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Editorial team and responsible for the content: www.schuetziana.org/contact.php

Mario Wick, 14547 Fichtenwalde, Fichtenweg 43, Germany, mario.wick@schuetziana.org

Massimo Meregalli, 10123 Torino, V. Accademia Albertina, 17, Italia, massimo.meregalli@schuetziana.org

Wolfgang Papsch, 8401 Kalsdorf, Ziehenweg 6, Austria, wolfgang.papsch@schuetziana.org

Tomáš Kulháněk, 67201 Moravský Krumlov, Tylova 673, Czech Republic, tomas.kulhanek@schuetziana.org.

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Cover picture: *Gymnocalycium leptanthum*, near Tanti (photo: Wolfgang Papsch)

Editorial

Dear *Gymnocalycium* enthusiasts

31. International *Gymnocalycium*-Day – Radebeul (Dresden, Germany)



The Gymno-Day that was held in Radebeul between Friday 4 and Sunday 6 September was again a very interesting, friendly and also scientifically important meeting. The subject of this meeting was the Uruguayan species of *Gymnocalycium*.

During Friday evening Volker Schädlich showed his photographic travelogue of his trip to Bolivia in 2015. The talk took us first to the Bolivian Chaco, and then to the high Andes, and extremely nice illustrations of landscape and cacti were seen with, obviously, *Gymnocalycium* in the foreground.

The scientific part of the meeting was started on Saturday morning by Wolfgang Papsch, who illustrated all the literature dealing with the plants belonging to the complex *G. hyptiacanthum* - *G. netrelianum* - *G. uruguayense* - *G. guerkeanum*, and other names associated with these taxa. Wolfgang's talk allowed us to realize the incredible confusion and complexity that reigns in nomenclature of these plants - in this case, nomenclatural confusion seems to exceed even the taxonomic doubts about the interpretation of the various populations.

Ludwig Bercht continued the discussion about all the species that live in Uruguay, with remarks on literature as well as interpretation of the names. He dealt with *G. schroederianum*, now *G. platense* subsp. *schroederianum*, *G. hyptiacanthum* and related species, including *G. artigas*, *G. melanocarpum*, and *G. megalothelon*, with some remarks also on the rather mysterious *G. rauschii*. His opinions were made clear with photographs of his plants in cultivation, and an indication of how the morphologically different groups of the *G. hyptiacanthum* - *uruguayense* complex are distributed was suggested.

Massimo Meregalli discussed the neotype of *G. hyptiacanthum*, trying to make a detailed comparison between plants from the neotype locality and the original description by Lemaire, 1839. He explained why, following the rules of the International Code of Botanical Nomenclature, it is almost impossible to reject the neotype designated by Kiesling, even though it is a general opinion that the choice of the plants from southern Uruguay as the neotype was not a satisfactory one.

After lunch, M. Meregalli added his contribution to the knowledge of the various populations of the *G. hyptiacanthum* - *G. uruguayense* complex, with photos of plants from his collection. The groups identified by Meregalli were almost matching those that were suggested by Bercht. He also showed that occasionally, at the limit of the range of two different forms, populations with are almost, or even perfectly, sympatric can be found, where respectively one or another of the two different morphological types are present.

Christian Hefti took part in the discussion by showing photographs of plants in habitat as well as in cultivation. He added a detailed analysis of some morphological characters, such as number of ribs, length and number of spines, etc., and tried to compare these characters either to altitude where the plants live, or to a south-north distribution.

Basing on the rich material that was examined, it appears clear that in the central and north-western part of Uruguay all the populations have a very typical morphology, with much stronger spines and less ribs. The flower is yellow in central Uruguay, and pink or whitish in the northern part of the range. Occasionally, plants with yellowish flower are present among some of the latter populations, whereas only one plant is presently known with a white flower from central Uruguay. This type corresponds to *G. uruguayense*. In the southern part of Uruguay, plants are often smaller, with thinner spines, with or without a reddish base, more ribs, and always a yellow flower, that is often also a little smaller. This type corresponds to *G. hyptiacanthum* and *G. netrelianum*. In the eastern Uruguay and south-western Rio Grande do Sul, in Brazil, the specimens always have yellow flowers and appear to be more closely related to those from the south-eastern part of the country.

Ludwig Bercht and Massimo Meregalli will complete the study of nomenclature and taxonomy of these Uruguayan plants, and the results will be published on *Schütziana* next year.

Norbert Gerloff added some remarks on a very interesting, extremely isolated population from the surroundings of Acegua, on the border between south-eastern Rio Grande do Sul and Uruguay, which shows intermediate characters between *G. uruguayense* and *G. denudatum*.

Finally, Jaroslav Prochazka illustrated his 1999 trip to Uruguay, with several slides that he made in habitat, featuring not only a large number of populations of cacti, but also various aspects of the Uruguayan life and the cities.

After completing the discussion on the theme of the meeting, we moved back to the Chaco of Paraguay and Bolivia with an extremely accurate presentation of *G. megatae* by Volker Schädlich. All names, synonyms, literature were discussed, with habitat photographs of plants of an incredibly large number of populations. Volker surely has now the greatest knowledge of this species, and he proposed a new taxonomic approach, that we hope to present to readers of this journal in the next future.

A short contribution by Franz Berger showed us photographs of the rare *G. angelae*. This critically endangered species seems now to be efficiently protected in its extremely small habitat by the care and intelligence of the owner of the estancia near which it lives, who does not allow anybody to collect any plants from nature.

Norbert Gerloff concluded the day with the presentation of his 25 years of trips to Rio Grande do Sul, giving special emphasis to the populations of *G. horstii* that he found together with some Brazilian collectors.

On Sunday morning the Gymno-day was integrated with the presentation of the *Gymnocalycium*, and other Cactaceae and plants that were found in central Argentina during a long trip by Horst Kallenowsky.

The meeting was a great success for all members of the Gymno-group and all the participants. All the presentations were very exciting, and stimulated an open discussion. The scientific part

allowed us to gain much new knowledge, thanks to the full interaction among all of us, with everybody ready to reconsider his own opinions according to what was presented in the other contributions.

And, as always, it was all mixed up with the great friendship that we all share among us, and, why not, with good food, good beer and wine.



During the Gymno-meeting in Radebeul. photo: Ludwig Bercht

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 Mr Takashi Shimada for the translation into Japanese and to Mr Daniel Schweich (France), who has mirrored our publications under <http://www.cactuspro.com/biblio/>.

Ideas occurring when reading the literature about *Gymnocalycium leptanthum* and *Gymnocalycium parvulum*

Wolfgang Papsch

Ziehrenweg 5, 8401 Kalsdorf (Austria)

e-mail: wolfgang.papsch@schuetziana.org



ABSTRACT:

In his Editorial for SCHÜTZIANA 6(3)2015 Massimo Meregalli has already mentioned the lively discussion on the taxa *Gymnocalycium leptanthum* and *G. parvulum* between the participants at the 9th Gymno-Day in Carmagnola 2015. These are two *Gymnocalycium* species described by Dr Carlos Spegazzini which have been interpreted in extremely differing ways not only in the past, but still today. Detailed studies of the literature about both taxa can give hints as to their origin and appearance, thus the locality of *G. leptanthum* can be narrowed down. Spegazzini obviously mistook pictures of *G. leptanthum* and *G. parvulum* for each other in his paper of 1925, which contributed to confusion later on. To the south of Cosquín, plants can be found which correspond to Spegazzini's description and which are identified here as *G. leptanthum*. The description of *G. leptanthum* is extended.

Keywords: *Gymnocalycium*, *Gymnocalycium leptanthum*, Spegazzini.

INTRODUCTION:

The Argentinean mycologist Dr Carlos Spegazzini (1858-1926) devoted intensive attention not only to fungi, his main field of studies, but apart from this also to vascular plants. In addition to many other plants across all genera he also described more than 70 new cacti between 1896 and 1925. Among them are 13 taxa which nowadays can be assigned to the genus *Gymnocalycium*. The classification of *Gymnocalycium spegazzinii* Britton & Rose as a species (described as *Echinocactus loricatus* Spegazzini), *G. baldianum* Spegazzini and *G. bruchii* (Spegazzini) Hosseus is beyond doubt. In general, *G. brachypetalum* Spegazzini is also counted among the described varieties of *G. gibbosum* (Haworth) Pfeiffer ex Mittler (var. *cerebriforme* Spegazzini, var. *chubutense* Spegazzini and var. *leonense* Spegazzini). The identity of *G. platense* (Spegazzini) Britton & Rose, misinterpreted for a long time, has also been clarified (Papsch 2015) in the meantime. *E. gibbosus* var. *ventanicola* Spegazzini (originally called *E. ottonis* Spegazzini non Link & Otto) is nowadays considered to be a synonym of *G. reductum* (Link) Pfeiffer ex Mittler.

The remaining *Gymnocalycium* species described (*G. leptanthum* (Spegazzini) Spegazzini; *G. parvulum* (Spegazzini) Spegazzini; *G. stuckertii* (Spegazzini) Britton & Rose; *G. stellatum* (Spegazzini) Spegazzini) have been the subject of great controversy in the past and are still

today. At the Gymno-Day in Carmagnola in 2015 the taxa *leptanthum* and *parvulum* were the subject of discussion and the question was asked whether these names could be assigned to plants of certain localities and what the plants would look like (Meregalli 2015). Hints for answering these questions can be found in the first descriptions, in Spegazzini's deposited and published pictures in the La Plata Museum and in further data from literature.

DISCUSSION:

Originally *G. leptanthum* and *G. parvulum* were described as varieties of *Echinocactus platense* by C. Spegazzini. The author describes the new varieties only briefly and does not refer to their localities in detail. However, he mentions for *Echinocactus platensis* Spegazzini that the habitats are situated both in the dry mountainous areas of the pampine sierras and around Córdoba ("*Vulgatus in montuosis aridis Sierras pampeanus (Ventana, Curámál, Olavarria etc. et prope Córdoba)*"). Here the specification of pampine sierras certainly refers to *E. platensis*. The description "*prope Córdoba*" can therefore only indicate the varieties localities (Spegazzini 1905).

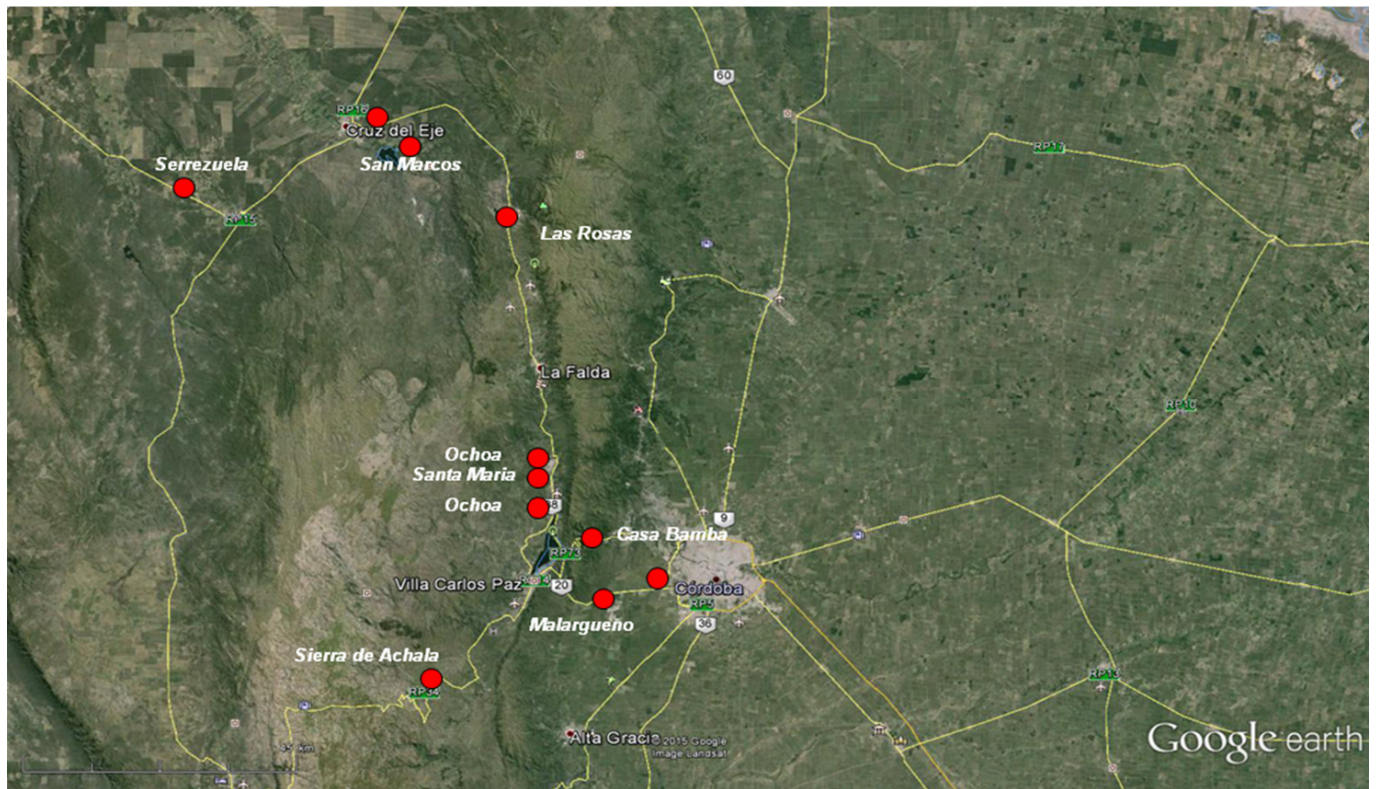
Twenty years later, after having studied both varieties in detail and turning their ranks into those of species, he specifies the localities more precisely. As to *G. leptanthum*, he only mentions dry and rocky hills in the surroundings of Cosquín (Prov. Córdoba) ("*Hab. En las colinas secas y pedregosas de los alrededores de Cosquín, provincia de Córdoba*"). For *G. parvulum* he states very rocky and dry hills of the Sierra de San Luis as locality ("*Hab. En las colinas más pedregosas y secas de la sierra de San Luis*") (Spegazzini 1925).

Can any evidence be found to support Spegazzini's specification of localities? In the case of *G. leptanthum* the first description is not helpful. The statement "around Córdoba" has little informative value. More information can be gathered from the paper of 1925. The locality is narrowed down considerably by the information that this plant originates from the surroundings of Cosquín. From the data of the type material, which is stored in La Plata under the number LPS 23076, evidence can be deduced indicating that this species indeed originate from the mentioned area. R. Kiesling calls the herbarium sheet "N. 43 *E. platensis* f. *leptantha*, ex Córdoba 18-I-99" the type (Kiesling 1984). Katinas et al. call this herbarium sheet lectotype (Katinas et al. 2004). The sheet consists of two flowers, however, it is the date mentioned on it which is of particular interest, namely January 18th, 1899.

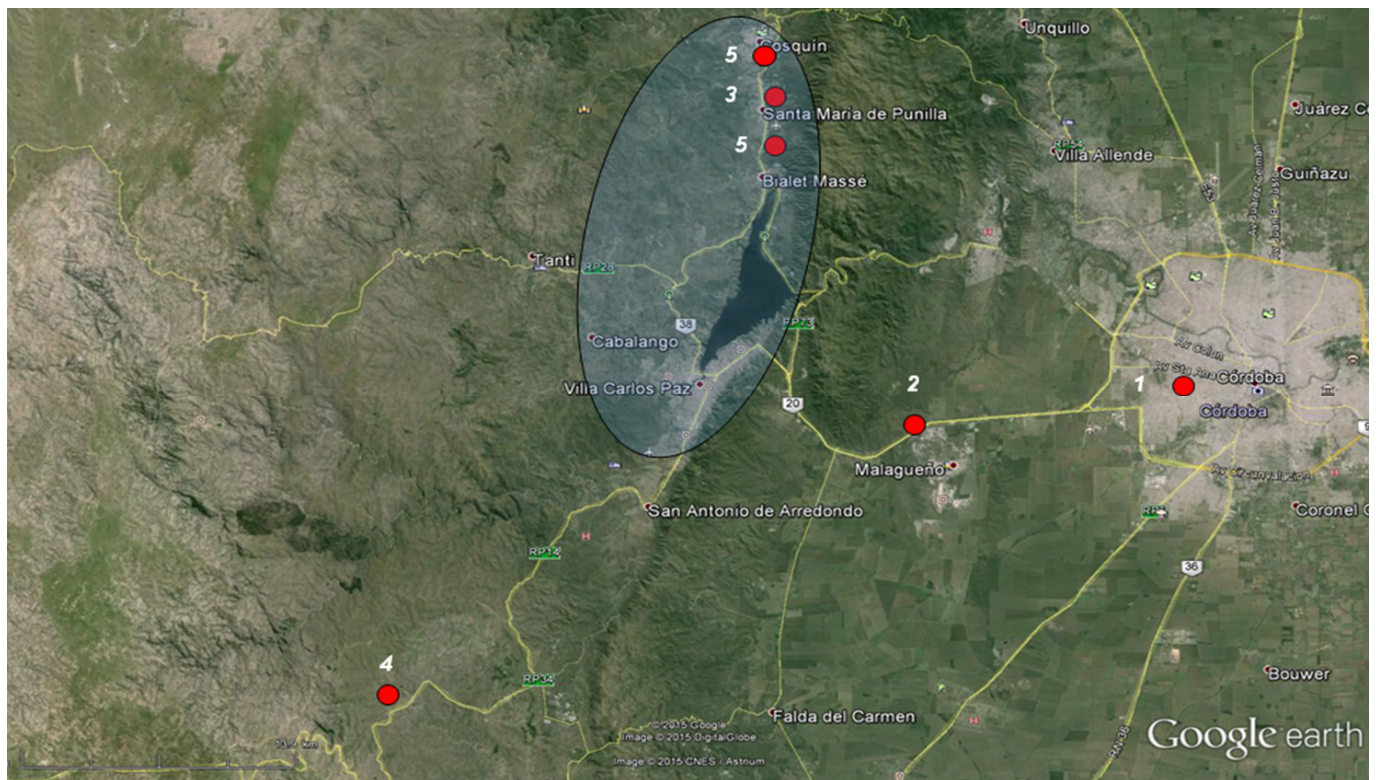
Between November 1898 and February 1899 Spegazzini was studying and collecting plants in the province of Córdoba (Katina et al. 2000) together with Swiss-born Theodor Stuckert (from 1885 to 1903 a pharmacist and, beginning in 1903, a professor of Sciences in Córdoba). From these collections many herbarium sheets deposited by Stuckert can be found in various herbaria. Most specimens collected during this period originate from the province of Córdoba. (see www.tropicos.org/PersonPage.aspx?personid=9462&tab=specimens).

A filter for the date January 18th, 1899 selects five herbarium sheets by Stuckert.

- Stuck 6202 Córdoba, 5 km to the west
- Stuck 6266 Malagueño
- Stuck sn Sierra Ochoa
- Stuck 6184 Santa María de Punilla
- Stuck 6208 Sierra de Achala



Map 1: Localities of some herbarium specimens deposited by Stuckert in CORD



Map 2: Localities of herbarium specimens deposited by Stuckert in CORD with January 18th, 1899 as date of discovery.

A further herbarium sheet by Spegazzini of the same date exists in La Plata, called "N 42 E. *grosse gibbosus affinis* 18-I-99". Further sheets with the date specification January 22nd, 1899, collected by Spegazzini, and others collected by Stuckert between January 10th and 22nd 1899, originate from around and west of Córdoba. Thus, with high probability, we can come to the conclusion that Spegazzini's specimen of *G. leptanthum* was also collected during this joint

excursion with Stuckert at one of the places and at the time mentioned. Santa Maria de Punilla is situated in the immediate vicinity south of Cosquín, which may be the reason for Spegazzini's indication of locality. This would also be a confirmation of the locality stated by Spegazzini.

The appearance of *G. leptanthum*

In the first description of *G. leptanthum* in 1905, Spegazzini states that the body of this variety is similar to the directly above mentioned variety *Quehliana* in size, in colour and the number of its ribs. This means, it is of compressed spherical shape with 3-5 cm in diameter and height, of bluish-green colour, possessing 8-11 ribs with tubercles (Spegazzini's specification of var. *quehliana*). It has 7 strong radial spines, which are close to the body, 7-10 mm long, straight or bent and its flowers are upright, elongated, delicate, 60-65 mm long. The flower tube should be longer by one third than the white petals.

He does not compare his variety d *parvula* with the variety c *Quehliana*. According to the description its spherical egg-shaped, small or even tiny bodies (10-30 mm in diameter and height) are of dirty greyish-green appearance and possess mostly 13 protruding strong ribs with many tubercles. The 5-7 bright, greyish-white spines are bristly, often flexible, close to the body and only 2-4 mm in length. The flower is upright and large in comparison with the body (45-60 mm long). The delicate perianth tube surpasses the white petals in length.

In 1925 Spegazzini published a picture with the caption "*Gymnocalycium leptanthum* Speg. 1/1". Thus the plant is depicted in full size. No date is mentioned on the original photograph, but it is labelled "Echinocactus stellatus Speg., forma" (Katinas et al. 2004).

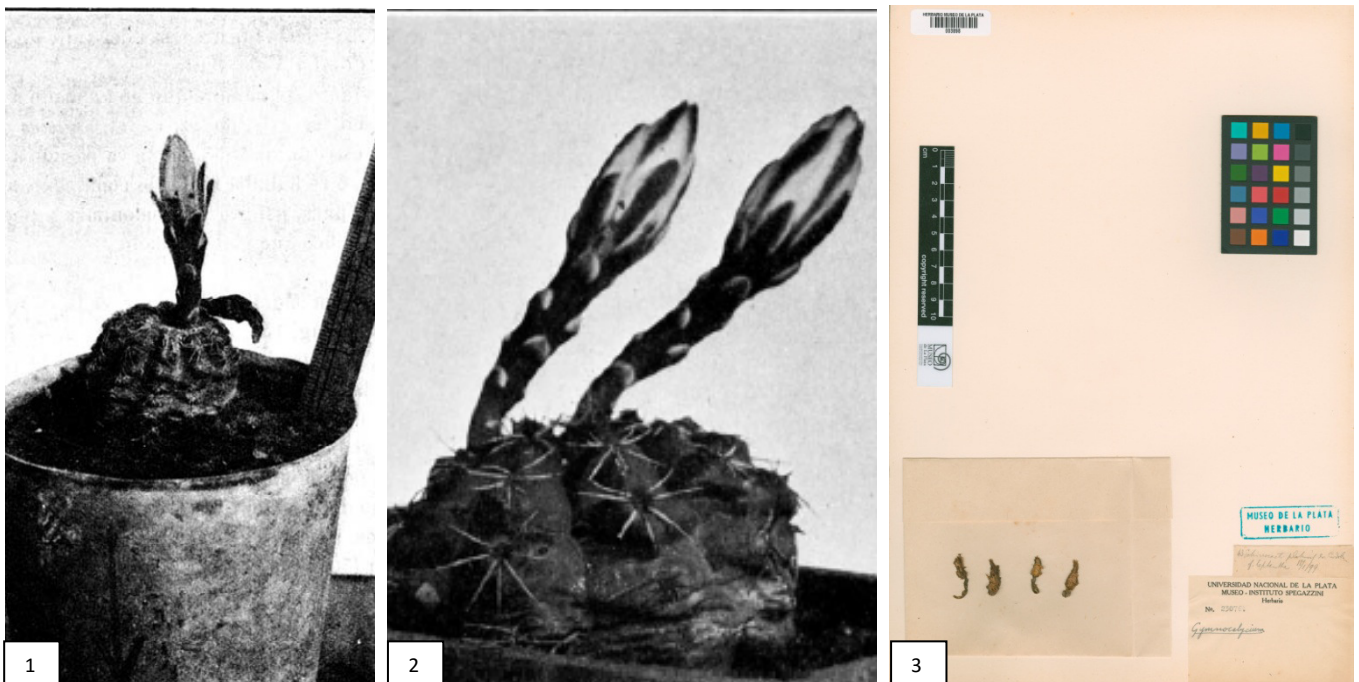


Fig. 1-3: „*G. leptanthum* Speg.“: reproduction from Spegazzini 1925 (1); reproduction from Britton und Rose 1922 (2); *G. leptanthum* Lectotypus (LP) (3).

This illustration does not correlate with the description of *G. leptanthum*. However, when comparing the illustration with the description of *G. parvulum*, there is a larger conformity as to size, spination and flower. Here some confusion seems to have occurred, which led to a long-lasting wrong interpretation of *G. leptanthum*.



Fig. 4: *G. leptanthum*, Villa Sagrada Familia



Fig 5: *G. leptanthum*, Aguilla Blanca

How do we really have to imagine the appearance of *G. leptanthum*? In 1922 Britton and Rose publish a plant from Argentina without further specification of origin as *G. leptanthum*, labelled Fig.176 in their *Cactaceae III*. They state that Spegazzini identified this plant as *G. leptanthum* (Britton & Rose 1922). This plant must be very similar to the one Spegazzini used for his description, indeed it correlates quite well with the description as to spination and flower. With the help of this figure we can imagine the actual appearance of *G. leptanthum*. Spegazzini states that the reader can recognize the differences between the typical flowers of *G. leptanthum* and *G. platense* (Spegazzini 1925) with the help of Britton and Rose's pictures. This comment was certainly meant to point out the clearly different features of his *G. leptanthum* and *G. platense*.

Starting from Cosquín in a southern direction, *Gymnocalycium* species can be found to which the body description of *G. leptanthum* applies well. However, in a broader sense the characteristics of Britton and Rose's plant can also be recognized, which explains why Spegazzini thought to have identify in Britton and Rose's plant as his *G. leptanthum*. There is no hint in the first description as to whether the plant offsets to form groups.



Fig. 6-9: *G. leptanthum*, Icho Cruz (6); Carlos Paz (7); northeast of Tanti (8); Bosque Alegre (9)

In his fundamental volume of 1925, Spegazzini holds the opinion after intensive studies of the plants, that the taxa *leptanthum* and *parvulum* must be considered as separate species. Apart from the features of the habit, the different characteristics of the flowers made him draw this conclusion (Spegazzini 1925).

The following 7 criteria formed the basis of his investigation of the flower:

1. Total length of the flower at the moment of anthesis
2. Form, length and diameter of the outer ovary
3. Length of the perianth tube and its colour inside
4. Number, form and size of perianth scales
5. Colour, relative and absolute length and width of the inner and outer petals
6. Insertion of the stamina in a continuous line or in two lines; the lower one surrounding the style, separated from the upper one by a bare area, as well as the colour of the filaments and anthers.
7. Length and colour of the style and its correlation to the insertion of the stamina (macrostylous, mesostylous, praquistylous)

Most criteria are documented in his key for the species of the genus *Gymnocalycium*. The following key applies to the taxa *leptanthum* and *parvulum*.

- 1 Flowers tapered at the basis, ovary more or less developed, but always clearly visible → 2
- 2 Stamina noticeably in two deries, the inner one surrounding the basis of the style, the other ones above, at the throat of the perianth tube, and more numerous → 4
- 4 Stigma lobes 5-8 → 5
- 4 Stigma lobes 10-15 → 8
- 5 **Length of the ovary more than one third of the overall length of the flower**, flower 60 mm long, **ovary 28 mm long = *Gymnocalycium leptanthum***
- 8 **Average flowers 70 mm long. Ovary shorter than one quarter of the overall length of the flower (author's note: >17 mm when overall flower length is 70 mm)** → 9
- 9 Style elongated, stigma surpassing the lower stamina by far, often the upper ones, too → 13
- 13 Petals as long as perianth tube or longer, lower part of the perianth from inversely cone shaped to discoid → 14
- 14 Petals shorter than 30 mm, style shorter than upper stamina → 15
- 15 **Ovary only one fifth of the overall length of the perianth (author's note: 14 mm for an overall flower length of 70 mm, if the flower length of the protologue is used, the length is only about 10 mm)** → 16
- 16 Ovary from discoid to almost cylindrical, merging flat into perianth at the outside = ***Gymnocalycium parvulum***

It is interesting that Spegazzini does not mention the throat colour, although it is important according to his key. In his explanations concerning *G. leptanthum* he mentions a very much extended peduncle-shaped ovary. This feature can also be seen in the flowers of the plant presented by Britton and Rose and was probably deduced from this photograph. The white style has 6 coloured stigma lobes and extends only as far as the middle of the upper filaments. If Spegazzini's specifications of size of both his papers are taken into account, the following section dimensions ensue: total length of flower 60-65 mm, ovary 28 mm, petal tube <19 mm, petals <15 mm, with a striking length of the ovary as opposed to the short petals. Of course it must be considered that the dimensions of the flower are subject to more or less wide variation.



Fig. 10-15: *G. leptanthum*, flowers: Carlos Paz (10-12); Tanti (13); Va. Sagrada Familia (14), Bosque Alegre (15)

SUMMARY:

Based on analysis of literature and herbarium samples we can come to the almost certain conclusion that Spegazzini found *G. leptanthum* on his field trip with Stuckert near Cosquín on January 18th, 1899. According to the first description, this species resembles *G. quehlianum* in its shape, but spination and flower are different.

The picture added to his paper of 1925 does not correspond to the description in one single feature and was in the beginning called *G. stellatum* sic! (Kiesling 1984). As Spegazzini had identified Britton and Rose's plant as *G. leptanthum*, it must bear close resemblance to his plant.



Fig. 16-18: *G. leptanthum*, flower sections: Carlos Paz (16); Tanti (17); Va. Sagrada Familia (18)

Plants which correspond in shape and flower with the description and are also very similar to Britton and Rose's plant grow in many places to the south of Cosquín and can thus be called *G. leptanthum*.

G. parvulum is not only different in shape and spination. According to Spegazzini, the flower of *G. parvulum* differs from that of *G. leptanthum* especially in its very short ovary flatly merging into the flower tube, more stigma lobes and longer petals. No indication as to the colour of the throat is given here either.

***Gymnocalycium leptanthum* (Spegazzini) Spegazzini**

Basionym: *Echinocactus platensis* var. *leptantha* Spegazzini

Cactacearum Plantarum Tentamen: 72.-Anal. Mus. Nac. Buenos Aires ser III, tom. XI (1905).

Type: LPS 23076 "E. platensis ex Córdoba, forma leptantha 18-I-99" (SI, lecto) design. R. Kiesling 1984:228.

Body: of flattened spherical shape, occasionally forming larger groups by offsetting, single plants up to 8 cm in diameter and 4 cm in height, from vivid bluish green to dark olive shades.

Ribs: 10 (-12), separated into wide, blunt tubercles by short transverse grooves, beneath the areole markedly chin-shaped.

Areoles: round to oval, about 2x3 mm, in the beginning with a lot of white wool, later balding.

Spines: (6-)7-8(-9), merely marginal spines, (6-)10(-12) mm long, white, when developing often brownish, flexible, 2-3 lateral pairs. 1-3 spines directed downward, the upper part of the areole without spines, all spines more or less bent towards the body, at the locations a north-south tendency towards longer and thinner spines can be noticed.

Flowers: 60-65 mm long, 50-55 mm in diameter at completed anthesis, scales not numerous, round with light margin, sometimes with a short line of delicate pink, 5-6 x 2.5-3 mm, outer petals wide spatula-shaped, from bluish green to olive green, inner petals spatula-shaped, the innermost sometimes in elongated pointed shape, 15-29 mm long, white, sometimes of delicate pink colour. Flower tube 15-20 mm, vividly reddish purple, nectar cell narrow, about 2 mm deep;

ovary 22-27 mm long, elongated, inversely cone-shaped, pointed, at the upper end with a diameter of 12 mm, completely filled with ovules; filaments clearly separated into primary and secondary rows, white, anthers yellow; style white, stigma lobes 6-8, reaching about as far as the middle of the upper filaments, but often also remaining below the middle.

Fruit: long, spindle-shaped, with adherent remains of the flower.

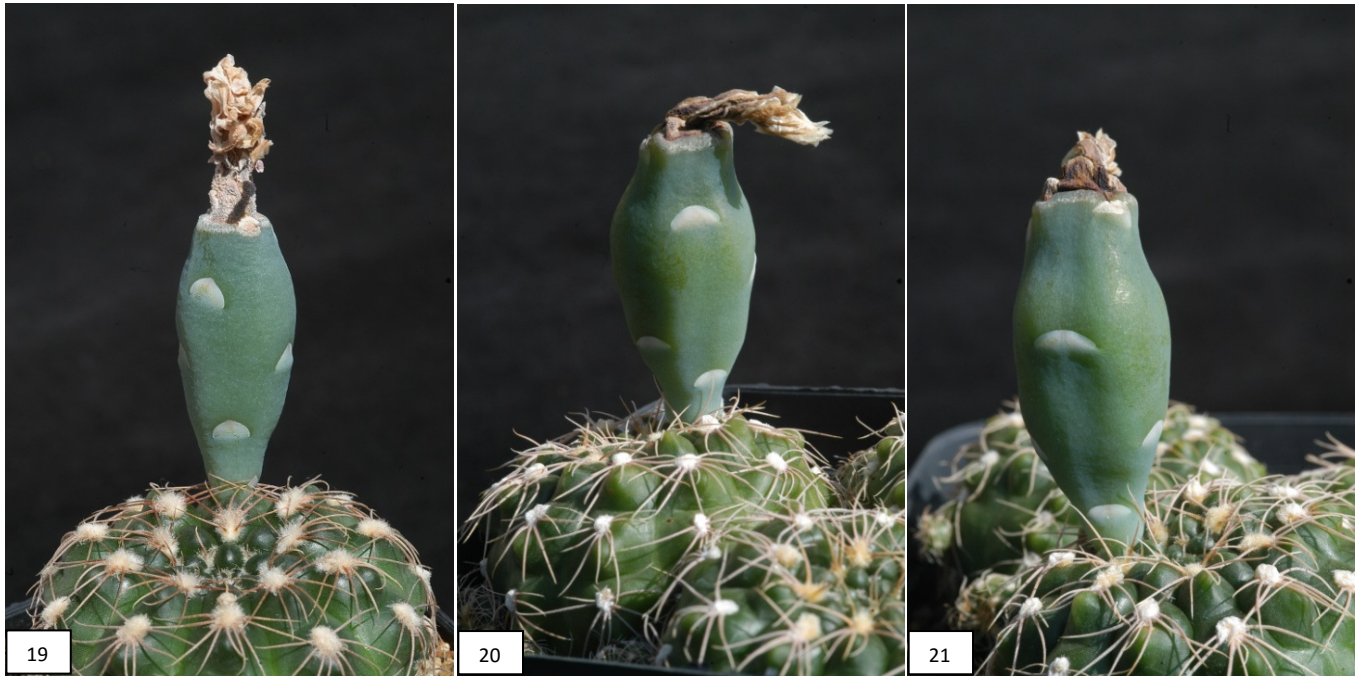


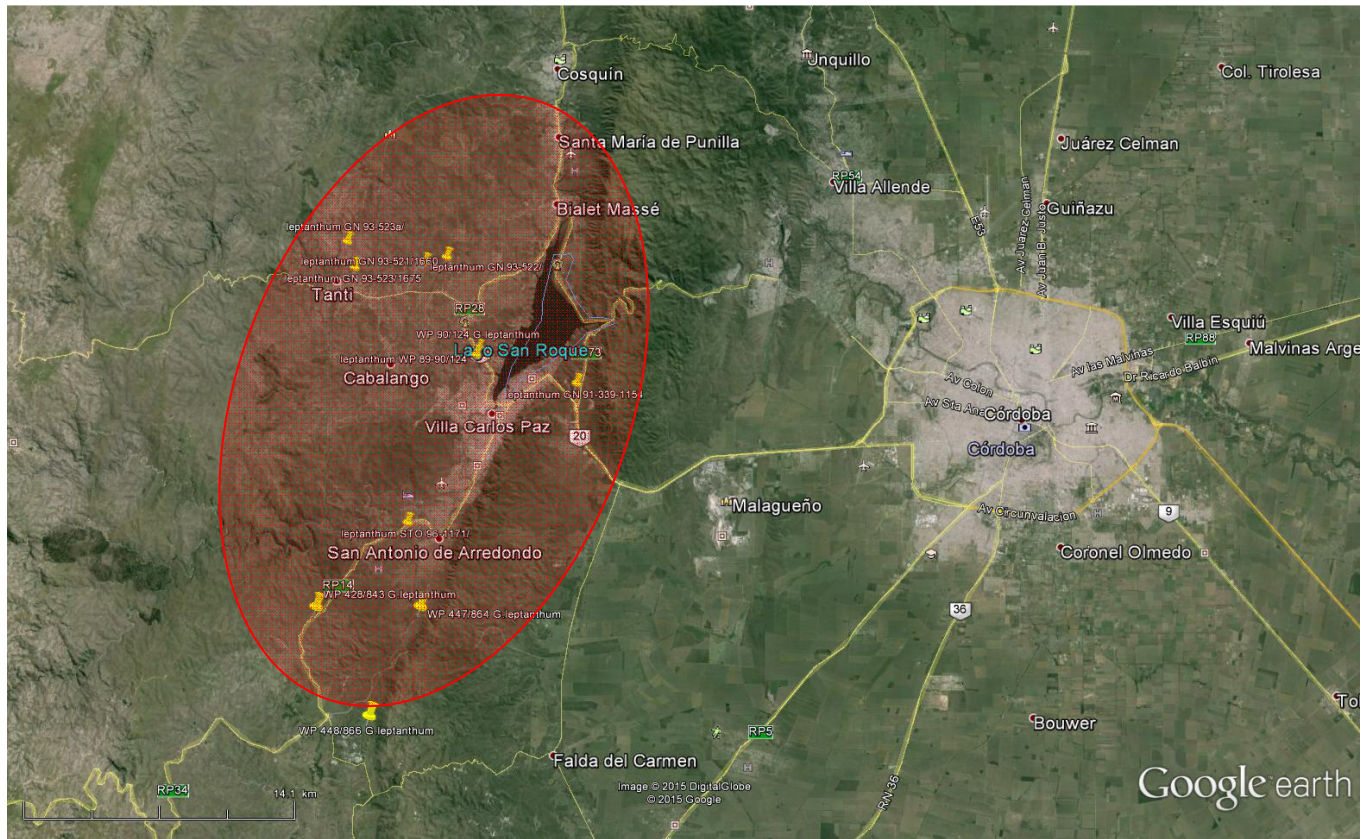
Fig. 19-21: *G. leptanthum*, fruits: Carlos Paz (19); Tanti (20); Va. Sagrada Familia (21)



Fig. 22-23: *G. leptanthum*, fruit with ripe seeds (22), seed (23) photograph: Volker Schädlich

Seed: Subspecies *Gymnocalycium*, black, 0.9-1.1 x 1-1.2 mm, testa cells cupola-shaped, HMR hardly sunk, wide drop-shaped to oval, marginal ridge somewhat protruding, light brown; micropyle slightly elevated.

Distribution: Argentina, province of Córdoba, between Cosquín and Bosque Alegre, at an altitude of 700 to 1.000 asl, on grassland interspersed with rubble or rocks and few shrubs, often coexisting with *G. bruchii* (Spegazzini) Hosseus, *G. monvillei* (Lemaire) Britton & Rose, *G. amerhauseri* subsp. *altagraciense* H. Till & Amerhauser, *Echinopsis aurea* Britton & Rose and *Parodia mammulosa* subsp. *submammulosa* (Lemaire) Taylor.



Map 3: *G. leptanthum*, area of distribution

Degree of endangerment: *G. leptanthum* can be found in large numbers at the investigated habitats. As these sites are not suitable for agriculture, no endangerment is to be expected from there. In small areas populations can be affected by human estate development or quarrying. The state of endangerment can therefore be considered to be "LC: Not endangered" at present.

All photographs: Wolfgang Papsch, Fig. 23 Volker Schädlich

Maps: Google Earth

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Fig. 24: *Gymnocalycium leptanthum*, Va. Sagrada Familia

Addendum to *Gymnocalycium schmidianum*

Wolfgang Papsch

Ziehrenweg 5, 8401 Kalsdorf (Austria)

e-mail: wolfgang.papsch@schuetziana.org



ABSTRACT:

There is little information about the first collection of *Gymnocalycium schmidianum* by Franz Strigl and Hans Till. It is mainly limited to Franz Strigl's diary entries. Illustrative pictures of the location and plants of the first collection have so far been known to only few persons. In Franz Strigl's documents three slides were found, one presenting the plant at its site of growth and two of imported plants of Strigl's collection.

Keywords: *Gymnocalycium*, *Gymnocalycium schmidianum*.

Gymnocalycium schmidianum (H. Till & W. Till) Meregalli & Kulhánek is the topic of a detailed paper, which was published at the beginning of 2015 (Meregalli & Kulhánek 2015). This species was found by Franz Strigl and Hans Till south of Tinogasta on 18th October, 1987, during their first trip to Argentina. On that day Hans Till was indisposed, thus no details as to locality can be found in his itinerary. He only notes that among the few discoveries on their way from Tinogasta to Famatina *G. hossei* var. *ferox* with the collection number STO 60 has possibly been found (Till 1987).

Franz Strigl writes in more detail about the collecting in his field records and calls the plant *G. hossei* var. *ferox*, too. The relevant entry reads as follows (Strigl 1987):

"60 southeast Tinogasta a mountain range left of the road, 1.600 asl, after exhausting way there search in vain at first. Finally at the foot of a mountain ridge wildly spinated G. hossei v. ferox, from spherical to slightly elongated spherical, 12-17 cm Ø, 13-18 cm high, partly flowers withered, occasionally with unripe, blue fruits."

All sorts of information were collected in order to discuss this taxon. Naturally, more than 28 years ago and long before the advent of digital photography, pictures at the habitat location were taken economically. In Strigl's collection of slides a reproduction of the plant at its habitat location has just been found (Fig. 1). Till could not visit the site due to health problems, thus there is no additional visual material from him.



Fig. 1: *Gymnocalycium schmidianum* STO 60, 18.10.1987 southeast of Tinogasta



Fig. 2: *Gymnocalycium schmidianum* STO 60 in the collection Strigl

Strigl took pictures of the plants in his collection, which he had brought back from this journey, in order to keep records of them. Among them two photographs of the site STO 60 were found in his slide collection (Fig. 2-3). No exact date of origin could be found for these slides.

The original transparencies from various manufacturers were digitalised with the help of BRAUN Multimag SlideScan 6000.



Fig. 3: *Gymnocalycium schmidianum* STO 60 in the collection Strigl

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LITERATURE:

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