PERALK, a Workshop on Peralkaline Rocks

Participants of PERALK assembled for the traditional group photograph.
PHOTO BY DAVID LENTZ

After attending two huge (6,000+) congresses, I found it most refreshing to attend the workshop entitled "Peralkaline Rocks: Sources, Economic Potential, and Evolution from Peralkaline Melts." The meeting was held in Tübingen, Germany on March 4–6, 2005, with approximately 70 scientists in attendance. The meeting was convened and ably organized by Gregor Markl, of the Institut für Geowissenschaften, Universität Tübingen. He and his enthusiastic associates have been focusing their attention lately on the peralkaline complexes of the Gardar Province, South Greenland, and in particular on the unique attributes of the Ilímaussaq Complex. Thus, through poster presentations and Gregor's talk on the parameters governing agpaitic crystallization, this group was able to showcase its recent accomplishments. The oral and poster presentations were subdivided into three major themes: Melt sources and melt generation, Crystallization conditions and magmatic evolution, and Late-stage processes and economic potential.

There were ooohs and aaahs during the slide and video presentation by Jurgis Klaudius on recent natrocarbonatitic activity in the northern crater of Oldoinyo Lengai, Tanzania, the world's only volcano spewing forth natrocarbonatitic lava. It was fascinating to witness the incredible mobility of such lava and the ephemeral nature of the fresh rocks formed; within three or four days, the bulk composition and the mineral assemblages had already changed! The primary minerals, including sylvite (found even as a phenocryst phase!), halite, gregoryite, and nyerereite, soon give way to an assemblage rich in pirssonite and gaylussite. The rocks get partially dissolved upon the first signs of rain, and the ultimate fate of a good part of the natrocarbonatite lava lies in Lake Natron, a few kilometers away.

In addition to seeing memorable presentations on Oldoinyo Lengai and Ilímaussaq, I was most interested to be brought up to date on the peralkaline rocks of Ethiopia, Pantelleria, Kenya, and the Kola Peninsula, and on parallel experimental and melt-inclusion studies on relevant systems. Even on a small scale, it was a smorgasbord of alkaline delights, and a bit of an information overload! The Program and Abstracts Volume, compiled by Michael Marks, will be an indispensable document for understanding the fine points made by the various contributors. A more permanent and widely available compilation of articles will be assembled, refereed, and published as a thematic issue of *Lithos*.

An event of this type, focused on peralkalinity in magmas, either oversaturated or undersaturated in silica, has been a very long time in coming. The feeling of participating in a rare event made attendees from far and wide really relish their weekend in Tübingen.

Robert F. Martin, McGill University, Montreal, Canada
bobm@eps.mcgill.ca

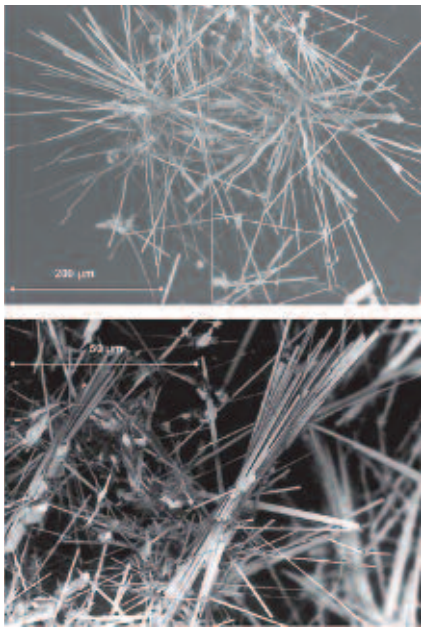
People Behind Mineral Names
Vurroite, after Filippo Vurro

The new mineral species *vurroite*, a sulfosalt with the ideal formula $Pb_{20}Sn_2(Bi,As)_{22}S_{54}Cl_6$, was recently discovered among the high-temperature products of fumarolic activity at the Fossa crater of the volcano Vulcano, in the Aeolian Islands of Italy (Garavelli et al. 2005). It is appropriately named after Filippo Vurro (b. 1940), professor of mineralogy at the University of Bari, in recognition of his important contributions to the mineralogy and geochemistry of modern volcanic deposits.

Filippo and co-investigators have formulated a geochemical model in which the ratio Br/Cl in sal ammoniac (NH_4Cl) is considered to be a reflection of inputs of magmatic gases feeding the fumaroles, and a thermochemical model for the transport of ore-forming metals in the high-temperature gaseous stream. He participated in the crystal-chemical and crystallographic characterization of rare phases in the systems $PbS–Bi_2S_3$ and $PbS–As_2S_3–Bi_2S_3$, and of the species barberiite [NH_4BF_4], mozgovaite [$PbBi_4(S,Se)_7$], and mutnovskite [$Pb_2AsS_3(I,Cl,Br)$], which also have Vulcano as a type locality.

Filippo began his career in the Air Force chemical laboratory in Bari. With his strong background in chemistry, he naturally was attracted to undertake geochemical and mineralogical investigations of the fumarolic sublimates at Vulcano, a tremendous natural laboratory and one of only a handful of volcanoes around the world where serious investigations of the products of gaseous transfer have been carried out. The lab work takes place on the flank of the volcano.

The experiments are ongoing and uncontrolled, and equilibrium conditions are probably not attained in such a fluctuating environment. The field work, which is challenging owing to the toxicity of the gas phase and the ever-changing direction of the air currents, involves careful monitoring of the temperature and gas compositions at well-established fumaroles and requires repeated sampling of mineral sublimates and encrustations. The temperature of gaseous emissions fluctuates in a secular fashion; the type material was collected at a stage of relatively high-temperature deposition, at 607°C, although it is also deposited at other fumaroles on Vulcano over the interval 406–430°C. Vurroite is an example of a multicomponent sulfosalt in which Sn and Cl are essential constituents, along with Pb, Bi, As, and S. It also contains minor Br and traces of Tl and Se.



The acicular habit of vurroite is typical of other sulfosalts deposited under conditions of rapid crystallization as the high-temperature gaseous emanation cools and mixes with the atmosphere.

Robert F. Martin
(bobm@eps.mcgill.ca)

REFERENCE

Garavelli A, Mozgovav NN, Orlandi P, Bonaccorsi E, Pinto D, Moëlo Y, Borodaev YuS (2005) Rare sulfosalts from Vulcano, Aeolian Islands, Italy. VI. Vurroite, $Pb_{20}Sn_2(Bi,As)_{22}S_{54}C_{16}$, a new mineral species. Canadian Mineralogist 43: 703-711