



On colour forms of *Opuntia weberi* (Cactaceae) with notes on the typification of the name

Authors: Egli, Urs, and Leuenberger, Beat Ernst

Source: Willdenowia, 28(1/2) : 175-180

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.28.2817>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

URS EGGLI & BEAT ERNST LEUENBERGER

On colour forms of *Opuntia weberi* (Cactaceae) with notes on the typification of the name

Abstract

Eggl, U. & Leuenberger, B. E.: On colour forms of *Opuntia weberi* (Cactaceae) with notes on the typification of the name. – Willdenowia 28: 175-180. 1998. – ISSN 0511-9618.

A pink-flowered population of *Opuntia weberi* is reported from San Juan Province, Argentina. The variation and geographical distribution of the species are discussed. Investigation of the extant original material confirms the choice of a type specimen by Kiesling in 1984 to be appropriate.

Introduction

Opuntia weberi was described by Spegazzini in 1905 but has since remained a relatively unknown taxon. As far as known, the species is endemic to Central and N Argentina and occurs scattered but in sometimes large local populations.

The classification of *Opuntia weberi* within the large genus *Opuntia* had already attracted the interest of Britton & Rose (1919). These authors proposed the monotypic *O. ser. Weberianae* (= *Tephrocactus ser. Elongati* subser. *Weberiani* (Britton & Rose) Backeb. (Backeberg 1958) within their *O. subg. Tephrocactus*. Most recent authors agree that *O. weberi* is rather isolated within *Opuntia*, and no taxa have been given as close relatives. The proposed genus *Weberiopuntia* Frič (never validly published) further testifies to the relatively isolated position of *O. weberi* within *Opuntia*. Likewise, Leighton-Boyce & Iliff (1973) treat the species under “unassigned plants”. Kiesling (1984a) included *O. weberi* in his newly circumscribed genus *Tephrocactus*, based on the seed morphology (balloonlike seeds due to the white spongy structure of the aril).

Whether the large genus *Opuntia* should be divided into a number of segregates has prompted much discussion for many years. While Backeberg (1958) and Ritter (1980) opted for accepting numerous small segregates, modern classifications (e.g., Barthlott & Hunt 1993) revert to a single large genus *Opuntia*, and this view is followed here.

Recorded flower colours of *Opuntia weberi*

Opuntia weberi was described with yellow flowers (Spegazzini 1905) and many later sources repeat this information (e.g., Britton & Rose 1919, Backeberg 1958). Ritter (1980: 397) describes the flowers as (translated from German) “lemon- to golden yellow, rarely orange-yellow”.

The first to mention an extended colour range were Kiesling (1984a, [translated:] “yellow and red (and intermediate colours?)”) and Lambert (1985, “yellow to red”, repeated 1993, “yellow to orange or red”). Rausch (1986) described a variety (*Tephrocactus weberi* var. *deminutus*) from Salta with orange flowers.

Colour variation from yellow to orange and red is known in other species of *Opuntia* as well (e.g., *O. versaffeltii*, *O. soehrensii*), but unfortunately the geographical distribution of flower colour variants has not been investigated so far for any of these species. It appears that the predominant flower colour of *O. weberi* is a bright lemon yellow. This colour is reported by the present authors from various populations from near Santa María, Catamarca, while Rausch’s variety is the only geographically localized record of orange flowers (Salta).

Recently, the present authors quite unexpectedly came across a population of otherwise fairly typical *Opuntia weberi* in San Juan, on the southern fringe of the known range of the taxon (Leuenberger & Eggli 4470, near Marayes). Several plants were flowering in January, and all showed attractive pink flowers. This population raises the interesting question about the flower colour of the type collection (cf. Kiesling 1984a and below) from the nearby Sierra Pié de Palo. Since the taxon is based on (at least) two collections from different localities, we do not know to which population the yellow flowers described in the protologue are referable.

Distribution and variation of *Opuntia weberi*

Opuntia weberi was described by Spegazzini on the basis of specimens from Salta (“prope Molinos”) and San Juan (“in montibus Sierra Pié de Palo”). For a long time, no additional records had been made of the species, which is surprising on account of the rather large distribution and the abundance of the species in several localities. We know now that *O. weberi* is rather widespread in the eastern foothills of the Andes (Fig. 1) between Salta (the northernmost record is from S of Cachi, cf. Ritter 1980) and San Juan, but is also commonly encountered in La Rioja, Catamarca and W Tucumán (Kiesling 1984a).

As in other opuntias, *O. weberi* propagates itself by fragmentation of its segmented stems, although the segments are not as easily caducous as in other taxa (e.g., *O. articulata*). Accordingly, populations tend to consist of numerous individuals exhibiting reduced variation, since most are probably the result of clonal propagation. Some populations, however, show a higher degree of variation as to plant size (length and diameter of segments) and spination (colour, length, coarseness, orientation) and therefore the varieties accepted by Backeberg (1958) cannot be upheld, as already anticipated by Ritter (1980).

Since the present authors have only limited personal knowledge of *O. weberi* in N Argentina, *Tephrocactus weberi* var. *deminutus* Rausch is included as a synonym with some hesitation. The type and cultivated material of the type collection give the impression of an altogether smaller plant with much reduced, short spination. It does, however, clearly fall within the range of variation expected in such a widespread species. According to the material seen by the present authors, the distribution information given by Kiesling (1984a: 190) can be complemented. *Opuntia weberi* has a far more extended altitudinal distribution, ranging from 550 m (our pink-flowered San Juan collection) to 2000 m in Catamarca.

Typification

Since Spegazzini based his description on at least two collections, a formal lectotypification is desirable. The first who designated a lectotype – though only in passing – were Britton & Rose (1919: 84–85). They include two figures, fig. 99 and fig. 100, with their description, both said to have been provided by Spegazzini. Fig. 100 “is from a photograph of the type specimen in the collection of Dr. Spegazzini” (Britton & Rose 1919: 85) and, following the formal description of the taxon, the type locality is given as “Sierra Pié de Palo”. Fig. 100 clearly shows a mounted herbarium specimen but without additional details on the collector and date. A search of the

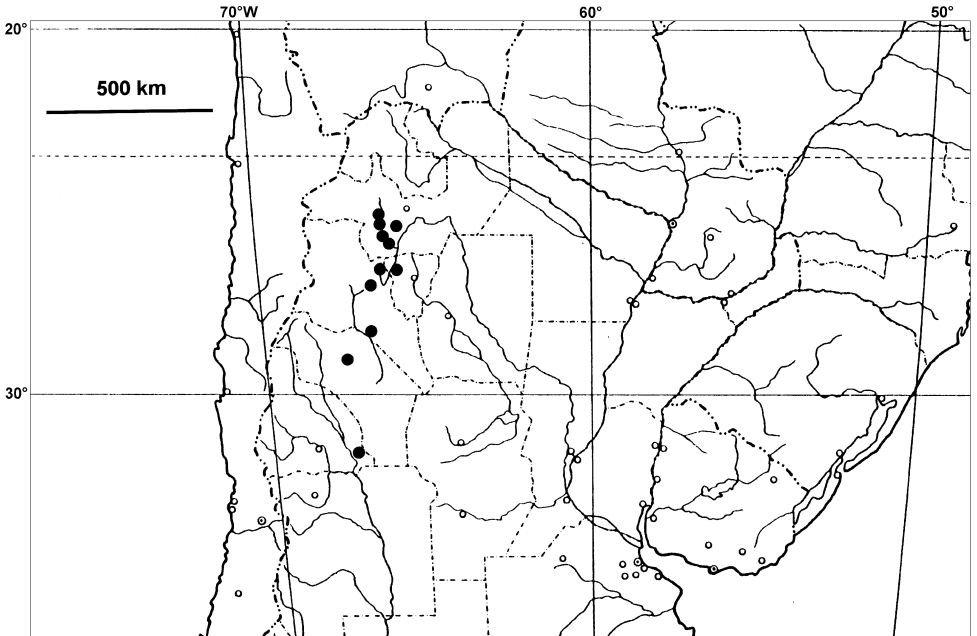


Fig. 1. Distribution of *Opuntia weberi*. – Map base modified from Goode Base Series No. 103, Univ. of Chicago 1961.

herbaria LP (La Plata) and BAF (Museo de Botánica Juan A. Dominguez, Buenos Aires), where Spegazzini's material is now lodged, did not result in a specimen matching this figure, although three different collections (and two photographs) to be considered in connection with the protologue have been found at LP and one at BAF, two of them originating from "San Juan, (Sierra Pié de Palo)".

The unnumbered specimen at LP "Sierra Pié de Palo, S. Juan I/99" (Fig. 2) was cited as holotype by Kiesling (1984a, 1984b), which constitutes a new lectotypification. The specimen designated as type is, presumably, a duplicate of the collection illustrated by Britton & Rose (1919: fig. 100). Kiesling (1984a-b) attributed this collection to [E. L.] Holmberg, although the collector's name does neither appear on the lectotype specimen at LP nor in the protologue. Holmberg figures only as collector on the label of a syntype specimen from Molinos (Salta) at LP.

Kiesling (1984a) mentions isotypes at BAF and US, and Kiesling (1984b) an isotype at BAF. The specimen at BAF is labelled "Prov. San Juan: Pié de Palo, leg. et det. C. Spegazzini, XI 1901", which casts some doubt on its identity and suitability as isotype. The label is not written by Spegazzini and the sheet is marked as "Isotype?" on the cardboard. The specimen at US (No. 603263) kept in the type collection (as "type fragment") includes two photographs and appears to be authentic material received from Spegazzini. The label attached to the fragment says "*Opuntia weberi* Speg. Typus", the label on the sheet adds "In collection of Carlos Spegazzini at La Plata, Sept. 1915". Lacking locality data, it has no clear connection with either of the two syntypes and is therefore unsuitable as lectotype, although the material is very similar to the specimen at LP designated as type by Kiesling (1984b).

Since there is apparently no material extant that were more appropriate to serve as lectotype than the specimen selected by Kiesling (1984), his lectotypification should be followed.

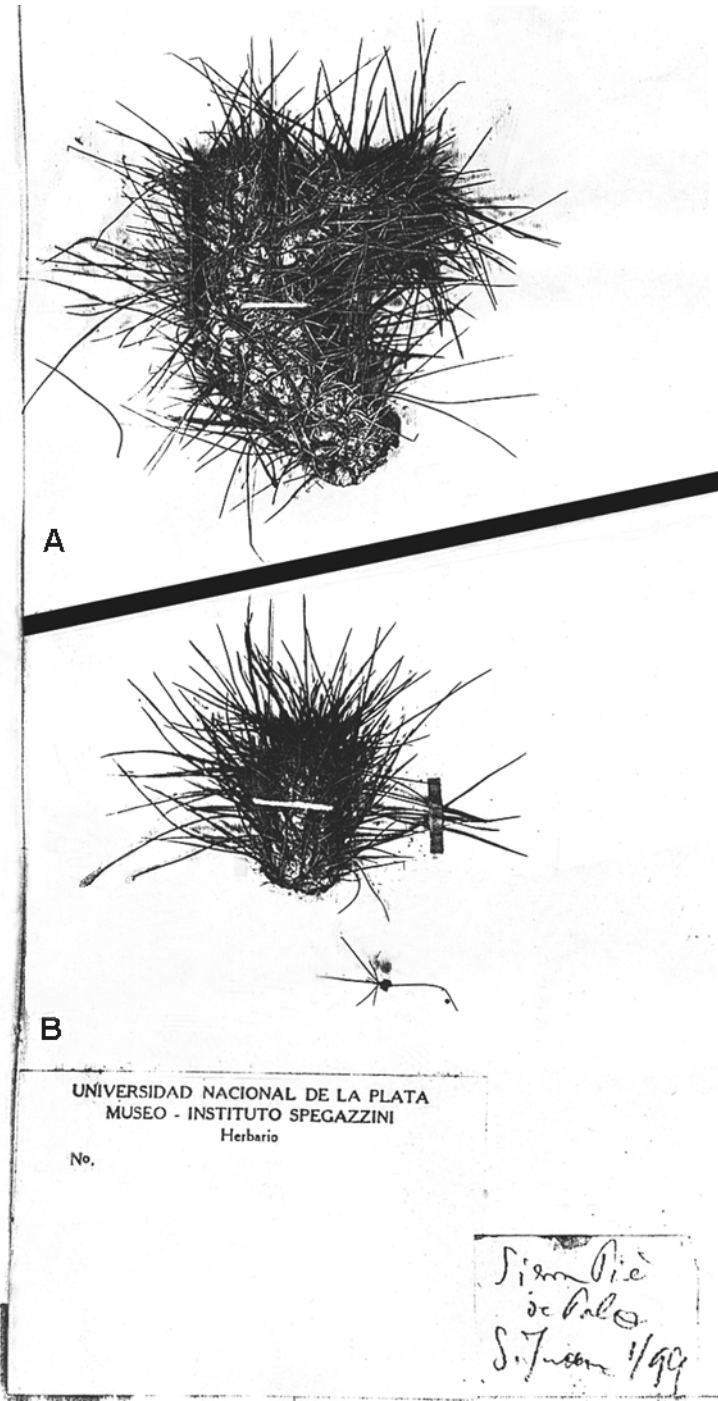


Fig. 2. *Opuntia weberi* Speg. – lectotype specimen at LP consisting of two fragments on one sheet (A: upper fragment; B: lower fragment and labels).

Opuntia weberi Speg. in *Anales Mus. Nac. Buenos Aires* 11: 509 (no. 102). 1905 ≡ *Tephrocactus weberi* (Speg.) Backeb. in *Backeberg & Knuth, Kaktus-ABC*: 106. 1936 [≡ *Weberiopuntia weberi* (Speg.) Frič in *Kreuzinger, Verzeichn. Amer. Kakt. & Sukk.*: 41. 1935, nom. nud. (Art. 43.1)]. – Lectotypus (designated by Kiesling 1984b [as “holotype”]): [Argentina, San Juan], “Sierra Pié de Palo, I/[18]99”, [anonymus (probably Holmberg)] *s.n.* (LP!). = *Opuntia weberi* var. *dispar* A. Cast. & Lelong in *Jahrb. Deutsch. Kakteen-Ges.* 1: 51. 1935/36 [amplified description: Castellanos & Lelong 1944]. – Holotypus: [Argentina], Tucumán, Amaicha, 1.2.1935, *Castellanos & Lelong s.n.* (BA 17054 [spirit coll.]). = *Tephrocactus setiger* Backeb. in *Backeberg & Knuth, Kaktus-ABC*: 106, 410. 1936 ≡ *Tephrocactus weberi* var. *setiger* (Backeb.) Backeb., *Cactaceae* 1: 252. 1958 ≡ *Opuntia weberi* var. *setiger* (Backeb.) G. D. Rowley in *Natl. Cact. Succ. J.* 13(2): 25. 1958. – Typus: unknown. ?= *Tephrocactus weberi* var. *deminutus* Rausch in *Succulenta* 65: 249. 1986. – Holotypus: [Argentina], Salta, S of Amblayo, *Rausch 241* (ZSS!).

Additional specimens examined

ARGENTINA: CATAMARCA: Santa María, 80 km NE of Hualfin, 2000 m, flowers yellow, *Leuenberger & al.* 4320 (B, CORD, ZSS); Belén, 6 km SSW of Hualfin, 1800 m, *Leuenberger & al.* 4313 (B, CORD, ZSS); S of Santa María, flowers yellow, *Supthut* 8695 (cult. ZSS); 33 km above Santa María, *Ritter 451 loc. 3* (SGO 125437); Dpto. Santa María, Andalhuala, 2000 m, 27.12.1933, flowers yellow, *Peirano 9800* (BA 13514 [spirit coll.]); Puntilla de Copacabana, 17.2.1930, *Castellanos s.n.* (BA 30743 [spirit coll.]); SE of Tinogasta on road towards San Blas, *Leuenberger & al.* 4230d (B, photo only). — LA RIOJA: Famatina, *Ritter 451, loc. 1* (ZSS T5034). — SALTA: 25 km E of Cafayate, *Supthut* 8629 (cult. ZSS); 30 km N of Cafayate, *Supthut* 8639 (cult. ZSS); 60 km above Cafayate, *Ritter 451 loc. 2* (SGO 125436); 14 km N of San Carlos, Dique Los Sauces, *Leuenberger 3494* (B, photo only); Valle Calchaquí, opposite Molinos, 6.2.1943, *Castellanos s.n.* (BA 46885 [spirit coll.]); *ibid.*, *Castellanos s.n.* (BA 46883 [spirit coll.]); Valle Calchaquí, Seclantás, 19.11.1942, *Castellanos & Lelong s.n.* (BA 46208 [spirit coll.]); Molinos, 1900, *Holmberg s.n.* (LP); Molinos, 3/1897; *sine coll.* (LP 14336). — SAN JUAN: Caucete, 2 km E of Marayes, 550 m, flowers pink, *Leuenberger & al.* 4470 (B, CORD, ZSS).

Acknowledgements

We are grateful to the Curators of BA, BAF, and LP for granting the second author access to the collections and to Dr S. Freire (LP), Ing. G. Giberti (BAF) and Mr. R. Russell (US) for providing photocopies. The present contribution results from our cooperation with the PROYECTO PROFLORA and we are very grateful for the facilities provided by Prof. A. T. Hunziker and Dr A. Anton, Córdoba, during fieldwork in 1994 and 1995.

Literature

- Backeberg, C. 1958: *Die Cactaceae. Handbuch der Kakteenkunde* 1. – Jena.
 Barthlott, W. & Hunt, D. R. 1993: *Cactaceae*. – Pp. 161-197 in: Kubitzki, K., Rohwer, G. & Bittrich, V. (ed.): *The families and genera of vascular plants* 2. – Berlin.
 Britton, N. L. & Rose, J. N. 1919: *The Cactaceae* 1. – Washington D.C.
 Castellanos, A. & Lelong, H. V. 1944: *Opuntia weberi* Spegazzini var. *dispar* Castell. et Lelong. – *Lilloa* 10: 469-470.
 Kiesling, R. 1984a: Estudios en *Cactaceae* de Argentina: *Maihueiopsis*, *Tephrocactus* y géneros afines (*Opuntioideae*). – *Darwiniana* 25: 171-215.

- 1984b: Recopilación, en edición facsimilar, de todos los trabajos o referencias sobre Cactáceas publicadas por el Dr. Carlos Spegazzini. – Buenos Aires.
- Lambert, J. G. 1985: Het Argentijnse geslacht *Tephrocactus*. – *Succulenta* **64**: 164-168.
- [1993]: Cactus d'Argentine. – Roeselare.
- Leighton-Boyce, G. & Iliff, J. 1973: The subgenus *Tephrocactus*. A historical survey with notes on cultivation. – *Morden*.
- Rausch, W. 1986: Nieuwbeschrijving. *Tephrocactus weberi* var. *deminutus* Rausch var. nov. – *Succulenta* **65**: 249, 251-252.
- Ritter, F. 1980: Kakteen in Südamerika 2. Argentinien / Bolivien. – Spangenberg.
- Spegazzini, C. 1905: Cactearum Platensium Tentamen. – *Anales Mus. Nac. Buenos Aires* **11**: 477-521.

Addresses of the authors:

Dr Urs Eggli, c/o Städtische Sukkulanten-Sammlung, Mythenquai 88, CH-8002 Zürich, Switzerland; urseggli@systbot.unizh.ch

Dr Beat Ernst Leuenberger, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Freie Universität Berlin, Königin-Luise-Straße 6-8, D-14191 Berlin; e-mail: leu@zedat.fu-berlin.de