

# New taxa of *Impatiens* (Balsaminaceae) from Madagascar. III

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## ABSTRACT

The new endemic species *Impatiens renae*, *I. kuepferi*, *I. wohlhauseri*, *I. sidaeformis*, *I. vellela*, *I. mayae-valeriae* and *I. loki-schmidtia* belonging to subgenus *Impatiens* and *I. stefaniae* from subgenus *Trimorphopetalum* are described and illustrated. Five nomina nova are proposed: *Impatiens elisettae* for *I. longicalcarata* H. Perrier, *I. grey-wilsonii* for *I. longicalcarata* (G.M. Schulze & Wilczek) Grey-Wilson, *I. delabathiana* for *I. trichocarpa* H. Perrier, *I. oniveensis* for *I. rubrolineata* H. Perrier and *I. lemuriana* for *I. gibbosa* H. Perrier.

## KEY WORDS

Balsaminaceae,  
*Impatiens*,  
Madagascar.

## RÉSUMÉ

*Nouveaux taxons dans le genre Impatiens (Balsaminaceae) à Madagascar. III.*  
Les espèces nouvelles endémiques *Impatiens renae*, *I. kuepferi*, *I. wohlhauseri*, *I. sidaeformis*, *I. vellela*, *I. mayae-valeriae*, *I. loki-schmidtia*, appartenant au sous-genre *Impatiens*, et *I. stefaniae* du sous-genre *Trimorphopetalum* sont décrites et illustrées. Cinq nouveaux noms sont proposés : *Impatiens elisettae* pour *I. longicalcarata* H. Perrier, *I. grey-wilsonii* pour *I. longicalcarata* (G.M. Schulze & Wilczek) Grey-Wilson, *I. delabathiana* pour *I. trichocarpa* H. Perrier, *I. oniveensis* pour *I. rubrolineata* H. Perrier et *I. lemuriana* pour *I. gibbosa* H. Perrier.

## MOTS CLÉS

Balsaminaceae,  
*Impatiens*,  
Madagascar.

## INTRODUCTION

The genus *Impatiens* L. is highly diversified in Madagascar and shows a pattern of distribution similar to that of the palms (DRANSFIELD & BEENTJE 1995), in which the number of species in Madagascar exceeds that of tropical Africa. Approximately 120 species of *Impatiens* are known (GREY-WILSON 1980; HALLÉ & LOUIS 1989; BOS 1990; FISCHER 1997; CHEEK & FISCHER 1999; FRIMODT-MØLLER & GREY-WILSON 1999; FISCHER *et al.* 2003), whereas in Madagascar, an estimated 170-190 species occur, with probably many new taxa that remain to be discovered.

During the preparation of a revision of *Impatiens* in Madagascar and the Comoro Islands, many new species have been described (see FISCHER & RAHELIVOLOLONA 2002; FISCHER *et al.* 2003). One of the most species-rich areas seems to be the Masoala peninsula, where more than 40 taxa have been recorded. In a forthcoming paper the diversity of *Impatiens* in this area is analyzed. In the present paper, some conspicuous new species of *Impatiens* subg. *Impatiens* and one species of subg. *Trimorphopetalum* are described. Due to several later homonyms, five nomina nova are proposed.

A short history of exploration of *Impatiens* in Madagascar as well as details on terminology and measurements were provided by FISCHER & RAHELIVOLOLONA (2002).

### IMPATIENS subg. IMPATIENS

Lower sepal with distinct spur.

#### *Impatiens renae* Eb. Fisch. & Rahelivololona, sp. nov.

*Ab Impatiens humblotianae differt forma laminae, forma sepali inferioris et numero nectariorum extrafloralium.*

TYPUS. — *Miller & Lowry 4032*, Madagascar, Prov. Antsiranana, Réserve Naturelle de Marojejy, along the trail to the summit of Marojejy Est, NW of Mandena, wet, evergreen forest between the second and third camp, 1100-1200 m, 13 Feb. 1989 (holo-, TAN; iso-, P, MO).

Succulent herb, 15-30 cm tall, entirely glabrous. Leaves alternate, petiole 15-30 mm long, with 5-10 pairs of *c.* 2 mm long extrafloral nectaries, lamina succulent, rigid, reddish below with reticulum of tertiary veins, pale green above, ovate-lanceolate, base rounded-cordate, apex acuminate, 60-90 × 20-25 mm, margin with 6-9 pairs of fimbriae.

Inflorescence axillary, with 1-2(-3) flowers per leaf axill, pedicel up to 42-45 mm long, reddish. Flower entirely bright red with bluish to violet anthers and pollen, glabrous. Lateral sepals broadly ovate, acuminate, 4-5 × 2-2.5 mm. Lower sepal *c.* 15 mm long and 10-3 mm wide, with 30-32 mm overall length, spur spirally curved. Dorsal petal cucullate, 15 × 12 mm, dorsal crest with spur-like apicule. Lateral united petals 12-14 mm long, upper petal *c.* 5-8 × 6 mm, lower petal *c.* 5 × 3-5 mm. Anthers *c.* 8 mm long. Ovary *c.* 6-7 mm long. Fruit up to 10 mm long. — Fig. 1.

HABITAT. — Submontane to montane rain-forest, from (300-)1000 to 1700 m a.s.l.

DISTRIBUTION. — Madagascar, only known from Marojejy Massif.

ETYMOLOGY. — Dedicated to Mrs RENA Stuck/Hildesheim on the occasion of her birthday.

*Impatiens renae* appears to be closely related to *Impatiens humblotiana* Baill., but differs in the shape of leaves which bear a cordate to rounded base, the number of extrafloral nectarines on petiole (5-10 pairs in *I. renae* and 1-2 pairs in *I. humblotiana*) and in the shape of the lower sepal with spur which is only gradually tapered towards spur. The plants from Marojejy are rather uniform and show no distinct variation. *Impatiens humblotiana* has a more southern distribution in the forests of eastern Madagascar. A forthcoming paper will deal with the Madagascar species related to *Impatiens humblotiana*.

PARATYPES. — *Humbert 23524*, vallée de la Lokoho, Mont Beodroka au N de Maroambihy, 300 m, 17-22 Mar. 1949 (P); *23680*, pentes orientales du Massif de Marojejy, à l'ouest de la rivière Manantenina, affluent de la Lokoho, 1500-1700 m, 25-26 Mar. 1949 (P); *23690*, pentes orientales du

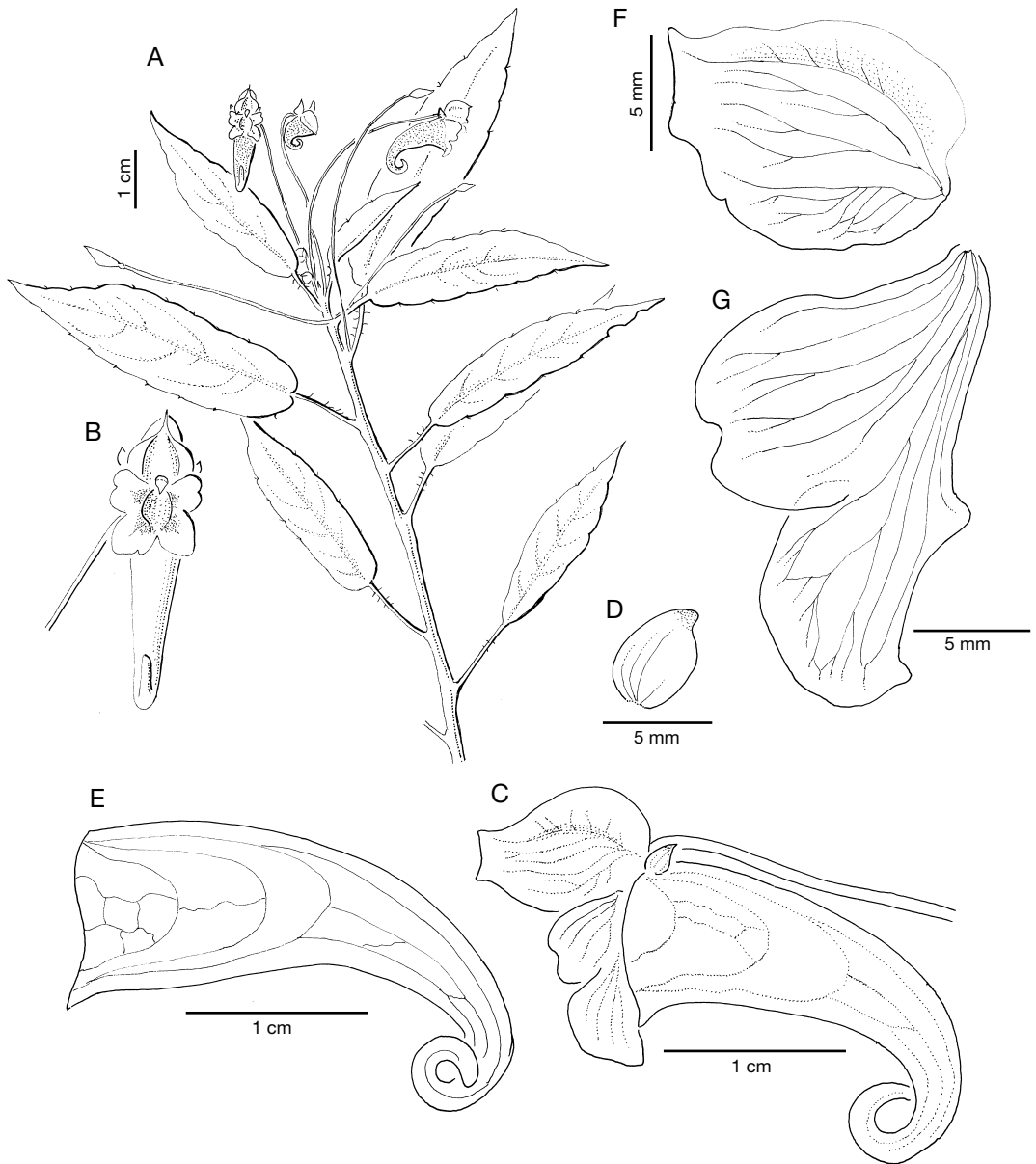


FIG. 1. — *Impatiens renae* Eb. Fisch. & Rahelivololona: **A**, habit; **B**, flower, lateral view; **C**, lateral sepal; **D**, **E**, lower sepal and spur; **F**, dorsal petal; **G**, lateral united petals. Miller & Lowry 4032 (P).

Massif de Marojejy (Nord-Est), à l'ouest de la rivière Manantenina, affluent de la Lokoho, sylve à lichens sur gneiss et quartzite, 1500-1700 m, 25-26 Dec. 1949 (P); *Randrianasolo 100*, Antsiranana, Réserve Nationale Marojejy, sentier qui mène au 3<sup>e</sup> Camp, au-

dessus du village de Manantenina, 1150-1300 m, 26 Mar. 1990 (P, TAN); *Rasoavimbahoaka 569*, Antsiranana, Marojejy RNI, Sambava, environ à 13,5 km au nord-est de Maroambihy et à 9,5 km au nord-est du fokotany de Mandena, 1200 m, 29-

31 Mar. 1995 (P, TAN, MO); *Wohlhauser & Pfund 1041*, Antsiranana, Marojejy Réserve Intégrale, camp 2-camp 3, on ridge, montane lichens sclerophyllous forest, mainly epiphyte, 1050 m, 27 Nov. 1995 (NEU, TAN).

***Impatiens kuepferi* Eb. Fisch. & Rahelivololona, sp. nov.**

*Impatiens wohlhauseri affinis, sed forma foliorum, forma sepalorum lateralium, forma sepali inferioris et calcaris valde differt.*

TYPUS. — *Rahelivololona, Saola & Scenario 137*, Madagascar, Prov. Toamasina, Masoala Peninsula, Ambanizana-Ambohitsitondroina, sous bois avant le campement et vers le sommet sur rochers, 500 m, 18. Feb. 2002 (holo-, TAN; iso-, NEU).

Perennial herb with creeping rhizome, glabrous. Stem up to 40 cm tall, greenish. Leaves alternate, petiole 10-13 mm long, with 1-2 pairs of obtuse extrafloral nectaries, lamina lanceolate, 135-148 × 36-44 mm, acuminate at apex, margin with 22-23 pairs of fimbriae. Inflorescence axillary, clustered with 1-3 flowers, pedicel *c.* 20 mm long. Flower with green-yellowish dorsal petal, lateral petals red and pink at apex, with yellow spots, spur pink-whitish. Lateral sepals 4, outer pair broadly ovate, 8-9 × *c.* 5 mm, inner pair ovate-lanceolate, *c.* 8 × 3 mm. Lower sepal navicular, sparsely hairy outside, 12 × 6 mm, spur clavate, constricted below apex, *c.* 5 mm long, obtuse. Dorsal petal sparsely hairy, cucullate, 7-8 × 6-7 mm. Lateral united petals *c.* 18 mm long, upper petal acuminate, *c.* 7 × 4-5 mm, lower petal rounded, *c.* 12 × 7 mm. Anthers *c.* 3 mm long. Ovary 4 mm long. Fruit unknown. — Fig. 2.

HABITAT. — Submontane rainforest.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to Philippe KUEPFER, Institut de Botanique, Université de Neuchâtel, outstanding botanist, for his research on *Impatiens*.

This species is nearly unique among Madagascan *Impatiens* as it bears four lateral

sepals. The only apparent relative seems to be *I. wohlhauseri*, described below, which has also four lateral sepals but differs in leaf shape and the shape of the lateral sepals and lower sepal and spur. Both species occur on the Masoala Peninsula. Taxa with four lateral sepals have not been reported previously from Madagascar, but are known from Africa (e.g., *I. fischeri* Warb., *I. teitensis* Grey-Wilson, *I. tinctoria* A. Rich., *I. quadrisepala* Wilczek & Schulze).

***Impatiens wohlhauseri* Eb. Fisch. & Rahelivololona, sp. nov.**

*Impatiens kuepferi affinis, sed forma foliorum, forma sepalorum lateralium, forma sepali inferioris et calcaris valde differt.*

TYPUS. — *Malcomber, Andriatsifera, Gerard & Moise 2715*, Madagascar, Prov. Toamasina, Masoala Peninsula, south of Ambanizana, Andranobe permanent plot, growing in forest gaps, 15°30'30"S 49°57'30"E, 300-400 m, 18-24 Mar. 1994 (holo-, TAN; iso-, MO, P).

Perennial herb up to 50 cm tall, entirely glabrous. Stem succulent. Leaves alternate, upper face dark green, lower face light green, petiole 15-30 mm long, lamina oblong-obovate, base attenuate-acuminate, apex rounded-obtuse at, becoming larger towards apex, 120-190 × 30-53 mm, margin with 8-9 pairs of fimbriae. Inflorescence with distinct axillary peduncle, up to 7-15 mm long, bracts linear-lanceolate, 3-4 × 1.5 mm, pedicel 32-40 mm long. Flower white, with pink lateral united petals. Lateral sepals 4, larger sepal ovate, distinctly acuminate, *c.* 7 × 3-4 mm, smaller sepal lanceolate, acuminate, 3-4 × 1-1.5 mm. Lower sepal 9-10 × 3-4 mm large, spur straight to slightly curved, with obtuse apex and indistinct furrows, 3 × 1.5 mm. Dorsal petal with a distinct crest, *c.* 8 × 6-7 mm high. Lateral united petals *c.* 12 mm long, upper petal *c.* 3 × 2 mm, obtuse, lower petal *c.* 7 × 5 mm, obtuse. Anthers 3-4 mm long. Ovary *c.* 4 mm long. Fruit unknown. — Fig. 3.

HABITAT. — Lowland to submontane rainforest.

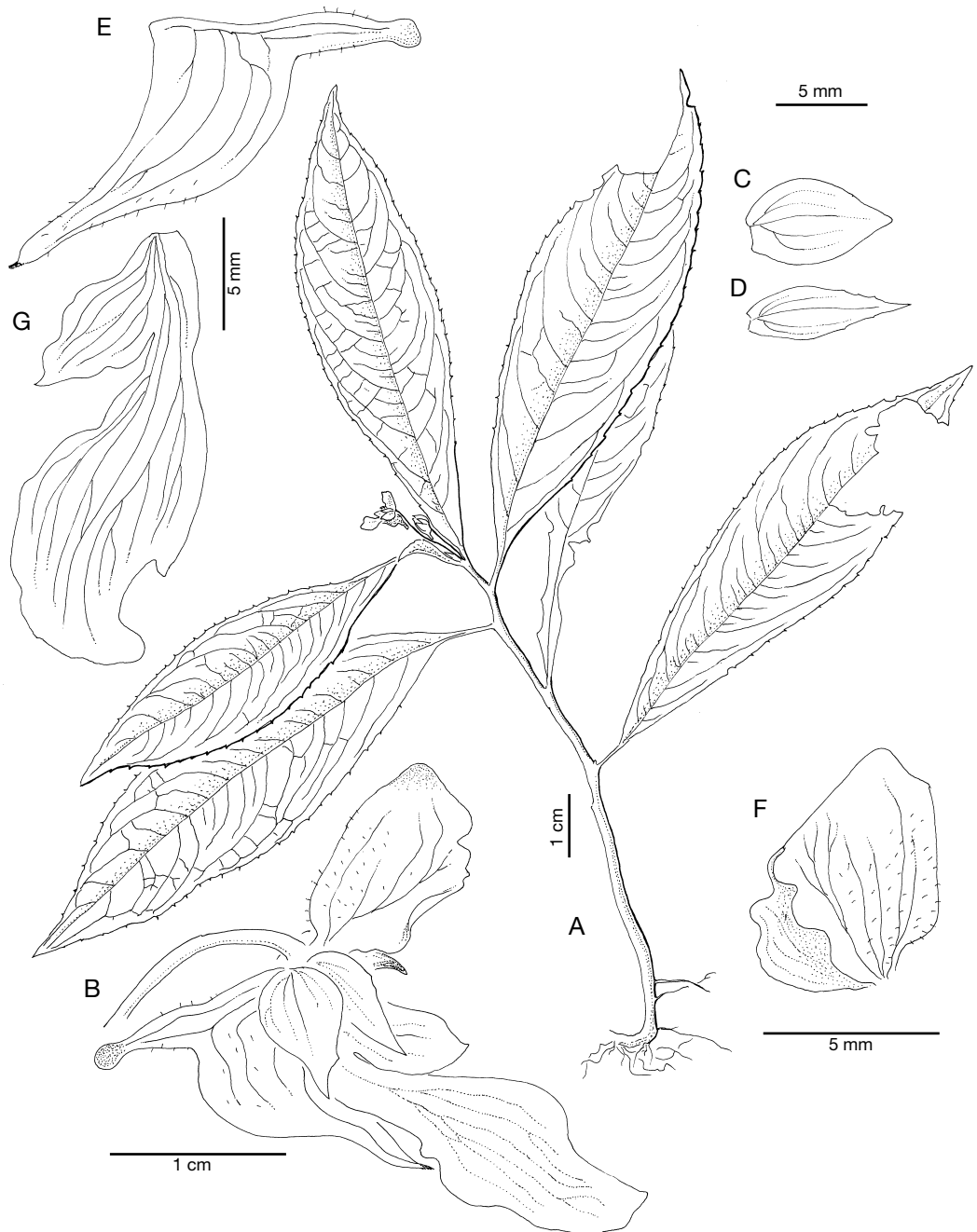


FIG. 2. — *Impatiens kuepferi* Eb. Fisch. & Rahelivololona: A, habit; B, flower, lateral view; C, D, lateral sepals; E, lower sepal and spur; F, dorsal petal; G, lateral united petals. *Rahelivololona, Saola & Scenario 137* (TAN).

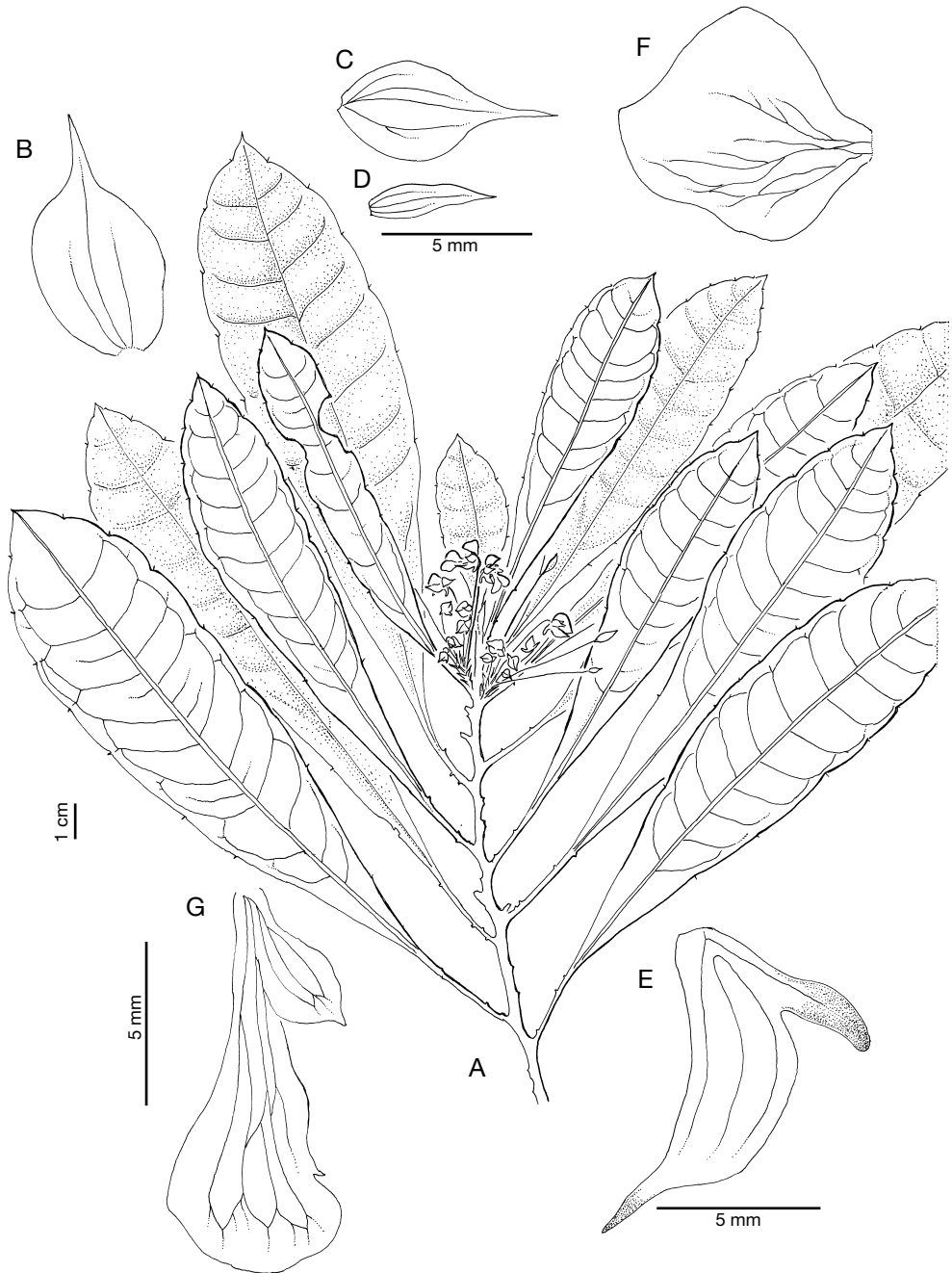


FIG. 3. — *Impatiens wohlhauseri* Eb. Fisch. & Rahelivololona: **A**, habit; **B-D**, lateral sepals; **E**, lower sepal and spur; **F**, dorsal petal; **G**, lateral united petals. *Malcomber, Andriatsifera, Gerard & Moise 2715 (P)*.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to Sebastien WOHLHAUSER, Institut de Botanique, Université de Neuchâtel, who studied the flora of Manongarivo and also collected numerous *Impatiens* on the Masoala Peninsula.

This is the second species from Madagascar with four lateral sepals (see discussion under *I. kuepferi*).

**Impatiens sidaeformis** Eb. Fisch. & Rahelivololona, **sp. nov.**

*Ab Impatiens sacculifera differt indumento foliorum petiolorumque et floribus minoribus.*

TYPUS. — *Rasoavimbahoaka 704*, Madagascar, Prov. Antsiranana, Andapa, Doany, Betsomanga, environ 11,2 km à vol d'oiseau au sud-est (14°) de Doany et à 7,5 km au nord-est (1°) d'Ambalamananasy II, entre la rivière d'Ampanrana et Betsomanga, au nord de Marojejy, 14°27'S, 49°34'E, 920-1040 m, 15-29 May 1995 (holo-, TAN; iso-, MO, P).

Prostrate to ascending richly branched herb up to 30 cm tall, densely covered with ferruginous brownish multicellular hairs. Stem rooting at nodes, densely pilose at least in upper parts. Leaves alternate, distant, petiole 50-100 mm long, with 1-4 pairs of extrafloral nectaries, lamina ovate or elliptic, base attenuate and rounded, apex acuminate, 45-50 × 15-20 mm, margin with 11-13 pairs of fimbriae. Inflorescence with 1-2 axillary flowers, bracts linear-lanceolate, acuminate, *c.* 4 × 0.8 mm. Pedicel 38-45 mm long. Flower white with yellow spur. Lateral sepals lanceolate-acuminate, *c.* 2 mm long, pilose. Lower sepal sparsely pilose, navicular, apiculate, *c.* 7 mm long, spur short and recurved, *c.* 2 mm long. Dorsal petal cucullate, with an apicule at apex, dorsal crest straight, descending towards base, sparsely pilose. Lateral united petals 13 mm long, upper petal bilobed, acuminate, with upper lobe smaller, lower petal bilobed.

Ovary glabrous. Fruit fusiform, *c.* 10 × 3-4 mm. — Fig. 4.

HABITAT. — Montane rainforest.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Resembling a *Sida* (Malvaceae).

The species appears to be closely related to *Impatiens sacculifera* H. Perrier, which is known from the bay of Antongil. However, *I. sidaeformis* differs in having densely tomentose indumentum on the stems and leaves (subglabrous in *I. sacculifera*), longer peduncles and generally smaller flowers with different shape of the lateral united petals.

**Impatiens vellela** Eb. Fisch. & Rahelivololona, **sp. nov.**

*Impatiens mindiae affinis, sed forma petali dorsali et callo petali laterali inferioris valde differt.*

TYPUS. — *Rahelivololona, Saola & Scenario 142*, Madagascar, Prov. Toamasina, Masoala, Ambanizana-Ambohitsitondroina, montée vers sommet Ambohitsitondroina, vers 750-900 m, sous bois le long du ruisseau sur rocher ou épiphyte 2 m au-dessus d'un arbre, 19 Feb. 2002 (holo-, TAN; iso-, NEU).

Perennial herb, glabrous. Stem up to 50 cm tall. Leaves coriaceous and succulent, lower surface light green, upper surface green-reddish, petiole reddish and green, 12-17 mm long, with 2-3 pairs of extrafloral nectaries, lamina ovate-lanceolate, apex acuminate, 55-85 × 17-25 mm, margin with (7-)8(-9) pairs of fimbriae. Inflorescence axillary, with a short peduncle, up to 3-4 mm long, bracts 2-3 × 0.8-1 mm, pedicel 30-50 mm long. Flower white to white-pink, lateral petals with yellow and red callus. Lateral sepals 2, ovate, acuminate, 5-6 × *c.* 3 mm. Lower sepal navicular, *c.* 13 mm long, spur curved, obtuse, 7-8 mm long. Dorsal petal cucullate, with a very broad and lobed lower margin, resembling a jelly-fish, 10-12 × 11-12 mm. Lateral united petals with an elongate callus, 23-24 mm long, upper petal bilobed, 11-12 × *c.* 6 mm, lower petal bilobed, *c.* 15 × 10 mm, inner lobe 5-6 × *c.* 4 mm. Anthers *c.* 6 mm long. Ovary 6-7 mm long. Fruit unknown. — Fig. 5.

HABITAT. — Montane rainforest.

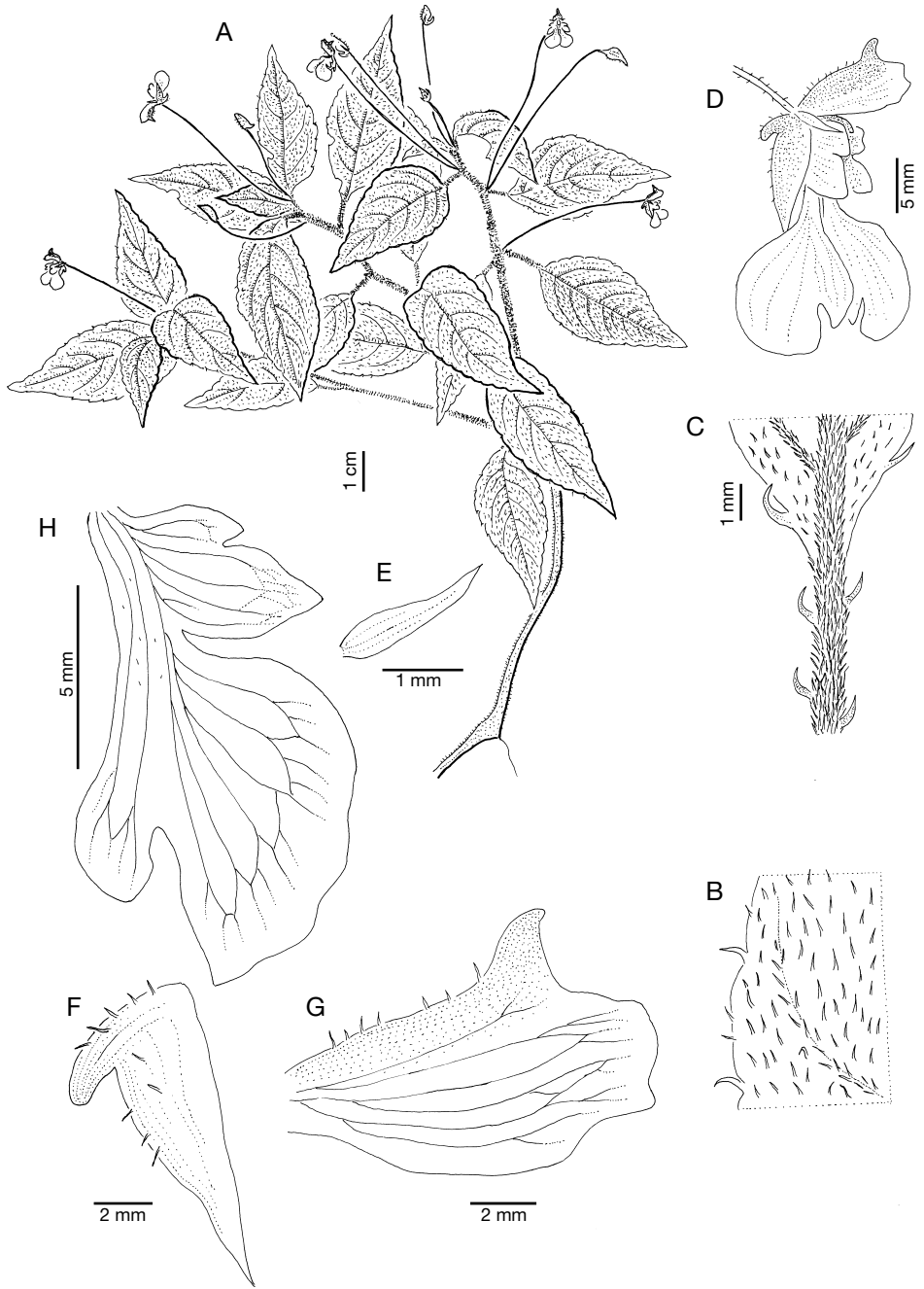


FIG. 4. — *Impatiens sidaeformis* Eb. Fisch. & Rahelivololona: **A**, habit; **B**, detail of lamina; **C**, leaf-base with petiole; **D**, flower, lateral view; **E**, lateral sepal; **F**, lower sepal and spur; **G**, dorsal petal; **H**, lateral united petals. *Rasoavimbahoaka* 704 (P).



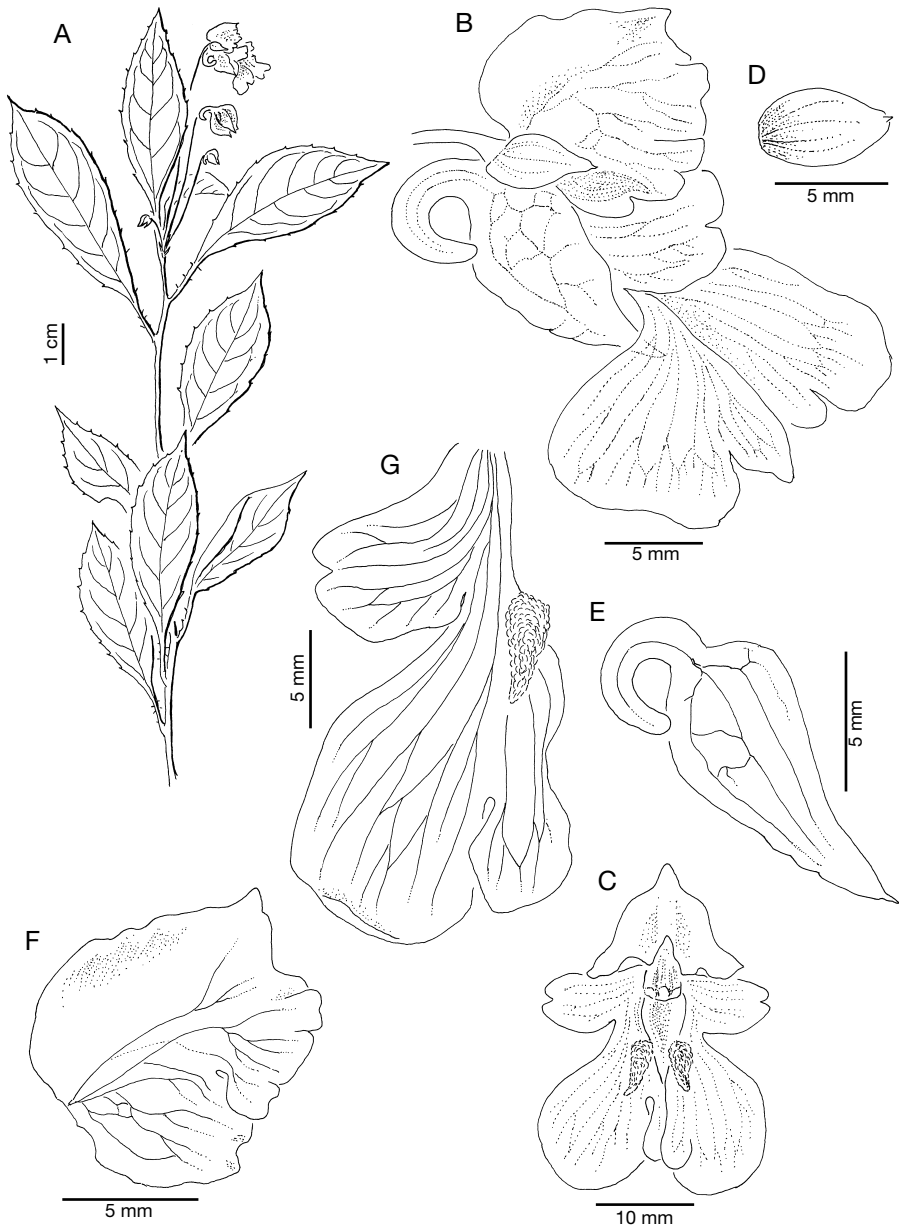


FIG. 5. — *Impatiens vellela* Eb. Fisch. & Rahelivololona: **A**, habit; **B**, flower, lateral view; **C**, flower, frontal view; **D**, lateral sepal; **E**, lower sepal and spur; **F**, dorsal petal; **G**, lateral united petals. *Rahelivololona*, *Saola* & *Scenario 142* (TAN).

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — The dorsal petal resembles a jelly-fish (Malagasy name “vellela”).

The species is related to *Impatiens mindiae* Eb. Fisch., Wohlhauser & Rahelivololona, but differs in having a dorsal petal with a distinct margin giving the impression of a jelly-fish, and in the shape of the lateral sepal and the presence of a callus on lower lateral petal. Both species are restricted to the Masoala Peninsula.

***Impatiens mayae-valeriae* Eb. Fisch. & Rahelivololona, sp. nov.**

*Impatiens manongarivensis affinis, sed floribus valde majoribus et forma sepalorum et petalorum differt.*

TYPUS. — *Schatz, Goldblatt, Rakotozafy & Randrianasolo 2683*, Madagascar, Prov. Toamasina, Réserve Intégrale 1 Betampona, approx. 3 km N of Fotsimavo, 17°55'S, 49°13'E, 500 m, 5 Apr. 1989 (holo-, TAN; iso-, P, BR, MO).

Perennial herb with woody rhizome, entirely glabrous. Stem woody at base, up to 100 cm tall. Leaves alternate, distant, dark green above, light green below, petiole 2-3 cm long, with 1-4 obtuse extrafloral nectaries, *c.* 1 mm long, lamina oblong to oblanceolate, base attenuate and apex acuminate, 130-170 × 30-60 mm, margin with 13-15 pairs of fimbriae. Inflorescence axillary, with 1 to 3 flowers, peduncle 1 mm long, bracts obovate, *c.* 7 × 2.5 mm, pedicel 45-50 mm long. Flower with sepals white with very slight pink tinge, petals pink with dark red spots at base, lower sepal with nectar spur whitish pink outside, reticulate magenta inside. Lateral sepals broadly ovate, acuminate, *c.* 17 × 8 mm. Lower sepal *c.* 23 mm long, 20 mm deep, with filiform, obtuse, slightly to distinctly curved spur up to 32-37 mm long. Dorsal petal cucullate, *c.* 20 mm long and 16 mm deep. Lateral united petals *c.* 42 mm long, upper petal bifid, *c.* 20 × 14 mm, lower petal *c.* 30 × 26 mm. Anthers 9-10 mm long. Ovary *c.* 10 mm long. Fruit unknown. — Fig. 6.

HABITAT. — Submontane rainforest.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to Maya Valerie STROMBERG/NEUSS on the occasion of her birthday.

*Impatiens mayae-valeriae* appears to be related to *I. manongarivensis* H. Perrier, *I. emiliae* Eb. Fisch. & Rahelivololona and *I. bathiei* Eb. Fisch. & Rahelivololona, but differs distinctly in its leaf-shape, the size of flowers and shape of its sepals and petals. *Impatiens mayae-valeriae* has a more southern distribution than the other species which are restricted to northern Madagascar (Manongarivo, Tsaratanana).

PARATYPE. — *Andrianarisata 112*, Madagascar, Prov. Toamasina, Réserve Naturelle Intégrale de Betampona, piste principale, 17°55'S, 49°13'E, 210-410 m, 22 Apr. 1994 (P, TAN, MO).

***Impatiens loki-schmidtiae* Eb. Fisch. & Rahelivololona, sp. nov.**

*Ex affinitate Impatiens manongarivensis, sed pedicellis longis et nectariis extrafloralibus spinosis differt.*

TYPUS. — *Randriamampionona 324*, Madagascar, Prov. Toliara, Réserve Intégrale 11 Andohahela, Parcelle 1, vicinity of Eminiminy, 24°40'S, 46°48'E, 200-700 m, 4-24 May 1993 (holo-, TAN; iso-, P).

Perennial herb, densely pilose with multicellular, brownish hairs. Stem up to 100 cm tall. Leaves alternate, lanceolate-ovate, densely pilose, petiole 50-70 mm long, with 8-10 spine-like triangular extrafloral nectaries, lamina elliptic, base attenuate, apex acuminate, 85-130 × 38-55 mm, margin with 16-18 pairs of fimbriae. Inflorescence with single axillary flowers. Pedicel 75-95 mm long. Flower light red, whitish inside. Lateral sepals lanceolate, pilose, 4-5 × 1.5-2 mm. Lower sepal navicular, densely pilose outside, *c.* 10 × 6-10 mm, with a long filiform, pilose, curved spur *c.* 25-30 mm long. Dorsal petal with greenish crest and apicule, 15 mm long and 16-17 mm broad. Lateral united petals 23-25 mm long, upper petal bifid, *c.* 15 × 12-3 mm, lower petal 15-16 × 10-12 mm. Anthers 5-6 mm long. Ovary 5-7 mm long. Fruit 14-15 × 6-7 mm. — Fig. 7.

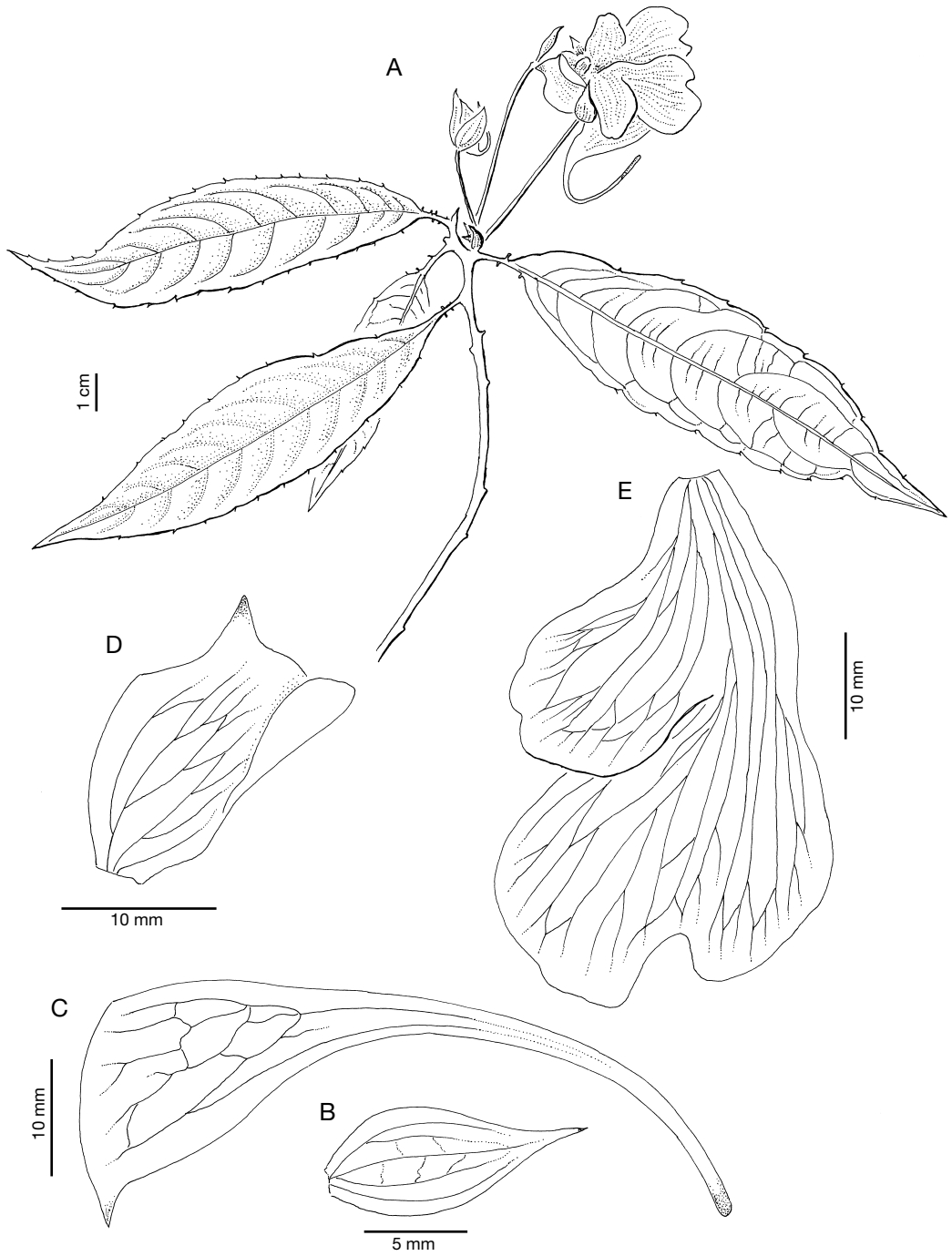


FIG. 6. — *Impatiens mayae-valeriae* Eb. Fisch. & Rahelivololona: **A**, habit; **B**, lateral sepal; **C**, lower sepal and spur; **D**, dorsal petal; **E**, lateral united petals. Schatz, Goldblatt, Rakotozafy & Randrianasolo 2683 (P).

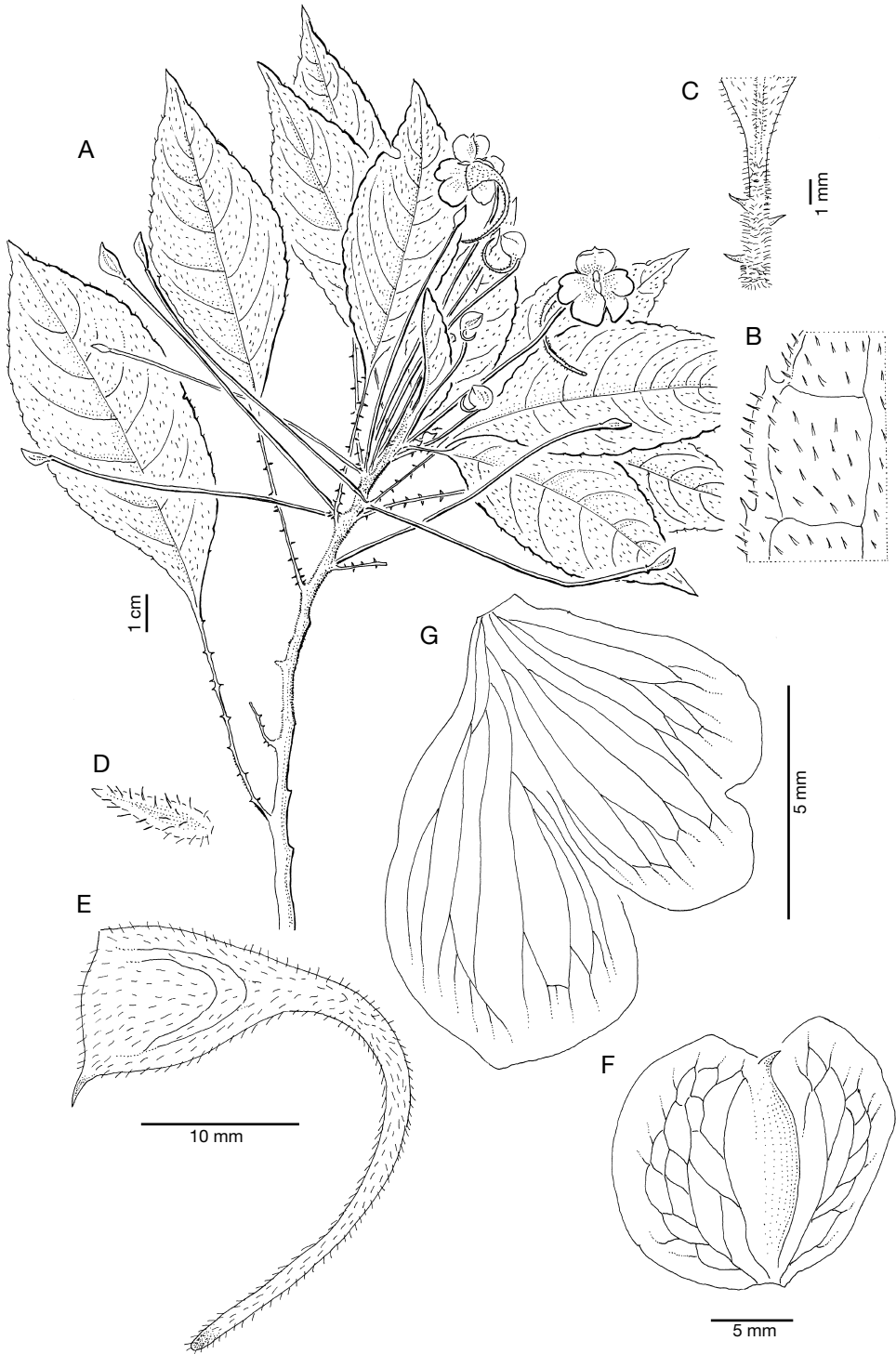


FIG. 7. — *Impatiens loki-schmidtiae* Eb. Fisch. & Rahelivololona: **A**, habit; **B**, detail of lamina; **C**, leaf-base and petiole; **D**, lateral sepal; **E**, lower sepal and spur; **F**, dorsal petal; **G**, lateral united petals. *Randriamampionona* 324 (P).

HABITAT. — Submontane rainforest, on rocks.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — The species is dedicated to Loki SCHMIDT, renowned botanist and nature conserver, on the occasion of her 85th birthday.

*Impatiens loki-schmidtiae* is related to *Impatiens manongarivensis*, *I. emiliae* and *I. bathiei*, but can be easily distinguished by its long pedicels and the spine-like extrafloral nectaries on its petiole. It is the only representative of the group in southern Madagascar, while all other relatives occur in northern to eastern Madagascar (Manongarivo south to Toamasina).

PARATYPES. — *Randriamampionona* 565, Toliara, Réserve Intégrale 11, Andohahela, Parcelle 1, southwest of Eminiminy, Manatavona River, 24°40'S, 46°48'E, 200-700 m, 9-26 Aug. 1993 (P, TAN, MO); *Du Puy, Du Puy, Rafamantanantsoa, Dransfield, Cheek & Cooke MB* 527, off Route Nationale XI, Andohahela Parcelle 1, path over Col Antanataka to Iminiminy, 24°44'S, 46°47'E, c. 800 m a.s.l., 7 Dec. 1989 (P, TAN, MO).

***Impatiens elisettae* Eb. Fisch., nom. nov.**

*Impatiens longicalcarata* H. Perrier, *Mém. Acad. Sci. Paris, Sér. 2, 67, 2: 6* (1948), non *Impatiens longicalcarata* Tardieu, *Not. Syst.* 11: 184 (1944).

TYPUS. — *Humbert 18333*, haute vallée du Sambirano, massif de Tsaratanana, vers 2000 m, Nov.-Dec. 1937 (holo-, P).

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to Elisette RAHELIVOLOLONA.

As the epithet *longecalcarata* of an East Asian species can be confused with *longicalcarata*, a new name had to be chosen for the Madagascan taxon according to article 53.3 of the St. Louis Code. *Impatiens elisettae* is related to *I. lokohensis* H. Humbert, *I. manongarivensis* H. Perrier, *I. mayae-valeriae* Eb. Fisch. & Rahelivololona and *I. loki-schmidtiae* Eb. Fisch. & Rahelivololona.

An African taxon, *Impatiens longicalcarata* (G.M. Schulze & Wilczek) Grey-Wilson had been raised to specific level. Here, another nomen novum is required, and the species is named in honour of Christopher GREY-WILSON who provided the first modern revision of *Impatiens* in Africa.

***Impatiens grey-wilsonii* Eb. Fisch., nom. nov.**

*Impatiens longicalcarata* (G.M. Schulze & Wilczek) Grey-Wilson, *Kew Bull.* 33: 644 (1979).

*Impatiens congolensis* G.M. Schulze & Wilczek var. *longicalcarata* G.M. Schulze & Wilczek, *Bull. Jard. Bot. Brux.* 29: 188 (1959).

TYPUS. — *Michelson 706*, Congo-Kinshasa, Miki (holo-, BR).

***Impatiens delabathiana* Eb. Fisch. & Rahelivololona, nom. nov.**

*Impatiens trichocarpa* H. Perrier, *Arch. Bot., Caen 7, Mém.* 1: 52 (1934), non *Impatiens trichocarpa* Hook.f.,  *Ic. Pl.* t. 2914 (1910).

TYPUS. — *Perrier de La Bathie 5804*, 1700 m, massif de Manongarivo, May 1909 (holo-, P).

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to PERRIER DE LA BATHIE, the pioneer of research on Madagascan *Impatiens*.

As the epithet *trichocarpa* had been used yet for an Indian *Impatiens* species by HOOKER, a new name had to be chosen for the Madagascan taxon. *Impatiens delabathiana* is related to *Impatiens firmula* Baker, *I. marivorahensis* H. Humbert and *I. sambiranensis* H. Perrier.

**Subgenus TRIMORPHOPETALUM (Baker) Eb. Fisch.**

Lower sepal without spur.

**Impatiens stefaniae** Eb. Fisch. & Rahelivololona, **sp. nov.**

*Differt ab* *Impatiens biophytoides* et *I. justicioides* *forma foliorum* et *forma petalorum lateralium*.

TYPUS. — *Rahelivololona, Saola & Scenario 135*, Madagascar, Prov. Toamasina. Masoala Peninsula, Ambanizana-Ambohitsitondroina, sous bois sur humus, ? chemin Campement, 300 m, 18 Feb. 2002 (holo-, TAN; iso-, NEU).

Perennial herb with creeping rhizome, glabrous, tinted with red. Stem erect, 19-50 cm tall. Leaves alternate, entirely green, petiole 7-13 mm long, lamina lanceolate, 49-72 × 11-19, margin with 6-8 pairs of fimbriae. Inflorescence with solitary axillary flowers, pedicel 5-8 mm, curved at apex. Flower green to greenish, lower sepal whitish to yellowish. Lateral sepals 2, linear-lanceolate, 3-3.5 × 1 mm. Lower sepal ovate, acuminate at apex, *c.* 7 × 3 mm. Dorsal petal cucullate, 6-7 × 3 mm, with rounded spur-like apicule near base of crest. Lateral united petals 8 mm long, upper petal obtuse, 2-2.5 × 1-1.5 mm, lower petal 5 × 2 mm. Anthers 3 mm long. Ovary 3-4 mm long. Fruit unknown. — Fig. 8.

HABITAT. — Lowland to submontane rainforest.

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Dedicated to Stefanie BENDER (Wiesbaden).

*Impatiens stefaniae* is related to *I. biophytoides* H. Perrier and *I. justicioides* H. Perrier, but differs in shape of leaves and shape of lateral united petals.

**Impatiens oniveensis** Eb. Fisch. & Rahelivololona, **nom. nov.**

*Impatiens rubrolineata* H. Perrier, Arch. Bot., Caen 7, Mém. 1: 84 (1934), non *Impatiens rubrolineata* Hook.f., Kew Bull. 1910: 300 (1910).

TYPUS. — *Perrier de La Bâthie 17021*, aux environs du confluent du Mongoro et de l'Onivé, vers 700 m, Feb. 1925 (holo-, P).

DISTRIBUTION. — Madagascar, only known from the type locality.

ETYMOLOGY. — Named after the River Onivé.

As the epithet *rubrolineata* had been used yet for an Indian *Impatiens* species by HOOKER, a new name had to be chosen for the Madagascan taxon. *Impatiens oniveensis* is related to *I. parvigaleata* H. Perrier and *I. asperipetala* H. Perrier.

**Impatiens lemuriana** Eb. Fisch. & Rahelivololona, **nom. nov.**

*Impatiens gibbosa* H. Perrier, Arch. Bot., Caen 7, Mém. 1: 85 (1934), non *Impatiens gibbosa* Arn., Comp. Bot. Mag. 1: 321 (1836) (= *I. leptopoda* Arn.).

TYPUS. — *Perrier de La Bâthie 15383*, sur le Mt. Tsaratanana, vers 2000 m, Jan. 1923 (holo-, P).

DISTRIBUTION. — Madagascar, only known from Mt. Tsaratanana.

ETYMOLOGY. — Named after its "lemurian" distribution.

As the epithet *gibbosa* had been used yet for an endemic *Impatiens* species from Sri Lanka, which is now considered to be a synonym of the Sri Lankan endemic *I. leptopoda*, a new name had to be chosen for the Madagascan taxon. *Impatiens lemuriana* is related to *Impatiens decaryana* H. Perrier, *I. silviana* Eb. Fisch. & Rahelivololona, *I. andohabelae* Eb. Fisch. & Rahelivololona, *I. luisae-echterae* Eb. Fisch., Wohlhauser & Rahelivololona, *I. callmanderi* Eb. Fisch., Wohlhauser & Rahelivololona and *I. humbertii* H. Perrier.

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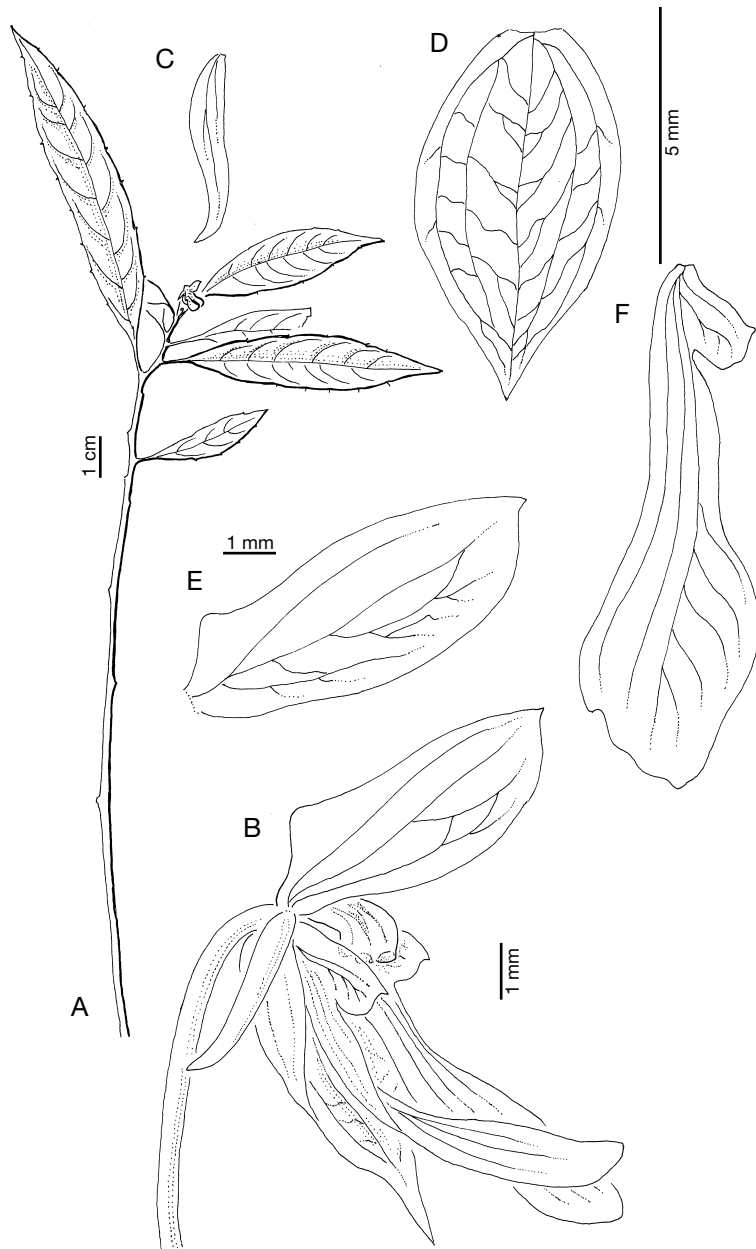


FIG. 8. — *Impatiens stefaniae* Eb. Fisch. & Rahelivololona; **A**, habit; **B**, flower; **C**, lateral sepal; **D**, lower sepal and spur; **E**, dorsal petal; **F**, lateral united petals. *Rahelivololona, Saola & Scenario 135* (TAN).

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