ACANTHOCAPPARIS (CAPPARACEAE): A NEW GENUS FROM MESOAMERICA

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Abstract. On the basis of defined morphological characters, *Acanthocapparis*, a new monospecific genus of Capparaceae from Mesoamerica and a segregate of *Capparicordis*, is formally proposed. The new combination *Acanthocapparis yunckeri* is also provided. The genus occurs from northern Honduras to Campeche, in the Yucatan Peninsula of Mexico.

Keywords: *Acanthocapparis,* Capparaceae, Mesoamerica, new genus

Resumen. Con base en caracteres morfológicos definidos se propone formalmente un nuevo género monoespecífico de Capparaceae de Mesoamérica, *Acanthocapparis,* un segregado de *Capparicordis*. También se provee la nueva combinación *Acanthocapparis yunckeri*. Este nuevo género se distribuye desde el norte de Honduras hasta Campeche, en la Península de Yucatán, México.

Palabras claves: *Acanthocapparis,* Capparaceae, género nuevo, Mesoamérica

Capparis yunckeri Standl. was originally described as an outstanding taxon of Neotropical Cappar-aceae with "no species to which it is at all similar" and recognized by the "scandent habit and for the small, broad, copiously stellate-tomentose leaves" (Standley in Yuncker, 1940), a unique combination of traits among Mesoamerican Capparaceae (Cornejo and Iltis, 2015). The species was initially known only from the type collection, which consists of a branch with leaves and one (F) or two fruits (NY) gathered by T. G. Yuncker from a thicket in woodland, in the semiarid region near Coyoles, Department of Yoro, northern Honduras (Standley in Yuncker, 1940). After the original publication, the flowers of *C. yunckeri* remained unknown to the scientific community for almost 80 years.

Despite the different habit, the distinct leaf shape with prominent venation and dense stellate pubescence, and the pepo fruits that the type exhibits, *Capparis yunckeri* was provisionally placed in *Capparicordis* Iltis & Cornejo, a South American genus, pending availability of flowering specimens (Iltis and Cornejo, 2007). Since the establishment of *Capparicordis* in 2007, *C. yunckeri* remained a taxonomic puzzle until field images sent to the author by Paul House† from the Department of Yoro, northern Honduras, exhibited for first time the distinctive floral features of this species that do not fit those of *Capparicordis*. Furthermore, the presence of brachyblasts and/or thorn derived brachyblasts, a unique character among Neotropical Capparaceae, makes clear at first glance that *C. yunckeri* cannot be placed in *Capparicordis* nor in any other known genus, deserving to be recognized in its own. In addition, a collection with fruits held in MEXU from southeastern Campeche, which has remained without identification since 1996, turned out to be a new record of distribution for this taxon from the Yucatan Peninsula in southeastern Mexico. Therefore, a new genus, the respective new combination, and a full description for the species are formally presented here.

Taxonomy

Acanthocapparis Cornejo, *gen. nov.*
TYPE**:** *Capparis yunckeri* Standl., Field Mus. Nat. Hist., Bot. Ser.9(4): 291–292. 1940.

Acanthocapparis has leaf blades densely stellate, similar in shape to those of *Capparicordis* Iltis & Cornejo but differing from the latter by the climbing (vs. shrubby) habit; presence (vs. absence) of brachyblasts and/or thorns; calyx with open (vs. closed) aestivation from early bud; petals oblong-obovate, white to creamish (vs. narrowly elliptic, yellow to orange), the nerves strongly ascendant and longitudinal toward apex (vs. pinnatinerved along petal blade); stamens in a higher number, ca. 20–25 (vs. 4–8); nectary dish bearing 4 nectary glands, each one attached on basal half of sepals (vs. nectary cup with 4 erect minute appendages inserted at the inner edge of calyx cup and apart from sepals); and pepo (vs. capsular) fruits.

Woody liana. *Brachyblasts* supraxillary, those often turning to thorns, densely ferrugineous stellate-tomentose, glabrescent. Stipules apparently absent. *Blades* subcordate to ovate or lanceolate. *Flowers* arranged at distal third of brachyblasts. *Floral buds* oblongoid. *Calyx* 1-seriate, valvate, sepals 4, equal, exhibiting the corolla from early bud. *Nectary dish* present, bearing 4 episepal green glands, the glands attached on basal half of sepals. *Petals* 4, oblong-obovate, white to cream, pinnatinerved from lower third, the nerves strongly ascendant and longitudinal toward apex. *Fruit* pepo; *seeds* cochleate-reniform, with a hair-infiltrated sarcotesta.

Etymology: *Acanthocapparis* is composed of the Greek prefix *Acantho*, which means spiny or thorny, and the genus *Capparis*, a name coined by Theophrastus (4th century BC; Inocencio et al., 2006), which became the mother genus that once comprised a significant part of the whole New World Capparaceae diversity and refers to the spiny New World *Capparis* L.

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Distribution: a monotypic genus ranging in the lowlands from northern Honduras to the Yucatan Peninsula of southeastern Mexico.

The generic name highlights the presence of spines, which is a rarity considering that none of the remaining genera of Capparaceae native to America is armed. Thorns that are present in most Old World *Capparis* s.str. (e.g., *C. spinosa* L., the type, and closely related species) are short, paired, stipular, clawlike, mostly retrorse or antrorse, and not solitary, supraxillary, ± straight, elongate, and derived from a brachyblast as in *Acanthocapparis*, the latter suggesting a different evolutionary origin.

The cordate-to-ovate leaves and densely stellate pubescence that *Acanthocapparis* presents resemble those of the South American genera *Cappariocordis* (western Ecuador to southern Brazil and northern Argentina; Iltis and Cornejo, 2007) and *Mesocapparis* from Brazil (Cornejo et al., 2015). However, the liana habit, presence of supraxillary flowering brachyblasts and/or thorn-derived brachyblasts, and the respective floral differences as nectary structure and pattern of veins of petals are strong morphological support for not allowing the placement of *C. yunckeri* in any of those genera. The vegetative similarity among *Acanthocapparis*, *Cappariocordis*, and *Mesocapparis* could be regarded as a case of convergent evolution (for differences see Table 1).

Acanthocapparis yunckeri (Standl.) Cornejo, *comb. nov.* (Fig. 1).

Basionym: *Capparis yunckeri* Standl., Field. Mus. Nat. Hist., Bot. Ser. 9 (4): 291. 1940. TYPE**:** HONDURAS. Dept. Yoro, Aguan River Valley, climbing in a thicket in woodland, semi-arid region near Coyoles, ca. 15°28'N 86°43'W, ca. 240 m, 25 July 1938 (fr), *T. Yuncker, J. Koepper & K. Wagner 8615* (Holotype: F; Isotype: NY; photo: WIS [F-neg.51614]).

Synonym: *Capparidastrum yunckeri* (Standl.) Iltis & Cornejo, Brittonia, 59(3): 251–254, f. 4A–I. 2007, *syn. nov.*

Woody liana. *Brachyblasts* supraxillary, (sub)patent to somewhat retrorse, 0.5–7.0(–10.0) cm, densely ferrugineous stellate-tomentose, glabrescent; after flowering, the brachyblasts often turning deciduous at terminal third and

TABLE 1. Comparison of *Acanthocapparis* and related Neotropical genera with cordate-to-ovate leaves and densely stellate pubescence.

FEATURE	*ACANTHOCAPPARIS*	*CAPPARICORDIS*	*MESOCAPPARIS*
Habit	Liana	Shrub, occasionally with shortly scandent branches	Liana or scandent shrub
Supraxillary brachyblasts turning to thorns with age	Present	Absent	Absent
Flowering	Nocturnal	Diurnal	Diurnal
Floral bracts	Unknown	Shortly linear, deciduous from very early buds	Absent
Calyx aestivation	Open	Closed until near anthesis	Closed until near anthesis
Calyx	1-seriate, valvate	1-seriate, reduplicate-valvate	2-seriate, decussate
Shape and color of petals	Oblong-obovate, white to cream	Narrowly elliptic, lemon-yellow to orange	Broadly obovate, white to cream or yellow
Petal nerves	Longitudinal, pinnatinerved from lower third	Pinnatinerved along midvein	Longitudinal-palmate
Number of stamens	Ca. 20–25	4–8	Ca. 20–30
Inflorescence	1–3 flowers, on distal part of brachyblasts	Corymbose or racemose, subterminal and opposite to distal leaves	Solitary flower, axillary
Calyx nectary glands	4 nectary glands adnate to sepals	4 erect nectary appendages, linear to linear-triangular	4 suberect nectary scales
Fruit type	Pepo	Capsular, opening along sutures at maturity, the soft and very flexible fruit wall splitting and falling apart in 2–4 segments at maturity	Pepo

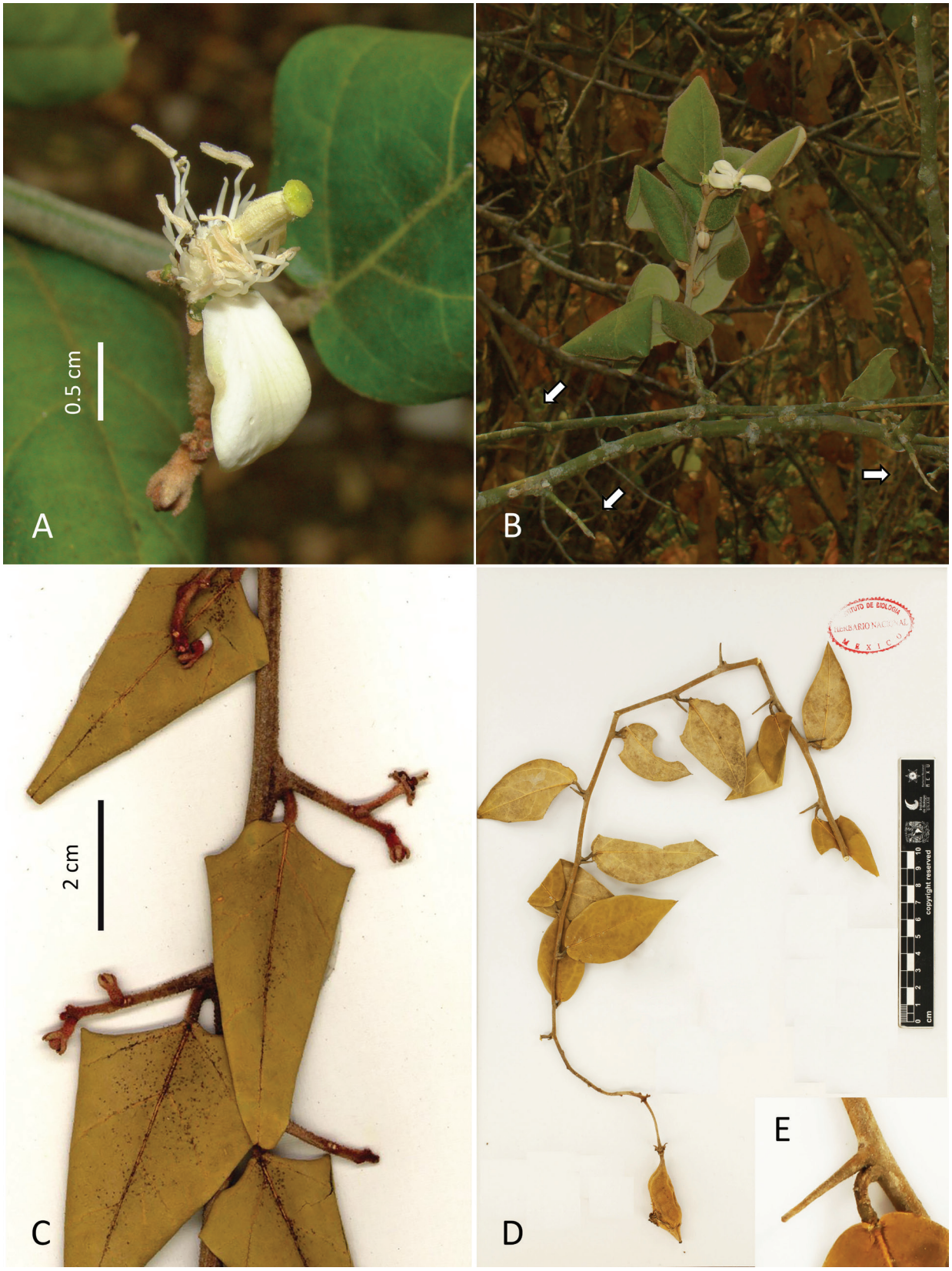

FIGURE 1. *Acanthocapparis yunckeri* (Standl.) Cornejo. **A**, flower at postanthesis; **B**, habit: thorns indicated by arrows; **C**, leafy branch bearing brachyblasts (*House et al. 5427*, TEFH); **D**, thorny liana bearing a fruit (*Alvarez 6077*, MEXU); **E**, thorn and leaf base, detail. A–B, courtesy of Paul House, from Department of Yoro, northern Honduras.

remaining as thorns. *Stems and leaves* densely stellate-tomentose throughout, at least when young, the *blades* subcordate to ovate or lanceolate, 2.5–5.0(–7.0) × 2–4 cm, subcordate to broadly obtuse at base, entire and often rolled inward at margins, broadly obtuse to acute and mucronate at apex, coriaceous and evergreen, soon glabrescent, dark green above, matte beneath (fresh), on drying, often becoming brittle and sharply rolled inward in herbarium material. *Petioles* 3–8 mm, ferrugineous stellate-tomentose, glabrescent. *Flowers* 1–3, but only 1 developed and open at time, the 2 remaining as very young buds otherwise abortive, all arranged at distal third of brachyblasts. *Pedicels* 5–8 mm, stellate-tomentose. *Calyx* 1-seriate, valvate, sepals 4, equal, shortly lanceolate, 2–3 × 1–2 mm, patent at anthesis, exhibiting the corolla from early bud, stellate-tomentose. *Nectary dish* present, bearing 4 episepal green glands, the glands attached on basal half of sepals. *Petals* 4, oblong-obovate, ca. 1.2 × 0.7 cm, white to cream, pinnatinerved from lower third, the nerves strongly ascendant and longitudinal toward apex. *Stamens* ca. 20–25, exserted; filaments ca. 0.8 cm length, white, glabrous; anthers cream. *Gynophore* 2–4 mm, densely stellate-tomentose; *ovary* oblong-elliptic, ca. 5 mm, longitudinally sulcate, greenish-white, densely stellate-tomentose; stigma capitate, sessile, green. *Fruit* pepo, narrowly obovoid to oblong, 4.5–6.0 × 1.3–2.5 cm, densely stellate, glabrescent; *seeds* ca. 20–25, cochleate-reniform, with a hair-infiltrated sarcotesta.

Habitat and distribution: from northern Honduras to southeastern Campeche in the center of the Yucatan Peninsula of southeastern Mexico, 150–240 m, in thicket in woodland, in semiarid regions to evergreen tropical forest ("selva baja perennifolia").

Additional specimens examined: HONDURAS. Atlántida: (based mostly on R.A. Howard's [Arnold Arboretum] letter to Iltis of November 1965) Los Dragos pine lands at a place called Jutiapa 15°47'N, 86°35'W, and ca. 1 km from, and the first village due south of, the coastal town of Nuevo Armenia, 3 Aug 1951 (fr), *R. Howard, W. Briggs, P. Kamb, I. Lane & R. Ritland 540* (A, photocopy WIS). **Yoro:** Municipio Arenal, 15°22'50"N 86°61'31"W, 260 m, 8 Apr 2011 (fl), *P. House, H. Vera, I. Rivera 5427* (TEFH, 2 sheets). MEXICO. Campeche: Mun. Champotón, a 120 km SO de Xpujil, alrededores de la zona arqueológica de Calakmul, 18°06'N, 89°50'W, 150 m, 7 Jul 1996 (fr), *Pascual Alvaro 340* (MEXU, 2 sheets).

Among Neotropical Capparaceae, *Acanthocapparis yunckeri* is the only liana that produces flowering brachyblasts and/or brachyblast-derived thorns. The highly reduced to essentially absent gynophores in flowers or fruits is an unusual characteristic shared with few other genera of New World Capparoids that also occur in xerophytic lowland areas, like *Quadrella quintanarooensis* Iltis & Cornejo, endemic to the state of Quintana Roo, Mexico (Yucatan Peninsula), and *Cynophalla heterophylla* (Ruiz & Pav. ex DC.) Iltis & Cornejo in coastal Ecuador and northwestern Peru.

Key to the Neotropical Genera of Capparaceae with Cordate to Ovate Leaves and Densely Stellate Pubescence

1a. Shrubs; inflorescence racemose or corymbose, subterminal and opposite to distal leaves; petals narrowly elliptic, pinnatinerved, the secondary nerves inserted along midvein; stamens 4–8; fruit capsular, dehiscent with a thin, soft, and very flexible fruit wall . . . . . *Capparicordis*

1b. Lianas; flowers solitary, axillary, or on brachyblasts; petals broadly obovate or shortly oblong, with longitudinal nerves, the secondary nerves inserted at basal third of midvein; stamens 20–30; fruit pepo 2

2a. Flowering brachyblasts and/or thorns absent, the flowers solitary, axillary; calyx 2-seriate, decussate, with closed aestivation until near anthesis, petals broadly obovate, the nerves longitudinal-palmate; nectary scales suberect; Brazil. . . . . *Mesocapparis*

2b. Flowering brachyblasts and/or thorns present; calyx 1-seriate, valvate, with open aestivation from very young buds, petals shortly oblong, the nerves pinnate and strongly ascending at lower third of blade, longitudinal at distal two thirds; nectary glands adnate to sepals on adaxial side; northern Honduras to southeastern Mexico . . . . . *Acanthocapparis*

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