Additions and corrections in American *Ipomoea (Convolvulaceae)*

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Summary

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Information is presented updating an earlier paper on the subject in this journal, by Austin & Huáman. Notes on the nomenclature or taxonomy of *Ipomoea demerariana, I. neurocephala, I. wrightii,* and *Convolvulus littoralis.*

Introduction

Since the paper by Austin & Huáman (1996) appeared dealing with the names applied to American members of the genus *Ipomoea,* several colleagues have sent questions or suggestions. We had the opportunity to work together in October 1996, and can now offer several complements.

Additions and corrections

The following additions and corrections to the paper by Austin & Huáman (1996). The order of presentation is alphabetical, with accepted names in bold-face type. Bracketed page references are to the earlier paper; asterisked (*) entries refer to Old-World species absent from the Americas.

Ipomoea arborescens (Kunth) G. Don [p. 5]: parenthetical authorship to be added.

* *Ipomoea bracteata* Wight 1848 (non Cav. 1799) [p. 21] = ***Ipomoea deccana*** D. F. Austin (an Asian species).

* ***Ipomoea campanulata*** L. [p. 21] is not a synonym of *Stictocardia tiliifolia,* but is the correct name for an Asian species. There has been confusion with *Stictocardia* (cf. Austin & al., 1978), and the previous entry should have read: *"Ipomoea campanulata"* sensu auct. (non L. 1753) = *Stictocardia tiliifolia* (Desr.) Hallier f.

Ipomoea cruckshanksii Choisy [p. 23] = ***Alona*** sp. (fide O'Donell, 1957: 184).

Ipomoea demerariana Choisy [p. 23] = ***Operculina turpethum*** var. ***ventricosa*** (Bertero) Staples & D. F. Austin (not = *I. phyllomega* (Vell.) House; see Notes).

Ipomoea elegans Meisn. (non Dietrich 1836) [p. 24] = ***I. patula*** Choisy (of which *I. monticola* [q.v.] is now considered a synonym).

Ipomoea federalis K. Afzel. [p. 24] = ***Ipomoea neurocephala*** Hallier f. (see Notes).

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Ipomoea heptaphylla Voigt, nom. illeg. = ***I. cairica*** (L.) Sweet (not ***I. wrightii*** A. Gray; see Notes).

Ipomoea *igualensis* Weath. [p. 7] = ***Ipomoea neurocephala*** Hallier f. (see Notes).

Ipomoea monticola (Meisn.) O'Donell [p. 9] (*I. patula* var. *monticola* Meisn. [p. 31]) = ***I. patula*** Choisy (and is not a distinct species). We found that *I. patula* and *I. monticola* are actually based on duplicates of the same collection, *Martius 788*, in P and M, respectively. Therefore, *I. monticola* must be placed as a synonym of *I. patula*.

Ipomoea neurocephala Hallier f. [p. 30], left unplaced, is the correct name for *I. igualensis* Weath. (see Notes).

Ipomoea nitida Griseb. [p. 9]. Authorship was incorrectly attributed to Lorentz, but *I. nitida* Lorentz (in Abh. Königl. Ges. Wiss. Göttingen 24: 264. 1879) is a *nomen nudum*. The name was validated by Grisebach (Symb. Fl. Argent.: 264. 1879). A photograph of the type (Argentina, entre Rios, *Lorentz 719*, B†?) is at F.

Ipomoea trifida var. *torreyana* A. Gray [p. 36] and *I. trichocarpa* var. *torreyana* (A. Gray) Shinners = ***I. cordatotriloba*** var. ***torreyana*** (A. Gray) D. F. Austin.

Ipomoea trichocarpa var. *australis* O'Donell [p. 36] = ***I. cordatotriloba*** var. ***australis*** (O'Donell) D. F. Austin. This and the foregoing varietal names were previously treated as plain synonyms of *I. cordatotriloba* Dennst. In trying to make the paper as succinct as possible, we accepted few varietal names. However, the three varieties of *I. cordatotriloba* (cf. Austin, 1976, 1988) are morphologically distinctive and geographically defined populations.

Notes on Ipomoea demerariana

Ipomoea demerariana Choisy was treated as a synonym of *I. phyllomega* (Vell.) House in the previous paper; others have considered it a distinct *Ipomoea* species. However, authors from Grisebach (1864) onward have misapplied the name, if they mentioned it at all, as was pointed out by Hill & Sandwith (1948). The type of *I. demerariana* belongs to a variety of *Operculina turpethum*.

Operculina turpethum var. ***ventricosa*** (Bertero) Staples & D. F. Austin in Brittonia 33: 595. 1981 *Convolvulus ventricosus* Bertero in Colla, Hortus Ripul. 37. 1824 *Ipomoea ventricosa* (Bertero) G. Don, Gen. Hist. 4: 274. 1838. – Type: "in Guadalupa ubi in hortis cultis ex Ins. S. Bartholomei allatus", *Bertero* (not seen).

= *Ipomoea demerariana* Choisy in Candolle, Prodr. 9: 361. 1845. –Type: Guiana, Demerara, from Barb[ado]s cult[ivated], *Parker* (K, 2 sheets).

When Staples & Austin (1981) discussed the Caribbean *Operculina* species, they noted that plants now considered to form *O. turpethum* var. *ventricosa* appear to have been selected by cultivation. The type of *Ipomoea demerariana* was also a cultivated plant, although the relevant label information was omitted by Choisy (1845: "... in Demerara rept. Parker. (v.s. in herb. Hooker)") and later authors. The only indication in the protologue that does not fit *Ipomoea* is the statement that the specimen has twisted anthers *("antheris tortilibus")*. Choisy opined that the corolla may have been yellow, but this was an artefact of drying and age as is obvious from the original label information.

There are two sheets from the Hooker herbarium at Kew. One is labelled "Ex herb. C. S. Parker. from Barb^{s}. cult. Blakes mat. 1824. Cephalic vine fl. albo". The other has an only partly legible handwritten label that includes the words "cult. from Barbados". The sheet bears annotations by 4 different people, including "*Ipomoea* Mr. Parker n. sp.", possibly by Hooker, and *"I. demerariana"*, possibly by Choisy. A third hand has written the full name and Choisy citation along with the word "Type!". Had Choisy included all of the original label information in the protologue, he would have prevented many subsequent problems.

Notes on Ipomoea neurocephala

Recently we compared Bolivian, Brazilian, and Mexican samples of several supposedly local endemic species. To our surprise, specimens of three of these named taxa were indistinguishable. Placement of *Ipomoea federalis* and *I. igualensis* in synonymy with *I. neurocephala* is the consequence.

Ipomoea neurocephala Hallier f. in Jahrb. Hamb. Wiss. Anst. 16: 40. 1899. – Holotype: Bolivia, Prov. Larecaja, "viciniis Anama, Sarqchani, in silvulis, reg. temperada", 2400 m, Jun 1860, *Mandon 1489* (G-DC [photo F!]).

= *Ipomoea igualensis* Weath. in Proc. Amer. Acad. Arts 45: 427. 1910. – Type: Mexico, Guerrero, "Iguala Cañon", 750 m, 21 Sep 1905, *Pringle 10054* (isotypes: ASU, CTES, F, US).

= *Ipomoea federalis* K. Afzel. in Svensk. Bot. Tidskr. 60: 483. 1966. – Holotype: Brazil, Distrito Federal, "Corrego Maranhão", 27 Apr 1963, *Pires & al. 9487* (S, not seen; isotypes: PB, UB); paratype: Brazil, "Fercal", 5 Apr 1961, *Heringer 8178/372* (S? or UB?, not seen).

Climbers, probably annual, the stems cylindrical, slender, with yellow-white, papillose-hirsute, often retrorse indumentum of 2-3 mm long trichomes, glabrescent with age. Leaves broadly cordate to ovate-orbicular, 7.5-12 cm long, 7-13 cm wide, cordate basally, the margins entire to somewhat undulate, acuminate, with trichomes above and below like the stems; the petioles 7-19 cm long, similarly hirsute. Inflorescences of simple cymes or capitate-cymose, on peduncles 12-24 cm long, with indumentum like stems and leaves. Flowers enclosed by two foliose, membranous, ovate, cuspidate bracts, 17-25 mm long, 10-12 mm wide, long-acuminate; hirsute trichomes scattered without, dense along margins, absent within the bracts, covering and obscuring the pedicels and sepals; the inner bracts and bracteoles to 10 mm long and 3 mm wide, indumentum as on the bracts; sepals pilose without and on the margins, glabrous within, the outer ovate-lanceolate, 13-19 mm long, 4-7 mm wide, acute, the inner narrowly lanceolate, 10-nerved, 13-15 mm long, 2-3 mm wide; corolla 5-6 cm long, funnel-shaped, pale lavender above, white below, the narrowed tube and interplicae hairy without, the limb glabrous; filaments glandular-pubescent basally; stigma 3-lobed; disc annular. Fruits unknown.

Distribution. – M e x i c o : Guerrero, Rincón de la Vía, 4 Nov 1960. *Matuda 37252* (MEXU, not seen); 4.9 km SW of Colorines, 0.4 km NE of Ixtapantongo, 16.1 km SW of Valle de Bravo dam on road from Valle de Bravo to Tingambato, weedy roadside thickets, with *Zea mays* subsp. *parviglumis* Iltis & Doebley, c. 1350 m, 3 Oct 1981, *Doebley 518* (FAU); San Pedro Limón, 16 Sep 1960, *Matuda 35271* (MEXU, not seen); Santo Tomás de los Plátonos, 31 Aug 1952, *Matuda 27550* (MEXU, not seen). –

B o l i v i a : Prov. Larecaja, viciniis Anama, Sarqchani, in silvulis, reg. temperada, 2400 m, Jun 1860, *Mandon 1489* (MO). – B r a z i l : Distrito Federal, Universidade de Brasília, herbaceous twining vine, in dense thicket, corolla rose-lavender, wet roadside ditch, 975 m, 26 Oct 1965, *Irwin & al. 9562* (FAU, NY, SP).

This species was first found in Bolivia (Larecaja) in 1860. When Weatherby studied the Mexican collection by Pringle that he subsequently named *Ipomoea igualensis*, he was unaware of the Bolivian plant. For many years, the species was known in N. America only from Pringle's type collection and was considered something of an anomaly by those studying the genus in Mexico. Matuda (1964), when recording his own collections from 1952 and 1960 had seen Pringle's original specimens. No other collections had been made in Mexico until Doebley found the plant again in 1981.

In the meantime, the species had been found in Brazil in 1961. Being quite unique it was described and named independently in Bolivia, Brazil, and Mexico. Not so much the hispid-hirsute sepals as the two bracts that surround several flowers united into a head-like cluster and the pale lavender flowers make the plants distinctive. Each author pointed out these traits when their new names were proposed. The only difference between the Bolivian and other specimens is that Hallier described the ovaries as 2-locular when both other populations were said to be 3-carpellate.

Weatherby placed the species in *Ipomoea* sect. *Pharbitis* (Choisy) Griseb., apparently solely because of the indumentum type. He further suggested that it was "near *I. hirtiflora* Mart. & Gal. ...", but that species is now placed in a distinct genus, *Odonellia* K. R. Robertson, and is no longer considered to be allied with *I.* sect. *Pharbitis*.

Afzelius thought *Ipomoea federalis* to be allied with *I. piresii* O'Donell (in Arq. Mus. Paraense 9: 229. 1952. – Holotype: Brazil, Maranhão, *Pires & Black 1989,* LIL [photo FAU!]; isotypes IAN, US). While *I. piresii* also has capitate inflorescences, it differs by its shorter internodes and petioles, smaller leaves, shorter peduncles, bracts, sepals, and corollas. Although he did not comment on infrageneric placement, Afzelius noitd that the species has a 3-lobed stigma; this fits species placed in *I.* sect. *Pharbitis* and supports Weatherby's conclusion. McDonald (1991) and Austin & Huáman (1996) concurred, including the species in *I.* ser. *Pharbitis*.

Pending proper field studies, the label data on several of the specimens suggest a probable reason for the widely disjunct foci of these collections. Collectors in Mexico (Doebley) and Brazil (Irwin & al.) have noted that the plants were associated with either cultivated or ruderal vegetation. The Brazilian plants were found near the University of Brasilia, which may indicate a cultivated origin. In Mexico, Doebley found the vines growing on corn *(Zea mays)*. Several species of *Convolvulaceae* are known to be spread widely around the world by seed contamination (see, e.g., Elmore & al., 1990). Association of *Ipomoea neurocephala* with corn in Mexico may indicate that it is yet another species that has been spread by seed contamination.

Notes on the nomenclature of Ipomoea wrightii

In the previous paper, *Ipomoea heptaphylla* "(Roxb.) Voigt" 1845 was included as a synonym of *I. wrightii*. Voigt's name is based on *Convolvulus heptaphyllus* Roxb. 1824, which is an illegitimate later homonym, but still antedates *I. wrightii* A. Gray 1878, so one may wonder why *I. heptaphylla* is not the correct name. The reason is that it is itself illegitimate through inclusion of the earlier, legitimate *I. pulchella* Roth 1821 in synonymy.

Another senior name listed by Austin & Huáman (1996: 33) as a synonym of *Ipomoea wrightii* is *I. radicans* Bertero ex Choisy 1845. It was an error to equate *I. radicans* with *I. wrightii*. The situation has been confused for decades, and our recent listing did nothing to clarify the situation. Hopefully, the following will.

The nomenclatural complexities of these and related names were discussed in detail by Verdcourt (1961) with reference to Old World species, two of which also occur in America. Whether the American plants were introduced to the Old World or vice versa has not been resolved.

Ipomoea wrightii A. Gray, Syn. Fl. N. Amer. 2: 213. 1878. – Holotype: Texas, *Wright* (GH).

= *Convolvulus heptaphyllus* Roxb., Fl. Ind. 2: 66. 1824 (non Rottler & Willd. 1803). – Lectotype (Verdcourt, 1961: 11): Painting No. 1950 by Roxburgh (K, not seen).

= *Ipomoea radicans* Bertero ex Choisy in Candolle, Prodr. 9: 387. 1845 (non Blume 1826). – Type: Jamaica, *Bertero* (?TO, not seen, fide Verdcourt, 1961).

= *Ipomoea spiralis* House in Muhlenbergia 3: 40. 1907. – Type: Mexico, *Palmer 24* (isotype: US).

= *Ipomoea pulchella* var. *lineariloba* Hassl. in Repert. Spec. Nov. Regni Veg. 9: 158. 1911. – Type: Paraguay, Gran Chaco, *Hassler* (isotype: NY).

Ipomoea cairica (L.) Sweet, Hort. Brit.: 287. 1826 *Convolvulus cairicus* L., Syst. Nat., ed. 10: 922. 1759.

= *Convolvulus heptaphyllus* Rottler & Willd. in Ges. Naturf. Freunde Berlin Neue Schriften 4: 196.1803, p. p. (non *Ipomoea heptaphylla* Voigt 1845, nom. illeg.). – Type: Madras at Marmelon, *Rottler* (isotype: K, not seen, fide Verdcourt, 1961).

= *Ipomoea pulchella* Roth, Nov. Pl. Sp.: 115. 1821 *I. heptaphylla* Voigt, Hort. Suburb. Calcutt.: 360. 1845, nom. illeg. – ?Original specimen: *Heyne* in Wallich No. 1353 (K, not seen, fide Verdcourt, 1961).

Notes on the identity of Convolvulus littoralis *L.*

At the request of George Staples (BISH) we recently re-examined the question of the identity of the type of *Convolvulus littoralis* L. (Syst. Nat., ed. 10: 924. 1759), which is the illustration of *C. foliis obtusis...".* in Plumier, Pl. Amer.: t. 90, f. 2. 1756. In an earlier paper, La Valva & Sabato (1983: 112) had reached the conclusion that the Plumier figure, which they designated as the type of the Linnaean name, does not represent the same species that they were calling *Ipomoea imperati* (Vahl) Griseb.

We disagree. The Plumier figure is a perfectly recognisable likeness of living specimens of *Ipomoea imperati* that we have seen from several places. The type of *Convolvulus littoralis* is *I. imperati* and *I. littoralis* (L.) Boiss. 1875 [non Blume 1826) should be included among the latter's synonyms, as was done in Austin & Huáman (1996: 28).

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