Obituary Lennart Jeppsson 1940-2015

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——OBITUARY——

Lennart Jeppsson 1940 – 2015

Photo: Mikael Calner.

Professor Lennart Jeppsson, one of the leaders in research on Silurian geology, passed away on 22nd April 2015 after a long illness. He was considered a world authority on conodonts and conodont biostratigraphy, but also made many other contributions of lasting value.

Lennart was born in Scania, the southernmost province in Sweden, and after attending local schools, he continued his education at Lund University where his academic studies included botany, zoology, chemistry, genetics and geology. He received his Fil. Mag. (approximately M.Sc.) degree in 1967 and his Fil. Lic. degree (the degree below Ph.D.) in 1971. From his high school years he had a deep interest and expertise in the local flora, and during a floristic inventory of his home region he even discovered a plant new to Sweden, a most unusual achievement for a young student. He maintained strong interests in plants to near the end of his life and published several botanical articles. He introduced hundreds of species into his garden that became a well-known showpiece in the city of Lund. However, during an elementary course in geology given by Stig M. Bergström (SMB), he changed his scientific focus from botany to geology and became particularly fascinated by conodonts and conodont biostratigraphy, which became his thesis topic under the general guidance of SMB. Lennart was associated with the Geology Department at Lund University through his entire career, where he held several positions and became Professor in 2000.

His studies initially focused on the Silurian successions in Scania and on the Island of Gotland, whose diverse conodont faunas had remained essentially unknown prior to his work. Over the years he also worked on collections from many other parts of the world, such as Australia, the UK, Bohemia and North America. He was a visiting Professor in Waterloo, Canada in 1970–1971, visited North America again in 1975, made two long research trips to Australia in 1996 and 2000, studied Silurian geology in the UK on several occasions starting in the 1960s, and participated in geological congresses in quite a few countries. He was co-organiser (with A. Löfgren) of the 3rd European Conodont Symposium in Lund in 1982.

As early as his first conodont paper (1969), he pioneered the use of multielement taxonomy for Silurian conodonts, a practice that did not fit well with some established but more conservative conodont workers of the time, some of whom continued using the old form taxonomy into the latter half of the 1970s. Because conodonts are generally not abundantly represented in the Gotland Silurian succession, Lennart carried out an enormous collecting programme in order to obtain collections of adequate size. This programme included annual collecting trips to numerous localities, the collection of tons of limestone, and the use of individual sample sizes of up to 70 kg. One can safely say that it is highly unlikely that this programme will be matched in the future. This huge collecting effort resulted in, among other achievements, the discovery of many very rare species which are unlikely to have been found using more conventional collecting work. The data

from his work on Gotland were published in a series of papers, some of monographic size, such as 'Silurian conodont apparatuses and conodont dimorphism' (*Geologica et Palaeontologica* 1972), 'Aspects of Late Silurian conodonts' (*Fossils and Strata* 1974), and 'Silurian conodont faunas from Gotland' (*Fossils and Strata* 1983). These detailed reports have become international standard references and are of lasting scientific value.

Lennart also possessed a technical talent and keen interest in improving conodont extraction methods. He designed a conodont preparation laboratory in Lund that is probably still the most advanced in the world with, for instance, computer-monitored and push-button changes of acid in huge sample processing baths. In cooperation with a couple of chemistry colleagues, he developed new extraction methods using buffered acids for breaking down especially clay-rich limestones that greatly increased conodont retrieval while simultaneously reducing the risk of losing, and etching, specimens due to acid effects. These methods are now used routinely worldwide. His views on microfossil extraction were summarized in a paper entitled 'Biases in the recovery and interpretation of microfossil data' (*Palaeontology* 2005).

His work on Gotland resulted not only in the establishment of a greatly refined Silurian conodont biostratigraphy of worldwide application but also in the discovery of ten conodont extinction events that subsequently have been shown to coincide with positive $\delta^{13}C$ excursions and be distributed globally. These extinction events are not restricted to conodonts but can also be recognised in the ranges of species of other fossil groups, and at least to some extent, they are also identifiable lithologically. Lennart proposed a relatively complex but logical oceanographic model to account for these events that involved changes from icehouse to greenhouse cycles combined with changes in the carbon cycle and even Milankovitch effects. In several papers, partly in cooperation with local workers, Lennart extended the application of his oceanographic model to Silurian successions in North America, Greenland, the UK, eastern Baltoscandia and Australia. Perhaps the best description of these events is his 1998 summary paper in the *New York State Museum Bulletin* 491 that also illustrates his incomparable knowledge of global Silurian conodont biostratigraphy. These events have figured prominently in the international literature but their cause is still a matter of discussion.

Lennart sustained a remarkable publication activity during the last decade of his life, as evidenced by the fact that 23 of his approximately 130 authored or co-authored papers were published in 2004–2014. Most of these deal with biostratigraphy, chemostratigraphy and extinction events but there are also studies on bentonites, depositional environments, vertebrates, graptolites, scolecodonts, hyoliths and problematic fossils.

Lennart suffered from a variety of health problems, particularly during the last quarter of his life, such as fibromyalgia. During his last few years he experienced progressive frontal lobe dementia and also developed skeletal cancer. The cause of his death was stated as pneumonia. He is survived by his wife, Ann-Sofi, who provided much support to him in many ways throughout his entire career, and his two children Anna-Lena and Anders.

Lennart had an unusual personality – very bright, independent in thought, and he was full of ideas and enthusiasm. He had firm opinions about some matters that occasionally caused practical problems. Lennart loved science in a broad way, read voraciously, and could discuss matters at a high level in subjects far from his beloved geology and palaeontology. He also had a wonderful sense of humour of the dry, witty, academic kind. In many respects, his research opened up new

and fertile ground. His friendliness, helpfulness and expertise were much appreciated by his students, some of whom (such as Mikael Calner and Mats Eriksson) have become internationally known. Many international conodont workers came to Lund to visit him, and throughout the years he maintained extensive contacts with specialists from many parts of the world. His leading position globally in Silurian conodont research is shown by his receipt of the Pander Society Gold Medal in 2006, which is the highest international award in conodont research.

It is sad to note that in the last few years, Silurian geology and especially Silurian conodont research, has lost several of its internationally best-known workers, such as Otto Walliser, Richard Aldridge, and now Lennart Jeppsson. The enormous body of expertise lost with the passing of these eminent workers is not replaceable, and the fact that several other Silurian specialists are now retired suggests that the end of the 'golden age' of Silurian conodont research during the last 50+ years may not be very far off.

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Lennart Jeppsson at Ireviken, Gotland, Sweden, August 2005.
Photo by Mikael Calner.