

Peter Sitte (1929–2015): a theistic cell biologist

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Some time ago, the first author of this tribute to the German biologist Peter Sitte had the chance to discuss the topic of “macroevolution” with a young earth creationist. During several conversations, the biblical literalist rejected all evidence for a gradual phylogenetic development of new body plans over millions of years, exemplified by the transition of tree-dwelling theropod dinosaurs to the ancestors of birds during the Mesozoic (i.e., avinisation). The evangelical Christian repeated over and over again that there are “gaps in the fossil record,” and therefore evolutionary transitions that “allegedly” took place “eons ago” can never be proven scientifically beyond reasonable doubt. Since the literalist was also a strong believer in the idea of “Intelligent Design,” he pointed out that, whenever he looks into nature, he senses that his biblical God is talking to him. Every beautiful flower is sending out “design-signals,” created by the “Intelligent Designer.” Accordingly, this supernatural *Theos* is communicating to his much less educated human beings with the display of *His* sophisticated, perfect creations. It soon became clear that no amount of data, reason, and logic will ever convince this evangelical Christian that evolution is *literally* a fact of nature and that empirical evidence proves beyond any doubt that body plans have gradually changed over millions of years on this dynamic Earth. Moreover, since the creationist was convinced that evolution is an “atheistic belief,” and not a

real-world process explained by a system of theories, the discussion came to a quick end.

Peter Sitte was a catholic who respected the Bible as one of the greatest books of spiritual revelation. However, with reference to the physicist Carl Friedrich von Weizsaecker (1912–2007), he argued that “One can take the Bible seriously or literally”. In discussions on creationism vs. evolution, the theistic biologist Peter Sitte referred to the twofold, contradictory description of the “Creation of Man” in the book Genesis of the Bible. He argued that this text must be interpreted metaphorically, and not in a literal sense, i.e., not as a scientific description of real-world events. In several letters and discussions with us, Sitte argued that, whenever one demands science to provide a complete, closed chain of cause-and-effect-relationships to explain phenomena of the living world, almost all branches of biology must be labeled as “un-scientific.” In other words, gaps in our knowledge will forever remain, since living (evolved) systems (i.e., uni- and multicellular organisms) are the most complex and flexible units on planet Earth. This powerful argument against the challenge of biblical literalists—“show me a complete series of connecting links, without any gaps, and I may accept that evolution has occurred” was one of Sitte’s great philosophical arguments.

Born on December 8, 1929, in Innsbruck (Austria), Peter Sitte attended a Christian High School (Jesuiten-Gymnasium) in his home city (Fig. 1). After graduation, he studied Biology, Chemistry, Physics, and Philosophy at Innsbruck University. In 1953, he earned his Ph.D. (Dr. phil.) in botanical cell research, and when he was 24 years old, his first scientific publication appeared in print (see Devidè, Z Acta Bot. Croat. 69 137–146; 2010 for a list of Peter Sitte’s publications, 1953 to 2008). From 1959 to 1965, he was an associate professor at the University of Heidelberg (Germany), and 1 year later, he took over the chair of Cell Biology (Lehrstuhl für Zellbiologie) at the University of Freiburg i.Br. He stayed in

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Fig. 1 Peter Sitte (1929–2015) at the age of ca. 70 years

this attractive city in Southern Germany, as a full professor (ordinarius) until 1994, when he became an active emeritus. Peter Sitte died on September 13, 2015, in Freiburg.

His scientific work focused on plant cell biology, with special reference to symbiogenesis (endosymbiosis) and cell evolution. Accordingly, Sitte summarized the current status of this discipline repeatedly in the review series *Progress in Botany* (1986, 1989, 1992). In addition to original research, Sitte published articles on microscopical techniques, bioethics, philosophical aspects of the life sciences, and the “evolution-creation-controversy.” He was also an excellent lecturer and public speaker at meetings. As a result, he published notable books (for instance, with Hans Kleinig *Zellbiologie—ein Lehrbuch*, 1984, 3.ed 1992 (*Cell Biology—a Textbook*) and contributed the first part to the *Strasburger—Lehrbuch der Botanik* (*Strasburger—Textbook of Botany*), three eds 1991, 1998, and 2002 (the 35th ed. of this longseller).

As a researcher, author, science manager, editor, and acclaimed speaker at conferences, Peter Sitte became a key figure in the biological sciences in Germany and beyond. Like other scientists, he was also interested in literature and arts, and played the piano in his free time. At the age of 76, he published one of his lectures on “creation vs. evolution” in a catholic journal (Sitte, P. *Zur Debatte* 35/5: 38–41, 2005). In this remarkable analysis, the bio-philosopher Peter Sitte explained in detail why biological facts should not be mixed up with religious dogma. Hence, he was a theistic evolutionary cell biologist, who respected the Biblical account of creation, but only in a metaphorical sense. Like Theodosius Dobzhansky (1900–1975) and other leading biologists, Sitte taught his students that biology only makes sense within the Darwinian framework of organismic evolution, which states that all living beings descended from a common ancestor. Peter Sitte’s original contributions on symbiogenesis and the phylogenetic development of “chimeric eukaryotic cells” are key elements of our modern view of the evolved biosphere. As an academic teacher, Professor Sitte presented all of his topics—the history of biology, bio-philosophy, principles of microscopy, cell biology etc. in a concise and inspiring style. His “Austrian” way of story-telling was unique, so that his students admired and respected him as lecturer and mentor.

Finally, it should be noted that Sitte was one of the founding Editors of the journal *Biologie in unserer Zeit*, and that he published several of his research papers in *Protoplasma*. Peter Sitte was one of Germany’s few generalists of biology, who not only pushed his own agenda, but also supported numerous junior scientists, as well as scientific organization, in a constructive, open, and friendly way. **Compliance with ethical standards**

Conflict of interest The authors declare that they have no conflict of interest.