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Two new species of the subgenus *Cryptanaema* de Vos of the genus *Cyana* Walker from eastern Indonesia (Lepidoptera: Erebidae: Arctiinae: Lithosiini: Nudariina)

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Abstract

Two new species of the subgenus *Cryptanaema* de Vos, 2017 of the genus *Cyana* Walker, 1854 are described from eastern Indonesia: *Cyana* (*Cryptanaema*) *ngata* **sp. n.** (Western New Guinea) and *Cyana* (*Cryptanaema*) *sibela* **sp. n.** (Maluku Islands). Adults, male and female genitalia of the new and similar species are illustrated.

Key words: Maluku Islands, morphology, New Guinea, taxonomy

Introduction

Cyana Walker, 1854 is one of the most species-rich Erebidae genera within the tribe Lithosiini Billberg of the subfamily Arctiinae Leach. The genus is widespread from Sub-Saharan Africa and Madagascar through southern and eastern Asia to New Guinea and Australia. The New Guinean taxa of the genus were revised by de Vos (2017). The subgenus *Cryptanaema* de Vos, 2017 of the genus *Cyana* Walker, 1854 has recently been described to include fourteen species distributed in New Guinea and adjacent islands and northern Australia as well (de Vos 2017). Subsequently, two additional species were described from New Guinea (de Vos 2018) and the Maluku Islands (Volynkin 2021). In the course of studying the *Cyana* materials collected in New Guinea and the Maluku Islands, series of two unidentified species of the subgenus *Cryptanaema* were found. The New Guinean species is similar to *C. punctistrigosa* (Rothschild, 1913) and *C. devriesi* de Vos, 2018 while the Maluku one is reminiscent of the sympatric *C. halmahera* Volynkin, 2021. However, through comparison of the genitalia structures of these species with the similar congeners a number of distinctive characters were detected suggesting the discovery of two hitherto unknown species, the descriptions of which are provided in this paper.

Material and methods

Abbreviations of the depositories used: CKC = research collection of Karel Černý (Innsbruck, Austria); MWM/ZSM = Museum Witt Munich in the Bavarian State Collection of Zoology (Museum Witt München designated to Zoologische Staatssammlung München, Munich, Germany); NHMUK (formerly BMNH) = Natural History Museum (London, UK); RMNH = Naturalis Biodiversity Center (Leiden, the Netherlands). Other abbreviations used: HT = holotype; PT = paratype. In the type labels citations, different labels are separated by a forward slash ("/") while the different lines of the same label are separated by an upright slash ("|").

The genitalia were dissected and mounted in Euparal on microscope slides. The photographs of adults were taken using a Nikon D3100/AF-S camera equipped with a Nikkor, 18–55 mm lens while the genitalia were imaged

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using the same camera attached to a microscope with an LM-scope adapter. All photographs were processed using the Adobe Photoshop CC 2018 software.

The male and female genitalia terminology follows Goater *et al.* (2003) and Fibiger (1997).

Data of comparative material examined

Cyana* (*Cryptanaema*) *devriesi. **Holotype**: male (Fig. 3), [Indonesia, Western New Guinea] "Irian Jaya | Keb. Merauke | Boma | 1.viii.1993 | P.J.A. de Vries" / "Zoölogisch | Museum | Amsterdam" / red label "Naturalis Biodiversity Center | Holotype ♂ | Cyana devriesi De Vos, 2018 | SUGAPA online 11(1): 7 | Erebidae, Arctiinae, Lithosiini" / "Prep. RV1626♂ | Cyana devriesi sp.nov. | Det. R. de Vos, 2018" / QR-code label with a unique number "RMNH.INS | 1098955" (RMNH).

Cyana* (*Cryptanaema*) *punctistrigosa. **Holotype**: male (Fig. 4), "Mt. Goliath | 5000 ft., Centr. | Dutch N. Guinea, | about 139° long., | March 1911 | (A.S. Meek)." / red label "*Chionaema* | *punctistrigosa* | Type Rothsch." / red ring "Type" label / "Rothschild | Bequest | B.M.1939-1." / QR-code label with a unique number: "NHMUK010597977" (NHMUK). **Additional material examined**: 1 male, Indonesia, Irian Jaya, Taja, 80 km S Sentani, 250m, 2–5.II.2000, K. Černý & Hluchý leg., gen. prep. No.: AV5532 (prepared by Volynkin) (CKC); 1 female, Near Oetakwa R., Snow Mts., Dutch N. G., up to 3500 ft., X–XII.1910, Meek leg. / Rothschild Bequest B.M.1939-1, unique number: NHMUK 014173069, gen. prep. No.: NHMUK010317226 (prepared by Volynkin) (NHMUK).

***Cyana* (*Cryptanaema*) *inusitata* (Bethune-Baker, 1910)**. **Lectotype** (designated by de Vos (2017)): male, "Arfak Mountains, | North New Guinea. | 4,000 ft. Feb.–Mar., 1909. | C.B. Pratt." / "Ex Kenrick Coll. | B.M.1933-46. " / red ring "Type" label / QR-code label with a unique number: "NHMUK010597976" (NHMUK). **Paralectotype**: female, "Arfak Mountains, | North New Guinea. | 4,000 ft. Feb.–Mar., 1909. | C.B. Pratt." / "Ex Kenrick Coll. | B.M.1933-46. " / red ring "Type" label / QR-code label with a unique number: "NHMUK010597979" (NHMUK). **Additional material examined**: 1 male, Indonesia, Irian Jaya, Nabire, Irian Jaya highway, km 45, 745m, primary forest, 3°29'52''S, 135°43'84''E, 22–24.XI.1997, K. Černý leg., gen. prep. No.: AV5542 (prepared by Volynkin) (CKC); 1 female, Indonesia, Irian Jaya, Taja, 80 km S Sentani, 250m, 2–5.II.2000, K. Černý & Hluchý leg., gen. prep. No.: AV5543 (prepared by Volynkin) (CKC).

Cyana* (*Cryptanaema*) *halmahera. **Holotype**: male, [Indonesia, North Maluku Province, Maluku Islands] "Molukken, Halmahera Mt. Talagaranu, 600m 15km SE Baru(Primärwald [primary forest]), 22.–31.1.1996 1'12'N – 127'32'E [1°12'N, 127°32'E], lgSinjaev & Tarasov [Sinyaev & Tarasov leg.]", gen. prep. No.: ZSM Arct. 2021-024 (prepared by Volynkin) (MWM/ZSM). **Paratype**: 1 male with same data as holotype (MWM/ZSM).

Taxonomic part

Genus *Cyana* Walker, 1854

Cyana Walker, 1854, *List of the specimens of lepidopterous insects in the collection of the British Museum*, 2: 528.

Type species: *Cyana detrita* Walker, 1854 by monotypy.

Subgenus *Cryptanaema* de Vos, 2017

Cyana (*Cryptanaema*) de Vos, 2017, *Biodiversity, Biogeography and Nature Conservation in Wallacea and New Guinea*, 3: 597.

Type species: *Chionaema nigroplagata* Bethune-Baker, 1910, by original designation.

Diagnosis. Species of the subgenus have a cryptic colouration with the dominance of brown, grey and creamy white whereas most species of other subgenera of *Cyana* display aposematic red or yellow patterns on a white ground colour or (in the subgenus *Clerckia* Aurivillius, 1882) an aposematic combination of black and various shades of orange, red and yellow. In the male genitalia, vesica bearing clusters of numerous short but robust triangular

cornuti which is characteristic of the subgenus, a feature similar to such Nudariina genera as *Barsine* Walker, 1854, *Ammatho* Walker, 1855, etc. (illustrated by Volynkin *et al.* (2019)). In the female genitalia, the posterior section of the corpus bursae is strongly dilated and rugose sclerotised.

***Cyana* (*Cryptanaema*) *ngata* sp. n.**
(Figs 1, 2, 13, 19)

Type material. **Holotype** (Figs 1, 13): male, "Indonesia, Irian Jaya | 25 km S Manokwari, Arfak Mts. | Ngat Biep, river Ngat valley | 250m, 17. XII. 1993, Sekundärveg. [secondary vegetation] | leg. R.Brechlin & K.Cerny" / 'Slide | AV5533♂ | A. Volynkin" (MWM/ZSM, ex CKC).

Paratypes: **INDONESIA**: 14 males, 3 females, same data as holotype, gen. prep. Nos.: MWM 33.482 (male) and AV5534 (female) (prepared by Volynkin) (CKC and MWM/ZSM); 5 males, Irian Jaya, Birdshead Peninsula, Warkapi (nr Breie), primary lowland forest, 500 m, at light, 12.XI.1993, A.J. de Boer, A.L.M. Rutten & R. de Vos. [leg.], unique numbers: RMNH.INS.1108918, 1108919, 1108920, 1108921, and 1108465 (RMNH); 1 male, Papua Barat, Onin Peninsula, Werba, 106 m, 2°53'20"S 132°13'00"E, 31.X.2014, at light, S. & J. Sinnema, F. Groenen & P.J. Zumkehr leg., unique number: RMNH.INS.1108466 (RMNH); 1 male, Irian Jaya, Birdshead Peninsula, Arfak Mts, 300 m, Warmare Dua, 0°58'S 133°53'E, 27.II.1996, at light, primary forest/cultiv. area, ZMA-exp. 1996, unique number: RMNH.INS.1108464 (RMNH); 1 male, Irian Jaya, Birdshead Peninsula, Gng [Mount] Bembab 350 m, 1°26'S 134°11'E, 2.III.1996, at light, primary/secondary forest, ZMA-exp. 1996, unique number: RMNH.INS.1108922 (RMNH).

Diagnosis. The new species (Figs 1, 2) is superficially reminiscent of *C. punctistrigosa* (Figs 4–6) but distinguished by its somewhat smaller size and a number of details in the forewing pattern. The male of *C. ngata* **sp. n.** differs from *C. punctistrigosa* in the medial line with a narrower gap in the cell and a subcostal spot positioned more distally, and the less dentate postmedial line with a posterior section smoothly curved inwards whereas it is curved outwards in the congener. Additionally, the spots and shades in the postmedial area of the new species are markedly smaller than in *C. punctistrigosa*. The female of *C. ngata* **sp. n.** differs from that of *C. punctistrigosa* in the cell lacking the elliptical spot in the gap of the medial line, the postmedial cellular spots positioned somewhat more inwardly, and the interrupted subterminal line, which is continuous and sinuous in the congener. Compared to *C. devriesi* (Fig. 3), the male of *C. ngata* **sp. n.** is larger, has a broader forewing lacking the small elliptical spot in the cellular gap of the medial line, and a narrower terminal shade of the hindwing. The male genital capsule of *C. ngata* **sp. n.** (Fig. 13) differs from that of *C. devriesi* (Fig. 14) in the more elongate distal section of the valva, and the longer and basally broader ampulla (in proportion to the valva width). Compared to *C. punctistrigosa* (Fig. 15), the male genital capsule of the new species has a slightly thicker uncus, broader arms of the tegumen, narrower arms of the vinculum, a medially broader valva, and a slightly longer and medially wider ampulla (in proportion to the valva width). The phallus of *C. ngata* **sp. n.** is similar to that of *C. devriesi* and differs from that of *C. punctistrigosa* in the significantly broader distal section bearing a row of tiny denticles latero-ventrally. The vesica structure of the new species is clearly different from that of *C. punctistrigosa* and is similar to *C. devriesi*. However, the vesica of *C. ngata* **sp. n.** is much broader than in the congener and differs from it in the markedly larger subbasal diverticulum bearing a broader cluster of scobination, the much longer and broader dorsal diverticulum bearing more numerous cornuti, and the longer and broader ventral diverticulum bearing a longer cluster of more numerous cornuti. Since the female of *C. devriesi* is unknown, the female genitalia of *C. ngata* **sp. n.** (Fig. 19) are compared only with *C. punctistrigosa* (Fig. 20). The posterior section of the corpus bursae of the new species is broader than in *C. punctistrigosa* and weakly sclerotised whereas it is spinulose in the congener. Additionally, the signum bursae of the new species is markedly shorter than in *C. punctistrigosa*, and the appendix bursae is shorter and distally narrower (in proportion to the ovipositor size).

Description. **External morphology of adults** (Figs 1, 2). Forewing length 10.5–11.0 mm in males and 13.0 mm in female. Antenna weakly ciliate in both sexes, pale coffee brown proximally and dark brown medially and distally. Sexual dimorphism limited: female with somewhat broader forewing than in male, larger cellular spots with elliptical proximal one, larger shade-like postmedial spots of forewing, and paler hindwing with posteriorly broader terminal band. Head monotonous pale coffee brown. Thorax pale coffee brown with two trapezoid dark brown spots medially; patagia edged with dark brown scales. Forewing with rounded apex and medially convex

anal margin. Forewing ground colour pale coffee brown, pattern dark brown. Subbasal spot transverse dash-like, curved outwards along vein R. Antemedial line sinuous, interrupted into series of irregular spots. Medial line broad, dilated posteriorly and interrupted in cell. Cell between medial and postmedial lines with two small spots postero-proximally and anterio-distally. Postmedial line curved anterio-medially, diffuse with small cuneal spots on veins. Postmedial area with broad and diffuse dark brown shade subapically and two smaller and diffuse spots opposite cell and posteriorly. Terminal line interrupted into spots between veins, indistinct at tornus. Forewing cilia monotonous pale coffee brown. Hindwing ground colour pale ochreous-yellow. Discal spot dash-like, fuscous, indistinct. Terminal band fuscous, strongly dilated at apex and indistinct at tornus. Hindwing cilia fuscous with admixture of ochreous-yellow scales. Abdomen ochreous-yellow basally and distally and fuscous medially. **Male genitalia** (Fig. 13). Uncus elongate and slender, laterally flattened, slightly down curved medially and apically pointed. Tuba analis broad (ca. 2/3 of tegumen length), with thin and weakly sclerotised scaphium and broad setose subscaphium. Arms of tegumen somewhat dilated posteriorly. Vinculum more or less equal in length to tegumen, U-shaped, with thin but well-sclerotised arms. Valva lobular, dilated medially, with distally tapered, down curved and apically pointed distal section. Ampulla broadly triangular with slightly curved apical section and pointed tip, directed ventrally-inwards. Sacculus narrow (ca. half of basal section of valva width), with extremely short, protrusion-like distal process. Juxta broad but short, falcate. Phallus long and broad (in proportion to genital capsule size), straight, slightly dilated medially. Vesica broad (in proportion to phallus and genital capsule size), with large digitiform subbasal diverticulum bearing cluster of spinulose scobination distally. Ventral diverticulum broadly conical and medially curved, directed ventrad, granulose anteriorly and with cluster of numerous short triangular cornuti of various sizes posteriorly, and with short semiglobular granulose lateral subdiverticulum. Dorsal diverticulum sausage-shaped, directed anteriad, granulose with cluster of numerous short triangular cornuti of various sizes outwardly. Vesica ejaculatorius narrowly tubular, directed dorsad, with thin plate-like basal plate. **Female genitalia** (Fig. 19). Papilla analis broadly trapezoid with rounded corners, setose. Apophyses elongate and thin, equal in length, anterior one thinner than posterior one. Ostium bursae with membranous margins. Ductus bursae membranous, tubular, dilated anteriorly. Posterior section of corpus bursae broad (in proportion to ovipositor width), moderately sclerotised, rugose, with three clusters of short spinulose scobination. Anterior section of corpus bursae narrower than posterior one, semiglobular, membranous, with bilobate and strongly dentate signum anterio-laterally. Appendix bursae short and narrow (in proportion to corpus bursae), conical and apically curved, membranous, positioned postero-laterally on right size.

Distribution. Known only from its type locality in the Arfak Mountains (Indonesia, Western New Guinea).

Etymology. The specific epithet originates from the type locality, Ngat River. The name is a noun in apposition.

Cyana (*Cryptanaema*) *sibela* sp. n.

(Figs 7, 9, 16, 21)

Type material. **Holotype** (Figs 7, 16): male, [Indonesia, North Maluku Province, Maluku Islands] "N.Moluccas, 400m | Bacan Island | Mt.Sibela, 14km SE | Labuha, 2.–13.2.1996 | 0'38''S 127'32'' [0°38'S 127°32'E] | Sinjaev [*recte*: Sinyaev] & Afonin lg" / "Slide | ZSM Arct. | 2021-023♂ | A. Volynkin" (MWM/ZSM).

Paratypes: 1 male, same data as holotype (MWM/ZSM); 7 males, 1 female, [Indonesia, North Maluku Province, Maluku Islands] Molukken, Halmahera, Mt. Talagaranu, 600m 15 km SE Baru (Primärwald [primary forest]), 22–31.I.1996, 1°12'N, 127°32'E, Sinyaev & Tarasov leg., gen. prep. Nos.: ZSM Arct. 2021-021 (male), ZSM Arct. 2021-022 (female) (prepared by Volynkin (MWM/ZSM).

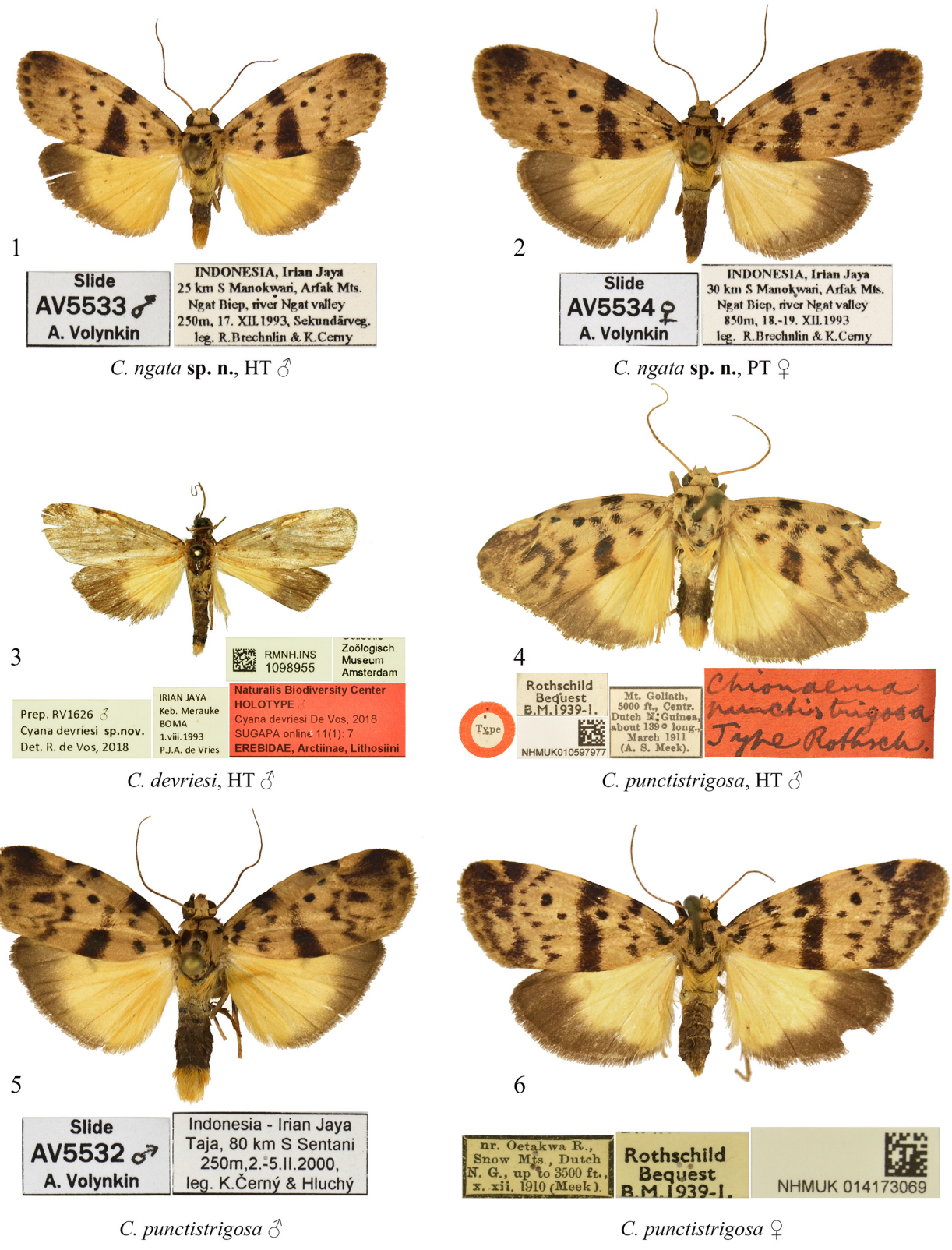
Diagnosis. *Cyana sibela* **sp. n.** (Figs 7–9) is superficially reminiscent of the sympatric *C. halmahera* (Fig. 10) belonging to the *Cyana fumea* Hampson, 1900 species group (de Vos 2017; Volynkin 2021) but is distinguished by the ochreous head, patagia and tegula (they are dark brown in the congener), the shorter lobus on the forewing, the developed forewing patter consisting of diffuse transverse lines and two black cellular spot (in *C. halmahera*, the pattern is reduced), and the pale yellow male hindwing with a somewhat broader terminal shade. Despite the superficial similarity, the male genital structures of the two species (Figs 16, 18) are strongly different and those of the new species are most reminiscent of the superficially dissimilar *C. inusitata* (Figs 11, 12). The male genital capsule of *C. sibela* **sp. n.** (Fig. 16) differs from that of *C. inusitata* (Fig. 17) in the medially thicker uncus, the

narrower and apically pointed valva (it is apically rounded in the congener), the somewhat shorter and markedly narrower ampulla, the conspicuously shorter medial saccular process positioned more proximally, the less convex margin of the distal section of the sacculus, and the somewhat more elongate and apically rounded distal saccular process, which is apically pointed in *C. inusitata*. The juxta of the new species has broader lateral arms than in *C. inusitata*. The phallus of *C. sibela* **sp. n.** is subapically dilated whereas it is evenly tubular medially and distally and somewhat dilated proximally in the congener. The vesica of the new species is markedly broader than in *C. inusitata* (in proportion to the phallus and genital capsule sizes). The subbasal diverticulum of *C. sibela* **sp. n.** is broad, apically conical and with two lateral lobes whereas it is narrower and sack-like in *C. inusitata*. The ventral diverticulum of the new species is conspicuously broader than in *C. inusitata* and has a markedly smaller subbasal lobe. The dorsal diverticulum of *C. sibela* **sp. n.** is broader and more rounded than in *C. inusitata*. In the female genitalia of *C. sibela* **sp. n.** (Fig. 21), the ductus bursae is markedly shorter than in *C. inusitata* (Fig. 22) (in proportion to the ovipositor size), the posterior sclerotised section of the corpus bursae is much narrower and less rugose, and the bulla is markedly longer and elliptical whereas it is more or less globular in the congener. Additionally, the apophyses anteriores of the new species are shorter than in *C. inusitata* (in proportion to the ovipositor size), and the signum bursae is larger.

Description. **External morphology of adults** (Figs 7–9). Forewing length 13.0 mm in both sexes. Antenna weakly ciliate in both sexes. Sexual dimorphism limited: female with more contrast forewing pattern, medial line positioned more proximally and touching proximal cellular spot (crossing distal cellular spot in male), and paler hindwing with broader terminal band and lacking discal spot. Head ochreous-brown with brown suffusion on frons. Thorax brown with ochreous-brown suffusion medially; patagia and tegula ochreous-brown, edged with brown scales. Forewing elongate with almost parallel margins and convex outer margin. Forewing ground colour ochreous-brown with dark brown irroration, pattern dark brown, diffuse. Subbasal line broad, diffuse. Antemedial line thin, irregularly dentate, dilated at anal margin. Medial line thin, curved inwards at costa. Medial area with two round blackish spots positioned longitudinally in cell. Postmedial line irregularly dentate, dilated medially and posteriorly. Postmedial area with intense dark brown suffusion. Forewing cilia dark brown. Hindwing ground colour pale yellow. Discal spot comma-like, indistinct, absent in female. Terminal band broad, fuscous, dilated at apex and stretching along costal margin. Hindwing cilia fuscous. Abdomen ochreous-brown basally and apically and fuscous medially. **Male genitalia** (Fig. 16). Uncus elongate and slender, laterally flattened, slightly down curved medially, dilated postmedially and subapically tapered, with tiny claw-like tip. Tuba analis broad basally (ca. ¾ of tegumen length) and narrower and tubular distally, with thin scaphium and setose subscaphium. Arms of tegumen slightly dilated anteriorly. Vinculum somewhat longer than tegumen, U-shaped, heavily sclerotised anteriorly. Valva lobular, somewhat dilated medially, with triangular and apically pointed distal section. Ampulla heavily sclerotised, triangular with claw-like curved tip. Sacculus narrow (ca. half of basal section of valva width), with broadly triangular medial process directed dorsad and positioned subproximally. Distal saccular process short (in proportion to valva length), narrowly triangular and apically rounded, directed distally. Juxta trapezoid with deep medial anterior depression. Phallus large (in proportion to genital capsule size), dilated medially and somewhat constricted distally. Vesica very broad (in proportion to genital capsule and phallus size). Subbasal diverticulum membranous, distally conical, with two semiglobular lateral lobes of different sizes. Ventral diverticulum broad, sack-like, granulose, ventrally bearing broad cluster of numerous short triangular cornuti of various sizes. Dorsal diverticulum broad, semiglobular, granulose, dorsally bearing cluster of short triangular cornuti of various sizes, with broadly conical and apically rounded weakly granulose subbasal lobe. Vesica ejaculatorius conical basally and tubular distally, with broadly triangular and heavily sclerotised basal plate, directed distally. **Female genitalia** (Fig. 21). Papilla analis trapezoid with rounded corners, setose. Apophyses elongate and thin, equal in length. Ostium bursae with membranous margins. Ductus bursae membranous, tubular anteriorly and funnel-like dilated posteriorly. Posterior section of corpus bursae broad (in proportion to ovipositor shape), sclerotised posteriorly and gelatinous and rugose anteriorly, protruding laterally to right side. Anterior section of corpus bursae narrower than posterior one, semiglobular, membranous, bearing bilobate and dentate signum anterio-laterally. Appendix bursae small (in proportion to corpus bursae size), originating postero-laterally on right side, membranous, broadly conical basally and narrowly tubular medially, with large (more or less equal in length to corpus bursae), membranous, elliptical bulla.

Distribution. Indonesia, Maluku Islands: Halmahera and Bacan Islands.

Etymology. The specific epithet is homonymic to the type locality, Mount Sibela. The name is a noun in apposition.



C. ngata **sp. n.**, HT ♂

C. ngata **sp. n.**, PT ♀

C. devriesi, HT ♂

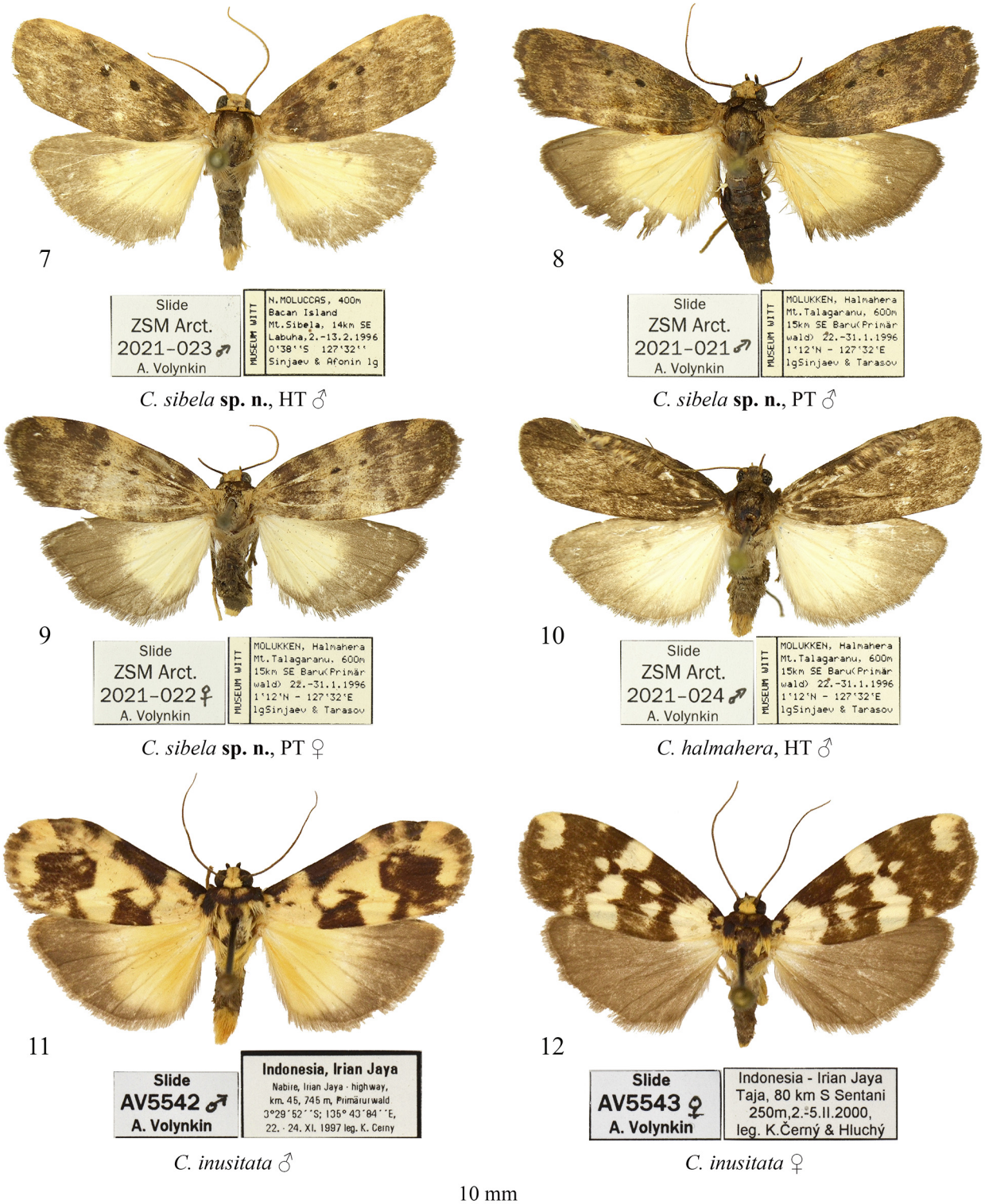
C. punctistrigosa, HT ♂

C. punctistrigosa ♂

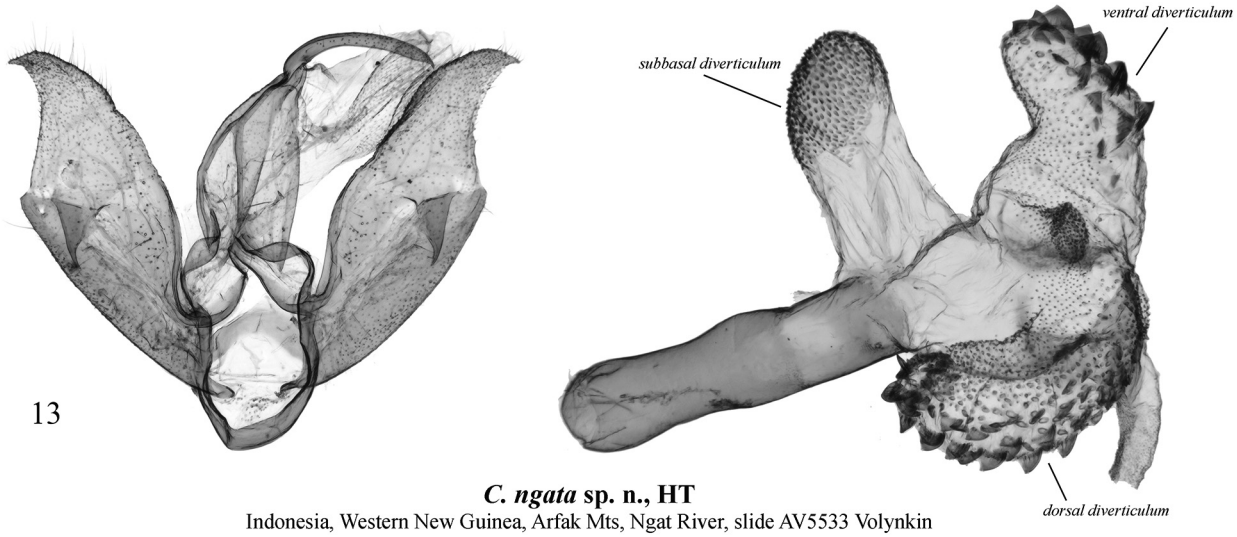
C. punctistrigosa ♀

10 mm

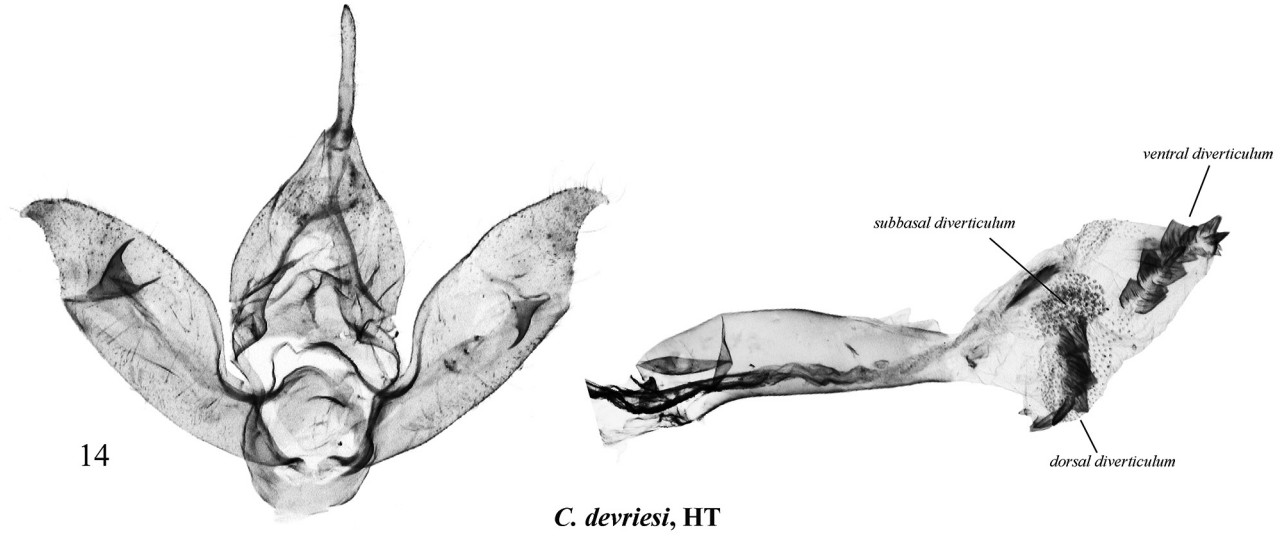
FIGURES 1–6. *Cyana* (*Cryptanaema*) spp.: adults. Depositories of the specimens: 1 in MWM/ZSM (ex CKC); 2 and 5 in CKC; 3 in RMNH; 4 and 6 in NHMUK (©The Trustees of NHMUK).



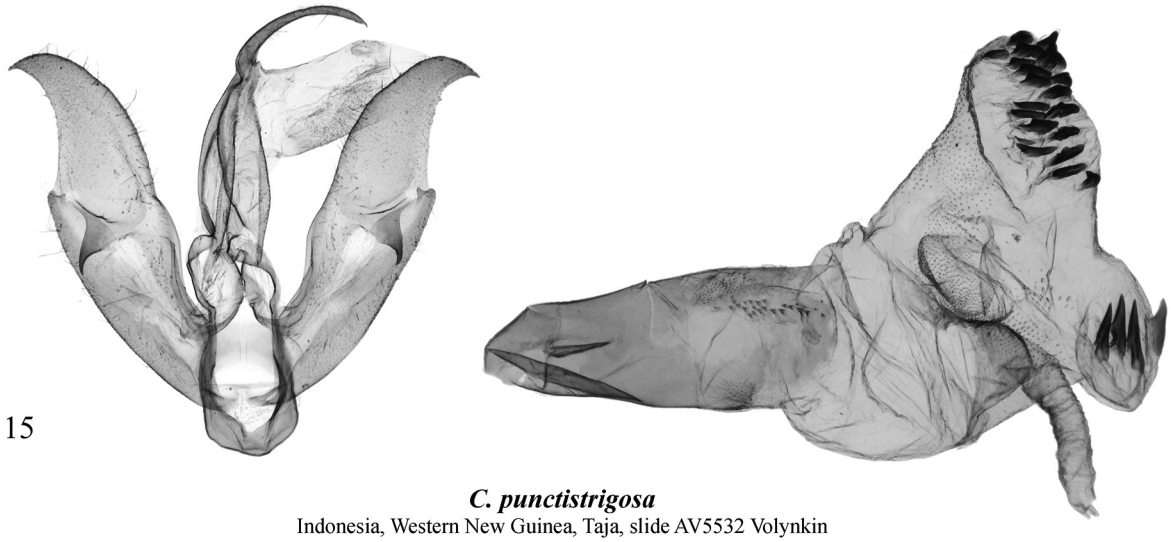
FIGURES 7–12. *Cyana* (*Cryptanaema*) spp.: adults. Depositories of the specimens: 7–10 in MWM/ZSM; 11 and 12 in CKC.



***C. ngata* sp. n., HT**
Indonesia, Western New Guinea, Arfak Mts, Ngat River, slide AV5533 Volynkin

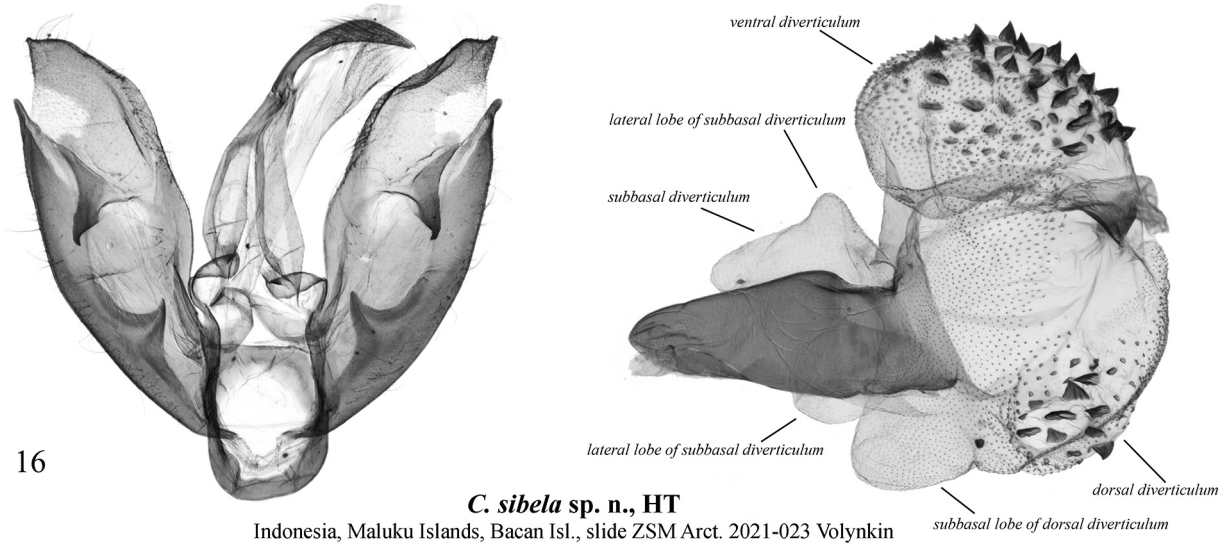


***C. devriesi*, HT**
Indonesia, Western New Guinea, Keb. Merauke, slide RV1626 de Vos

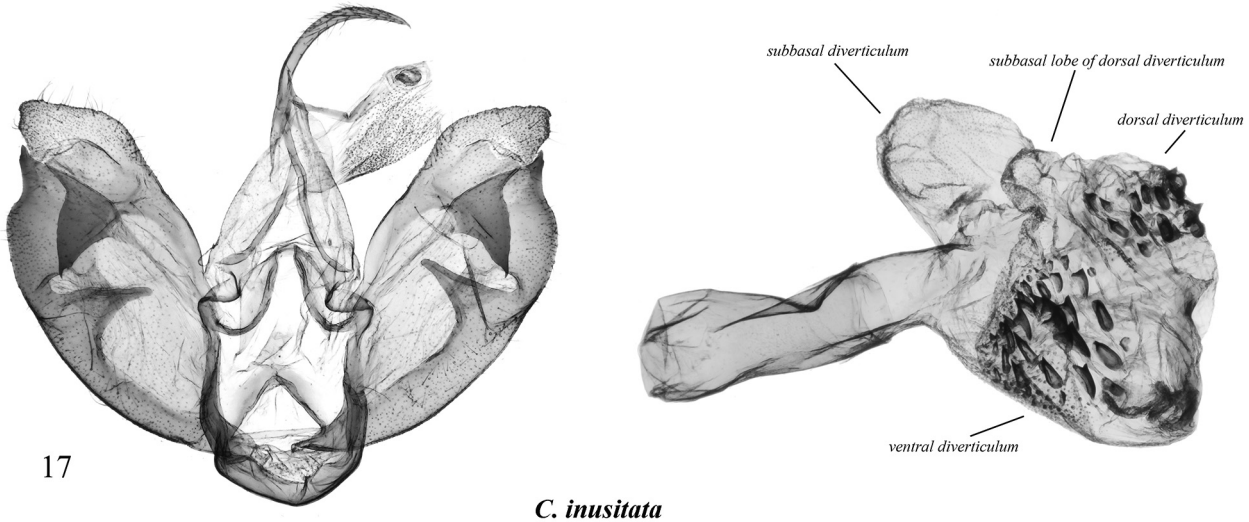


C. punctistrigosa
Indonesia, Western New Guinea, Taja, slide AV5532 Volynkin

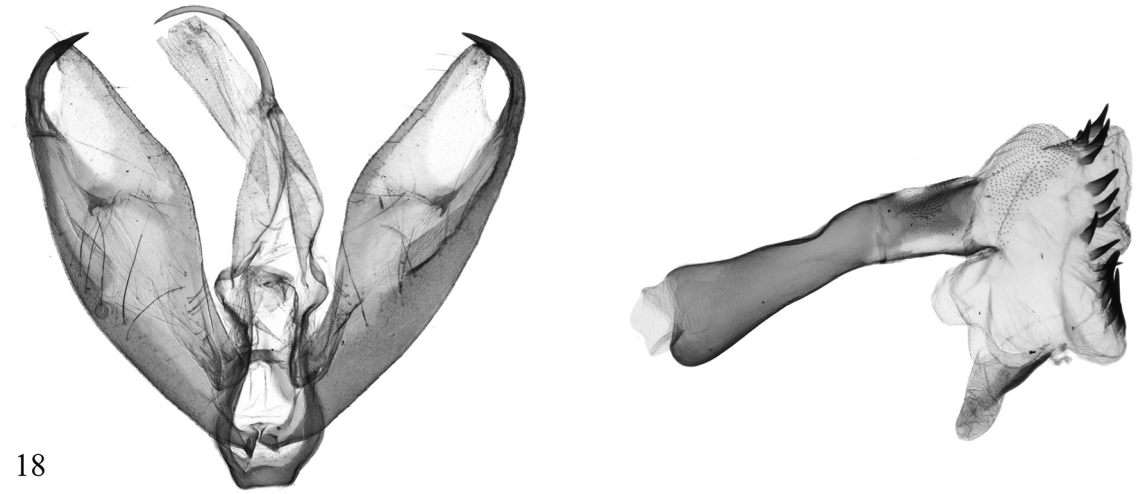
FIGURES 13–15. *Cyana* (*Cryptanaema*) spp.: male genitalia. Depositories of the specimens dissected: 13 in MWM/ZSM (ex CKC); 14 in RMNH; 15 in CKC.



***C. sibela* sp. n., HT**
Indonesia, Maluku Islands, Bacan Isl., slide ZSM Arct. 2021-023 Volynkin

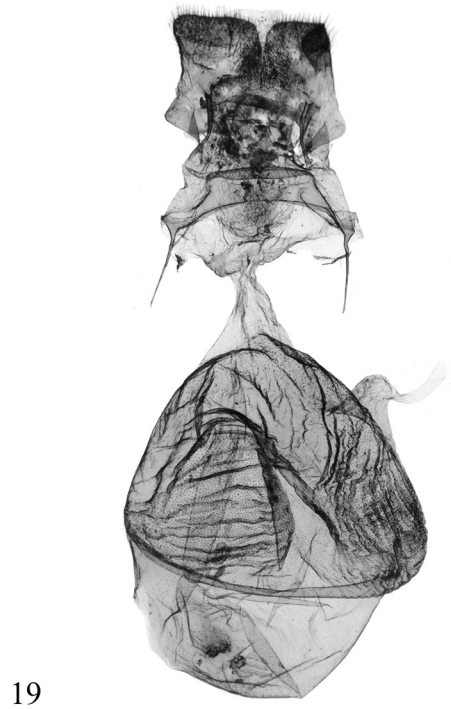


C. inusitata
Indonesia, Western New Guinea, Nabire, slide AV5542 Volynkin



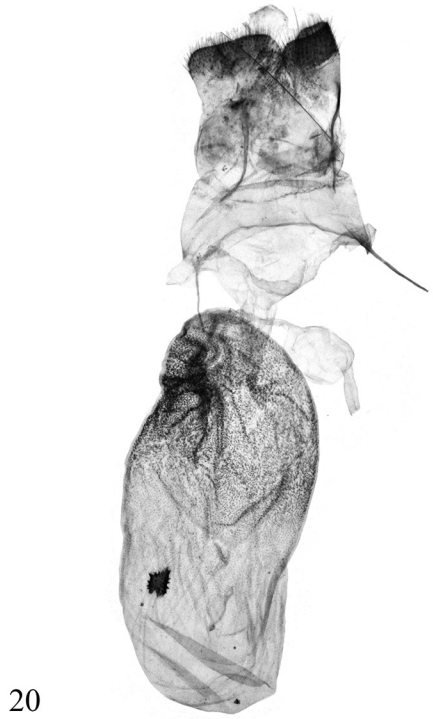
***C. halmahera*, HT**
Indonesia, Maluku Islands, Halmahera Isl., slide ZSM Arct. 2021-024 Volynkin

FIGURES 16–18. *Cyana* (*Cryptanaema*) spp.: male genitalia. Depositories of the specimens dissected: 16 and 18 in MWM/ZSM; 17 in CKC.



19

***C. ngata* sp. n., PT**
Indonesia, Western New Guinea, Arfak Mts,
slide AV5534 Volynkin

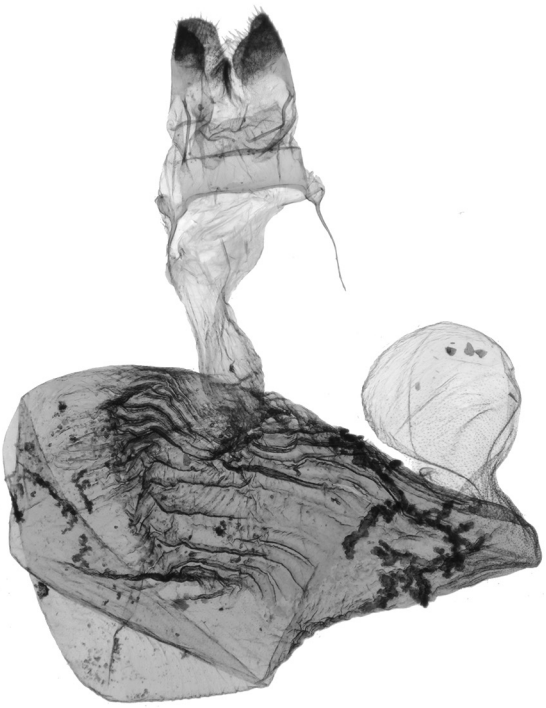


20

C. punctistrigosa
Indonesia, Western New Guinea, Snow Mts,
slide NHMUK010317226 Volynkin

21

***C. sibela* sp. n., PT**
Indonesia, Maluku Islands, Halmahera Isl.,
slide ZSM Arct. 2021-022 Volynkin



22

C. inusitata
Indonesia, Western New Guinea, Taja,
slide AV5543 Volynkin

FIGURES 19–22. *Cyana* (*Cryptanaema*) spp.: female genitalia. Depositories of the specimens dissected: 19 and 22 in CKC; 20 in NHMUK (©The Trustees of NHMUK); 21 in MWM/ZSM.

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