

Notes on Vietnamese *Begonia* (Begoniaceae), including three new species

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ABSTRACT

Several extra-Vietnamese names have been misapplied to Vietnamese *Begonia* species. For those included by Gagnepain in *Flore générale de l'Indo-Chine*, *Begonia aptera* is *B. acetosella* Craib and *B. rex* is *B. sizemoreae* Kiew; *B. rupicola* and *B. wallichiana* are new species, here named *B. phamiana* Kiew and *B. glutinosa* Kiew, respectively. Four included by Hô in *Cây Cỏ Việt Nam* whose identity cannot be verified, namely, *B. decora*, *B. grandis*, *B. martabanica* and *B. masoniana* are excluded from the checklist of begonias from Vietnam. *Begonia poilanei* Kiew, a striking new species with ornamental potential, is also described.

KEY WORDS

Begoniaceae,
Begonia,
Vietnam,
new species.

RÉSUMÉ

Notes sur les Begonia (Begoniaceae) du Vietnam, incluant trois nouvelles espèces. Plusieurs noms de taxons non vietnamiens ont été utilisés de façon erronée pour des *Begonia* vietnamiens. Concernant les espèces incluses par Gagnepain dans la *Flore générale de l'Indo-Chine*, *Begonia aptera* est *B. acetosella* Craib et *B. rex* est *B. sizemoreae* Kiew; *B. rupicola* et *B. wallichiana* sont de nouvelles espèces, nommées ici *B. phamiana* Kiew et *B. glutinosa* Kiew, respectivement. Concernant les espèces incluses par Hô dans *Cây Cỏ Việt Nam*, *B. decora*, *B. grandis*, *B. martabanica* et *B. masoniana* sont exclues de la liste des bégonias du Vietnam. *Begonia poilanei* Kiew, une nouvelle espèce ayant un potentiel ornemental est décrite.

MOTS CLÉS

Begoniaceae,
Begonia,
Vietnam,
espèces nouvelles.

INTRODUCTION

About 30 validly named *Begonia* L. species are recorded from Vietnam, probably representing less than half the begonia flora of Vietnam. Gagnepain (1921) wrote the first general account of begonias in the *Flore générale de l'Indo-Chine*, which included 19 species from Vietnam, of which nine he described as new species. Hô (1999) has provided the latest overview of Vietnamese begonias and included illustrations of 37 native species. Since then a further four species have been described (Nguyen 2004; Kiew 2004; Truong *et al.* 2005; Nguyen & Tebbitt 2005). Many more undescribed species have already been collected and can be found unnamed in herbaria, and certainly new species will be discovered as new areas are botanically explored in Vietnam.

When regional floras were not so well known and detailed descriptions of the species were not available, a few Vietnamese species were identified as conspecific with apparently similar extra-Vietnamese ones. For example, Gagnepain named four Vietnamese species as conspecific, two with Himalayan species (*B. rex* Putz. and *B. wallichiana* A.DC.), and two with Malesian (*B. aptera* Blume and *B. rupicola* Miq.). Similarly, Hô used *B. martabanica* A.DC., a species from Thailand, as well as names of some cultivated Asian species, *B. decora* Stapf, *B. grandis* Dryand. and *B. masoniana* Irmsch., for Vietnamese species. These species therefore need, where possible, to be assigned to their correct species, thus *Begonia aptera* is *B. acetosella* Craib, and *B. rex* is *B. sizemoreae* Kiew; or else they need to be renamed, thus *B. rupicola* is here named as a new species *B. phamiana* Kiew and *B. wallichiana* as *B. glutinosa* Kiew. Species names for which specimens were not cited or the material is too poor for identification, namely, *Begonia decora* Stapf, *B. grandis* Dryand., *B. martabanica* A.DC. and *B. masoniana* Irmsch., are excluded from the flora of Vietnam.

Several Vietnamese begonias have ornamental value principally because of their beautiful foliage. Tebbitt (2005) drew attention to the beautiful net-veined leaves and showy pink flowers of *B. balansana* Gagnep.; the velvety leaves and orange flowers of *B. cathayana* Hemsl.; and the fragrant flowers of *B. handelii* Irmsch. However, the ornamental

potential of most species has yet to be realized as witnessed by the recent description of the Vietnamese hairy begonia, *B. sizemoreae* Kiew (2004); the recently discovered but as yet undescribed begonia by Nguyen Quang Hieu (pers. comm.), which Hô misidentified as *B. "massoniana"*, and *B. poilanei* Kiew, the striking new species described below.

BEGONIAS TO WHICH EXTRA-VIETNAMESE SPECIES NAMES WERE MISAPPLIED

A. SPECIES RENAMED OR SYNONYMISED

1. *Begonia acetosella* Craib

Kew Bulletin Miscellaneous Information: 153 (1912); Tebbitt *Brittonia* 55: 22, figs 1D, 2 (2003).

Begonia aptera auct. non Blume: Gagnepain in Lecomte, *Flore générale de l'Indo-Chine* 2: 1110 (1921); Hô, *Cây Cỏ Việt Nam* 1: 729, fig. 2023 (1991), *Cây Cỏ Việt Nam* 1: 577, fig. 2305 (1999).

MATERIAL CITED. — Mt Ba Vi, *Petelot 7084* (B, n.v.). — Sa Pa, *Sino-Vietnam team & C. Y. Wu 379* (KUN, n.v.). — Tam Dao, *D'Alleizette s.n.* (L, n.v.). — Lang Bian, *Eberhardt* (not located).

REMARKS

This is one of the wingless berry begonias in Vietnam. Tebbitt (2003), in his revision of sect. *Sphenanthera*, has shown that Gagnepain's taxon belongs to *Begonia acetosella*. He recognised two varieties of *B. acetosella*, but only var. *acetosella* occurs in Vietnam.

DISTRIBUTION

Vietnam (Hà Tây [Mont Ba Vi], Lâm Đông [Massif du Lang Bian], Lào Cai [Sa Pa], and Vinh Phu [Massif du Tam Dao]), Myanmar, N Thailand, Laos, and SW China.

2. *Begonia glutinosa* Kiew, sp. nov.
(Fig. 1)

Begonia wallichiana auct. non A.DC.: Gagnepain in Lecomte, *Flore générale de l'Indo-Chine* 2: 1115 (1921);

Hồ, *Cây Cò Việt Nam*. 1: 743, fig. 2065 (1991), *Cây Cò Việt Nam*. 1: 588, fig. 2351 (1999).

Species in fructu *Begonia bonii* Gagnep. *optime congruens, sed habitu erecto (nec rhizomato), foliis minoribus 4-8 × 3-5 cm (nec 7-11 × 5-7 cm) et inflorescentiis brevioribus 2-3 cm longis (nec usque 20 cm) differt.* Sect. *Reichenheimia*.

TYPUS. — Vietnam, Lang Son (Massif du Cai Kinh, route de Thanh-moi au col de Dao-ben), 5.X.1917, *Bois s.n.* (serres du Muséum) (holo-, P barcode P00539150; iso-, P barcodes P00539151, P00539152).

OTHER MATERIAL EXAMINED. — Vietnam. Lang Son (Thanh Moi), 18.VII.1916, *Bois s. n.* (P).

DESCRIPTION

Annual, cane-like herb densely covered in downy viscid hairs on stems, petioles, lower leaf surface, upper and lower surface of the midrib and veins, inflorescences and pedicels, in the dried state appearing minutely and densely pubescent. Rhizome short, erect stems to 50 cm tall, robust and 3-6 mm thick, internodes 2.5-5.2 cm long, nodes constricted, pale green, becoming reddish; branches *c.* 4.5 cm long, pale green, zigzag. Stipules caducous, lanceolate, *c.* 2 mm long. Leaves oblique; petioles 3-7 cm long; laminae more or less asymmetric, broadly ovate, 4-8 × 3-5 cm, basal lobe *c.* 2 cm long, bright green above, pale beneath, base cordate, margin shallowly dentate-crenate, apex shortly acuminate; venation palmate-pinnate with 2 pairs of veins at the base, 2 pairs along the midrib and 2 veins in the basal lobe, veins very fine, in dried state scarcely prominent beneath. Inflorescences axillary, cymose, 2-3 cm long, erect, few-flowered (with up to 3 male flowers and one female flower), protandrous, male flowers above, with a single female flower below; peduncle downy. Bracts like the stipules, lanceolate, 1-3.5 × 1.5 mm long. Flowers pale pink, pedicels 5-20 mm long. Male flowers with pedicels 10-15 mm long, tepals 4, outer two oval, *c.* 8 × 7 mm, outside downy with viscid hairs; the interior two narrowly obovate-linear, *c.* 5 × 3 mm, androphore *c.* 1 mm long, stamens *c.* 20, filaments longer than the anthers, anthers elliptic, *c.* 1 mm long, locules lateral, not reaching the top of the connective. Female flowers with pedicels 7-12 mm long, tepals 5, slightly glandular outside, 5-6 × 2.5-3.5 mm, the inner ones smaller than the outer ones; ovary orbicular or

slightly rhomboid in outline, 12-16 × 12-13 mm, densely downy, styles 3, free, bifurcating and lyre-shaped, spirally twisted at the apex. Fruits downy, oval in outline, 12-16 × 12-13 mm; wings 3, equal, 3-4 mm wide or sometimes slightly unequal with the longer wing *c.* 5 mm wide, very thinly fibrous with a conspicuous network of veins, locules 3, placentas 1 per locule with two short side branches, dehiscing between the locules and wings.

REMARKS

The name "*Begonia wallichiana*" has had a tortuous history and is in fact correctly applied to a Brazilian species (Doorenbos 1975). The Himalayan species to which this name was also applied is now correctly known as *B. minicarpa* H.Hara (Hara 1972), but the latter species bears no resemblance to the Vietnamese one. It is a small begonia that grows to 22 cm tall, has lanceolate triangular leaves attenuate to the apex with a short petiole to 2 cm long. The capsule too is small (to 4 mm long) and it has unequal wings, the larger 4-5 mm wide and the smaller two 2-3 mm wide. The Vietnamese taxon is clearly not this species. It is a new species.

This is a very distinct species by the combination of its cane-like habit, its relatively small leaves and fruits with three more or less equal, rounded wings. It is the only Vietnamese begonia reported to have viscid hairs, hence the species epithet. The type was grown from seed collected by D. Bois from "Cai Kin route de Thanh-moi au col de Deo-ben" in December 1908 (last digit not clearly legible). Among the Vietnamese species with short stems to 50 cm tall that are not succulent (i.e. that excludes species in sect. *Parvibegonia*), it superficially resembles *Begonia boissiana* Gagnep., but its leaves are much more oblique and unequal and, more importantly, it differs in its fruits that have three equal wings (in *B. boissiana* they are conspicuously unequal). In addition, Gagnepain (1921) considered differences in stigma morphology important — his *B. wallichiana* has lyre-shaped stigmas while *B. boissiana* has suborbicular ones. *Begonia boissiana*, which has fruits with three locules each with two placentas, belongs to sect. *Petermannia*.

In its fruits with three equal wings, three locules each with a single placenta, it falls within sect.

Reichenheimia. The three other Vietnamese species in this section, *B. bonii* Gagnep., *B. harmandii* Gagnep. and *B. pierrei* Gagnep. are different from this species in being stemless begonias that produce inflorescences with long peduncles from the prostrate rhizome. They also all have relatively larger and broader ovate leaves. In addition, they have different fruits – those of *B. harmandii* are very hairy and those of *B. pierrei* are inverted pyramidal in outline. *Begonia bonii* has similar fruits in that the wings are narrow and rounded. Indeed, in Gagnepain's account they key out together. He contrasted the stemless, downy *B. bonii* without viscid hairs and lacking an androphore with his *B. wallichiana*, a downy viscid plant with a branching stem and a short androphore.

DISTRIBUTION

Endemic in Vietnam: Lang Son (Massif du Cai Kinh).

HABITAT

In a high valley, by streams on rocks inundated by the water flow.

3. *Begonia phamiana* Kiew, sp. nov.

Begonia rupicola auct. non Miq.: Gagnepain in Lecomte, *Flore générale de l'Indo-Chine* 2: 1106 (1921); Hộ, *Cây Cỏ Việt Nam* 1: 739, fig. 2055 (1991), *Cây Cỏ Việt Nam* 1: 586, fig. 2341 (1999).

A *Begonia* geoffrayi Gagnep. *foliis brevioribus angustioribus usque 11 × 5.5 cm (nec usque 18.5 × 10 cm) et alis fructus rotundato (nec acuto) differt. Sect. Parvibegonia.*

TYPUS. — Cambodia, Île du Pic, Gulf of Cambodia 15.VIII.1905, *Geoffray* 483 (holo-, P barcode P00539153; iso-, P barcode P00539154).

OTHER MATERIAL EXAMINED. — Vietnam. Île de Côn Dao, *Germain* 105 (P); *Harmand* 689 (P); *Talmy* (P).

DESCRIPTION

Glabrous herb with a stem 15–60 cm tall and 1–3 mm thick with internodes 3–6 cm long, pink, succulent, unbranched or shortly branched, with an ovoid tuber at the base. Stipules persistent, 7–12 mm long, apex acuminate. Leaves oblique;

petioles grooved above, *c.* 3 cm long on the lower leaves and *c.* 0.5 cm on the upper; laminas asymmetric, ovate, 10–16 × 4–7 cm, broad side 2.7–4.2 cm wide, basal lobe 1(–2) cm long, pale red beneath, in dried state thinly papery, base cordate, margin slightly crenate and rather sinuous, apex acuminate; venation palmate-pinnate with 1 or 2 pairs at the base and *c.* 4 pairs along the midrib and 1 or 2 veins in the basal lobe; in the dried state veins slightly prominent above and beneath. Inflorescences terminal or lateral on short branches, cymose panicles, 5–7 cm long, shorter than the leaves, lax, few-flowered, protandrous. Flowers pink of various shades. Male flowers with pedicel *c.* 7 mm long; tepals 4, outer two orbicular, 5–7 mm diam., inner two obovate, 5 × 3 mm; androphore *c.* 1 mm long, stamens many (*c.* 80–90), anthers narrowly lanceolate, apex slightly emarginate, 0.7 mm long and longer than the filaments, dehiscing through longitudinal slits. Female flowers with pedicels 7–10 mm long; tepals 6, the largest elliptic, *c.* 4 mm long, gradually decreasing in size to 2.5 mm long in the inner ones; ovary 3-winged, locules 2, placentas 2 per locule; styles short, joined for almost their entire length; stigmas cauliflower-like, distinctly bilobed. Fruits pendent with pedicels 10–12 mm long, capsules 9–10 × 11–15 mm; wings unequal, the long wing *c.* 8 mm wide, almost rectangular, apex obtuse; two shorter wings 2–3 mm wide.

REMARKS

The Vietnamese taxon is completely different from the Miquel's Javanese species in being a much taller plant with a stem 20–60 cm long as opposed to about 15 cm long in *Begonia rupicola* and the leaves are larger and at least twice as long as wide (10–16 × 4–7 cm long) with a scarcely toothed margin whereas *B. rupicola* has smaller leaves that are as wide as long (7–8 × 8 cm) and the margin is distinctly toothed. Gagnepain's taxon is a distinct new species that requires to be named.

This species is named in honour of Pham Hoang Hộ whose simple line drawings are an invaluable first step towards identifying Vietnamese begonias. Brummit & Powell (1992) assigned "P.H.Hồ" as his authority name when in fact correctly it should

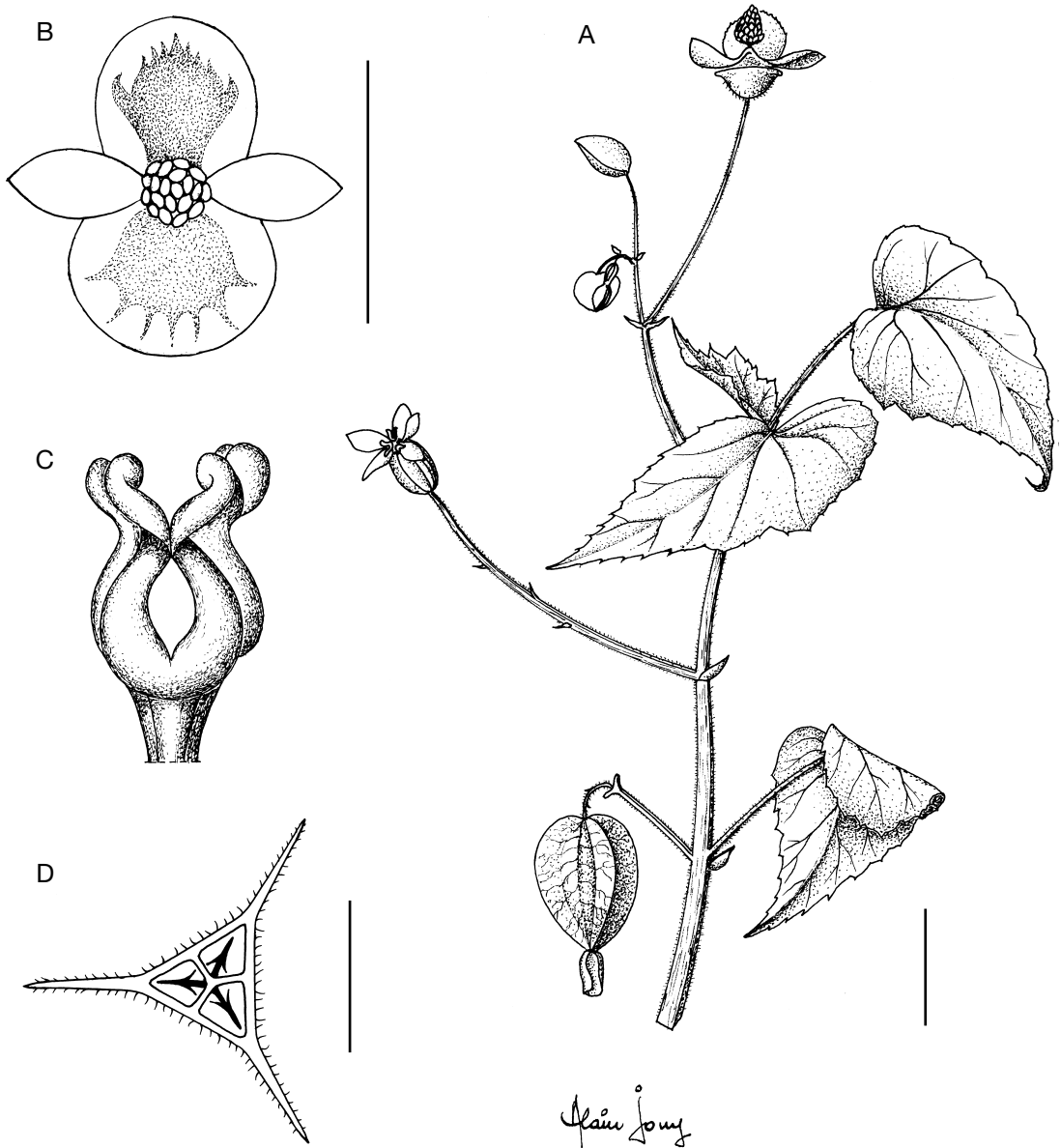


FIG. 1. — *Begonia glutinosa* Kiew: **A**, habit; **B**, male flower; **C**, stigmas; **D**, transverse section of fruit. *Bois s.n.* Scale bars: A, B, 15 mm; D, 5 mm.

have been H.H.Pham based on his family name, Pham – hence the species epithet. However, for the sake of consistency in the scientific literature, he is cited as Hô in the text and as the scientific authority.

This group of succulent begonias in sect. *Parvibegonia* includes extremely variable species, which vary both within a lifetime and between populations (Kiew [2005] has detailed this for *Begonia integrifolia* Dalziel and *B. variabilis* Ridl. in Malaysia).

The Vietnamese species in this section do not appear to be either common or widespread. For example, *B. integrifolia*, a widespread species distributed from India to Peninsular Malaysia, in Vietnam is known only from Bà Rịa-Vung Tàu, Mont Dinh (*Pierre s.n.*, P), Ban Hoa, Mont Chua (*Pierre s.n.*, P) and Île de Khon, Me Kong (*Thorel s.n.*, P).

Begonia phamiana is readily distinguished from Vietnamese specimens of *B. integrifolia*, the other species in sect. *Parvibegonia* in Vietnam with asymmetric leaves, by its narrower laminas up to 11 × 5.5 cm (compared with broadly ovate laminas 6-7 × 6-6.5 cm in *B. integrifolia*) and the attenuated leaf apex (compared with the broadly acute one in *B. integrifolia*). It is in fact more similar to *B. geoffrayi* from Cambodia in leaf shape (narrowly ovate with an attenuate apex), except that *B. geoffrayi* has much larger leaves (up to 18.5 × 10 cm) and the capsule wings are pointed and the longest is up to 11 mm long, compared with the rounded ones of *B. phamiana*, where the longest wing is *c.* 7 mm long.

According to label data, this species flowers and fruits in June, July and August.

DISTRIBUTION

Cambodia (Île du Pic) and South Vietnam (Bà Rịa-Vung Tàu [Île de Côn Dao]).

HABITAT

Locally common, in shaded, humid conditions below the tree canopy, on soil with humus, close to the river bed.

4. *Begonia sizemoreae* Kiew

Gardens Bulletin Singapore 56: 95 (2004).

Begonia rex auct. non Putz.: Gagnepain in Lecomte, *Flore générale de l'Indo-Chine* 2: 1112 (1921).

MATERIAL EXAMINED. — Mt Ba Vi, Son-gi Village, XII.1887, *Balansa* 3765 (P).

REMARKS

Gagnepain (1921) based his description of *Begonia rex* on *Balansa* 3765 (P). This specimen is typical of *B. sizemoreae* in its leaves that have densely hairy petioles and laminas that are more rounded than those

of *B. rex* (the difference in leaf shape between these two species is clearly shown in Tebbitt 2005: pl. 89), and that have a very hairy leaf margin, hairy upper surface of the lamina with hairs 5-10 mm long and have conspicuous deep crimson tertiary venation in the centre and outer part of the lower leaf surface – this last feature can be seen even in the dried leaf.

Balansa 3765 is a well-grown specimen (its laminas measure 14 × 14.5 cm), which necessitates some modification to the original description in Kiew (2004) and also enables description of the fruit. The ratio of petiole to lamina length is variable, i.e. longer or shorter than the lamina and there is also variation in whether the basal lobes of the lamina overlap or not (this can vary even on the same plant); and the inflorescence is either monochasial or dichasial (the latter is seen in the *Balansa* specimen that has four fruits on a single infructescence). These characters therefore cannot be used to distinguish *B. sizemoreae* from *B. rex*.

The fruit is the typical splash cup of sect. *Platycentrum*: the capsules are (8-)15-18 mm long and (23-)30-37 mm wide with pedicels 13-20 mm long and the large fibrous wing is 17-25 mm wide and the two shorter, thinner wings (5-)7-9 mm wide. The tips of the wings are rounded.

Begonia sizemoreae is one of the most beautiful Vietnamese begonias and it is becoming popular in cultivation (Kiew 2004). Hộ (1991, 1999) correctly noted *Begonia rex* Putz. only as cultivated in Vietnam. *Begonia rex* should therefore be excluded from the list of indigenous Vietnamese species.

DISTRIBUTION

Endemic in Vietnam, known only from Hà Tây (Mont Ba Vi).

B. NAMES EXCLUDED FROM THE BEGONIA FLORA OF VIETNAM

1. *Begonia decora* Stapf

Begonia decora auct. non Stapf: Hộ, *Cây Cỏ Việt Nam* 1: 579, fig. 2314 (1999).

REMARKS

Hộ (1999) recorded *Begonia decora* from Vietnam

but did not cite a specimen or locality. *Begonia decora* is a narrow endemic confined to a few mountains peaks in Peninsular Malaysia (Kiew 2005). It is extremely unlikely to occur in Vietnam. This species should therefore be excluded from the begonia flora of Vietnam. Because Hộ does not cite specimens, it is not possible to know what he meant by this taxon.

2. *Begonia grandis* Dryand.

Begonia grandis auct. non Dryand.: Hộ, *Cây Cò Việt Nam* 1: 733, fig. 2035 (1991), *Cây Cò Việt Nam* 1: 580, fig. 2318 (1999). — *Begonia grandis* Dryand. var. *chinensis* Hộ, *Cây Cò Việt Nam* 1: 733, fig. 2035 (1991), *Cây Cò Việt Nam* 1: 580, fig. 2318 (1999) invalid name.

REMARKS

Begonia grandis is an extremely variable Chinese species. Hộ's figure shows a geophyte with a distinct tuber and short stem that superficially resembles plants belonging to ssp. *sinensis* (A.DC.) Irmsch. Hộ called this plant "var. *chinensis* Irmsch.", an invalid name. The identity of the plant illustrated cannot be confirmed as Hộ does not cite specimens nor does his sketch show flowers or fruits. Until authenticated specimens of *B. grandis* from Vietnam are located (there are none at P), this species should be excluded from the Vietnamese flora.

3. *Begonia martabanica* A.DC.

Begonia martabanica auct. non A.DC.: Hộ, *Cây Cò Việt Nam* 1: 737, fig. 2048 (1991), *Cây Cò Việt Nam* 1: 584, fig. 2332 (1999).

REMARKS

Hộ (1999) reported this species from Đà Lạt, Lâm Đồng Province. However, his illustration and the specimen at P on which it was based do not resemble this species at all. *Begonia martabanica* has symmetric leaves, whereas Hộ's sketch and the specimen have a strongly asymmetric one. *Begonia martabanica* should therefore be omitted from the flora of Vietnam.

While it is clear that this specimen does not belong to *B. martabanica*, the specimen on which

Hộ's drawing was based comprises a single detached leaf and infructescence, which is too incomplete to identify with certainty.

4. *Begonia masoniana* Irmsch.

Begonia masoniana auct. non Irmsch.: Hộ (*B. "massoniana"*), *Cây Cò Việt Nam* 1: 584, fig. 2333 (1999).

REMARKS

Hộ (1999) figured this species as *Begonia "massoniana"* based on a specimen collected by Nguyen Quang Hieu (pers. comm.). However, the leaves illustrated are different in shape being narrowed to the apex whereas *B. masoniana* Irmsch. has more rounded leaves. As yet *B. masoniana* is known only from southern China. The Vietnamese plant is likely to be an undescribed species. *Begonia masoniana* should therefore be excluded from the flora of Vietnam.

A NEW VIETNAMESE *BEGONIA* WITH ORNAMENTAL POTENTIAL

Among the many unnamed and probably new taxa of Vietnamese *Begonia* in the Paris collection, one – even in the dried state – stands out as an exceptionally beautiful species on account of its variegated foliage. Because it is such a distinctive begonia, it deserves to be named and is here described as a new species.

Begonia poilanei Kiew, sp. nov. (Fig. 2)

A Begonia sinuata Wall. ex Meisn. *pilis uniseratis* (nec *stellatis*) *recedit*. Sect. *Diploclinium*

TYPUS. — Vietnam, Haut Donai District, Djijuih, 21.X.1931, *Poilane 19824* (holo-, P barcode P00539147; iso-, P barcode P00539160, barcode P00539161).

DESCRIPTION

Herb stemless or with a short stem 1.5–3 mm long; basal tuber cylindrical 1.5–2.5 cm long and 5–7.5 mm

thick, covered in a network of fibrous roots. Leaves one per plant, sometimes two, not oblique; petioles densely hairy when young, 6.5-12 cm long, slender to 2 mm diam. in the dried state; laminae symmetric, broadly ovate, 6.5-14.5 × 7-17 cm, in the dried state with a conspicuous reddish band *c.* 3-5 mm wide along the secondary and tertiary veins, with scattered uniseriate hairs 0.75-1 mm long, thinly papery in the dried state, base equal, cordate, sinus wide, basal lobes 1.75-4 cm long, margin denticulate and ciliate, apex shortly acuminate, acumen to 7.5 mm long, venation palmate with 4 pairs of veins, tertiary veins conspicuous and perpendicular or at 45° to the secondary veins, on the lower surface secondary veins with uniseriate hairs *c.* 3-4 mm long and even the smallest veins with hairs 1-1.5 mm long, in the dried state veins slightly impressed above and slightly prominent beneath. Flowers not known. Inflorescences axillary, cymose panicles, erect, above the leaves, 12-26 cm long, peduncles 11.5-23 cm long, branching 3 or 4 times, distally with up to 4 fruits. Bract pair ovate, *c.* 2 × 1 mm, persistent. Fruits with slender hair-like pedicels 12-14 mm long, capsules 6-12 × 16-23 mm, glabrous, wings 3, unequal, thinly fibrous, dehiscing between the locules and wings, longer wing 10-13 mm wide, slightly falcate and tapering to a point, smaller two wings rounded, sometimes broadly acute, 4-5 mm wide, locules 3, placentas 2 per locule, styles 3, free to base, bifid, branches lyre-shaped and spirally twisted, 1.5-2 mm long, persistent. Seeds broadly barrel-shaped, *c.* 0.25 mm long, collar cells *c.* $\frac{3}{4}$ of the seed length.

REMARKS

As Poilane noted on the herbarium label, this is a very pretty plant ("très jolie") with foliage as attractive as any in cultivation. He described the leaves as tawny brown along the veins against a green background and being darker green beneath, the peduncles are sable yellow with flowers varying from pale to bright pink.

Very few Asian begonias have symmetric, non-oblique leaves. The only one in Vietnam is *Begonia sinuata* Wall. ex Meisn., which in common with this new species is stemless or has only a very short

stem and produces one or two broadly ovate leaves, a basal tuber, and fruits with three unequal wings. *Begonia poilanei* differs from *B. sinuata* in its larger leaves with a cordate base and in its uniseriate hairs. In contrast, *B. sinuata* has leaves up to 8 × 8 cm with a rounded or truncate base and its hairs are stellate. Among Vietnamese begonias, stellate hairs are unique to *B. sinuata*. *Begonia sinuata* belongs to sect. *Parvibegonia* and has ovaries with two locules each with two placentas.

Begonia harmandii Gagnep. is also similar in habit in that it is stemless and has tubers and sometimes has only one leaf. However, it differs in its oblique leaf that is longer than wide, its inflorescences that are racemose and its fruits with three equal, hairy, rounded wings. It is placed in sect. *Reichenheimia* on account of its single placenta per locule.

Begonia poilanei that has a three-locular ovary with two placentas per locule belongs to sect. *Diploclinium* and conforms to the Doorenbos *et al.* (1998) Group III of this section in the plant being tuberous, having a reduced stem with one or two symmetric leaves, an axillary inflorescence and styles persisting in the fruit. *Begonia cavaleriei* H.Lév. is the only other Vietnamese begonia in this section but it differs in having peltate leaves.

Two specimens, one from Cambodia (*Martin M244*, P, sterile) and the other from Thailand (*Larsen et al. 1003*, P, with male and female flowers) are very similar to *B. poilanei* in having one symmetric ovate leaf with the same dimensions, coloration and indumentum. They differ in that both these specimens have leaves with the base without a wide sinus, the margin being deeply serrate, the apex strongly acuminate with an acumen to 2 cm long, and the venation being palmate-pinnate. The fertile Thai specimen has a similar inflorescence and ovary, the latter with unequal, thinly fibrous wings, the longer one being slightly falcate, and with three styles with lyre-shaped branches. However, the Thai specimen has one placenta per locule, which would place it in sect. *Reichenheimia*; in contrast, *B. poilanei*, has two placentas per locule and so belongs to sect. *Diploclinium* (though one placenta may be poorly developed). Until more material from these three countries is available, it is uncertain whether they belong to one or two taxa. Presently, *B. poilanei* is

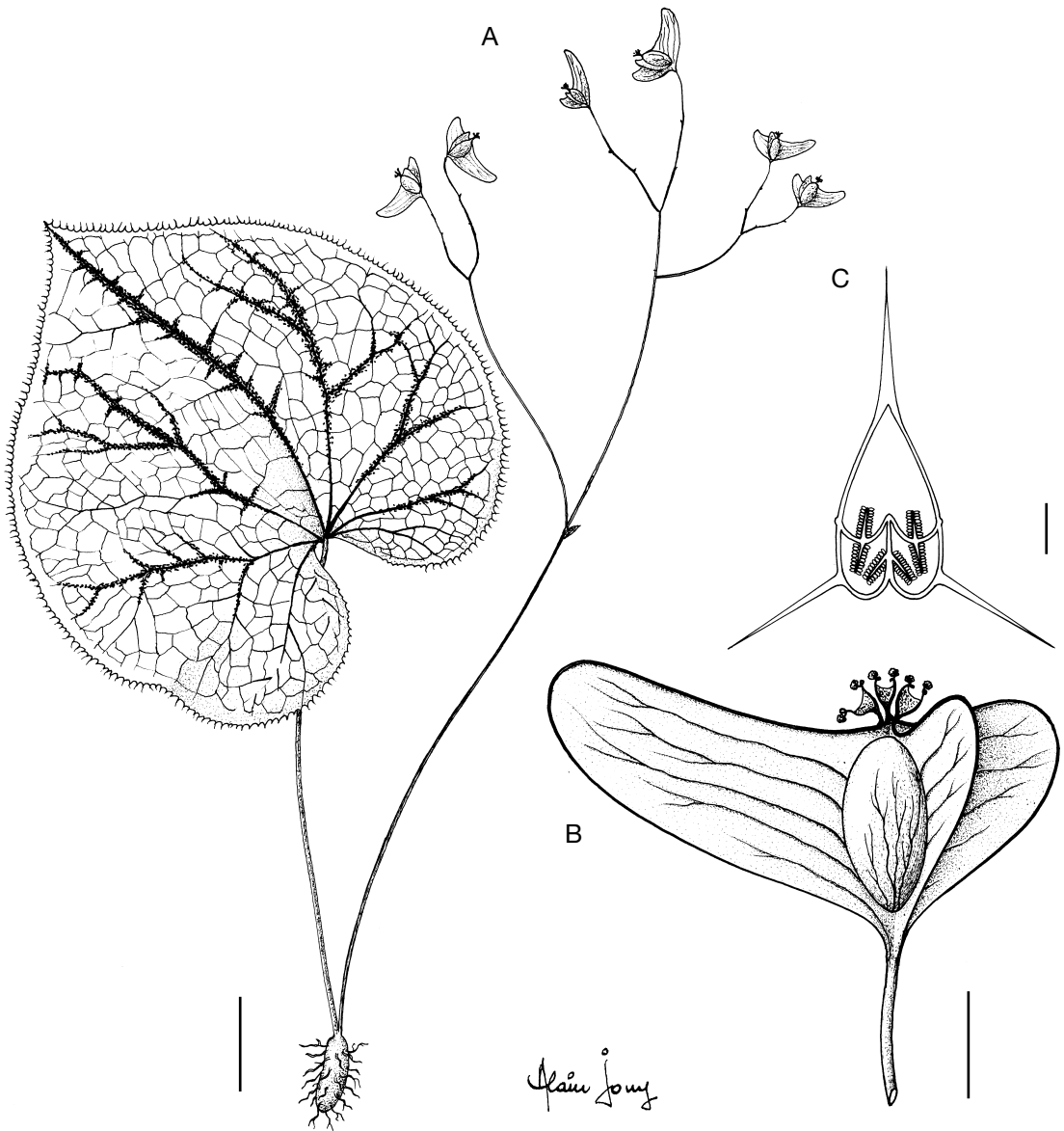


FIG. 2. — *Begonia poilanei* Kiew: **A**, habit; **B**, fruit with persistent stigmas; **C**, transverse section of fruit. *Poilane 19824*. Scale bars: A, 15 mm; B, 3 mm; C, 2 mm.

known from a single fruiting specimen.

This new species is named in honour of M. Poilane, who discovered and collected this beautiful begonia, in recognition of his extensive contribution to botanical collecting in Vietnam

(more than 40 000 specimens).

DISTRIBUTION

Endemic in Vietnam, Haut Donai District, Djijuih (Dalat). Known only from the type.

HABITAT

At 250 m altitude, growing on bare, vertical rock surfaces.

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