

In Memoriam Udo Schwertmann (25 November 1927–20 January 2016)



It is with infinite sadness that I write these lines.

I first met Udo Schwertmann in the spring of 1975. His department was seeking a scientist with experience in X-ray methods (XRD and XRF) and I was looking for a job. To me, a young upstart with a PhD and experience in igneous petrology and geochemistry, soils were something like ‘yukk.’ In the end, Schwertmann taught me to respect soils and practically all that I know about soils and clays.

First, the sheer size of this 2 m-tall, wiry man was impressive. Then there was the reserved dignity of the North-German Hanseatic gentleman: style without a trace of aloofness.

So much for my personal reminiscences.

Schwertmann was a critical person. Seldom enough among university professors, he was also willing to accept criticism from anyone as long as it was founded. Nothing would annoy him more than unsubstantiated statements, and he was willing to criticize and, if necessary, even antagonize colleagues (including fellow professors) who were careless enough to utter such statements.

Schwertmann had an excellent command of the English language, an important prerequisite for editorship of a journal, and so it comes as no surprise that he was Associate Editor of *Clays and Clay Minerals* from 1980 to 1992. He was also Associate Editor of the journal *Clay Minerals* for 16 years, on the Editorial Board of which he served since its ‘Europeanization’ in 1976 until his demise (D.C. Bain and J.W. Stucki, pers. comm.).

As a researcher, Schwertmann is best known for his work on the iron oxides. This work led to the publication of a multitude of articles and review papers, and culminated in the publication of two books (both currently in the second edition) together with Rochelle (‘Shelley’) Cornell, on the synthesis of oxides that occur in nature (Schwertmann and Cornell, 1991) and a colossal oeuvre on the properties, reactions, occurrences, and uses of iron oxides (Cornell and Schwertmann, 2003) that some colleagues behind his back informally call the ‘iron oxide bible.’ Together with Joe Stucki and Bernard Goodman he also co-edited a book on iron in soils and clay minerals (Stucki *et al.*, 1988).

Schwertmann was active in soil-related topics other than the iron oxides: soil fertility and soil erosion, and the ensuing loss of valuable top soil were major concerns

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of his, and he thus also published numerous journal articles on these subjects. Together with his students and research associates Karl Auerswald, Willi Vogl, and Max Kainz he wrote books on soil erosion (e.g. Schwertmann *et al.*, 1989, 1990), and, among other key works, he contributed substantially to several editions of the ‘classic’ German-language textbook on soil science, the ‘Scheffer/Schachtschabel’ (Schachtschabel *et al.*, 1976–1998).

Schwertmann travelled often, mostly to institutions in which work similar to his own was being carried out. Conversely, scientists from all over the world flocked to his department to work on subjects related to soils *sensu lato*. One of the guests he hosted, Jerry Bigham, a professor of soil science from Ohio, brought along numerous samples of acid mine precipitates, some of which contained a hitherto unknown phase, which the IMA (the International Mineralogical Association) eventually officially approved as a ‘new’ mineral named schwertmannite, ideally $\text{Fe}_8\text{O}_8(\text{OH})_6\text{SO}_4$, in honor of Udo Schwertmann (Bigham *et al.*, 1994).

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