

## *Echinocereus* of the Mountain Pima Village of Nabogame, Chihuahua, Mexico

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The Mountain Pima village of Nabogame is located in the Sierra Madre Occidental of the Mexican state of Chihuahua, approximately 10 km east of the boundary with the state of Sonora. I spent 13 months in the town doing intensive ethnobotanical investigations (Laferrière 1992, 1994; Laferrière and Van Asdall 1992; Laferrière et al. 1991a,b).

Three species of *Echinocereus* are present in Nabogame, all of which bear edible fruits. *Echinocereus* and *Mammillaria* are collectively referred to as "chollas" by the local Pima. That word is of course usually applied in most of Mexico to cylindrically stemmed opuntias, but none of the latter are present in the region around Nabogame. Fruits of *Echinocereus* have been reported consumed by the Navajo, Seri, and Tarahumara (Vestal 1952; Felger and Moser 1985), and by the Pima of Arizona (Curtin 1949). Fruits of several species of *Echinocereus* were consumed by the Navajo although fruits of *E. coccineus* Engelm. are reportedly poisonous and used as a heart stimulant (Elmore 1943). Stems of certain species of *Echinocereus* have been used as hallucinogens (Bye 1979; Ferrigni et al. 1982), although stems of other species have been used to make candy (Nobel 1988).

The following are descriptions of specimens collected in Nabogame; descriptions based on other collections may be found in Taylor (1985), Britton and Rose (1963) and Backeberg (1982).

1. *Echinocereus stoloniferus* ssp. *tayopensis* (Marsh.) N.P. Taylor, Kew Mag. 2:258, 1985 (Figure 1, p. 30). *E. tayopensis* Marsh., Saguaroand Bull. 10:78, 1956.

Stems caespitose, stoloniferous, ovoid to cylindric; ribs 10; areoles 6-9 mm apart on ribs; radial spines 8-11, adpressed to slightly ascending, 6-9 mm long; central spine 1, white above, yellow-brown below, 19-24 mm long. Flowers campanulate, yellow, bearing areoles with white wool; outer perianth segments red, 10-20 mm long, linear to spatulate, with a small tip 1 mm long; inner perianth segments obovate, yellow, 25-40 mm long, 14-18 mm wide; anthers pale yellow, 1.2-1.7 mm long; filaments 15-30 mm long, yellow to yellow-orange; style yellow, 2.7-3.0 mm long; stigmas 10, green, 3-8 mm long. Fruit red, ovoid, spiny, 22-25 mm long, 16-18 mm wide, juicy.

*Echinocereus stoloniferus* ssp. *tayopensis* tends to occur in open, dry, rocky savannah areas.

Specimens examined: Nabogame, pine-oak forest, 25 Apr 1987, Laferrière 381 (ARIZ); Nabogame, oak woodland, 13 Aug 1987, Laferrière 787 (ARIZ, MEXU); Nabogame, open rocky hillside, 24 Jun 1988, Laferrière 1457 (ARIZ, MEXU). (Editor's note: The above description indicates where the specimens are housed.)

2. *Echinocereus datae* Laferr. *staminus liberis* (Fig. 2, p.30).

Stems caespitose, creeping to erect, cylindric, to 30 cm long, 1.5-4 cm in diameter; ribs 7; areoles 2-6 mm apart; radial spines gray with reddish-brown tips; central spine 1. Flowers trumpet-shaped; floral tube with areoles bearing long tufts of white, cottony hairs; outer perianth segments pink with greenish-brown margins adaxially, greenish-brown with darker margin abaxially; inner perianth segments pink; filaments white below, pink above; anthers pink; pollen yellow; ovary green to reddish; style white; stigma green. Fruit and seeds unknown.

*Echinocereus datae* occurs in much more shaded locations than the other two species and has more of a tendency to show a recumbent habit. It also blooms in early April a few weeks earlier than the other two species. It can be found in canyons shaded by *Acer grandidentatum* Nutt., *Prunus gentryi* Standl., and *Cupressus lusitanica* Mill., and under large boulders. The plant is occasionally cultivated in pots by the Mountain Pima for its showy pink flowers. It is closely related to *E. sheeri* (Salm-Dyck) Ruempler but distinguished by its free (rather than connate) stamens.

Specimens examined: Nabogame, shaded cliff-face under *Cupressus lusitanica*, 8 Apr 1988, Laferrière 1425 (ARIZ [holotypus], MEXU).

3. *Echinocereus polyacanthus* Engelm. var. *polyacanthus*, Mem. Tour. North. Mex. 104, 1848. (Figure 3, p. 30)

Stems caespitose, erect to slightly procumbent, cylindric, tapering above and below, to 20 cm long, 3-4 cm in diameter; ribs 10, 8-15 mm apart; areoles circular, 8-11 mm apart on ribs; spines 9-13, glaucous, acicular, bulbous-based, 7-18 mm long, the radial intergrading with the central. Flowers tubular, red to orange; floral tube funnelform, green to reddish, 5-7 cm long, with areoles 4-10 mm apart, with 8-13 spines, white with a reddish base and a red tip, to 10 mm long, thinner than cauline spines, and beset with long, white, woolly hairs up to 6 mm long; outer perianth segments linear, tapering at tip, green to red, 1.0-1.9 mm long; inner perianth segments obovate, orange to red, 20-25 mm long, 3-6 mm wide; filaments white below, pink above, 4-5 cm long; anthers pink, 1.2-1.6 mm long; pollen yellow; style white; stigmas 7, green, 4-7 mm long. Fruit ovoid, juicy. Seeds black.

*Echinocereus polyacanthus* is the most common of the three species in Nabogame. It often forms large colonies on rocky, sunlit hillsides.

Specimens examined: Nabogame, 28 Apr 1987, Laferrière 405 (ARIZ); Nabogame, open ridge in pine-oak woodland, 11 Apr 1988, Laferrière 1428 (MEXU).

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**Figure 1**  
*Echinocereus stoloniferus*  
ssp. *tayopensis*



**Figure 2**  
*Echinocereus datae*  
(*staminus liberis*)



**Figure 3**  
*Echinocereus polyacanthus*  
var. *polyacanthus*

