

A taxonomic study of *Jacquemontia evolvuloides* (Moric.) Meisn. and related species (Convolvulaceae)

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ABSTRACT

The genus *Jacquemontia* Choisy comprises climbing, rarely erect herbs or subshrubs with stellate, rarely forked, glandular or simple trichomes, simple style with two terminal, ellipsoidal stigmas, and capsules opening through eight valves. This study aims to clarify the delimitation of a group of eight easily confused species of this genus, including *Jacquemontia evolvuloides* (Moric.) Meisn. and seven related species that form a group characterized by equal lanceolate, acuminate sepals and rotate-infundibuliform corolla. An identification key, relation of the synonyms, type material, selected examined material, comments regarding the taxonomy and distribution of the species are provided. Twelve new synonyms are proposed, and four lectotypes are designated.

KEY WORDS

Solanales,
Tropical America,
lectotypification,
new synonyms.

RÉSUMÉ

Une étude taxonomique de Jacquemontia evolvuloides (Moric.) Meisn. et espèces apparentées (Convolvulaceae).

Le genre *Jacquemontia* Choisy est caractérisé par un port volubile, rarement sous-arbustif ou herbacé, les trichomes sont étoilés, rarement ramifiés glandulaires ou simples, le style est simple avec deux stigmates terminaux, ellipsoïdaux et dorsalement aplatis, les capsules s'ouvrent par huit valves. La présente étude visait à effectuer la délimitation morphologique de huit espèces facilement confondues dans ce genre. *Jacquemontia evolvuloides* (Moric.) Meisn. est morphologiquement lié à huit espèces, caractérisées par des sépales égaux, lancéolés avec apex acuminé, tous semblables entre eux, et une corolle rotacée-infundibuliforme. Pour les espèces étudiées sont fournies une clé d'identification, une liste de synonymes reconnus ici, la référence des matériaux-type, une sélection du matériel examiné, la répartition géographique et des commentaires taxonomiques. Douze synonymes nouveaux sont reconnus et quatre lectotypes sont désignés.

MOTS CLÉS

Solanales,
Amérique tropicale,
lectotypification,
synonymes nouveaux.

INTRODUCTION

Convolvulaceae is a mainly neotropical family, with a few species occurring in Eurasia and Oceania (Staples & Brummitt 2007; Staples 2012), including *c.* 60 genera and *c.* 1.880 species (Staples 2012; Cheek & Simão-Bianchini 2013; Buriel *et al.* 2015).

The family is characterized by the predominance of herbaceous climbers and lianas with alternate leaves, pentamerous flowers with sepals usually persistent in the fruit, gamopetalous corolla with five distinct mid-petaline bands, five epipetalous stamens, superior ovary and often two ovules per locule. With a few exceptions, the fruits are capsular and dehiscent by valves (Simão-Bianchini & Pirani 1997; Staples 2012).

Jacquemontia Choisy comprises around 120 mainly Neotropical species, with few representatives from Africa, Asia, and Oceania (Austin *et al.* 2008, Staples 2012). In Brazil, 69 species are recognized and amongst them, 46 are endemic (BFG 2015). Distinguished by the presence of stellate trichomes (usually 3–8-radiate or derived from this condition), simple style with two ellipsoidal and dorsally flattened terminal stigmas, and capsules usually opening through eight valves, glabrous, often verrucose, and ruminate or striate seeds with marginal wings (Robertson 1971).

Meisner (1869) recognized three sections and 33 species of *Jacquemontia* in *Flora Brasiliensis*: *Jacquemontia* sect. *Cyrtosae*, with 17 species, was characterized by lax to contracted cymes with five to many pedicellate flowers; *Jacquemontia* sect. *Capitatae*, with nine species, comprised species with capituliform cymes with many sessile or subsessile flowers; and *Jacquemontia* sect. *Anomalae*, with seven species, were grouped due to their lax cymes with few, pedicellate flowers.

The study carried out by Robertson (1971) focused on a revision of the North and Central American and Caribbean species, where he treated 27 species, but taxonomic problems amongst the South American taxa still remained.

Buriel (2013) carried out phylogenetic studies involving 56 mainly South American species of *Jacquemontia*, and concluded that it was not possible to use the infrageneric classification proposed by Meisner (1869) because these sections do not represent monophyletic groups and their morphological delimitation is very hard to apply.

According to Simão-Bianchini & Pirani (2005), studies of South American Convolvulaceae consisting chiefly of regional floras, such as Simão-Bianchini (1999), Krapovickas (2009), Buriel *et al.* (2012), Buriel & Alves (2011, 2013), Ferreira *et al.* (2013), Silva & Simão-Bianchini (2014), Pastore & Simão-Bianchini (2016), Vasconcelos *et al.* (2016), Petrongari & Simão-Bianchini (2016), Moreira *et al.* (2017), Wood & Scotland (2017) have revealed many species new to science.

The objective of this study is to evaluate the morphological delimitation of *J. evolvuloides*, placed by Meisner (1869) in *Jacquemontia* sect. *Anomalae*, by comparing it to a group of seven related species, in order to provide a better understanding of this species complex.

MATERIAL AND METHODS

The morphological analysis of the species has been based on the analysis of type material and also of abundant specimens kept at ALCB, BHCBC, CEN, COR, CTES, ESA, HB, HEPG, HEPH, HRCB, HUTO, HUEFS, IBGE, IAC, K, LIL, MBM, MO, NY, P, PMSP, R, RB, SJRP, SP, SPE, SPSE, UB, and UEC herbaria (Thiers continuously updated). Images of type material from BR, F, G, GH, M, MA, S, SI, and US were analysed. Material was observed in the field during several expeditions carried out to collect *Jacquemontia* specimens in different biomes in Brazil.

Specimens were compared with the original descriptions, and the species diagnostic characters were checked. Morphological nomenclature followed Hickey (1973) and Radford *et al.* (1974).

RESULTS AND DISCUSSION

This study does not propose an alternative infrageneric classification based on morphological characters, but retrieves the *J. evolvuloides* group comprising eight closely related species that were often taxonomically confused. While the sections of *Jacquemontia* circumscribed by Meisner (1869) were very useful at the

point of their creation, the advance of the studies in this genus obviates that it is necessary to find diagnostic characters to delimitate infrageneric groups that have proven to be monophyletic.

A calyx with equal sepals that are lanceolate, apically acuminate, and a rotate-infundibuliform corolla characterizes all species studied here. The species are separated by a combination of habit, trichome type, leaf shape, inflorescence architecture, bracteole size and sepal.

While the genus *Jacquemontia* is characterized by stellate, furcate and sometimes glandular trichomes, there are species with simple, thick based trichomes that resemble forked trichomes with very short ray (Fig. 2). These are found on

a few species of *Jacquemontia*, such as *J. anomala* O'Donell, *J. tamnifolia* (L.) Griseb., *J. warmingii* O'Donell, and on occasional individuals of *J. evolvuloides* and *J. sphaerostigma*.

Two of the species studied here have wide American distribution and grow in open vegetation, often in roadsides and disturbed areas: *J. evolvuloides* and *J. sphaerostigma*. Both of them display large morphological variation from one population to the next rather than within each population, however it was possible to perceive a continuous gradient. This polymorphism has led different authors to recognize several populations as distinct species. The other six species have restricted distribution in specific habitats in Venezuela, Brazil, Paraguay or Argentina.

IDENTIFICATION KEY FOR *JACQUEMONTIA EVOLVULOIDES* (MORIC.) MEISN. AND ALLIED SPECIES

1. Subshrubs with woody, mostly erect stems, sometimes scandent 2
— Herbs with herbaceous, voluble, scandent or prostrate stems 4
2. Leaves and stem tomentose; bracteoles 5-8 mm long *J. fruticulosa* Hallier f.
— Leaves and stem pubescent or hirsute; bracteoles 1.5-2.5 mm. long..... 3
3. Plants ferruginous *in sicco*; stems densely branched near the base; peduncles 0.2-1.5 cm
..... *J. heterotricha* O'Donell
— Plants greenish in sicco; stems sparsely branched throughout the plant; peduncles 3-6 cm
..... *J. evolvuloides*
4. Inflorescence dichasial congested (umbelliform to corymbiform) (Fig. 1) *J. sphaerostigma* (Cav.) Rusby
— Inflorescence monochasial or thyrsoid (Fig. 1) 5
5. Leaves linear or narrowly lanceolate; sepals 3-4 mm long, glabrous *J. linoidea* (Choisy) Meisn.
— Leaves ovate, elliptic or lanceolate; sepals 6.5-8 mm long, hirsute or pubescent 6
6. Leaves brochidodromous, 5-6 pairs of secondary veins, stems greenish *in sicco* *J. evolvuloides*
— Leaves eucamptodromous, 2-3 pairs of secondary veins, stems reddish *in sicco* 7
7. Glandular trichomes present; inflorescence thyrsoid or monochasial *J. warmingii* O'Donell
— Glandular trichomes absent; inflorescence monochasial 8
8. Stems with a mix of stellate, 3-radiate and forked trichomes (Fig. 2); bracteoles 8-12 mm long
..... *J. guaranitica* Hassl.
— Stems with a mix of simple trichomes thickened at the base and forked trichomes (Fig. 2); bracteoles 3-4 mm long *J. anomala* O'Donell

Family CONVULVACEAE L.

Genus *Jacquemontia* Choisy

1. *Jacquemontia anomala* O'Donell

Lilloa 23: 460 (1950). — Type: Paraguay, "In regione fluminis Alto Parana", X.1909, K. Fiebrig 6278 (holo-, GH[GH00054630] photo!; iso-, BM[BM000089502]!, K[K000613023]!, LIL[LIL001301]!, SI[SI001302] photo!, US[US00111297] photo!).

DISTRIBUTION. — Known only from Paraguay and known only from its type-material. O'Donell (1950a) mentioned that there was a paratype in SI and LIL herbaria, but he failed to cite the material and it has not been located so far. Among the species studied here, this is the only one that has not been recorded from Brazil.

REMARKS

Distinguished by its herbaceous habit with scandent stems, narrowly elliptical leaves with simple trichomes that are thick-

ened at base mixed with forked trichomes, and monochasial inflorescences, *J. anomala* is difficult to distinguish from *J. guaranitica*, differing only in the type of indumentum and bracteole size. The fact that *J. anomala* is known through a single collection makes it difficult to ascertain whether it represents a variant of *J. guaranitica* with longer bracteoles and without stellate trichomes on its stems.

2. *Jacquemontia evolvuloides* (Moric.) Meisn. (Fig. 8A, B)

In Martius 7: 307 (1869). — *Ipomoea evolvuloides* Moric., *Plantes Nouvelles d'Amérique*, t. 32: 47 (1838). — *Montejacquia evolvuloides* (Moric.) Roberty, *Candollea* 14: 33 (1952). — *Jacquemontia evolvuloides* (Moric.) Meisn. var. *longepedunculata* Meisn., *in Martius, Flora Brasiliensis* 7: 307 (1869) (*nom. illeg.*). — Lectotype (designated here): Brazil, Bahia, 1834, *J.S. Blanchet 1876* (lecto-, G[G00222066]



FIG. 1. — Representative inflorescences: **A**, inflorescence dichasial congested in *Jacquemontia sphaerostigma* (M. Kuhlmann & A. Geht s.n. [SP39995]); **B**, inflorescence thyrsoid in *Jacquemontia warmingii* (S.M. Soares 565); **C**, inflorescence monochasial in *Jacquemontia evolvuloides* (G. Pereira-Silva 6283). Scale bars: A, B, C, 1 cm.

photo!; isolecto-, G[G00222068] photo!, P[P03848976]! (Fig. 3); lectosyn-, Brazil, Bahia, *Blanchet 2050* G[G00222067] photo!).

Convolvulus agrestis Choisy, *DC. Prodrômus Systematis* (9): 405 (1845). — *Jacquemontia agrestis* (Choisy) Meisn., in Martius, *Flora Brasiliensis* 7: 306 (1869). — Lectotype (designated by Robertson 1971): Brazil, Bahia, Joazeiro, São Francisco, *C.F.P. Martius s.n.* (lecto-, M[M0174135] photo!; isolecto-, M[M0174134] photo!), **syn. nov.**

Convolvulus breviacuminatus Mart. ex Choisy, *DC. Prodrômus Systematis* (9): 409 (1845). — *Jacquemontia racemosa* Meisn., in Martius, *Flora Brasiliensis* 7: 308 (1869) (*nom. illeg.*). — *Jacquemontia breviacuminata* (Mart. ex Choisy) Buril, *Phytologia* 97 (3): 219-223 (2015). — Type: Brazil, Piauí, “Campo-Grande et Castello”, *C.F.P. Martius obs. 2459* (holo-, M[M0184703] photo!; iso-, M[M0184702] photo!), **syn. nov.**

Jacquemontia erecta Mart. ex Choisy, *DC. Prodrômus Systematis* (9): 298 (1845). — Type: Brazil, Bahia, Joazeiro, São Francisco, *C.F.P. Martius s.n.* (holo-, M[M0184742] photo!).

Ipomoea evolvuloides var. *grandiflora* Choisy, *DC. Prodrômus Systematis* (9): 373 (1845). — Type: Brazil, 1837, *J.S. Blanchet 2746* (holo-, G[G00222099] photo!; iso-, G[G00135887] photo!, F[F0054879F] photo!, K[K000895056]!).

Jacquemontia palmeri S. Watson, *Proceedings of the American Academy of Arts* 24: 63 (1889). — Type: Mexico, Sonora, mountains above Guaymas, 6.VII.1887, *E. Palmer 221* (holo-, US[US00111313] photo!; iso-, C[C10009696] photo!, E[E00502204] photo!, GH[GH00054624] photo!, NDG[NDG40383] photo!, NY[NY00319265, NY00319266]!, UC[UC105022] photo!, YU[YU002063] photo!).

Jacquemontia pedunculata Rusby, *Memoirs of the Torrey Botanical Club* 6: 85 (1896). — Type: Bolivia, Cochabamba, 1891, *M. Bang 1067*

(holo-, NY[NY00336552]!; iso-, BR[BR0000008660244] photo!, F[F0054909F] photo!, K[K000613118]!, MO[MO-694490]!, US[US00111318] photo!, WIS[WISv0004254WIS] photo!).

Convolvulus secundiflorus Fernald, *Proceedings of the American Academy of Arts* 33 (5): 90 (1897). — *Jacquemontia secundiflora* (Fernald) O’Donell, *Lilloa* 23: 467 (1950). — Type: Mexico, Guerrero, Acapulco, X.1894, *E. Palmer 32* (holo-, GH[GH00054627] photo!; iso-, K[K000613054]!, MO[MO-152715]!, US[US00111342] photo!).

Jacquemontia palmeri S. Watson var. *varians* Brandegee, *Zoë* 5 (9): 170 (1903). — Type: Mexico, Baja California, XI.1902, *T.S. Brandegee s.n.* (holo-, UC[UC105019] photo!; iso-, US[US00111314] photo!).

Jacquemontia hirsuta Choisy var. *parvifolia* Chodat & Hassl., *Bulletin de l’Herbier Boissier*, ser. 2, 5: 697 (1905). — *Jacquemontia evolvuloides* var. *grandiflora* f. *hirsutula* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 194 (1911). — Type: Paraguay, Concepción, IX.1901, *E. Hassler 7340* (holo-, G[G00175387]!; iso-, GH[GH00054638] photo!, MO[MO-1176113]!, MPU[MPU012120, MPU012121] photo!, NY[NY00319288]!, P[P03867994]! (Fig. 4), S[S12-717] photo!, UC[UC944288] photo!), **syn. nov.**

Ipomoea prostrata Meisn. var. *longepedunculata* Chodat & Hassl., *Bulletin de l’Herbier Boissier* ser. 2, 5: 697 (1905). — Type: Paraguay “In regione cursus superioris fluminis Apa, Lect. mens. Febr.”, 1901, *E. Hassler 8459* (holo-, G[G00228052] photo!; iso-, G[G00175389] photo!, G[G00175390] photo!, G[G00175388] photo!, K[K000612783]!), **syn. nov.**

Jacquemontia evolvuloides var. *grandiflora* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 194 (1911). — *Jacquemontia evolvuloides* var. *grandiflora* f. *albiflora* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 194 (1911). — Type: Paraguay “In campis in regione superioris fluminis Apa, flor. mens. Febr.”, *E. Hassler 8459* (holo-, NY[NY00319297]!), **syn. nov.**

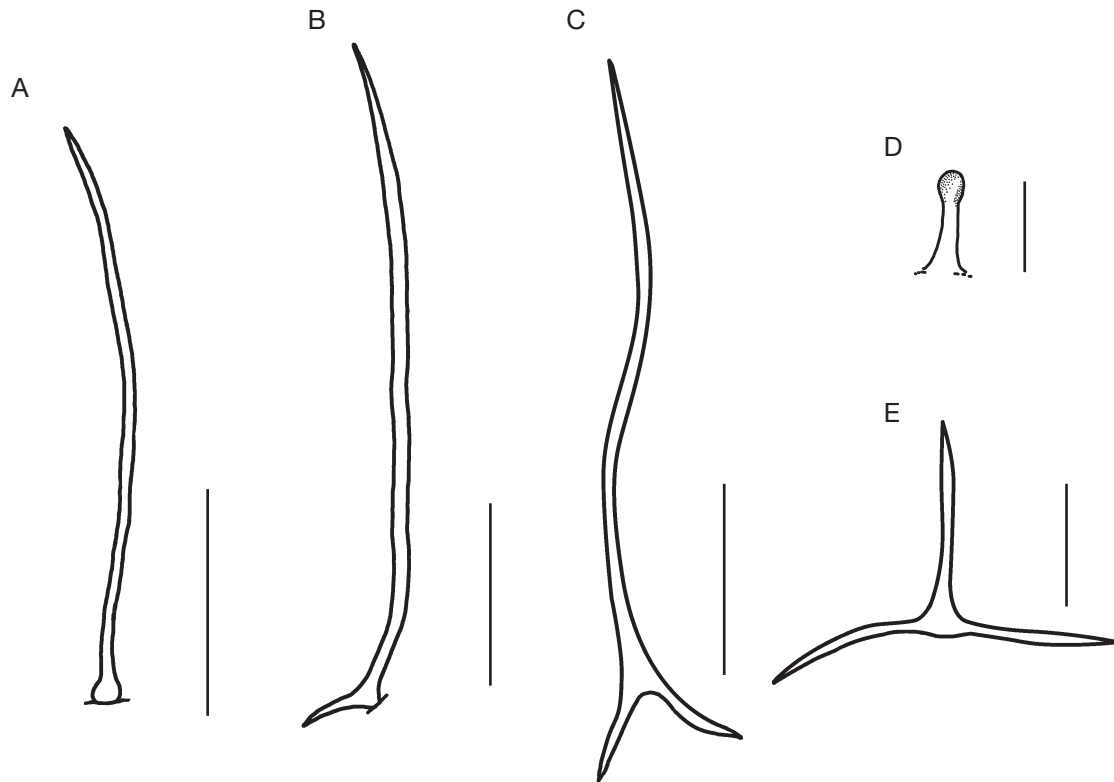


FIG. 2. — Representative trichomes: **A**, simple trichome thickened at the base; **B**, forked trichome with a very short ray; **C**, 3-radiate trichomes with unequal rays; **D**, glandular trichome; **E**, 3-radiate trichomes with equal rays. Scale bars: A, B, C, 0,5 mm; D, E, 0,25 mm.

Jacquemontia evoluloides var. *grandiflora* f. *tomentosula* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 194 (1911). — Type: Paraguay “Centurian, trockener Camp zwischen Gräsern, flo. et fruct. Mens. Oct et Nov.”, *K. Fiebrig 4216* (syn-, G[G00175378] photo!, M[M0184736] photo!, GOET[GOET002529] photo!; Paraguay “Zwischen Rio Apa und Rio Aquidaban 1908/1909” *K. Fiebrig 4124* (syn-, G[G00175380, G00175379], M[M0184737] photo!), **syn. nov.**

Jacquemontia pauciflora Brandege, *University of California Publications in Botany* 4 (19): 384 (1913). — Type: Mexico: Vera Cruz, Baños del Carrizal, VIII.1912, *C.A. Purpus 6139* (holo-, UC[UC155183] photo!; iso-, F[F0054936F] photo!, G[G00222103], GH[GH00054625] photo!, MO[MO-15271, MO-152716]!, NY[NY00319267]!, US[US00111317] photo!).

Jacquemontia diantha Urban, *Symbolae Antillanae* 9: 243, 244 (1924). — Type: Cuba, Guantanamo, 17.XII.1919, *E.L. Ekman 10180* (holo-, S[S07-4311] photo!; iso-, BM[BM000953204]!, F[F0054941F] photo!, G[G00227291] photo!, NY[NY00111078]!).

Jacquemontia guatemalensis Standl. & Steyerl., *Publications of the Field Museum of Natural History, Botanical series* 23 (2): 84 (1944). — Type: Guatemala, Chiquimula, 20.X.1939, *J.A. Steyermark 30066* (holo-, F[F0054934F] photo!).

Jacquemontia decumbens O’Donell, *Lilloa* 23: 422 (1950). — Type: Argentina, Misiones, Dep. Candelaria, Gramajo, 1.III.1948, *G.J. Schwarz 5553* (holo-, LIL[LIL001304]!, iso-, BAA[BAA00004765] photo!, BR[BR0000006992224, BR0000006992552] photo!, E[E00421736] photo!, GH[GH00054632] photo!, IAN[IAN060867]!, L[L0004209] photo!, LIL[LIL001305, LIL001306, LIL001307, LIL001308, LIL001309]! MO[MO-694362]!, P[P03848994]! (Fig. 5), RB[RB00263525]!, RSA[RSA0002446, RSA0002447] photo!, TEX[TEX00372578, TEX00372579]! photo), **syn. nov.**

SELECTED MATERIAL EXAMINED. — **Argentina.** Córdoba, Colón, 4.IV.1953, *A.T. Hunziker 10257* (MBM). — Corrientes, Empredado, 24.III.1979, *T.M. Pedersen 12409* (SPF, MBM, CTES); Ituzaingó, 17.XI.1978, *M.M. Arbo et al. 2107* (MBM, ICN); Meroedes, 13.XI.1981, *A. Schinini 21710* (MBM). — Misiones, Candelaria, 15.III.2002, *M.E. Rodríguez & A. Góchez 1184* (ESA).

Brazil. Bahia, Rio de Contas, 13°36’18”S, 41°46’22”W, 20.IV.2009, *R.M. Harley et al. 55956* (SP, HUEFS); Ceará, Santa Quitéria, 16.IV.2011, *M.E.F. Rodrigues et al. 691* (SP). — Distrito Federal, Sobradinho, 9.VIII.1990, *T.B. Cavalcanti 587* (SP, CEN). — Goiás, Colinas do Sul, 14°11’32.5”S, 48°03’23.5”W, 21.V.2004, *M.L. Fonseca et al. 5374* (SP, IBGE); Maranhão, Loreto, 18.V.1962, *G. Eiten 4620* (SP). — Piauí, 27.V.1978, *J. Souza et al. 674* (SP). — Mato Grosso, Araguaína, 16°42’51”S, 53°08’25”W, 11.VIII.2012, *A. Francener et al. 1151* (SP); Mato Grosso do Sul, Ladário, 19°04’17”S, 57°29’16”W, 8.XI.1996, *V.J. Pott 3248* (SP, CPAP). — Minas Gerais, Mato Verde, 15°18’21”S, 42°49’37”W, 7.IV.2004, *M.A. Farinaccio et al. 707* (SP, SPF). — Pernambuco, Buíque, 11.VII.1997, *A.M. Miranda 2744* (SP, HST). — Rio Grande do Norte, Acari, 13.III.2009, *A.A. Roque et al. 731* (SP, UFRN); Sergipe, Areia Branca, 10°44’48.7”S, 37°20’35.5”W, 29.VI.2010, *R. Simão-Bianchini 1761* (SP). — Tocantins, Cachoeirinha, 10.VII.2016, *M. Pastore et al. 487* (MG).

Mexico. Campeche, San Antonio Ebulá, 19°48’11.4”N, 90°26’38”W, 11.X.2002, *C.P. Lanz 169* (MBM). — Guaymas, 1887, *E. Palmer 221* (K). — Tejuzilco Ixtapan, 2.XI.1932, *G.B. Hinton, 2474* (K). — Temascaltepec El Salitre, 19°00’42”N, 100°11’19”W, 15.XI.1932, *G.B. Hinton 2594* (K).

Paraguay. Amambay, 25.X.1994, *A. Krapovickas 46046* (SP, CTES). — Boquerón, 10.IV.1997, *R. Vanni et al. 3957* (SP, CTES). — Central, 8.V.1994, *A. Krapovickas 45208* (SP, CTES). — Presidente Hayes, 27.II.1994, *A. Krapovickas et al. 45081* (SP, CTES). — San Pedro, 24°35’S, 56°34’W, 22.X.1994, *A. Krapovickas et al. 45858* (SP, CTES, K).

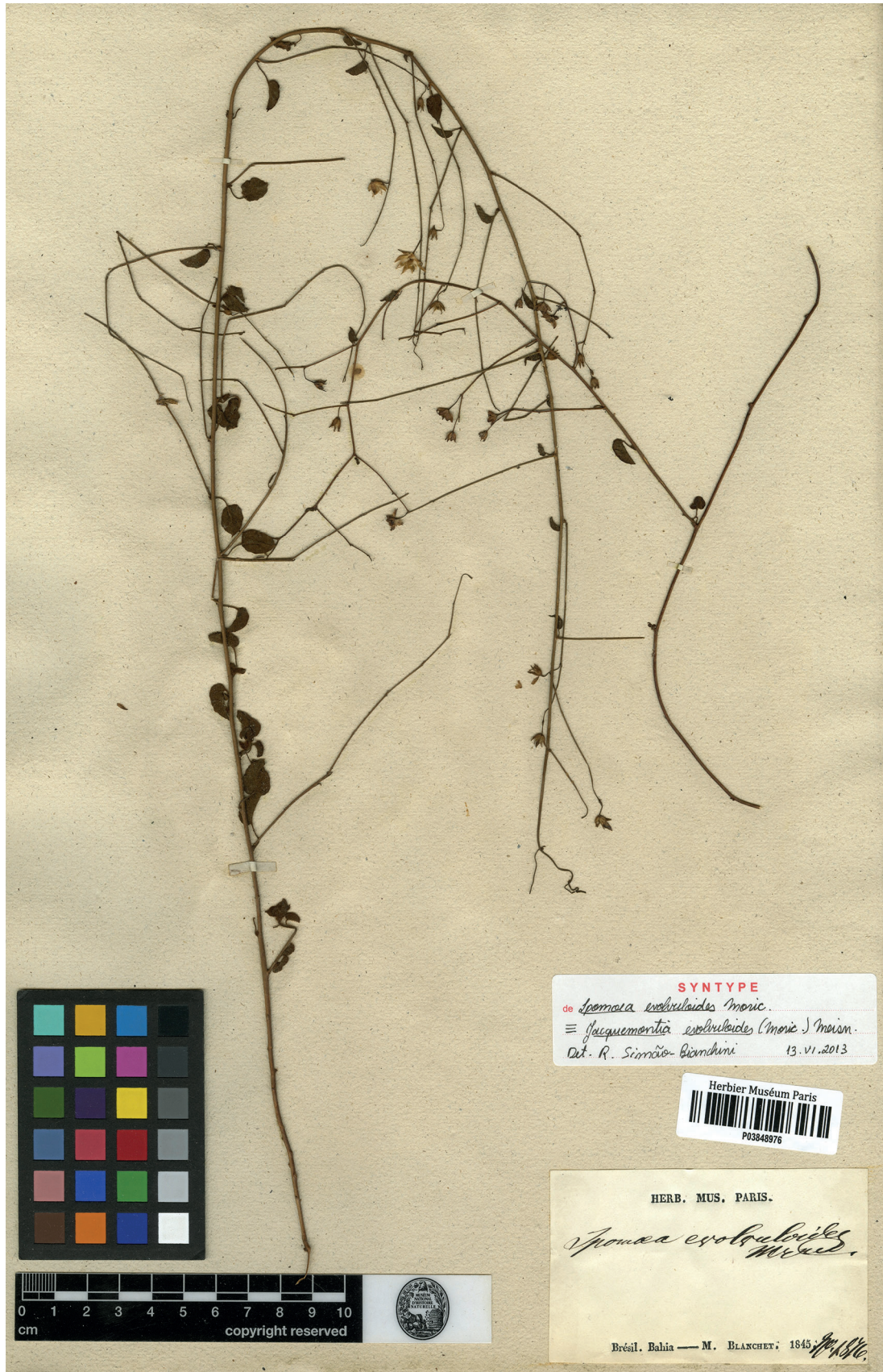


FIG. 3. — Isolectotype of *Jacquemontia evoluloidea* (P03848976).



Fig. 4. — Isotype of *Jacquemontia hirsuta* var. *parvifolia* (P03867994).

DISTRIBUTION. — *Jacquemontia evolvuloides* has widespread distribution ranging from USA (Arizona) to South America (Robertson 1971; Austin & Cavalcante 1982). In Brazil, it occurs mainly in Cerrado, Caatinga, and anthropic areas. It is uncommon in the Amazon and in Atlantic Rainforest.

REMARKS

Jacquemontia evolvuloides varies widely in the habit, leaf shape and density of the indumentum. Regarding the habit, mature plants with secondary growth only at the base of stems grow into subshrubs with voluble distal stems, but sometimes the plant can flower when very young, with almost erect habit. We observed a similar trend in other Convolvulaceae species, such as *J. nodiflora* (Desr.) G. Don, *J. tamnifolia* (L.) Griseb., *Ipomoea nil* (L.) Roth., and *I. quamoclit* L.

Density of the indumentum varies between individuals from dense to sparse. Stem trichomes may be only stellate, 3-radiate, with equal to subequal rays; intermixed 3-radiate trichomes with unequal rays (central ray longer than the lateral rays), or a combination between forked and rarely simple, basally thickened trichomes (Fig. 2). Regardless of the fact that glandular trichomes are typical of *J. evolvuloides*, even these are lacking in some specimens as also observed by Robertson (1971). Leaf trichomes are stellate, 3-radiate, with equal or subequal rays, sometimes with glandular margin, and the density is very variable.

Leaf size varies between 1 to 5.5 cm long and the shape is generally ovate with cordate base, however they can also be truncate or obtuse at base. This morphological variation follows the wide distribution of this species in America. Brandegee (1903) observed that more robust plants grow in environments with abundant rainfall and in the shade (as those formerly recognized as *J. agrestis*).

The material G00222066 was used to prepare the figure that appears in the original description (Moricand 1838) and was chosen as the lectotype of *Ipomoea evolvuloides*.

Jacquemontia agrestis was recognized by Meisner (1869), who distinguished it from *J. evolvuloides* by its herbaceous stems, denser indumentum and larger leaves (2–4 cm long) with deeply cordate base. Austin (1982) and O’Donell (1953) already mentioned the overlapping characters between *J. agrestis* and *J. evolvuloides*.

Meisner (1869) recognized three varieties of *J. evolvuloides*: a) *Jacquemontia evolvuloides* var. *longepedunculata*, an illegitimate name based on the same type of *Ipomoea evolvuloides*, McDonald (1993) had previously synonymized this variety under *J. agrestis*; b) *Jacquemontia evolvuloides* var. *brevipedunculata* is synonymous with *J. sphaerostigma*, as annotated by O’Donell in 1952 on the holotype (BR), but not published; c) *Jacquemontia evolvuloides* var. *tweediei* is synonymous with *J. heterotricha*, as recognized by O’Donell (1950b).

Chodat & Hassler (1905) and Hassler (1911) described varieties and forms such as *J. evolvuloides* var. *grandiflora* f. *albiflora*, *J. evolvuloides* var. *grandiflora* f. *tomentosula* and *J. evolvuloides* var. *grandiflora* f. *hirsutula*, causing great confusion pertaining the status of these taxa. The analysis of the type materials brought us to the conclusion that these are all synonyms of *J. evolvuloides*.

Meisner (1869) also recognized *Jacquemontia racemosa*, and distinguished it from *J. evolvuloides* by cordate-ovate leaves with undulate margins and racemose inflorescence. Study of

the type material revealed a monochasial inflorescence (the racemes on the stem actually belonging to a Lamiaceae stem around which *Jacquemontia* is entwined). We do not consider the characters proposed to separate *J. racemosa* and *J. agrestis* distinct enough to grant them recognition at specific level and propose their synonymization under *J. evolvuloides*. Moreover *J. racemosa* is an illegitimate name, as Meisner (1869) failed to combine *C. breviacuminatus* into *Jacquemontia breviacuminata* and created a new epithet instead (Staples *et al.* 2015).

The name *Jacquemontia decumbens* is also considered a synonym of *J. evolvuloides*. O’Donell (1950c) used its prostrate habit, shorter and very sparse glandular trichomes, leaves not deeply cordate, and larger corollas as distinctive features, but even then, he was not totally convinced that this taxon was a good species, commenting that it might be a variety or a form. Anyway, these characters have proven to be too variable and insufficient to deserve taxonomic recognition.

3. *Jacquemontia fruticulosa* Hallier f.

Bulletin de l’Herbier Boissier 7, App. 1: 45 (1899). — *Jacquemontia fruticulosa* Hallier f. var. *genuina* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911), *nom. superf.* — Type: Paraguay, “Valle de l’y-acam entre Paraguari et Valenzuela”, 5.III.1883, B. Balansa 4400 (holo-, G[G00175395] photo!; iso-, BM[BM000089517]!, G[G00175393, G00175394, G00175918] photo!, K[K000613020]!, P[P03865849, P03867344]!).

Jacquemontia fruticulosa Hallier f. f. *grandifolia* Chodat & Hassl., *Bulletin de l’Herbier Boissier* ser. 2, 5: 697 (1905). — *Jacquemontia fruticulosa* var. *glandulifera* f. *grandifolia* (Chodat & Hassl.) Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911). — Type: Paraguay, pr. Tobaty, IX.1900, E. Hassler 6106 (holo-, G; iso-, NY[NY00319282]!, P[P03848960, P03867477]!, S[S12-720] photo!).

Jacquemontia fruticulosa Hallier f. var. *genuina* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911). — Type: Paraguay, Guairá, Villa Rica, “Cerro Pelado” (holo-, G[G00175686]; iso-, NY[NY00319281]!), *syn. nov.*

Jacquemontia fruticulosa Hallier f. var. *glandulifera* f. *viscosissima* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911). — Type: Paraguay, E. Hassler 6802 (holo-, G; iso-, NY[NY00319283]!, P[P03536030 (Fig. 6), P03848959]!, S[S12-719] photo!), *syn. nov.*

Jacquemontia fruticulosa Hallier f. var. *glandulifera* f. *subsericea* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911). — Type: Paraguay, “Zwischen Rio Apa und Rio Aquidaban. Centurion. schwach bewaldeter, steiniger Berg.”, X.1908, K. Fiebrig 4100 (holo-, G; iso-, M[M0184733] photo!), *syn. nov.*

Jacquemontia fruticulosa Hallier f. var. *glandulifera* f. *angustifolia* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 160 (1911). — Type: Paraguay, Cordillera, I.1900, E. Hassler 6897 (syn-, G); Paraguay, “In regione cursus superioris fluminis Y-Aca” I.1900, E. Hassler 7028 (syn-, G; isosyn-, S[S12-718] photo!, P[P03848958 (Fig. 7)]!), *syn. nov.*

SELECTED MATERIAL EXAMINED. — **Brazil.** Mato Grosso do Sul, Miranda, 12.VI.1973, J.S. Silva 169 (SP). **Paraguay.** Cordillera. 2.III.1994. A. Krapovickas & C.L. Cristóbal 45171 (CTES, SP).

DISTRIBUTION. — In Brazil, this species occurs in Mato Grosso do Sul, and according to Hallier (1899), it is also found in Paraguay and Venezuela.

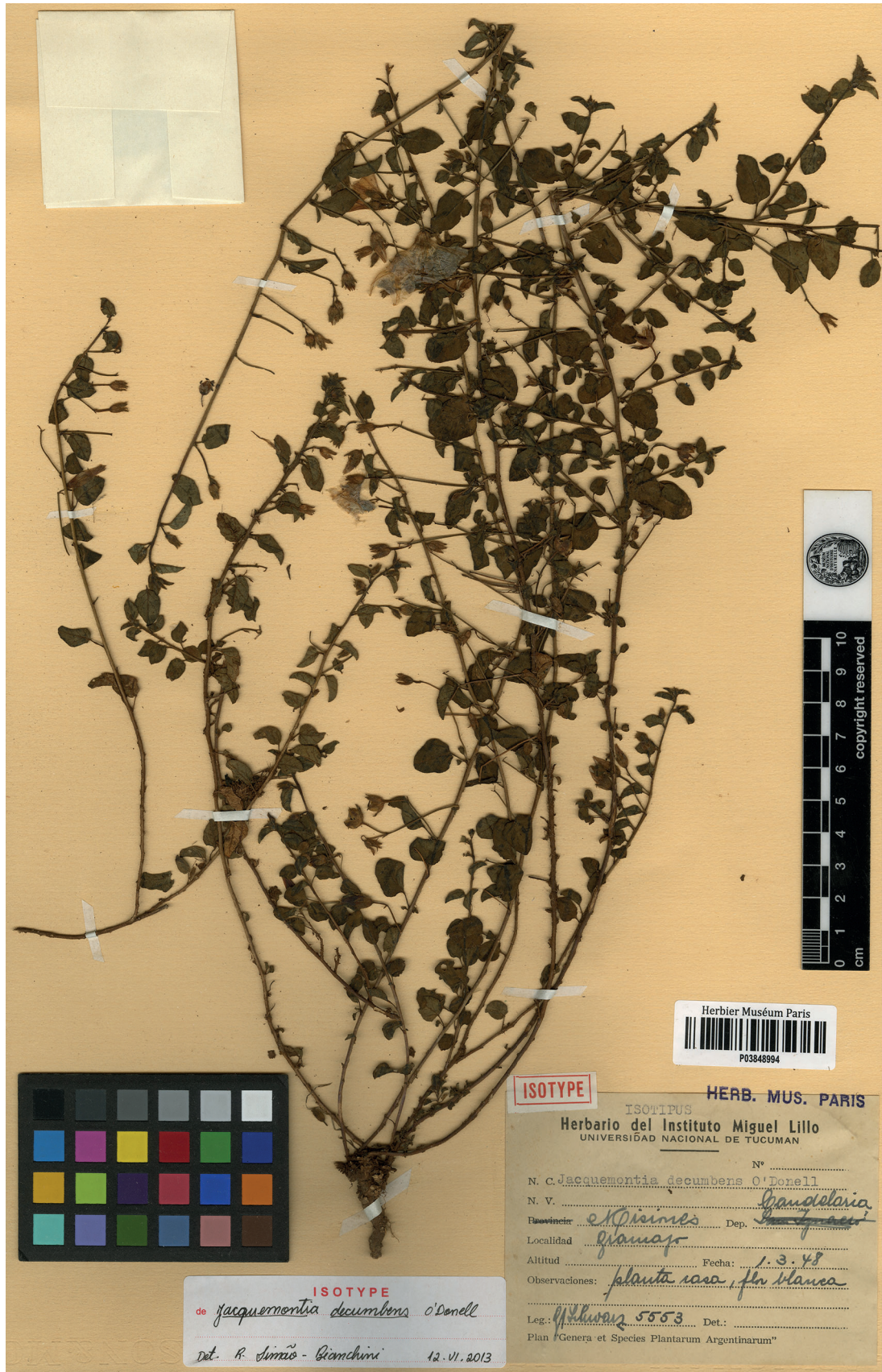


Fig. 5. — Isotype of *Jacquemontia decumbens* (P03848994).



FIG. 6. — Isotype of *Jacquemontia fruticulosa* var. *glandulifera* f. *viscosissima* (P03536030).



Fig. 7. — Isosyntype of *Jacquemontia fruticulosa* var. *glandulifera* f. *angustifolia* (P03848958).



FIG. 8. — **A, B**, *Jacquemontia evoluloides* (photo: M. Pastore); **C, D**, *Jacquemontia heterotricha* (photo: H. Moreira); **E, F**, *Jacquemontia sphaerostigma* (photo: H.J.C. Moreira); **G, H**, *Jacquemontia warmingii* (photo: A.L.C. Moreira).



FIG. 9. — Lectotype of *Evolvulus graminifolius* (P03848243).

TABLE 1. — Distinctive characters in the *Jacquemontia guaranitica* and allied species. Adapted to key from O'Donell (1950b).

	<i>J. guaranitica</i> Hassl.	<i>J. anomala</i> O'Donell	<i>J. warmingii</i> O'Donell
Inflorescence	monochasial	monochasial	thyrsoid or monochasial
Glandular trichomes	absent	absent	present
3-radiate trichomes	present only on the stems	absent	absent
Simple trichomes	absent	present	present
Bracteoles	8-12 mm long	3-4 mm long	2-4 mm long

REMARKS

Jacquemontia fruticulosa is morphologically similar to *J. heterotricha*, as both have sub-shrubby habit with either erect or scandent stems, stellate trichomes (3-radiate, with subequal rays mixed with 3-radiate with unequal rays), wide to narrowly ovate leaves, and monochasial, few flowered inflorescence. On the other hand, *Jacquemontia fruticulosa* can be distinguished by the tomentose indumentum, longer bracteoles (5-8 mm long), and shorter peduncles (up to 6 mm long) while *J. heterotricha* has sparse indumentum, shorter bracteoles (1.5-2.5 mm long), and longer peduncles (1-2 cm long).

Hassler (1911) created several varieties and forms distinguished by the density of their glandular hairs and leaf size, however, upon examining abundant material, we consider that these characters are highly variable amongst and within populations, and we opt to synonymize them.

4. *Jacquemontia guaranitica* Hassl.

Repertorium Specierum Novarum Regni Vegetabilis 9: 193 (1911). — Type: Paraguay, “Sierra de Amambay in campis altis siccis Punta Porá”, XI.1907, *E. Hassler* 9749 (holo-, G[G00175717] photo!; iso-, F[F0BN013760] photo!, G[G00175718] photo!, K[K000613016]!, MPU[MPU012117] photo!, P[P00723273]!).

SELECTED MATERIAL EXAMINED. — **Brazil.** Mato Grosso. Pedra Preta, 11.X.1938 *J.E. Rombouts* 264 (IAC, SP, UEC).

Paraguay. Amambay, 23.X.1994, *A. Krapovickas & R.M. Harley* 45910 (CTES, SP). — Pedro Juan Cabalero, 16.X.1984, *G. Hatschbach & R. Kummrow* 48510 (MBM, SP).

DISTRIBUTION. — *Jacquemontia guaranitica* is known only from Paraguay in Amambay and Pedro Juan Cabalero, and Brazil in the state of Mato Grosso.

REMARKS

According to Hassler (1911), *J. guaranitica* differs from *J. evolulooides* by its seeds measuring up to 3.5 mm long, while *J. evolulooides* seeds are up to 2.2 mm long. We also found that venation on leaves, ciliate margins and glandular trichomes are good characters to separate the species.

Jacquemontia guaranitica is also very close to *J. anomala* and *J. warmingii*, all of them with herbaceous habit and scandent stems up to 50 cm long, turning reddish *in sicco*, sparsely hirsute stems and leaves, lamina elliptic and with 2-3 pairs of eucamptodromous veins. Useful characters for their distinction are shown in Table 1.

5. *Jacquemontia heterotricha* O'Donell (Fig. 8C, D)

Boletín de la Sociedad Argentina de Botánica 3: 88 (1950). — Lectotype (designated here): Argentina, Misiones, Candelaria, Loreto, 3.III.1948, *G.J. Schwarz* 5556 (lecto-, LIL[LIL001312]!; isolecto-, BR[BR0000006991982] photo!, DAO[DAO000455999] photo!, K[K000613116]!, L[L0004211, L0004212] photo!, LIL[LIL001313, LIL001314, LIL001315, LIL001316, LIL001317]!, LD[LD1218364] photo!, P[P00735473]!, RB[RB00538241]!, RSA[RSA0002445] photo!, S[S-R-3076] photo!, TEX[TEX00372581] photo!).

Jacquemontia evolulooides var. *tweediei* Meisn., in *Martius, Flora Brasiliensis* 7: 307 (1869). — Lectotype (designated here): Rio Grande, 1837, *J. Tweedie s.n.* (lecto-, K[K000613132]!).

SELECTED MATERIAL EXAMINED. — **Argentina.** Corrientes, Paso de los Libres, 18.II.1998, *A. Krapovickas* 46966 (HUEFS). — Misiones, Caingúas, 15.III.2000, *F. Biganzoli et al.* 839 (MBM).

Brazil. Goiás, Alto Paraíso de Goiás, 4.II.1990, *Arbo, M.M.* 3607 (SP); São João da Aliança, 16.III.1971, *H.S. Irwin R.M. et al.* 31906 (SP, UB, NY). — Minas Gerais, Grão Mogol, 10.XI.1938, *F. Markgraf et al.* 3376 (SP, BHCB, RB); Itacambira, 9.I.1986, *I. Cordeiro et al.* 9155 (SP, SPF). — Rio Grande do Sul, Porto Alegre, 13.XII.2007, *P.P.A. Ferreira* 122 (SP, ICN); Teresópolis, XII.1940, *J.E. Leite* 45282 (SP).

DISTRIBUTION. — *Jacquemontia heterotricha* occurs in Misiones and Corrientes in Argentina, and Rio Grande do Sul, Minas Gerais and Goiás in Brazil.

REMARKS

Previously recognized at variety level by Meisner (1869), it was raised to species level by O'Donell (1950b) under a different final epithet. According to McNeill *et al.* (2012) this combination is not required in different ranks.

6. *Jacquemontia linoides* (Choisy) Meisn.

In *Martius, Flora Brasiliensis* 7: 308 (1869). — *Ipomoea linoides* Choisy, *DC. Prodrromus Systematis* 9: 354 (1845). — Type: Brazil, “Sertão”, *J.S. Blanchet* 2923 (holo-, G[G00222058] photo!).

Ipomoea linoides var. *major* Choisy, *DC. Prodrromus Systematis* 9: 354 (1845). — *Jacquemontia linoides* var. *major* (Choisy) Meisn., in *Martius, Flora Brasiliensis* 7: 308 (1869). — Type: Brazil, “Provinciae Maragnaniensis in pascuis ad. fl. Itapicuri”, *Martius s.n.* (holo, M[M0184716] photo!).

Evolvulus graminifolius Dammer, *Botanische Jahrbücher für Systematik* 23(57): 38 (1897). — Lectotype (designated here): Brazil, “Minas ad Ayuruoca, in campo, inter rupes” IX.1878, *A.F.M. Glaziou* 11265 (holo-, B, destroyed; lecto-, P[P03848243]!).

SELECTED MATERIAL EXAMINED. — **Brazil.** Bahia, Bela Vista, 30.III.2004, *M.V. Moraes et al.* 673 (SP, HUEFS); Remanso, 10.III.2005, *L.P. Queiroz et al.* 10042 (HUEFS, SP); Bom Jesus da Lapa, 18.IV.1980, *R.M. Harley et al.* 21481 (K, SPF, UEC). — Ceará, Aiuaba, 30.V.1996, *M.L. Bezerra-Loyola et al.* 184 (EAC, SP). — Mato Grosso, Poconé, 9.V.1993, *A.L. Prado* 3181 (UEC). — Pernambuco, Petrolina, 4.IV.1983, *G. Fotius* 3390 (SP); Rio Grande do Norte, Itajá, 8.VIII.2011, *A.A. Roque A.B. Jardim & A.B. Oliveira* 1199 (SP, UFRN); Mossoró, 31.VIII.1984, *M. Ataíde* 571 (RB).

Paraguay. Itapúa, Bella Vista, 26.II.1994, *A. Krapovickas C.L. Cristóbal* 45051 (CTES, SP).



FIG. 10. — Isotype of *Jacquemontia hirsuta* var. *pohlii* f. *racemosa* (P03867995).

DISTRIBUTION. — This species was found in Paraguay (Bella Vista) and Brazil occurring in the states of Bahia, Ceará, Mato Grosso, Minas Gerais, Pernambuco, and Rio Grande do Norte.

REMARKS

Jacquemontia linooides differs from all species treated here by its linear to narrowly lanceolate leaves with cuneate to rounded bases and glabrous, shorter sepals (3–4 mm long).

The holotype of *Evolvulus graminifolius*, deposited in Berlin, was destroyed during WWII, thus a lectotype is proposed using the *Glaziou 11265* sample, deposited in P (Fig. 9), but the locality was changed to Rio de Janeiro in resting from Cabo Frio. Wurdack (1970) explains that there is also a problem with the collections of Melastomataceae carried out by Glaziou.

7. *Jacquemontia sphaerostigma* (Cav.) Rusby
(Fig. 8E-F)

Bulletin of the Torrey Botanical Club 26: 151 (1899). — *Convolvulus sphaerostigma* Cav., *Icones et Descriptiones Plantarum* 5: 54. pl. 481 (1799). — *Jacquemontia hirsuta* Choisy, *Mémoires de la Société de Physique et d'Histoire naturelle de Genève* 8: 141 (1838), *nom. illeg.* — Type: Mexico: “Habitat in Mindanao, floret Decembri; et in diversorio vulgo del Alto Camaron Regni mexicani ubi floret April et Maio. Vidi siccum in eodem herbario.” *Nee s.n.* (holo-, MA[MA222550] photo!; iso-, F[F0054761F] photo!).

Convolvulus apocynoides Schlttdl. & Cham., *Linnaea* 5: 117 (1830). — *Jacquemontia apocynoides* (Schlttdl. & Cham.) Urb., *Symbolae Antillanae* 8: 560 (1921). — Type: Mexico, Vera Cruz, 1.X.1828, C.J.W. Schiede & F. Deppe s.n. (holo-, HAL[HAL0098217] photo!).

Convolvulus coeruleus Martens & Galeotti, *Bulletin de l'Académie royale des Sciences et Belles-Lettres de Bruxelles* 12: 254 (1845). — Lectotype (designated by McDonald 1993): Oaxaca, Cordillera, 1840, H.G. Galeotti 1359 (lecto-, BR[BR0000006991944] photo!; isolecto-, BR[BR0000006992279], G[G00227335] photo!; K[K000613052]!; P[P00723272]!).

Jacquemontia evolvuloides var. *brevipedunculata* Meisn., in Martius, *Flora Brasiliensis* 7: 307 (1869). — Type: Brazil, Minas Gerais, Lagoa Santa, 25.IV.1865, E. Warming s.n. (holo-, BR[BR0000005793884] photo!; iso-, P[P00723268]!).

Jacquemontia hirsuta var. *trichodonta* Meisn., in Martius, *Flora Brasiliensis* 7: 299 (1869). — Type: Brazil, Minas Gerais, 1840, P. Claussen 71 (lecto-, BR[BR0000005793228] photo!); Brazil, Minas Gerais, Barbacena, 24.VI.1863, E. Warming s.n. (lectosyn-, BR[BR0000005795734] photo!).

Jacquemontia hirsuta var. *poblii* Meisn., in Martius, *Flora Brasiliensis* 7: 299 (1869). — Type: Brazil, 1939, J.B.E. Pohl (holo-, BR[BR0000005793556] photo!; iso-, F[F0054950F] photo!, M[M0184718] photo!).

Jacquemontia hirsuta var. *poblii* Meisn. f. *racemosa* Chodat & Hassl., *Bulletin de l'Herbier Boissier* ser. 2, 5: 697 (1905). — Type: Paraguay, “Cerros de Paraguay”, XII.1900, E. Hassler 6515 (holo-, G; iso-, GH[GH00054639] photo!, P[P03867995] (Fig. 10), P03536031!; UC[UC944287] photo!), *syn. nov.*

Jacquemontia hirsuta var. *adenotricha* Hassl., *Repertorium Specierum Novarum Regni Vegetabilis* 9: 193 (1911). — Type: Paraguay, “pr. Flumen Jejuí Guazú” XII.1898, E. Hassler 5694 (syn-, G, K[K000613128]!); Paraguay, Concepción, Villa-Sana “zwischen Rio Apa und Rio Aquidaban”, 21.I.1909, K. Fiebrig 4663 (syn-, G, K[K000613129]!).

Jacquemontia viscidulosa Hoehne, *Anexos das Memórias do Instituto Butantan, Seção de Botânica* 1: 51. pl. 7 (1922). — Type: Brasil, Mato Grosso, Porto Esperança, IX.1914, J.G. Kuhlmann 1272 (holo-, SP[SP000697]!; iso-, R[R000027509]!).

Jacquemontia agricola Rusby, *Memoirs of the New York Botanical Garden* 7: 337 (1927). — Type: Bolivia, Canamonia, 15.VII.1922, H.H. Rusby 80 (holo-, NY[NY00319276]!).

Jacquemontia laxiflora O'Donell, *Lilloa* 30: 14 (1960). — Type: Argentina, Misiones, Dep. San Ignacio, Puerto Nuevo, 12.III.1946, G.J. Schwartz 2211 (holo-, LIL[LIL001323]!; iso-, S[S07-4313] photo!).

SELECTED MATERIAL EXAMINED. — **Bolivia.** Beni, Gral, 22.VI.1995, J. Bederrama 582 (SP). Canamina, VII.1922, H.H. Rusby 80 (K, NY). **Brazil.** Amapá, Macapá, 20.VIII.1982, B.V. Rabelo et al. 1672 (ULM). — Bahia, Conde, 22.VI.2003, G. Hatschbach et al. 75615 (MBM). — Ceará, Barbalha, 23.V.2011, E.M. Marreira et al. 181 (HUEFS). — Distrito Federal, Brasília, 15.II.1994, G. Pereira-Silva 2266 (CEN, SP). — Espírito Santo, Conceição da Barra, 9.VI.2003, G. Hatschbach et al. 75050 (MBM). — Goiás, Formosa, 11.X.1965, H.S. Irwin & R.R. Santos 9146 (NY, SP, UB). — Mato Grosso, Aquidauana, 18.VII.1969, G. Hatschbach & O. Guimarães 21978 (MBM). — Mato Grosso do Sul, Paranaíba, 1.III.1981, L. Oliveira 28 (UEC); Minas Gerais, Santana do Riacho, 28.I.1990, R.S. Bianchini 11705 (SPF). — Pará, Tarapoto, XI.1902, Ule 6569 (MG). — Paraíba, Areia, 12.IX.1944, J.M. Vasconcelos & B.J. Pickel 78 (SP, SPSF). — Pernambuco, Olinda, VI.1925, B. Pickel 967 (SP, SPF). — São Paulo, Pedregulho, 22.III.2004, D. Sasaki & M.F.A. Calió 999 (SPF). **Guyana.** Pirara, 1.I.1841, Schomburgk 370 (P). **Mexico.** Oaxaca, Cordillera, 1840, H.G. Galeotti 1359 (BR, G, K, P, W). **Paraguay.** Amamby, 24.II.1994, A. Krapovickas & C.L. Cristóbal 45005 (SP, CTES). — Canendiyu, 9.V.1974, P. Arenas 726 (SP, CTES). — Sierra de Maracayú, 2.X.1960, E. Hassler 5694 (K, P). **Peru.** 1.I.1839, C. Gay 690 (P). **Venezuela.** Bolívar, Sierra Imataca 10.IV.1988 C. Sastre et al. 8549 (P).

DISTRIBUTION. — Widely distributed, occurring in Mexico, throughout Central and South America in Colombia, Peru, Bolivia, Venezuela, Brazil (Robertson 1971), Guyana and Argentina. It grows in other open, non forested habitats.

REMARKS

Jacquemontia sphaerostigma has herbaceous habit and climbing stems, dense inflorescences and four distinct types of trichomes: stellate 3-radiate with subequal rays; stellate 3-radiate with unequal rays; forked (rarely simple); and glandular trichomes (Fig. 2). With the similar indumentum to *J. evolvuloides*, *J. sphaerostigma* is distinguished with basis on its umbelliform to corymbiform dichasium, while *J. evolvuloides* has lax monochasial.

Choisy (1838) observed that *Convolvulus sphaerostigma* Cav. should be transferred to *Jacquemontia* but he renamed it as *J. hirsuta*, creating an illegitimate name. Rusby (1899) subsequently made the correct combination.

We considered *Jacquemontia laxiflora* as synonym of *J. sphaerostigma* because slightly lax inflorescence, non-glandular trichomes, and corolla 12–15 mm long are characters also found in some specimens of *J. sphaerostigma*.

8. *Jacquemontia warmingii* O'Donell
(Fig. 8G-H)

Lilloa 23: 472. (1950). — *Ipomoea prostrata* Meisn., in Martius, *Flora Brasiliensis* 7: 254 (1869), *non Ipomoea prostrata* Choisy

(1845). — Type: Brazil, Minas Gerais, Lagoa Santa, *E. Warming* 39 (holo-, BR[BR0000005837168] photo!; iso-, C).

SELECTED MATERIAL EXAMINED. — **Brazil.** Distrito Federal, Brasília, 15°39'15" S, 47°59'47" W, 28.VI.2012, *M.R.V. Zanatta* 1380 (SP). Goiás, Bela Vista de Goiás, 48°57'12" S, 16°58'22" W, 5.VI.2004, *J.E.B. Pastore* 974 (SP, CEN); Minaçu, 13°47' S, 48°17' W, 22.VI.1995, *T.B. Cavalcanti et al.* 1446 (SP, CEN). — Minas Gerais, Brasilândia de Minas, 10.VI.2002, *S.M. Soares* 565 (SP, BHCB); Sete Lagoas, 9.IV.1970, *J.B. Silva* 514 (SP, PAMG).

DISTRIBUTION. — Known only from Brazil, this species is represented by a handful of collections from the states of Minas Gerais, Mato Grosso, Goiás and Distrito Federal (Moreira *et al.* 2014) where it occurs in cerrado vegetation.

REMARKS

Jacquemontia warmingii is allied to *J. anomala* and *J. guaranitica*, and the distinguishing characters are presented in Table 1.

Hassler (1911) had already suggested that *Ipomoea prostrata* Meisn. probably belonged to the genus *Jacquemontia*, but he did not propose a new combination. When transferring *Ipomoea prostrata* (1869) to *Jacquemontia*, O'Donnell (1950c) correctly proposed the replacement name *J. warmingii* (1950), according to article 11.4 (McNeill *et al.* 2012). The name *Jacquemontia* was previously occupied by *J. prostrata* Choisy (1845).

DOUBTFUL SPECIES

Jacquemontia crassifolia Scheele

Linnaea 21: 752 (1848). — Type: Brazil, Minas Gerais, *Hartleben s.n.* (not found).

REMARKS

The identity of *J. crassifolia* remains a mystery. Meisner (1869) suggested it might be related to *J. evolvuloides*. However, this species is not part of the species group studied here, as its protologue clearly states that its calyx has outer oblong sepals smaller than the inner ones, and that the inner sepals are obovate, with abrupt acuminate apex.

Jacquemontia hispida Scheele

Linnaea 21: 751 (1848). — Type: Brazil, Minas Gerais (not found).

REMARKS

The identity of *Jacquemontia hispida* remains unknown, even though it has been considered related to *J. erecta* by Meisner (1869), who distinguished them by peduncle length and sepal shape. However, *J. hispida* is unlikely to belong to the informal group studied here, because its sepals are described as cordate at base.

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