Reviews and Resources

BOOKS

The Fantastic Laboratory of Dr. Weigl

At the time of World War II, the vaccine against epidemic typhus that was most trusted by the Germans was the one developed by a Polish microbiologist, Rudolf Weigl. This vaccine was only available in his laboratory in Lwow. It was made by infecting body lice with the typhus rickettsiae, waiting a week for them to develop, and collecting the infected gut. This material was phenol treated and made into the vaccine. To accomplish this, Weigl needed a colony of healthy lice, which he bred using human volunteers as feeders. The Germans placed such priority of this endeavor that they left not only the outspoken Weigl to his work, but even sheltered the louse-feeding volunteers, which included scientists and other intellectuals, some of whom were Jewish. Moreover, the lab sent full-strength vaccine preparations to the underground and to some ghettos while diluting out those provided to the Germans.

This extraordinary story is the subject of this book, which goes into considerable detail regarding these events and its participants. One of them that figures prominently is the eminent, now-retired microbiologist Waclaw Szybalski of the University of Wisconsin, who worked in the Weigl lab as a young man.

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Life’s Engines: How Microbes Made Earth Habitable

This short book, less than 200 pages of text, is a delight. It’s not clear for whom it is written. Falkowsky says it’s an outreach beyond that of a textbook. I doubt if most of its contents aren’t familiar in broad outline to most professional microbiologists, but I’m sure all of them would be rewarded by reading it. I was. It’s sprinkled with intriguing historical vignettes: when he was 22, Darwin collected fossils with Adam Sedgwick in north Wales; Darwin took a copy of Charles Lyell’s Principles of Geology along with the King James Bible on the HMS Beagle; Robert Hooke learned Dutch to read Van Leeuwenhoek, and wonderful sentences like, “In 1859, the same year that Big Ben chimed for the first time and the London publisher John Murray and Sons sent the first edition of The Origin of Species to press, on the other side of the Atlantic an American train conductor, Edwin Drake, drilled the first major oil well near Titusville, Pennsylvania.”

Falkowsky has intriguing ideas about a variety of microbiological happenings. He pays considerable attention to the delay between the emergence of oxygenic photosynthesis and the great oxygenation event, discounting the impact of iron’s being the major oxygen sump (as he used to believe) emphasizing instead that of sulfur and nitrogen. The topics are eclectic. He discusses, among others, the age of Earth, origin of life, panspermia, lateral gene transfer, climate change, and the consequences of our burgeoning human population. He’s intrigued by the origins and impact of biology’s “nanomachines:” particularly photosynthetic reaction centers and membrane-bound ATP synthases. Perhaps the book ought better to be titled A Chat with Paul Falkowsky, that, too, undoubtedly a delight.

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