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Cover images: *Catanthera keris* Veldk. (1. Inflorescences; 2. Close up flower; 3. Flower bud), *Medinilla squillula* Veldk. (4. Habit; 5. Branches; 6. Fascicle of uniflorous Infructescences), *Medinilla uninervis* Veldk. (7. Habit. Note 1-nerved leaves; 8. infructescence; 9. Immature and mature fruits), *Medinilla zoster* Veldk. (10. Habit; 11. Inflorescences; 12. Flower). Photo credits: Bangun 223, Lowry & Phillipson 7287, Mahroji, Fabanyo & Soleman 69, Callmander, *et al*. 1067.

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HOYA NARCISSIFLORA (APOCYNACEAE, ASCLEPIADOIDEAE), A NEW SPECIES FROM BORNEO

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ABSTRACT
RAHAYU, S. & RODDA, M. 2017. *Hoya narcissiflora* (Apocynaceae, Asclepiadoideae), a new species from Borneo. *Reinwardtia* 16(1): 5 – 10. — A new species of *Hoya* from Borneo is described, namely *Hoya narcissiflora* S. Rahayu & Rodda. The species has thin, non-succulent leaves similar to those of species in the *Hoya campanulata* group and shallowly campanulate corolla. It is compared with all other Bornean *Hoya* species possessing campanulate corollas.

Key words: *Hoya campanulata*, *H. danumensis*, *H. jiewhoeana*, *H. sammannaniana*, Indonesia, primary forest, West Kalimantan.

ABSTRAK
RAHAYU, S. & RODDA, M. 2017. *Hoya narcissiflora* (Apocynaceae, Asclepiadoideae), satu jenis baru dari Borneo. *Reinwardtia* 16(1): 5 – 10. — Satu jenis baru dari Borneo dideskripsikan di dalam makalah ini, yaitu *Hoya narcissiflora* S. Rahayu & Rodda. Jenis ini memiliki tipe daun tipis dan bukan sukulen, serta tipe bunga dengan mahkota berlekatan (*campanulate*), merupakan tipe yang dimiliki kelompok *Hoya campanulata.* Jenis ini dibandingkan secara morfologi dengan jenis-jenis *Hoya* bertipe "campanulata" yang terdapat di Borneo.

INTRODUCTION

Hoya R. Br. is the largest genus of Apocynaceae (Endress *et al*., 2014) and includes 350-450 mostly epiphytic climbers with a centre of diversity in tropical Asia (Rodda, 2015). The recently published guidebook to Hoyas of Borneo by Lamb & Rodda (2016) despite not being a complete revision was a first step towards a revision of Bornean *Hoya*. The checklist included in the book lists 72 *Hoya* species for Borneo, half of which endemic to the island. However, most of the information for the compilation of the book was obtained from collections gathered from Brunei, Sabah and Sarawak, and to a much lesser extent from Kalimantan. In consequence, the diversity of *Hoya* species in Indonesian Borneo is incomplete due to the scarcity of recent collections. The only information on *Hoya* diversity of Central Kalimantan is given by Rahayu (2006), who listed just nine species collected during expeditions to just a small part of Central Kalimantan. Lamb *et al*. (2014) suggested that 60 to 70 *Hoya* species may occur in Sabah alone, and it is becoming apparent that the diversity of *Hoya* of Borneo is expected to be comparable to or even exceeding that of the Philippines (Aurigue *et al.*, 2013, 104 species) or of New Guinea (Forster, 1996, 74 species). Nonetheless new species have been described from West Kalimantan such as *Hoya undulata* S. Rahayu & Rodda (Rahayu *et al*., 2015) and *H. sammannaniana* A.L. Lamb, Gavrus, Emoi & Gokusing (Lamb *et al*., 2014), also found in Sabah.

Hoya species are rarely found blooming in the wild and cultivation of wild collected plants has been a successful way to identify the species (Kleijn & van Donkelaar, 2001; Lamb *et al*. 2014; Rintz, 1978; Rodda & Simonsson-Juhonewe, 2016). Most *Hoya* species are epiphytic climbers with fleshy to succulent leaves. A few species however have thinner non-succulent leaves and often campanulate or urceolate corollas and are adapted to more moist environments. These may be more difficult to keep alive in mixed collections in botanic gardens and need much more care to bloom.

The first species with thin leaves that was described is *H. campanulata* Blume from Java (Blume, 1826). This species has not been collected in Borneo, but numerous other species in this group can be found on the island such as *H. wallichii* (Wight) C.M. Burton, Type: Singapore (Burton, 1996), *H. danumensis* Rodda & Nyhuus, Type: Sabah (Rodda & Nyhuus, 2009);

H. mappigera Rodda & Simonsson, Type: Peninsular Malaysia, Perak (Rodda & Simonsson-Juhonewe, 2012) and *H. wongii* Rodda, Simonsson & L. Wanntorp, Type: Brunai (Rodda *et al*., 2011) and *H. sammannaniana* which has deep bell shaped corollas, type locality Sabah (Lamb *et al*., 2014).

Recently, we found a new thin leaved *Hoya* with shallowly campanulate flowers in West Kalimantan. The specimen was firstly seen for sale as an unidentified species at the Flora Show in Jakarta in October 2014. Based on the shape and thickness of the leaves it looked similar to *H. sammannaniana* or also possibly to *H. danumensis* or *H. campanulata*. Pictures of the flowers were later uploaded on Facebook by Mr. Maskuran, and we realised that it represents a new species. Mr. Maskuran provided a live specimen collected from Sanggau, West Kalimantan that was cultivated at the Bogor Botanic Gardens. Pickled flowers were also sent to Bogor Botanic Gardens from the private collection of Melda Lazuardi in Jakarta, who obtained her plant from Mr. Maskuran. The morphological observation of the specimen was done in Bogor Botanic Gardens, while the observation of pollinia took place in the Singapore Botanic Gardens Herbarium.

TAXONOMIC TREATMEANT

Hoya narcissiflora S. Rahayu & Rodda *spec. nov*. Figs. 1 − 3. — Type: Indonesia, West Kalimantan, Sanggau, 100–300 m, on a slope close to a stream, primary forest "Hutan Adat", Feb 2014 (cultivated at Bogor Botanic Gardens from vegetative material collected in the wild by Mr. Maskuran) *Sri Rahayu JQ705* (Holotype BO, isotype KRB).

Diagnosis. Similar to *H. danumensis* as both taxa have elliptic to oblong thin laminas and ovoid corona lobes. It can be separated from *H. danumensis* on the shape of the corona lobes that are less than 1.5 times as long as broad in *H. narcissiflora vs. ca.* twice as long as broad in *H. danumensis*.

Description. *Epiphytic climber*, shrubby when young, with white latex in all vegetative parts, glabrous. *Stems* slender, lignified when old, internodes very variable in length, 0.5 – 10 cm long, 2.0 – 2.5 mm in diameter, green when young, grey-green when mature; *Leaves* petiolate; petiole, 0.5 – 1.0 cm × 1.5 – 2.0 mm in diameter, channelled above, light green; lamina elliptic to oblong, thin, 5 – 12 × 2 – 4 cm, base cuneate without colleters, apex acute or acuminate, discolorous with upper side fresh to dark green, lower side paler green, young leaves pale green, venation pinnate, secondary veins 4 – 5 pairs. *Inflorescence* pseudo-umbellate, convex, 5 – 10 flowered; peduncle ageotropic, with a rachis turning positively geotropic, very short 4 – 6 × 1.5 – 2.0 mm in diameter, grey green, glabrous. *Flowers* weakly scented, produce visible nectar from the second day onwards, lasting 4 – 5 days in cultivation; *pedicel* positively geotropic, *ca.* 2.5 cm × *ca.* 1 mm in diameter, white-pale green, glabrous. *Calyx* lobes free, ovate to triangular with a round tip, 1.0 – 1.2 × 0.8 – 1.0 mm wide, creamy white or light green, glabrous, *basal colleters* one in each calyx lobe sinus, triangular, 2.3 – 2.7 × 1.5 – 1.7 mm. *Corolla* very shallowly campanulate, almost round in outline, flattened and slightly campanulate at the centre underneath the corona when in full bloom, white or very pale yellow; tube 10–14 mm in diameter, undulating and with a depression underneath each corona lobe, visible as a small hump on the outside in between the calyx lobes, glabrous outside, pubescent inside only underneath the corona; lobes broadly triangular, 6 – 9 × 3.5 – 5 mm, folded in the centre, apex acute, glabrous. *Corona* staminal, erect, 6 – 7 mm in diameter, 5.0 – 5.5 mm high, white or yellowish white; *lobes* upright, when observed from above round to ovoid, 2.2 – 2.5 × 1.0 – 1.2 mm, 5.0 – 5.5 mm tall, outer process concave with an acute tip, inner process apiculate; *skirt* located at the base of each coronal lobe, 1/3 of the corona length, thin, rhomboid with short acuminate apex at the centre, white or yellowish white; *Anthers* with apical round membranaceous appendage just exceeding the style-head apex. *Pollinia* elliptic oblong, 500 – 550 × 100 – 150 µm, narrowing towards the base, apex round, sterile edge prominent along the outer edge of the pollinium; *corpusculum* elliptic, 50 – 60 × 25 – 30 µm with an acute tip, *caudicle* almost rectangular, 90 – 100 × 20 – 25 µm, twisted at the base; concave, hyaline. *Style-head* 5 angled in cross section, style-head apex acute, 0.5 – 0.6 mm high, 1.4 – 1.5 mm broad at the base. *Ovaries* elliptic with narrower tip from the base, *ca.* 1.9 – 2 mm × *ca.* 0.7 mm at the widest area in the centre, light green, glabrous. *Fruit* and *seed* not seen.

Distribution. Only known from the type locality in West Kalimantan, close to Sanggau.

Habitat and ecology. *Hoya narcissiflora* has been observed in lowland primary forest at 100–

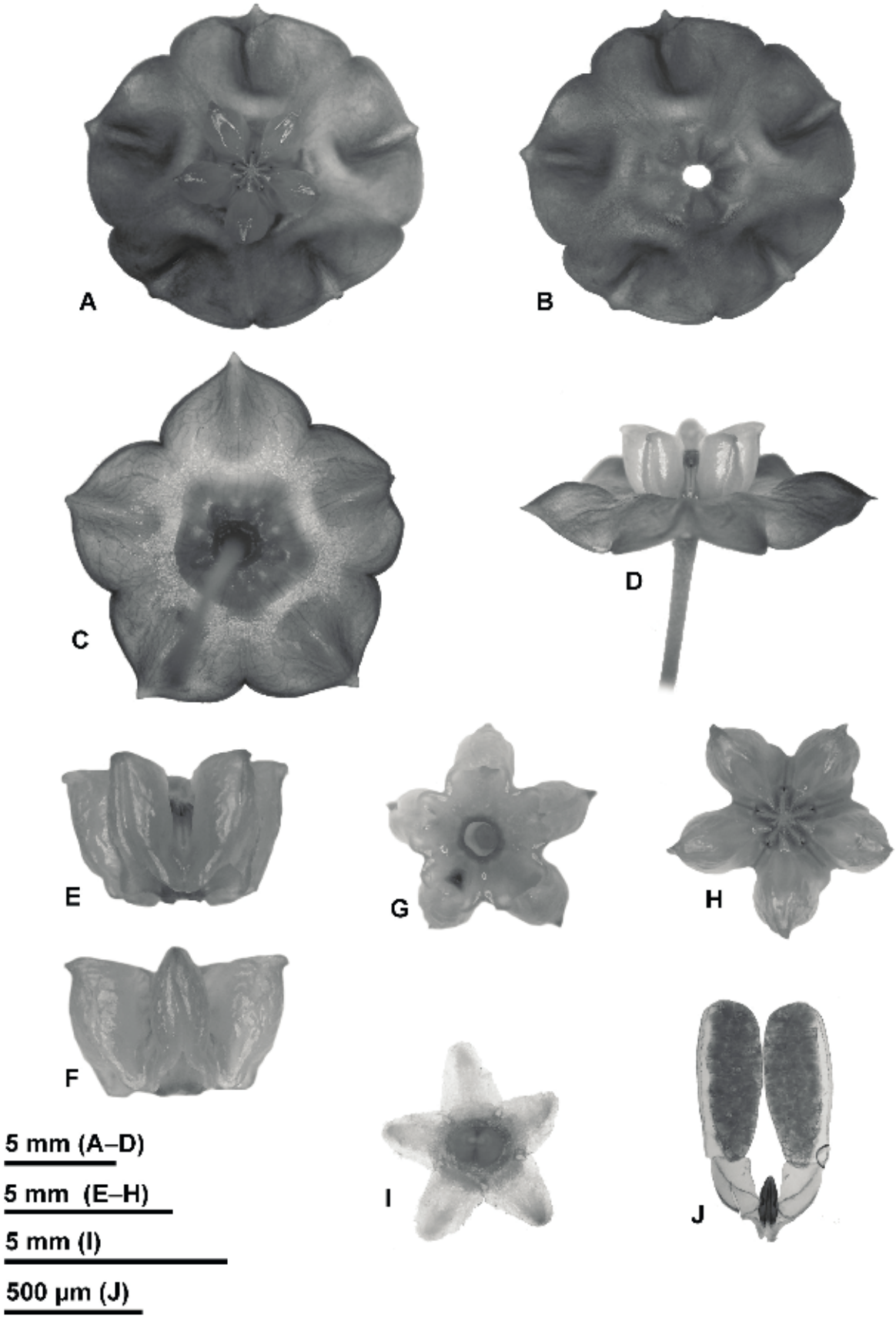

Fig. 1. *Hoya narcissiflora.* A. Flower from above. B. Corolla with corona removed. C. Corolla and calyx, from underneath. D. Flower, side view. E, F. Corona, side view. G. Corona, from underneath. H. Corona, from above. I. Calyx and ovaries. J. Pollinarium.

Fig. 2. *Hoya narcissiflora.* Inflorescence from a plant in cultivation. A. From above. B. From underneath. (Photos: Maskuran)

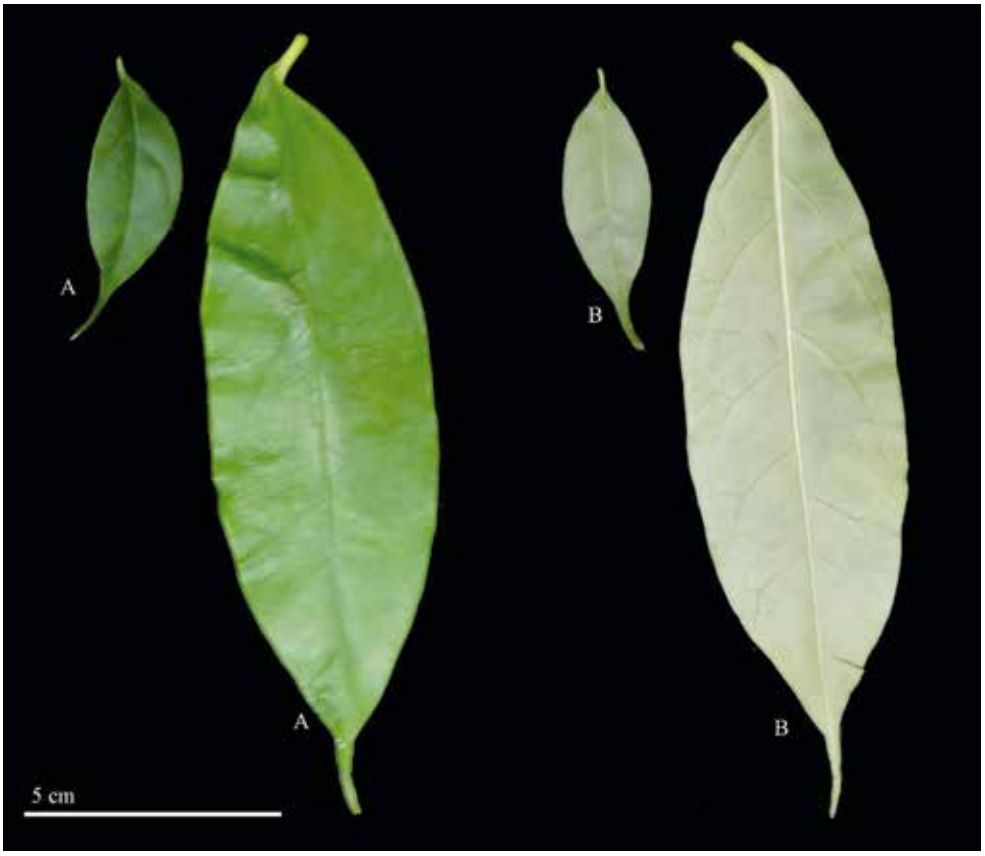

Fig. 3. *Hoya narcissiflora.* Larger and smaller leaves. A. From above. B. From underneath. (Photos: Maskuran)

300 m above sea level on a slope near a small river. It was growing as an epiphyte on the main trunk of dipterocarp trees at about 1.5 m above ground, growing in deep shade (30% sunlight) and very high humidity (about 80%) (Maskuran, pers. comm.). Johansson (1975) categorised the various areas of the host plant occupied by epiphytes. The main stem of the host is indicated as the zone B. Different zones are correlated with the differential requirement for light, nutrients and water. According to Benzing (1990) some species are restricted to strongly illuminated sites, some to shady sites, while some avoid both strong light and deep shade and yet others have a wide range of tolerance. Occupying the B zone means that the species is adapted to moist shady habitats. In the wild the plants of *H. narcissiflora* were only found in deep shade. In cultivation however exposure to brighter light was necessary to trigger blooming (Sri Rahayu and Melda Lazuardi, pers. obs.).

Etymology. The epithet refers to the resemblance of the flowers to species of *Narcissus*, both in color and in general shape.

IUCN conservation assessment. This species is only known from a single locality in West Kalimantan. The preliminary conservation status of *H. narcissiflora* is therefore Data Deficient (DD, IUCN 2014). *Ex situ* collections are present in Bogor Botanic Gardens (from type locality) and several private collectors in Indonesia as Mr. Maskuran has been distributing cuttings from his original collection among the *Hoya* growers under the community *Hoya* Indonesia.

Notes. Borneo has numerous species with thin leaves and campanulate or urceolate flowers. *Hoya mappigera*, *H. omlorii* (Livsh. & Meve) L. Wanntorp & Meve (Wanntorp & Meve, 2011), *H. sammannaniana*, *H. wallichii* and *H. wongii* can be separated from *H. narcissiflora* because they have single flowers or few-flowered inflorescences. *Hoya danumensis*, *H. devogelii* Rodda & Simonsson (Rodda & Simonsson, 2011), *H. gildingii* Kloppenb. (Kloppenburg, 2002), *H. jiewhoeana*, *H. nuttiana* Rodda & Simonsson (Rodda & Simonsson-Juhonewe, 2013) and *H. phyllura* O. Schwartz (Schwartz, 1931) instead have convex umbelliform inflorescences with numerous flowers open concurrently.

Hoya narcissiflora can be separated from *H. devogelii*, *H. gildingii*, *H. jiewhoeana*, *H. nuttiana* and *H. phyllura* because these species have a pubescent corolla (only sparsely pubescent in *H. phyllura*) while the corolla of *H. narcissiflora* is glabrous. It can be separated from *H. danumensis* on the shape of the corona lobes in top view are *ca.* twice as long as broad in *H. danumensis* and less than 1.5 times as long as broad in *H. narcissiflora*. The corona lobes of *H. narcissiflora* are also taller and more erect than those of *H. danumensis* that are instead flat and spreading. The corona of *H. narcissiflora*, with its tall and erect lobes is also similar to that of *Hoya chewiorum* A. L. Lamb, Gavrus, Emoi & Gokusing and *H. jiewhoeana*. The flowers of the three species can be easily separated based on the corolla that is shallowly campanulate and glabrous in *H. narcissiflora*, reflexed and pubescent inside in *H. chewiorum* and campanulate pubescent inside in *H. jiewhoeana*.

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REFERENCES

AURIGUE, F. B., SAHAGUN, J. R. & SUAREZ, W. M. 2013. *Hoya cutis-porcelana* (Apocynaceae): A new species from Samar and Biliran Islands, Philippines. *J. Nat. Studies* 12 (1): 12–17.

BENZING, D. H. 1990. *Vascular epiphytes: general biology and related biota*. Cambridge Univ. Press, Cambridge.

BLUME, C. L. 1826. Hoya. In: BLUME, C. L. *Bijdr. Fl. Ned. Ind.* 16: 1062–1065. Batavia: Ter Lands Drukkerij.

BURTON, C. M. 1996. A tentative alternative arrangement of *Hoya* sections. *Hoyan*. 18(1:2): 2–6.

ENDRESS, M. E., LIEDE-SCHUMANN, S. & MEVE, U. 2014. An updated classification for Apocynaceae. *Phytotaxa* 159(3): 175–194.

FORSTER, P. I. 1996. A checklist of the Asclepiadaceae of Papua. *Science in New Guinea* 22 (1): 15–22.

JOHANSSON, D. R. 1975. Ecology of epiphytic orchids in West African rain forests. *American Orchid Society Bulletin* 44: 125–136.

KLEIJN, D. & van DONKELAAR, R. 2001. Notes on the taxonomy and ecology of the genus *Hoya* (Asclepiadaceae) in Central Sulawesi. *Blumea* 46: 457–483.

KLOPPENBURG, R. D. 2002. Correction. *Fraterna* 15(1): 10.

IUCN. 2014. *Guidelines for Using the IUCN Red List Categories and Criteria. Version 10.1. Prepared by the Standards and Petitions Subcommittee*.[Downloaded on 20 January 2014] Available from http://www.iucnredlist.org/documents/RedListGuidelines.pdf

LAMB, A.L., GAVRUS, A., EMOI, B. & GOKUSING, L. 2014. The Hoyas of Sabah, a commentary with seven new species and a new subspecies. *Sandakania* 19: 1–89.

LAMB, A.L. & RODDA, M. 2016. *A Guide to Hoyas of Borneo*. Natural History Publications Borneo, Kota Kinabalu, 204 pp.

RAHAYU, S. 2006. Species diversity of *Hoya* in Bukit Batikap, Muller Mountain, Central Kalimantan. [In Bahasa with English summary]. Keanekaragaman jenis *Hoya* di Hutan Lindung Bukit Batikap, Pegunungan Muller, Kalimantan Tengah. *Biodiversitas* 7(2): 139–142.

RAHAYU, S., MEVE, U. & RODDA, M. 2015. *Hoya undulata* (Apocynaceae, Asclepiadoideae), a new myrmecophytic species from Borneo, and typification of *H. darwinii*. *Gardens' Bulletin Singapore* 67(1): 85–94. doi: 10.3850/S2382581215000101

RINTZ, R. E. 1978. The peninsular Malaysian species of *Hoya* (Asclepiadaceae). *Malay. Nat. J.* 30: 467–522.

RODDA, M. 2015. Two new species of *Hoya* R. Br. (Apocynaceae, Asclepiadoideae) from Borneo. *PhytoKeys* 53: 83–93.

RODDA, M. & NYHUUS, T. 2009. *Hoya danumensis*, a new species of *Hoya* (Apocynaceae, Asclepiadoideae) from Borneo. *Webbia* 64(2): 163–167.

RODDA, M. & SIMONSSON, N. 2011. *Hoya devogelii* (Apocynaceae: Asclepiadoideae), a new species from Sarawak, Borneo. *Webbia* 66 (1): 33–38.

RODDA, M. & SIMONSSON-JUHONEWE, N. 2012. *Hoya mappigera* (Apocynaceae, Asclepiadoideae), a new campanulate flowered species from Peninsular Malaysia and southern Thailand. *Fed. Repert.* 122: 1–7.

RODDA, M. & SIMONSSON-JUHONEWE, N. 2013. *Hoya nuttiana* (Apocynaceae: Asclepiadoideae), a new species from Sarawak, Malaysian Borneo. *Phytotaxa* 140(1): 56–60.

RODDA, M. & SIMONSSON-JUHONEWE, N. 2016. *Hoya isabelchanae* Rodda & Simonsson, a new, showy species of *Hoya* R. Br. (Apocynaceae, Asclepiadoideae) with pomegranate red flowers from Sulawesi, Indonesia. *PhytoKeys* 68: 45–50.

RODDA, M., SIMONSSON, N. & WANNTORP, L. 2011. *Hoya wongii* (Apocynaceae, Asclepiadoideae): a new campanulate flowered species from Brunei (Borneo). *Blumea* 56: 205–208.

SCHWARTZ, O. 1931. *Hoya* In: IRMSCHER, I. (Ed.). Beitrage zur kenntnis der flora von Borneo. *Mitt. Inst. Allg. Bot. Hamburg* 7: 261–262.

WANNTORP, L. & MEVE, U. 2011. New combinations in *Hoya* for the species of *Clemensiella* (Marsdenieae, Apocynaceae). *Willdenowia* 41 (1): 97–99.

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Journal : KRAENZLIN, F. 1913. *Cyrtandraceae* novae Philippinenses I. *Philipp. J. Sci.* 8: 163–179.
MAYER, V., MOLLER, M., PERRET, M. & WEBER, A. 2003. Phylogenetic position and generic differentiation of *Epithemateae* (*Gesneriaceae*) inferred from plastid DNA sequence data. *American J. Bot.* 90: 321–329.

Proceedings :TEMU, S. T. 1995. Peranan tumbuhan dan ternak dalam upacara adat "Djoka Dju" pada suku Lio, Ende, Flores, Nusa Tenggara Timur. In: NASUTION, E. (Ed.). Prosiding Seminar dan Lokakarya Nasional Etnobotani II. LIPI & Perpustakaan Nasional: 263–268. (In Indonesian).
SIMBOLON, H. & MIRMANTO, E. 2000. Checklist of plant species in the peat swamp forests of Central Kalimantan, Indonesia. In: IWAKUMA, T. *et al.* (Eds.) Proceedings of the International Symposium on: Tropical Peatlands. Pp.179-190.

Book : RIDLEY, H. N. 1923. *Flora of the Malay Peninsula 2*. L. Reeve & Co. Ltd, London.

Part of Book : BENTHAM, G. 1876. *Gesneriaceae*. In: BENTHAM, G. & HOOKER, J. D. *Genera plantarum 2*. Lovell Reeve & Co., London. Pp. 990–1025.

Thesis : BAIRD, L. 2002. *A Grammar of Kéo: An Austronesian language of East Nusantara*. Australian National University, Canberra. [PhD. Thesis].

Website : http://www.nationaalherbarium.nl/fmcollectors/k/KostermansAJGH.htm). Accessed 15 February 2012.

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