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Cover page: *Gymnocalycium monvillei* subsp. *gertrudae* MaW 05-117/158, 5 km south of La Verbena, Ruta 9, Province San Luis, Argentina, photo: M. Wick

Editorial

Dear *Gymnocalycium* enthusiast!



Wolfgang Papsch

You can deal with plants in different ways. Of course, this also applies to the field of cactus studies. Our collections focus on the natural appearance of plants, their health, growth form, spination, flowering, seeds and also seedling behaviour.

But there is another interesting occupation: literature. It is fascinating to read how important exotic plants, including our cacti and other succulents, were in the past, for example in the 18th century, and how they were treated. The collection and care of these plants was almost exclusively in the hands of wealthy, high-ranking people or the nobility. Written documents about cacti from this time are not very common.

This changed massively in the 19th century. In France and Italy numerous botanical, often elaborately illustrated books and magazines have been published. Much of it is available in large university libraries, but also in private libraries.

In the age of digitization, more and more of these bibliographic treasures are being scanned and made accessible to the general public (e.g. our friend Daniel Schweich: <https://www.cactuspro.com/biblio/>).

When looking through such sources one sometimes finds unknown or forgotten things, but again also astonishing things. Many an old written contribution can clarify questions of nomenclature and system. As in the following article in this issue of SCHÜTZIANA.

In addition, enthusiastically equipped gymnofriends repeatedly try to validate old literature references on type locations. Volker Schädlich and Ludwig Bercht succeeded in doing this on their journey to Paraguay in 2016 for *Gymnocalycium mihanovichii*. The history of discovery forms the second part of this issue.

Enjoy reading!

We would like to thank Mrs Iris Blanz (Austria), Mr Brian Bates (Bolivia) and Mr Graham Charles (Great Britain), who support us with the translation into English, Mrs Larisa Zaitseva for the translation into Russian and Mr Victor Gapon (both Russia) for the content corrections of the Russian edition, Mr Takashi Shimada (Japan) for the translation into Japanese and Mr. Daniel Schweich (France), who reflects our publication below: <https://www.cactuspro.com/biblio/>.

To whom is the authorship of *Echinocactus ourselianus* to be attributed?

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ABSTRACT

Charles Antoine Lemaire and Hippolyte Boissel de Monville published nine cactus names in the French magazine "Herbier général de l'amateur" in 1843. So far, those cacti have remained unknown to subsequent scientists and cactus lovers. Among those nine cactus species described is included *Echinocactus ourselianus* Monville, whose description has been wrongly attributed to Fürst Salm-Reifferscheidt-Dyck, Lemaire or Cels by some authors.

KEYWORDS: Cactaceae, Nomenclature, *Echinocactus ourselianus*, *Gymnocalycium ourselianum*, *Gymnocalycium multiflorum*, *Gymnocalycium monvillei*.

INTRODUCTION

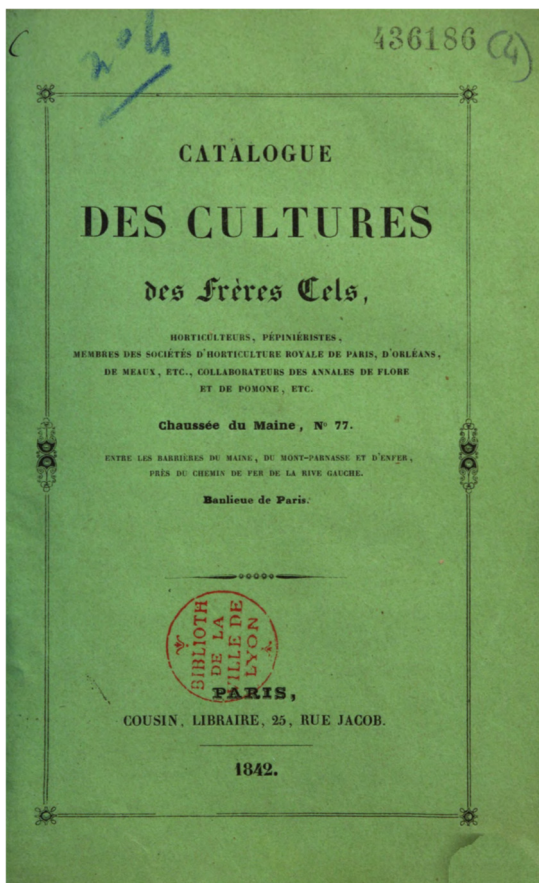
When studying articles which have been published in books and magazines since the middle of the 19th century and which refer in some way to *Echinocactus ourselianus*, it soon becomes obvious that none of the persons concerned had any knowledge of a first description of this plant. In the past this lack of knowledge led to various taxonomic interpretations and a range of differing nomenclature. The only fact that can be established is that so far authors' quotations referring to the name of this plant have been used randomly.

DISCUSSION

From the viewpoint of nomenclature G. Charles (2008), D. Hunt (2006) und C. Backeberg (1959) have named, in a chronologically descending order, J. Salm-Reifferscheidt-Dyck as the first author of *E. ourselianus*. However, Salm-Dyck on his part refers to a catalogue name used by Jean-Francois Cels in Paris.

Cels published a plant catalogue in 1842, in which he offers *Echinocactus oursellianus* (!) in two different sizes for 50, respectively 200 francs. He specifies Lemaire as the author of this species. As Cels does not offer a description of this plant, the name remained a nomen nudum.

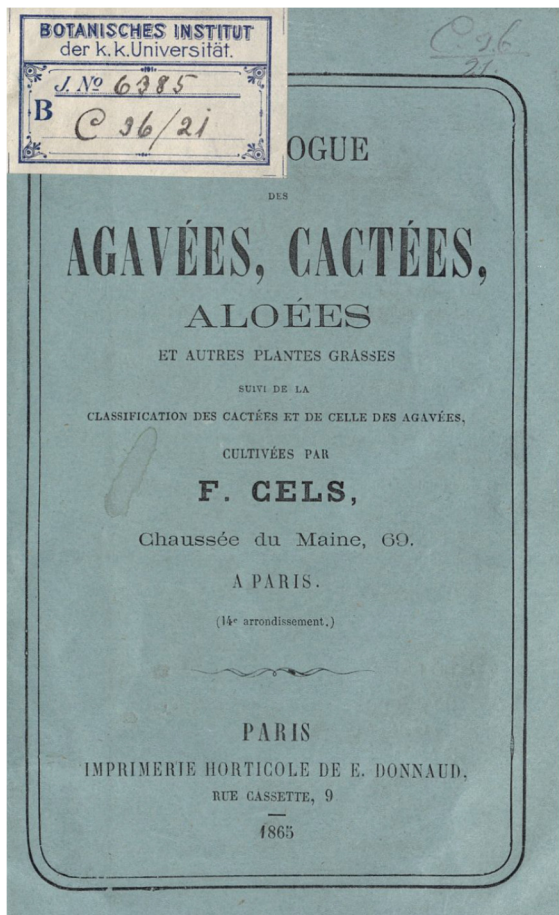
In his catalogue of 1865 the spelling of the name and the author citation remain the same and no characterisation equalling a description is given. As opposed to the catalogue of 1842, *E. multiflorus* Hooker is considered identical.



ET SERRE TEMPÉRÉE. 17

<i>Erong.</i> 3 à 15	<i>thelacanthus, Lem.</i> 10 c. 75
<i>formosus, Gill.</i> 10	<i>tortuosus, L. et O.</i> 4
<i>Gibbosus, Dec.</i> 8	<i>turbiformis.</i> 150
<i>gracillimus, Lem.</i> 3	<i>villosus (espèce fleurissant</i>
<i>hexaedrophorus, Lem.</i> 25 à 100	<i>deux fois l'an.) 1 à</i>
<i>hispanicanthus, Lem., de</i>	<i>12 c. haut. 50 à 500</i>
<i>43 cent. de diam. 125</i>	EPIPHYLLUM <i>Alteinstelii,</i>
<i>horripilus (caspitillus), de</i>	<i>Pfr.</i> 1
<i>2 à 10 centim. de 10 à 35</i>	<i>Russelianum.</i> 4
<i>hypticanthus, Lem. de 7 c. 180</i>	<i>truncatum.</i> 1
<i>Ingens, Zucc.</i> 5	<i>violaceum.</i> 5
<i>leucacanthus (salporrec-</i>	HABROTA <i>casseytha, Gaertn.</i>
<i>tus, Lem.) cœreus tube-</i>	<i>floccosa, Salm.</i> 1
<i>rossus, Pfr. à 6 c. 3 à 15</i>	<i>funalis, Salm.</i> 1
<i>Linkii, Lem.</i> 2	<i>mesembrianthemoides,</i>
<i>macrodiscus, de 14 à 17 c.</i>	<i>Haw.</i>
<i>de diam. 100 à 150</i>	<i>pentaptera.</i> 1
<i>Mackalanus, Hook.</i>	<i>saglionis.</i> 1
<i>mamulosus, Lem. de 12 c. 25</i>	<i>salicornioides, Haw.</i> 1
<i>— de 2 à 9 c. de d. 3 à 12</i>	LEPISMUM <i>communis, Pfr.</i>
<i>minax, Lem. 7 à 12 c. 12 à 30</i>	<i>knightsii, Pfr.</i> 50
<i>— de 47 cent. de diam. 70</i>	<i>myosurum, Pfr.</i> 1
<i>Mirbeli, Lem.</i> 40	<i>paradoxum, Salm. (Rhip-</i>
<i>Mouyilli, 2 à 12 c. 50 à 350</i>	<i>salis.) 2</i>
<i>niger (du Chili) 25 à 50</i>	MAMILLARIA <i>acanthophleg-</i>
<i>obvallatus, Dec. de 8 à 12 c.</i>	<i>ma, Pfr., leucocophala,</i>
<i>de diam. 40 à 80</i>	<i>Erong. de 1 à 9 c. 3 à 20</i>
<i>Ottonis, Lem.</i> 4	<i>angularis, Otto.</i> 3
<i>tenuispinus, L. et O.</i> 2	<i>arietina, d. 7 à 10 centim.</i>
<i>Oursellianus, Lem. 1/2 c. 50</i>	<i>15 à 25</i>
<i>— de 8 centim. 200</i>	<i>touffe de 28 centim. 75</i>
<i>Pendulii, Salm. 2 à 3 c.</i>	<i>aureiceps, Lem. 6 à 12 cent.</i>
<i>de diam. 22 à 50</i>	<i>5 à 25</i>
<i>pectiniferus, Lem. de 2 à</i>	<i>bicolor, Lem.</i> 4
<i>7 centim. 13 à 60</i>	<i>biglandulosa, Pfr.</i> 10
<i>phyllacanthus, Lem. de 2</i>	<i>caput Medusa, L. et O. 5 à</i>
<i>à 4 centim. de diam. 10 à 20</i>	<i>10 cent. 6 à 25</i>
<i>platyceras, Lem. 7 à 12 c.</i>	<i>diacantha.</i> 10 à 30
<i>de diam. 12 à 50</i>	<i>Celsiana, Lem.</i> 6
<i>polycanthus.</i> 40 à 50	<i>centricirria.</i> 10 à 50
<i>porrectus, Lem. (CERES)</i>	<i>macrochele.</i> 15
<i>Malbei 10</i>	<i>centrispina, Pfr.</i> 5
<i>pumilus, Lem.</i> 1 à 5	<i>chrysacantha, Otto.</i>
<i>recurvus, L. et O. 2 à 15 c.</i>	<i>cirriferia, Mart.</i> 2 à 10
<i>10 à 100</i>	<i>columnaris, Mart.</i> 4
<i>rhodacanthus cocineus</i>	<i>coronaria, Haw.</i> 2
<i>Hort. Salm.</i> 2	<i>crociata, Lem.</i> 2
<i>robustus, Otto.</i> 2	<i>crucigera, Mart.</i> 2
<i>Sellowianus, L. et O. de 2</i>	<i>dalmonoceras, Lem. 2 à 8</i>
<i>à 17 centim. 4 à 55</i>	<i>cent. 5 à 20</i>
<i>Courantii, Lem. 2 à 10 c.</i>	<i>deflexispina, Lem.</i> 8
<i>de diam. 4 à 15</i>	<i>diaphanacantha, Lem.</i>
<i>sessiliflorus, Hook. 3 à</i>	<i>discolor, Haw.</i> 10
<i>7 c. 8 à 25</i>	<i>monstruosa.</i> 7
<i>tetracanthus, 3 à 7 c. 8 à 25</i>	<i>dollicocentra, Lem. (Gart.)</i>
<i>scopa, L. et O.</i> 8	<i>leotti (Sch.) 6 à 12 cent.</i>
<i>candida.</i> 3	<i>6 à 15</i>
<i>cristata.</i> 15	<i>echinata.</i> 1
<i>spiralis, Karw.</i> 15	<i>elephantidens, Lem. (fleurs</i>

Fig. 1: Cels Catalogue 1842: Title page and page 17



— 9 —

Obvallatus, Wegeneri, Salm.	FR. C.
Ottonis, Lem.	8 »
— <i>Linkii, Lem.</i>	4 »
— <i>tortuosus, Lk et Otto.</i>	4 »
Odiari, Lem.	2 »
Oursellianus, Lem. multiflorus, Hook.	40 »
Pepinianus, Lem.	8 »
— <i>macracanthus.</i>	» »
Pfeifferi, Zucc.	8 »
Phyllacanthus, Mart.	5 »
— <i>grandicornis, Lem.</i>	7 »
— <i>micracanthus, Lem.</i>	5 »
— <i>macracanthus.</i>	6 »
Piliferus, Sch. Steinesii, Hook.	» »
Platyceras, Lem. platycanthus, Karw.	40 »
Pootsii, Scheer.	8 »
Pumilus, Lem.	4 »
Recurvus, Lk et Ott.	» »
— <i>spiralis, Karw.</i>	» »
Robustus, H. Ber.	5 »
Scopa, Lk et Ott.	4 »
— <i>candida, Pfr.</i>	4 »
— <i>cristata, Salm.</i>	10 »
Sinuatus, Diet.	6 »
— <i>flexispinus.</i>	» »
— <i>robustus.</i>	» »
Submamulosus, Lem.	4 »
Smithii.	» »
Texensis, Hopfr.	15 »
Treculianus, Lab.	40 »
Tulensis, Posel.	40 »
Uncinatus, Hopf.	20 »
— <i>unguispinus, Salm.</i>	25 »
Villosus, Lem. polyraphis.	8 »
— <i>niger.</i>	8 »
Williamsii, Lem.	6 »
Wislizenii, Engelm.	» »

EPIPHYLLUM.

Rukerianum et varietates	1 »
Russelianum, Hook.	2 »
Truncatum, Pfr. et varietates	4 »

Fig. 2: Cels Catalogue 1865: Title page and page 9

Quoting Cels as the author, Salm-Dyck regards *E. ourselianus* as synonym with *Echinocactus multiflorus* Hooker in 1850. In this paper, too, only the name is used without any description, that is why Salm-Dyck can also not be called the author and the name remains a nomen nudum. This opinion is corroborated by Metzging et. al. (1995).

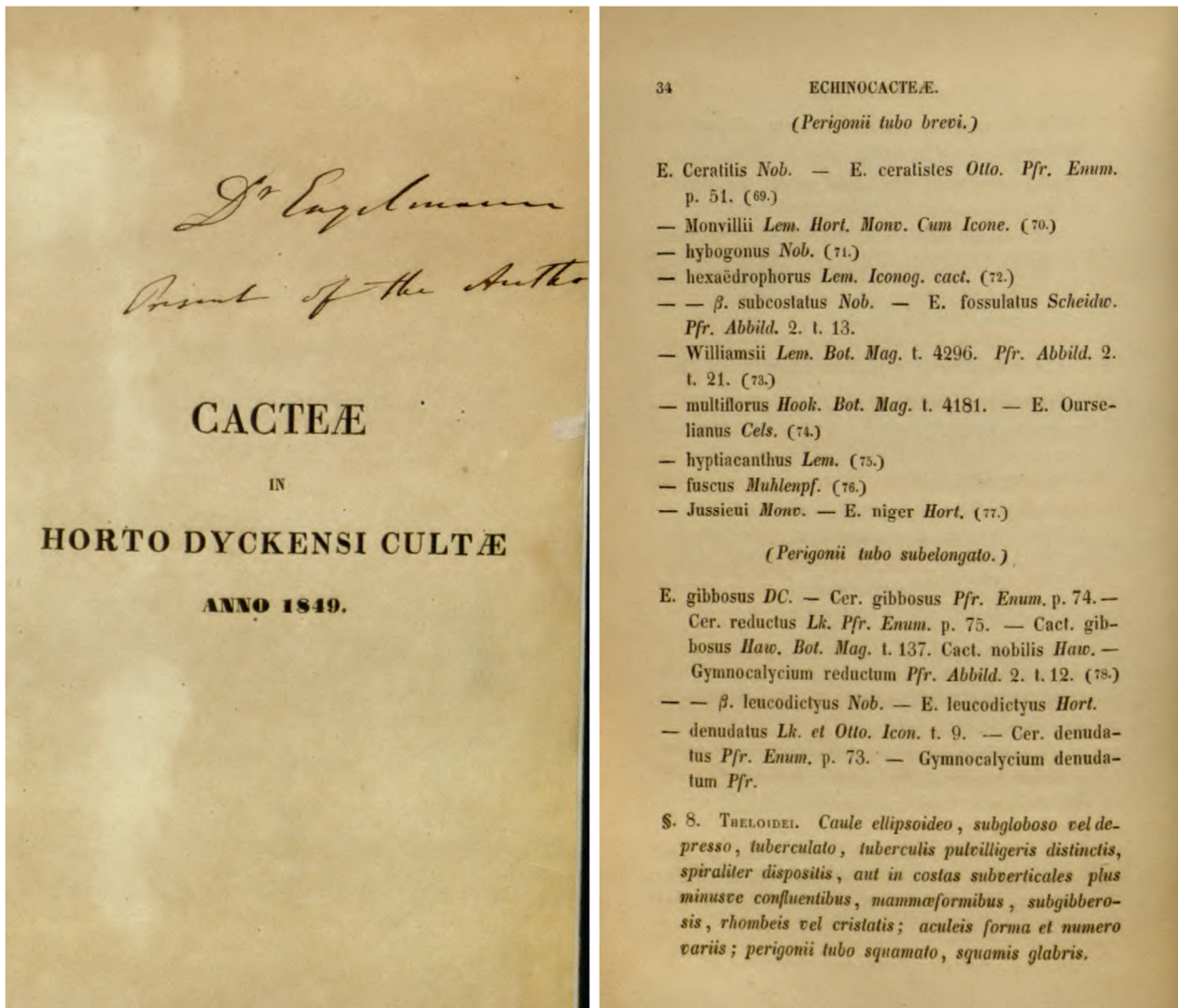


Fig. 3: Salm-Dyck 1850, Title page and page 34

K. Schumann (1895), E. Schelle (1907, 1926), A. Berger (1929), N. L. Britton & J. N. Rose (1922) and Y. Ito (1957) ascribe authorship to Monville. Ito refers to a publication by Monville in 1850, although it is not the first description of the species. He possibly relates to the auction catalogue of Monville's collection (Monville 1846). His repeated attempt to attribute *E. ourselianus* to the genus *Gymnocalycium* remains invalid for formal reasons (Ito 1952, 1957). The source used by Berger and Schelle is unknown. Britton & Rose, on the other hand, refer to Salm-Dyck.

C. F. Förster (1846) lists *E. ourselianus* under the title "New *Echinocacti* which are still very rare or only exist as juvenile specimens so that no exact description can be given." He names Lemaire as the author but does not quote his source for this statement.

H. Till & W. Till (2008) consider Cels to be the exclusive author of this taxon. They also take the fact as proven that the name *Echinocactus ourselianus* Cels ex Salm-Dyck is a nomen nudum and therefore they describe this taxon formally new as a subspecies of *Gymnocalycium multiflorum*. Thus, their approach and motivation for a new description are questionable.

In the course of his intensive research of old literature in 2012, the Swiss Anton Hofer came across the so far unknown description of nine cacti by Charles Lemaire and Hippolyte Boisset de Monville. The French magazine *Herbier général de l'amateur*, deuxième série appeared as a supplier between 1839 and 1850. In volume 3 (1843, editor Charles Lemaire) the new species were published under the title "*Miscellanés Botaniques*" with a diagnosis in Latin in four articles distributed over the year. On pages 2-3 Lemaire describes an *E. poliocentrus* from Mexico and on page 4 a new Rhipsalis species as *R. sarmentacea* from the province Buenos Aires. On pages 41-43 Lemaire adopts the description of four Latin American species under the subheading "*Espèces nouvelles de la famille des CACTÉES*". In another paragraph (pages 43-44) Lemaire describes three new species from Mexico using the title "*De aliis CACTEARUAM speciebus aliquot novis*".

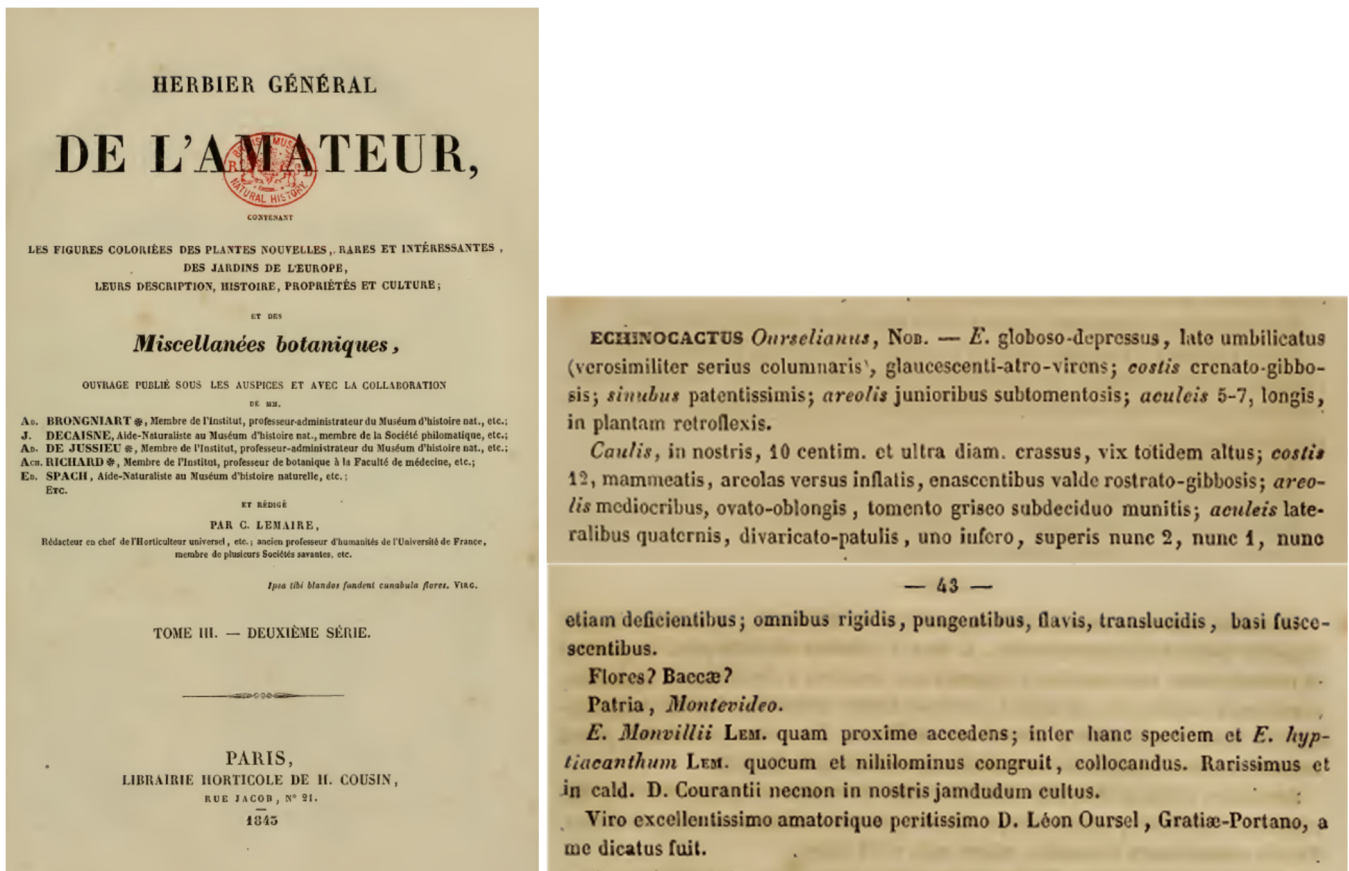


Fig. 4: Title page and excerpt from page 42/43 of the publication *Herbier général de l'amateur*, 1843.

Among the described four species by Monville there is also an *Echinocactus ourselianus*, apart from *Echinocactus neumannianus*, *Echinopsis jamesiana* und *Echinopsis valida*.

The original description of *Echinocactus ourselianus*:

ECHINOCACTUS Ourselianus, Nob. — *E. globoso-depressus*, late umbilicatus (verosimiliter serius columnaris), glaucescenti-atro-virens; costis crenato-gibbosis; sinubus patentissimis; areolis junioribus subtomentosis; aculeis 5-7, longis, in plantam retroflexis.

Caulis, in nostris, 10 centim. et ultra diam. crassus, vix totidem altus; costis 12, mammeatis, areolas versus inflatis, enascentibus valde rostrato-gibbosis; areolis mediocribus, ovato-oblongis, tomento griseo subdeciduo munitis; aculeis lateralibus quaternis, divaricato-patulis, uno infero, superis nunc 2, nunc 1, nunc etiam deficientibus; omnibus rigidis, pungentibus, flavis, translucidis, basi fuscescentibus.

Flores? Baccae?

Patria, Montevideo.

E. Monvillii Lem. quam proxime accedens; inter hanc speciem et E. hyptiacanthum Lem. quocum et nihilominus congruit, collocandus. Rarissimus et in cald. D. Courantii necnon in nostris jamdudum cultus.

Viro excellentissimo amatorique peritissimo D. Léon Oursel, Gratiae-Portano, a me dicatus fuit.

English translation:

ECHINOCACTUS Ourselianus, Nob. — *E. sub-globose with broad umbilicus (presumably elongated later), body dark, bluish grey-green; ribs crenated, bulging, conical; strongly sinuated with widely open protuberances; young areoles with short felt; 5-7 spines, long, curving back to the plant body.*

Plant body in this case 10 cm and more in diameter (and almost as high). Ribs 12, dissolved into wart-like structures, the ovate, elongated areoles originate in moderate distances on beaklike humps, they are fringed with grey felt, which falls off later.

4 radial spines, opening in lateral direction, mostly one spine directed downward, sometimes two, sometimes only one, sometimes none, all spines are strong, prickly, yellow, transparent, brownish at their base.

Flowers? Fruits?

Home: Montevideo.

Resembles E. Monvillii Lem. the most; its position between the latter species and E. hyptiacanthum Lem., with which it also differs, is still to be established. Very rare, but according to D. Courantii has been in culture here for a long time.

Dedicated to the excellent and experienced cacti lover and specialist D. Léon OURSEL, with gratitude and my special esteem.

Therefore, this species has to be quoted correctly as ***Echinocactus ourselianus*** Monville 1843.

As *E. ourselianus* has not been validly placed within the genus *Gymnocalycium* so far, this is put into effect here:

Gymnocalycium ourselianum (Monville) Papsch comb. nov.

Basionym:

Echinocactus ourselianus Monville. - Espèces nouvelles de la famille des CACTÉES. - Herbar général de l'amateur, deuxième série: 42-43 (1843).

Type: Protologue.

Synonyms:

- *Echinocactus ourselianus* Lemaire ex Cels nom. nud. 1842,
- *Echinocactus ourselianus* Lemaire ex Förster nom. nud. 1846,
- *Echinocactus ourselianus* Cels ex Salm-Dyck nom. nud. 1850,
- *Gymnocalycium ourselianum* (Monville) Y. Ito nom. inval. 1952,
- *Gymnocalycium ourselianum* (Monville 1850) Y. Ito nom. inval. 1957,
- *Gymnocalycium multiflorum* subspec. *ourselianum* Cels ex H. Till & W. Till 2007.

Due to their lack of knowledge of its first description, *E. ourselianus* has been, in taxonomic respect, regarded by authors by various authors as a separate species (Cels 1844, Förster 1846) or as a synonym, first of *G. multiflorum* (Hooker) Britton & Rose (Salm-Dyck 1850, Rümpler 1896, Schumann 1898, Schelle 1907 and 1926, Britton & Rose 1922, Berger 1928) and in the latest publications of *G. monvillei* (Lemaire) Britton & Rose (Hunt 2006, Charles 2008, Lodé 2015).

Lemaire, Cels and Monville were in close contact and maintained a lively exchange of their knowledge. Monville was a factory owner in Montville near Rouen and a great collector of plants with the cacti within his substantial collection being of special interest to him. Jean-Francois Cels ran a large garden centre in Paris, where he also cultivated about 5,000 cacti. We can read in an 1843 commission report to the Royal Horticultural Society of Paris about the size and enormous choice of plants in this garden centre:

“Report for the Royal Horticultural Society of Paris on Father Cels’s horticultural centre on the way to Maine by a commission consisting of the gentlemen Fr. BERLÈSE, NEUMANN, POITEAU, PÉPIN as well as Vicomte DEBONNARY OF GIF as commentator.

(.) These two greenhouses store about 5,000 cacti on trays located at the front side, some in soil on the ground, others in pots. These cacti are of the rarest species. (.)

*(.) The temperate greenhouse is a pavilion at the entrance of the building and it is kept temperate by Cels’s house. This pavilion, of square layout, is reserved for cacti, there are about five hundred of them, some with a circumference of more than one metre. Among the rare species can be mentioned: *Echinocactus helophorus*, *piliferus*, *ourselianus*, *Monvillii*, *ancistracanthus*, *courantianus*, *Williamsii*, *hyptiacanthus*, *denudatus*, *macrodiscus*, *Anhalonium pulvilligerum* and *prismaticum*, *Astrophyton*, *Pilocereus senilis*, as well as *Mamillaria elephantidens*.” (.)*

Lemaire, initially professor of literature in Paris, discovered his passion for botany in 1835 and became an expert on cacti and succulents. For his studies of these plants the collection Monville as well as the cacti and succulents of Cels’s garden centre were his most important sources.

In 1838 Lemaire describes an *Echinocactus monvillei* Lemaire (as *E. monvillii*) and corroborates his description with a certain Mr Thiollat’s detailed drawing of the plant and a protuberance with an areole. The latter had already completed the drawing in 1836 (Lemaire 1838). The plant is represented in full size and thus had a diameter of 23 cm and a height of 19 cm. This drawing can also be regarded as a lectotype for *E. monvillei*.

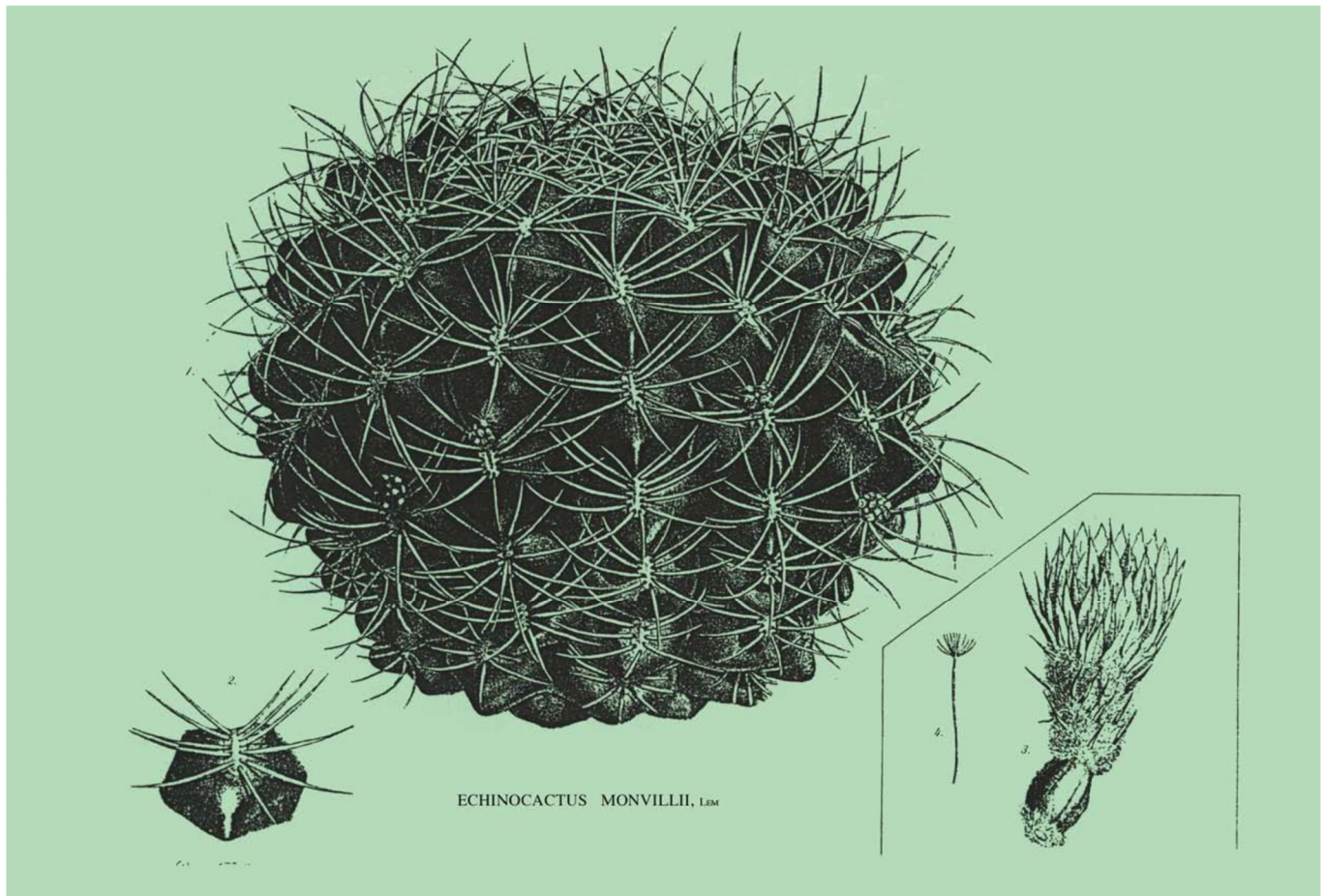


Fig. 5: *Echinocactus Monvillii* in Lemaire, Ch.: Cactearum aliquot novarum ac insuetarum in horto monvilliano cultarum accurata description 1838

Simply because of its attractive spines and size, this species must have been very much in demand and thus well-known. Lemaire states that the plant, despite its enormous size - over 8 inches high and more than 2 foot in diameter, (approximately 22 cm high and 60 cm in diameter) - has not flowered yet. Rümpler, too, maintains that a 22 cm high plant of Salm-Dyck's hasn't flowered yet (Rümpler 1886). In 1847 Lemaire published, as an addition, a flowering plant in his endeavour to improve illustrations of plants in general. He uses the drawing of the first description, but reproduces it in a mirror-inverted way and adds the flowers (Lemaire 1847). According to his data, the flowers have a length of over 9 cm and a diameter of 10-11 cm in full anthesis. The same year A. Dietrich could also see flowers for the first time in the Collection of Heyder in Berlin and he delivers a good description. Here the size of the flowers is described as 2-2.5 inches (approximately 5-6.5 cm), which is considerably smaller (Dietrich 1849). So *E. monvillei* cannot be called particularly eager to flower, only large, fully-grown specimens form numerous flowers. The reproduction of *E. monvillii* must still have worked well, as Cels offers it in various sizes as early as in 1840/41.

As mentioned above, Cels already offers *E. ourselianus* in various sizes in 1842 and in doing so refers to Lemaire (Cels 1842). It is stated in the first description that this species has been present in cultivation for quite some time and we can draw the conclusion that of course this *Echinocactus* must have been known to Lemaire and Monville, too. However, those plants must have shown marked differences compared with *E. monvillii*. There were several plants of both species present for comparison and the differences must have been noticed by Lemaire, Monville and Cels.

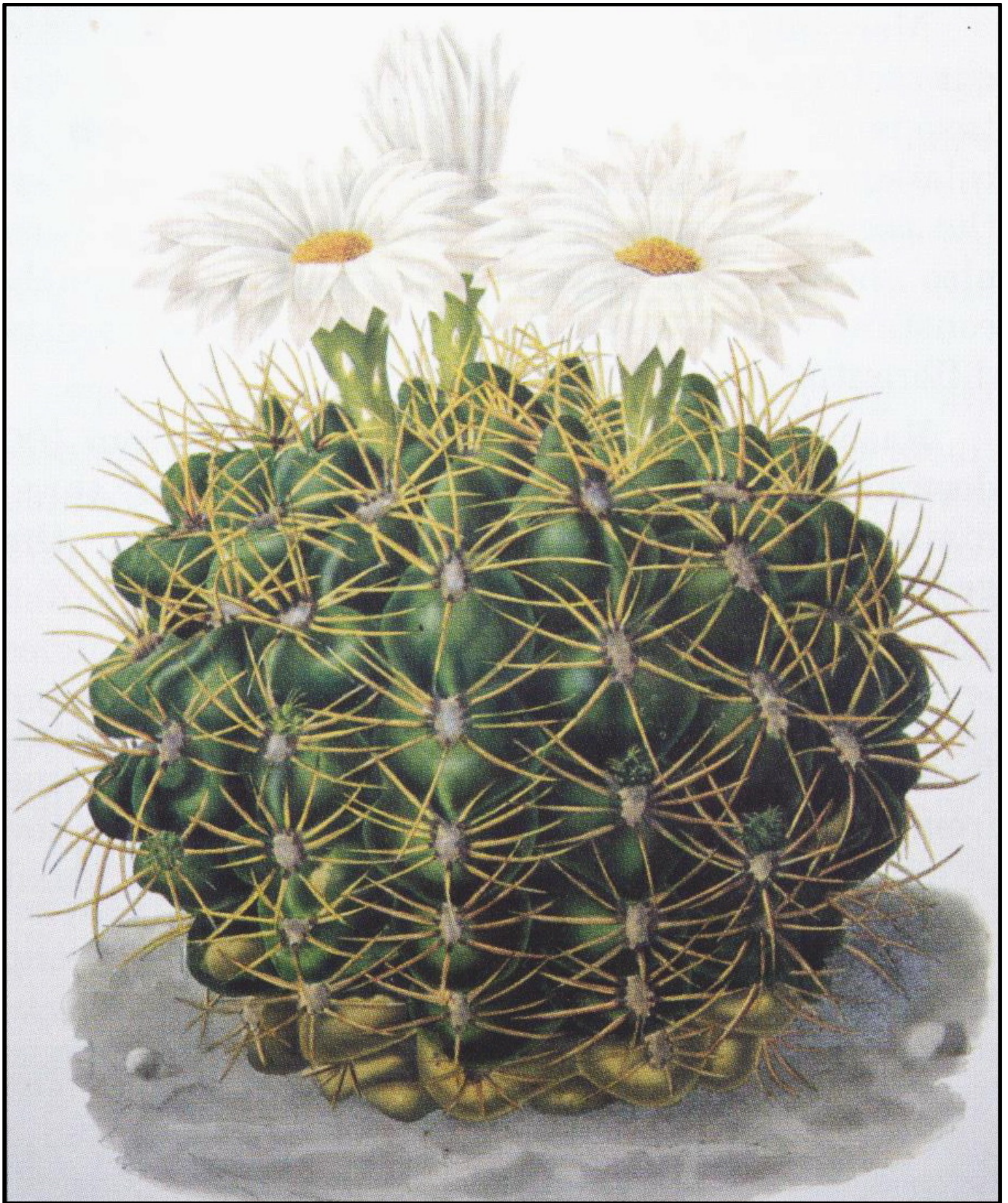


Fig. 6: Lemaire, Ch.: Iconographie Descriptive des Cactées 1847

We regret that so far we have not had the possibility to resort to any illustration of *E. ourselianus*. This means that only the descriptive features of the protologues of *E. monvillii* and *E. ourselianus* can be compared against each other. Apart from the given localities, body sizes and offsetting characteristics, a remarkable difference can be noticed in spination and flower. Lemaire's *E. monvillei* has lateral shoots up to half of its body size and the author deliberately mentions this

offsetting. Number and position (10 lateral spines sideward, 1 spine upward and 1 downward as well as 1 central spine in *E. monvillii* as opposed to 4 lateral spines sideward and 1-3 spines downward in *E. ourselianus*) result in basically different areole patterns. At the time of their first description both species were not flowering, respectively had not flowered so far. Monville indicates in his catalogue that *E. monvillii* has a diameter of 35 cm in the collection and *E. ourselianus* a diameter of 16 cm. To both he adds (fl.), an indicator that both have flowered, in contrast to plants in other collections. Monville's catalogue does not list any *E. multiflorus*.

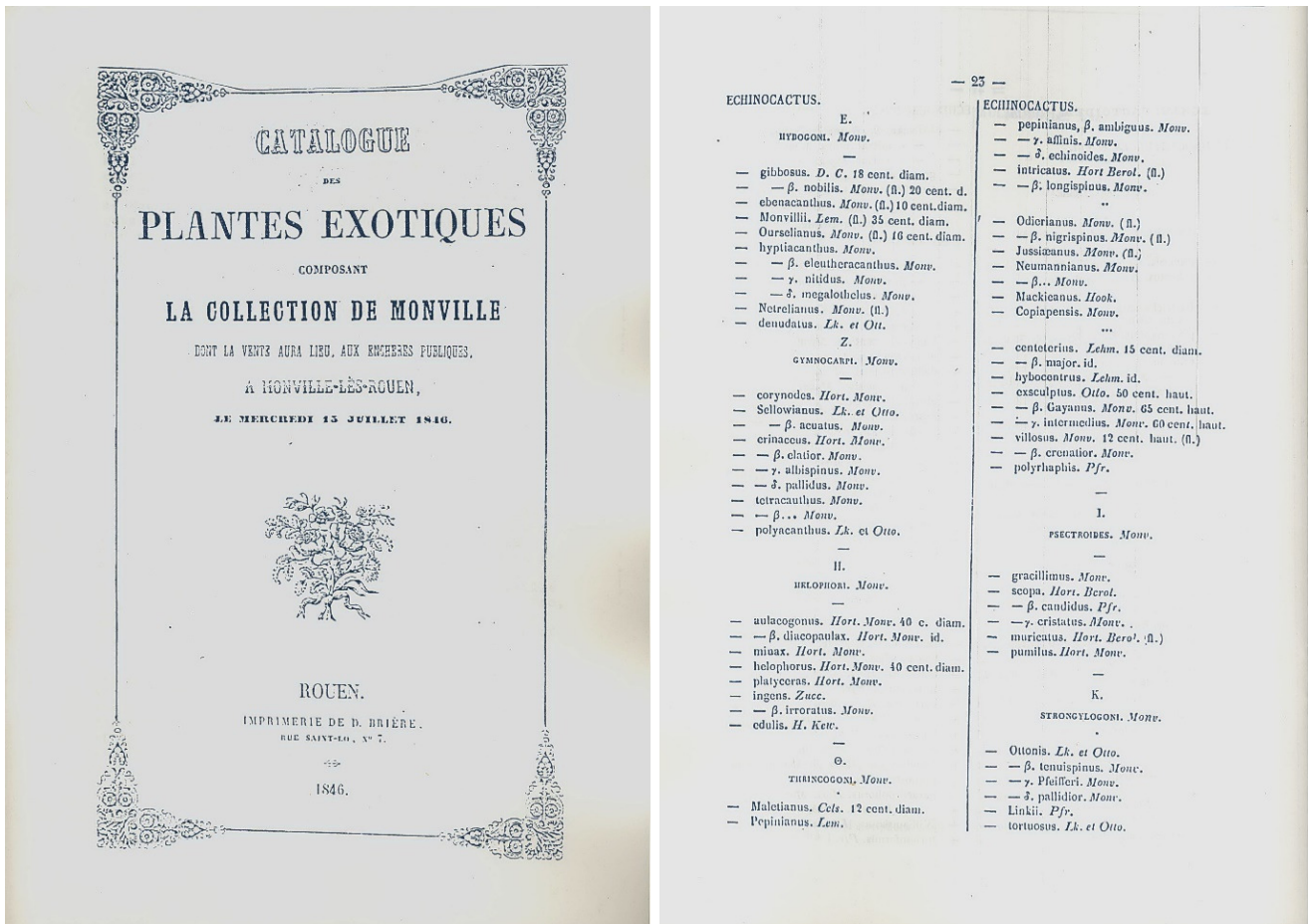


Fig. 7: Monville Catalogue 1846 Title page and page 23

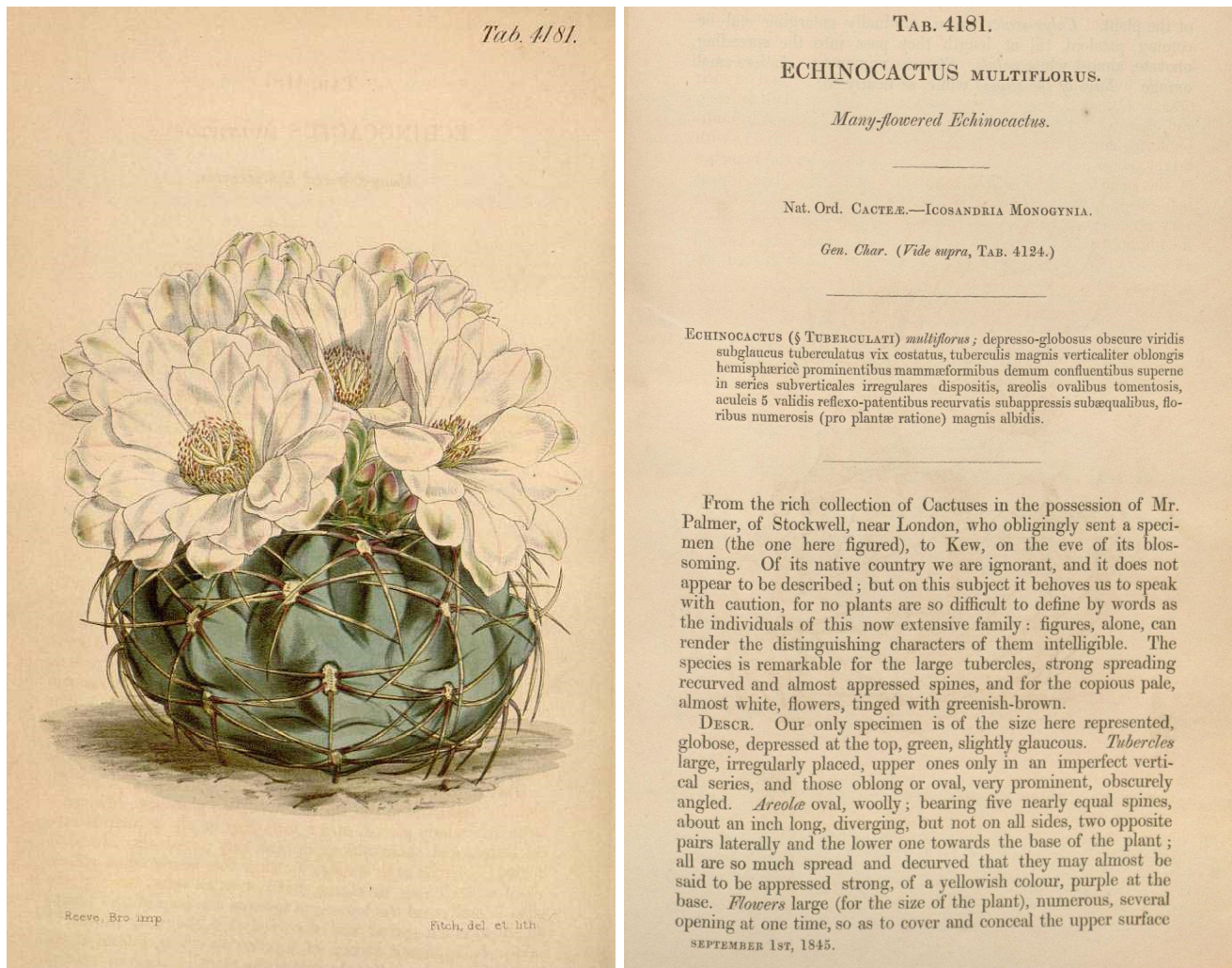
A clue for identifying *E. ourselianus* could be given by Cels's regarding *E. multiflorus* as identical in his 1875 catalogue. (Cels 1875).

E. multiflorus was first described by Hooker in Curtis Botanical Magazine in 1845 with an informative drawing of the plant. The drawing was done by W. H. Fitch and shows a flowering plant. On comparing the features listed for *E. ourselianus* with those of *E. multiflorus*, a high analogy can be established. Cels certainly knew this first description and could compare the picture with his plants, thus drawing the conclusion that both plants described were identical. K. Hirscht, too, assumes that Monville's plant was described before by Hooker (Hirscht 1897). With this statement *E. ourselianus*, which was described two years earlier, obtains priority over *E. multiflorus*, as already quoted correctly by Cels and Weber.

Gymnocalycium ourselianum (Monville) Papsch

Synonym: *Echinocactus multiflorus* Hooker 1845

Gymnocalycium multiflorum (Hooker) Britton & Rose 1922 *Synonym nova*



of the plant. *Calyx-scales* green, gradually enlarging and becoming petaloid, till at length they pass into the spreading, obovate, almost white *petals*. *Stamens* numerous. *Anthers* small orange. *Rays of the stigma* white, or nearly so.

Fig. 8: Curtis Botanical Magazin tab. 4181 (1845)

If Cels mentions that his *E. ourselianus* is identical with *E. multiflorus*, the two plants must have been at least very similar in their appearance. Now we can compare the pictures of *E. monvillei* and *E. multiflorus* = *E. ourselianus*, as mentioned above, and the spine and rib patterns turn out to be noticeably different. The different flowering features are also striking: Only large *E. monvillei* specimens flower abundantly, whereas even small *E. multiflorus* specimens are rich in flowers. Rümpler, too, points out the “large amount of flowers” of *E. multiflorus* (Rümpler 1886).

The flowers of *E. monvillei* and *E. multiflorus* are depicted markedly differently. Plants from Córdoba and its surroundings, which are nowadays generally regarded as *G. monvillei*, show the typical flowers consisting of short tubes as they were drawn by Fitch in 1845. The flowers of Lemaire’s *E. monvillei*, however, have unusually long tubes with a length of 10-11 cm.

Tab. 1: Comparison of features of *G. monvillei*, *G. ourselianum* and *G. multiflorum*:

	monvillei	ourselianum	multiflorum
Body	22 cm high, 55 cm in diameter, spherical, offsetting	10 cm and more in diameter, compressed hemispherical,	spherical
Body colour	Intensively bright green	dark bluish green	green, slightly bluish
Apex	flat	compressed	caving in
Ribs	17, almost vertical, dissolving into tubercles	12, crenate, humpy, cone-shaped	dissolving into tubercles
Tubercles	ca. 23 x 18 mm, hexagonal, slightly indented	strongly indented, wide open	large, irregularly arranged, oblong or oval, prominent, slightly bent
Areoles	elongated oval, short, white, woolly	ovate on the beaklike humps, short, grey, with felt	oval, woolly,
Spines	12-13, in two rows	5-7, long, curving towards the body	5, almost similar, bent wide apart
Radial spines	10 sideward, 1 shorter upward, 1 downward	4, open, in vertical direction 1 (0-2) downward	2 lateral pairs, 1 downward
Central spines	1, very long, straight, 5.5 cm long		-
Shape of spines	40 mm long, flexible vertically striped, slightly flattened	strong, prickly	2.7 cm long, tightly pressed to the body
Spine colour	bright yellow, purple at its base and awl-shaped	yellow, transparent, brownish at their base	yellowish, purple at the base,
Flowers	very large, 9 cm long, 10-11 cm in diameter, shining white,	?	large, numerous, white (compared with plant size)
Fruit	-	?	-
Home	Paraguay, Cordillera	Montevideo	-

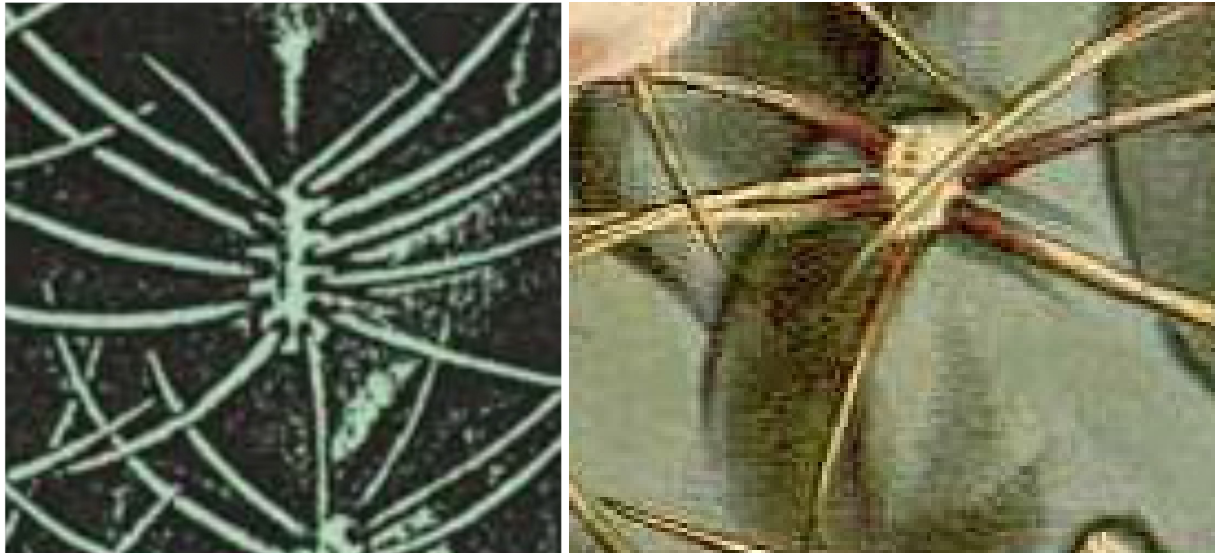


Fig. 9: Areole pictures: *G. monvillei* and *G. multiflorum*

In the protologue of his *E. ourselianus* Monville points out that this plant has already been cultivated for a long time. This must be true as otherwise Cels's plant offerings could not have been possible. It can only be speculated about how *E. monvillei* and *E. ourselianus* can have got into Monville's collection.

During the years before the description of *E. monvillei*, *E. ourselianus* and *E. multiflorus* many plants newly discovered by famous natural scientists like John Gillies, Aime Bonpland or Friedrich Sello got to England and France.

The sheer description of the locality – “Paraguay, Cordillera” – in Lemaire's protologue of *E. monvillei* allows us to draw some conclusions. Together with the plants from Córdoba, plants from Paraguay might have arrived at the same time. Due to lack of material for comparison they could have been regarded as the same plants. Although Paraguay was almost completely isolated in the first half of the 19th century, there was the occasional possibility to travel the country, as for instance the Swiss R. Rengger and M. Longchamp report. It is an interesting fact that the French natural scientist Aime Bonpland lived in Buenos Aires from 1816 to 1820 and then in Paraguay until 1821. After his release from Paraguayan captivity in 1829 he lived in São Borja (Brazil) before returning to Argentina. We also shouldn't forget that up to the Triple Alliance War in 1864 the Argentinian province Formosa was part of Paraguay. The province Misiones and some parts of neighbouring Brazil had been annexed by Paraguay and the town São Borja is situated on the border of the area claimed by Paraguay.

Of course, Bonpland kept in close contact with France. Considering this background, Lemaire's locality would make sense. Charles's opinion, which is based on a report about the meeting of the German Cacti Society by E. Dams in March 1903, must be contradicted. The report claims that the origin of *E. monvillei* has become clear with PhD Spengler's statement. PhD Spengler created a botanical garden in Vomero, Italy (erroneously Volmero, Argentina, according to Charles) called *Hortus botanicus Vomeriensis*, and dedicated his time to theoretical and practical studies of botany. By corresponding with specialists from all over the world he got seeds and used them to establish experimental plant cultivations. In 1903 he sent some cacti to Schumann. Spengler answered Schumann's enquiry whether *E. monvillei* originated from Córdoba like *E. quehlianus* in the affirmative. Spengler himself was never in Argentina and the origins of his plant material are unknown.

In cultivation the differences between *E. monvillei*, i.e. the plant from “Paraguay”, never become obvious and thus led to the description of *E. ourselianus*.

However, Monville specifies Montevideo, Uruguay, as locality of *E. ourselianus* and he presumes that it must be positioned between *E. monvillei* and *E. hyptiacanthus*. Up to 1843 only seven Echinocactus species were known, which are now assigned to the genus *Gymnocalycium* (*E. gibbosus* 1812, *E. reductus* 1822, *E. denudatus* 1828, *E. leeanus* 1837, *E. mackienanus* 1838, *E. monvillei* 1838 and *E. hyptiacanthus* 1839). The possibilities to compare were really not numerous and indeed, only the species described by Lemaire could be resorted to for comparison.

Four samples from PhD Weber's collection are deposited in the herbarium of the Muséum National d'Histoire Naturelle in Paris (P). These are, among other names, labelled *E. oursellianus* respectively *E. ourselianus*, with the labelling being Weber's, judging from the handwriting. Each sample consists of a split flower.

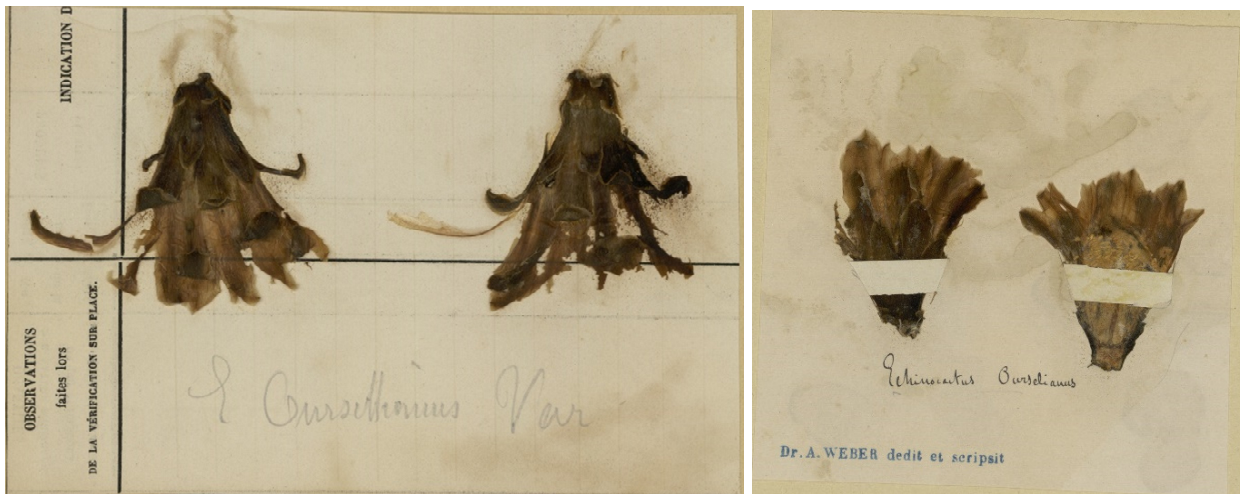


Fig. 10: Left sample P 04594110 is labelled "*E. Oursellianus Var*", thus following Cels in spelling; right sample P 04594011 now labelled "*Echinocactus Ourselianus*".



Fig. 11: Left sample P 04594012 with the label "*Echinocactus Ourselianus, épines blanches non adprimées*"; right sample P 94584013 labelled "*Echinocactus multiflorus Hook.*" and "*Echinocactus oursellianus*".

CONCLUSIONS

Echinocactus ourselianus is validly described by Monville 1843. *Echinocactus multiflorus* described by Hooker in 1845 does not show any differences in the features listed and must therefore be regarded as a synonym. The features given for *G. ourselianus* and *G. multiflorus* on the one hand and *G. monvillei* on the other hand exhibit significant differences. These refer to spination, offsetting and particularly to flower features.

The province Córdoba is probably certain as the locality of *G. ourselianus* (= *G. multiflorus*). The locality mentioned by Lemaire in his first description of *G. monvillei* should be verified in field studies in Paraguay, where there is a province Cordillera. If by doing so no specimens similar to the described plant can be found, the present practice of listing *G. ourselianus* and *G. multiflorus* as synonyms can be accepted, also for reasons of nomenclature stability.

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The long search for the type location of *Gymnocalycium mihanovichii* (Frič & Gürke) Britton & Rose

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ABSTRACT

It was doubted by experts for many decades whether Alberto Vojtěch Frič with the location of his *Echinocactus mihanovichii*: "on the beach lying forests north of Puerto Casado" has indicated the actual site of discovery. More than a century later Volker Schädlich and Ludwig Bercht succeeded on their journey to Paraguay in 2016 to validate the type location again and to find *Gymnocalycium mihanovichii* there again.

KEYWORDS: Cactaceae, *Gymnocalycium mihanovichii*.

On his second trip to South America, from August 11th, 1903 to September 17th, 1905, Alberto Vojtěch Frič found a hitherto unknown taxon in the riparian forests of the Rio Paraguay.

In the monthly publication "Monatsschrift für Kakteenkunde" in 1905, the valid description of *Echinocactus Mihanovichii* by Alberto Frič and Max Gürke was published. This species was named after Nicolas Mihanovich, a shipowner from Paraguay. Mihanovich supported the trips of Frič.

In 1925 Frič reported in the magazine "Život v přírodě" (Life in Nature) in the supplement "Kaktusová příloha Kaktusy a succulenty" (Cacti Supplement Cacti and Succulents) that he found the plants in the beach woods north of Puerto Casado. The collected plants were stored in boxes and left in the forest. Frič was waiting for money from Europe to send the plants. This did not happen anymore because there was a dispute between the owner of the estate and the Indians of the Sanapaná tribe about the murder of their chieftains. Frič, who sided with the Indians, was denied access to the forests of Casado.

Later he collected the plants again about 100 kilometres north of the type location. According to Frič's reports, no more than about twenty plants came to Europe. Some of them went to the company De Laet in Contich, Belgium, to the Botanical Garden Dahlem in Berlin and Frič kept twelve plants himself.



Fig. 1: First photographic illustration of *Gymnocalycium mihanovichii* in the monthly publication *Monatsschrift für Kakteenkunde* 1919, p. 67

Much has been speculated over the last few years whether Frič's *G. mihanovichii* has really found at Puerto Casado. Schütz writes the following in 1978:

"It is obvious that Frič has deliberately indicated an incorrect location. He has repeatedly written that the sites should not be revealed in order to protect them from extinction by unscrupulous collectors. It is highly probable that he collected this species somewhere in the area where Filadelfia later was founded."

Till and Amerhauser (2006) suspected that Frič collected the plants on the way to the Indians at the Rio Pilcomayo.

If one deals in detail with the material of the first discovery and the finds made by Friedrich, one must inevitably come to the confirmation of the data of Frič.

Frič was demonstrably around the area of the Sanapana-Indians in 1903. This tribe lived in the Puerto Casado area. Friedrich confirmed the information from Frič by his own findings at the type location in Puerto Casado. In his first letter to Moser on June 6th, 1963 he wrote the following:

"I found this species in Puerto Casado (tannin factory) up to 140 km inland, especially in the immediate vicinity of the city of Concepcion but also on the coast of the Paraguay River between these two places."



Fig. 2: The bridge did not seem suitable for us to drive our car over.

In 2008 the first author bought a book with the title "Ein Feldführer für Chacogehölze" (A field guide for Chaco Woods, ISBN 3- 9807409-2-7). Via detours he managed to get in contact with the author Verena Friesen Ratzlaf. During a visit to Paraguay in September 2009 we arranged our cooperation. Verena Friesen Ratzlaf, who often travels for a longer time in Chaco because of business reason, used her stay in April 2010 to look for *G. mihanovichii*. She found the plants not far from Puerto Casado, a real stroke of luck.



Fig. 3: We decided to take this path after all.



Fig. 4: With a lot of luck we could also pass this 50 meter long mud section.

Despite the information provided by Verena Friesen Ratzlaf, the first author was not able to find *G. mihanovichii* in this area in 2012. It had rained a lot and the roads had become impassable.

For our joint journey in 2016, the recovery of *G. mihanovichii* near Puerto Casado had top priority. Today the small village at the Rio Paraguay is called Puerto La Victoria. Annual precipitation averages 1200 mm, temperatures 24°C. In this area there are only unpaved roads, so a successful search depends very much on the weather conditions. In October 2016 we were lucky and the roads were dry. Nevertheless, there were always surprises. At two points along the path we were almost forced to turn back (Fig. 2-4).

On the way we met a man from this area (Fig. 5). We showed him pictures of spherical cacti, but unfortunately, he could not help us, unfortunately he only knew *Opuntias*.



Fig. 5: He couldn't help us either, he didn't know spherical cacti.

It was about 1:00 pm when Ludwig roared "Gymno". We stopped immediately. At the roadside *Gymnocalycium mihanovichii* stood everywhere. It was a lucky day for both of us. We have never been able to find such an abundance of plants of this species (Fig. 6-10).

The soil consists of loess loam with humus content (Fig. 11). Due to the pore volume, these soils can store sufficient water. The dense undergrowth, consisting of various *Dyckias*, *Bromelias*, *Tillandsias*, grasses and mosses, and the dense canopy of leaves above, consisting of shady deciduous trees and deciduous shrubs, create a special microclimate on the ground in summer. It is always amazing that even adult specimens of *G. mihanovichii* have only very few roots that run flat in the soil.



Fig. 6-7: Many plants presented themselves to us with their open flowers. The flower colour varies from light yellow-green to dark brown-green. The flowers only open slightly on very high heat, usually the perianth leaves remain tulip-like.



Fig. 8-9: A premiere for us: flowering *G. mihanovichii* with pollinators.

In the late afternoon we reached Puerto Casado. We got lucky. When we reached the village, we had a flat tire (Fig. 12) and a thunderstorm with heavy rain greeted us. We were happy not to be in the woods near the Rio Paraguay any more. Luck was on our side once again.



Fig. 10: Location of *G. mihanovichii* near Puerto Casado.



Fig. 11: Location of *G. mihanovichii* near Puerto Casado.



Fig. 12: After the rain we changed the wheel.

Photo: Michael Melojer

Unless otherwise stated, all photos were taken by the authors.

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