

## Memorial of Renaud Vochten, 1933–2012

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On Sunday, July 29, 2012, Prof. Em. Dr. Renaud Vochten, after whom the mineral vochtenite was named, passed away after an illness of several months. He was an MSA member from 1979–1988.

Renaud Vochten was born in Deurne (Antwerp) on December 8, 1933. He studied at Ghent University, obtaining his engineer's degree. Because he realized that working in the industry was not his cup of tea, he also got a master's degree in chemistry. From 1964 on, he worked on his doctorate, resulting in a Ph.D. in 1967.

Soon after the founding of the State University Centre of Antwerp in 1965, he was appointed assistant, responsible for mineralogy courses at the Faculty of Applied Economic Sciences. In 1972, he became assistant professor. In 1973 and 1974, he followed a post-doctoral training at the University of Heidelberg in the group of Professor Paul Ramdohr. He was so fond of this training that even in recent years he referred to it several times.

In 1979, he was appointed full professor at Antwerp University. From 1992 to 2000 he regularly acted as a guest Professor at Ghent University, where he gave courses on ore mineralogy and gemology for geology students. Although retiring in 1999, he continued working in his mineralogy labs. The only difference in the first years of his retirement probably was just the fact that he was not paid.

Professionally, Renaud was a typical Jack-of-all-trades. He performed research in many fields of chemistry, including e.g., surfactants, pharmaceutical products, etc. His great passion was uranium mineralogy. He co-authored the description of four new uranium minerals: deliensite, piritite, oswaldpeetersite, and blatonite. The latter was not named after the famous phosphate locality of Blaton (Hainaut, Belgium), but after Prof. Norbert Blaton, a close friend of Renaud, who wrote more than 10 scientific articles with him. Norbert Blaton held a well-appreciated farewell speech during the service for Renaud in the church of Schilde (Belgium), where he lived.

Between 1962 and 1970, Renaud Vochten performed research in the field of double-layer potentials, which was (and still is) of great importance for flotation processes for ore enrichment.

In regard to his research on uranium mineralogy, Renaud cooperated often with e.g., Eddy De Grave (Ghent University) and Pieter C. Zwaan (Leiden Museum). It was these two colleagues who named a new uranium mineral "vochtenite" after him in 1989. Vochtenite is an uranyl phosphate, found in Wheal Basset in Cornwall, formula  $(\text{Fe}^{2+}, \text{Mg})\text{Fe}^{3+}(\text{UO}_2/\text{PO}_4)_4(\text{OH}) \cdot 12\text{--}13 \text{H}_2\text{O}$ . Only a few 100 mg of pure vochtenite was available for a full characterization by thermal analysis, infrared spectrometry,



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Mössbauer spectrometry, and X-ray diffractometry (Zwaan et al. 1989).

He was a specialist in the synthetic preparation of sufficiently pure uranium compounds for further research, enabling him to prepare larger and purer crystals in cases where not enough pure natural material was available. He made synthetic zippeite, metazeunerite, metakirchheimerite, a nickel-uranylarsenate, boltwoodite, liebigite, andersonite, rutherfordine, weeksite, chernovite, and meta-ankoleite. Every time he succeeded in such a synthesis he walked on clouds for weeks, and he regularly called me just to share his enthusiasm. As far as I know Renaud never produced his "own" mineral, vochtenite, in the lab.

He worked in the field of magnetic properties of minerals (e.g., on clinopyroxenes and diopside) and Mössbauer spectroscopy, in collaboration with Eddy De Grave (Ghent University). He also designed several improvements in X-ray diffraction instrumentation, in particular making sample holders for very small samples.

Not only was he very interested in mineralogy, he also appreciated almost all other scientific subjects and nature in general. He enjoyed fauna and flora, or a simple starry sky. I will never forget one evening, when we were camping in the middle of nowhere in central Namibia. There was practically no light pollution and he literally fell back, while gazing at the splendid view of the Milky Way, straight above us. The entire evening, we talked about the time-space problem, the big bang theory, etc.

He wrote several publications on units and more mathematical subjects, and a whole series of laboratory handbooks. Mineral-

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ogy was his passion, profession, and hobby, but he was also a very knowledgeable mathematician. Never a mathematical or physical problem was too difficult for him, and he was familiar with many mathematical enigmas.

I had the privilege to cooperate with him in a study on a 20 kg fragment of the Santa-Catharina meteorite. Every other day he called me to ask if my micro-analytical and scanning electron microscopical work had already brought some results. The same happened when I obtained trace analysis on fluorite specimens from Seilles (Belgium) via ICP-mass spectrometry. He was always giddy as a schoolboy to get the results.

For several years, we participated in evaluation commissions for the training reports of engineers to be at the Industrial Graduate School of Ostend, Belgium. He was a driven interrogator, very strict, but fair.

Mineralogy was not only his profession, but also his hobby. He always told me that “he did not have to go working”, but that “he had the privilege to be allowed to go to work”. After 60 years of collecting, his private mineral collection contains more than 12,000 high-quality specimens. In recent years he donated a big part of his exclusive collection of uranium minerals (146 specimens, 37 species) to the Museum for the History of Science of Ghent University. Because of legal limitations concerning radiation hazard to the public, the collection is preserved in the Institute for Nuclear Sciences in Ghent. For research purposes it

can be visited by appointment ([www.sciencemuseum.ugent.be](http://www.sciencemuseum.ugent.be)).

He embodied a splendid link between academic mineralogists and the mineral collectors community, and he regularly took part in excursions with members of the Mineralogische Kring Antwerpen. In 2004, he and his wife Henny participated in a mineralogical exploration tour through Namibia. He enjoyed the country with its minerals, but he also enjoyed the daily campfire where he told the most spectacular stories, moreso even after the group emptied some bottles of wine. When we went to a mineral locality, the only reason to stop searching was because it got dark in the evening.

He never went by unnoticed in a group. He was a gentleman with temperament, who always said what he thought. If something was wrong, you would have noticed that immediately. But when he was happy, you would also share his joy. The word “apathy” was not in his vocabulary.

Renaud Vochten will be missed very much, not only for his professional contributions to science, but also for his jokes, his enthusiasm, his perseverance, his knowledge, and above all, his warm personality.

#### REFERENCES CITED

- Zwaan, P.C. Arps, C.E.S., and de Grave, E. (1989) Vochtenite,  $(\text{Fe}^{2+}, \text{Mg})\text{Fe}^{3+}[\text{UO}_2/\text{PO}_4]_4(\text{OH}) \cdot 12\text{--}13 \text{H}_2\text{O}$ , a New Uranyl Phosphate Mineral from Wheal Basset, Redruth, Cornwall, England. *Mineralogical Magazine*, 53, 473–478.