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Cover picture: *Gymnocalycium valnicekianum*, Cerro Uritorco (photo: W. Papsch).

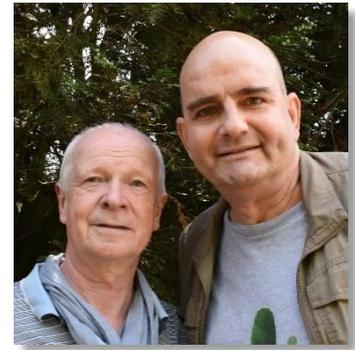
## Editorial

Dear *Gymnocalycium* friends

Report on

The international Gymno-Meeting on 29<sup>th</sup> and 30<sup>th</sup> April 2022 at Linz (Austria)

Wolfgang Greb & Ulf Marx



In the afternoon of April 29<sup>th</sup>, about 40 participants gathered in bright sunshine at the Botanical Garden in Linz for the 2<sup>nd</sup> International Meeting of the Association "Cactus Gymno Team International".

As early as in the afternoon numerous young and old plants changed hands and gave rise to extensive discussions. After a pleasant evening the conference was opened by Ulf Marx the next morning, who was pleased to welcome not only the speakers, but also the oldest field researcher present, Franz Strigl.



Introducing the conference topic, Wolfgang Papsch showed the numerous local and international guests from the Czech Republic, Germany and Italy Friedrich Ritter's meticulous diary notes dating back to the time between January 30 and February 2, 1957. He outlined Ritter's travel routes and located the exact type locality of his *Gymnocalycium glaucum*, which was the subject of controversial discussions in the past.

With the help of Franz Strigl and Hans Till's travel notes and the personal communication of Franz Strigl, the exact type locality of *Gymnocalycium schmidianum* was also detected. Furthermore, the first description of *G. schmidianum* subsp. *asperum* by Massimo Meregalli and Tomáš Kulhánek and the first description of *G. ferrarii* by Walter Rausch were used to document their type locality.

Furthermore, relevant quotes from literature, e.g., by Graham Charles or the confusing first description of *G. glaucum* subsp. *albertovojtechii* by Josef Halda and Ivan Milt were included in

the discussion. In addition, the type locality of *G. schmidianum* was discussed in more detail. The question of what Ritter found in Alpasinche was also briefly discussed.



Afterwards Tomáš Kulhánek presented *G. schmidianum* and *G. glaucum* in two lectures based on different site photographs and showed the exact distribution area. He explained the influence of soil conditions on the shape of the plants, the characteristic features of the two species from the different areas and compared the site photographs with the offspring from his collection.



After the lunch break Massimo Meregalli gave a detailed overview of the differences between the respective seeds on the basis of different testa surface photographs, which impressively showed the arrangement of the testa surface.

Peter Lechner repeatedly acted as a sovereign presenter and moderator between the lectures. It soon became clear that although *Gymnocalycium mucidum* was validly described by Hans Oehme in 1937, there is no plant reference in the provinces of Catamarca and La Rioja. *G. mucidum* would therefore be a nomen dubium and should no longer be used as a species name.

Bernhard Schweitzer provided pictures of his visits to the localities and also had brought some plants along for discussion and viewing.

Concluding the conference topic, Gert Neuhuber compared the species belonging to the conference topic and, on the basis of the seeds, pointed out recurring characteristics that can be assigned to individual species. According to him, *G. catamarcense*, *G. catamarcense* fa. *montanum* and *G. schmidianum* showed the same bend in the hilum, while in *G. catamarcense* fa. *belense*, *G. catamarcense* fa. *ensispinum* and *G. catamarcense* subsp. *acinacispinum* it was curved and in *G. catamarcense* subsp. *schmidianum* var. *asperum*, *G. glaucum*, *G. ambatoense* and *G. nigriareolatum* it was bent in the middle.

During the afternoon coffee break many conference participants took advantage of a guided tour through the Botanical Garden and thus also had access to the part of the cactus collection that is not open to the public.



Afterwards Karl Fickenscher analysed molecular biological relationship studies using *Sulcorebutia* and *Aylostera* as examples. He showed partly surprising results achieved by using DNA-analyses. Some criteria of the species definition had to be questioned or had to be determined partly anew. He emphasized that *Sulcorebutia* had colonized an area which they could no longer colonize today due to geological changes and geographical barriers. Although 175 *Sulcorebutia*s have been validly described so far, only a fraction are recognized in specialist literature by Willi Gertel or also Ladislav Horacek.

He also analysed the individual genera's relations of flower characteristics to each other. For non-professionals it became clear that the plants of the genus *Aylostera* can be easily distinguished from the naked flowers of the *Rebutia* by their hairy flowers, while the systematics of *Weingartia* (*Sulcorebutia*) will probably remain a Bolivian mystery for a long time. Massimo Meregalli completed the discussion with regard to the presented DNA studies.

After dinner Volker Schädlich introduced us to the often-neglected genus *Frailea*. He showed habitat pictures from his travels in Argentina, Bolivia, Paraguay and Mato Grosso do Sul in habitat and also pictures of cultivated plants. Amazing was the often tiny habitats, such as of *Frailea alexandri*, which was discovered by Alexander Arzberger.

The lecturer distinguished between frequently cleistogamous - rarely flowering - and few autogamous *Frailea*s. For species preservation and seed collection, the long-time field researcher repeatedly grafts his plants, which are often tricky to care for in cultivation. Especially the large-

seeded *Fraileas* always have to be sown soon, because their capability to germinate decreases rapidly. Besides numerous beautiful site photographs of *Frailea cataphracta*, *F. conceptionensis*, *F. friedrichii* and the rare *F. ignacioensis*, reference was, of course, made to the accompanying flora in the form of *Gymnocalycium anisitsii*, *G. angelae*, *G. eurypleurum* and *G. chiquitanum*.



The evening activities went on for a long time, the exchange of memories of common experiences and the sharing of cultural experiences also made time fly by.

We are looking forward to meet again and can already announce that on June 30<sup>th</sup> and July 1<sup>st</sup>, 2023, we will deal with the topic "*Gymnocalycium rhodantherum-guanchinense* sensu Frič ex Schütz und ex Till" in the Botanical Garden Linz.

All photos: Ulf Marx

We would like to express our warmest thanks to Mrs Iris Blanz (Austria) who supports us with the translation into English, to Mrs Larisa Zaitseva (Russia) for the translation into Russian, to Mr Victor Gapon (Russia) for the content corrections of the Russian edition, to Mr Takashi Shimada (Japan) for the translation into Japanese, to Mr Jiahui Lin (China) for the translation into Chinese, to Mr Václav Johanna (Czech Republic) for the translation into Czech and to Mr Daniel Schweich (France), who has mirrored our publications under <http://www.cactuspro.com/biblio/>.

## On the Way at Cerro Uritorco in the Argentinian Province Córdoba

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### ABSTRACT

This article presents a summary of my four journeys to the Argentinian Cerro Uritorco. In addition, photographs of the last common journey with Ludwig Bercht taken by Reiner Sperling and Volker Schädlich to Cerro Uritorco are shown. The focus is on cacti from the genus *Gymnocalycium*, though the fauna and flora of the whole region around Cerro Uritorco are also illustrated. All travel companions are given photographic credit and the village Capilla del Monte is introduced.

**KEYWORDS:** *Cactaceae*, *Gymnocalycium*, *andreae*, *bruchii*, *capillense*, *kulhanekii*, *monvillei*, *valnicekianum*, *quehlianum*.

### INTRODUCTION

Cerro Uritorco, which is situated east of the village Capilla del Monte, is the highest elevation in the north-western region of the Argentinian Province Córdoba. The north-western foothills of the Sierra Chica extend on the eastern side of Cerro Uritorco (fig. 1).



Fig. 1: Cerro Uritorco in 3D- perspective (map: M. Wick).

## Capilla del Monte

Capilla del Monte is a small town in the central Argentinian province Córdoba. A gist translation of the town's name is "chapel in the mountains". Capilla del Monte is a tourist destination with most of the tourists being Argentinians, originating from the big cities Córdoba, Buenos Aires or Rosario. The main tourist season is the midsummer month of January. In order to get away from the summer heat, people in search of a cooler climate go to Capilla del Monte, which is situated at an altitude of around 1,000 m above sea level. In January the entire town centre is closed to traffic and a wide range of attractions is presented, such as music and acting, but also culinary delicacies. Off-season the traffic squeezes through the main street (fig. 2-5). The main street is roofed over in the centre to protect tourists from rain and sun.



Fig. 2-5: Church of Capilla del Monte (2), a lot of traffic as well as hustle and bustle in the town (3-5). Photos 3-5: Maja Strub.

Social life mainly takes place in the evening. During daytime most shops and restaurants are closed. Dinner is usually not served until 9 p.m.

Among other things sweets are sold in the shops. Cerro Uritorco, the landmark mountain of Capilla del Monte, is omnipresent and is merchandised intensively. Souvenirs, watches, clothes as well as food and drinks are on offer. Beer can be obtained in the handy quantity of one litre (fig. 6-11).



Fig. 6-11: Shopping and drinking (Photos: Maja Strub).

Mostly the main streets are tarmac streets in Argentina, the side streets are predominantly dirt roads. Road works on dirt roads remind a little of playing in a sandpit (fig. 12). The centre of Capilla del Monte is very neat. However, a short distance away from the centre the living quarters become simpler and the cars older (fig. 13).



Fig. 12-13: In the outskirts of Capilla del Monte.

Within the tourist season there are many cultural events, among others horse parades with gauchos and marching through Capilla del Monte. Before the parade they assemble in the nearby park of the town (fig. 14-17).



Fig. 14-17: Gauchos assemble for the parade (photos: Horst Kallenowsky).

## Cerro Uritorco

Cerro Uritorco is attributed with special powers, especially by mystics. Thus, they invoked an ascent of the mountain on December 21<sup>st</sup>, 2012, because a cycle of the Maya calendar ended on that day and allegedly the end of the world would be impending. Respective online articles fuelled the flames so that finally 15,000 people wanted to climb the mountain. Yet, the Argentinian government had the access to the mountain fenced off so as to prevent possible fatal rituals (source: Focus-Online, December 18<sup>th</sup>, 2012). This event in connection with the alien cult is still good business in the shops of Capilla del Monte (fig. 18-19).



Fig. 18-19: This is how aliens and UFOs are merchandised.

Capilla del Monte is also a retreat area of social dropouts of all stripes. They offer their hand-made souvenirs to tourists everywhere in the streets. Additionally, the town is blasted with the rhythmic sound of their bongos all night long.

For geologists Cerro Uritorco is less spectacular. The mountain is a monolith – a single rock consisting merely of granite. The meaning of “Uritorco” in indigenous language is “macho”, and this mountain is really very striking and visible from afar (fig. 20-21, 23).



Fig. 20: Cerro Uritorco. The road sign “Carlos Sigel” refers to the namesake of *G. sigelianum* (a form of *G. capillense*).



Fig. 21: Cerro Uritorco, view from water reservoir *Dique El Cajón* (photo: Reiner Sperling).

A rampant path leads up Cerro Uritorco. It can easily be recognized by means of the white line (fig. 22). The vertical height between its foot and the top is about 1,000 metres.

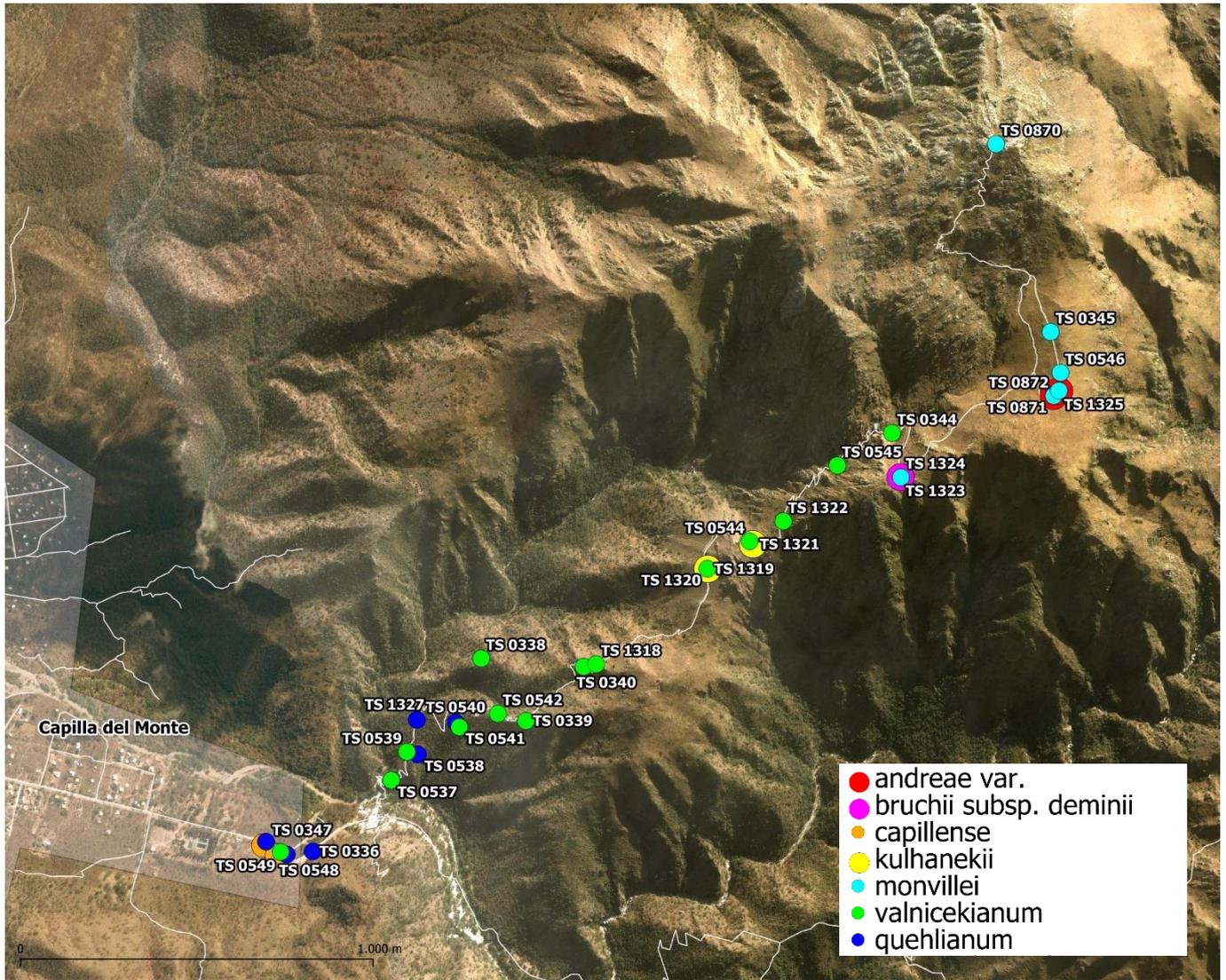


Fig. 22: Cerro Uritorco and localities of *Gymnocalycium* (map: M. Wick).

Seven different *Gymnocalycium* species from three subgenera can be found in the Cerro Uritorco region. These are *G. andreae* var., *G. bruchii* subsp. *deminii*, *G. capillense* and *G. kulhanekii* from the subgenus *Gymnocalycium*. *G. monvillei* as well as *G. valnicekianum* belong to the subgenus *Scabrosemineum* and *G. quehlianum* to the subgenus *Trichomosemineum*. I have rarely been able to find such an accumulation of *Gymnocalycium* species in nature.

The climate of this region is warm and moderate in the six summer months. The mercury column regularly climbs to temperatures between 30 and 40 degrees Celsius. It sometimes gets very sultry, followed by heavy thunderstorms and a drop in temperatures to around 10 degrees Celsius. This knowledge is important for cultivating cacti from this area, which means, do not water for a longer period, but then water them heavily.

Just like in our Swiss mountains weather conditions can change quickly in the Sierra Chica. There is often only little time between sunny weather and heavy thunderstorms. Then Cerro Uritorco can hardly be made out from the position of Capilla del Monte (fig. 24).



Fig. 23: Cerro Uritorco in sunset light during an upcoming thunderstorm.



Fig. 24: Cerro Uritorco, one hour later during a heavy thunderstorm.

### Lowlands ahead of Cerro Uritorco

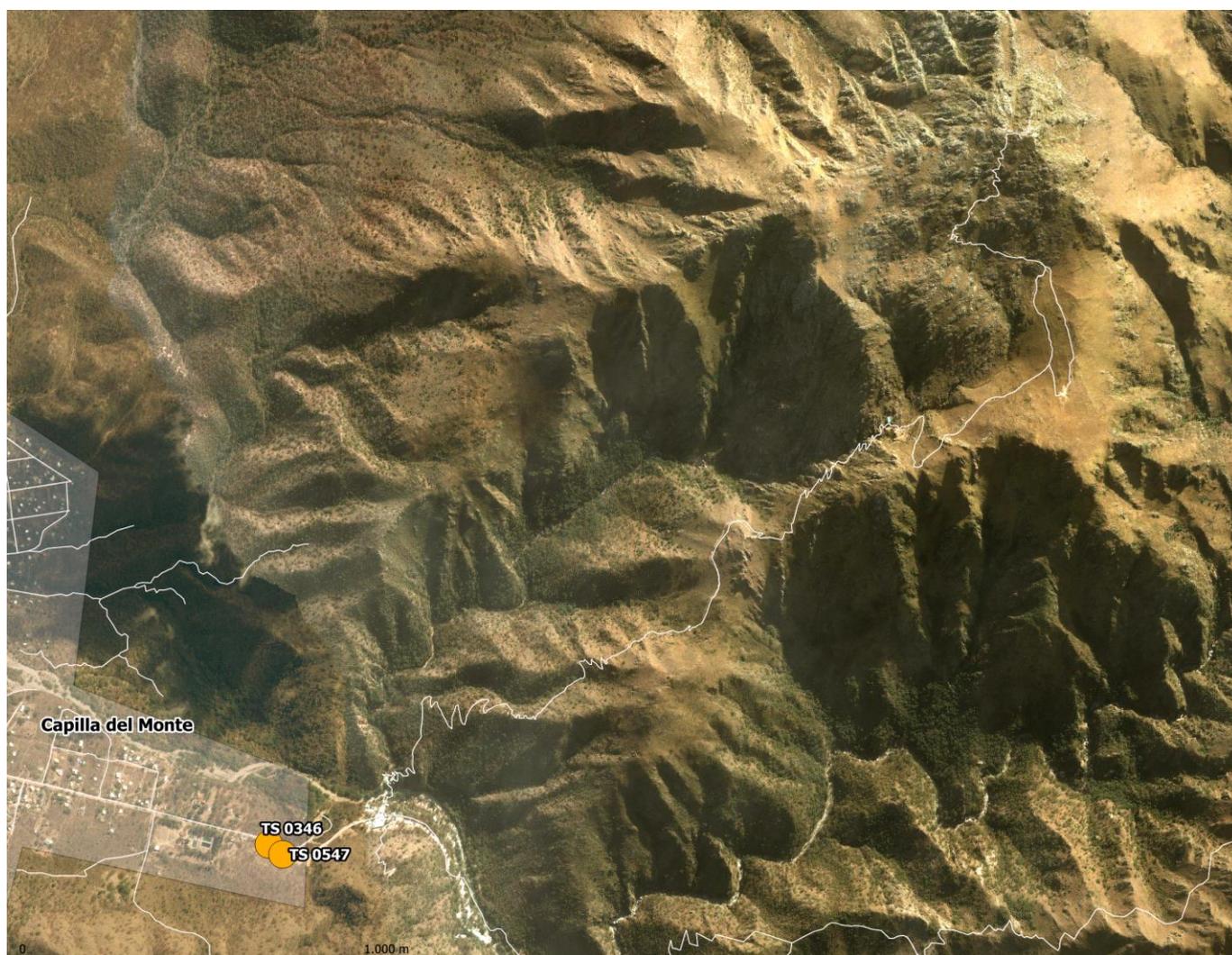


Fig. 25: Lowlands ahead of Cerro Uritorco, localities of *G. capillense* (map: Mario Wick).

A dirt road leads from the eastern outskirts of the town Capilla del Monte to Cerro Uritorco visitor centre (fig. 26). This dirt road is lined with trees which are grown over by tillandsia (fig. 27). *G. capillense* and *G. quehlianum* grow in the shadow of the brushwood.



Fig. 26: Dirt road to the visitor centre of Cerro Uritorco. *G. capillense* grows along the roads in the shadow of brushwood.



Fig. 27: *Tillandsia spec.*

### ***Gymnocalycium capillense***

*G. capillense* belongs to the subgenus *Gymnocalycium* (*Ovatisemineum* Schütz). This species grows in sandy mineral soil. Even relatively young individuals of this species start sprouting and form large groups at older age. The body of the plant is spherical to flat spherical, with a bluish green epidermis. The flowering period extends from late spring to midsummer (fig. 28-31). After starting the ascent to Cerro Uritorco we could not find this species anymore.



Fig. 28: TS 547 *G. capillense*, base of Cerro Uritorco, 1,060 meters a.s.l.



Fig. 29: TS 346 *G. capillense*, base of Cerro Uritorco, 1,079 metres a.s.l.



Fig. 30-31: TS 346 *G. capillense*, base of Cerro Uritorco, 1,079 metres a.s.l.

## Visitor Centre Cerro Uritorco

The Cerro Uritorco Visitor Centre is situated at the foot of the mountain. A suspension bridge takes the visitors to the entrance. The Argentinians are no hikers, public footpaths, as we know them in Central Europe, do not exist. The few existing mountain paths that are serviced are private property. Predominantly young people of extremely diverse fitness levels climb Cerro Uritorco and their hiking equipment is often insufficient, just like appropriate footgear. In order to prevent legal problems most visitors of Cerro Uritorco must be made acquainted with the basic rules of hiking. Personal data must be deposited at the entrance and pre-existing illnesses are also inquired about. In addition, there is a check if people take enough water along. In the evening, they verify whether all hikers have returned (fig. 32-37).



Fig. 32: Visitor Centre Cerro Uritorco.



Fig. 33: The way is well-provided with road signs.



Fig. 34: Mario Wick is quite confident.



Fig. 35: Suspension bridge to the visitor centre.



Fig. 36: Personal data must be deposited.



Fig. 37: The visitors are mainly young people.

The path to Cerro Uritorco takes hikers across a conservation area, which is private property and thus fenced in. During the midsummer season masses of hikers ascend the mountain. They must strictly keep to the paths. This is supervised by different methods, such as helicopters. Patrols,

too, make sure that rules are stuck to, respectively that no hiker is in distress on the mountain. The visitor centre is situated at an altitude of 1,000 metres a.s.l. The path up Cerro Uritorco, whose summit is at 1,979 metres, starts at the visitor centre. The distance amounts to around 5.5 kilometres, the estimated time required is three to four hours on foot.

The path is divided into seven stagepoints resp. positions with euphonic names:

- Stagepoint 1: *Mirador del Caminante*, 1,137 metres a.s.l.
- Stagepoint 2: *Posta del Silencio*, 1,216 metres a.s.l.
- Stagepoint 3: *Hondonada del Buey*, 1,317 metres a.s.l.
- Stagepoint 4: *Quebrada del Viento*, 1,450 metres a.s.l.
- Stagepoint 5: *Valle de Espiritus*, 1,570 metres a.s.l.
- Stagepoint 6: *Pampilla*, 1,680 metres a.s.l.
- Stagepoint 7: *Cerro Macho Uritorco* (summit) 1,979 metres a.s.l.

## Low-lying areas of Cerro Uritorco

### *Gymnocalycium quehlianum*

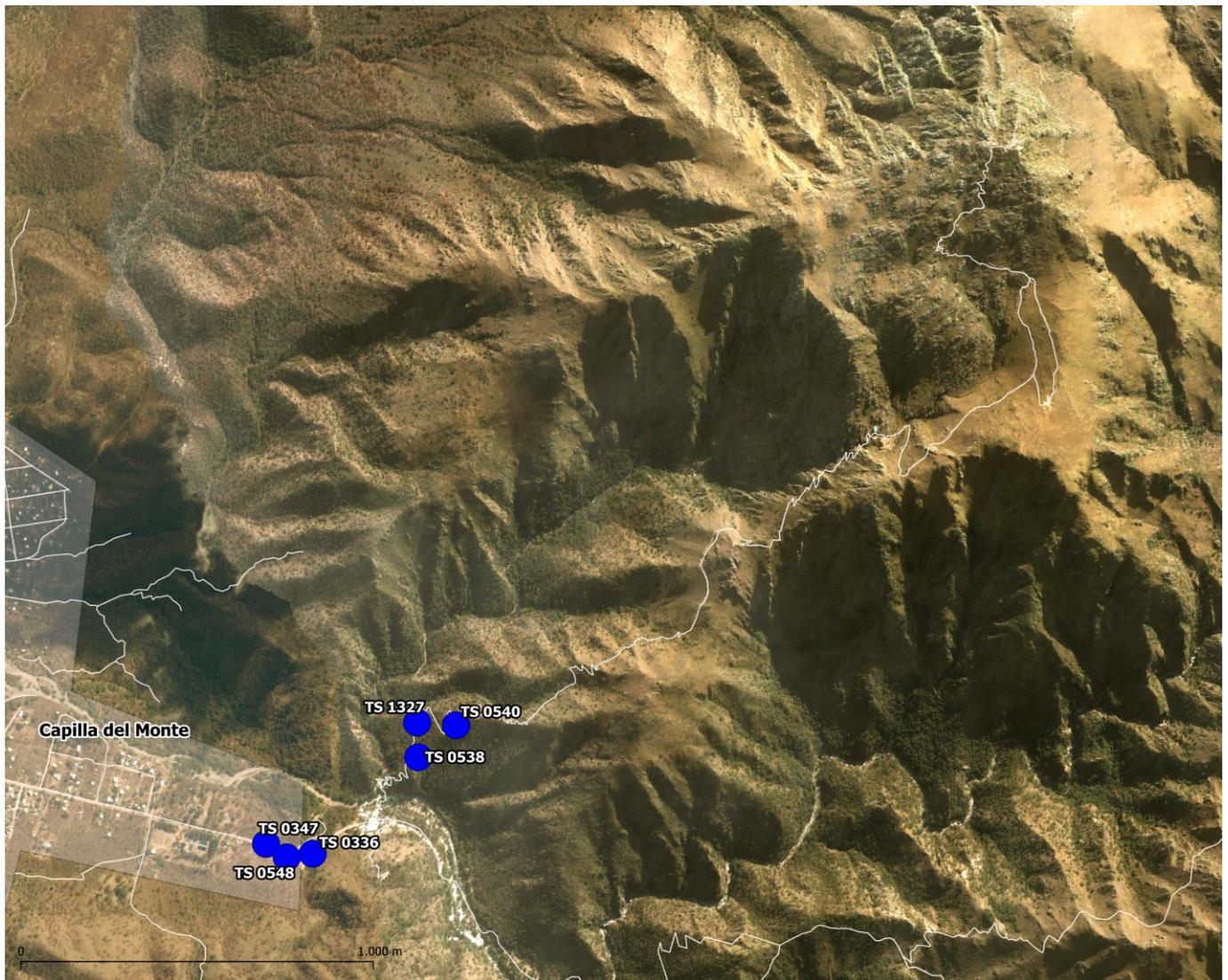


Fig. 38: Cerro Uritorco, localities of *G. quehlianum* (map: M. Wick).

*Gymnocalycium quehlianum* from the subgenus *Trichomosemineum* grows on the plain and in the low-lying regions of Cerro Uritorco between around 1,050 and 1,100 metres a.s.l.

The plant's body is flat spherical, the epidermis greyish to brownish green.

*G. quehlianum* often populates cracks in rocks and is thus protected from abundantly growing accompanying vegetation. It also grows in recesses between rocks filled with mineral-containing humid soil. This species, too, mostly grows in the shadow of bushes, the more shade, the less developed its spination. I rarely came across older individuals of *G. quehlianum* (fig. 39-40).



Fig. 39-40: TS 336 *Gymnocalycium quehlianum*, base of Cerro Uritorco, 1,077 metres a.s.l..



Fig. 41: TS 347 *G. quehlianum*, base of Cerro Uritorco, 1,079 metres a.s.l.

Fig. 42: TS 548 *G. quehlianum*, base of Cerro Uritorco, 1,060 metres a.s.l.



Fig. 43-44: TS 538 *Gymnocalycium quehlianum*, low-lying areas of Cerro Uritorco, 1,103 metres a.s.l.

Part of the accompanying vegetation is *Bromelia spec.* (fig. 45-46).



Fig. 45-46: *Bromelia spec.*, low-lying areas of Cerro Uritorco.

### Low-lying and middle altitudes of Cerro Uritorco.

#### *Gymnocalycium valnicekianum*.

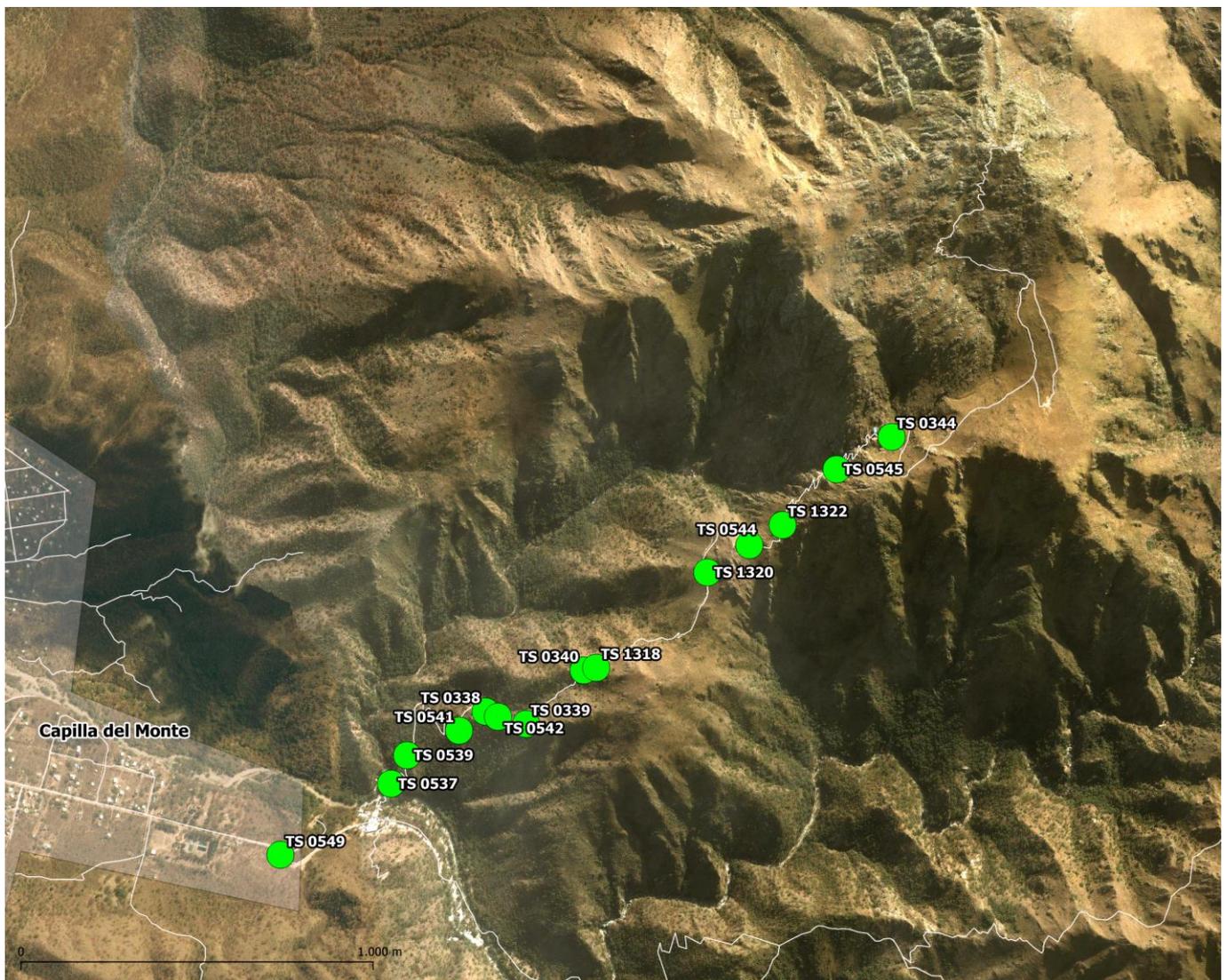


Fig. 47: Low-lying and middle altitudes of Cerro Uritorco, localities of *G. valnicekianum* (map: M. Wick).

This species belongs to the *G. mostii*-group within the sugenus *Scabrosemineum*. Various names are used, among others *G. mostii* var. *valnicekianum* or *G. immemorum*. *G. valnicekianum* grows sporadically on the plain and to an increasing degree at low-lying to middle altitudes of the

ascent to Cerro Uritorco. It occurs between 1,100 and 1,600 metres above sea level. At higher altitudes we found only *G. monvillei* from the subgenus *Scabrosemineum*. The body of *G. valnicekianum* is spherical, becoming cylindrical with older individuals. With progressing age remarkable sizes can be reached (fig. 48). In exceptional cases they fall over due to their own weight, so that the fibre root becomes visible (fig. 52).



Fig. 48: TS 337 *G. valnicekianum*, Cerro Uritorco, 1,084 metres a.s.l.



Fig. 49: TS 542 *G. valnicekianum*, Cerro Uritorco, 1,237 metres a.s.l.



Fig. 50-51: TS 541 *G. valnicekianum*, Cerro Uritorco, 1,175 metres a s.l.



Fig. 52-53: TS 344 *G. valnicekianum*, Cerro Uritorco, 1,595 metres a.s.l.

One of *G. valnicekianum*'s typical features is its strong spination, consisting of several marginal and at least one central spine. *G. valnicekianum* already forms fruits in early summer. As with all representatives of the subgenus *Scabrosemineum* the seed capsule contains numerous small grains of seeds (fig. 50).

The intermediate stage point, *Mirador del Caminante*, is situated at 1,137 metres above sea level. From here it is “just” about 850 metres of altitude difference to be tackled to reach the summit. Although Ludwig Bercht was already visibly strained at this point, he still managed to get much farther uphill. It becomes clear from his clothes that temperatures can be low, even in the midsummer month of January (fig. 54).



Fig. 54: 1<sup>st</sup> stagepoint – *Mirador del Caminante*, 1,137 metres a.s.l. (photo: Reiner Sperling).



Fig. 55: View of Capilla del Monte.



Fig. 56: *Tillandsia spec.* growing in soil.



Fig. 57: *Commelina erecta* (photo: Reiner Sperling).

On the lower part of the ascend to Cerro Uritorco the brushwood, mostly acacia, still grows relatively high (fig. 55). It is interesting to note that we found a *Tillandsia* growing in soil (fig 56). *Commelina erecta* is often among the accompanying vegetation of cacti and is thus an indicator plant, as it were (fig. 57).



Fig. 58: Wasp's nest (photo: Reiner Sperling).



Fig. 59: Photographic detail of a wasp.

On the plain ahead of Cerro Uritorco and in the low-lying regions *Trichocereus candicans* occurs as an accompanying plant of *G. quehlianum* and *G. valnicekianum* (fig. 60-61).



Fig. 60: TS 549c *Trichocereus candicans*, Cerro Uritorco, 1,077 metres a.s.l.



Fig. 61: TS 339c *Trichocereus candicans*, Cerro Uritorco, 1,211 metres a.s.l.

We came across numerous insects such as locusts, beetles, butterflies and wild bees, but also wasps with a beautiful pattern (fig. 58-59).

### Intermediate regions of Cerro Uritorco.

Hikers usually carry a backpack, but Horst Kallenowski is an exception. He wants to take the load off his back and therefore carries a piece of luggage in each hand. We held the opinion that these would be a sort of deformation zone to protect him in case of a tumble. Thus, he got the nickname “airbag Horst”. Capilla del Monte, the water reservoir *Dique El Cajón* and the mountain range *San Marcos Sierras* can be seen in the background.

Horst unbelievably regards the sign of stage point 3 (fig. 62), which is at an altitude of 1,317 metres a.s.l. “Merely” a distance of 3.8 km for about 700 vertical metres and two hours walking time to the summit (fig. 63).



Fig. 62: Horst Kallenowski.



Fig. 63: Stagepoint 3 at 1.317 metres a.s.l.

The path is steep and cumbersome and Cerro Uritorco’s summit is still far away. The higher up we get on the path, the less dense the vegetation becomes, and the shrubs get stockier (fig. 64-65).



Fig. 64: Cerro Uritorco (background left).



Fig. 65: the shrubs get stockier.

Flowering plants are always something to look at and a welcome change to the prickly fellows (fig. 66-67).



Fig. 66-67: Accompanying flora.

### ***Gymnocalycium kulhanekii***

The localities of *G. kulhanekii* from the subgenus *Gymnocalycium* (*Ovatisemineum*, Schütz) are situated in the middle region of Cerro Uritorco near stagepoint four - *Quebrada del Viento* (fig. 72). A wonderful view over the Sierra Chica opens in eastern direction from the type locality of *G. kulhanekii* (fig. 68).



Fig. 68: View from *G. kulhanekii*'s type locality over the Sierra Chica.



Fig. 69: Type locality of *G. kulhanekii*.

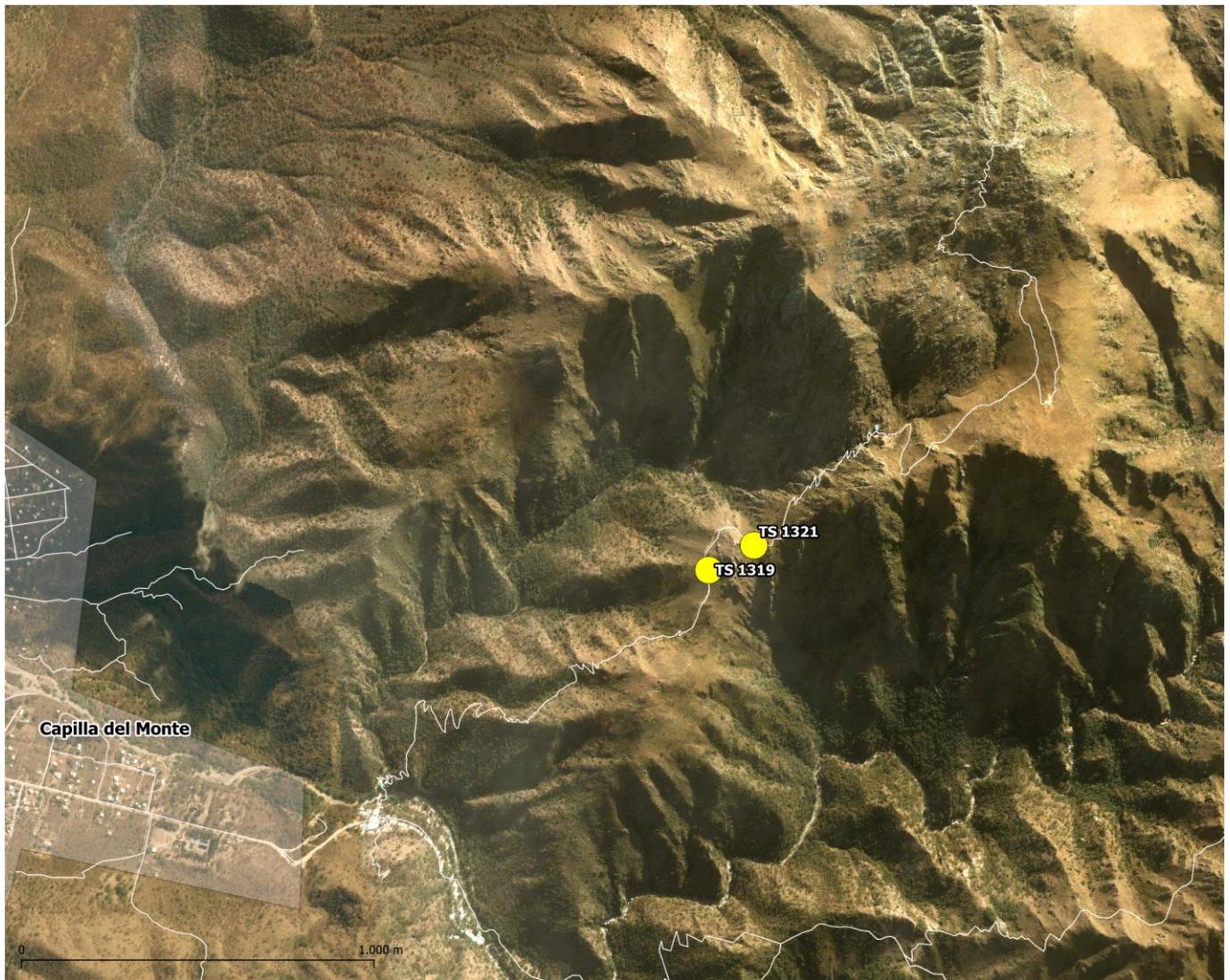


Fig. 70: Cerro Uritorco, localities of *G. kulhanekii* (map: Mario Wick).

The plants often grow in dense grass. The first individual could only be recognized owing to its flower. After having discovered the first plant we were able to find some more of them. Many plants populate small depressions with quartz inclusions. The cracks in the rock are partly tiny.

When the plants are exposed to the sun the spines become very pronounced. Their flower colour is magenta to rose-coloured magenta. The epidermis is greyish green to bluish green. Some plants differ in body colour, which might be ascribed to environmental impacts or nutritional conditions. The spines are less pronounced when the plants grow in the shade (fig. 71-76). We could discover only few seedlings of *G. kulhanekii* (fig. 77).



Fig. 71-72: TS 342 *G. kulhanekii*, Cerro Uritorco, 1,457 metres a.s.l.



Fig. 73: TS 543 *G. kulhanekii*, Cerro Uritorco, 1,451 metres a.s.l.

Fig. 74: TS 1321 *G. kulhanekii*, Cerro Uritorco, 1,461 metres a.s.l.

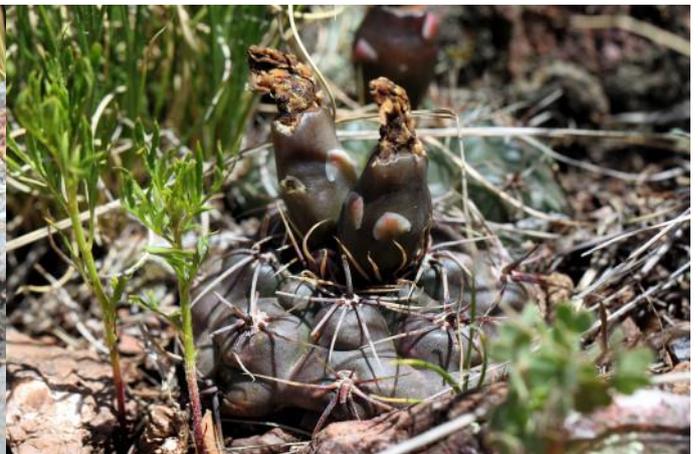


Fig. 75-76: TS 869 *G. kulhanekii*, Cerro Uritorco, 1,451 metres a.s.l.



Fig. 77: TS 1319 *G. kulhanekii*, Cerro Uritorco, 1,417 metres a.s.l.

At lower and middle altitudes of Cerro Uritorco, *Lobivia aurea* occurs sporadically as a companion plant to *G. quehlianum*, *G. valnicekianum*, and *G. kulhanekii*. Flowering plants are often visited by wild bees or beetles. When old, *Lobivia aurea* grows cylindrically (fig. 78-81).



Fig. 78-79: TS 339a *Lobivia aurea*, Cerro Uritorco, 1,211 metres a.s.l.



Fig. 80: TS 343a *Lobivia aurea*, Cerro Uritorco, 1,457 metres a.s.l.

Fig. 81: TS 343a *Lobivia aurea*, Cerro Uritorco, 1,457 metres a.s.l.

The path across the intermediate regions of Cerro Uritorco takes hikers along precipitous flanks of hill. Ahead of the high plateau *Valle de Espiritus* a “natural bathtub” provides cooling-down (fig. 82-83).



Fig. 82: The path takes us along precipitous hill flanks.



Fig. 83: A natural “bathtub”.

Stopover 5, *Valle de Espiritus*, is situated on a high plateau 1,570 metres above sea level. Ludwig Bercht could make it to this point. He waves good-bye to Reiner Sperling and Volker Schädlich (fig. 84-87).

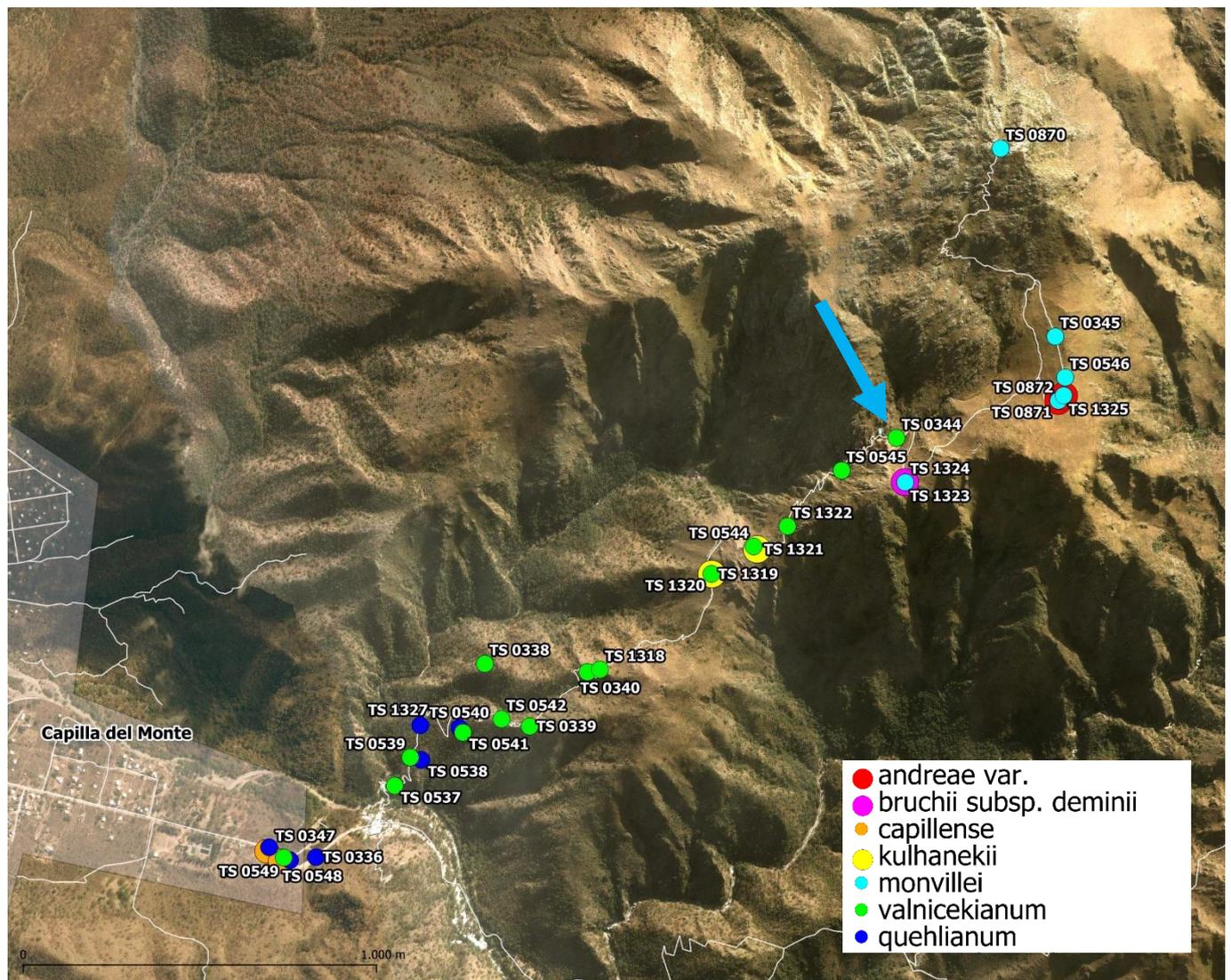


Fig. 84: Stagepoint 5, *Valle de Espiritus* (map: Mario Wick).



Fig. 85: *Valle de Espiritus*



Fig. 86: View over *Valle de Espiritus*.



Fig. 87: Ludwig made it to this point! He waves good-bye (photo: R. Sperling).

In midsummer the plateau is used at this stage point for a refreshment break by many hikers. Many birds already expect getting treats like breadcrumbs from hikers.

The rufous-collared sparrow (*Zonotrichia capensis*) is a sparrow species which we have come across during any of our visits to Cerro Uritorco (fig. 88-89). We could also observe further sparrows (fig. 90-91).



Fig. 88: Male of rufous-collared sparrow (*Zonotrichia capensis*).



Fig. 89: Female of rufous-collared sparrow (*Zonotrichia capensis*).



Fig. 90: Another species of sparrow (photo: Reiner Sperling).



Fig. 91: And another “sperling“ (sparrow). Reiner on the first day of his first journey to South America. Does he nibble on a bromeliad?



Fig. 92-93: We also spotted blackbirds (photos: Horst Kallenowsky).

Beginning at *Valle de Espiritus* the vegetation changes from shrubs to predominantly open grassland interspersed with rocks. The quality of the path deteriorates, and the actual path can hardly be distinguished from the multitude of dirt tracks. We met a mountain guide who led a group of ladies to the summit. Their level of fitness was extremely varied, and the guide had to use all his powers of persuasion to make them continue. Horst led the troop of fitter ones; the guide was the rear guard.



Fig. 94: The vegetation becomes sparse and the path deteriorates.



Fig. 95: Ladies hiking group with Horst.

***Gymnocalycium bruchii* subsp. *deminii***

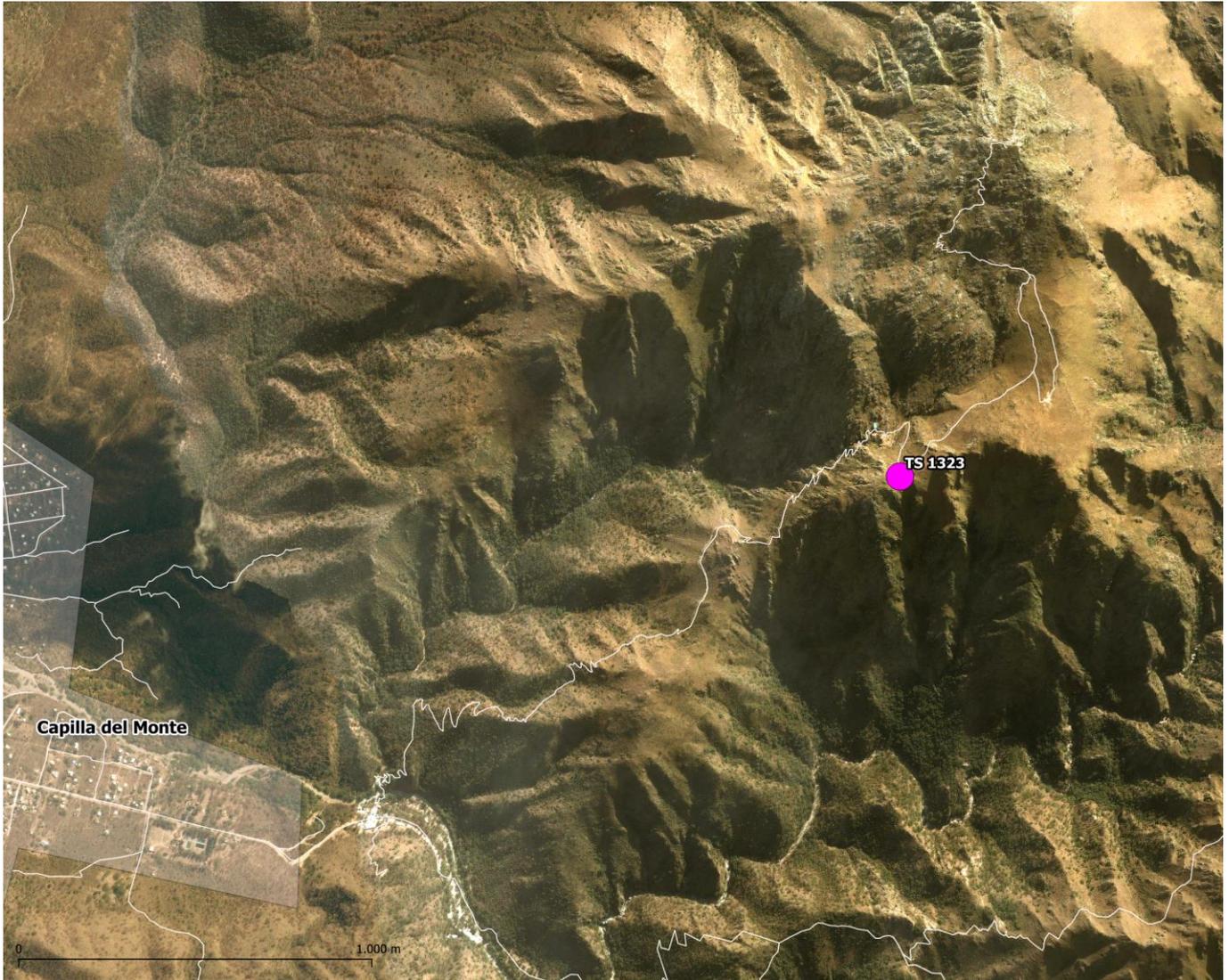


Fig. 96: Cerro Uritorco, locality of *G. bruchii* subsp. *deminii* (map: Mario Wick).

*G. bruchii* subsp. *deminii* is another representative of the subgenus *Gymnocalycium* (*Ovatisemineum*, Schütz). We found the plants between 1,600 and 1,650 metres a.s.l. (fig. 96).



Fig. 97: Locality of *G. bruchii* subsp. *deminii*.

They form cushions and are typically early bloomers, like all *G. bruchii* representatives. The flowers, however, are yellowish instead of white rose-coloured, as is the case with most of the *G. bruchii* individuals. The plants grow in high grass and thus are not easy to discover. They preferably grow in small depressions which form between rocks and where mineral-containing

humous soil accumulates. They populate extremely tiny habitats, mostly in small, flat places. We could not discover them on slopes (fig. 98-101). The plant's body is flat spherical, the epidermis greyish green.



Fig. 98-101: TS 1323 *G. bruchii* subsp. *deminii*, Cerro Uritorco, 1,632 metres a.s.l.

### Higher reaches of Cerro Uritorco.

Stagepost 6, *Pampilla*, is situated on a wide plateau at 1,680 metres a.s.l., a short way ahead of the final, very steep ascend to the summit. Starting from this point it takes one more hour of hiking for 200 metres of altitude difference (fig. 102-104).



Fig. 102-103: *Pampilla* is an intermediate plateau.

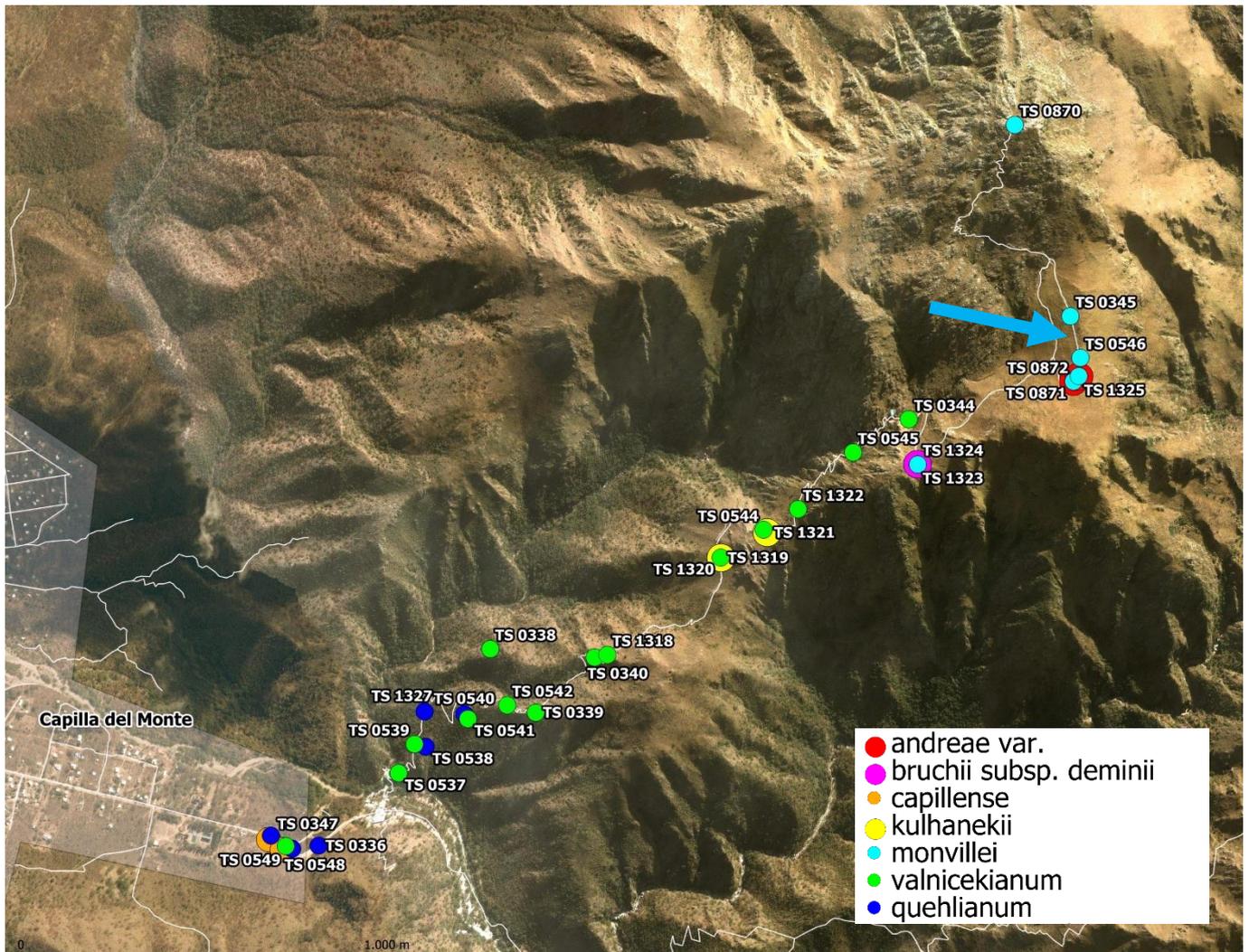


Fig. 104: Stagepost 6, *Pampilla* (map: Mario Wick).

Like in the Sierra Chica, which is situated opposite towards the east, the typical vegetation consists mainly of grasses and scattered low brushwood (fig. 105-106). Horses are responsible for the area not being overgrown with bushes. They are curious, not shy and are pleased with a welcome change (fig. 103).



Fig. 105-106: *Pampilla* is an intermediate plateau, just before the steep ascent to the summit.



Fig. 107: Surprisingly, we could find a *Notocactus submammulosus* at an altitude of 1,600 metres.

In the upper elevations of Cerro Uritorco we could find a variety of flowering plants. They grow on the one hand between the rocks and stones, on the other hand on small meadow areas. Verbenas are common, forming pretty red splashes of colour. Thistles are also widespread. In addition, we repeatedly encountered a sunflower species (*Helianthus spec.*) (figs. 108-113). Malva, passionflower, and bindweed attract pollinators with their colourful flowers (figs. 114-117).



Fig. 108-111: Flowerage (photo bottom right: Reiner Sperling).



Fig. 112-113: Flowerage of a thistle (photo right: Reiner Sperling).



Fig. 114-115: Mallow species (photo: Reiner Sperling).



Fig. 116: Passion flower (photo: R. Sperling).

Fig. 117: Bindweed species (photo: R. Sperling).

***Gymnocalycium andreae***

Fig. 118: Cerro Uritorco, localities of *G. andreae* (map: Mario Wick).

On the high plateau of *La Pampilla* there also grows *Gymnocalycium andreae*, next to *G. monvillei* (fig. 118). We discovered them at an altitude between 1,600 and 1,700 metres a.s.l. These species could be found no longer in the summit regions. Owing to its flower these plants can be recognized easily (fig. 119-120). Without its flower we could discover this species only after searching for a long time. It grows in small strips of rock and is virtually overgrown with grass (fig. 121-122). The body of the plant is flat spherical, the epidermis is dark green. The plants start sprouting at advanced age.



Fig. 119-120: TS 871 *G. andreae* var., Cerro Uritorco, 1,748 metres a.s.l.



Fig. 121-122: TS 1325 *G. andreae* var., Cerro Uritorco, 1,739 metres a.s.l.

### *Gymnocalycium monvillei*



Fig. 123: Cerro Uritorco, localities of *G. monvillei* (map: Mario Wick).

*G. monvillei* grows in large numbers in the higher regions of Cerro Uritorco. We could find it from about 1,600 metres upwards as far as the summit (fig. 123). The plants can easily be found in exposed sites. They mostly grow between cragged rocks and are often completely exposed to sunlight. When overgrown with grass they can only be recognised by their flowers. The colour of the flower varies from purely white to pale rose-coloured or even intensive rose-coloured. Pollinators are wild bees. The plant's body is flat spherical, the epidermis is medium green. The plants start to sprout at advanced age (fig. 124-131).



Fig. 124-125: TS 546 *G. monvillei*, Cerro Uritorco, 1,749 metres a.s.l.



Fig. 126-129: TS 345 *G. monvillei*, Cerro Uritorco, 1,759 metres a.s.l.



Fig. 130: TS 872 *G. monvillei*, Cerro Uritorco, 1,748 metres a.s.l.

Fig. 131: TS 870 *G. monvillei*, Cerro Uritorco, 1,931 metres a.s.l., close to the summit.

### Summit region of Cerro Uritorco.

The 1,979 meters high summit can be accessed via a steep slope with several switchbacks. Over a distance of less than one kilometre an altitude difference of 300 metres has to be overcome (fig. 132-133). A fantastic view in the direction of the Sierras Grandes and the Sierras Chicas emerges after reaching the summit (fig. 134-135).

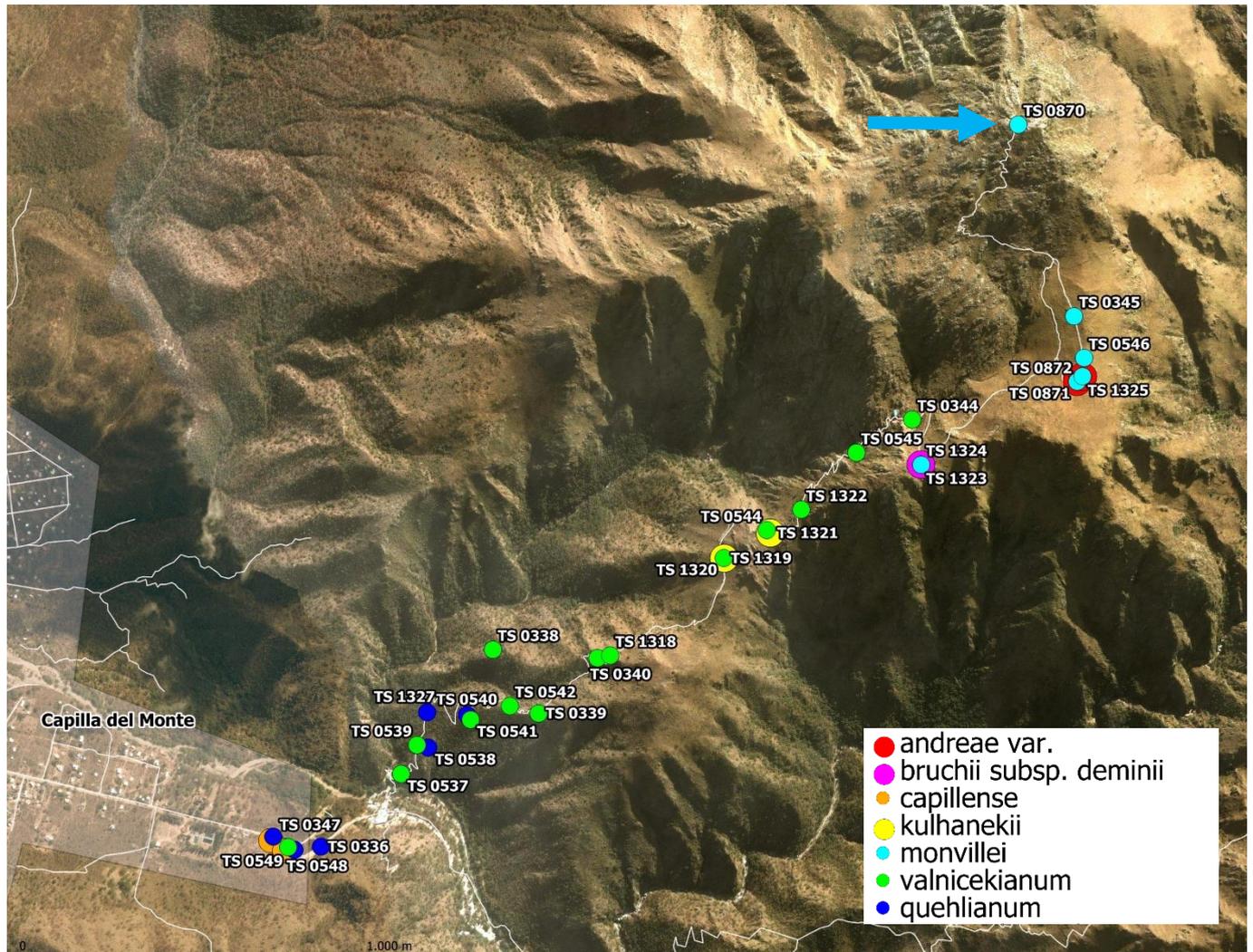


Fig. 132: Summit region of Cerro Uritorco (map: Mario Wick).



Fig. 133: Summit Cerro Uritorco.

Fig.134: The summit cross.



Fig. 135: View in the direction of the Sierra Chica.



Fig. 136: A mythical creature (photo: R. Sperling).

We ourselves could not catch sight of any aliens or UFOs. Reiner could at least discover a mythical creature adoring the sun (fig. 136).

### Descent from Cerro Uritorco

From the summit down to the visitor centre we had to cover again an altitude difference of 1,000 metres over a distance of merely 5.5 kilometres. The estimated hiking time was put at three hours. We had to hurry as the entrance to Cerro Uritorco would be closed at 5 o'clock p.m.

A little nap during his descent enabled Horst Kallenowsky to regain his strength (fig. 137). Maja Strub, too, got it over and done with and suffered from the heat and strain even in the shade after the descent from Cerro Uritorco (fig. 138).



Fig. 137: Horst did it and he is dead beat.



Fig. 138: Searching for shade after successful descent.

In rainy weather the descent is especially difficult. In 2013 we were taken unawares by a thunderstorm, stones and rocks on the path became dangerously slippery.

## The night after the hike

After the hike we indulged ourselves. We had to replace the burnt calories as well as the lost liquid. We reminisced the day over hot discussions and cold beer. The two “migratory goats” Reiner Sperling and Volker Schädlich were soon well again.



Fig. 139: Hot discussions over a glass of cold beer (photo: Mario Wick).



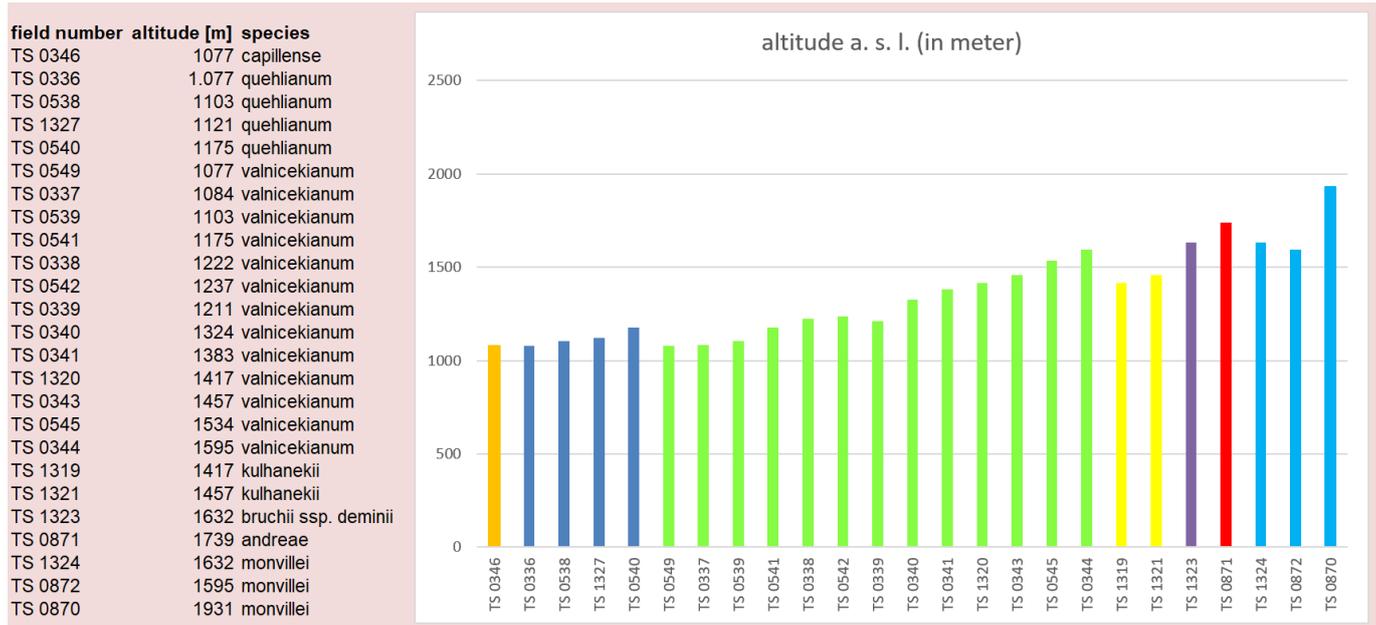
Fig. 140: Management of calorie intake (Photo: Reiner Sperling).



Fig. 141: Mario Wick suffering (photo: Reiner Sperling).

I had already recovered well, not least thanks to the fact that I had not climbed as far as the summit. After this drudgery Mario Wick mutated into an “almost alien” (fig. 141). Still, he made it to the summit and returned safe and sound despite a thunderstorm.

## Summary – Altitude comparison of *Gymnocalycium* species.



The horizontal axis shows my field numbers with the *Gymnocalycium* species highlighted in different colours. The altitude metres are represented on the vertical axis.

- *G. capillense* grows on the plain in front of Cerro Uritorco between around 1,000-1,100 metres a.s.l. We found *G. quehlianum* on the plain and in lower areas of Cerro Uritorco (1,000-1,200 metres a.s.l.).
- *G. valnicekianum* occurs on the plain and in low as well as intermediate areas (1,000-1,600 metres a.s.l.).
- We found *G. kulhanekii* (1,400-1,500 metres a.s.l.), *G. bruchii* subsp. *deminii* (1,600-1,650 metres a.s.l.) and *G. andreae* (1,700-1,800 metres a.s.l.) at the intermediate sites.
- *G. monvillei* grows from intermediate areas up to the summit (1,600-1,950 metres a.s.l.).

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