

New taxa of *Impatiens* (Balsaminaceae) from Madagascar. V. New species of *Impatiens* from Masoala Peninsula

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ABSTRACT

Nine new species of *Impatiens* from Masoala Peninsula are described and illustrated (*Impatiens scenarioi*, *I. ambanizanensis*, *I. salifii*, *I. nanatonaensis*, *I. tafononensis*, *I. nidus-apis*, *I. saolana*, *I. mamyi*, and *I. volatianae*). *Impatiens scenarioi* belongs to subgenus *Impatiens* and is related to *I. wohlhauseri* and *I. kuepferi*, while the remaining species belong to subgenus *Trimorphopetalum*. *Impatiens ambanizanensis* is related to *I. salifii*, *I. nanatonaensis* to *I. tafononensis*, *I. nidus-apis* to *I. celligera*, *I. saolana* to *I. luteoviridis*, *I. mamyi* to *I. stefaniae* and *I. volatianae* to *I. oniveensis*.

RÉSUMÉ

Nouveaux taxons dans le genre *Impatiens* (Balsaminaceae) à Madagascar V. Espèces nouvelles d'*Impatiens* de la péninsule de Masoala.

Neuf espèces nouvelles du genre *Impatiens* de la péninsule de Masoala sont décrites et illustrées (*Impatiens scenarioi*, *I. ambanizanensis*, *I. salifii*, *I. nanatonaensis*, *I. tafononensis*, *I. nidus-apis*, *I. saolana*, *I. mamyi*, et *I. volatianae*). *Impatiens scenarioi* est membre du sous-genre *Impatiens* et relié à *I. wohlhauseri* et *I. kuepferi*. Les autres espèces sont membres du sous-genre *Trimorphopetalum*, et *Impatiens ambanizanensis* est proche d'*I. salifii*, *I. nanatonaensis* d'*I. tafononensis*, *I. nidus-apis* d'*I. celligera*, *I. saolana* d'*I. luteoviridis*, *I. mamyi* d'*I. stefaniae* et *I. volatianae* d'*I. oniveensis*.

KEY WORDS

Balsaminaceae,
Impatiens,
subgenus *Impatiens*,
subgenus
Trimorphopetalum,
Masoala,
Madagascar,
espèces nouvelles.

MOTS CLÉS

Balsaminaceae,
Impatiens,
sous-genre *Impatiens*,
sous-genre
Trimorphopetalum,
Masoala,
Madagascar,
new species.

INTRODUCTION

The most important centre of diversity for *Impatiens* L. in Madagascar is situated in the Masoala Peninsula where about 50% of all species have been recorded. The present paper contains descriptions of new taxa collected and studied by the second author within a project between the Laboratoire de Phanérogamie, University of Neuchâtel, under the direction of Philippe Kuepfer, the University of Koblenz-Landau and the Parc botanique et zoologique de Tsimbazaza/Antananarivo.

For a short history of the exploration of *Impatiens* in Madagascar as well as details on terminology and measurements, see Fischer & Rahelivololona (2002).

SYSTEMATICS

Genus *Impatiens* L.

Subgenus *Impatiens* L.

DIAGNOSTIC CHARACTERS

Lower sepal with spur, petiole usually with extrafloral nectaries (fimbriae).

Impatiens scenarioii

Eb.Fisch. & Raheliv., sp. nov.

(Fig. 1)

Impatiens wohlhauseri affinis sed forma foliorum et 2 sepalis lateralibus valde differt. Ab *I. kuepferi* differt pedunculo deficiente et 2 sepalis lateralibus.

TYPUS. — **Madagascar.** Masoala, Ambanizana, sous-bois un peu plus haut vers le campement, c. 350-400 m, 18.II.2002, *Rahelivololona, Saola & Scenario* 136 (holo-, TAN).

DESCRIPTION

Perennial herb, erect, glabrous. Stem semi-succulent, 25-50 cm tall. Leaves alternate, petiole 10-15 mm long, with 1 or 2 pairs of linear, 2 mm long extrafloral nectaries, lamina oblong-lanceolate, with a distinctly acuminate

apex, attenuate at base, widest at upper third, 65-110 × 23-31 mm, margin with 7 or 8 pairs of teeth, each with a gland-tipped appendage. Inflorescence axillary, with up to 20 flowers, peduncle short, up to 5-20 mm long. Bracts 3-5 × 0.8 mm. Pedicel 12-14 mm long. Flowers with yellow brown dorsal petal, lower sepal with red brown veins, spur with red apex. Lateral sepals 2, broadly ovate, acuminate, 4-5 × 2-2.5 mm. Lower sepal navicular, 10-11 × 5-6 mm, acuminate at base, spur bottle-shaped, constricted below apex, 4-4.5 mm long, 2 mm large at base and 1 mm at apex, obtuse. Dorsal petal cucullate, 7-8 × 5 mm. Lateral united petals 2, 12-13 mm long, upper petal narrow, acuminate, 4 × 1.5 mm, lower petal rounded, 5 × 3 mm. Anthers 2-3 mm long. Ovary 3-4 mm long. Fruit unknown.

REMARKS

Impatiens scenarioii is related to *I. wohlhauseri* Eb.Fisch. & Raheliv. and *I. kuepferi* Eb.Fisch. & Raheliv., both also restricted to the Masoala Peninsula, but lacks a second pair of lateral sepals. It differs, however, from *I. kuepferi* in the presence of a peduncle and the shorter lateral united petals (12-13 mm in *I. scenarioii*, 18 mm in *I. kuepferi*), and from *I. wohlhauseri* in the shape of the leaves (65-110 × 23-31 mm in *I. scenarioii*, 120-190 × 3-53 mm in *I. wohlhauseri*).

HABITAT

Submontane rainforest, 350-400 m.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

ETYMOLOGY

Named after the collector Scenario.

Subgenus *Trimorphopetalum* (Baker) Eb.Fisch.

DIAGNOSTIC CHARACTERS

Lower sepal without spur, extrafloral nectaries on petiole lacking.

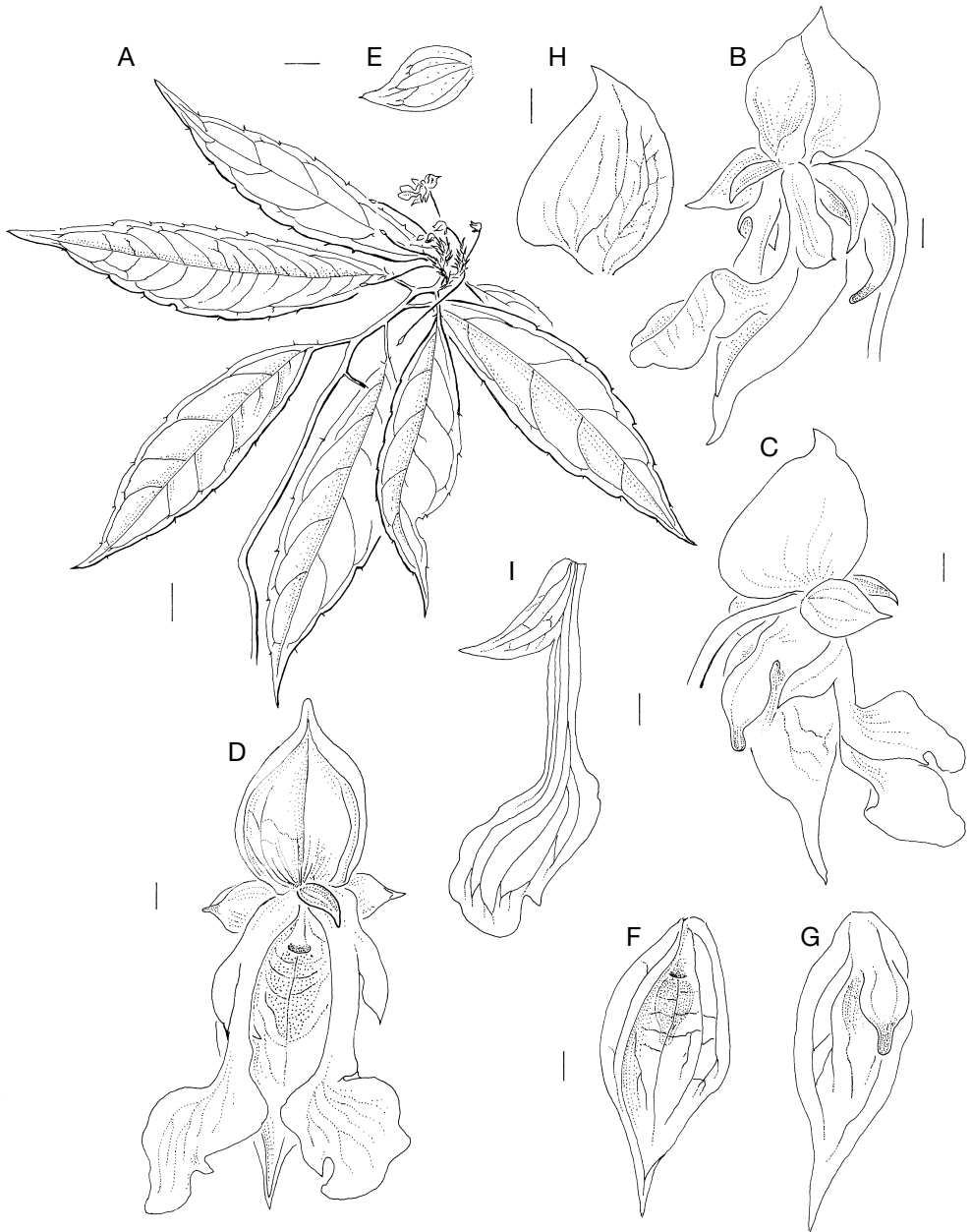


FIG. 1. — *Impatiens scenarioi* Eb.Fisch. & Raheliv.: **A**, habit; **B**, **C**, flower, lateral view; **D**, flower, frontal view; **E**, lateral sepal; **F**, **G**, lower sepal and spur; **H**, dorsal petal; **I**, lateral united petals. *Rahelivololona*, Saola & Scenario 136 (TAN). Scale bars: A, 1 cm; B-I, 1 mm.

Impatiens ambanizanensis
Eb.Fisch. & Raheliv., sp. nov.
(Fig. 2)

Impatiens salifii affinis sed ornamento sepalii inferioris
et petalibus lateralibus cum petalo superiore indistincte
breviore quam petalo inferiore differt.

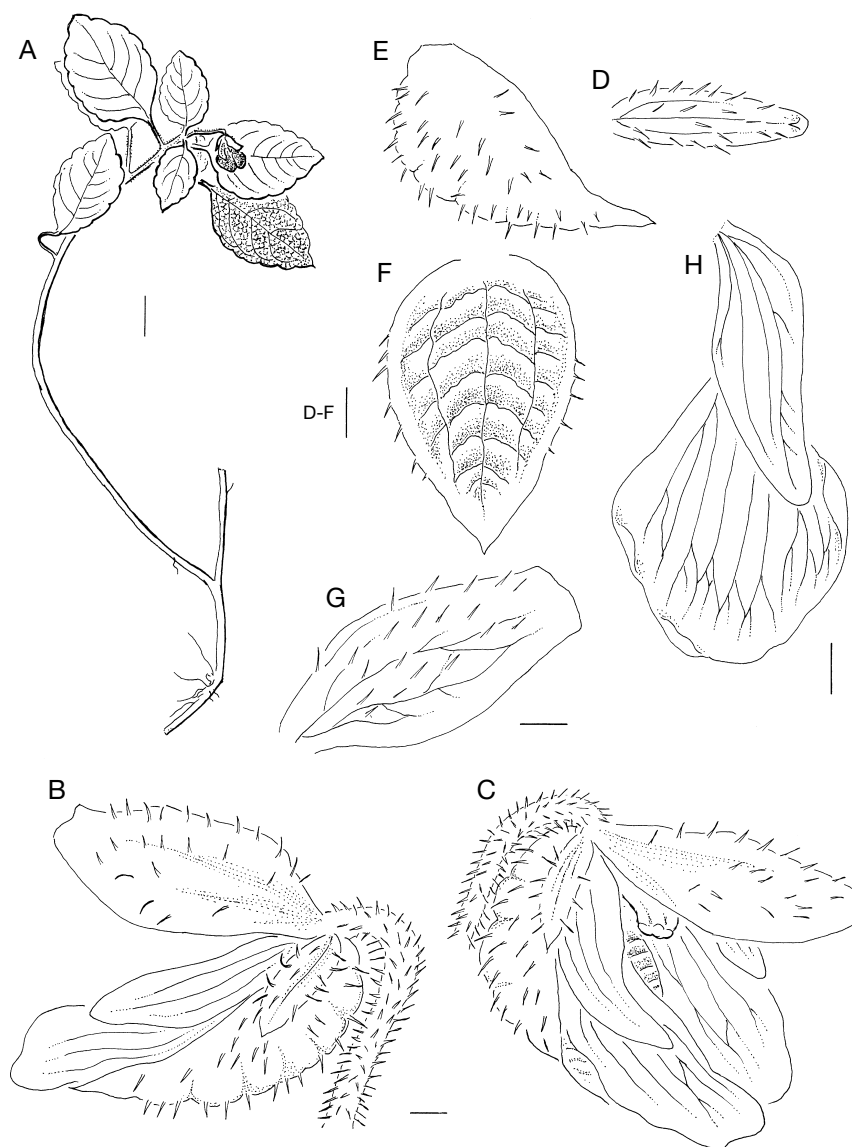


FIG. 2. — *Impatiens ambanizanensis* Eb.Fisch. & Raheliv.: **A**, habit; **B**, **C**, flower; **D**, lateral sepal; **E**, **F**, lower sepal; **G**, dorsal petal; **H**, lateral united petals. *Rahelivololona, Saola & Scenario 145* (TAN). Scale bars: A, 1 cm; B-H, 1 mm.

TYPUS. — **Madagascar.** Masoala, Ambanizana-Ambohitsitondroina, au pied d'Ambohitsitondroina vers 900 m, 19.II.2002, *Rahelivololona, Saola & Scenario 145* (holo-, TAN).

DESCRIPTION

Perennial herb, with creeping rhizome entirely pubescent. Stem ascending to erect, up to 10-12 cm

tall. Leaves alternate, greenish with darker reddish veins, petiole 9-13 mm long, lamina ovate, 23-30 × 12-20 mm, margin crenate, with 4 or 5 pairs of teeth with a short gland-tipped appendage. Inflorescence with solitary axillary flowers. Pedicel up to 5-6 mm long, curved at apex, pubescent. Flower with greenish lateral sepals, petals entirely maroon. Lateral sepals

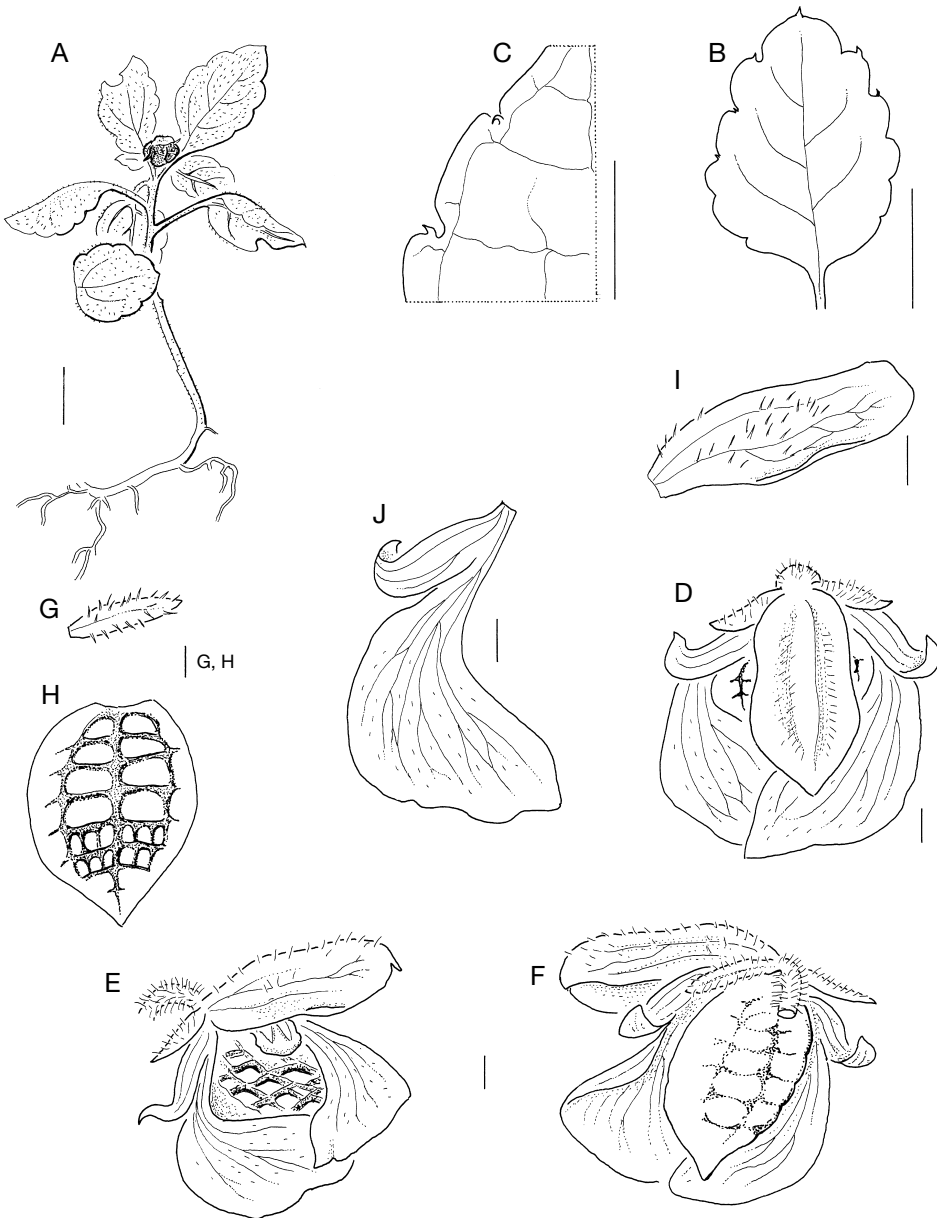


FIG. 3. — *Impatiens salifii* Eb.Fisch. & Raheliv.: **A**, habit; **B**, leaf; **C**, detail of leaf margin; **D-F**, flower; **G**, lateral sepal; **H**, lower sepal; **I**, dorsal petal; **J**, lateral united petals. *Rahelivololona, Saola & Scenario 141* (TAN). Scale bars: A, B, 1 cm; C, 5 mm; D-J, 1 mm.

lanceolate, pilose outside, 2-3 × 1 mm. Lower sepal navicular, broadly ovate, pilose outside, inside with distinct ornamentation, producing broad rib-like crests on the secondary nerves, 5-6 × 5 mm. Dorsal

petal cucullate, pilose outside, 8 × 3.5 mm. Lateral united petals glabrous, 10 mm long, upper petal 5-6 × 1-1.5 mm, lower petal 7 × 4-4.5 mm. Anthers 3 mm long. Ovary 3 mm long. Fruit unknown.

REMARKS

Impatiens ambanizanensis is related to *I. salifii* Eb.Fisch. & Raheliv. from Masoala Peninsula, but differs in the ornamentation of the lower sepal producing broad rib-like crests on the secondary nerves (lower sepal with central ridge and 7 or 8 rib-like crests surrounding *c.* 7 holes on each side in *I. salifii*) and the lateral united petals with upper petal only slightly shorter than lower petal (upper petal distinctly shorter in *I. salifii*).

HABITAT

Montane rainforest at 900 m.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

Impatiens salifii

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 3)

Impatiens ambanizanensis affinis sed ornamento sepal inferioris et petalibus lateralibus cum petalo superiore distincte brevior quam petalo inferiore differt.

TYPUS. — **Madagascar.** Masoala, Ambanizana-Ambohitsitondroina, poussant sur rocher le long d'un ruisseau venant du sommet vers 750-800 m, 19.II.2002, *Rahelivololona, Saola & Scenario 141* (holo-, TAN).

DESCRIPTION

Perennial herbs, ascending with creeping rhizome hairy throughout. Stems 5-7 cm long. Leaves alternate, petiole not exceeding 15 mm in length, lamina ovate, 20-30 × 15-18 mm, dark green above, light green with purplish venation below, margin crenate with 5 pairs of filiform fimbriae. Inflorescence with solitary axillary flowers. Pedicels not exceeding 6-13 mm of length. Flowers greenish with dark purple venation. Lateral sepals lanceolate, acuminate, 2 × 1 mm, hairy. Lower sepal broadly ovate, 7 × 5 mm, with central ridge and 7 or 8 rib-like crests, glabrous, surrounding *c.* 7 holes on each side, glabrous. Dorsal petal helmet-like, with dorsal ridge, 6 × 2.5 mm, hairy outside. Lateral united petals 8-9 mm long, slightly hairy, upper petal acuminate,

3 × 1.5-2 mm, curved backwards, lower petal 6 × 3-4 mm, obtuse to subacute. Anthers *c.* 1 mm long. Ovary 3 mm long. Fruit not known.

REMARKS

Impatiens salifii is related to *I. ambanizanensis* Eb.Fisch. & Raheliv. from Masoala Peninsula, but differs in the ornamentation of the lower sepal with central ridge and 7 or 8 rib-like crests surrounding *c.* 7 holes on each side (lower sepal producing broad rib-like crests on the secondary nerves in *I. ambanizanensis*) and the lateral united petals with upper petal distinctly shorter than lower petal (only slightly shorter in *I. ambanizanensis*).

HABITAT

Rocks along stream in montane rainforest at 750-800 m.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

ETYMOLOGY

Named after Salifi, who supported the second author.

Impatiens nanatonanensis

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 4)

Impatiens tafononensis affinis sed petalo superiore acuminato et tuberculis petali inferioris valde differt.

TYPUS. — **Madagascar.** Masoala, forêt de Nanatonana, on rocks in Tafonona river, 15.IX.2003, *Rahelivololona, Triponez, Arnold & Mamy Tfa 2b* (holo-, TAN).

DESCRIPTION

Perennial herbs, ascending to erect, with creeping rhizome rooting at the nodes, with whitish hairs throughout. Stems branched, up to 7-15 cm long. Leaves purple to darker red, petiole 5-20 mm long, lamina ovate, attenuate at base, broadly obtuse at apex, 50-60 × 17-20 mm, margin dentate, with 6 or 7 pairs of teeth with a short gland-tipped appendage. Inflorescence with 1 or 2 axillary flowers

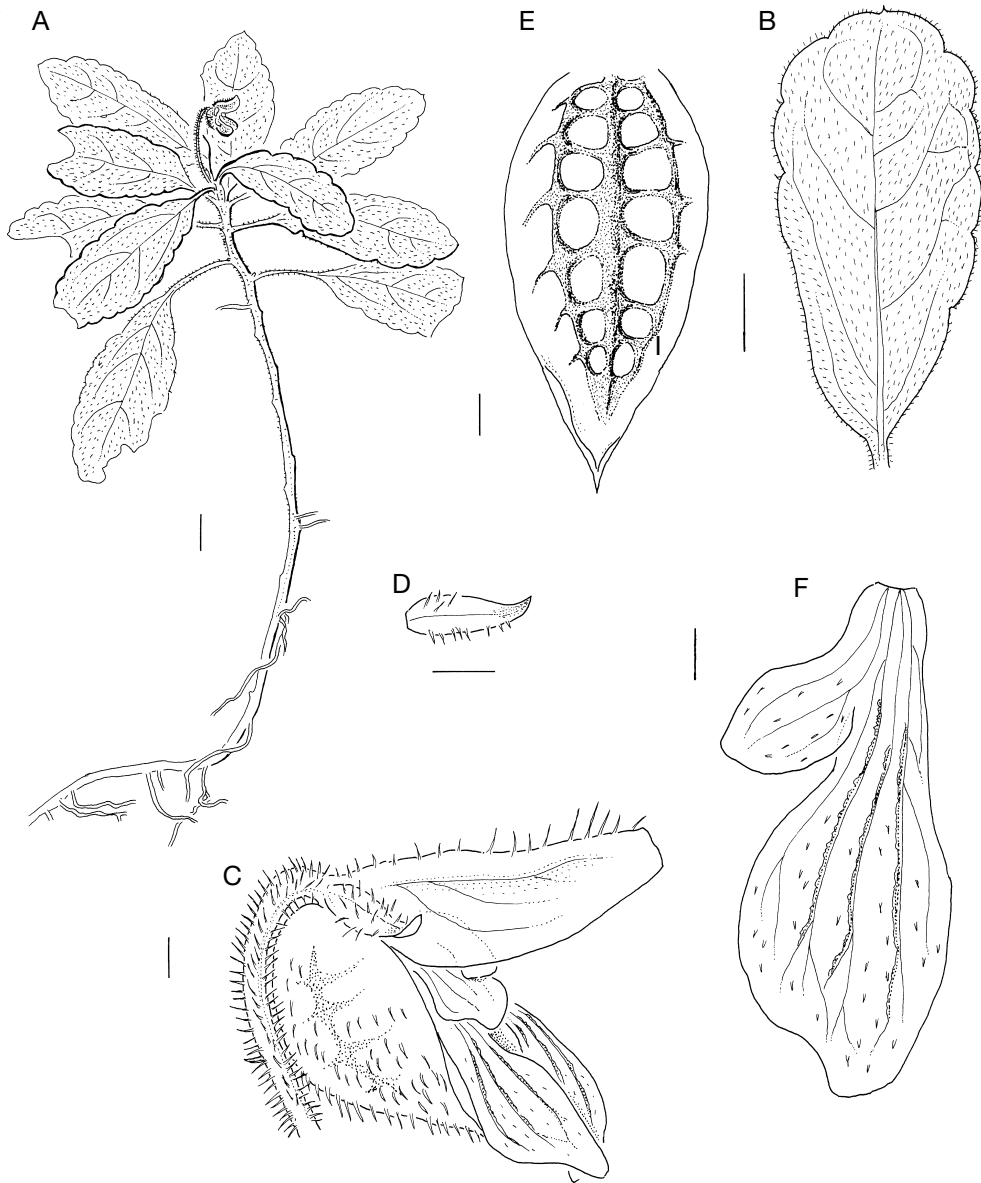


FIG. 4. — *Impatiens nanatonanensis* Eb.Fisch. & Raheliv.: **A**, habit; **B**, leaf; **C**, flower; **D**, lateral sepal; **E**, lower sepal; **F**, lateral united petals. *Rahelivololona, Triponez, Arnold & Mamy Tfa 2b* (TAN). Scale bars: A, B, 1 cm; C-F, 1 mm.

per leaf. Bracts densely hairy, linear-filiform, up to 0.5 mm long. Pedicels up to 17 mm long. Flowers whitish-yellowish with rose to purple venation. Lateral sepals linear-lanceolate, acute at apex, hairy, 2-2.5 × 1 mm. Lower sepal ovate, acuminate, hairy

on lower surface, glabrous on upper surface, with dark purple “bee-nest”-like prominent crest and 6 or 7 pairs of rib-like ridges with 7 holes in between, 10-11 × 4 mm. Dorsal petal helmet-like, hairy 9 × 3 mm. Lateral united petals 9-10 mm long,

only with sparse whitish hairs, upper petal acuminate, 4-5 × 2 mm, lower petal 7 × 4 mm, obtuse, with tubercle-like ridges along the veins. Anthers 2-3 mm long. Ovary 3-4 mm long, densely hairy. Fruit not known.

REMARKS

Impatiens nanatonanensis is related to *I. tafononensis* Eb.Fisch. & Raheliv. from Masoala Peninsula, but differs in the flower colour (yellowish with rose to purple veins in *I. nanatonanensis*, whitish-transparent with purple veins in *I. tafononensis*), the acuminate upper petal 4-5 × 2 mm, and the obtuse lower petal 7 × 4 mm, with tubercle-like ridges along the veins (upper petal broadly obtuse, 5.5-6 × 3 mm, and lower petal obtuse, 7 × 5 mm, smooth in *I. tafononensis*).

HABITAT

Montane rainforest.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

Impatiens tafononensis

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 5)

Impatiens nanatonanensis affinis sed petalo superiore obtuso majore et tuberculis petali inferioris deficientibus valde differt.

TYPUS. — **Madagascar.** Masoala, forêt de Nanatonana, on rocks in Tafonona river, 18.IX.2003, *Rahelivololona, Triponez, Arnold & Mamy Tfa* 6 (holo-, TAN).

DESCRIPTION

Perennial herb, ascending to erect with creeping rhizome, rooting at the nodes, whitish-hairy throughout. Stems up to 20(-30) cm long, branched. Leaves dark greenish, with whitish hairs, petiole 7-14 mm long, lamina ovate, attenuate at base, broadly obtuse at apex, 60-65 × 19-22 mm, margin dentate, with 9 or 10 pairs of teeth with a short gland-tipped appendage. Inflorescence with solitary axillary flowers. Pedicels up to 16 mm long. Flowers with dorsal

petal whitish-transparent with purple veins, lower sepal and lateral united petals yellowish with dark purple veins. Lateral sepals linear-lanceolate, 3.5 × 1 mm, acute at apex, with whitish hairs. Lower sepal ovate, acute at apex, hairy on lower surface, glabrous on upper surface, with “bee-nest”-like prominent crest and 7 pairs of rib-like ridges with 7 or 8 holes in between, 9 × 4-5 mm. Dorsal petal helmet-like, with whitish hairs, short apicule at apex of dorsal crest, 8 × 5 mm. Lateral united petals 10 mm long, subglabrous and only with sparse whitish hairs, upper petal broadly obtuse, 5.5-6 × 3 mm, lower petal obtuse, 7 × 5 mm. Anthers 1-2 mm long. Ovary 2-3 mm long, hairy. Fruit not known.

REMARKS

Impatiens tafononensis is related to *I. nanatonanensis* from Masoala Peninsula, but differs in the flower colour (whitish-transparent with purple veins in *I. tafononensis*, yellowish with rose to purple veins in *I. nanatonanensis*), in the broadly obtuse upper petal, 5.5-6 × 3 mm, and the obtuse and smooth lower petal, 7 × 5 mm (upper petal acuminate, 4-5 × 2 mm, and obtuse lower petal 7 × 4 mm, with tubercle-like ridges along the veins in *I. nanatonanensis*).

HABITAT

Montane rainforest.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

Impatiens nidus-apis

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 6)

Impatiens celligerae affinis sed ornameto sepali inferioris forma *nidus apis* valde differt.

TYPUS. — **Madagascar.** Masoala, Ambanizana-Ambohitsitondroina, poussant sur rocher le long d'un ruisseau venant du sommet vers 750-800 m, 19.II.2002, *Rahelivololona, Saola & Scenarion* 143 (holo-, TAN).

DESCRIPTION

Perennial herb, entirely pubescent. Stem erect, up to 18-20 cm tall, green and succulent. Leaves

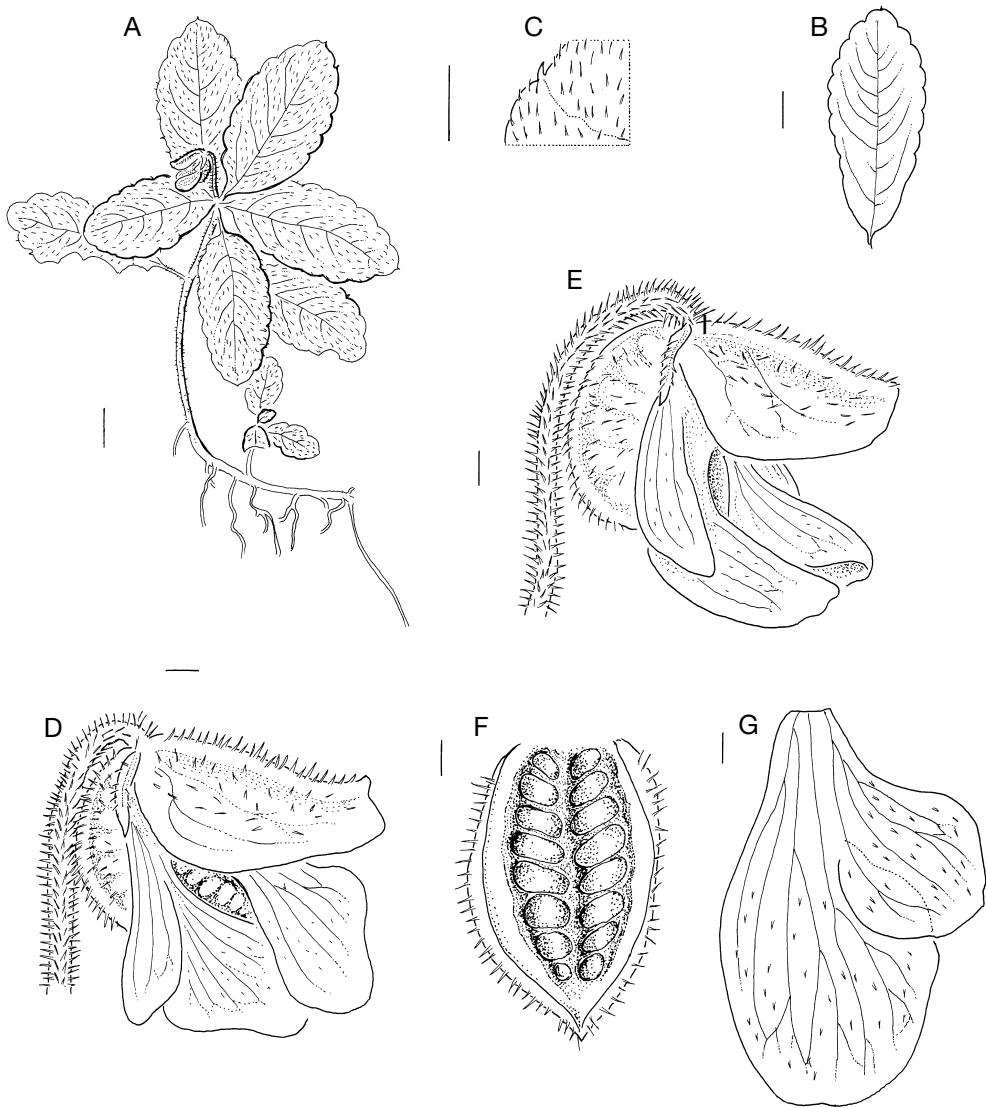


FIG. 5. — *Impatiens tafanonensis* Eb.Fisch. & Raheliv.: **A**, habit; **B**, leaf; **C**, detail of leaf margin; **D**, **E**, flower; **F**, lower sepal; **G**, lateral united petals. *Rahelivololona*, Triponez, Arnold & Mamy Tfa 6 (TAN). Scale bars: A, B, 1 cm; C, 5 mm; D-G, 1 mm.

alternate, petiole reddish, 14-25 mm long, lamina ovate-lanceolate, acuminate at apex, green on upper surface and reddish on lower surface, 55-61 × 22-24 mm, margin with 6-8 pairs of filiform gland-tipped appendages. Inflorescence with solitary axillary flowers. Pedicel up to 13 mm long, curved at apex, pubescent. Flower with lower sepal yellow and maroon veins and apex, dorsal petal greenish

outside and maroon inside, lateral petals entirely maroon. Lateral sepals 2, linear-lanceolate, 6 × 1.5-2 mm, sparsely pilose. Lower sepal navicular, outside with whitish hairs, inside with distinct reticular ornamentation, 12 × 8-9 mm. Dorsal petal cucullate, outside with whitish hairs, apiculate, 9 × 4-5 mm. Lateral united petals densely covered with papillae on the veins, 14-15 mm long, upper petal

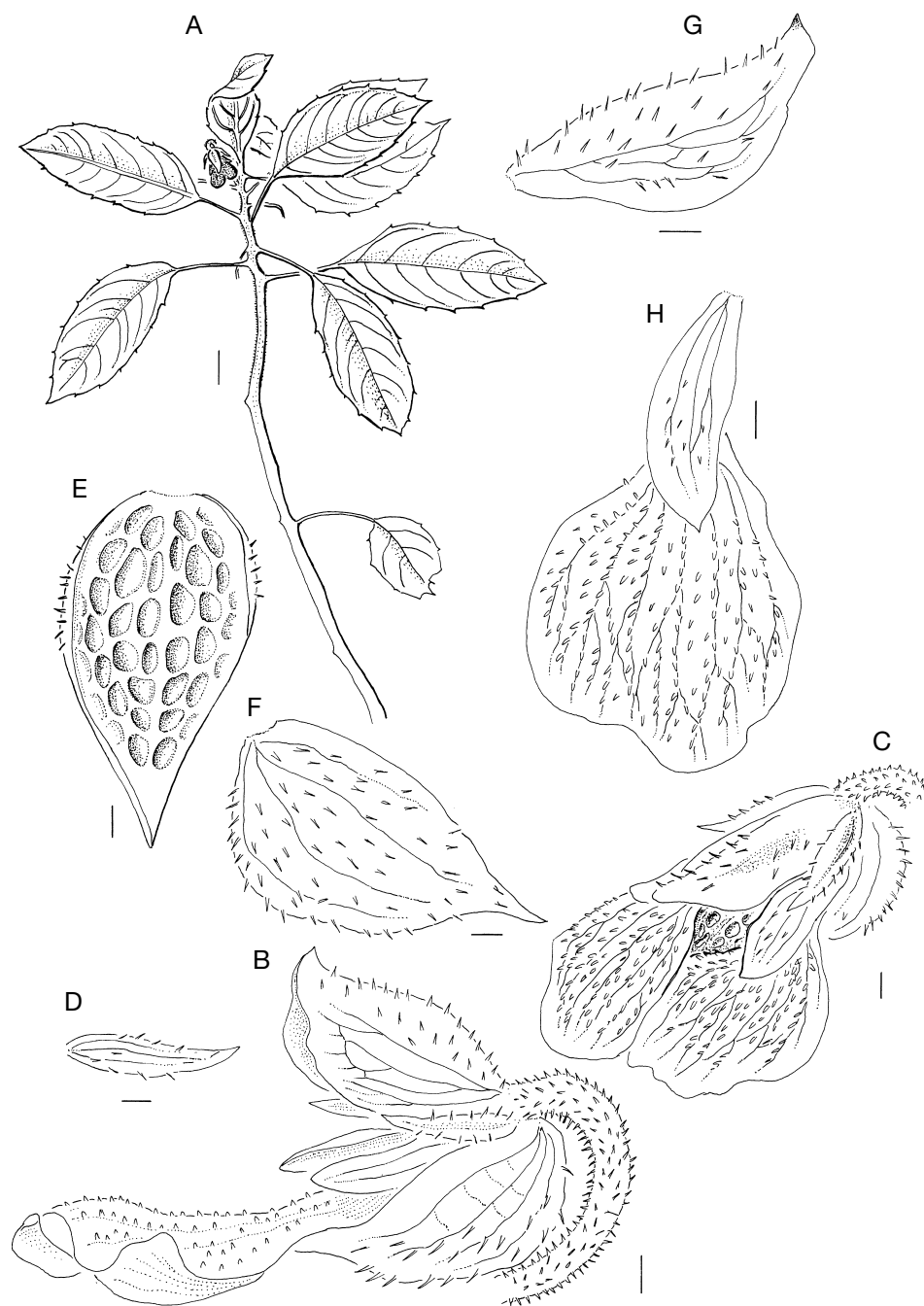


FIG. 6. — *Impatiens nidus-apis* Eb.Fisch. & Raheliv.: **A**, habit; **B**, **C**, flower; **D**, lateral sepal; **E**, **F**, lower sepal; **G**, dorsal petal; **H**, lateral united petals. *Rahelivololona*, *Saola & Scenario* 143 (TAN). Scale bars: A, 1 cm; B-H, 1 mm.

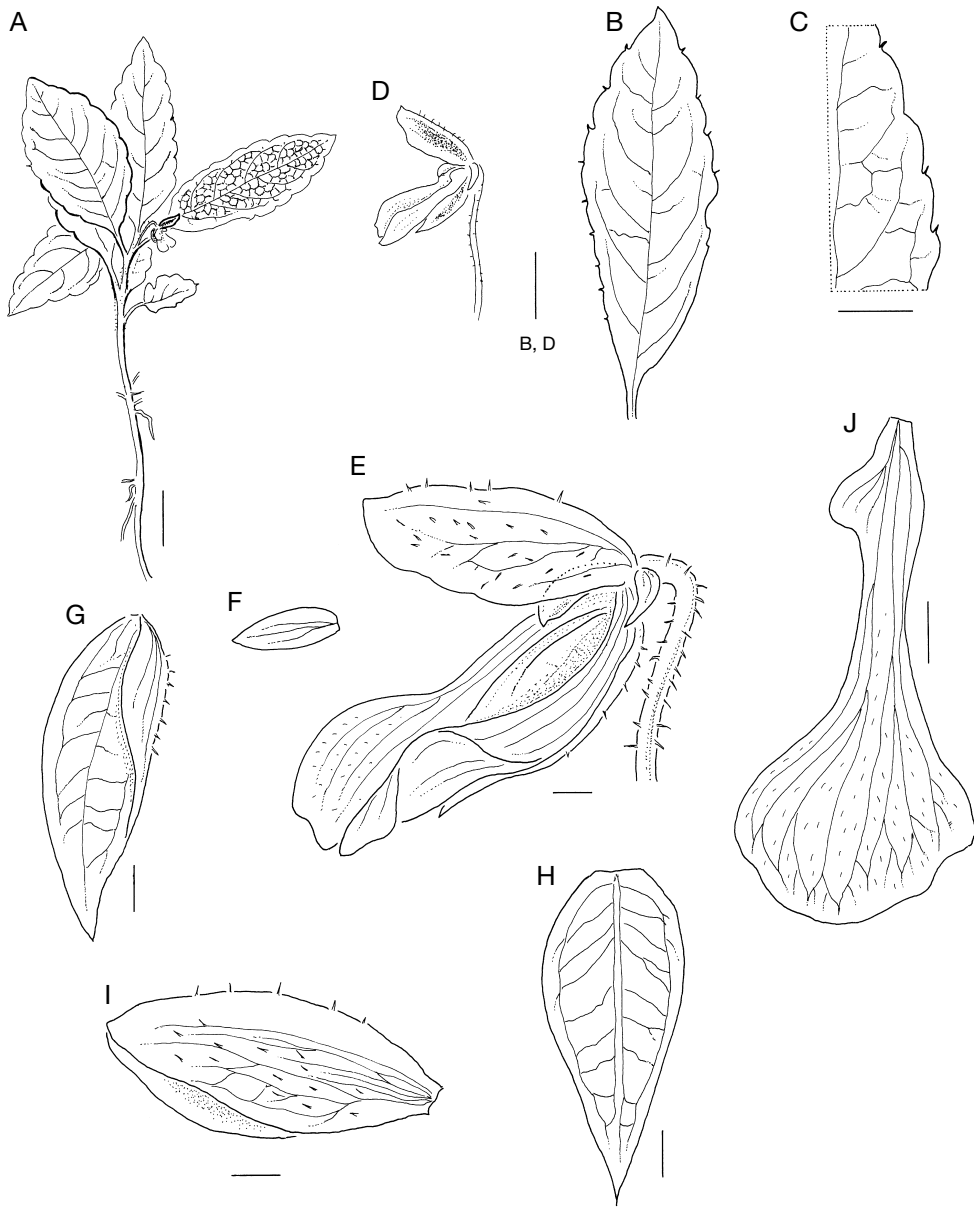


FIG. 7. — *Impatiens saolana* Eb.Fisch. & Raheliv.: **A**, habit; **B**, leaf; **C**, detail of leaf margin; **D**, **E**, flower; **F**, lateral sepal; **G**, **H**, lower sepal; **I**, dorsal petal; **J**, lateral united petals. *Rahelivololona*, *Saola & Scenario 134* (TAN). Scale bars: A, B, D, 1 cm; C, 5 mm; E-J, 1 mm.

acuminate, 7×3 mm, lower petal broadly obtuse, $8-9 \times 7$ mm. Anthers 3-4 mm long. Ovary 4 mm long, pubescent. Fruit unknown.

REMARKS

Impatiens nidus-apis resembles *I. celligera* H.Perrier from the Masoala Peninsula but differs in the smaller

leaves (55-61 × 22-24 mm in *I. nidus-apis*, 83-105 × 22-23 mm in *I. celligera*), the flower colour (yellow with maroon veins in *I. nidus-apis*, reddish in *I. celligera*), the shorter lateral sepals (6 × 1.5-2 mm in *I. nidus-apis*, 8 × 1.8 mm in *I. celligera*), and the shorter lateral united petals (14-15 mm in *I. nidus-apis*, 17 mm in *I. celligera*). *Impatiens nidus-apis* has a unique “bee-nest”-like ornamentation on its lower sepal.

HABITAT

Montane rainforest at 750-800 m.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

Impatiens saolana

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 7)

Impatiens luteoviridis affinis sed sepalis inferiore sine ullo ornamento vel colore differt.

TYPUS. — **Madagascar.** Masoala, Ambanizana-Ambohitsitondroina, sur rocher et mousse le long d'une rivière descendant vers riv. Ambanizana, 200 m, 18.II.2002, *Rahelivololona, Saola & Scenário 134* (holo-, TAN).

DESCRIPTION

Perennial erect herb, with creeping rhizome, with pubescent stem, petiole and pedicels. Stem erect, up to 5-10 cm tall. Leaves alternate, petiole 3-8 mm long, lamina ovate-lanceolate, 30-40 × 12-19 mm, margin broadly crenate, with 8-10 pairs of teeth with a short gland-tipped appendage. Inflorescence with single axillary flowers. Pedicel 4-6 mm long, curved at apex. Flower greenish with dark red veins. Lateral sepals 2, pubescent, lanceolate, 2 × 1 mm. Lower sepal ovate-lanceolate, acuminate at apex, pubescent outside, 7 × 3 mm. Dorsal petal cucullate, pubescent, 7 × 3 mm. Lateral united petals with pubescent lower petal, 8 mm long, upper petal 1-2 × 1 mm, obtuse, lower petal 5 × 4 mm. Anthers 3 mm long. Ovary 3 mm long. Fruit unknown.

REMARKS

Impatiens saolana is related to *I. luteoviridis* H.Perrier from Analamaitso, but differs immediately in smaller leaves (30-40 × 12-19 mm in *I. saolana*, 40-100 × 17-40 mm in *I. luteoviridis*), the shorter lateral sepals (2 × 1 mm in *I. saolana*, 6 × 0.7 mm in *I. luteoviridis*), the lower sepal without any ornamentation or colour, and the shorter lateral united petals (8 mm in *I. saolana*, 10-11 mm in *I. luteoviridis*).

HABITAT

Lowland rainforest at 200 m.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

ETYMOLOGY

Named after the collector Saola.

Impatiens mamyi

Eb.Fisch. & Raheliv., sp. nov.
(Fig. 8)

Impatiens stefaniae affinis sed petalo superiore acuminato et sepalis inferiore ovato differt.

TYPUS. — **Madagascar.** Masoala, forêt de Nanatonana, on rocks in Tafonona river or occasionally epiphytic, 15.IX.2003, *Rahelivololona, Triponez, Arnold & Mamyi Tfa 5* (holo-, TAN).

DESCRIPTION

Perennial herb, erect with creeping rhizome, glabrous throughout except for small whitish scales on leaves and flower. Stems up to 30(-50) cm long. Leaves dark green on upper surface and whitish on lower surface, petiole not exceeding 7-10 mm, lamina lanceolate, acute at base and apex, net of tertiary veins nearly invisible, 60-90 × 8-15 mm, margin dentate with 7 or 8 pairs of teeth with a short gland-tipped appendage. Inflorescence with solitary axillary flowers. Bracts linear, 1 mm long. Pedicels up to 12-17 mm long. Flowers with greenish lateral sepals, whitish lower sepal and dorsal petal with purple veins, and pale yellow lateral united petals with purple veins. Lateral sepals linear-lanceolate,

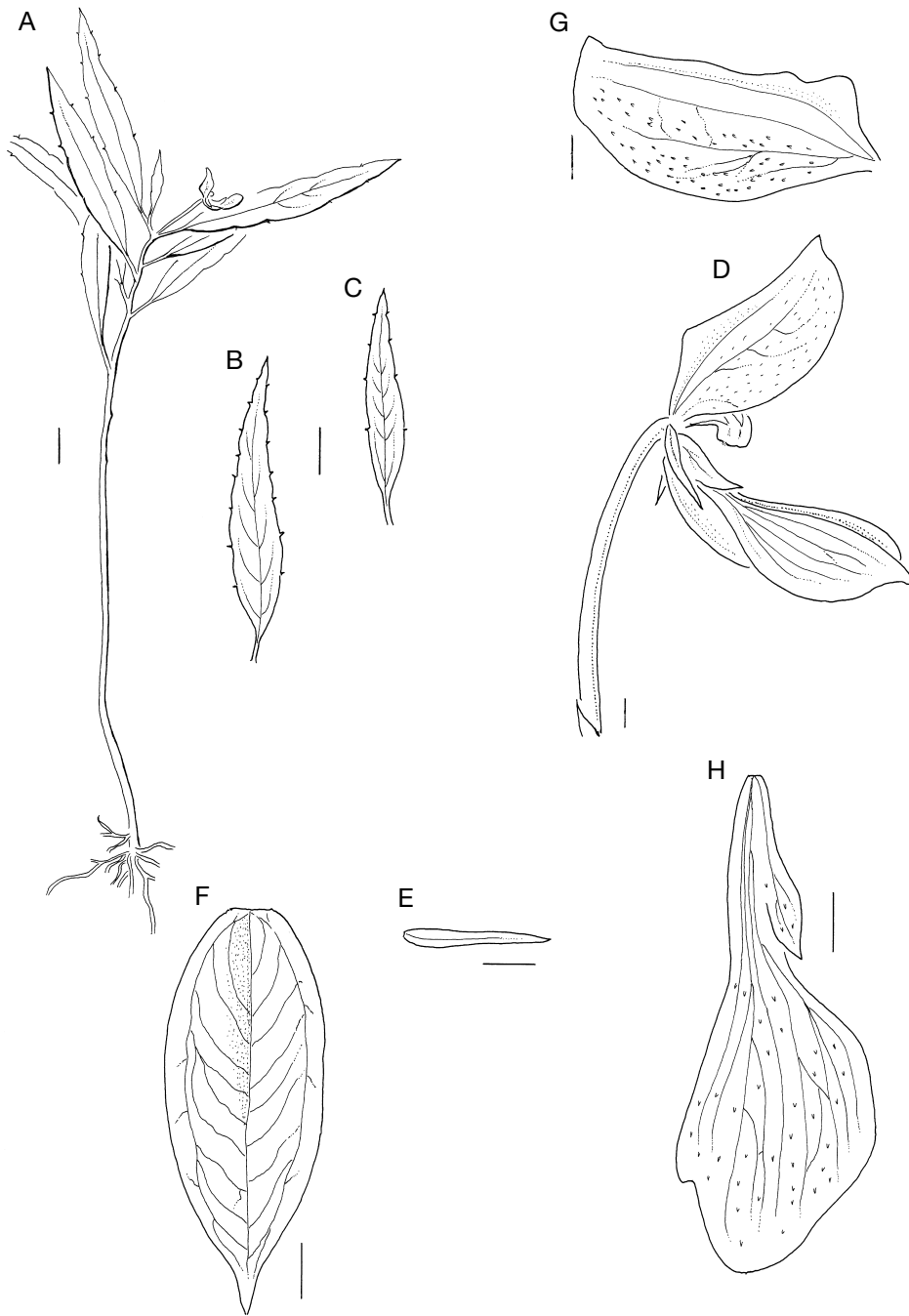


FIG. 8. — *Impatiens mamyi* Eb.Fisch. & Raheliv.: **A**, habit; **B**, **C**, leaves; **D**, flower; **E**, lateral sepal; **F**, lower sepal; **G**, dorsal petal; **H**, lateral united petals. *Rahelivololona*, Triponez, Arnold & Mamy Tfa 5 (TAN). Scale bars: A-C, 1 cm; D-H, 1 mm.

2.5-3 × 0.8 mm. Lower sepal lanceolate-ovate, with distinct acumens, with dark red centre, 7-8 × 3-3.5 mm. Dorsal petal helmet-like, dorsal crest with 0.5 mm long spur at apex and dilated to a triangle at lower third, 8 × 3.2-4 mm. Lateral united petals 10-11 mm long, upper petal acute, 4 × 0.5-1 mm, free part 0.5 × 0.5 mm, lower petal obtuse, 7-8 × 3.5 mm. Anthers 3 mm long. Ovary 3-4 mm long. Fruit glabrous, 12 × 4 mm.

REMARKS

Impatiens mamyi is related to *I. stefaniae* Eb. Fisch. & Raheliv. from Masoala Peninsula, but differs in flower colour (yellowish with purple veins in *I. mamyi*, greenish in *I. stefaniae*), the longer lateral united petals (10-11 mm in *I. mamyi*, 8 mm in *I. stefaniae*), the acuminate upper petal (rounded obtuse in *I. stefaniae*) and the broadly ovate lower sepal (lanceolate-ovate in *I. stefaniae*).

HABITAT

Montane rainforest.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

ETYMOLOGY

Named after the collector Mamy.

Impatiens volatiana

Eb. Fisch. & Raheliv., sp. nov.
(Fig. 9)

Impatiens oniveensis affinis sed foliis late-ovatis et petalo inferiore ovato-lanceolato differt.

TYPUS. — **Madagascar.** Masoala, forêt de Nanatonana, on rocks in Tafonona river, 15.IX.2003, *Rahelivololona, Triponez, Arnold & Mamy Tfa* 4 (holo-, TAN).

DESCRIPTION

Perennial herbs, ascending to erect with creeping rhizome, rooting at the nodes, glabrous except for small whitish scales throughout. Stems up to 30 cm long. Leaves alternate, dark green or purple, petiole up to 10 mm long, lamina oblong-rounded, shortly

attenuate at base and apex, net of tertiary veins hardly visible, 45-60 × 22-40 mm, margin dentate, with 5 pairs of teeth with a short gland-tipped appendage. Inflorescence with 1 or 2 axillary flowers per leaf. Bracts linear, up to 1 mm long. Pedicels up to 15-20 mm long. Flowers pale yellow with dark purple veins. Lateral sepals linear, 3 × 1.2 mm. Lower sepal with a net of non-prominent darker veins, 7-8 × 3-4 mm. Dorsal petal helmet-like, dorsal crest with 1 mm long spur at apex, dilated to a slight triangle below middle, 9-10 × 4 mm. Lateral united petals 11 mm long, upper petal with obtuse to emarginated apex, 3-4 × 1 mm, lower petal obtuse, ovate-lanceolate, 7 × 4 mm. Anthers 2 mm long. Ovary 2.5 mm long. Fruit with white scales, 11 × 5 mm.

REMARKS

Impatiens volatiana is related to *I. oniveensis* Eb. Fisch. & Raheliv. from the Onive Basin, but differs in the broadly ovate leaves and the smaller ovate-lanceolate lower petal (7-8 × 3-4 mm in *I. volatiana*, lower petal broad and rounded, 12 × 4-5 mm in *I. oniveensis*), the smaller dorsal sepal (9-10 × 4 mm in *I. volatiana*, 12 × 3 in *I. oniveensis*), and the shorter lateral united petals (11 mm in *I. volatiana*, 15 mm in *I. oniveensis*).

HABITAT

Montane rainforest.

DISTRIBUTION

Madagascar, Masoala Peninsula, only known from the type collection.

ETYMOLOGY

Named after Volatiana, daughter of the second author.

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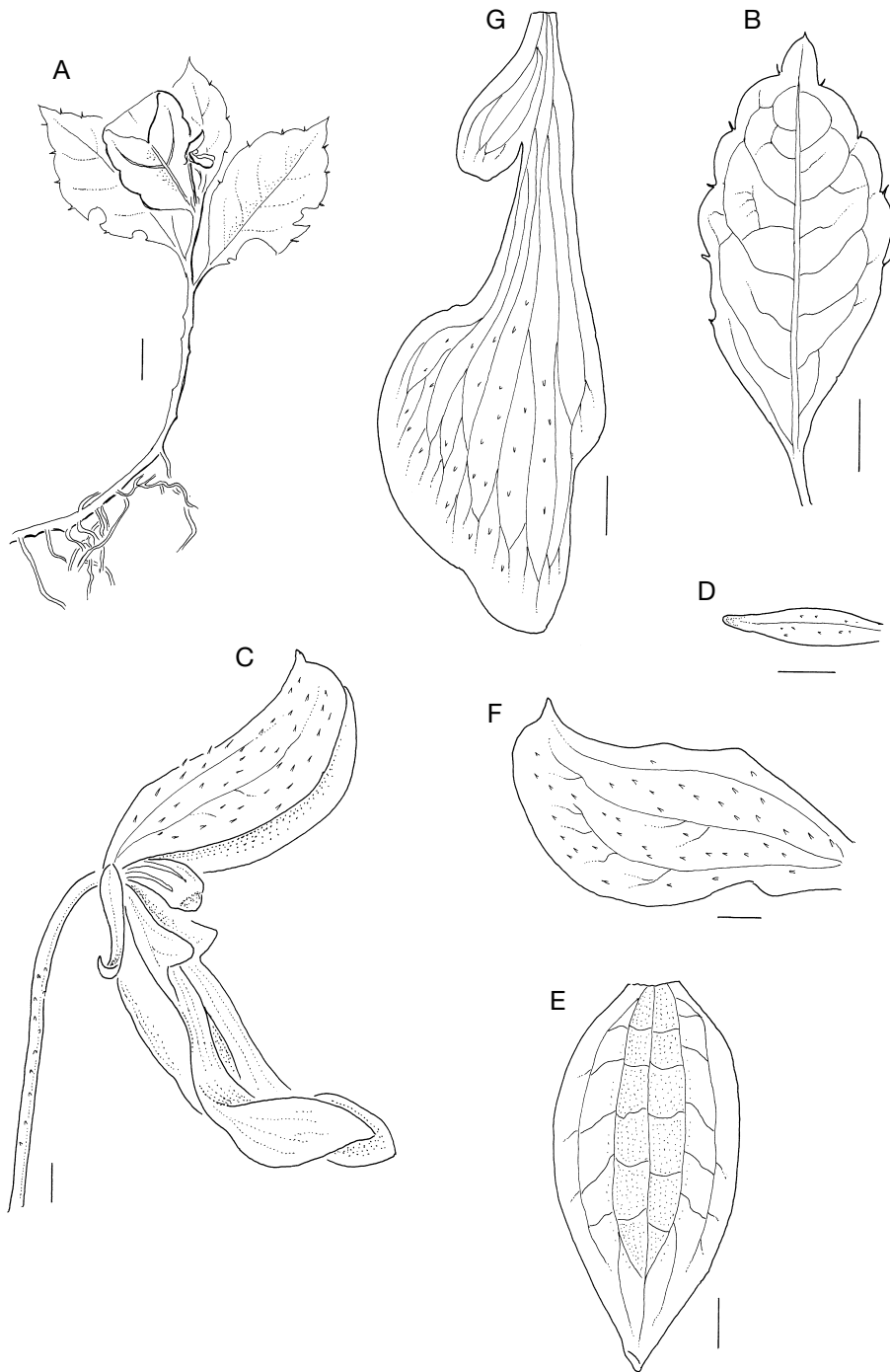


FIG. 9. — *Impatiens volatiana* Eb.Fisch. & Rahelivololona: **A**, habit; **B**, leaf; **C**, flower; **D**, lateral sepal; **E**, lower sepal; **F**, dorsal petal; **G**, lateral united petals. *Rahelivololona*, Triponez, Arnold & Mamy Tfa 4 (TAN). Scale bars: A, B, 1 cm; C-G, 1 mm.

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