

## SPELEOLOGICAL POTENTIAL OF KAMCHATKA OBLAST

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In September 1996 I spent 8 days in Kamchatka Oblast of Silberia, speaking at the institute of Volcanic Geology and Geochemistry in Petropavlovsk and participating in a field excursion to the 1740 and 1975 lava beds of Tolbachik volcano. By international standards, the caves of these flows are small. But recently it has appeared that variations in chemistry and gas content of pahoehoe basalts makes profound variations in their lava tube caves. Thus it is important to look at as many speleoliferous regions as possible. This trend continued at Tolbachik. Although the longest cave to date has only about 500 meters of passages in a straight line distance of 200 meters, it is unusual in several ways and contains a type of feature I have not seen before. This consists of wafer-thin, irregular rounded blades of grainy lava many inches in diameter hanging down in parallel rows along the axis of flow. Especially they are present in constricted areas downslope from spacious sections. I could not determine whether they are lava stalactites or eroded/ablated bedrock remnants. The cave's pattern is braided, with small tubular cutarounds at floor and ceiling level. The main corridor is up to 20 meters wide and 4 meters high, although most of it is much smaller. The cave is an important water source in a pseudokarst which is very arid in summer and autumn despite up to 20 feet of snow each winter. Section of its

arched ceiling are especially interesting because of innumerable little flattened tubes of lava, recurved or straight like tiny grey cigarettes evidently blasted upward by innumerable molten bubbles bursting in molten lava close below. The cave is believed to have been mapped three times: in 1975 by Yurii Slezin (now the Russian member of the IUS Commission on Volcanic Caves), in 1995 by a Japanese team headed by Takanori Ogawa, and a few days before our coming by a Swiss team led by Yvo Widmann. Only the 1975 map has been published to date. In the next year, fuller description will appear in several countries.

Several other caves are known in the 1740 and 1975 flows. The longest is about 60 meters long but some of these are of interest because they resemble boundary ridge caves on Kilauea volcano. Most of these flows have not been investigated for caves. The 1975 flow was studied very thoroughly during its emplacement and caves found here will be of special interest. The Swiss found several caves but they were only a few meters long. The lava is platy pahoehoe and does not appear especially promising for long caves. A pit cave with an 8m overhanging entrance located a few km farther north, near Gora Vsokaja (High Mountain) may be tectonic rather than rheogenic. It consists of a single chamber with extensive snow and ice accumulations. On the ridge south of Zvesd vent of the 1740 flows is a hornito with a possible side window. On Hualalai volcano, HI similar hornitos are atop open vertical volcanic conduits up to 50 meters deep. Older flows farther east contain at least one pit emitting warm air when the ambient temperature was about -25°C and a line of

sinks is present in a 1975 flow farther north. Much remains to be done in this wonderful volcanic area.

## CURRENT STATUS OF THE PUNA EMERGENCY ACCESS ROAD EMERGENCY

The final Environmental Assessment (negative Declaration), Puna Emergency Access Road was issued in May 1996. While it contains many inaccuracies and misstatements about lava tubes and lava tube caves, which reflect lack of knowledge by the preparers, these do not affect the provision for protection of the major caves originally threatened with segmental collapses. The Hawaii County Council has voted unanimously to proceed with the road project, but the Hawaiian Acres Community Association voted out its officers who were the primary advocates of the road. HACA now is proposing major modifications of the proposal. The Hawaii Speological Survey is continuing to monitor the situation.