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Cover picture: *Gymnocalycium kulhanekii* WP 04-442/859, seedling (photo: T. Kulhánek)

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## Editorial

### Dear *Gymnocalycium* enthusiasts



#### 10<sup>th</sup> Italian Gymno-Day - Carmagnola (Turin, Italy)

##### Massimo Meregalli

The 10<sup>th</sup> Italian Gymno-Day was held in Carmagnola between Friday 29 and Sunday 31 July, 2016. During the first day the participants visited Milena Audisio's nursery and saw the plants and Massimo Meregalli's collection.

In the evening, the meeting point was held, in Casalgrasso, at the Restaurant Due Citroni. There we could admire the interesting presentation by Tomáš Kulhánek, who showed us the highlights of his trips to Argentina. Many nice localities were seen, with special emphasis on some plants that are now under study and may represent new taxa, as well as habitat photographs of the recently described *G. pinalii*. After the presentation, a very good meal of the Restaurant was waiting for us.

On Saturday morning we started the workshop regarding the correct interpretation of two names proposed by Carlos Spegazzini in 1905, *Echinocactus platensis* var. *parvulus* and var. *leptanthus*. This had already been partly discussed in 2015, but we needed more information and more studies to complete the research.

Wolfgang Papsch, as usual, presented us a survey on the literature, and particular attention was given to the identification of the type locality of *G. parvulum*, that was indicated in a 1925 paper by Spegazzini as the rocky hills in the "sierra de San Luis". Several mistakes occurred in the attempt to localize this "Sierra de San Luis", and it is clear that the plants that were used for the description were not found in the province of San Luis, as it was recently suggested. However, also the indication by Till about a locality named San Luis, near Panaholma, in the western slopes of the Sierra Grande, seemed to be unlikely, since in 1905 Spegazzini indicated the surroundings of Cordoba for these taxa, and there is no information about any plant from that region having been seen by the author in 1905.

According to Papsch, the most likely possibility is the mountain region in the eastern slopes of the Sierra Grande, west of Tanti, so not far from Córdoba, where a Pampa de San Luis is reported in the maps. In this region also other plants described in 1905 were found.

Then, we all discussed the application of the name *G. parvulum*, whose type consists of some flowers, surely taken from different plants and apparently also different species - a lectotype had been selected by Till.

All the participants showed photographs of plants in habitat and cultivation, with flower sections, and suggested various interpretations.

A major point that was taken into account was the difference between the populations from the eastern side of the Sierra Grande, those from the western side, and those belonging to the subspecies *amoenum*, from the southern slopes of the Sierra de Guasapampa, in eastern Córdoba province.

It was provisionally suggested that the subspecies *amoenum* might indeed be specifically distinct from the populations that grow on both sides of the Sierra Grande. Some remarks on the northern forms of *G. parvulum*, *G. parvulum agnesiae* and *G. parvulum huettneri*, were also given.

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The workshop lasted for the whole day, of course with several pauses for coffee, beer and lunch. The results of the day will be published in one of the next issues of *Schütziana*, where a definitive interpretation of the names *G. parvulum* and *G. leptanthum* will hopefully be reached.

Before the evening meal Massimo Meregalli showed slides of plants of the subgenus *Gymnocalycium* from the northern part of the province of Córdoba, the Sierra de Ambargasta, and the southern part of the province of Santiago del Estero. It was really clear that the taxonomy of these species still requires a lot of research.

As always, the Carmagnola workshop was very useful and exciting, with an open discussion during each presentation, everybody suggesting his own ideas, often the most important points were re-examined to have a better understanding, and at the end important results were obtained. And, most important of all, we all shared an atmosphere of great friendship, and a fully cooperative feeling.



Participants of the meeting during a break (from left): T. Kulhánek, M. Meregalli, M. Wick, A. Funetta, A. Lorenzini, V. Schädlich, B. Schweitzer, F. Gallina (concealed), J. Prochazka, T. Strub, L. Bercht, D. Zerbine.

We would like to express our warmest thanks to Mrs Iris Blanz (Fernitz, Austria), to Mr Brian Bates (Bolivia) and to Mr Graham Charles (United Kingdom), who support us with the translation into English, to Mrs Larisa Zaitseva for the translation into Russian (Tscheljabinsk, Russia), to Mr Takashi Shimada (Japan) for the translation into Japanese and to Mr Daniel Schweich (France), who has mirrored our publications under <http://www.cactuspro.com/biblio/>.

## ***Gymnocalycium kulhanekii* Papsch spec. nov.**

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### **ABSTRACT**

**A so far unknown *Gymnocalycium* population, which was found halfway up Cerro Uritorco, Prov. Córdoba, is described as *Gymnocalycium kulhanekii* Papsch. The features for distinguishing it from those *Gymnocalycium* species growing on top of and close to Cerro Uritorco are discussed.**

**Keywords: *Gymnocalycium*, *Gymnocalycium kulhanekii*, Cerro Uritorco.**

### **INTRODUCTION**

Cerro Uritorco near Capilla del Monte (Province Córdoba) has been in the focus of cactus research for a long time (Fig. 1). As to the investigated plants, emphasis has been put on the species *Gymnocalycium*. Findings of *G. andreae* (Boedeker) Backeberg, *G. bruchii* (Spegazzini) Hosseus, *G. mostii* (Guerke) Britton & Rose, *G. monvillei* (Lemaire) Britton & Rose and *G. quehlianum* (F. Haage ex Quehl) Vaupel ex Hosseus are documented.

The first field reports about *Gymnocalycium* discoveries on Cerro Uritorco were written by Mats Nilsson in his 1988 account, in which he describes his collection MN 80 erroneously as *G. andreae*. This is because Cerro Uritorco is mentioned as locality of this species by Krainz (Nilsson 1988). The site of the type variety of *G. andreae* is, according to its first description, Pampa de la Esquina, situated at Cerro los Gigantes (Sierra Grande, Prov. Córdoba) at an altitude of 1,500 to 2,000 m (Bödeker 1930). This site is mentioned again by Krainz as well, however, he adds that C. Hosseus collected his plants from Cerro Uritorco at an altitude of 1,800 m (Krainz 1957). This variety is, strictly speaking, merely a form that can be found in the nearby mountains and therefore not worthy of any rank of its own. This form seems to be within the normal scope of variation of *G. andreae*, as Krainz's description suggests (personal remark M. Meregalli).

Together with *D. Andreae*, Krainz describes in the same paper *G. andreae* var. *grandiflorum* Krainz & Andreae as originating from the same locality as the type variety. According to the authors, the plants were supplied by Hosseus. Therefore, Cerro Uritorco has been regarded as type locality of the variety *grandiflorum* since then (Krainz 1957). Various field collectors have documented this variety in the area around the peak of Cerro Uritorco.

MN 80 grows at an altitude of only few meters below the locality of *G. andreae* and is nowadays considered to be a subspecies of *G. bruchii*, which has only very recently been described as *G. bruchii* subsp. *deminii* Gapon & Neuhuber (Gapon & Neuhuber 2016).



Fig. 1: Cerro Uritorco

In the course of intensive field research on the distribution area of *G. bruchii* and its forms, the opportunity to visit Cerro Uritorco arose in 2004. With a height of almost 2,000 m, this striking alpenstock is the highest elevation of the Sierra Chica, easily accessible to tourists these days and advertised as a centre of esotericism and meditation. The ascent to the top is not difficult via a well-beaten track at the south side of the mountain. During the descent from the top a *Gymnocalycium* plant was discovered at an altitude of about 1,430 m in rocky terrain interspersed with grassland. This plant was spontaneously assumed to be a *G. andreae* var. *grandiflorum*. However, doubts arose due to its coloured spination and the reddish rest of a flower. The finding was documented under the field numbers 'WP 04-442/859 *G. andreae* fa. Co. Uritorco, 1,430 m' and 'SNE 04-108'. Ripe seeds could be collected from some plants (Fig. 2).



Fig. 2: Quebrada del Viento, locality of WP 04-442/859 and SNE 04-108 (photo: T. Kulhánek)

After 12 years of cultivating plants from seeds collected at this locality, reports and documentations of further visits to the habitat, assessment of records on flower, fruiting and seeds we can come to the conclusion that a new species has been discovered with these plants.



Fig. 3-4: *G. kulhanekii*, at the locality Quebrada del Viento (photo: T. Kulhánek)

### ***Gymnocalycium kulhanekii* Papsch spec. nov.**

**Differential diagnosis:** differs from *G. pinalii* Meregalli & Kulhánek 2016 in its smaller body, stronger spination and short, intensively purple-coloured flower, which is almost without any throat. Petals are arranged in several rows.

**Body:** spherical, (5)-6-8-(10) cm in diameter, of dull, greyish green, young plants distinctly lighter green, not offsetting at the locality (Fig. 3, 4, 6).

**Root:** short tap-root, ending in fine fibres.

**Ribs:** (7)-9-10-(11), constantly 7 at seedlings, straight, dissolving into tubercles which are wide, blunt and rounded at the base and are divided by short transverse grooves.

**Areoles:** round, initially woolly white, later balding.

**Lateral spines:** (6)-7-9, typically one pair of 15-18 mm in length at each side respectively, 2 longer ones (16-22 mm) at the left and right side of the areole, pointing laterally downwards and a mostly shorter one (15 mm) pointing straight downwards. Up to 2 further delicate lateral spines are sometimes formed at the upper side of the areoles.

**Central spines:** 1-2, sticking out straight, 12-15 mm long.

**All spines:** radial, not close to the body, not very stiff, sometimes irregularly bent at the tip, young unicoloured white to yellowish, later a distinctly reddish brown base appears so that spination colour can be called distinctly multicoloured.

**Flower:** very numerous from younger areoles, wide funnel-shaped to inversely cone-shaped, up to 40 mm long, up to 35 mm in diameter at full anthesis, deep pink coloured; merely odd semicircular scales with light rims at the receptacle, scales merge abruptly into wide spatula-shaped petals of dark olive colour. Outer petals wide spatula-shaped, 20 x 9 mm, with a wide, dark mid stripe; inner petals 5.6 x 20 mm, almost always arranged in several rows so that the flower appears to be filled. Ovary about 4 x 5 mm, rounded to slightly inversely cone-shaped, narrow nectar compartments 1-1.5 mm in depth and of delicately pink colour, insertion of the

filaments is hardly discernable in two rows, with few primary filaments tilting towards the style, the rest spread across the whole perianth tube, all of them white with a delicately pink base. Anthers spherical, 0.5-0.6 mm in diameter, yellow. Style up to 18 mm long, 2-2.5 mm in diameter at the base, white, stigma lobes 8, up to 5 mm long, white (Fig. 5, 27).

**Fruit:** spherical to ovoid, 1-1.2 cm in diameter, first light green, later changing colour to olive green, opening longitudinally in when ripe (Fig. 23-25).

**Seed:** subgenus *Gymnocalycium*, 1-1.2 mm, black, covered with partly very thick cuticle (Fig. 26).

**Locality:** Prov. Córdoba, Dept. Punilla, Capilla del Monte, Cerro Uritorco, in the section Quebrada del Viento at an altitude of 1,400-1,450 m, in a very restricted area of not too steep grassland, which is interspersed with rocks and rubbles or peels.

**Type:** Argentina, Prov. Córdoba, Cerro Uritorco, 1,430 m above sea level; leg. Papsch WP 04-442/859, Nov. 2004 (CORD, holo; TO, iso). The exact coordinates of the locality are deposited with the holotype.

**Etymologie:** The new species is named in honour to Tomáš Kulháněk, *Gymnocalycium* enthusiast and field collector (Moravský Krumlov, Czechia).



Fig. 5: *G. kulhanekii* SNE 04-108 flowering



## DISCUSSION

*G. andreae* and *G. bruchii* from Cerro Uritorco are similar to the new species in size and form of the flower. The seed subgenus is also the same. There are no common features as to body form and spination, bodies remain smaller and offset (Fig. 7-8). Thus their being more closely related species can be excluded. This applies even more to *G. mostii* and *G. monvillei* from the same locality as they belong to the seed subgenus *Scabrosemineum*.



Fig. 6: *G. kulhanekii* WP 442/859 in the collection Meregalli, the original name *G. andreae* fa. is still on the label



Fig. 7-8: *G. andreae* subspec. *pabloi* A 09-18 (7); *G. bruchii* WP 314/684 (8)

Some *Gymnocalycium* taxa of the same seed subgenus, which can be used for comparison, grow not far north and northeast of Cerro Uritorco, and also somewhat further south. These are *G. amerhauseri* Till, *G. erinaceum* var. *paucisquamosum* Piltz as well as the very recently described *G. pinalii* Meregalli & Kulhánek. A comparison of plant features of these species, except for those of the new one, is presented by Meregalli and Kulhánek (Meregalli & Kulhánek 2016).

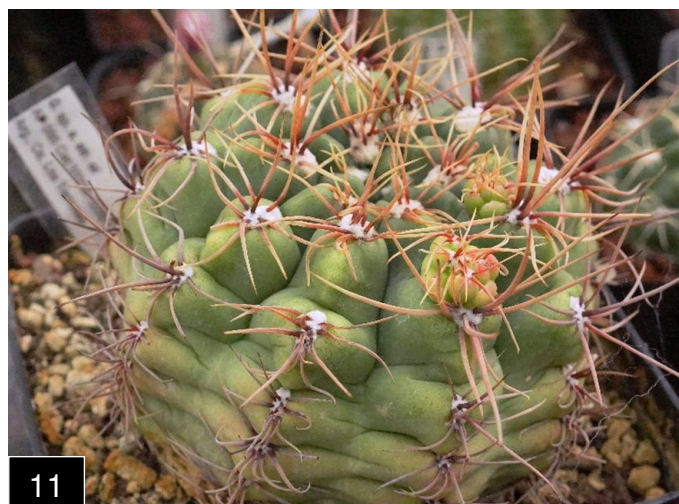


Fig. 9-12: *G. amerhauseri* Ongamira (9); *G. erinaceum* var. *paucisquamosum* west of Ongamira (10); *G. pinalii* AP 50 (11) (photo: M. Meregalli); *G. neuhuberi* (12)

*G. amerhauseri* is set apart from *G. kulhanekii* by its flattened, spherical body with relatively short spines, *G. erinaceum* by its markedly smaller body with dense spination. *G. neuhuberi* differs in its dense, hard spination and *G. pinalii* grows to considerably larger size (Fig. 9-12), but its spination matches well so that it is problematic to distinguish it from the new species, especially in the latter's young growth state and without flowers (see Meregalli & Kulhánek 2016). Judging from the matching habitus, *G. kulhanekii* could be considered merely as a form influenced by altitude, but there are distinct differences in flower structure. *G. amerhauseri*, *G. erinaceum* var. *paucisquamosum* and *G. pinalii* have more or less wide to narrow funnel-shaped white flowers with purple throat, which grow to a length of up to 70 mm. The flower of the newly described species differs considerably from this and in all the relevant features. The short, broadly funnel-shaped flower of the new species with its extremely short ovary indicates a completely different line of origin. Apart from its similarity in flower structure to that of *G. andreae* and *G. bruchii*, a similarity to the flower of *G. neuhuberi* Till & Till can also be established, although the habitats of *G. neuhuberi* are situated 300 km further southeast in straight-distance on the Sierra de San Luis (Fig. 13-22).

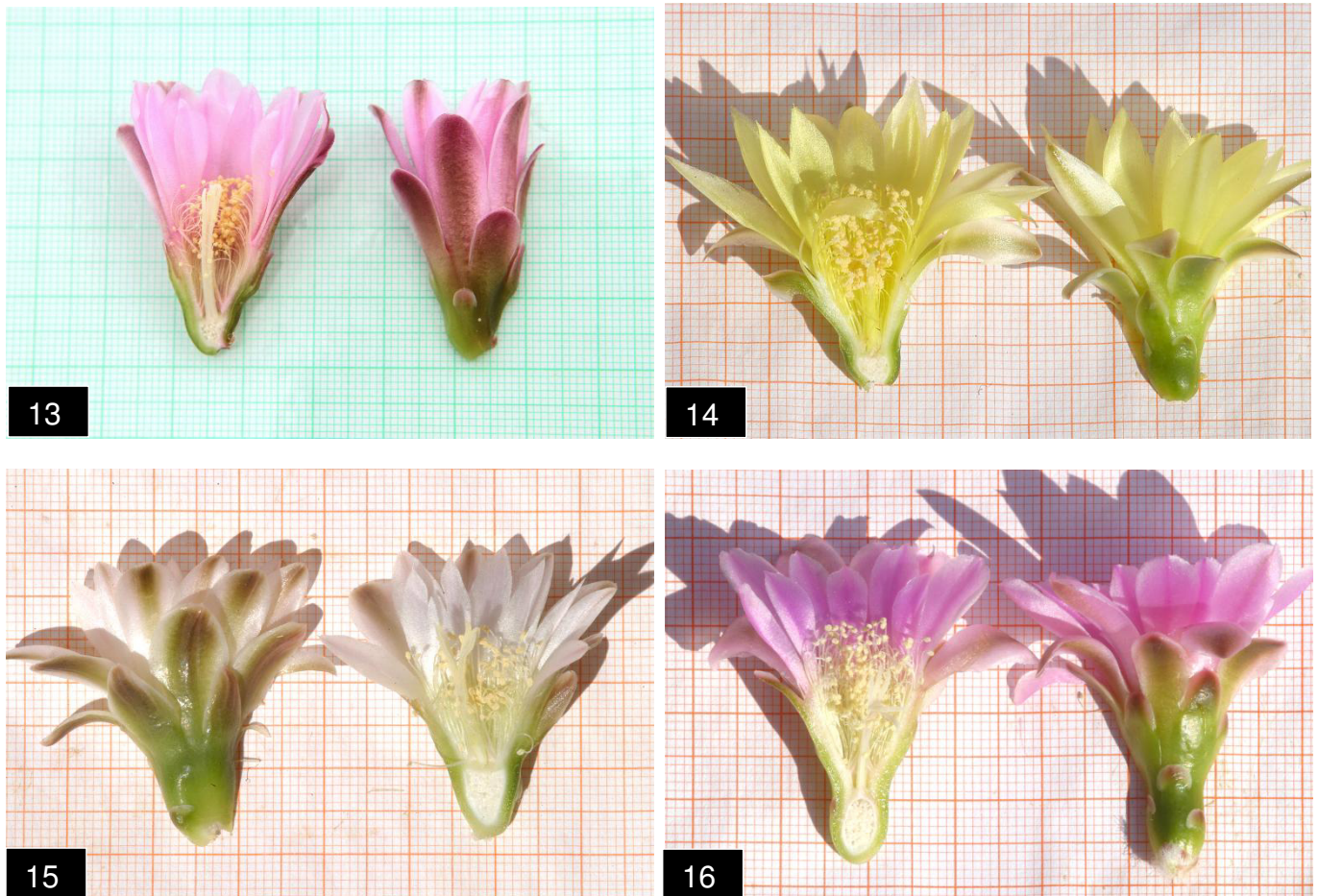


Fig. 13-16: *G. kulhanekii* WP 442/859 (13) (photo: Kulhánek); *G. andreae* SNE 04-96 (14); *G. bruchii* WP 314/684 (15); *G. neuhuberi* (16)

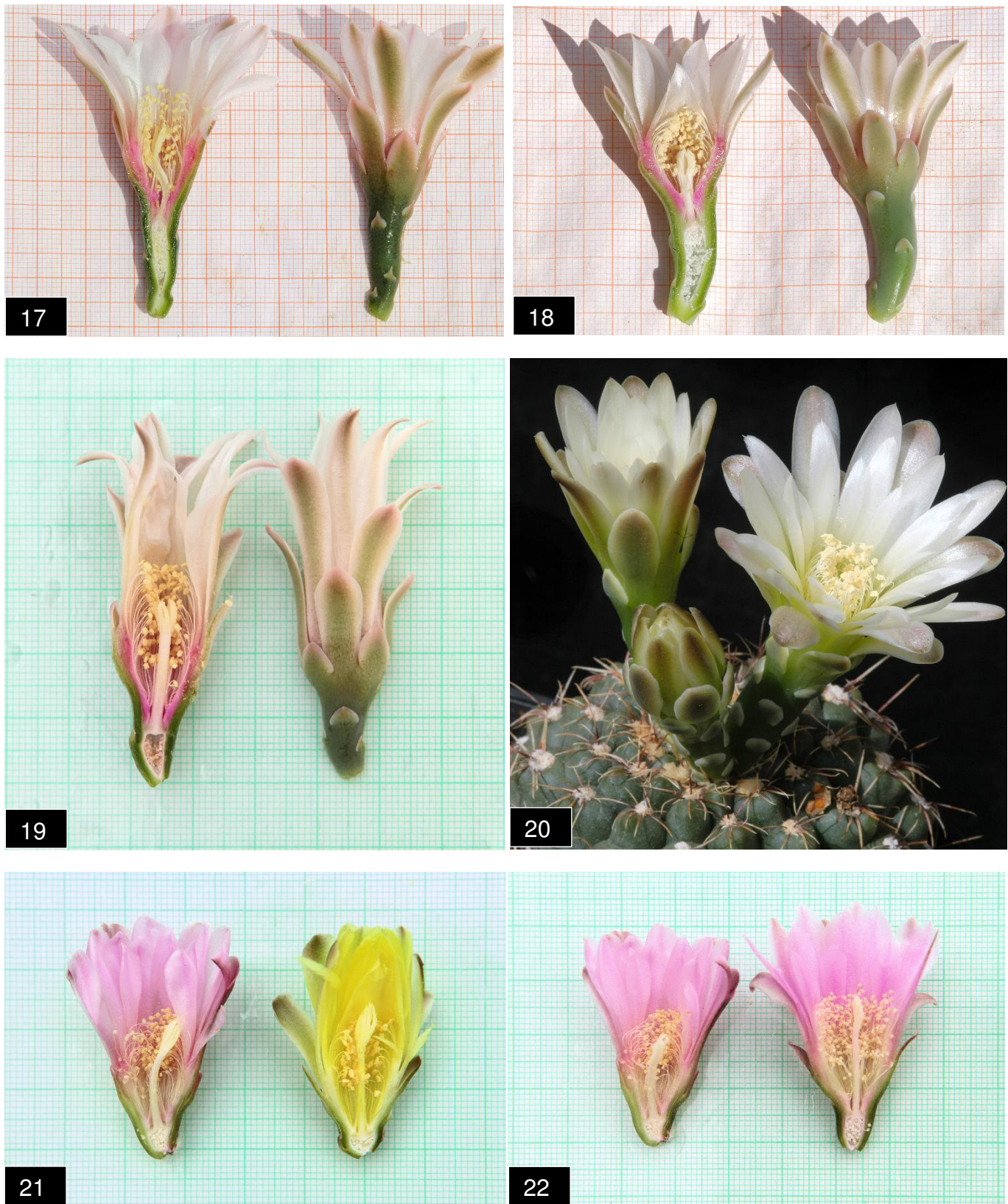


Fig. 17-22: *G. amerhauseri* STO 229 (17); *G. erinaceum* WP 363/759 (18); *G. pinalii* (19) (photo: Kulhánek); *G. erinaceum* var. *paucisquamosum* (20); comparison *G. kulhanekii* - *G. andreae* (21); comparison *G. kulhanekii* - *G. neuhuberi* (22)

The fruits of *G. kulhanekii* are spherical to ovoid berries, those of *G. amerhauseri*, *G. erinaceum* var. *paucisquamosum* und *G. pinalii* are more or less elongated.



Fig. 23-24: *G. kulhanekii* with fruit in habitat



Fig. 25-26: dry fruits and seeds (photo of the seeds: V. Schädlich)

### STATE OF CONSERVATION

The so far known locality of *G. kulhanekii* is very limited. Neither in neighbouring areas nor on slopes adjacent in eastern and western direction could the species be detected. There is no endangerment by animal feeding damages, however, tourist activities and commercial collecting might bring this population to the brink of facing collapse. Therefore, the degree of endangerment is classified as high (**VU** vulnerable)

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Abb. 27: *G. kulhanekii* SNE 04-108 seedlings (photo: T. Kulhánek)

Photos: if not indicated differently made by the author.