

## OVERVIEW OF THE 8<sup>th</sup> INTERNATIONAL SYMPOSIUM ON VULCANOSPELEOLOGY

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### ABSTRACT

In February 1998 the 8<sup>th</sup> International Symposium on Vulcanospeleology was hosted by CEGEA (Cave Exploration Group of East Africa) in Nairobi, Kenya: it was attended by 16 scientists coming from 4 continents. Pre- and Post- Symposium excursions allowed the participants to have an overview on the most important and famous volcanic cave of that area.

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Despite record-breaking floods, sporadic intertribal warfare (grossly distorted by the media), a false rumor of massacre of British Museum scientists and true threats of a paralyzing nationwide bank strike, 16 vulcanospeleologists attended the 8th Symposium in Kenya in February 1998. Included were participants from Australia, Great Britain, Italy, Japan, Kenya, Netherlands, Norway, and the United States. Host organization was the venerable Cave Exploration Group of East Africa; the International Union of Speleology was a co-sponsor. At the meeting of the IUS Commission on Volcanic Caves, Jan Paul van der Pas took over as President.

The overwhelming success of the meeting was a personal triumph for Jim Simons, Hon. Chairman of CEGEA, who had been urging such a meeting in Nairobi for a quarter of a century, and served as its organizer and Chairman.

In addition to a remarkable overview of vulcanospeleology of East Africa by Jim Simons, notable papers in the East Africa session included a report on high-elevation caves of Kilimanjaro by Clive Wood, and reports on lava tube caves of Grand Comoro Island and of Mauritius, by Tasmanian Greg Middleton, session Chairman.

Ron Greeley of Arizona State University chaired a session on vulcanospeleogenesis, including his own paper on California's Giant Crater lava tube system (where there is definite evidence of erosion into pre-flow country rock). Kevin Alfred's paper (in absentia) on supposed "Lava Tube Remelt by Radiant Heat and Burning Gases" was read by Dave Womack of CEGEA. I presented papers on hollow tumulus caves and sheet flow caves of Kilauea Caldera, Hawaii.

IUS past president Paolo Forti chaired a session on speleothems of lava tube caves and presented a paper (with several co-authors) on "Chemical Deposits in Volcanic Caves of Argentina", contrasting occurrences in Cueva del Tigre (ions from weathering of lava) with phosphates in a nearby tectonic cave, resulting from interaction of bird guano and volcanic rock. Gordon Davies reported unique rope-like meters-long speleothems in a hollow half-cone in carbonatite in the caldera of Tanzania's Oldoinyo Lengai. This was a short-lived hyperthermal cave with speleothems presumably of sodi-

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um carbonates (and possibly also NaCl), primarily in the form of long, thin uniform stalactitic columns. Tourism has arrived here, but requires a 1800-m ascent using ropes and crampons to reach the caldera at 3100 m. Ron Greeley commented that carbonatite lava is the only type in which downcutting by flowing lava actually has been observed. Also, Kevin and Carlene Alfred (in absentia) reported on filter-pressed segregation as the cause of tubular lava stalactites and related forms, and Jim Simons, on guano-mining in Kenya lava tube caves.

Jan Paul van der Pas chaired a session on miscellaneous topics. Included were an archaeological report on an important Kenya lava tube cave, a report by Bob Davies on roofed tectonic caves in the Solai area of Kenya, and my paper on speleological aspects of pit craters and certain open vertical volcanic conduits, with special reference to definitions in the 1997 4th Edition of Glossary of Geology.

Floods in the Leviathan Cave area forced long detours and caused major changes in the Chyulu Hills field excursions. Only the central section of 10.5 km Leviathan Cave could be reached in the time available. However, fascinating Mathioni Cave and Shetani Cave at the north and south ends of the Chyulus were reached without difficulty. An especially notable feature of the former is a 5m lava stalagmite formed by invasion through a round 1 m defect in the ceiling high overhead. A 1/2-day excursion from Nairobi also visited two of the puzzling Giggles Caves: intricate networks of small passages in tuff in the Ndarugu River Gorge, with what appear to be karstic features.

After the sessions, several lava tube caves in the intricate Mt. Suswa network were visited. These contain extensive secondary deposits of SiO<sub>2</sub> and other minerals in addition to a magnificent display of enormous hollow pahoehoe ropes and other notable primary features. Some overnighted in "The Ballroom", frustrating a prowling hyena that wanted to nibble somebody. Most continued north to Mt. Elgon on the Uganda border, for "dread" Kitum Cave, supposedly the lair of the Ebola virus and other caves in a peculiar, partially soluble complex of agglomerates, tuffs, and lake bed deposits. The entrance of Makningen Cave is 60 m wide and 20 m high; its entrance room is some 200 m long and contains numerous features characteristic of karstic caves. The 1973 published map labelled Makningen Cave actually is of Kitum Cave where speleogenesis is partially obscured by more extensive breakdown. The caves have been enlarged by primitive mining of the salty bedrock and by their use as salt licks by domestic and wild animals (including elephants) but most of their volume clearly is due to geologic processes.

Extra copies of the symposium guidebook are available from the Cave Exploration Group of East Africa (P.O. Box 47363, Nairobi, Kenya).