

ACACIA PACENSIS (LEGUMINOSAE: MIMOSOIDEAE),
A NEW SPECIES FROM BAJA CALIFORNIA SUR, MEXICO

VELVA E. RUDD

Department of Biology, California State University,
Northridge 91330

ANNETTA M. CARTER

Department of Botany, University of California,
Berkeley 94720

ABSTRACT

Acacia pacensis Rudd & Carter is described as new from México. It is known thus far only from the vicinity of La Paz, Baja California Sur and the adjacent islands in the Gulf of California, Isla Espiritu Santo and Isla Partida Sur.

Several unidentified and misidentified collections of *Acacia* from the vicinity of La Paz, Baja California Sur, México, and adjacent islands in the Gulf of California have been found to represent a new species, described in this paper as *Acacia pacensis* Rudd & Carter.

The earliest extant specimen of this *Acacia*, which we have chosen as the type, was collected by T. S. Brandegee near La Paz and cited originally as "*Acacia* ? sp." (1891, p. 134); and later (1892, p. 221) as *Acacia constricta* Benth. He commented, "also found by Mr. Bryant on Espiritu Santo Island." Unfortunately, Bryant's collections were lost in the 1906 San Francisco earthquake and fire (Wiggins 1980, p. 42). A later collection from La Paz, made by Marcus E. Jones in 1930, was misidentified as "a pretty *Prosopis* (?)" (Jones 1933-1935, p. 99). Incidentally, Jones' notebook gives Oct. 3, 1930 as the date but the herbarium specimen at UC bears the date Oct. 4, 1930. More recently, in 1981, Turner and Burgess found the species in that same locality. All other known specimens are from the two offshore islands, Isla Espiritu Santo and Isla Partida Sur. In 1921, I. M. Johnston found a "globose shrub 12-25 dm high, frequent in gravelly soil near the ocean at Candeleros Bay on Espiritu Santo island (4073) . . . The fruit necessary for positive identification is lacking. The relationship of the plant seems to be with *A. constricta* Benth. It differs from that species . . . in its stout, short, unbracted peduncle. It probably is the same as the unexamined Bryant plant reported by Brandegee. The island plant is probably an unnamed form" (Johnston 1924, p. 1032). Most of the more recent collections have been referred to *A. constricta* Benth.

Acacia pacensis Rudd & Carter

Frutices usque ad 2.5 m alti; spinae stipulares aciculares, 1–1.5 mm longae; folia 3–4 cm longa, pinnarum paribus 2–6, foliolarum paribus (3–)4–10, foliolis ellipticus, 1–3 mm longis, 0.5–1 mm latis, glabris vel nonnumquam margine ciliatis vel glanduliferis, nervo medio centrali vel plus minusve excentrico; inflorescentiae capitatae, diam. 6–8 mm, floribus flavidis, 3 mm longis, pedunculo apice bracteato; legumina elongata, indehiscencia, stipite ca. 5–10 mm comprehendente 6–15 cm longa, 5–7 mm lata, ad apicem versus attenuata, inter semina plus minusve constricta; seminibus brunneis, ca. 8–13(–15) (Fig. 1).

Acaciae constrictae simulententes utcunque *A. cochliacanthae*, *A. penatulae*, *A. macracanthae*, *A. schaffneri*, et *A. farnesiana*e affinis.

Shrubs, to about 2.5 m tall; trunk dark gray, to about 8 cm diam.; young stems brown or reddish-brown, pubescent with minute crispate hairs, glabrescent with age; stipular spines straight, to about 1–1.5 cm long, 1–1.5 mm diam. at base, terete, acicular, whitish or brown; leaves to about 3–4 cm long with 2–6 pairs of pinnae, the rachis puberulent bearing a minute, raised, cupular gland between the terminal pair of pinnae, sometimes also between some lateral pairs and, occasionally, on the petiole slightly above midpoint; leaflets (3–)4–10 pairs, elliptic, obtuse or sometimes acuminate with a glandular tip, asymmetrical at the base, 1–3 mm long, 0.5–1 mm wide, glabrous or sometimes ciliate or minutely glandular along the margin, the venation inconspicuous, the midvein central or slightly excentric; inflorescences essentially capitata, 6–8 mm in diameter, summibracteate, i.e., bracteate at the apex of the peduncle, the bracts sometimes caducous, the receptacle usually with minute glands; bractlets at base of flowers about 0.5 mm long, spatulate; flowers yellowish, 3 mm long, glabrous; calyx about 1 mm long with teeth slightly glandular; corolla 2 mm long; stamens 3 mm long; peduncle 5–15 mm long, minutely pubescent; fruit elongate, straight or slightly curved, indehiscent, about 6–15 cm long including stipe about 5–10 mm long, 5–7 mm wide, attenuate at the apex, septate, slightly constricted between the seeds, bright red when fresh, blackish with age, lightly pubescent with subappressed hairs, about 5–13(–15)-seeded; seeds dark brown, lenticular to subovoid, 5–8 mm long, 4–5 mm wide, 1.5–3 mm thick, the areole lighter in color, about 3-mm long, 1.5–2 mm wide.

TYPE: México, Baja California Sur, La Paz, 1 Nov 1890, *T. S. Brandegee 190* (Holotype: UC 81017).

PARATYPES: México, Baja California Sur, coast e. of La Paz, 4 Oct 1930, *M. E. Jones 27268* (UC), as *27168* (BM); west-facing hillside above small bay, 0.5 mi n. of Pichilique Ferry, low, open scrub, 19 Oct 1981, *R. M. Turner & T. L. Burgess 6190* (ARIZ, SFV, UC); 1.0 mi n. of Pichilique Ferry, rocky breccia hillside e. of Bahía de La Paz, 19 Oct 1981, *Turner & Burgess 6192* (ARIZ, SFV, UC, others

to be distributed). Isla Espiritu Santo, Candeleros Bay, 9 Jun 1921, *I. M. Johnston 4073* (CAS); Ensenada de la Ballena, 21 Apr 1962, *Wiggins 17853* (DS); 4 Apr 1981, *Rudd 3610* (SFV, UC); without exact locality, elev. 50 m, 27 Mar 1971, *Hastings 71-179* (SD). Isla Partida Sur, near n. end, rocky slope near beach, ca. 5 m elev., 20 Apr 1962, *Moran 9606* (SD, US); near summit of pass leading to dry lake, ca. 62 m elev., 24 Jun 1964, *Wiggins 19110* (DS); without exact locality, 22 Nov 1973, *Orr s.n.* (UC).

Superficially, *A. pacensis* does resemble *A. constricta*, both species having small leaflets, yellowish flowers in capitate inflorescences, straight spines, and long, narrow pods. However, as pointed out by Johnston, *A. pacensis* lacks the medibracteate peduncles characteristic of *A. constricta* and its relatives (Bentham 1875, p. 446, 513). Another difference is in the structure of the pods. Those of *A. constricta* are dehiscent, and the inner surface of the valves (pericarp) has a ribbon-like, continuous, sclerenchymatous band parallel to the longitudinal axis of the valve. In *A. pacensis*, the pods are indehiscent with parenchymatous tissue forming septa between the seeds. The seeds of *A. constricta* are mottled-gray with lighter-colored areoles, i.e., the area on each face bounded by the pleurogram, a crack in the testa (Gunn 1981, p. 920; Polhill et al. 1981, p. 6). The seeds of *A. pacensis* are dark brown with lighter-colored, relatively larger areoles.

More closely related to *A. pacensis*, apparently, are such species as *A. cochliacantha* (*A. cymbispina*), *A. pennatula*, *A. macracantha*, *A. schaffneri*, and *A. farnesiana*, all of which are fairly similar vegetatively, have summibracteate peduncles, capitate inflorescences, and indehiscent pods with pulpy, parenchymatous valves, and are more or less septate between the seeds (Bentham 1875, p. 446, 499 ff.). All have spines that are essentially straight, not recurved or unguiculate. Of these species, *A. cochliacantha* and *A. farnesiana* are known from Baja California, the others only from the mainland.

Key to *Acacia pacensis* and related species in Baja California

Pods linear or elongate, dehiscent or indehiscent, 3–7 mm wide; peduncles medibracteate or summibracteate; flowers essentially glabrous; stipular spines slender, straight, terete.

Peduncles medibracteate, i.e., bearing several minute bractlets at about midpoint; pods dehiscent, continuous within, not septate, constricted between the seeds, glabrous, often lustrous at maturity; seeds gray-mottled. *A. constricta* Benth.

Peduncles summibracteate, i.e., bearing bractlets at the apex, immediately below the flowering head; pods indehiscent, septate, slightly constricted between the seeds, puberulent with subappressed hairs; seeds dark brown, not mottled.
 ***A. pacensis*** Rudd & Carter



FIG. 1. Holotype of *Acacia pacensis* Rudd & Carter.

Pods oblong, 9–25 mm wide, indehiscent; peduncles summibracteate; flowers puberulent, at least at tip of calyx and corolla lobes; stipular spines terete or flattened, concave-boat-shaped.

Spines terete, acicular; pods turgid, sessile with seeds usually irregularly imbedded in parenchymatous tissue.
 *A. farnesiana* (L.) Willd.

Spines flattened, concave-boat-shaped; pods compressed, stipitate, with seeds regularly aligned.
 *A. cochliacantha* Humb. & Bonpl. ex Willd.

LITERATURE CITED

- BENTHAM, G. 1875. Revision of the Suborder Mimoseae. Trans. Linn. Soc. London 30:335–664.
- BRANDEGEE, T. S. 1891. Flora of the Cape Region of Baja California. Proc. Calif. Acad. Sci. Ser. 2, 3:108–152.
- . 1892. Additions to the Flora of the Cape Region of Baja California, Proc. California Acad. Sci. Ser. 2, 3:218–227.
- GUNN, C. R. 1981. Seeds of Leguminosae. In R. M. Polhill and P. H. Raven, eds., Advances in legume systematics. Royal Botanic Gardens, Kew, Richmond, Surrey, England.
- JOHNSTON, I. M. 1924. The botany (the vascular plants). In Expedition of the California Academy of Sciences to the Gulf of California in 1921. Proc. California Acad. Sci. ser. 4, 12:951–1218.
- JONES, M. E. 1933–1935. Contr. W. Bot., no. 18:1–157. Publ. by the author.
- POLHILL, R. M., P. H. RAVEN, and C. H. STIRTON. 1981. Evolution and systematics of the legumes. In R. M. Polhill and P. H. Raven, eds., Advances in legume systematics. Royal Botanic Gardens, Kew, Richmond, Surrey, England.
- WIGGINS, I. L. 1980. Flora of Baja California. Stanford Univ. Press, Stanford, CA.

(Received 28 Jun 1982; revision accepted 23 Aug 1982.)