to England. She succeeded in getting five nephews and nieces to England, and finally a brother, a few days before the outbreak of the Second World War, but was unsuccessful in getting her mother and sister out, and they killed themselves in 1941. Two weeks after her arrival in England she started work at the Lister Institute in Chelsea where she remained until her retirement in 1962. In 1944 she married Edmund Nobel, another refugee and a distinguished paediatrician, who died only 2 years later. In that year she became one of the founder members of the SGM.

On her arrival at the Lister Institute, the director, Dr J.C.G. Ledingham FRS, suggested that she should work on the causal organisms of pleuropneumonia in cattle and agalactia in sheep. The organism that caused bovine pleuropneumonia had been discovered at the end of the 19th century. Its size was that of a small bacterium, but it was of variable form, due to the lack of a cell wall. Other organisms with similar features were discovered and were named

**Michael J. Carlile** recalls two ladies, Emmy Klieneberger-Nobel and Anna Mayr-Harting, refugees from the Nazis, who made notable contributions to British microbiology.

pleuropneumonia-like organisms (PPLOs), but proved so difficult to culture that little progress had been made by 1933. Emmy, a meticulous bench worker, soon had the cattle and sheep organisms growing on serum agar, and then extended her work to rodents, isolating two new species causing disease in rats and a third in mice. She became a leading authority on PPLOs, now known as mycoplasmas. She also observed what she at first thought were symbiotic mycoplasmas in *Streptobacillus moniliforme* cultures, and later other bacteria, and named them L organisms (L for the Lister Institute). Subsequently, it was realized that they were wall-less variants of the bacteria, and termed L-forms.

Emmy's studies extended to a wide variety of bacteria, including actinomycetes and myxococci; she published a paper on each in 1947 in the first issue of *JGM*. She also carried out work on staining bacterial nucleoids. In retirement she produced charming memoirs with a full publication list. Anna Mayr-Harting introduced me to Emmy when the latter was 65. We were attending the 1957 SGM Meeting at the Royal Institution and had gone in search of lunch. We located a Lyons restaurant

and joined Emmy, already at the coffee stage. On being introduced I said 'L-forms'. Emmy, plumpish and economical in movement, conveyed the impression of a benevolent Buddha. She commented 'Some say PPLOs, some say L-forms – I'm happy either way'.

## Anna Mayr-Harting

Anna Mayr-Harting was born in Prague in 1906 when Bohemia was part of the Austro-Hungarian Empire. When she was 12 years old the Empire collapsed and Czechoslovakia was created. She was from a well-to-do background and had a nurse, who she said was 'As similar to the Good Soldier Schweik as is possible for a woman'. When in 1918 revolutionary crowds were tearing down the Imperial Austrian Eagles in Wenceslas Square and Anna was rather frightened, her nurse said 'Isn't it nice to see people enjoying themselves'. Anna would have then become a Czech citizen and, an alarming combination for the ethnically and ideologically prejudiced 20th century, a Czech Catholic German Jew. By religion a Catholic, she would not have been popular among the Jews, or being of Jewish origin, among the then substantial German population of Prague.



▲ Top Emmy Klieneberger-Nobel at the last scientific meeting she attended: the 2nd Congress on the Biology of Mycoplasmas in New York in 1965. Ruth M. Lemcke  
Bottom Anna Mayr-Harting at her retirement party in 1972. Cliff Jeal

Finally, being ethnically German, she would not have been a favourite of the now dominant Czechs.

Anna qualified in medicine and became active in medical microbiology. She fled from Prague with her husband and son ahead of the Nazi occupation and joined the Department of Bacteriology in Leeds in 1939. Subsequently, she moved to Bristol to become Bacteriologist and later Lecturer in the Department of Preventive Medicine, carrying out diagnostic work and continuing bacteriological research. She was a good linguist and made use of her linguistic knowledge in abstracting foreign scientific, veterinary and medical journals. When, in 1950, Bristol University established a separate Department of Bacteriology under Professor K. E. Cooper, Anna joined the department, becoming Senior Lecturer in 1964. She died in 1974, only 2 years after her retirement.

I came to know Anna well when I was at Bristol. Small and with straight white hair, she was a delightful and popular person, an entertaining conversationalist with a good sense of

humour. She was keen on music, and played the trombone in the university orchestra, but perhaps her skill did not match her enthusiasm, as suggested by a tale from the Bacteriology Department humorist. At that time one of the tests in the diagnosis of gonorrhoea involved the inoculation of material into a selective liquid medium in which the causal bacterium produces gas bubbles. In the Bristol Department it seems that these bubbles were detected by an instrument that they called the gonophone, which amplified the sound made by the bubbles bursting at the surface of the liquid. The wag claimed that one day he thought that the gonophone had gone wrong, but it was only Anna practising the trombone.

Anna was a keen teacher, and in her enthusiasm for realistic exercises obtained copious material from a Bristol Hospital for her afternoon practical classes. One of her students told me that he was not enthusiastic about confrontations with a diseased kidney or material from an abscess soon after lunch. Forty years later Anna would have been in double trouble over her classes. There would have been indignation by relatives about post-mortem samples being taken without written permission, and the Health and Safety folk would have been appalled by students confronting diseased material without elaborate precautions. I did not experience Anna's post-lunch practical classes. Once, however, joining me in the University Senior Common Room for lunch, an event that I normally appreciated, she announced that she had just been translating a German forensic science article about discriminating between hanging, strangling, throttling and smothering.

I once expressed to Anna the view that the philosopher-biologist J. H. Woodger's attempt to construct a logical theoretical foundation for biology was a futile activity. Anna said that she knew Woodger and recalled how, when walking up a hill one evening, he bent over and looked at the sunset from between his legs, declaring that this would give him a view free from the usual associations. She declared that he was 'a splendid exhibit in God's Zoo'. Anna was a fine scientist and a charming, lovable person, but the same could be said of her.

*I wish to thank Janet Hurst for establishing that Klieneberger-Nobel was one of the original members of the SGM, and Barbara Costello, Biology Library, University of Bristol, for obtaining the Lancet obituary of Anna Mayr-Harting.*

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## Further reading

Cooper, K.E. (1974). Dr A. Mayr-Harting; Bacteriologist at Bristol. *The Times*, 10 July, p. 20.

K. E. C. (1974). Anna Josephine Mayr-Harting. *Lancet* 7873, 177.

Klieneberger-Nobel, E. (1980). *Memoirs*. London: Academic Press.