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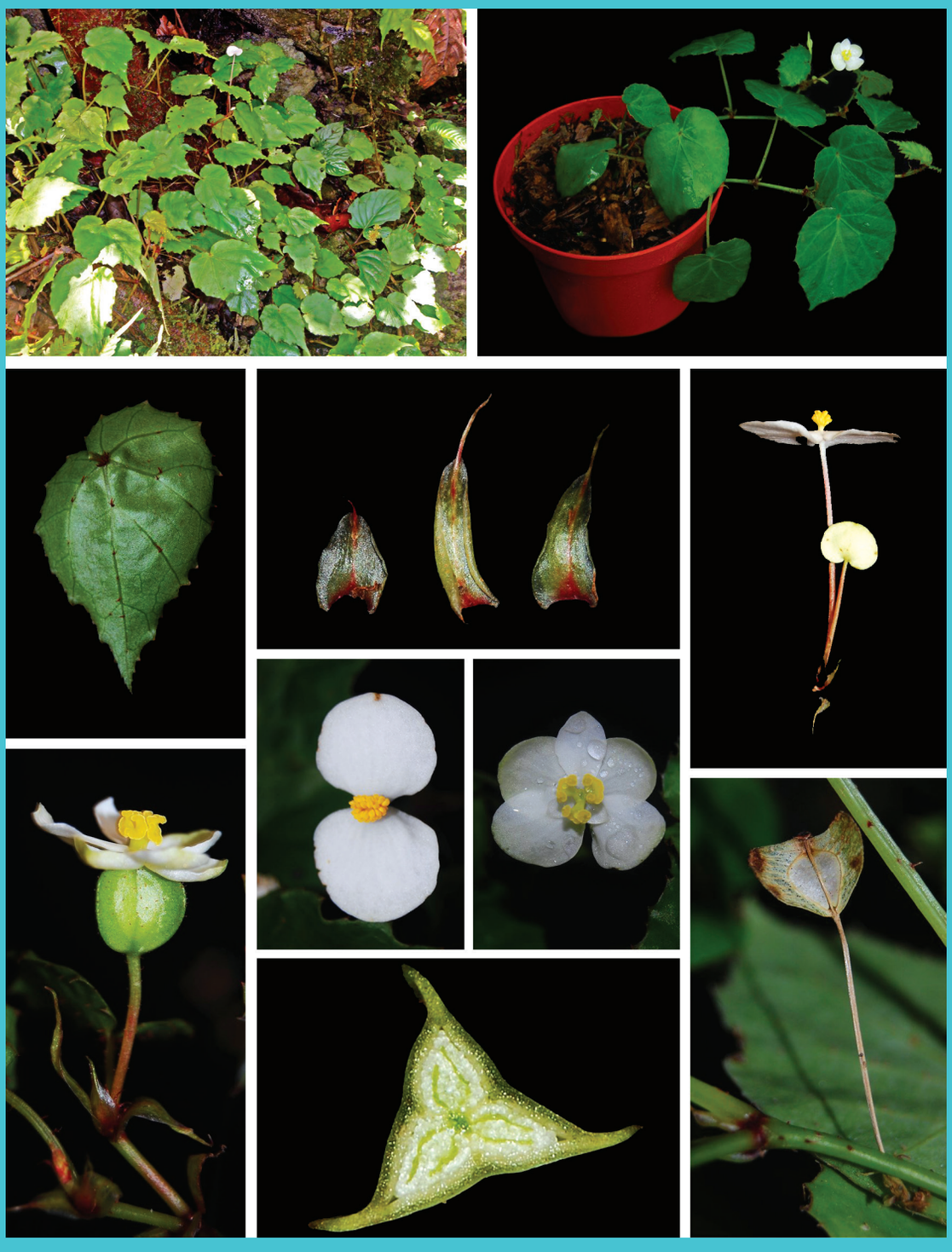

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Correspondence on editorial matters and subscriptions for Reinwardtia should be addressed to:

HERBARIUM BOGORIENSE, BOTANY DIVISION,
RESEARCH CENTER FOR BIOLOGY– INDONESIAN INSTITUTE OF SCIENCES
CIBINONG SCIENCE CENTER, JLN. RAYA JAKARTA – BOGOR KM 46,
CIBINONG 16911, P.O. Box 25 CIBINONG
INDONESIA
PHONE (+62) 21 8765066; Fax (+62) 21 8765062
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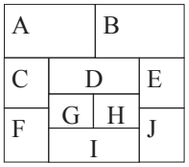

Cover images: *Begonia manuselaensis* Ardaka & Ardi. A. Plant habit in situ; B. Plant habit ex situ; C. Lamina abaxial surface with the small red scales on the veins; D. Stipules. E. Male inflorescence; F. Solitary female inflorescence; G. Male flower; H. Female flowers; I. Ovary cross section; J. Fruit. Source of materials: Wisnu Ardi, WI 104 (BO, KRB, SING). Photo credits: (B-J) by Wisnu Ardi; A: I.G. Tirta

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REINWARDTIA
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A NEW SPECIES OF *BEGONIA* (BEGONIACEAE) FROM MANUSELA NATIONAL PARK, SERAM

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I MADE ARDHAKA
Bali Botanic Garden, Candikuning, Baturiti, Tabanan 82191, Indonesia. Email: Ardhaimade@gmail.com

WISNU HANDOYO ARDI
Center for Plant Conservation-Bogor Botanic Gardens, Jln. Ir. H. Juanda No. 13, Bogor 16003, Indonesia. Email: wisnu.ardi83@gmail.com

NI KADEK EROSI UNDAHARTA & I. G. TIRTA
Bali Botanic Garden, Candikuning, Baturiti, Tabanan 82191, Indonesia. Email: nika002@lipi.go.id; Email: Iged007@lipi.go.id

ABSTRACT
ARDHAKA, I. M., ARDI, W. H., UNDAHARTA, N. K. E. & TIRTA, I. G. 2016. A new species *Begonia* from Manusela National Park, Seram. *Reinwardtia* 15(1): 61 – 64. — A new species of *Begonia*, *B. manuselaensis* Ardhaka & Ardi, is described from Seram, Maluku province, Indonesia. The species is endemic to Seram and belongs to *Begonia* section *Petermannia.*

Key words: *Begonia*, endemic, Manusela, Molucca, new species.

ABSTRAK
ARDHAKA, I. M., ARDI, W. H., UNDAHARTA, N. K. E. & TIRTA, I. G. 2016. Satu jenis baru *Begonia* dari Taman Nasional Manusela, Seram. *Reinwardtia* 15(1): 61 – 64. — Satu jenis baru *Begonia, B. manuselaensis* Ardhaka & Ardi dari Seram, Provinsi Maluku, Indonesia telah dideskripsi. Jenis ini merupakan jenis endemik Seram dan termasuk ke dalam *Begonia* seksi *Petermannia.*

Kata kunci: *Begonia*, endemik, jenis baru, Maluku, Manusela.

INTRODUCTION

The genus *Begonia* L. (Begoniaceae) is one of the largest flowering plant genera, currently comprising 1803 species (Hughes *et al.*, 2015). It is distributed in tropical and subtropical Africa, America and Asia, with more than one third of the species recorded from Southeast Asia (Hughes, 2008). Towards a taxonomic study of Moluccan *Begonia*, Bali and Bogor Botanic Gardens have organized several field expeditions to the archipelago in recent years. The expeditions have brought back many important specimens, such as rediscovery of *B. holosericea* (Teijsm. & Binn.) Teijsm. & Binn. and three new species, *e.g. B. aketajawensis* Ardi & D.C. Thomas, *B. holosericeoides* Ardi & D.C. Thomas (Ardi *et al.,* 2014) and *B. galeolepis* (Ardi & Thomas, 2015).

In this paper we report the discovery of another new species in sect. *Petermannia*, *B. manuselaensis*, from the Manusela National Park, Seram Island, as it exhibits typical characters of the section: protogynous inflorescences, two-tepaled male flowers, anthers with unilaterally positioned slits, five-tepaled female flowers, two-flowered female inflorescences or solitary female flowers, three-locular ovaries with axile placentation and bilamellate placentae, and fruits with equal or subequal wings (Doorenbos *et al*., 1998).

A careful study of the literature and all available *Begonia* specimens from A, B, BM, BO, E, K, L and SING and plants, both in the wild and cultivated material in the experimental greenhouse, reveals that *B. manuselaensis* is distinct from such congeners as *B. gemella* War. *ex* L.B. Sm and *B. flacca* Irmsch. from Sulawesi and other creeping *Begonia* sect. *Petermannia* from the Moluccas.

Begonia manuselaensis Ardhaka & Ardi *spec. nov*. § *Petermannia* − Type: Indonesia, cultivated at Bali and Bogor Botanic Garden from vegetative material collected in the wild (Manusela National Park, Seram Island, Indonesia), 22 February 2016. *Wisnu Ardi, WI* 104 (holotype BO!; isotype KRB! SING). Fig. 1.

Diagnosis. Similar to *B. gemella* differing from that species by the very sparse indumentum of red emergences on vegetative parts, ovate to elliptic lamina with serrate margin, and longer female flower pedicel 1.6–4 cm long (glabrous vegetative parts, suborbicular lamina with sublobed margin and female flower pedicels 7 mm long in *B. gemella*)

Perenial, monoecious herb, stems creeping, non –rhizomatous, up to *ca.* 30 cm long, terete, diameter up to 2 mm, with very sparse indumentum of small flattened red scales *ca.* 0.5-1 × 2 mm, and microscopic glandular hairs. *Stem*

much–branched; internodes *ca.* 2–5 cm long, rooting where nodes touch substrate, green and reddish on the internodes, *stipules* persistent, *ca.* 7 –11 × 5 mm, ovate to elliptic, with an abaxially prominent midrib and moderately dense indumentum of microscopic hairs, margin entire, apex projecting up to 12 mm long, green with red patch at the base, translucent. *Leaves* alternate; *petioles* 4–7.5 cm long, adaxially channelled, green, with sparse indumentum of red branched scale-like hairs, which form a ring at the transition of the petiole and the lamina; *lamina* basifixed, *ca.* 4.8–7 × 3–5 cm, asymmetric, ovate to elliptic, base cordate and lobes often overlapping, apex acuminate, margin serrate, the teeth bristle–pointed, adaxial surface green and bright green along the veins, glabrous to sparsely bristle between the veins, abaxial surface pale green, with sparse red scales on the veins, primary veins 5–6, actinodromous, secondary veins craspedodromus. *Inflorescences*: protogynous; *female inflorescences* 1(–2) flowered, one node basal to the male inflorescences, peduncles *ca.* 1–1.5 mm long; *male inflorescences* composed of 1–2 monochasial partial inflorescences, each a monochasium with 2–(4) flowers, bracts ovate to elliptic, 4–10 × 2–4 mm, green to red, with an abaxially slightly prominent midrib and apex projected up to 6 mm long, glabrous. *Male flowers*: *pedicels ca.* 3–6 cm long, reddish, sparsely hairy; *tepals* 2, broadly ovate to suborbicular, 11–19 × 14–16 mm, white, base slightly cordate, margin entire, apex rounded, abaxially with a sparse indumentum of multicellular hairs; *androecium* of *ca.* 34–40 stamens, yellow, filaments up to *ca.* 1 mm long, slightly fused at the very base, anthers up to *ca.* 1 mm long, obovate, dehiscing through unilaterally positioned slits *ca.* 1/2 as long as the anthers. *Female flowers*: *pedicels* 1.6–4 cm long, sparsely hairy, green–reddish; *tepals* 5(–6), white, unequal, the smaller 7–10 × 4–8 mm, elliptic, the larger 10–15 × 9–13 mm, suborbicular; *ovary* obovoid, 10–11 × 8–9 mm (excluding the wings), pale green with a moderately dense indumentum of microscopic hairs and a sparse indumentum of reddish multicellular hairs, locules 3, placentation axile, placentae bilamellate, wings 3, green, base cuneate, apex truncate, style basally fused, 3–branched, each stylodium bifurcate in the stigmatic region, stigmatic surface a spirally twisted papillose band, orange. *Fruits* on *ca.* 2–4.4 cm long pedicels; seed bearing part obovoid, *ca.* 10–11 × 11–12 mm (excluding the wings), hairy, dehiscent, splitting along the wing attachment, wing shape as for ovary, 2–3 mm wide at the widest point (at the apex); *seeds* unknown.

Distribution. Endemic to Manusela National Park, Seram, Maluku Province, Indonesia. Locally common.

Habitat. Lowland primary rainforest, the species grows on moist limestone rock, full to half shade.

Etymology. The specific epithet refers to the collection locality of the type material, Manusela National Park (Latin, –ensis – originating from).

Provisional IUCN conservation assesment. Least Concern (LC) *B. manuselaensis* is known from only one locations, Manusela National Park, which is in a legally protected area no signs of major anthropogenic disturbance were noticed and the observation during expedition revealed that the *B. manusealensis* is locally common.

Notes. *Begonia manuselaensis* has morphological similarity with *B. gemella* from North Sulawesi. Both of them have similarities, such exhibit relatively thin creeping stem, small sized lamina, few flowered monochasial male inflorescences. However *B. manuselaensis* can be easily distinguished by its very sparse indumentum

Table 1. Comparison of morphological characters of *Begonia manuselaensis* and *B. gemella*

Characters	*B. manuselaensis*	*B. gemella*
Stem	Creeping, internodes 2 5 cm	Creeping, internodes 2 cm.
Indumentum	Very sparse indumentum of small flattened red scale, and microscopic glandular hairs	Glabrous
Lamina	4.8–7 × 3–5 cm, asymmetric, ovate to elliptic	*ca*. 8 cm wide, sub orbicular
Male flower		
Pedicel	3–6 cm	4 cm
Androecium	34–40 stamens	-
Female flowers		
Pedicel	1.6–4 cm	7 mm

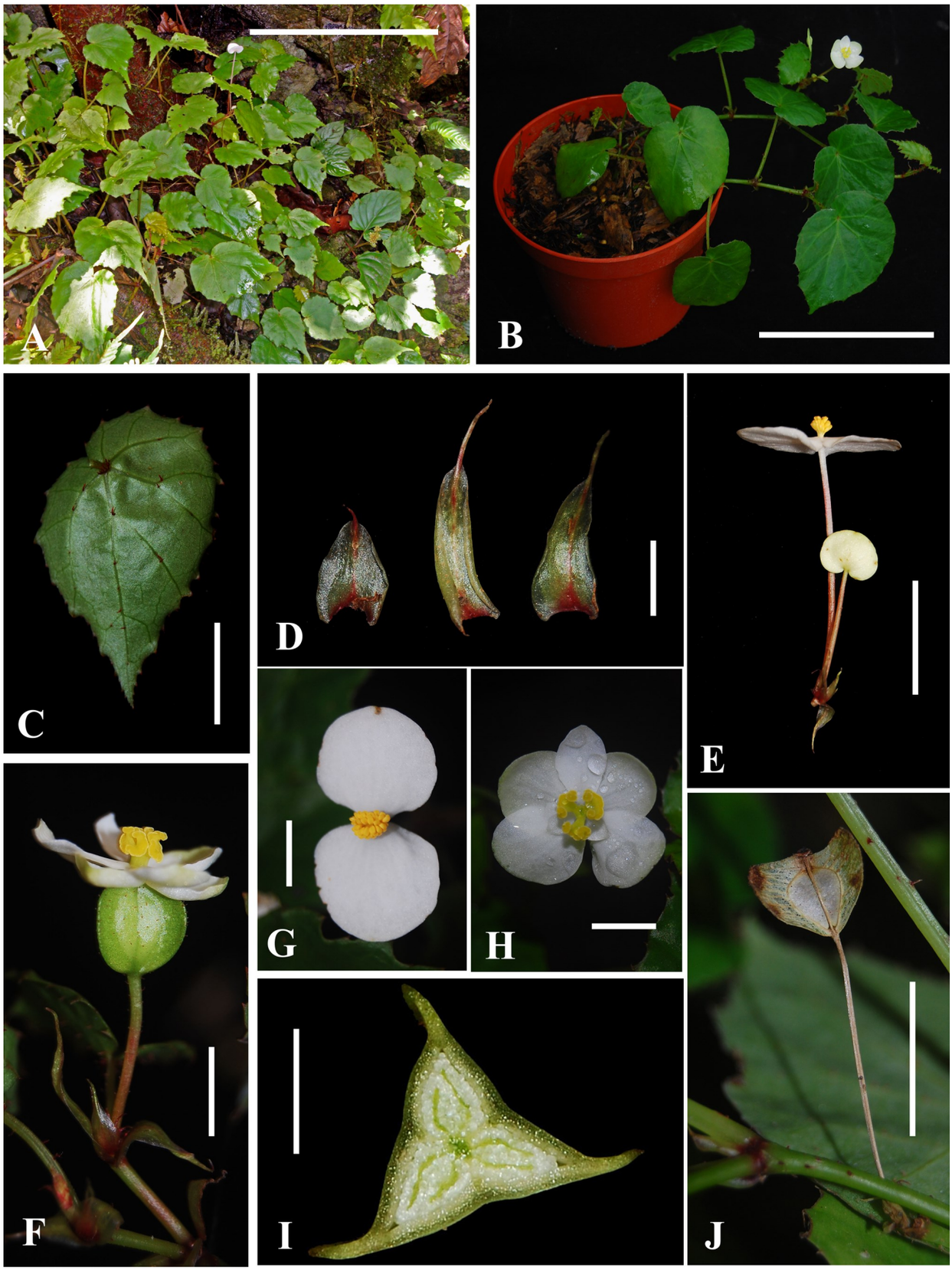

Fig 1. *Begonia manuselaensis*. A. Plant habit in situ, scale bar 20 cm.; B. Plant habit ex situ, scale bar 10 cm.; C. Lamina abaxial surface with the small red scales on the veins, scale bar 2 cm.; D. Stipules, scale bar 5 mm. E. Male inflorescence, scale bar 3 cm.; F. Solitary female inflorescence, scale bar 1 cm.; G. Male flower, scale bar 1 cm.; H. Female flowers, scale bar 1 cm.; I. Ovary cross section, scale bar 5 mm.; J. Fruit, scale bar 2 cm. Photographs of WI 104 (B-J) by Wisnu H. Ardi; A: I.G. Tirta

of red flattened scales on vegetative parts, leaf shape, male and female pedicel length. A detailed comparison is provided in the Table 1. *B. manuselaensis* also has some similarities with *B. flacca* Irmsch. with regards to the creeping stem and few flowered male and female inflorescences. However apart those characters, the larger lamina (6–10 × 4–6.5 cm) with a biserrate margin, the sparse indumentum of long white hairs (not flattened scales), shorter pedicels both female (up to 3.5 mm *vs* 1.6–4 cm) and male flowers (up to 3.3 cm *vs.* 3–6 cm) separate this species from *B. manuselaensis*.

The unusual indumentum of flattened red scales are very rare in Asian *Begonia*, and its only been found in a *Begonia* species from Seram, *Begonia galeolepis* Ardi & D. C. Thomas, (Ardi & Thomas, 2015), but it can be easily differentiated from *B. galeolepis* by its thinner stem (2 mm in diameter *vs.* 10 mm), sparser and smaller flattened red scales, smaller leaf size (4.8–7 × 3–5 cm *vs.* 16–23.8 × 12.5–17.2 cm), and fewer male flowers inflorescences (1–(2) *vs.* 2–3).

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REINWARDTIA
Vol 15, No 1, pp: 65

ERRATUM

REINWARDTIA Vol. 14 (2), 2015

1. Please change the existing epithet name in p. 307, LINE 2 on ABSTRACT after *Zingiber: engganoense*

2. Please change the existing epithet name in p. 307, LINE 2 on ABSTRAK after *Zingiber: engganoense*

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4. Please change the existing epithet name in p. 307, COLUMN 2, LINE 9 on SPECIES DESCRIPTION after *Zingiber: engganoense*

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6. Please change the existing epithet name in p. 308, on Table 1 after *Zingiber: engganoense*

7. Please change the existing epithet name in p. 309, on Table 2 after *Zingiber: engganoense*

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9. Please change the existing epithet name in p. 310, on Plate 1. after *Zingiber: engganoense*

10. Please change the existing word in p. 312, LINE 17 on *Alpinia macrocrista* with the following: KRB

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Map/line drawing illustration/photograph. Map, line drawing illustration, or photograph preferably should be prepared in landscape presentation to occupy two columns. Illustration must be submitted as original art accompanying, but separated from the manuscript. The illustration should be saved in JPG or GIF format at least 350 pixels. Legends or illustration must be submitted separately at the end of the manuscript.

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Address: Jln. Raya Jakarta-Bogor Km. 46 Cibinong 16911, P.O. Box 25 Cibinong
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REINWARDTIA
Vol. 15. No. 1. 2016
CONTENTS
Page

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