

## NEW SPECIES OF ARDISIA (MYRSINACEAE) FROM MALESIA

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### SUMMARY

Twenty-seven new species, one new subspecies and five new varieties of *Ardisia* are described from the Flora Malesian region.

**Key words:** *Ardisia*, Malesia, new taxa.

### INTRODUCTION

In a previous paper on the genus *Ardisia* Sw. the author reported 95 new synonyms and some new combinations (Hu, 1999). This contribution is a continuation of studies on Myrsinaceae within the Flora Malesiana region. When the whole of the genus had been reviewed, it was found necessary to establish as valid species certain plants which had hitherto not received recognition and were not described. The new taxa described here are arranged alphabetically under the appropriate subgenus.

### Subgenus *Acardisia* Mez

#### 1. *Ardisia beccariana* var. *glabrifolia* C.M. Hu, var. nov.

A var. *beccariana* foliis glabris differt. *Ardisia praetervisa* C.M. Hu habitu foliorumque forma varietati novae similis, sed floribus majoribus, fructibus globosis valde diversa.  
— Typus: A. Latiff 4217 (holo L), Sarawak, Kelabit Highland, Bario, roadside, altitude 1115 m.

Small tree to 3 m high. *Branchlets* slender, glabrate. *Leaves* alternate; petioles 3–5 mm long; blades elliptic to obovate-elliptic, 10–23 by 4–5.5 cm, apex acute to shortly acuminate, base broadly cuneate to subrounded, margin entire, glabrous on both surfaces. *Inflorescence* terminal, paniculate, c. 10 mm long. *Pedicels* 5–8 mm long. *Flowers* c. 6 mm long. *Fruit* globose, c. 4.5 mm in diameter.

Distribution — Borneo: Sarawak, Ulu Sg. Belaban (path to G. Murut); Ulu Belaban; Billeryki, Bakelalan; Pa Ukat, Kerangas forest; Kelabit Highland. Kalimantan Timur, between long Bawan and Panado; Mt Leputung.

Habitat — In forest on ridges and near river; altitude 1100–1800 m. Flowering: September.

#### *Specimens examined:*

A. Latiff 4217 (holo L); W.M.A. Brooke 10424, 10454; R. Geesink 8994; M. Kato et al. B-8113; SAN 26301, 26348 (*Lawas, Ilias Paie*), 35396 (*Peter Sie*).

## 2. *Ardisia densipunctata* C.M. Hu, *spec. nov.*

Habitu et aspectu *Ardisiae garubahayae* C.M. Hu subsimilis, sed foliis chartaceis densissime nigro-punctatis, nervis lateralibus paucioribus nervo intramarginali haud formanti differt. Ab *Ardisia polyacti* Mez, floribus multo minoribus facile distinguenda. — Typus: *P. Wilkie 94182* (holo L), Kalimantan.

Small tree. *Branchlets* greyish. *Leaves* alternate; petioles 4–6 mm long, glabrous, thickened when mature; blades oblong-elliptic, 13–12 by 5.5–9 cm, chartaceous, apex shortly acuminate, base broadly cuneate, margin entire, glabrous above, sparsely covered with tiny rusty peltate scales beneath, each areole with a thick black glandular dot, prominent on both surfaces, midrib impressed above, raised beneath, lateral nerves 10–12 pairs, angle to the midrib about 70°, arcuately ascending along the margin, reticulation of veins prominent on both surfaces. *Inflorescence* terminal, paniculate, 9–10 cm long, 1 time branched, ± sparsely glandular puberulous, with black glandular lines on median axis and branches; the branches 1–15 mm long, each bearing 4–8 subumbellate flowers. *Pedicels* 3–6 mm long, glandular puberulous and with black glandular dots. *Calyx* c. 2.25 mm long; lobes ovate, c. 1.75 mm long, acute or ± obtuse, with black and orange dots on back, margin whitish, minutely ciliate. *Corolla* 3.5–4 mm long; tube c. 0.5 mm long; lobes ovate-elliptic, c. 2 mm broad, with black and orange dots near the apex. *Anthers* lanceolate, black punctate on back. *Ovary* ovoid; style c. 3 mm long, included in bud prior to anthesis; ovules 8–10 in 1 series.

Distribution — C Kalimantan, Kabupaten Kotawaringin Timur.

Habitat — On slope of lowland mixed dipterocarp forest; altitude 50 m. Flowering: April.

Vernacular name — Sari Palanduk (C Kalimantan).

### *Specimen examined:*

*P. Wilkie 94182* (holo L), Kalimantan, 92 km from Sangai (S Mentaya), Kabupaten Kotawaringin Timur, 19 April 1994.

## 3. *Ardisia garubahaya* C.M. Hu, *spec. nov.*

*Ardisia polyacti* Mez persimilis, sed floribus multo minoribus, foliorum nervis lateralibus plurioribus nervo intramarginali confluentibus differt. — Typus: *Tuke I. Dujda 94247* (holo L; iso A), Central Kalimantan: 92 km from Sangai (S Mentaga), Kabupaten Kotawaringin Timur.

Small tree. *Branchlets* tortuous; bark grey, glabrous. *Leaves* alternate; petioles 8–15 mm long, corked, very thick; blades elliptic, 13–25 by 5–9.5 cm, base broadly cuneate to obtuse, apex acute or shortly acuminate, entire, margin narrowly recurved, subcoriaceous, glabrous, ± shining above; glandular dots scattered, obscure or ± raised on both surfaces, midrib narrowly impressed above, strongly raised beneath, lateral nerves 18–22 pairs, subparallel, angle to the midrib about 70–80°, anastomosing and forming an intramarginal vein near the margin, reticulation of veins obscure. *Inflorescence* terminal or subterminal, paniculate, 10–12 cm long, glandular puberulous, usually 1 time branched, rarely the lower branches with 1 or 2 secondary branches; the branches racemosely arranged, each bearing 4–6 subumbellate flowers. *Pedicels* 4–6 mm long, glandular puberulous. *Calyx* c. 2.5 mm long; lobes ovate, c. 2 mm long, acute, glabrous, with a few orange dots on back, margin membranaceous, minutely ciliate. *Corolla* c. 4.5 mm long; tube very short; lobes ovate, acute, with black dots on

lower part and orange ones on upper part. *Anthers* lanceolate, c. 3 mm long, sparsely black punctate on back. *Ovary* glabrous; style 3–3.5 mm long, included in bud prior to anthesis; ovules c. 10 in 1 series. *Fruit* globose, c. 5.5 mm in diameter.

**Distribution** — C Kalimantan, 92 km from Sangai (S Mentaga), Kabupaten Kotawaringin Timur.

**Habitat** — In lowland mixed dipterocarp forest; altitude c. 50 m. Flowering: June.  
**Vernacular name** — Garubahaya (C Kalimantan).

*Specimens examined:*

*Tuke I. Dujda* 94247 (holo L; iso L); same locality, *Wilkie* 94170.

#### 4. *Ardisia javanica* A.DC. var. *multiflora* C.M. Hu, var. *nov.*

A var. *javanica* foliis majoribus, inflorescentiis glabris, floribus majoribus, sepalis orbicularis imbricatis differt. — Typus: *Verheijen* 4755 (holo L), Lesser Sunda Islands, Flores.

Shrub or small tree, throughout glabrous. *Branchlets* subterete, greyish. *Leaves* alternate; petioles 5–8 mm long, canaliculate; blades elliptic, (5.5–)8–16 by (2.5–)3.5–6 cm, base cuneate, apex acute or slightly acuminate, entire, chartaceous, glabrous, glandular dots scattered, obscure or prominent, especially near the margin, midrib ± impressed above, raised beneath, lateral nerves 10–12 pairs, angle to midrib about 60°, raised beneath, tertiary nerves prominent on both surfaces. *Inflorescence* terminal, paniculate, 5–10 cm long, 2 times branched, with a spread 7–9 cm at base, median axis and branches ± compressed, with 3–7 flowers umbellately arranged on the ultimate branches. *Pedicels* 6–10 mm long, lengthened to 15–20 mm in fruit. *Calyx* c. 1.25 mm long; lobes broadly ovate to suborbicular, c. 1 mm in diameter (2 mm in fruit), obtuse to rounded. *Corolla* c. 5.5 mm long; tube very short; lobes ovate-elliptic, c. 2 mm broad, acute, dotted with dark or orange glands. *Anthers* ovate-lanceolate, c. 4 mm long, apiculate, black punctate on back. *Ovary* glabrous; style 3.5 mm long, included in bud prior to anthesis; ovules c. 26 in 3 series. *Fruit* globose, c. 5.5 mm in diameter, with a beak-like persistent style.

**Distribution** — Lesser Sunda Islands: Flores.

**Habitat** — In forest; altitude 100–1400 m. Flowering: April.

*Specimens examined:*

*Verheijen* 4755 (holo L), 1106, 4325, 4487, 4749.

#### 5. *Ardisia meijerii* C.M. Hu, *spec. nov.*

Primo visu *A. pterocauli* Miq. maxime similis, tamen non arcte affinis, a qua floribus majoribus, sepalis manifeste dextrosum tegentibus, stylo ante anthesin petalis brevioribus haud porrecto differt. — Typus: *SAN* 22143 (*W. Meijer*) (holo L), Borneo, Sabah, District Kota Belud, Mt Templer Forest Reserve.

Shrub or small tree, 1.5–2.5 m high. *Branchlets* grey, subterete, covered with appressed rusty scales when young. *Leaves* alternate; petioles 8–12 mm long, canaliculate; blades oblong-elliptic, 9.5–19 by 3.5–6 cm, base cuneate, apex shortly acuminate, entire, chartaceous, glabrous above, covered with appressed rusty scales beneath, glandular dots numerous, more or less obscure, midrib flat or slightly raised above, strongly raised beneath, lateral nerves (16–)18–26 pairs, angle to the midrib about 70°, arcuate ascending and forming a looped intramarginal vein near the margin, tertiary veins

very fine, obscure or  $\pm$  prominent. *Inflorescence* terminal, paniculate, 9–14 cm long including the peduncle, 2 times branched,  $\pm$  covered with appressed rusty scales, lower primary branches 2.5–3.5 cm long, secondary branches 2–6 mm long, racemosely arranged, each bearing 3–6 umbellate flowers. *Pedicels* 1–2 mm long. *Calyx* c. 1.5 mm long; lobes broadly ovate, c. 1.5 mm long, imbricate, with a few glandular dots on back, margin whitish, membranaceous, fimbriate ciliate. *Corolla* pink, c. 3 mm long; tube very short; lobes ovate, c. 2.5 mm long, acute, not punctate. *Anthers* ovate-lanceolate, less than 2 mm long, apiculate, scarcely punctate. *Ovary* ovoid; style c. 1.75 mm long, included in bud prior to anthesis; ovules 10–12 in 1 series.

*Distribution* — Borneo: Sabah, District Tawan, Tawan Hills Park; District Kota Belud, Mt Templer Forest Reserve; Danum Valley and environs.

*Habitat* — In logged lowland rain forest; altitude 0–600 m. Flowering: May to June.

*Specimens examined:*

SAN 22143 (W. Meijer) (holo L); J.H. Beaman 10166; Ridsdale 2065.

## 6. *Ardisia milneensis* C.M. Hu, *spec. nov.*

*Ardisia milneensis* S. Moore proxima, sed inflorescentiis glabris, floribus in ramulis ultimis umbellatim dispositis differt. — Typus: Brass 23146 (holo L; iso A), New Guinea, Milne Bay District, north slope of Mt Dayman, Maneau Range.

Small tree to 3 m high, glabrous. *Branchlets*  $\pm$  ridged. *Leaves* alternate on the upper half of branches; petioles 5–12 mm long, canaliculate; blades elliptic to elliptic-lanceolate, 9–18 by 2.5–5.5 cm, base cuneate, apex long acuminate, entire, chartaceous, glandular dots scattered, obscure on both surfaces, midrib impressed above, raised beneath; lateral nerves 20–24 pairs, raised on both surfaces, angle to the midrib about 60°, arcuate ascending and anastomosing near the margin, reticulation of veins  $\pm$  prominent on both surfaces. *Inflorescence* terminal, 4–13 cm long, paniculate, 1 or 2 times branched; primary branches 2–6 cm long, secondary branches c. 1 cm long, each bearing 3–5 umbellate flowers. *Pedicels* 6–8 mm long, obscurely punctate. *Calyx* c. 1 mm long; lobes ovate-triangular, c. 0.75 mm long, acute, punctate, minutely ciliate. *Corolla* white, c. 3 mm long; lobes ovate elliptic, c. 2.5 by 1.8 mm, acute, with orange dots. *Anthers* lanceolate, c. 2 mm long, punctate on back. *Ovary* ovoid; style c. 2 mm long, included in bud prior to anthesis; ovules c. 20 in 3 series. *Fruit* globose, c. 5 mm in diameter.

*Distribution* — Papua New Guinea, Milne Bay District, north slope of Mt Dayman.

*Habitat* — In oak forest undergrowth; altitude 1100–1550 m.

*Specimens examined:*

L.J. Brass 23146 (holo L), 23025, 23291.

## 7. *Ardisia oreophila* C.M. Hu, *spec. nov.*

*Ardisia oreophila* Merr. similis, sed inflorescentia glabra, floribus minoribus, petiolis longioribus differt. *Ardisia laxiflora* Merr. floribus circiter 5 mm longis, longe pedicellatis, in ramulis ultimis racemose dispositis longe distat. — Typus: Soejarto, Fernando & Sogea 8828 (holo L), Philippines, Palawan, Brooke's Point, Bgy Macagua, ridges and slopes at Sanduapi Peak, altitude 1100 m, wet montane forest.

Tree 5–7 m high. *Branchlets* ± compressed, with ridges between petioles, ± brown scaly. *Leaves* alternate; petioles 10–12 mm long, canaliculate and narrowly winged; blades elliptic to elliptic-lanceolate, 10.5–17 by 3–5 cm, base cuneate, apex acute or ± acuminate, entire, chartaceous, glabrous above, covered with peltate scales beneath, with thick scattered glandular dots on both surfaces, midrib impressed above, raised beneath, lateral nerves 14–16 pairs, flat above, raised beneath, angle to the midrib about 60°, arcuate ascending, tertiary veins very fine, ± prominent beneath. *Inflorescence* terminal, paniculate, 15–18 cm long, sparsely rusty-lepidote, 2 times branched, with a spread 12–15 cm at base. *Flowers* 3.5–4 mm long, 3–8 umbellately arranged on ultimate branches. *Pedicels* 4–8 mm long, glabrous. *Calyx* c. 1.75 mm long; lobes ovate, c. 1.2 mm long, acute or ± obtuse, black punctate, minutely ciliate. *Corolla* pink, 3–3.5 mm long; tube very short; lobes ovate, c. 1.5 mm broad, acute, scarcely punctate. *Anthers* lanceolate, c. 2.5 mm long, apiculate, scarcely punctate. *Ovary* glabrous; style c. 2 mm long, included in bud prior to anthesis; ovules c. 20 in 3 series.

Distribution — Philippines: Palawan, Booke's Point, Sanduapi Peak and Mt Mantalingajan.

Habitat — In montane ridge forest; altitude c. 1100 m.

*Specimens examined:*

*Soejarto, Fernando & Sogea* 8828 (holo L); *Argent & Romero* 92168 (E).

### 8. *Ardisia phaeoneura* C.M. Hu, *spec. nov.*

*Ardisiae javanicae* A.DC. similis, sed foliis majoribus, foliorum nervis lateralibus paucioribus, in sicco nigrescentibus, sepalis oblongo-ovatis obtusis differt. — Typus: *Church, Mahyar & Afriastini* 1837 (holo L), W Kalimantan, Serowai, Sungai Merah.

Small tree, 5–8 m high. *Branchlets* subterete, glabrous, turning black when dry. *Leaves* alternate; petioles 5–8 mm long, canaliculate; blades elliptic to obovate-elliptic, 8.5–15 by 4–6.8 cm, base cuneate, apex shortly acuminate, entire, chartaceous, glabrous, obscurely punctate, midrib and main nerves turning black when dry on the underside, lateral nerves 6–9 pairs, strongly raised beneath, angle to the midrib about 60°, arcuate ascending and anastomosing near the margin; reticulation of veins ± prominent on both surfaces. *Inflorescence* terminal, paniculate, ± glandular, 10–13 cm long in fruiting time, usually 1 time branched; branches 3–5 cm long, rarely with secondary branches. *Flowers* not seen. *Fruit* racemosely arranged on the upper 1/3 of the branches. *Pedicels* 8–10 mm long, with black glandular lines. *Persistent calyx* c. 2 mm long; lobes oblong-ovate, c. 1 mm broad at base, with black or orange dots near the margin, minutely ciliate. *Fruit* subglobose, with black glandular lines, c. 4.5 mm in diameter.

Distribution — W Kalimantan, Serowai, Sungai Merah.

Habitat — In hill dipterocarp forest; altitude 700 m.

*Specimens examined:*

*Church, Mahyar & Afriastini* 1837 (holo L; iso AAU, E, L), 1767.

### 9. *Ardisia praetervis* C.M. Hu, *spec. nov.*

*Ardisiae caudiferoidi* B.C. Stone similis, sed foliis chartaceis majoribus inflorescentisque ferrugineo-puberulis differt. — Typus: *SAN* 76448 (*Chew & Leopold*) (holo L), Borneo, Sabah, District Pinusok Plateau Trail.

Small tree to 3 m high. *Branchlets* subterete, glabrous. *Leaves* alternate; petioles 2–5 mm long, narrowly winged; blades elliptic, rarely  $\pm$  obovate-elliptic, 7–16 by 3–5.5 cm, base cuneate to broadly cuneate, apex acute or shortly acuminate, entire, chartaceous, glabrous above,  $\pm$  rusty-lepidote beneath, densely black punctate on both surfaces, especially near the margin, midrib flat or slightly impressed above, raised beneath, with black glandular lines, lateral nerves 12–16 pairs, angle to the midrib about  $60^\circ$ , anastomosing near the margin, as are the reticulation of the veins prominent beneath. *Inflorescence* terminal, paniculate, densely ferruginous puberulous, 10–15 cm long, 2 times branched; primary branches to 6 cm long, secondary branches 8–15 mm long, each bearing 4–8 umbellate flowers. *Pedicels* 4–5 mm long. *Calyx* c. 1.5 mm long, split almost to base; lobes lanceolate, with orange dots, sparsely glandular ciliate. *Corolla* whitish orange, c. 3.5 mm long; tube very short; lobes ovate, c. 1.75 mm broad, acuminate, sparsely punctate. *Anthers* ovate, c. 1.5 mm long, apiculate, obscurely punctate. *Ovary* ovoid; style c. 2 mm long, included in bud prior to anthesis; ovules c. 30 in 4 series. *Fruit* depressed globose, 3 by 4.5 mm.

Distribution — Borneo: Sabah, District Ranau, Pinusok Plateau Trail; Tenompok; Mt Kinabalu, eastern shoulder. Sarawak, Kalabit Highland.

Habitat — In forest; altitude c. 1500 m. Flowering: September.

*Specimens examined:*

SAN 76448 (*Chew & Leopold*) (holo L); W.L. Chew, Corner & Stainton RSNB 63, 285, 1248, 4054, 4574; J. & M.S. Clemens 30249, 30251, 38133, 38133a.

**10. *Ardisia rubicunda* C.M. Hu, *spec. nov.***

*Ardisiae caudiferae* Mez similis, sed ab ea foliis subsessilis, sepalis lanceolatis differt.

— Typus: *De Vogel* 8281 (holo L), Borneo, Sabah, Interior zone, hill c. 5 km west of Long Pa Sia, altitude 1400 m.

Treelet to 5 m high. *Leaves* subsessile; blades narrowly elliptic, 9–16 by 3–4.5 cm, base broadly cuneate to subrounded, apex acute, entire, chartaceous, glabrous; glandular dots scattered, more dense and prominent near the margin, lateral nerves 14–18 pairs, angle to the midrib about  $60^\circ$ , reticulation of veins obscure. *Inflorescence* terminal and in axil of upper leaves, 8–16 cm long, paniculate,  $\pm$  glandular, 1 time branched or the branches ramified again, lower branches 3–6 cm long, each bearing 6–20 flowers; peduncle and branches reddish. *Pedicels* 4–8 mm long. *Calyx* c. 2 mm long, split almost to base; lobes lanceolate, c. 0.75 mm broad,  $\pm$  obtuse, with orange dots, minutely ciliate. *Corolla* pinkish, c. 3 mm long; tube very short; lobes ovate, c. 1.75 mm broad, acute, with many orange dots on the upper parts. *Anthers* ovate-lanceolate, c. 2 mm long,  $\pm$  apiculate, obscurely punctate on back. *Ovary* glabrous; style c. 2 mm long, included in bud prior to anthesis; ovules c. 30 in 4 series.

Distribution — Borneo: Sabah, Interior zone.

Habitat — In primary forest; altitude 1300–1400 m. Flowering: October.

*Specimens examined:*

Borneo, Sabah, Interior zone, hill about 5 km west of Long Pa Sia, *De Vogel* 8281 (holo L); path from Long Pa Sia to Long Samdo, near Sungai Malabid, *De Vogel* 8623.

**11. *Ardisia spiciformis* C.M. Hu, *spec. nov.***

*Ardisiae caudiferae* Mez similis, sed inflorescentia spicato-racemosa, floribus breve pedicellatis facile distinguenda. — Typus: *Burley, Tukirin et al. 3162* (holo A), W Kalimantan, Gunung Bentuang area.

Shrub, 1–3 m high. *Branchlets* glabrous, with raised lines between the petioles. *Leaves* alternate; petioles 2–5 mm long; blades oblong-lanceolate, rarely oblong-elliptic, 9–16 by 2.2–5 cm, base broadly cuneate to subrounded, apex acuminate, entire, chartaceous, glabrous and ± shining above, rusty-lepidote beneath, with thick black glandular dots mainly near the margin, midrib flat above, raised beneath, lateral nerves 16–22 pairs, with many thinner ones, subparallel, angle to the midrib about 60°, anastomosing near the margin, reticulation of veins obscure. *Inflorescence* terminal paniculate, 9–15 cm long, rusty puberulous, 1 time branched; branches 2–8 mm long, initially with 6–many umbellately arranged flowers, later the rachis elongate, up to 5–25 mm long and the flowers becoming racemosely arranged but very crowded, less than 1 mm spaced, with many scars of the falling pedicels. *Pedicels* c. 5 mm long, glandular puberulous. *Calyx* c. 1.75 mm long; lobes ovate, c. 1.2 mm long, acute or ± obtuse, with 3 or 4 thick glandular dots on back, minutely ciliate. *Corolla* pinkish white, c. 3 mm long; tube c. 0.75 mm long; lobes ovate, acute, with a few black and orange glandular dots. *Anthers* ovate-lanceolate, c. 2.2 mm long, apiculate, obscurely punctate on back. *Ovary* ovoid; style c. 2.5 mm long, included in bud prior to anthesis; ovules c. 12 in 1 series. *Fruit* oblong, 5 by 4 mm.

Distribution — W Kalimantan: Gunung Bentuang area; Kabupaten Sanggau.

Habitat — In mixed dipterocarp forest; altitude 150–360 m. Flowering: June.

*Specimens examined:*

*Burley, Tukirin et al. 3162* (holo A), 2318, 2448, 2532, 2888, 2931; *De Jong 405*; *Tukirin Pastomiharjo 3339*.

**Subgenus *Akosmos* Mez****12. *Ardisia dewildei* C.M. Hu, *spec. nov.***

*Ardisiae marginatae* Blume persimilis, a qua imprimis foliis majoribus, pedicellis longioribus ad 10 mm longis, petalis obscure punctatis differt. — Typus: *De Wilde & De Wilde-Duyffes 21095* (holo L), Sumatra, S Atjeh, middle Alas river area.

Shrub or small tree, 1–4 m high. *Branchlets*, petioles and inflorescence densely covered with rusty scales. *Leaves* alternate; petioles 4–12 mm long, canaliculate; blades narrowly elliptic to elliptic-lanceolate, 7–16 by 1.5–5.2 cm, base cuneate or broadly cuneate, apex acuminate, entire, thinly chartaceous, glabrous above, densely covered with peltate rusty scales beneath, copiously punctate with tiny glandular dots, midrib impressed above, raised beneath, lateral nerves 16–20 pairs, very slender, sometimes invisible due to the thick scales, angle to the midrib about 60°, anastomosing near the margin, not forming an intramarginal vein, reticulation of veins invisible. *Inflorescence* in axils of upper leaves, subumbellate. *Peduncle* 1.2–2.5 cm long, simple or with 1 or 2 branches, each bearing 3–6 umbellate flowers. *Pedicels* 3–8 mm long. *Calyx* c. 1.5

mm long; lobes ovate-triangular, c. 1.2 mm long, acute, lepidote and punctate, glandular ciliate. *Corolla* pale pink, c. 3.5 mm long; tube very short; lobes ovate-lanceolate, acute, c. 1.5 mm broad, obscurely punctate. *Anthers* ovate-lanceolate, c. 2 mm long, apiculate, obscurely punctate on back. *Ovary* glabrous; style c. 2.5 mm long; ovules 8–10 in 1 series. *Fruit* globose, c. 7 mm in diameter.

Distribution — Sumatra: S Atjeh, middle Alas River area; Kloet nature reserve; Mt Bukit Lawang-Bohorok; Sekundur, Bohorok.

Habitat — On hillside, dry-land forest and stony forested slopes; altitude 50–300 m. Flowering: April to July.

*Specimens examined:*

*De Wilde & De Wilde-Duyffes* 21095 (holo L), 18468, 18710, 19725, 19987; *Whitmore & Kalima* TCW 3244; *Wiriadinata & Maskuri* 457, 525.

**13. *Ardisia recurvata* C.M. Hu, *spec. nov.***

Ex affinitate *Ardisiae copelandii* Mez, sed inflorescentiis brevioribus, floribus minoribus, 5–6 mm longis distincta. — Typus: *De Wilde & De Wilde-Duyffes* 13068 (holo L), N Sumatra.

Small tree to 8 m high. *Branchlets* subterete, glabrous, sparsely covered with appressed rusty scales when young. *Leaves* alternate; petioles 3–6 mm long, canaliculate and narrowly winged; blades narrowly elliptic to elliptic-lanceolate, 9–15 by 2.5–4.5 cm, base broadly cuneate, apex shortly acuminate, entire, chartaceous, glabrous above, ± rusty-lepidote beneath; glandular dots numerous, black, obscure or prominent on young leaves, midrib impressed above, raised and black punctate beneath, lateral nerves slender, more than 20 pairs, subparallel, angle to the midrib about 65°, anastomosing and forming an intramarginal vein near the margin, tertiary veins invisible. *Inflorescence* in axils of upper leaves, corymbose-paniculate; peduncle 3.5–6 cm long, black punctate, ± rusty-lepidote; branches 1–1.5 cm long; bracteoles oblong-lanceolate, 2.5–3 mm long, densely black punctate. *Pedicels* 4–6 mm long, glabrous. *Calyx* c. 1.75 mm long; lobes ovate-triangular, c. 1.25 mm long, acute, densely black punctate, minutely ciliate. *Corolla* pale lilac-pink, c. 6.5 mm long; tube very short; lobes ovate-lanceolate, 3–3.5 mm broad, acute, densely marked with black dots and short lines. *Anthers* c. 5 mm long, lanceolate, apiculate, black punctate on back. *Ovary* glabrous; style c. 4 mm long, black punctate; ovules numerous (> 50) in 4 or 5 series. *Fruit* globose, c. 6 mm in diameter.

Distribution — N Sumatra: Atjeh, Gunung Leuser Nature Reserve; W Sumatra, Taram.

Habitat — In montane rain forest; altitude 1500–1800 m. Flowering: May to June.

*Specimens examined:*

*De Wilde & De Wilde-Duyffes* 13068 (holo L), 16665; *W. Meijer* 6911.

**14. *Ardisia sorogensis* C.M. Hu, *spec. nov.***

*Ardisiae mindanaensi* Mez similis, sed pedicellis longioribus, floribus majoribus ad 5 mm longis differt. — Typus: *Van Royen* 3145 (holo L), New Guinea, District Radjah Ampat, Sorong.



Small tree, 1–2 m high. *Branchlets*, petioles and inflorescence densely puberulous with rusty glandular hairs. *Leaves* alternate, usually on the upper half of the branches; petioles 6–12 mm long, canaliculate; blades elliptic to elliptic-lanceolate, 9–19 by 2–6 cm, base cuneate, apex acuminate, entire, chartaceous, glabrous above, ± covered with appressed rusty scales beneath, glandular dots numerous, black, prominent on both surfaces, midrib impressed above, raised beneath, lateral nerves 16–22 pairs, flat above, raised beneath, angle to the midrib about 60°, arcuate ascending, tertiary nerves prominent below. *Inflorescence* lateral, near the apex of branches, subumbellate, simple, 3–11-flowered; peduncle 2–4 cm long. *Pedicels* 6–10 mm long, lengthening to 15 mm in fruit. *Calyx* c. 1.5 mm long; lobes ovate-triangular, c. 1.25 mm long, acute, black punctate, ciliate. *Corolla* light purple, c. 5 mm long; tube very short; lobes ovate, c. 2 mm broad, ± acuminate, black punctate. *Anthers* lanceolate, c. 4.5 mm long, mucronate, punctate on back. *Ovary* ovoid; style c. 3.5 mm long; ovules 16–18 in 3 series. *Fruit* globose, c. 6 mm in diameter.

Distribution — Irian Jaya: District Radjah Ampat, Sorong; Sidei 50 km west of Manokwari.

Habitat — In primary forest; altitude 50–100 m. Flowering: March to October.

*Specimens examined:*

*Van Royen 3145* (holo L), 3065; *Sijde BW 5563*.

### Subgenus *Crispardisia* Mez

#### 15. *Ardisia premnifolia* C.M. Hu, *spec. nov.*

*Ardisiae polystictae* Miq. similima, a qua imprimis inflorescentiis paniculatis, floribus minoribus differt. — Typus: *SAN 114639* (*Sumbing Jimpin*) (holo L), Borneo, Sabah, Tunggul, Jlu K. Kinabalu, Penampang District.

Shrub or small tree, glabrous. *Branchlets* terete, with black glandular lines. *Leaves* alternate; petioles 3–6 mm long, canaliculate; blades elliptic to elliptic-lanceolate, 5–11 by 1.8–3.2 cm, base cuneate, apex long acuminate, crenate on the upper 2/3, with marginal glands on the tip of the teeth, thinly chartaceous to membranaceous, densely black punctate on both surfaces, midrib flat above, raised beneath, lateral nerves 10–14 pairs, prominent on both surfaces, angle to the midrib about 60°, arcuate ascending, anastomosing near the margin, reticulation of veins prominent on both surfaces. *Inflorescence* terminal on special flowering branches, paniculate, 4–6 cm long, 1 time branched; branches 5–20 mm long, racemosely arranged, each bearing 5–12 subumbellate flowers. *Pedicels* 5–10 mm long. *Calyx* c. 1 mm long, split almost to base; lobes ovate-triangular, ± acute, with a few black or orange glandular dots. *Corolla* white to pinkish; tube c. 0.5 mm long; lobes ovate-elliptic, c. 4 mm long, acute, with black or orange dots. *Anthers* ovate-lanceolate, c. 2 mm long, acute, scarcely punctate. *Ovary* ovoid; style c. 2 mm long; ovules 18–20 in 2 or 3 imperfect series.

Distribution — Borneo: Sabah, G. Alab.; Tunggul, Penampang District; Tuaran District.

Habitat — In montane rain forest; altitude 1500 m. Flowering: February to July.

*Specimens examined:*

*SAN 114639* (*Sumbing Jimpin*) (holo L); *SAN 65590* (*Amin et al.*); *Nooteboom 930, 972*.

**16. *Ardisia villosa* Roxb. subsp. *brevisepala* C.M. Hu, *subsp. nov.***

A subsp. *villosa* sepalis quam corollis et fructibus duplo-brevioribus differt. — Typus: *De Wilde & De Wilde-Duyffes 13069* (holo L), N Sumatra, Atjeh, Gunung Bandahara.

Shrub to 1 m high. *Calyx* c. 3 mm long, split almost to base; lobes lanceolate, c. 1 mm broad, densely marked with black glandular dots and short lines, ciliate. *Corolla* whitish, c. 6 mm long; tube very short; lobes elliptic lanceolate, 2–2.5 mm broad, acute, with thick black glandular dots and short lines. *Ovary* glabrous; style 3.5 mm long, black punctate; ovules c. 4 in 1 series. *Fruit* globose, to 8.5 mm in diameter.

Distribution — N Sumatra: Atjeh, Gunung Bandahara; Gunung Ketambe; upper Mamas river valley; Taram, east of Pajakumbuh.

Habitat — In secondary forest; altitude 500–2000 m. Flowering: June.

*Specimens examined:*

*De Wilde & De Wilde-Duyffes 13069* (holo L), *14174*, *15917*, *18648*, *19188*; *W. Meijer 6922*.

**Subgenus *Pimelandra* (A. DC.) Mez****17. *Ardisia congestiflora* C.M. Hu, *spec. nov.***

*Ardisiae ternatensi* Scheff. similis, sed foliis minoribus floribus confertis in umbellis subsessiles dispositis differt. — Typus: *Verheijen 4787* (holo L), Lesser Sunda Islands, Flores.

Small tree to 6 m high. *Branchlets* ± ridged, covered with appressed scales when young. *Leaves* alternate; petioles 1–1.5 cm long, canaliculate, initially lepidote; blades elliptic to elliptic-lanceolate, 6–13 by 2–4.7 cm, base broadly cuneate to obtuse, apex acute, tip blunt, entire, thickly chartaceous, glabrous above, sparsely lepidote beneath, glandular dots numerous, obscure, midrib impressed above, raised beneath, lateral nerves 8–12 pairs, angle to the midrib about 60°, arcuate ascending along the margin. *Inflorescence* axillary, umbellate, 2–6-flowered. *Peduncle* 0–3 mm long, lepidote. *Pedicels* 4–6 mm, densely rusty-lepidote. *Calyx* c. 1.5 mm long; lobes ovate-triangular, c. 1.25 mm long, acute, ± lepidote, with orange dots, ciliate. *Corolla* creamy white, c. 3 mm long; tube very short; lobes ovate-elliptic, c. 2 mm broad, ± acute, with orange dots. *Anthers* ovate-lanceolate, scarcely to 2 mm long. *Ovary* ovoid; style c. 2 mm long; ovules 3 in 1 series.

Distribution — Lesser Sunda Islands: Flores; W Maggarai; Ruteng.

Habitat — In forest, on steep rocky slopes; altitude 900–1600 m.

*Specimens examined:*

*Verheijen 4787* (holo L), *641*, *912*, *913*, *3127*, *4763*; *Kostermans & Wirawan 657*, *876*; *E. Schmutz 1837*, *2719*, *4360*, *4573*; *Veldkamp 7028*.

**18. *Ardisia denigrata* C.M. Hu, *spec. nov.***

*Ardisiae kostermanii* B. C. Stone similis, sed ramulis appresso-lepidotis (nec tomentellis), inflorescentiis multifloris, pedicellis longioribus (1–1.5 cm longis) differt. — Typus: *Kostermans 18475* (holo L), W Sumbawa, Mt Batulantee.

Small tree, 2–8 m high. *Branchlets* subterete or ± ridged, densely covered with appressed rusty scales. *Leaves* alternate; petioles 8–15 mm long, canaliculate, initially densely

rusty-lepidote; blades narrowly elliptic to elliptic-lanceolate, 7–13 by 2.3–3.5 cm, base cuneate, apex acute or  $\pm$  acuminate, tip blunt, entire, subcoriaceous, glabrous above, covered with rusty appressed scales beneath, glandular dots obscure, sometimes prominent along the margin, midrib narrowly impressed above, raised beneath, lateral nerves 13–15 pairs, raised beneath, angle to the midrib about  $60^\circ$ , arcuate ascending. *Inflorescence* lateral, usually simple, subumbellate, (3–)5–10-flowered, densely rusty scaly. *Peduncle* 3–12 mm long. *Pedicels* 7–14 mm long, densely rusty-lepidote. *Calyx* c. 1.25 mm long; lobes ovate-triangular, c. 1 mm long, acute, densely rusty-lepidote, with a few black glandular dots at apex, minutely ciliate. *Corolla* pink; tube very short (0.25 mm long); lobes ovate-elliptic, c. 3.75 by 2.2 mm, acute, with orange glandular dots. *Anthers* lanceolate, c. 2.5 mm long, apiculate, scarcely punctate. *Ovary* ovoid,  $\pm$  lepidote; style c. 3.75 mm long; ovules 16–20 in 3 imperfect series.

Distribution — Lesser Sunda Islands: W Sumbawa, Mt Batulantee.

Habitat — In moist forest; altitude 700–1200 m. Flowering: April.

Vernacular name — Marina Suai (W Sumbawa).

*Specimens examined:*

*Kostermans* 18475 (holo L), 18286.

### 19. *Ardisia morotaiensis* C.M. Hu, *spec. nov.*

Species distinctissima, foliorum nervis lateralibus nervo intramarginali confluentibus, *Ardisiae apositatae* B. C. Stone subsimilis, sed inflorescentiis paucifloris (floris 1 vel 2), pedicellis brevioribus circiter 2 mm longis differt. — Typus: *Kostermans* 1267 (holo L), Moluccas, Morotai.

Small tree to 3 m high. *Branchlets* terete, covered with appressed scales. *Leaves* alternate; petioles 6–10 mm long, canaliculate; blades elliptic, 8–13 by 3–4.5 cm, base cuneate, apex acuminate, entire, chartaceous, glabrous above, covered with appressed scales beneath, glandular dots numerous,  $\pm$  raised on both surfaces, midrib impressed above, raised beneath; lateral nerves slender, c. 14 pairs, angle to the midrib about  $60^\circ$ , arcuately ascending and forming an intramarginal vein near the margin, tertiary veins obscure. *Inflorescence* 1- or 2-flowered, umbellate, in axils of leaves. *Pedicels* 3–4 mm long,  $\pm$  lepidote. *Calyx* c. 1.75 mm long; lobes subrounded, c. 1 mm long, lepidote, glandular ciliate. *Corolla* white, c. 4 mm long; lobes lanceolate, c. 3 mm, sparsely punctate. *Anthers* lanceolate, c. 1.75 mm long, scarcely punctate. *Ovary* ovoid; style c. 2.5 mm long; ovules c. 20 in 2 or 3 imperfect series.

Distribution — Known only from the type locality.

Habitat — In forest; altitude 800–1300 m. Flowering: April to May.

*Specimens examined:*

*Kostermans* 1267 (holo L), 1062, 1082, 1182, 1280, 1308.

### Subgenus *Pyrgus* (Lour.) Mez

### 20. *Ardisia ridsdalei* C.M. Hu, *spec. nov.*

*Ardisiae sibuyanensi* Elmer similis, sed ramulis inflorescentiisque glabris differt. — Typus: *Ridsdale* 1992 (holo L), Borneo, Sabah, Danum Valley.

Shrub or small tree to 1.5 m high, monopodial; stem marked with abscission branch scars. *Branchlets* terete, glabrous. *Leaves* crowded at the apex of branches, subsessile; blades elliptic to narrowly elliptic or rarely obovate-elliptic, 11.5–21 by 3.5–9 cm, gradually narrowed to both ends, obtuse at the very base, apex shortly acuminate, entire, chartaceous, glabrous, with scattered black or orange glandular dots on both surfaces, midrib flat above, raised beneath, lateral nerves 12–14 pairs, prominent on both surfaces, angle to the midrib about 60°, arcuate ascending, reticulation of veins prominent beneath. *Inflorescence* terminal on branches, corymbose-paniculate, 3–6 cm long, 1 or 2 times branched; ultimate branches 4–5 mm, each bearing 3–5 umbellate flowers. *Pedicels* 6–10 mm long. *Persistent calyx* c. 2.25 mm long, lobes ovate, c. 1.5 mm long, acute, punctate on back, minutely ciliate. *Immature fruit* globose, with black dots, c. 5 mm in diameter.

Distribution — Known only from the type locality.

Habitat — In primary lowland rain forest.

*Specimen examined:*

Ridsdale 1992 (holo L).

### Subgenus *Stylardisia* Mez

#### 21. *Ardisia belaitensis* C.M. Hu, *spec. nov.*

*Ardisiae forbesii* S. Moore similis, sed pedicellis brevioribus (1–2 mm longis), glabris, foliorum nervis lateralibus pluribus (20–28 paribus), tenuioribus, sub angulo fere recto e nervo mediano abeuntibus differt. — Typus: *Thomas 153* (holo L), Brunei, Belait.

Small tree to 2.5 m high. *Branchlets* ± compressed or ridged, covered with rusty scales and mixed with stellate hairs. *Leaves* alternate; petioles 1–1.2 cm long, rusty scaly, canaliculate; blades oblong-lanceolate to lanceolate, 10–22 by 2–2.5 cm, base cuneate, apex acuminate, entire, subcoriaceous, scarcely punctate, glabrous above, densely covered with appressed rusty scales beneath, midrib impressed above, raised beneath, lateral nerves slender 20–28 pairs, subparallel, almost in right angle with the midrib, tertiary veins obscure. *Inflorescence* terminal, 3.5–15 cm long, densely rusty lepidote, 2 times branched; primary branches 1–2.5(–8) cm long, secondary branches 1.5–8 mm long, each bearing 3–8 umbellate flowers. *Bracts* leafy, lanceolate, 1–3 cm long. *Pedicels* 1–2 mm long. *Calyx* c. 1.5 mm long, split to lower 1/3; lobes ovate-triangular, c. 1 mm broad, acute, ciliate. *Corolla* pink; tube c. 0.5 mm long; lobes ovate, 2–2.5 mm long, acute, with a few glandular dots near apex. *Anthers* ovate, apiculate, less than 2 mm long, minutely punctate on back. *Ovary* ovoid, ± lepidote; style c. 2.5 mm long, exerted before flower opening; ovules 8–10 in 1 series. *Fruit* subglobose, c. 4.5 mm in diameter.

Distribution — Borneo: Brunei, Belait District, Lumut Hills; Bukit Sawat Labi Road; Badas Forest Reserve; Ulu Ingei.

Habitat — In peat swamp forest and heath forest; altitude 25–150 m. Flowering: July to December.

*Specimens examined:*

*Thomas 153* (holo L); *Niga Nangkat NN 171, 277, 348; Sands 5930; Van Niel 4111, 4521.*

**22. *Ardisia cockburniana* C.M. Hu, *spec. nov.***

*Ardisiae crassae* C.B. Clarke similima, a qua foliis subtus densissime ferrugineo-lepidoto-pubescentibus, antheris haud locellatis differt. — Typus: *Cockburn FRI 8246* (holo L), Malaya, Kepong, Selangor, Ulu Besut Trengganu.

Shrub or small tree to 3 m high. *Branchlets*, inflorescence and petioles densely ferruginous tomentose, covered with stellate scaly hairs. *Leaves* alternate; petioles 1–1.5 cm long, slightly canaliculate; blades oblong-elliptic, 12–19 by 3–5 cm, base broadly cuneate or obtuse, apex acute or slightly acuminate, entire, with numerous tiny pellucid glandular dots, glabrous above except puberulous on the impressed midrib when young, ferruginous puberulous beneath, lateral nerves 16–20 pairs, angle to the midrib about 60°, arcuate ascending, tertiary nerves obscure, almost invisible. *Inflorescence* terminal, paniculate, 13–15 cm long including the peduncle (lengthening to 23 cm in fruit), 2 times branched, lower primary branches 2–3 cm long, secondary branches 3–6 mm long, each bearing 4–6 umbellate flowers; bracteoles lanceolate, 2–3 mm long, densely ferruginous puberulous. *Pedicels* 1–2 mm long (to 4 mm in fruit), rather thick (to 1.5 mm across in fruit). *Calyx* c. 2 mm long; lobes triangular-lanceolate, c. 1.5 mm long, acute, densely rusty puberulous outside, ciliate. *Corolla* red; tube c. 0.5 mm long; lobes ovate, c. 3 by 2 mm, acuminate, scarcely punctate. *Anthers* lanceolate, c. 2.5 mm long, acuminate, obscurely punctate on back. *Ovary* ovoid; style 6 mm long, exerted before flower opening; ovules 8–10 in 1 series. *Fruit* globose, c. 5 mm in diameter.

Distribution — Peninsular Malaysia: Kepong, Selangor, Ulu Besut Trengganu.

Habitat — In lowland disturbed forest, on hillside and riverbank; altitude c. 30 m.

*Specimens examined:*

*Cockburn FRI 8246* (holo L; iso A); *Kochummen 98767* (A).

**23. *Ardisia crassiuscula* C.M. Hu, *spec. nov.***

*Ardisiae crassae* C.B. Clarke et *Ardisiae cockburnianae* C.M. Hu similis, a quibus calycibus brevioribus, foliorum nervis lateralibus nervo intramarginali confluentibus differt. — Typus: *Kochummen FRI 2473* (holo L), Malaya, Selangor, Piah Fr. Kuala Kangsar, Perak.

Tree to 5 m high. *Branchlets* below the inflorescence ± compressed, sparsely rusty-lepidote. *Leaves* alternate; petioles 10–15 mm long, canaliculate; blades oblong-lanceolate, 10–20(–28) by 3–6.5(–8.5) cm, base broadly cuneate, apex shortly acuminate, entire, glabrous, glandular dots numerous, very tiny, obscure on both surfaces, midrib flat or slightly impressed above, raised beneath, lateral nerves more than 25 pairs, impressed above, raised beneath, almost in right angle to the midrib, arcuate ascending and forming a looped marginal vein near the margin, tertiary vein slender, ± prominent on both surfaces. *Inflorescence* terminal, rusty glandular puberulous, paniculate, 2 times branched, primary branches 2.5–5 cm long, secondary branches 2–15 mm long, each bearing 3–8 umbellate flowers. *Pedicels* 1.5–2 mm long, thickened in fruit. *Calyx* c. 1.5 mm long; lobes ovate-triangular, c. 1 mm long, acute, black punctate on back, minutely glandular ciliate. *Corolla* purple; tube c. 0.75 mm long; lobes ovate-elliptic, c. 3 mm long, acute, scarcely punctate. *Anthers* ovate, c. 2 mm long, acute, locellate;

filaments very short. *Ovary* ovoid, glabrous; style c. 4.5 mm long, exerted before flower opening; ovules c. 12 in 1 series. *Fruit* subglobose, c. 4.5 mm in diameter.

Distribution — Peninsular Malaysia: Selangor, Perak; Kelantan; Trengganu.

Habitat — In lowland primary and dipterocarp forest, on broad ridge top and rock shore; altitude 100–150 m. Flowering: June, July.

*Specimens examined:*

*Kochummen FRI 2473* (holo L); *Cockburn FRI 7025*; *Everett FRI 14517*; *Saw FRI 36479*; *Stone, Chiu et al. 15269*.

#### 24. *Ardisia elocellata* C.M. Hu, *spec. nov.*

*Ardisiae nurii* Furtado similis, sed inflorescentiis paniculatis, floribus in ramulis ultimis racemose despositis, antheris haud locellatis differt. — Typus: *Cockburn FRI 8216* (holo L), Malaya, Selangor, G. Lawit Besut, Trengganu.

Small tree to 6 m high. *Branchlets* terete, glabrous. *Leaves* alternate; petioles 1.5–2 cm long, shallowly canaliculate; blades elliptic to obovate-elliptic, 15–27 by 4.5–7.2 cm, base cuneate, apex shortly acuminate, entire, subcoriaceous, glabrous, scarcely punctate, midrib impressed above, strongly raised beneath, lateral nerves slender, 18–24 pairs, angle to the midrib about 70°, arcuate ascending and anastomosing near the margin, reticulation of veins obscure. *Inflorescence* terminal, 13–24 cm long, ferruginous puberulous, median axis ± compressed, 2 times branched, lower primary branches to 8 cm long, with a few secondary branches in the lower half; flowers many, usually racemously arranged. *Pedicels* 6–8 mm long, ± glandular. *Calyx* c. 3 mm long; tube c. 1 mm long; lobes ovate-triangular, acute or ± obtuse, black punctate near the apex, minutely ciliate. *Corolla* pink, 4.5–5 mm long; tube c. 0.5 mm long; lobes ovate, 2–2.5 mm broad, acute, scarcely punctate. *Anthers* ovate 2.5–3 mm long, apiculate, obscurely punctate on back. *Ovary* ovoid; style c. 6 mm long, exerted before flower opening; ovules c. 20 in 2 series. *Fruit* globose, 6 mm in diameter.

Distribution — Peninsular Malaysia: Selangor, Trengganu, Gunung Lawit, District Besut and Ulu Trengganu.

Habitat — In primary rain forest and ridge top hill forest; altitude 300–1300 m. Flowering: March, April.

*Specimens examined:*

*Cockburn FRI 8216* (holo L); *Davidson 1275*.

#### 25. *Ardisia leuserensis* C.M. Hu, *spec. nov.*

*Ardisiae sanguinolentae* Blume similis, sed calycibus longioribus, paulo infra medium in lobis triangularibus fissis, antheris locellatis, ovulis paucioribus (c. 8) uniseriatis differt. — Typus: *De Wilde & De Wilde-Duyffes 18286* (holo L), N Sumatra, Atjeh, Gunung Leuser Nature Reserve.

Small tree, 3–8 m high. *Branchlets* glabrous, ± compressed below the inflorescence. *Leaves* alternate; petioles 1.5–2 cm long, canaliculate; blades oblong-elliptic, 12–29 by 3.5–6.5 cm, base cuneate to obtuse, apex acuminate, margin entire, chartaceous, glabrous, with numerous tiny colourless glandular dots on both surfaces, midrib raised slightly above, strongly beneath, lateral nerves 16–18 pairs, impressed above, raised

beneath, angle to the midrib about 60°, arcuate ascending near the margin; tertiary veins invisible or very obscure. *Inflorescence* terminal, 13–15 cm long, scaly puberulous, median axis compressed, 2 times branched; lower primary branches 5–6 cm long, secondary branches 3–6 mm long, racemously arranged, each bearing 2–6 umbellate flowers. *Pedicels* 1–2 mm long, scaly puberulous. *Calyx* c. 2 mm long, cleft to a little below middle; lobes triangular, glabrous, with 3–5 glandular dots on back, minutely ciliate. *Corolla* purple-lilac; tube c. 0.75 mm long; lobes ovate-elliptic, c. 4 by 2 mm long, acute, with a few orange glandular dots near margin. *Anthers* ovate, c. 2 mm long, apiculate, locellate, obscurely punctate on back. *Ovary* ovoid; style c. 3 mm long, exerted before flower opening; ovules c. 8 in 1 series. *Fruit* globose, c. 5 mm in diameter.

Distribution — Sumatra: Atjeh, Gunung Leuser; Barisan rang; border of Asahan and Toba.

Habitat — In montane primary and disturbed rain forest; altitude 500–1000 m. Flowering: May.

*Specimens examined:*

*De Wilde & De Wilde-Duyffes* 18286 (holo L), 12345, 16594.

**26. *Ardisia sanguinolenta* Blume var. *margimaly* C.M. Hu, var. nov.**

A var. *sanguinolenta* omnino glabra, inflorescentiis laxioribus, pedicellis longioribus, ad 10 mm longis differt. — Typus: *Keßler* 370 (holo L), Brunei, Sungei Ingei.

Tree to 5 m high, throughout glabrous, bark grey, smooth. *Branchlets* subterete, with lines between the petioles, flattened at the insertion. *Leaves* alternate; petioles c. 1 cm long, canaliculate; blades oblong to oblong-lanceolate, 12–29 by 3.5–7.5 cm, base broadly cuneate to subrounded, apex acuminate, margin entire, chartaceous, dark green above, ± rusty-lepidote beneath, glandular dots scattered, ± prominent on the lower surface, midrib ± impressed above, raised beneath, lateral nerves 18–22 pairs, prominent beneath, angle to the midrib about 60°, arcuate ascending along the margin; reticulation of veins obscure or ± prominent beneath. *Inflorescence* a loose terminal pyramidal panicle, 15–25 cm long, with a spread 16–18 cm at base, 3 times branched, sometimes with lanceolate leafy bracts (2.5–7 cm); ultimate branches 6–18 mm long, each bearing 5–12 subumbellate flowers. *Pedicels* 6–10 mm long. *Calyx* c. 1.5 mm long, cleft to a little below middle; lobes triangular, acute, black punctate, minutely ciliate. *Corolla* whitish, c. 3.5 mm long; tube very short; lobes ovate, c. 1.75 mm broad, with a few orange or pellucid glandular dots. *Anthers* ovate, c. 2 mm long, ± apiculate, scarcely punctate. *Ovary* glabrous; style c. 3 mm long, exerted before flower opening; ovules c. 30 in 2 series. *Fruit* depressed globose, c. 5 by 6.5 mm.

Distribution — Borneo: Brunei, Sungei Ingei; Ulu Belait; Temburong District, Sungai Temburong.

Habitat — In primary and dipterocarp forest; altitude 30–70 m. Flowering: November, December.

Vernacular name — Margimaly (Iban).

*Specimens examined:*

*Keßler* 370 (holo L); *BRUN* 134 (*Ashton*); *Awong Anak Kaya WKM* 355; *Dransfield* 6682; *Forman* 1173; *Jacobs* 5570; *Sands* 5913; *S* 29266 (*Wight*).

**27. *Ardisia venulosa* C.M. Hu, *spec. nov.***

*Ardisiae sanguinolentae* Blume similis, sed floribus minoribus, c. 2 mm longis, foliorum nervis lateralibus nervo intramarginali confluentibus, ovulis paucioribus (4 vel 5) uniseriatis differt. — Typus: *Rahmat si Boeea 10981* (holo L), Sumatra, Asahan.

Shrub to 2.5 m high. *Branchlets* subterete, grey, covered with rusty scales when young. *Leaves* alternate; petioles 10–12 mm long, canaliculate; blades narrowly elliptic to lanceolate, 7.5–15.5 by 2–4.8 cm, base cuneate, apex acuminate, margin entire, subcoriaceous, glabrous, ± shining above, glandular dots numerous, obscure or ± prominent on both surfaces, midrib impressed above, raised beneath, lateral nerves 12–18 pairs, angle to the midrib about 60°, anastomosing and forming a double marginal vein near the margin, reticulation of veins prominent on both surfaces. *Inflorescence* terminal, paniculate, 7–11 cm long, 2 or 3 times branched, sparsely rusty-lepidote; primary branches 2–4.5 cm long; flowers 2–6 umbellately arranged on the ultimate branches. *Pedicels* 2–3 mm long, glabrous. *Calyx* c. 1 mm long; lobes ovate-triangular, c. 0.75 mm long, obtuse, with a few thick glandular dots on back, minutely ciliate. *Corolla* c. 2.5 mm long; tube very short; lobes ovate, c. 1.2 mm broad, acute, with a few glandular dots near apex. *Anthers* ovate, c. 0.75 mm long, apiculate. *Ovary* ovoid; style c. 2.5 mm long, exerted before flower opening; ovules 4 or 5 in 1 series. *Fruit* subglobose, c. 4 mm in diameter.

Distribution — Sumatra: Atjeh, Asahan (east coast), Dolk Parhorasan; Mt Sogo near Pajakumbuh.

Habitat — In montane forest; altitude 1100–2000 m. Flowering: October, November.

*Specimens examined:*

*Rahmat si Boeea 10981* (holo L), 10436, 10446, 10459, 10487, 10570, 10623, 11050, 11090, 11294; *W. Meijer 5109, 5291*.

**Subgenus *Tinopsis* Mez**

**28. *Ardisia lanceolata* Roxb. var. *asahanensis* C.M. Hu, *var. nov.***

A var. *lanceolata* Roxb. inflorescentiis glabris, floribus minoribus, sepalis ovato-ellipticis nec orbicularibus differt. — Typus: *Rahmat si Boeea 9500* (holo L), Sumatra, Tor Matoe-toeng, Asahan.

Small tree, throughout glabrous. *Branchlets* subterete, bark grey. *Leaves* crowded toward apex of the current year branchlets, subverticillate; petioles 8–15 cm long, canaliculate; blades obovate- or oblanceolate-elliptic, (6–)10–20 by 3.2–6 cm, base cuneate, apex acute or shortly acuminate, margin entire, narrowly recurved, coriaceous, ± shining above, with numerous tiny sunken pits beneath, glandular dots scattered, sometimes occur only along the margin, midrib impressed above, raised beneath, lateral nerves very slender, 8–14 pairs, angle to the midrib about 50°, tertiary veins obscure. *Inflorescence* terminal, 1 time branched; lower branches 2.5–6 cm long, with 3–12 subumbellately or racemosely arranged flowers. *Pedicels* 3–6 mm long, thickened in fruit. *Calyx* c. 2.5 mm long, split almost to base; lobes ovate-elliptic, c. 1.5 mm broad, enlarged to 3.5 by 3 mm in fruit, ± obtuse, sparsely punctate, ciliate. *Corolla* whitish, c. 4.5 mm long; tube very short; lobes elliptic, c. 2 mm broad, acute, black punctate.



*Anthers* lanceolate, c. 2.5 mm long, obscurely punctate. *Ovary* ovoid; style c. 2 mm long; ovules about 50 in 4 series. *Fruit* c. 5 mm in diameter.

*Distribution* — Sumatra: Tor Matoetoeng, Asahan; vicinity of Tomoean, Dolok, Asahan; Bandar Poelau, Asahan; Karo plateau near Kabandjahe; near Aek Sordand, Loendoet Concession, Koeloe.

*Habitat* — In old jungle and secondary growth; altitude 1000–1800 m. Flowering: August.

*Specimens examined:*

*Rahmat si Boeea* 9500 (holo L), 9863; *Bartlett* 7283, 7646; *Lörzing* 6224, 13642; *Yates* 2579.

### 29. *Ardisia sagoensis* C.M. Hu, *spec. nov.*

Species valde distincta cujus affinitas est cum *Ardisia creaghii* Ridl. atque *Ardisia spilota* B.C. Stone, a quibus foliis membranceis, punctis pellucidis dense praeditis differt. *Ardisia lingula* B.C. Stone habitu et foliorum forma speciei novae similis, sed structura inflorescentiae diversissima. — *Typus: Maradjo* 351 (holo L), W Sumatra, Mt Sago, east of Pajakumbuh, Hutan Tambuik.

Small tree, young parts and inflorescence densely covered with rusty appressed scales. *Branchlets* ± compressed, flattened at the insertion. *Leaves* alternate; petioles 3–6 mm long, canaliculate, ± rusty-lepidote; blades elliptic-lanceolate, 6–12 by 1.7–3.6 cm, base cuneate to broadly cuneate, apex acuminate, entire, membranaceous, glabrous above, ± covered with rusty appressed scales beneath, with numerous tiny pellucid glandular dots, midrib flat above, raised beneath, lateral nerves 12–14 pairs, with intermediate shorter ones, prominent beneath, angle to the midrib about 75°, arcuate ascending and anastomosing near the margin, tertiary veins slender, prominent beneath. *Inflorescence* terminal, paniculate, 6–8 cm long in fruiting time, median axis compressed, 2 times branched, primary branches 1.5–4.5 cm long, ± compressed, secondary branches 1–1.8 cm long, each bearing 2–4 subumbellate flowers. *Pedicels* 8–12 mm long in fruit. *Persistent calyx* 2.3 mm long, split to base; lobes broadly elliptic, c. 2 mm broad, obtuse, glabrous, with numerous pellucid glandular dots. *Fruit* depressed globose, 4.5 by 5 mm.

*Distribution* — W Sumatra, Mt Sago, east of Pajakumbuh, Hutan Tambuik: Hutan Sinamo, G. Kapur.

*Habitat* — In forest; altitude 600–700 m.

*Specimens examined:*

*Maradjo* 351 (holo L), 381.

### Subgenus *Tinus* (Burm.) Mez

### 30. *Ardisia daphinifolia* C.M. Hu, *spec. nov.*

*Ardisia elliptica* Thunb. similis, sed calyce brevior, fere toto in lobos ovatos fisso, antheris haud locellatis differt. — *Typus: Beaman* 9240 (holo L), Borneo, Ranau District, SW side of Lohan River.

Shrub or small tree to 2 m high, glabrous. *Branchlets* terete. *Leaves* alternate, ± crowded to the upper 1/3 of the new growth; petioles 5–13 mm long, canaliculate; blades

elliptic to narrowly elliptic, 6–12 by 2.2–4 cm, base cuneate, apex acute or shortly acuminate, entire, subcoriaceous, not punctate, with tiny sunken pits on the lower surface, midrib flat above, raised beneath, lateral nerves slender, sometimes obscure, 16–18 pairs, subparallel, angle to the midrib about 60°, anastomosing and forming a looped marginal vein near the margin, reticulation of veins  $\pm$  prominent beneath or obscure. *Inflorescence* lateral, subumbellate, 3–5 flowered. *Peduncle* 2–3.5 cm long. *Pedicels* c. 1.5 cm long. *Calyx* c. 1.5 mm long; lobes ovate, c. 1 mm long, scarcely imbricate, apex obtuse or slightly emarginate, obscurely punctate on back. *Corolla* pink; tube very short, c. 0.5 mm long; lobes ovate, 6 by 3.75 mm, acute, densely marked with orange glandular dots and short lines. *Anthers* lanceolate, c. 4.5 mm long, acuminate, sparsely black punctate on back. *Ovary* ovoid; style c. 4 mm long; ovules about 30 in 4 series. *Fruit* depressed globose, 4 by 6 mm.

Distribution — Borneo: Sabah, Ranau District.

Habitat — In primary forest, on banks, steep slopes, cliffs; altitude 700–1000 m. Flowering: March, April.

*Specimens examined:*

*Beaman* 9240 (holo L), 9057; *SAN* 25335 (*Brand & Anak*).

### 31. *Ardisia kajumarina* C.M. Hu, *spec. nov.*

Planta inflorescentia corymboso-paniculata, *Ardisiae banghamii* Merr. subsimilis, sed floribus multo majoribus ad 9 mm longis, foliis acutis apice ipso obtuso differt. —  
Typus: *Kostermans* 19101 (holo L; iso C), W Sumbawa, Mt Batulantee.

Small tree to 3 m high, glabrous. *Branchlets* terete. *Leaves* alternate; petioles 6–10 mm long, canaliculate; blades elliptic to oblong-elliptic, 8–15 by 3–5.5 cm, base broadly cuneate, apex acute, tip blunt, entire, subcoriaceous, obscurely punctate on both surfaces, midrib  $\pm$  impressed above, raised beneath, lateral nerves slender, 16–18 pairs, angle to the midrib about 60°, arcuate upward, anastomosing at margin, reticulation of veins prominent beneath. *Inflorescence* lateral, corymboso-paniculate, 1 time branched. *Peduncle* 3–4 cm long, compressed; branches 1.5–3 cm long. *Flowers* many, racemously arranged on the apex of median axis and umbellately arranged on branches. *Pedicels* 1.3–2.5 cm long. *Calyx* suborbicular, 3.5–4 mm long, split almost to base, apex rounded, scarcely punctate, minutely ciliolate, imbricate. *Corolla* light red; tube c. 1 mm long; lobes ovate, 6–7 by 4–5 mm, acute, rather thick, scarcely punctate. *Anthers* lanceolate, acuminate, c. 4 mm long, punctate on back. *Ovary* ovoid, narrowed upward to the style; style c. 4.5 mm long; ovules about 30 in 3 series.

Distribution — Lesser Sunda Islands: W Sumbawa, Mt Batulantee; Batudulang.

Habitat — In secondary vegetation; altitude 600–1000 m. Flowering: October.

Vernacular name — *Kaju marina* (W Sumbawa).

*Specimens examined:*

*Kostermans* 19101 (holo L), 18092.

### 32. *Ardisia scortechinii* King & Gamble var. *trengganuensis* C.M. Hu, *var. nov.*

A var. *scortechinii* floribus majoribus ad 10 mm longis, foliis latoribus differt. — Typus: *F.S.P. Ng* *FRI* 022021 (holo L), Malaya, Sg. Petung, Ulu Trengganu.

Small tree to 3 m high, throughout glabrous. *Branches* stout, with large leaf-scars; branchlets terete. *Leaves* alternate; petioles 1–2.5 cm long, subterete; blades elliptic to obovate-elliptic, 13–20 by 5–8.5 cm, base cuneate, apex broadly acute or subrounded with a short acume, entire, subcoriaceous, with colourless  $\pm$  raised glandular dots on both surfaces, midrib flat or slightly raised above, strongly raised beneath, lateral nerves slender, subparallel, 16–20 pairs, angle to the midrib about  $70^\circ$ , arcuate ascending and anastomosing along the margin, reticulations of veins prominent on both surfaces. *Inflorescence* lateral, subumbellate, 3–8-flowered. *Peduncle* c. 2 cm long, lengthening to 4.5 cm in fruit,  $\pm$  compressed. *Pedicels* 8–10 mm long, rather thick, lengthening to 2 cm in fruit. *Calyx* c. 5 mm long; lobes suborbicular, c. 4 by 5 mm, imbricate, apex rounded to subtruncate, with numerous orange glandular dots, especially prominent near the margin, minutely ciliate. *Corolla* waxy-pink; tube c. 1.5 mm long; lobes rhomboid-elliptic, c. 8 by 4 mm, broadest at middle, narrowed to both ends, apex acute, with orange dots. *Anthers* lanceolate, c. 5 mm long, apiculate, obscurely black-punctate on back. *Ovary* ovoid, narrowed upward; style c. 5 mm long; ovules c. 26 in 3 series. *Fruit* globose, c. 1.2 cm in diameter.

Distribution — Peninsular Malaysia: Sg. Petung, Ulu Trengganu.

Habitat — Hillside virgin jungle and primary forest; altitude c. 300 m.

*Specimens examined:*

*F.S.P. Ng FRI 022021* (holo L); *Cockburn FRI 10553*; *Loh Hoy Shing FRI 13525*.

### 33. *Ardisia torsiva* C.M. Hu, *spec. nov.*

Proxima *Ardisiam solanaceae* Roxb., sed sepalis elliptico-ovatis, nec orbicularibus, petalis lanceolatis differt. *Ardisiae laevigatae* Blume habitu et aspectu subsimilis, sed corollae calycisque forma longe recedit. — Typus: *De Wilde & De Wilde-Duyffes 16041* (holo L), N Sumatra, Atjeh, Gunung Leuser Nature Reserve.

Small tree to 5 m high, throughout glabrous. *Old branches* verrucose; branches of the current year terete, smooth. *Leaves*  $\pm$  conferted near the apex of branches; petioles 8–15 mm long, canaliculate and narrowly winged; blades elliptic, 7.5–17 by 3.5–6 cm, base cuneate, apex acuminate, thickly chartaceous to subcoriaceous, obscurely punctate and with numerous pellucid glandular dots and short glandular lines, midrib impressed above, strongly raised beneath, lateral nerves 14–18 pairs, angle to the midrib about  $60^\circ$ , arcuate ascending. *Inflorescence* lateral, with 4–6 subumbellately or racemosely arranged flowers. *Peduncle* 3–4 cm long,  $\pm$  compressed. *Pedicels* c. 2 mm long. *Calyx* 4.5–5 mm long, split almost to base; lobes ovate-elliptic, 2.5–3 mm broad, 5-nerved, apex broadly acute, with pellucid and a few black dots. *Corolla* pale pink to whitish; tube c. 1 mm long; lobes obovate-lanceolate, c. 9 by 4 mm, strongly twisted, with numerous pellucid glandular dots and a few black dots at apex. *Anthers* ovate-lanceolate, c. 3.5 mm long,  $\pm$  apiculate, scarcely punctate. *Ovary* ovoid; style c. 7 mm long; ovules more than 30 in 4 series. *Fruit* subglobose, 8–9 mm in diameter.

Distribution — N Sumatra: Atjeh, Gunung Leuser; Gunung Kerarisi; Mt Kemiri.

Habitat — In montane rain forest and mossy forest; altitude 1000–3000 m.  
Flowering: April.

*Specimens examined:*

*De Wilde & De Wilde-Duyffes 16041* (holo L), 13220, 15346, 16084, 16340; *S 1243* (K. Iwatsuki, G. Murata et al.); *Van Steenis 8518, 9102, 9547, 9690*.

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