

# *Opuntia cacanapa* and *O. cacanapa* ‘Ellisiana’

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The basionym is *Opuntia cacanapa* Griffiths & Hare, and it was introduced to the world in 1906 (Fig. 1). In the way of so many opuntias, it was rechristened several times, apparently without supporting evidence. POWO reports it is synonymous with *O. engelmannii* var. *cacanapa* (Griffiths & Hare) D.Weniger. It gets confusing because Tropicos says its accepted name is *O. engelmannii* Salm-Dyck ex Engelm. subsp. *engelmannii*. Britton and Rose (1919) included *O. cacanapa* Griffiths in their unusually broad treatment of *O. lindheimeri*. After treating it as a variety of *O. lindheimeri* in earlier years (1969), Benson (1982) listed it as a synonym of *O. subarmata* and treated them together as a hybrid of *O. ficus-indica* × *O. lindheimeri*. Yet, he treated the synonym *O. tricolor* totally differently, as a distinct variety of *O. lindheimeri*. However, none of these assertions is supported by behavior, morphology, nor cytology of the plants.

Other synonyms include:

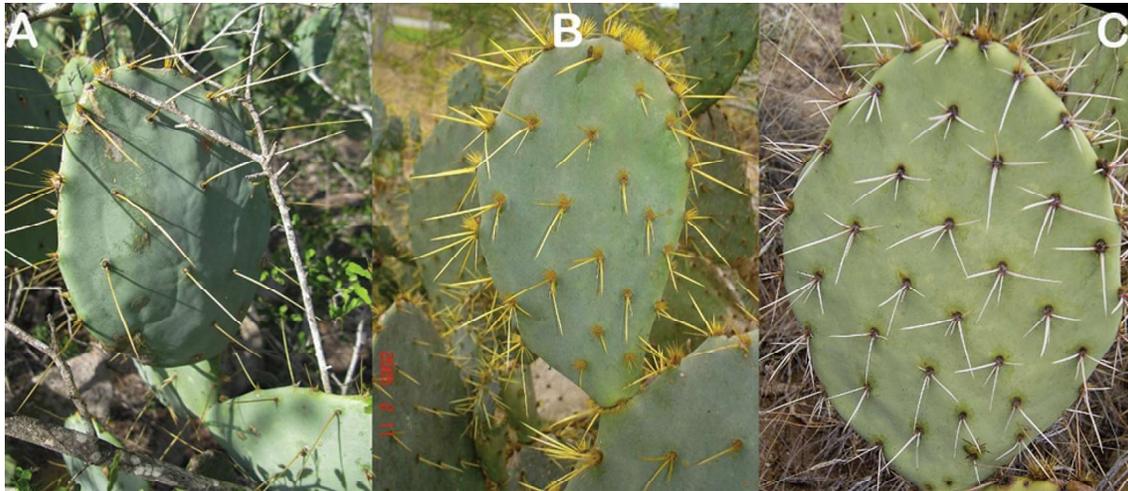
- O. tricolor* Griffiths (Griffiths, 1909)
- O. ellisiana* Griffiths (Griffiths, 1910)
- O. lindheimeri* var. *tricolor* (Griffiths) L.Benson (Benson, 1969)
- O. lindheimeri* var. *ellisiana* (Griffiths) K.Hammer (Hammer 1976)
- O. cacanapa* cv. ‘Ellisiana’ Green and Ferguson (Green and Ferguson, 2011)



**Fig. 1** Image of isotype of *Opuntia cacanapa*, 1906. Deposited by David Griffiths. United States National Herbarium No. 3053357.



**Fig. 2** A. *Opuntia cacanapa* spines. B. *O. cacanapa*, mature plant. Photos by David J Ferguson.



**Fig. 3** Comparison of cladodes. A. *Opuntia cacanapa*. B. *O. lindheimeri*. C. *O. engelmannii*. Photos by David J. Ferguson (A) and Joseph Shaw (B and C).



**Fig. 4** A. *Opuntia cacanapa* leaves on flower buds. B. *O. cacanapa* 'Ellisiana' leaves on new growth. Photos by Joseph Shaw.

The original description of *Opuntia cacanapa* (Griffiths and Hare 1906) describes it as an erect, or ascending, sometimes open shrub, to 6 feet with a scaly black trunk (or multiple trunks) up to 6 inches in diameter, but some individuals may grow taller. It has green or bluish subcircular or broadly obovate cladodes about 6 to 8 inches in largest diameter. Slender spines occur singly at each areole, up to 2 inches long, or spines may be nearly absent from parts of cladodes (Figs. 1 and 2). However, there may be 2–4 spines in edge areoles. Areoles are white when new but darken with age. [In contrast, *O. lindheimeri* and *O. engelmannii* may have 2–5(6) spines at each areole, shorter than 2 inches (Fig. 3).] The plant has leaves about 0.5 inches long and strongly recurved (Fig.

4). *O. cacanapa* 'Ellisiana' is diploid:  $2n = 22$  (Weedin et al., 1989; Majure et al., 2012).

The yellow flowers (very rarely orange or red) have white styles, pale filaments, yellow anthers, and green stigmas. Griffiths and Hare (1906) wrote that it flowers 4 to 6 weeks later than sympatric *O. lindheimeri*. The fruits are obovate to pyriform, glabrous, and spineless, with areoles clustered near the umbilicus (Fig. 5), and seeds are small. It is found in the Stockton/Edwards Plateau of Texas and south into Mexico (Green and Ferguson 2011).

*O. ellisiana* Griffiths is a variant of *O. cacanapa* that has no spines and essentially no glochids; it is only known in cultivation (Britton & Rose, 1919) and its wild origins

are unknown. According to POWO, *O. ellisiana* is a synonym of *O. engelmannii* var. *cacanapa* (Griffiths & Hare) D. Weniger (Weniger 1970). Tropicos accepts it as *O. ellisiana* (Griffiths) Hunt. Because it was found in gardens near Corpus Christi and does not occur in habitat and because it so obviously resembles *O. cacanapa*, it was proposed to be a cultivar of *O. cacanapa*, i.e., *O. cacanapa* 'Ellisiana' (Green and Ferguson 2011). Like *O. cacanapa*, it is also a large plant (Fig. 6) that can form a trunk or multiple trunks with time and has glaucous pads that are circular to broadly obovate (Fig. 7). The yellow flowers have white styles, pale filaments, yellow anthers, and green stigmas as does *O. cacanapa*. Also, like *O. cacanapa*, the leaves are strongly recurved (Fig. 4). In overall shape and size; fruit size, shape, and color; seed size; cladode color; and flowering time, *O. cacanapa* 'Ellisiana' is identical to *O. cacanapa* except for the lack of spines and glochids.

In his search for opuntias as animal food (Griffiths 1906, Griffiths 1908) Griffiths found that plants similar to *Opuntia ficus-indica* (L.) Mill. were not particularly hardy in San Antonio, TX, and they were not suitable for sustained mass production as animal food due to freeze damage. Therefore, he examined several native opuntias to determine if they were cold hardy (Griffiths

1915). These included some with reduced spines: *O. cacanapa* 'Ellisiana': *O. subarmata* Griffiths (*O. lindheimeri* var. *subarmata* [(Griffiths)] Elizondo & Wehbe); *O. dilleyi* Griffiths (*O. orbiculata* Salm-Dyck ex Pfeiff.). He had hopes that *O. cacanapa* 'Ellisiana' would be useful in his program because it is cold hardy in much of Texas and because it has no spines and essentially no glochids. But



Fig. 5 *Opuntia cacanapa* fruit. Photo by David J Ferguson.



Fig. 6 *Opuntia cacanapa* 'Ellisiana' near Loving, TX. Photo by Joseph Shaw.



**Fig. 7** *Opuntia cacanapa* 'Ellisiana' cladode. Photo by Joseph Shaw.

the cladodes of *O. cacanapa* 'Ellisiana' proved to be too woody for animals to easily consume, and he found it too slow growing.

## Summary

*O. cacanapa* has an elaborate taxonomic history as does its variant *O. cacanapa* cv 'Ellisiana.' They are identical except that the cultivar has no spines and essentially no glochids. Both are attractive large plants that can be grown in gardens in USDA zone 8. Having essentially no glochids, the cultivar is an inviting plant for gardens. Though it may become large, it is a slow grower and can be managed by pruning.

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