The decline of the type locality of *Rebutia canigueralii*

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In April 1961 Father Juan Cañigueral, then the priest at the Recoleta in Sucre, collected the type of *Rebutia canigueralii*. The protologue stated: "Bolivia, Province of Oropeza, Department of Chuquisaca. Sucre, 2,800m. P. Juan Cañigueral. April 1961. No. 5554 (Type in Herbarium Cardenasianum)." The locality was later expanded to "Cerro Churuquella, above the Recoleta".

In December 1996 the author, in company with Martin Lowry, Tim Marshall and Ralph Tomlinson, climbed Cerro Churuquella from the south. We encountered numerous largish clumps of 10-15 cm in diameter among about 200 examples encountered. This was just before the rainy season (here, mainly January-April) but well after the flowering season, which is October.

The author again climbed the Cerro in March 1999, a month after emigrating to Bolivia. This time there were no largish clusters, and the plants were particularly difficult to find. It was decided to revisit the site during the main flowering period in order to investigate the condition of the "type locality". This was accomplished on 5th October 1999 in the company of Cárlos Cáseres Claros, the curator of the Museo de Historia Natural of the University San Francisco Xavier of Chuquisaca. We climbed from the north, finding nothing whatsoever on the north-facing slopes except *Eucalyptus*, which had been planted circa 1980. On the top, about 50 m past the small church, we encountered our first plants. We searched for over two hours and found nearly 100 plants, including two groups of smallish seedlings but no real Clusters like those found in 1996. Most of those plants were in full flower — we would have found very few if they had not been, as most were at least partly covered by leaf litter.

Figure 1. The skull of a barbecued goat contemplates a large cluster of *S. canigueralii*.

Last year I became aware that there was an annual pilgrimage to the top of the Cerro each Good Friday. We were aware of barbecues there in 1996 when we saw the remains of many fires and skulls and other bones. It was decided to investigate the "pilgrimage".

In October 2000, in the company of John Kaufman of San Francisco, the

Figure 2. *S. caniguerallii* with half-open flowers, surrounded by picnic trash

Cerro was again visited in the flowering season. John was more successful at spotting the plants than Cárlos had been. We found more than a hundred plants in much less time than the previous year, and many more of these were "on the top". Alas, again there were no large clusters, most just small ones of up to 3-10 heads.

On Good Friday of 2001 the author investigated the pilgrimage. The family left before me and was not encountered again until we were all back in the house. Before reaching the Recoleta at about 9 a.m. there was already a steady flow of people both to and from the Cerro. The path from the Recoleta to the small church at the top of the Cerro passes the "twelve stations of the cross", and the climbing groups stopped to pray at each station. The path was packed with pilgrims, and those descending had such difficulty in passing that they often descended via other routes than the proper pathway. On the top there was an amplified sermon from the church, and many tents, both for the people who had camped the night and the many vendors who served food and drink. The campers were responsible for the fires and barbecues and the major trampling of the site. The author made a cursory search of the area on top without finding a single plant.

The decline of the plants can be attributed to two main causes. These are 1) the mulch from the eucalyptus trees, whose peeling bark and leathery, oily leaves do not decompose easily in this dry environment, and 2) the pilgrims, who contribute much trampling and the burning of the bonfires. It is estimated that 10,000 people visit the Cerro each Good Friday.

The adjacent Cerro Sica-Sica does not have visiting pilgrims but does have *Eucalyptus*. It is subject to much less degradation of its cactus population, which is composed of the closely related *Sulcorebutia losenickyana*. Cerro Sica-Sica also has cacti on its north-facing slopes, namely *Rebutia fiebrigii*, as well as an echeveria and a napiform-rooted legume. Since the two cerros both have *Eucalyptus*, it seems logical that the major cause of the degradation is the camping and trampling of the pilgrims.

I estimate that today there are less than 500 plants on the whole of Cerro Churuquella and possibly only half that number.

Figure 1 is by John Kaufman, figure 2 by Martin Lowry.

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Originally published in C.& S.J. USA Vol. 73 2001, N°5 (p. 248-249)
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