

**Research article**Submitted: July 21<sup>st</sup>, 2021 – Accepted: September 2<sup>nd</sup>, 2021 – Published: November 30<sup>th</sup>, 2021

DOI: 10.13133/2284-4880/569

**The *sumatrana* species group of the genus *Platyja* with descriptions of four new species (Lepidoptera: Erebidae)**Alberto ZILLI<sup>1,\*</sup>, Rob de VOS<sup>2</sup><sup>1</sup> Natural History Museum, Life Sciences DC2-2N, Cromwell Road, SW7 5BD London, UK – a.zilli@nhm.ac.uk; ORCID: <https://orcid.org/0000-0002-3416-8069><sup>2</sup> Naturalis Biodiversity Center, Department of Entomology, Darwinweg 2, NL-2333, CR Leiden, The Netherlands – rob.devos@naturalis.nl

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**Abstract**

It is shown that under the old concept of *Platyja cyanocraspis* Hampson, 1922 at least six species are intermingled, including two sympatric sibling ones from New Guinea. Four such species are new to science and are herein described, namely *Platyja subtracta* sp. n. (New Guinea), *P. togutila* sp. n. (Halmahera), *P. vityaz* sp. n. (Bismarck Archipelago) and *P. yaleyambae* sp. n. (Louisiades), while a fifth one from Buru and Seram is upgraded from subspecific status as *P. lecerfi* A.E. Prout, 1922 stat. n. A singleton from New Britain (Bismarck Archipelago) closely albeit not entirely matching *P. vityaz* is also discussed.

**Key words:** moths, taxonomy, sibling species, Indo-Australian Region, Papuan Region.<http://zoobank.org/urn:lsid:zoobank.org:pub:027D68B6-0973-4D49-9F26-8E3B3335F8C6>**Introduction**

Following a first article dedicated to the subgenus *Mocrenodes* Nye, 1975 of the genus *Platyja* Hübner, [1823] (Zilli et al., 2021), ongoing revisionary work on the *Platyja* genus group proceeds with the present review of species that will be herein collectively circumscribed as the *sumatrana* species group, no further subgeneric name being proposed here pending upon a complete revision of the genus group.

Recuration at the Natural History Museum (London) of holdings of *Platyja cyanocraspis* Hampson, 1922, hitherto considered to be a well characterized species from New Guinea with a Moluccan subspecies, revealed that there are two sibling species sympatrically occurring in the main island, *cyanocraspis* proper being indeed the least common of the two. The similarity in habitus between the two species is surprising, though this essentially affects the moths' dorsal aspects, while on the underside (and in antennae) differences are way obvious. Populations peripheral to New Guinea superficially ascribable to "*cyanocraspis*" were thus analysed to assess their features, which led to the discovery of a further

three cryptic species new to science, from North Moluccas (Halmahera), the Bismarck and the Louisiade archipelagos, respectively, and that the so-called Moluccan subspecies of *cyanocraspis* from Buru and Seram (*lecerfi* A.E. Prout, 1922) requires elevation in status as of a valid species. Except for *lecerfi* and real *cyanocraspis*, all other species so far intermingled within the concept of *cyanocraspis* are almost indistinguishable in habitus, but they show remarkable differences in the genitalia.

*Platyja sumatrana* ([C. & R.] Felder & Rogenhofer, 1874), whose identity has never been in doubt, has been chosen to give the name of convenience to the overall group treated here, being the taxon of earliest description. Despite the female bears practically no external similarity to the other members of the group, the male shares the main features of this assemblage, and structural characters of the female do also conform. In this essay, the group will be arranged for the sake of convenience into two sections, named respectively *sumatrana*- and *cyanocraspis* sub-groups, the former consisting solely of *sumatrana*, the latter comprising *cyanocraspis* and all its relatives in the Moluccan-Papuan area.

## Materials and methods

Study material originated from the holdings of the Natural History Museum, London (NHMUK) (formerly BMNH) and Naturalis Biodiversity Center, Leiden (formerly Rijksmuseum voor Natuurlijke Historie) (RMNH). Dissection and photography methods follow those already outlined in Zilli et al. (2021). Some old preparations of genitalia already available at NHMUK were also used. A distribution map was generated via SimpleMapp (Shorthouse, 2010) and further edited in Adobe Photoshop 2021 (version 22.3.1).

As noted in the aforementioned article, associating sexes of species of *Platyja* when these occur sympatrically can be a demanding exercise. The discovery that the old concept of *Platyja cyanocraspis* consists of two sibling species coexisting in New Guinea was initially based on examination of males. This was followed by the challenging task of associating females to respective males. In fact, after a quick training, males of the two species can easily be distinguished at sight, but the distinction of females is more difficult. This circumstance initially hampered proper association between sexes of the two species. However, in the absence of molecular information enabling to match the sexes, this issue could eventually be solved thanks to two independent criteria, as follows. (1) In spite of the dark ground colour of males which makes the postmedial line of forewing appear almost indistinct, this is actually slightly darker than the ground colour, so that its trend can be properly appreciated. Such process may be assisted by enhancing the brightness of digital pictures of specimens, though this procedure is not strictly necessary. As a difference occurs in the postmedial line between males of the two species and the very same circumstance also happens in the females, the sexes have been associated upon the assumption that conspecific individuals would show the same trend of the line. (2) Examination of a long series (12) of males from the SE Louisiade Archipelago indicates that they are conspecific and that such population is a clear offshoot of the sibling of *cyanocraspis* in New Guinea. As all available females from the SE Louisiades (12 examined) corresponded in pattern to each other, it was concluded that these were all conspecific and belonged to the same species assessed upon males, and that there is therefore only one species of the group occurring in this group of islands (*P. yaleyambae* sp. n., described below). In fact, the odds of sampling 12 females out of 12 from another, hypothetically coexisting species would be  $2.4 \times 10^{-4}$ . Due to the full matching in habitus between males from the SE Louisiades and the sibling of *cyanocraspis* in New Guinea, it was parsimoniously assumed that also respective females would agree in pattern to each other, especially by the trend of their forewing postmedials. Of the two sets of females available from New Guinea, that corresponding to those from the Louisiades was thus considered to be that

of the sibling species coexisting with *cyanocraspis* in the main island (*subtracta* sp. n. described below). The two criteria led to the same conclusion.

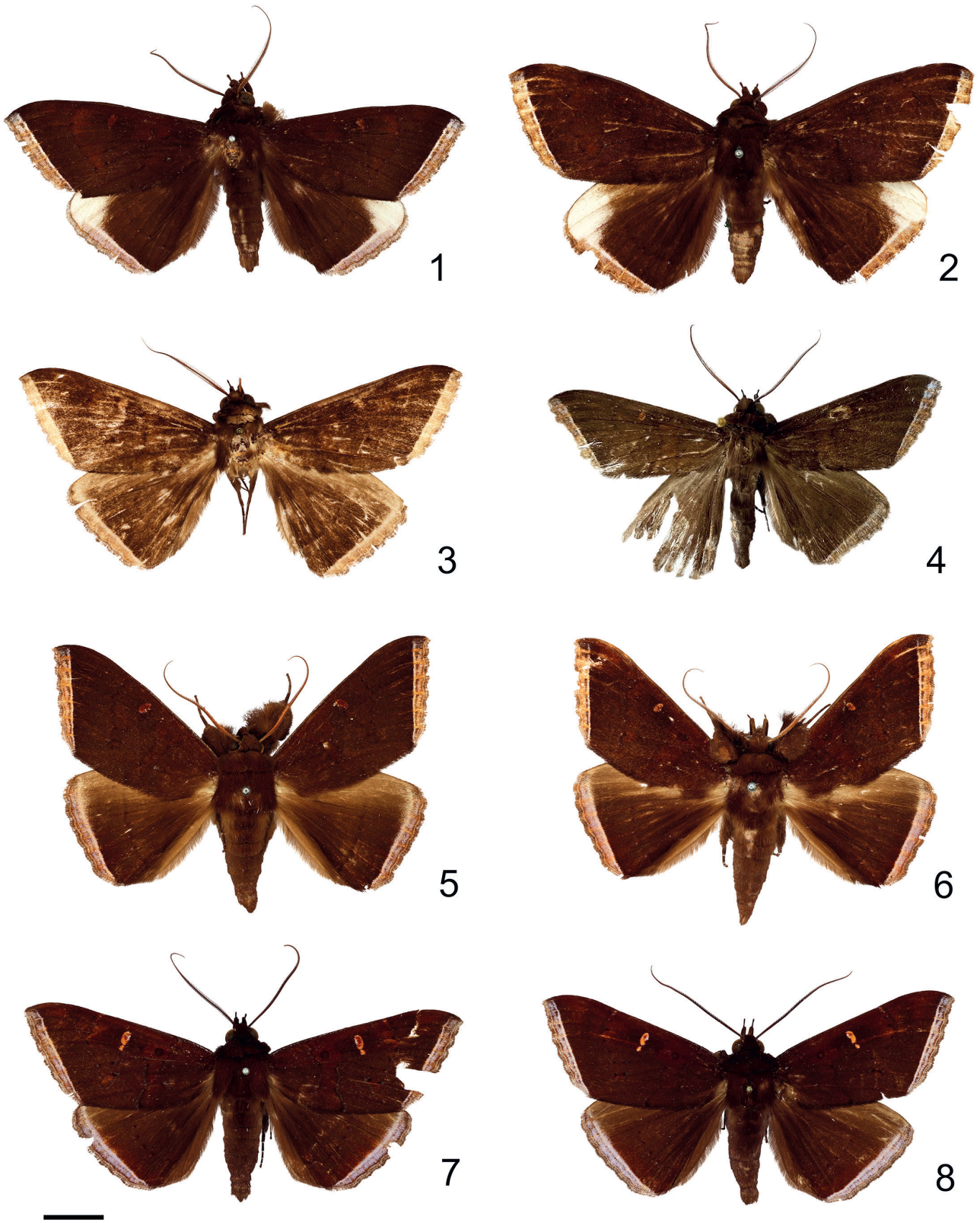
Due to the conspicuous external differences between *P. sumatrana* and members of the *P. cyanocraspis* sub-group, reference to the first species will be avoided in the comparative diagnoses, while details enabling distinction of the often confusingly similar species of the latter will be provided.

## Taxonomic part

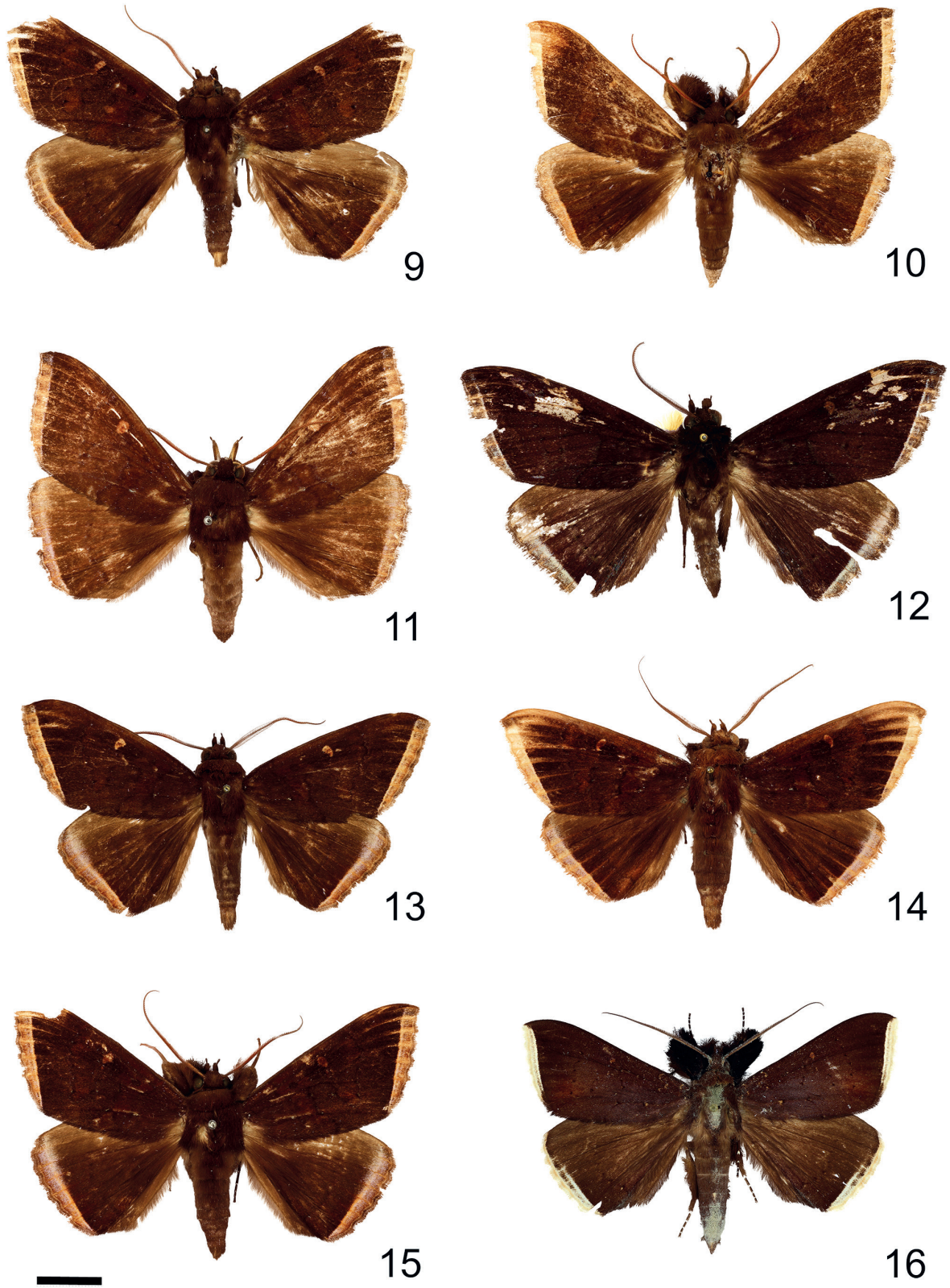
### Characterization of the group

**Diagnostic remarks.** Species of the *sumatrana*-group of *Platyja* Hübner, [1823] can be recognised by features of the male sex, which shows shortly to long feathered tripectinate antennae, heavily tufted fore- and midlegs, broad, dark-coloured velvety wings with narrow, pale adterminal bands and trapezoidal hindwing with almost straight termen. The females are very different from males and usually better expressing the typical “*Platyja* pattern” (cf. Zilli et al., 2021), but extraordinarily difficult to identify taxonomically in case of sympatry. In the male genitalia, the vinculum is long and narrow, and the distal margin of cucullus is variously produced into short processes and lobes. Members of the *Platyja cyanocraspis* sub-group sport a small apical process at the apical corner of valva, whereas *P. sumatrana* shows a rounded lobe in the same position. The juxta is asymmetrical, consisting of paired sclerotised plates separated midventrally by a narrow membrane, the right plate being longer and variously produced apically into sinuous process. Not all females of the various species are known. Those that are show in the genitalia a short, flat, strongly sclerotised ductus bursae whose dorsal wall fuses posteriorly with post-ostial sclerotisation (lamella postvaginalis) that interposes between the latero-ventral ends of tergum A8, while the ventral wall folds outwardly into short lip that joins with the lodix in correspondence of its midventral cleft. The ostium bursae is actually the transverse slit where the two walls of ductus bursae separate. In the corpus bursae, the cervix bursae is large and broadly connected to the fundus bursae, and its wall is sclerotised.

**Morphological and taxonomic remarks.** A most unusual feature shown by several members of the *sumatrana* species group is the loss of symmetry by the lobes of lodix (female sternum A7), that overlap onto each other along their inner edges (the left one above the other) and link with a mechanism reminiscent of a press stud, so that easy access to the ostium bursae is hindered. The right lobe is a little concave in the overlap zone to let an expansion from the opposite lobe optimally fit in. Males of species showing this character may show an extremely



**Figs 1-8** – Males of *Platyja*: 1, *P. lecerfi* stat. n., syntypus, Moluccas, Seram, Manusela; 2, idem, Moluccas, Buru, Kako Tagalago; 3, *P. togutila* sp. n., holotypus, Moluccas, Halmahera; 4, idem, paratypus, Halmahera; 5, *P. subtracta* sp. n., holotypus, New Guinea, Hydrographer Mts; 6, idem, paratypus, Hydrographer Mts; 7, *P. cyanocraspis*, holotypus, New Guinea, near Oetakwa River; 8, idem, topotypus, near Oetakwa River. Scale bar = 1 cm.



**Figs 9-16** – Males of *Platyja*: **9**, *P. subtracta* sp. n., Dampier Island (= Karkar); **10**, *id.*, Fergusson Island; **11**, *P. vityaz* sp. n., holotypus, Rook Island (= Umboi, Siassi); **12**, *Platyja* sp. (*vityaz* sp. n. or close), New Britain, Talesea; **13**, *P. yaleyambae* sp. n., holotypus, Sudest Island (= Vanatinai, Tagula); **14**, *id.*, paratypus, Sudest Island; **15**, *id.*, Rossel Island (= Yela), Mt Rossel; **16**, *P. sumatrana*, Borneo, Brunei, Bukit Retak. Scale bar = 1 cm.

elongated phallus sheath that terminates in a sharp, awl-like point, most likely to disjoin the lodix lobes prior to copula. Interestingly, these mechanical adaptations occur in *cyanocraspis* and its coexisting sibling in New Guinea (*subtracta* sp. n.), so that a role in species isolation could in theory be envisaged. The configuration of these modifications in the two species differs by some details, but the mechanics is essentially the same. It is not known if the system holds a lock-and-key function or it acts as a retardant to allow intervention by other clues and stimuli (e.g. chemical) during courtship (all males of the group have androconial tufts on the legs). With the exception of the species from the SE Louisiade Archipelago, which appears to be a direct offshoot of *subtracta* sp. n., all other insular endemics peripheral to New Guinea similar to *cyanocraspis* lack the awl-like termination of the phallus, but unfortunately only the female of *lecerfi* stat. n. is known, which has symmetrical lodix lobes exposing the midventral slit that lets to the ostium bursae. A substantially similar but even more advanced configuration of lodix is found in *P. sumatrana*. In this species, the lateral edge of the concave area of the right lobe folds over the protruding scale-like edge of the left lobe which thence slips into the right one like in a pocket. The phallus of *sumatrana* is also long but does not have an awl-like termination, rather the distal edge of the sheath splits into a complex array of sclerotised plates and strips that follow onto the base of vesica. Allopatry of *sumatrana* with respect to other species weakens the hypothesis of a function of these structures in species isolation, making more likely that they developed within the context of specific mate recognition systems (see Zilli, 1993 for a discussion).

Another striking taxonomic character in the group is the colour of the male androconial brushes on legs, which may either be bright yellow or dark (brown or black). This difference is one allowing to immediately distinguish the two New Guinean species, true *cyanocraspis* showing yellow tufting. The same colouring is found in the species from the Bismarck archipelago, which however is one of those with blunt phallus, thus this and the previous characters are disassociated in species of the complex. All other species show dark brown or black scent tufts.

## Annotated list with descriptions of the new species

### *Platyja sumatrana* sub-group

*Platyja sumatrana* ([C. & R.] Felder & Rogenhofer, 1874) (Figs 16, 25-26, 30)

*Ophisma sumatrana* [C. & R.] Felder & Rogenhofer, 1874. In: Felder C. et al., [1865]-1875, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857,*

1858, 1859 unter den Befehlen des Commodore B. von Willerstorff-Urbair (Zoologischer Theil) 2 (2) Lepidoptera (Atlas): Erklärung der Tafel CXVI, pl. 116, fig. 5. Locus typicus: Sumatra. Holotypus ♂ (by 'likely' monotypy), in NHMUK [examined: actually, a chimaera of glued pieces as usual by Felder's technicians].

= *Platyja sumatrana magnimargo* Holloway, 1976. *Moths of Borneo with special reference to Mount Kinabalu*: 34, pl. 13, fig. 161. Locus typicus: [Borneo, Mt Kinabalu] Park H[ead] Q[uarters]. Holotypus ♀ (by original designation), in NHMUK [examined].

**Distribution.** Indochinese-Sundan species known from Vietnam, Malay Peninsula (from Southern Thailand to Singapore), Sumatra and Borneo (Roepke, 1951; Holloway, 1976, 2011; and original data) (Fig. 76).

**Diagnostic remarks.** Unmistakable species. The male has much shorter antennal rami than other relatives and is of deep dark blackish brown colour, with weakly expressed pattern, postmedial line of forewing just barely visible and reduced to a few black dots, narrow bright white adterminal bands on both wings, and strongly tetragonal hindwing. On the underside black colour predominates too, but there are broad white patches in correspondence of forewing apex and basal area of hindwing, and also the fringes are white. On the upperside, the female is similarly patterned to the male but with much wider, dirty white adterminal bands, especially on forewing, and its ground colour can vary from chocolate to dark blackish brown; on the underside it is pale lilac brown with sparse pinkish white sprinkles and minute pinkish white streaks where the uniformly bowed postmedial lines and veins cross. The male and female genitalia are as illustrated in figures 49, 70 and 75. Their most outstanding features are the small rounded apical process of valvae, the long, arched, banana-shaped apical process of the right plate of juxta, the short scaphium lying on a partly separate lobe overlapping tuba analis, the very long midventral cleft of the lodix that almost reaches the base of sternum A7, where the two lateral lobes interlock via the 'scale-fold' system described in the general morphological and taxonomic remarks above, and the post-ostial prolongation of the dorsal wall of the ductus bursae, which is particularly long and narrow.

**Taxonomic remarks.** The description by Holloway (1976) of *Platyja sumatrana magnimargo* as of a wider-banded subspecies was likely driven by the filiform antenna artificially glued by Felder's technicians onto the male holotype of *sumatrana*, so that at a first glance this seems to be a female, and absence of other females of this sexually dimorphic species at the NHMUK at the time of its description. This taxon was eventually subsumed into nominate *sumatrana* by Holloway (2005) himself.

### *Platyja cyanocraspis* sub-group

*Platyja cyanocraspis* Hampson, 1922 (Figs 7-8, 21-22, 28)  
*Platyja cyanocraspis* Hampson, 1922. *The Bulletin of the Hill Museum* 1 (2): 191. Locus typicus: Dutch New Guinea: Oetakwa River, Snow Mountains. Holotypus ♂ (by original designation), in NHMUK [examined] (Fig. 7).

**Material examined.** [Indonesia] ‘Dutch New Guinea’ [West Papua Province]: 2♀♀, Central Arfak Mts, Ninay Valley, 3500 ft, Nov.[19]08 to Jan.[19]09; in NHMUK; [Papua Province]: holotypus ♂, Snow Mts. [= Maoke Mts], nr. Oetakwa R[iver], up to 3500 ft, x.xii.1910, Meek; 5♂♂, 7♀♀, idem; 1♂, Upper Setekwa R[iver], 2-3000 ft, Aug. 1910, A.S Meek; 2♂♂, 3♀♀, 25 miles south of Wangaar, Nomnagihé, 2000 ft, Jan.-Feb. 1921, C. F. & J. Pratt; these (9♂♂, 10♀♀) in NHMUK; 1♀, Yahukimo District, in RMNH; [Papua New Guinea] ‘British New Guinea’: 1♂, Hydrographer Mts, 2500 ft, Jan. 1918, Eichorn Bros., in NHMUK.

**Distribution.** Most records of *Platyja cyanocraspis* known to date are from the Indonesian side of New Guinea, from the Birdsheed Peninsula (= Doberai, Vogelkop) to the Maoke Range, but a singleton from the Hydrographer Mountains (Owen Stanley Range) shows that this species is widespread in the island, where it also coexists and can be synchronically on the wing with its close relative (described below) (Fig. 76).

**Diagnostic remarks.** Males of this and its sympatric sister species *Platyja subtracta* sp. n. (described below) are very similar in the habitus of the upperside, but they can immediately be distinguished by several features, above all the antennae, labial palpi, colour and shape of the discal spot of forewing, colour of androconial leg tufts and colour and pattern of the wings’ underside. In male *P. cyanocraspis*, the antennae are more slender and more darkly coloured, nearly black, the labial palpus is bigger, with the third joint almost as long as twice that of the other species, the reniform stigma is more deeply orange, thinner, straighter and more sharply defined, with a disjoint small lower spot, the postmedial line of forewing is distinctly angled between the discal cell and the apical area, and in both wings the adterminal band is more consistently tinged lilac; on the underside, the wings are deep black with no transverse lines and discal spots, and the legs are more weakly tufted with innermost (androconial) scaling of pro- and mesotibiae conspicuously yellow. Males are also weaker-bodied and more brightly coloured, sometimes with more vivid orangeish brown apical third of forewing. As regards the females, the best character to identify those of *cyanocraspis* is the trend of the crenulate postmedial line of forewing, which is more sharply angled beyond the reniform stigma, so that the external lobe of the median field is wider. Other features are the pale adterminal band of forewing, that

is narrower and crossed by a straighter continuous indigo midline, and the slightly narrower lilac stripe proximal to the same midline of the hindwing. The same basic differences between the reniform stigmata seen in males also apply to females, though in this case they are less evident because the filling colour is more weakly contrasting with the ground colour. On the underside, females of the whole sub-group do not show appreciable differences.

In the male genitalia (Figs 38-39, 61-62), clear diagnostic characters are found in the longer and broadly rounded apical saccular lobe of *cyanocraspis*, the trilobate cucullus, with longer, thinner and hooked apical process, the awl-like termination of phallus, which is stouter, thorn-like and externally flexed with respect to the sheath, and in the vesica, with numerous differences in the configuration and armature of diverticula. Among these, *cyanocraspis* shows a shorter and saccate main diverticulum anteriorly oriented from the vesica corpus, a longer and thinner, posteriorly directed diverticulum that is tipped by one cornutus only, and a median diverticulum which is also tipped by a cornutus, besides several differences in smaller lobes. In the female genitalia (Figs 67, 72), the overlap between the lodix lobes of *cyanocraspis* is less extended and the corpus bursae is more oblong, with less prominent and more anteriorly positioned cervical sclerotisation.

The same external differences occurring between *cyanocraspis* and *subtracta* are found in the other new species peripheral to New Guinea that are here described, due to the remarkable similarity of *subtracta* with these. Only exceptions are the colour of the scent tufts on legs, which also in *P. vityaz* sp. n. from the Bismarck Archipelago are as yellow as in *cyanocraspis*, the size of *P. yaleyambae* sp. n. from the Louisiade archipelago, whose individuals are quite small, and the terminal joint of the labial palpi, which are never as short as in *subtracta*. For the genitalia features of these species see under the relative descriptions.

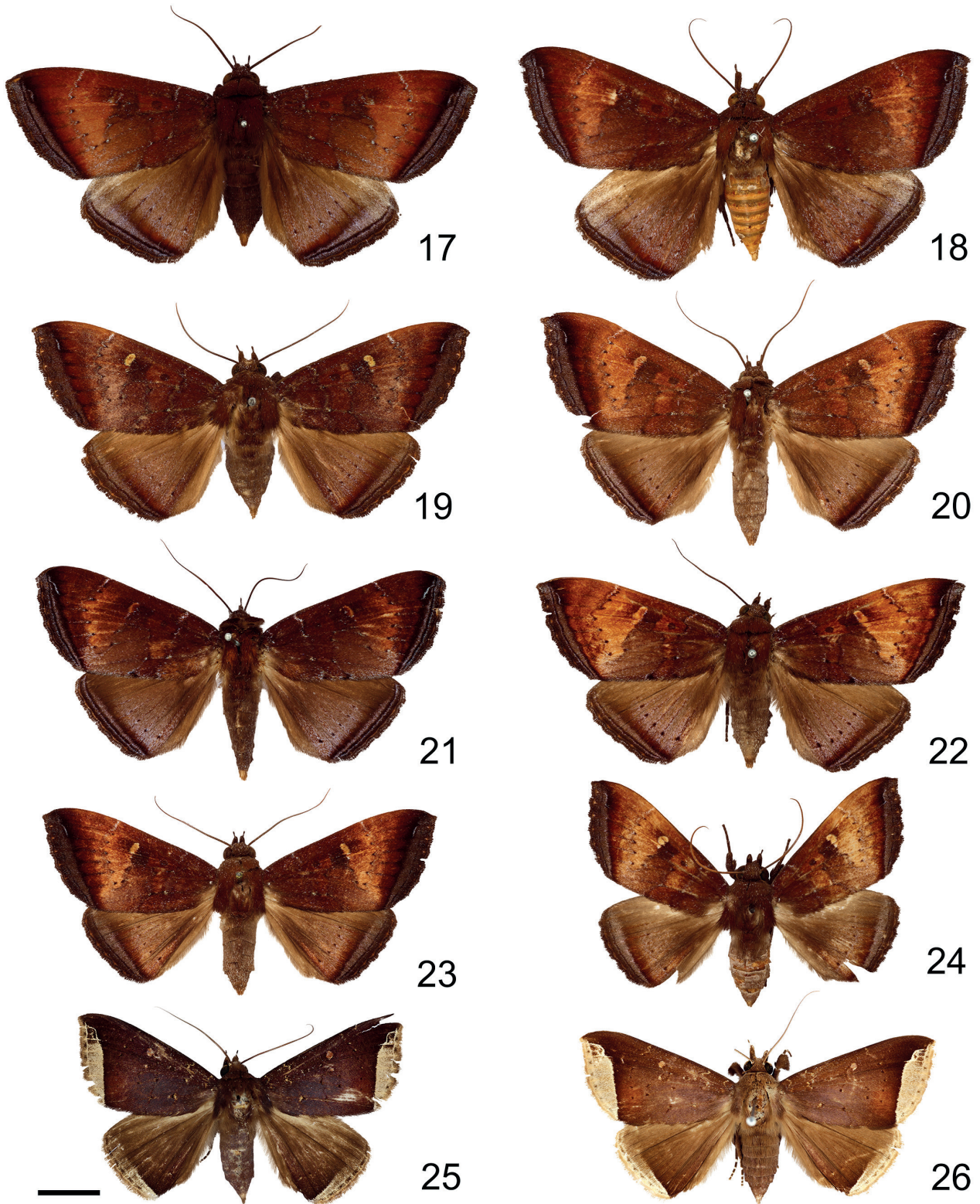
Despite it has hitherto been considered as a subspecies of *cyanocraspis*, *P. lecerfi* stat. n. is very differently looking from *cyanocraspis* in the male sex, and cannot be confused because of outstanding differences in habitus and structural characters (see below). Females are as usual more similar, though the large size of those of *lecerfi*, their non-angular trend of the forewing postmedial and proximal lilac suffusion of the pale adterminal band of the hindwing that dilates superiorly will prevent any confusion between the two species, besides allopatry and the notable differences in the genitalia.

**Morphological remarks.** Variation has been observed in the width of valva between specimens from nearby localities.

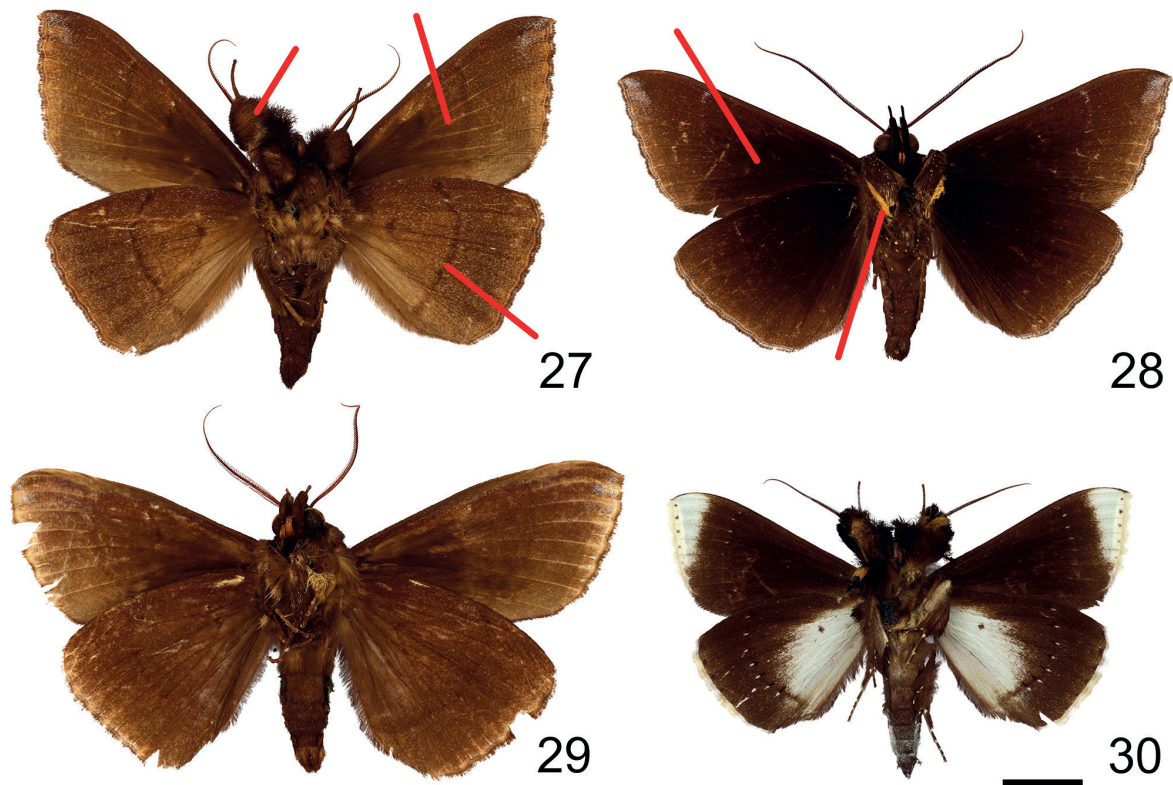
### *Platyja subtracta* sp. n.

#### Description

Male (Figs 5-6, 9-10, 27)



**Figs 17-25** – Females of *Platyja*: **17**, *P. lecerfi* stat. n., syntypus, Moluccas, Seram, Manusela; **18**, idem, Moluccas, Buru, Gamoe Mrapat; **19**, *P. subtracta* sp. n., paratypus, New Guinea, near Oetakwa River; **20**, idem, paratypus, New Guinea, Ninay Valley; **21**, *P. cyanocraspis*, New Guinea, Ninay Valley; **22**, idem, New Guinea, Nomnagihé; **23**, *P. yaleyambae* sp. n., paratypus, Sudest Island (= Vanatinai, Tagula); **24**, idem, paratypus, Sudest Island, Mt. Riu; **25**, *P. sumatrana*, Borneo, Sabah, Danum Valley; **26**, idem, without locality. Scale bar = 1 cm.



**Figs 27-30** – Male undersides of *Platytja* (red lines in figs 27-28 point to main diagnostic features between the two species represented): **27**, *P. subtracta* sp. n.; **28**, *P. cyanocraspis*; **29**, *P. lecerfi* stat. n.; **30**, *P. sumatrana*. Scale bar = 1 cm.

*Habitus*. Length of forewing: 30-35 mm. Head large, frons flat, vertex with thick vestiture of hair-like scales, eye globular, antenna mellow honey-coloured, with long opposite rami in basal half of flagellum, labial palpus with regularly arched and compactly scaled second joint, third joint very short rod-like, feebly securiform at apex. Patagium long, with compact vestiture of hair-like scales, tegula long, similarly scaled, meso-metanotum smoothly scaled. Ground colour of head, notum and abdomen uniformly dark chocolate brown, pectus blackish brown tufted. Forewing broad subtriangular, with costa well bowed before apex, slightly crenulate termen whose overall trend is almost straight and slightly convex anal margin; ground colour dark chocolate brown, occasionally with very feeble and patchy orangeish brown irroration in parts of the median and apical fields, *Platytja* pattern (see Zilli et al., 2021) feebly darker than ground colour, orbicular stigma either indistinct or barely discernible as a grey circular spot, reniform irregularly discoidal, orangeish brown, postmedial line regularly arched between discal cell and apical area, crenulate in correspondence with veins, adterminal band and fringe mostly beige, with alternating series of paler and darker lines; hindwing dark chocolate brown, except for paler costal area, and adterminal band, more evidently tinged lilac; postmedial line feebly evident, crenulate. Underside of wings medium brown irrorated with paler brown

scales, discal spots and postmedial lines well distinct, darker brown than the ground colour, the lines regularly arched. Foreleg stout, with large coxa, thick, slightly arcuate femur and dilated tibia, both with invagination on inner side to host conspicuous dark blackish brown tufts, tarsus comparatively short and thick; midleg with very stout and arcuate femur and swollen tibia hosting tufts, but tarsus slender; hindleg slender, with middorsal and midventral scale crests along tibia; profemur and all tibiae unarmed; spurs very long and thin, inner ones half the length of outer ones or shorter, their formula 0-2-4. Abdomen slender and comparatively long tufted, especially dorsally at base.

*Male genitalia* (Figs 40-45, 54-57). Tegumen long and narrow, vinculum slightly longer than tegumen, V-shaped, with robust arms; valva broad subrectangular with expanded cucullus, saccular lobe broad-based with sharp-pointed, externally curved apex, cucullus with short and wide, thumb-like apical process and broadly rounded terminal plate; juxta asymmetrical, consisting of paired strips separated midventrally by membrane, the left strip shorter, the right one very sinuous, consisting of basal broader plate and apical, strongly sclerotised cup-like extension wrapping from below the ventral part of manica penis; uncus slightly arched ventrally, feebly incrassate before apical, recurved hook; tuba analis with long and narrow, sclerotised scaphium. Phallus sinuous, distally prolonged into

sharp awl-like apex, so that everted vesica is not even the most distal component of phallus and ‘stretches down like a flag from its pole’, coecum shortly bilobed, vesica with long tubular anteriorly oriented diverticulum tipped by cornutus, short posteriorly oriented one bearing a variable number (2-7) of very stout cornuti before constriction leading to thin, finger-like apex, and numerous smaller, unarmed conical diverticula.

Female (Figs 19-20)

*Habitus.* Length of forewing 30-36 mm. Head and notum as in male, with the exception of filiform antenna, and longer third joint of labial palpus, paler orangeish to lilac brown ground colour and less thick scale vestiture. Forewing broad, similar in shape to male, with more smoothly convex, gently crenulate termen and feebly falcate apex; ground colour medium brown with variable mottling from lilac to orange tinge, *Platyja* pattern well evident, orbicular a grey circular spot filled by ground colour, reniform orangeish to yellowish brown, trend of postmedial line as in male but well distinct, adterminal band darker, less contrasting in colour with wing disc than in male, extensively irrorated lilac with thin indigo midline, which is slightly crenulate or irregularly interrupted at veins; hindwing medium brown with some lilac irroration, paler below costa; postmedial line as dark grey dots in correspondence with veins, adterminal line as in forewing. Legs slender. Abdomen coloured as hindwing, with shorter scaling than in male. Underside of body trunk pale lilac brown, of wings also, with pinkish white sprinkles all over, and minute postmedial pinkish white streaks preceded by dark lilac suffusion at veins, this suffusion more continuous and drawing a better expressed postmedial line on hindwing than in forewing.

*Female genitalia* (Figs 68, 73). Lodix lobes strongly asymmetrical, with inner edge of left one greatly overlapping right one. Tergum A8 narrowed latero-ventrally into paired belts that fuse antero-ventrally with broad lamella postvaginalis, ductus bursae flat, feebly narrowed and curved to right anteriorly, bursa copulatrix large, with very wide posterior section trochoidal in shape, this with the wall of its left (cervical) part conspicuously sclerotised, and narrower oblong-ovate fundus, appendix bursae small conical, pointing posteriorly from posterior right of trochoidal part; apophyses anteriores short rod-like; ovipositor short, papillae anales large, elongate subrectangular, sparsely setose (but not at very base) with long setae and belt of much shorter and denser setae along their distal edges; apophyses posteriores short rod-like.

**Material examined.** Type material. [**Papua New Guinea**]: Holotypus: ♂, British New Guinea, Hydrographer Mts, 2500 ft, Jan[uary] 1918, Eichorn Bros. (Rothschild Bequest 1939-1), NHMUK010918637, in NHMUK (Fig. 5);

Paratypes (34♂♂, 11♀♀): [**Indonesia**] ‘Dutch New Guinea’ [**West Papua Province**]: 2♂♂, Waigeu, Camp Nok, 2,500 ft, iv.1938; 2♀♀, Central Arfak Mts, Ninay Valley, 3500 ft, Nov. [19]08 to Jan. [19]09; these (2♂♂, 2♀♀) in NHMUK; 1♂, Birdhead Peninsula, Tuan Wowi (nr Andai), 240 m, primary lowlandforest, at light, 2.XI.1993, A.J. de Boer, A.L.M. Rutten & R. de Vos, in RMNH; [**Papua Province**]: 1♂, Humboldt Bay Distr. [sic], Uskwar, 4.[?].1934; 2♂♂, Snow Mts. [= Maoke Mts], Upper Setekwa R[iver], 2-3000 ft, Sept. 1910, A.S. Meek; 6♂♂, 3♀♀, nr. Oetakwa R[iver], up to 3500 ft, x.xii.1910, Meek; 1♂, 25 miles south of Wangaar, Nomnagihé, 2000 ft, Jan.-Feb. 1921, C. F. & J. Pratt; 1♂, Jobi [= Yapen], Anusus, I.V.V.[sic] [18]97, W. Doherty; these (11♂♂, 3♀♀) in NHMUK; 1♀, Arso District, Uskwar, 21.XII.1937, leg. W. Stüber; 1♂, 1♀, Waris district, Ampas, 20.XI.1938, leg. W. Stüber; 1♂, idem, 17.VIII.1939; 1♀, “Bivak-Ins.” [= camp in Noord-River (Lorentz River), expedition 1909-1910]; these (2♂♂, 3♀♀) in RMNH; [**Papua New Guinea**] ‘British New Guinea’: 3♂♂, Hydrographer Mts, 2500 ft, Jan. 1918, Eichorn Bros.; 1♂, idem, Jan.-Feb. 1918; 1♂, idem, M. [March or May] 1918; 1♂, idem, April 1918; 5♂♂, idem, Jan.-May 1918; 2♂♂, Milne Bay, XI.[18]98, A.S. Meek; 2♂♂, idem, XII.[18]98; 1♂, 1♀, idem, I.[18]99; 1♂, idem, II.18[99]; 1♂, Biagi, Mambare R[iver], 5000 ft, Meek; 1♀, upper Waria River, Saiko, Bubu River, 5500’, Sept-Beg[inning] Oct. 1936, F. Shaw Mayer; 1♀, Holnicote B[ay], to Owen Stanley Range, Rohu; these (15♂♂, 2♀♀) in NHMUK;

Non-type material (3♂♂, 1♀): 2♂♂, Dampier Isl. [= Karkar], Feb. & March 1914, Meek’s Expedition; 1♂, 1♀, Fergusson I[sland], xii.[18]94, A.S. Meek; these (3♂♂, 1♀) in NHMUK.

**Distribution.** Widespread in New Guinea from the Birdhead Peninsula (= Doberai, Vogelkop) to the Owen Stanley Range and the Milne Bay Province in Papua New Guinea, it may also locally coexist with and show the same adult phenology of *P. cyanocraspis*. In the peripheral islands to New Guinea, its presence has been assessed in Waigeo (Raja Ampat group), Jobi (= Yapen) (Cenderawasih Bay), Dampier (= Karkar) (Bismarck Sea) and Fergusson (D’Entrecasteaux group) (Fig. 76).

**Etymology.** The name of the new species is based on Latin “*subtracta*”, meaning ‘taken out’, in order to emphasise that this species is excerpted from the concept of *P. cyanocraspis* until now in use. The name is a feminine adjective agreeing in gender with the generic name.

**Diagnostic remarks.** Males of the new species can be easily recognised from those of sympatric *P. cyanocraspis* by the paler, honey-coloured antennae with much longer rami in the basal half of the flagellum, the smaller labial palpi with shorter terminal joint, almost half the length of *cyanocraspis*,

the reniform stigma more discoidal in shape, without a small accessory spot below, which is also less outstanding with respect to the ground colour, the postmedial line of forewing which runs closer to the reniform and draws a smoothly convex arch between the discal cell and apical area, so that the width of the outer lobe of the median field is smaller, and the adterminal band of forewing with a ochre tinge; on the underside, the wings are medium brown with well distinct discal spots and postmedial lines on both wings, and the legs are more strongly tufted with conspicuous blackish brown tufting on both femora and tibiae of fore- and midleg. Males are on average also larger sized and duller coloured. As regards the females, as noted under *P. cyanocraspis*, in *P. subtracta* sp. n. the trend of the crenulate postmedial line of forewing is smoothly arched beyond the reniform, and the pale adterminal band of forewing is slightly wider and crossed by a narrower indigo midline, that is more waved or interrupted at veins. In the hindwing, the lilac suffusion proximal to the midline of the adterminal band is usually slightly wider. In the male genitalia, the most conspicuous differences between the two species occur in the saccular lobe, sharply pointed and externally curved in *subtracta*, and the cucullus, with large rounded terminal plate that broadly protrudes ventrally and short, thumb-like superior process in this species. The phallus of *subtracta* is of the awl-like type, but its apical sharp tip is only slightly outcurved, not sharply flexed externally as in *cyanocraspis*, and the vesica has longer anteriorly directed diverticulum, shorter and stouter posteriorly directed one which bears lateral crest of stout cornuti before digitiform termination instead of one apical cornutus, and the third longest diverticulum is without cornutus, other minor diverticula also showing different configurations. In the female genitalia, the overlap between the lodix lobes is more extended and the bursa copulatrix is much larger posteriorly, trochoidal in shape, and with large cervical sclerotization to the left bulging perpendicularly to the axis of bursa, and due to this shape the constriction with the narrower, obovate fundus is more evident.

The smaller size, less bowed forewing costa and lack of a white apical patch on the hindwing will enable an easy distinction of males of *subtracta* from those of *lecerfi* stat. n., but the authors have been unable to find any outstanding external clue to separate the former from the other endemics of the sub-group settled in smaller islands, with the only exceptions of *P. vityaz* sp. n. from the Bismarck archipelago, whose androconial tufts on the legs are as yellow as in *cyanocraspis*, not brown, and the terminal joints of labial palpi, which appear to be shortest in *subtracta*. All species can in any case be reliably distinguished by differences in the genitalia. *Platyja togutila* sp. n. has trilobate cucullus and is one of the species with blunt, not awl-shaped phallus sheath, so is the phallus of *P. vityaz*, which furthermore has very short, subconical, and apically rounded saccular lobe of valva and straight distal edge of cucullus. Females of these two species are

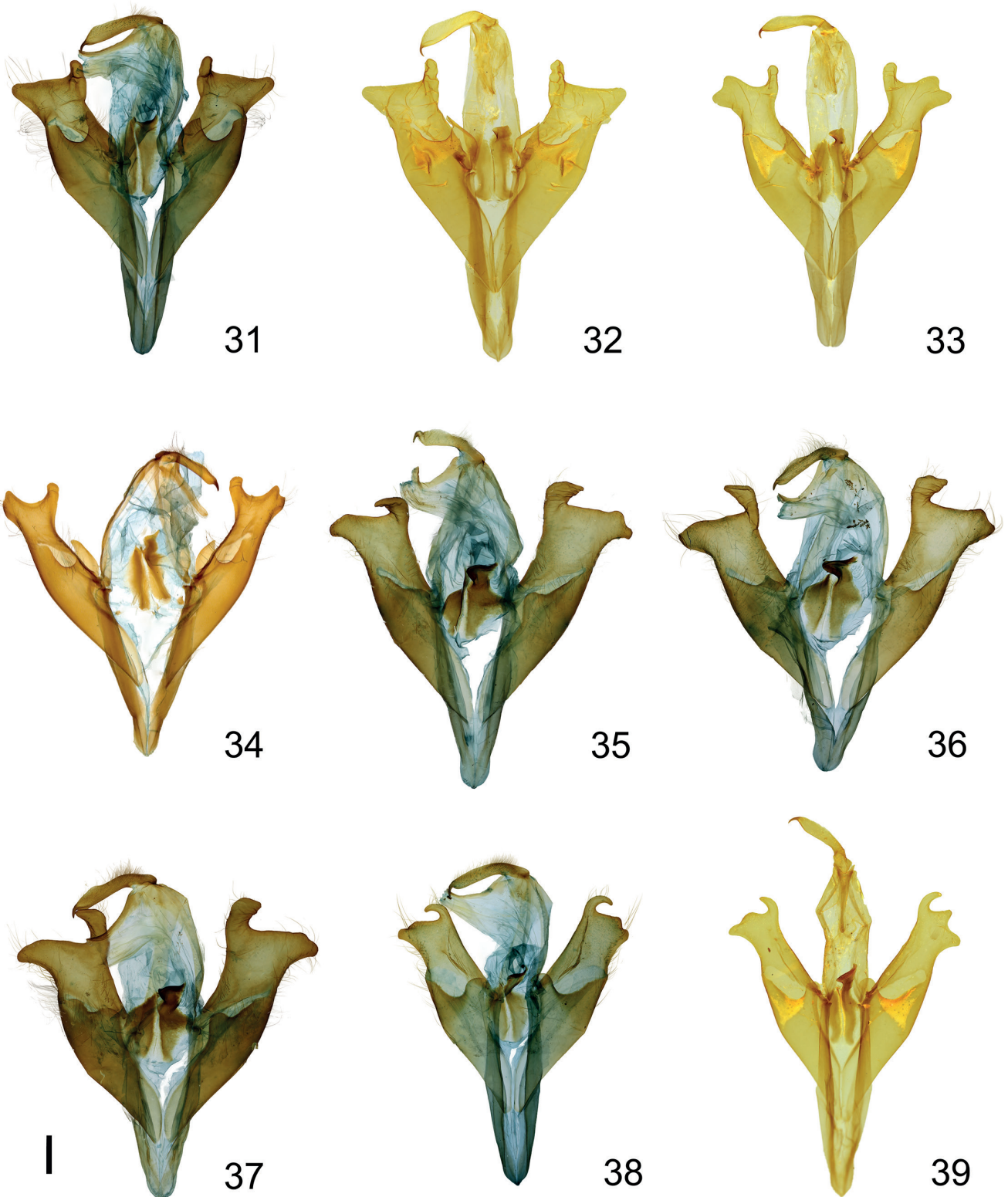
unknown. Really challenging is the separation between *P. subtracta* and *P. yaleyambae* sp. n. from the Louisiades, as they agree in all respects except for the configuration of one of the main diverticula of vesica, besides the smaller size of the latter and some allomorphic differences in the female genitalia (see under this species).

***Platyja lecerfi*** A.E. Prout, 1922 **stat. n.** (Figs 1-2, 17-18, 29)  
*Platyja cyanocraspis lecerfi* A.E. Prout, 1922. *The Bulletin of the Hill Museum* 1 (2): 235; (3) (1924): pl. 20, figs 3-4. Locus typicus: Central Ceram... Manusela, 6,000 feet. Syntypi 1♂, 1♀, in NHMUK [examined] (Figs 1, 17).

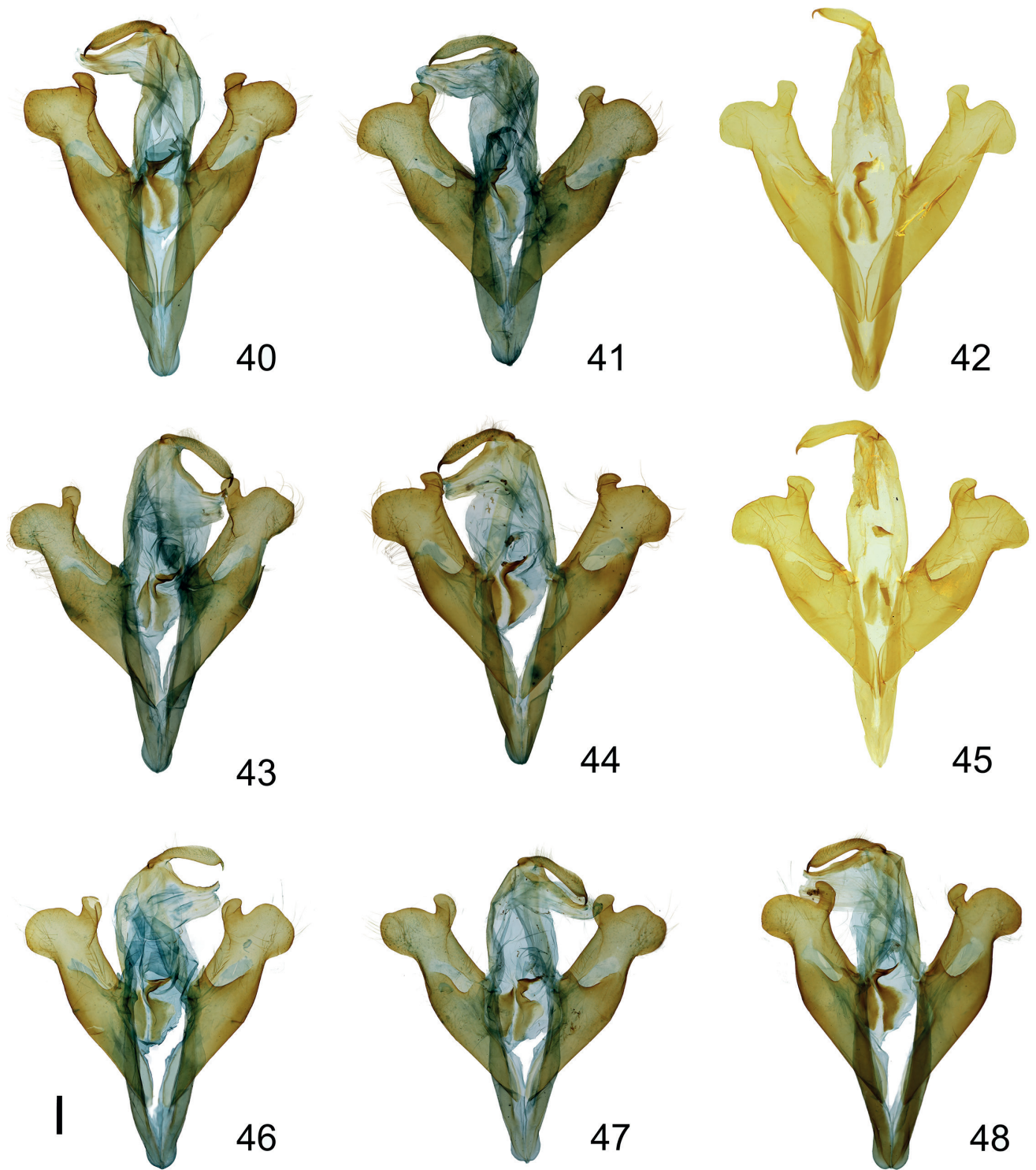
**Material examined.** [Indonesia: Maluku Province]: [Buru]: 1♀, Central West Buru, Gamoe Mrapat, 5000 ft, 3-4 [19]22, C.F. & J. Pratt; 2♂♂, 1♀, Central Buru, Kako Tagalago, 2700 ft, May 1922, C.F. & J. Pratt (1♂ incorrectly labelled "paratype"); [Seram]: 1♂, 1♀ syntypi, Central Ceram, Manusela, 6000 ft, Oct.-Dec. 1919, C.F. & J. Pratt; 1♂, Seram, Gunung Kobipoto north slopes, 900 m, lowland forest, Aug.-Sept. 1987, J.D. Holloway, D.T. Jones et al.; all in NHMUK.

**Distribution.** So far known only from Seram (= Ceram) and Buru in the Moluccas (Fig. 76).

**Diagnostic remarks.** Possibly the largest-sized species of *Platyja* overall, easily recognisable in the male sex from other Moluccan and Papuan relatives by the conspicuous white patch in the apical area of hindwing. On the underside, the male is similar but duller coloured than that of *P. subtracta* sp. n., and with less conspicuous pattern elements. The female is similar to those of other members of the group but with broader wings, with more convex costa and termen of forewing, pattern elements more weakly expressed, essentially matching in tinge and features of postmedial line female *subtracta*, but with thick and continuous indigo midline of the forewing adterminal band, and lilac suffusion before dark brown adterminal line of hindwing which is of uneven width, distinctly broadened anteriorly towards apical area. In the male genitalia (Figs 31-32, 50-51), the broad-based, outwardly curved pointed saccular lobes are shared with some other species, namely *subtracta*, *yaleyambae* sp. n. and *togutila* sp. n., but the first two of this set have awl-like phallus and rounded cucullus, while the cucullus of *togutila* is multilobed, contrary to the straight one with small apical process of *lecerfi*, a species which also lacks the awl-like phallus. The cucullus shape of *P. lecerfi* is not dissimilar from that of *P. vityaz* sp. n., but this species has stouter apical process of cucullus, weakly pronounced saccular lobes and broader juxta with more conspicuous apical process of the right plate. All species strongly differ also in the configuration of vesicae. In the female genitalia the lodix is diagnostic, being subtrapezoid in shape with symmetrical lobes, and the bursa



**Figs 31-39** – Male genitalia of *Platyja* (phalli removed): **31**, *P. lecerfi* stat. n., Moluccas, Seram, Gunung Kobipoto; **32**, idem, Buru, Kako Tagalago; **33**, *P. togutila* sp. n., holotypus, Moluccas, Halmahera; **34**, idem, paratypus, Halmahera; **35**, *P. vityaz* sp. n., paratypus, Rook Island; **36**, idem, holotypus, Rook Island; **37**, *Platyja* sp. (*vityaz* sp. n. or close), New Britain, Talesea; **38**, *P. cyanocraspis*, New Guinea, Upper Setekwa River; **39**, idem, topotypus, near Oetakwa River. Scale bar = 1 mm.



**Figs 40–48** – Male genitalia of *Platytja* (phalli removed): **40**, *P. subtracta* sp. n., paratypus, New Guinea, Hydrographer Mts; **41**, idem, paratypus, New Guinea, Milne Bay; **42**, idem, paratypus, New Guinea, Hydrographer Mts; **43**, idem, Dampier Island (= Karkar); **44**, idem, Fergusson Island; **45**, idem, paratypus, Waigeo, Camp Nok; **46**, *P. yaleyambae* sp. n., paratypus, Sudest Island; **47**, idem, paratypus, Sudest Island; **48**, idem, Rossel Island. Scale bar = 1 mm.

copulatrix is large and ovate, with weakly sclerotised cervix and no constriction between this and the fundus bursae (Figs 66, 71).

**Taxonomic remarks.** Comparison of genitalia configurations of this species and other relatives leaves no doubt that specific status needs to be conferred to this taxon, which had originally been described as a subspecies of *P. cyanocraspis*.

### *Platyja togutila* sp. n.

#### Description

Male (Figs 3-4)

**Habitus.** Forewing length 29-34 mm. Outward form and pattern as in *P. subtracta* sp. n. (described here above), but labial palpus with third joint longer.

**Male genitalia** (Figs 33-34, 52-53). Tegumen long and narrow, vinculum approximately as long as tegumen, V-shaped, with robust arms; valva comparatively slender, narrow at sacculus, widest at middle, and constricted at base of cucullus, saccular lobe broad-based with sharp-pointed, externally curved apex, cucullus edge with distinct finger-like apical process, median hump and more or less pronounced lobe at anal angle; juxta asymmetrical, consisting of paired strips separated midventrally by membrane, the left strip shorter, the right one terminated apically by small subtriangular process; uncus slightly arched ventrally, feebly incrassate before apical, recurved hook; tuba analis with long, narrow sclerotised scaphium. Phallus feebly arched,

with shortly bilobed coecum, vesica with central, finely scobinate corpus and three main diverticula, longest and shortest ones tipped by stout terminal cornuti, and conical one with two main curved cornuti and stripe of smaller ones.

Female

Unknown.

**Material examined.** Type material. [**Indonesia: North Maluku Province**]: Holotypus: ♂, Halmahera, Toelo (*bought from E. Le Moult*) (Rothschild Bequest 1939-1), NHMUK014165469, slide BMNH Noct. 6347, in NHMUK (Fig. 3);

Paratypus: ♂, 23 km SW of Tobelo, Tunuo Camp, 1°32'40"N 127°53'50"E, 19-22 Sep. 1995, at light, leg. De Jong & Ansari, RMNH.INS 1108646, in RMNH.

**Distribution.** So far known only from Halmahera (Northern Moluccas) (Fig. 76).

**Etymology.** The species is named after the Togutil people inhabiting the island of Halmahera. The specific epithet is adjectivated in feminine gender agreeing with the generic name.

**Diagnostic remarks.** Externally indistinguishable from *P. subtracta* sp. n. and akin, though with longer third joint of labial palpi than *P. subtracta*, *P. togutila* is, unlike *P. cyanocraspis*, *P. subtracta* and *P. yaleyambae* sp. n., one of the species without awl-like sheath of phallus. Its saccular lobe is as shaped as in *P. subtracta*, *P. yaleyambae* and *P. lecerfi*, but its valval outline, slender, with narrow-necked and multilobed palmate cucullus, is most similar only to that of *P.*

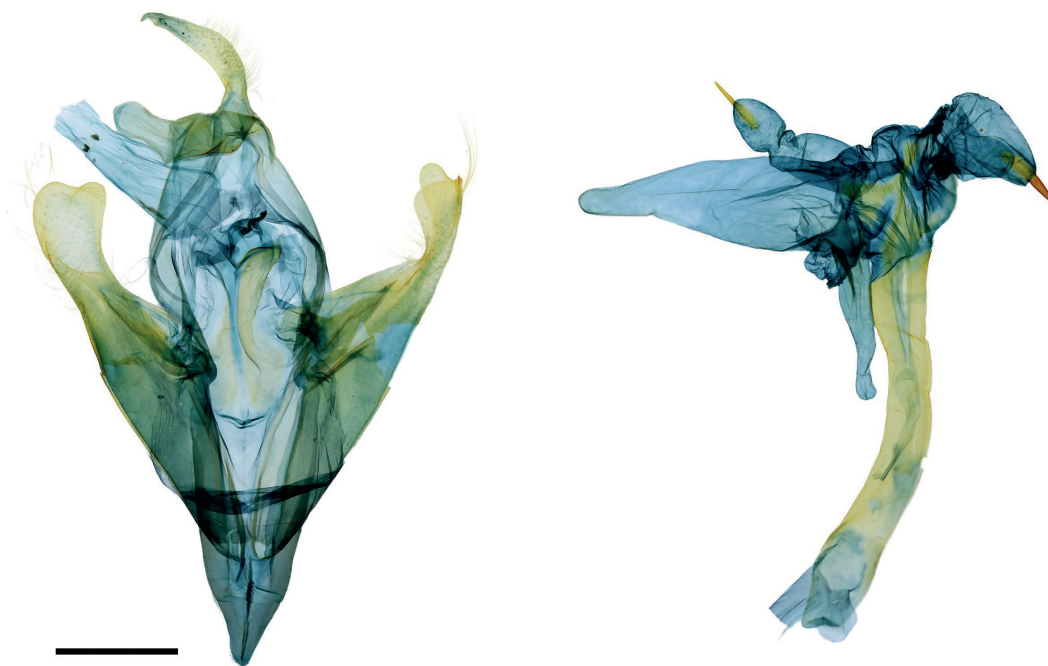


Fig. 49 – Male genitalia of *Platyja sumatrana*, Sumatra, Lebong Tandai. Scale bar = 1 mm.

*cyanocraspis*, which however has rounded saccular lobes and, as noted above, sharply acuminate phallus. Its valval shape will also enable an easy distinction from *P. vityaz* sp. n. (described below).

**Taxonomic remarks.** *Platyja togutila* is very differently looking from the other Moluccan endemic from Buru and Seram of the group (*P. lecerfi* stat. n.), and at a first glance seemed nothing but the westernmost peripheral isolate of *P. subtracta* sp. n., occurring already in Waigeo and the Birdshead Peninsula, but the genitalia differences leave no doubt about its status.

### *Platyja vityaz* sp. n.

#### Description

Male (Fig. 11)

**Habitus.** Forewing length 33–34.5 mm. Outward form and pattern as in *P. subtracta* sp. n. and *P. togutila* sp. n. (described here above), with third joint of labial palpus as long as in the latter or slightly longer, and androconial pencils on pro- and mesotibiae yellow.

**Male genitalia** (Figs 35–36, 63–64). Tegumen long and narrow, vinculum approximately as long as tegumen, V-shaped, with robust arms; valva stout and wide, not constricted at base of cucullus, saccular lobe broad-based and little pronounced, subtriangular in outline with well rounded tip, cucullus dilated, with short and thick, thumb-like apical process and prominent costal angle, edge of cucullus almost blunt, that on left cucullus slightly smoother than that of right one, that shows small hump before costal angle; juxta asymmetrical, large, consisting of paired triangular plates separated midventrally by membrane, the right plate prolonged apically into conspicuous, heavily sclerotised subtriangular process; uncus slender and a bit knobby, with feeble dorsal crest before apical, recurved hook; tuba analis with long, narrow sclerotised scaphium. Phallus distally arched and with shortly bilobed coecum, vesica with small bilobed, minutely scobinate corpus from which two main diverticula branch, one forward projected that is long and wide tubular and the other opposite, approximately half as wide and half as long as the former, both tipped by stout single cornuti; in addition, one lobe of central corpus produces a swelling terminated by small cornutus.

**Material examined.** Type material. [**Papua New Guinea: Morobe Province**]: Holotypus: ♂, Bismarck Archipelago, Rook Isl. [= Umboi, Siassi], July 1913, A.S. Meek, NHMUK010918649, in NHMUK (Fig. 11); Paratypes: ♂, same collecting data as holotype, in NHMUK.

**Distribution.** So far known only from Rook Island (= Umboi, Siassi), lying approximately half-way between the

Huon Peninsula of New Guinea and New Britain (Fig. 76). Possibly also present or replaced by a close relative in the latter island (see entry below).

**Etymology.** The species is named after the Russian corvette “Vityaz”, which inspired the name of the sea strait (“Vityaz”) that separates New Guinea from the island(s) where the new species occurs. The name is a noun in apposition.

**Diagnostic remarks.** The new species is looking externally like *P. subtracta* sp. n., *P. togutila* sp. n. and *P. yaleyambae* sp. n. but, contrary to these, sports yellow androconial pencils on male pro- and mesotibiae, which is a feature shared with *P. cyanocraspis*. Always in the male sex, the third joint of labial palpus is twice as long as in *subtracta* and *yaleyambae*, less so distinct with respect to *togutila*. In the male genitalia, *P. vityaz* sp. n. can easily be distinguished from all other members of the *sumatrana*-group by the shortest saccular lobes, while as regards the valval outline it is most similar to *P. lecerfi* stat.n., from which however it can be separated by the saccular lobes and by the even broader cucullus with much thicker, thumb-like apical process and the wider, less narrowly elongated juxta with stout apical process of the right plate. The phallus sheath of *P. vityaz* does not terminate into awl-like point and can be therefore confused only with that of *lecerfi* and *togutila*, both very different in the configuration of vesicae. Similarities and distinction from a population in New Britain are discussed below.

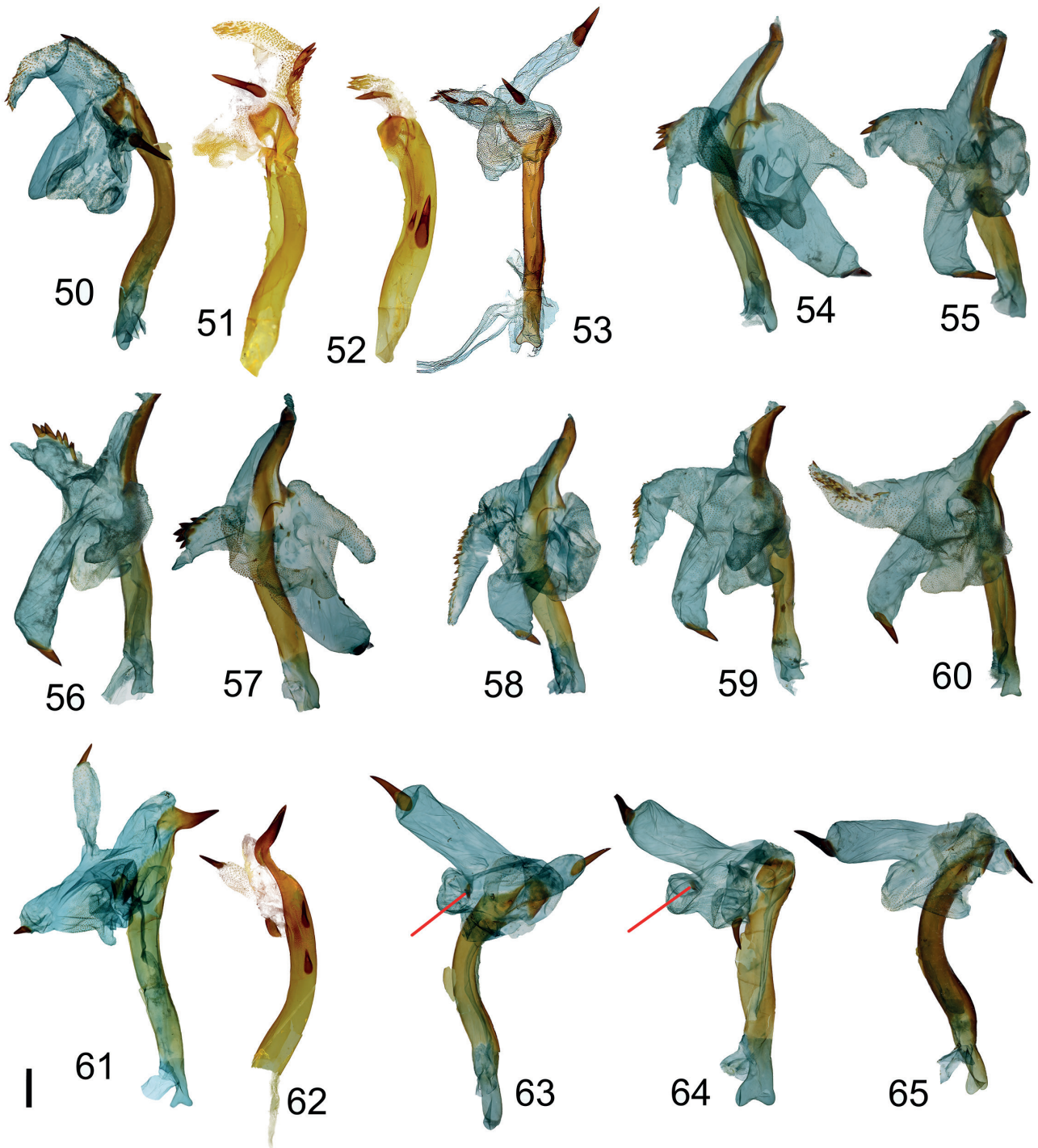
**Taxonomic remarks.** This species is described on the basis of two males from Rook Island (= Umboi, Siassi) but it is likely present more to the east in the Bismarck Archipelago or substituted by a close relative which we refrain to describe here, pending upon more material to become available (see next entry).

### *Platyja* sp. (*vityaz* sp. n. or close) (Fig. 12)

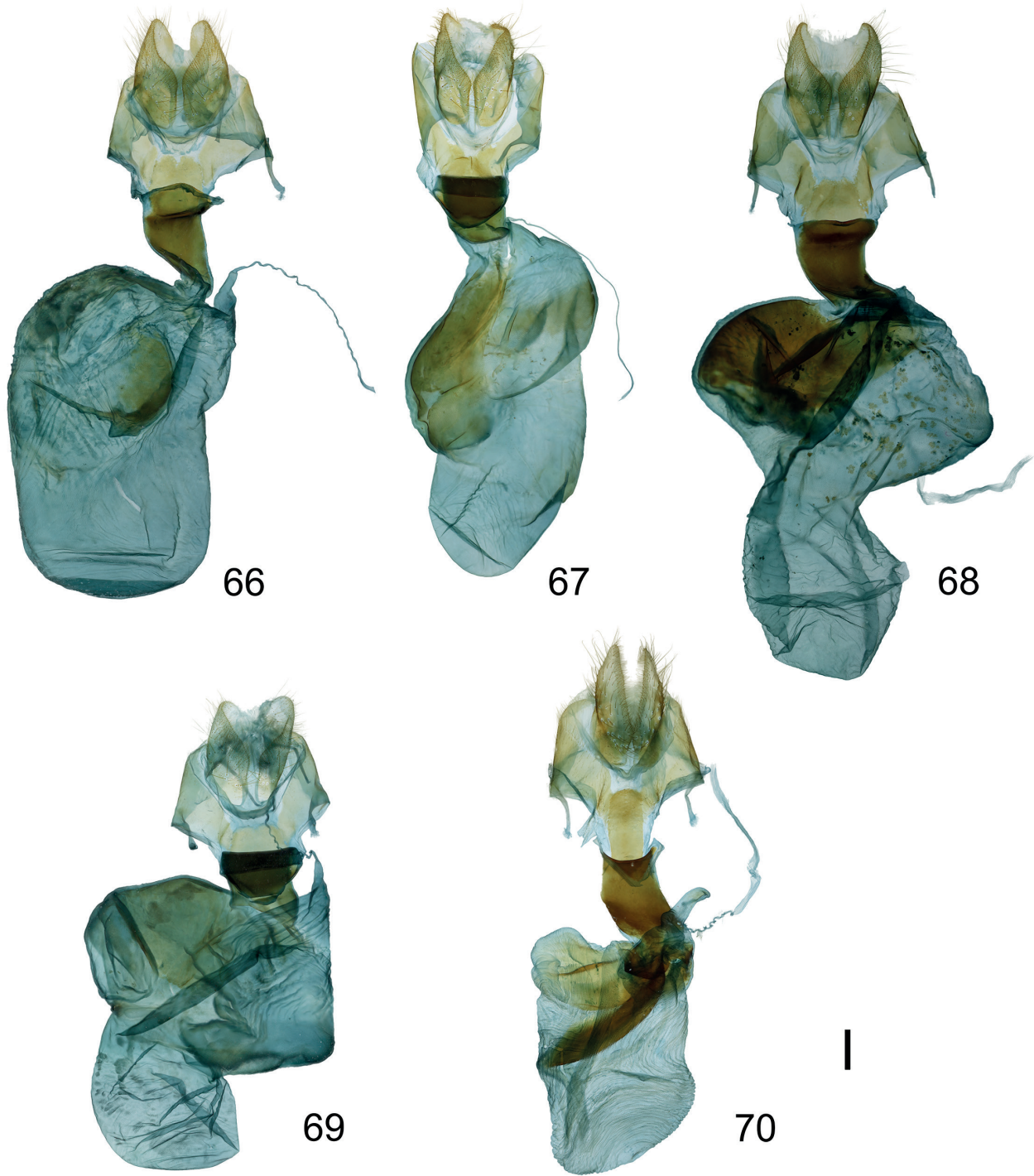
**Material examined. Papua New Guinea: West New Britain Province:** 1♂, Talesea district, Kulkolpun (near Biälla) rainforest, 500 m, S 05°46.257 E150°33.572, 21.23.III.2003, leg. Rudloff & Schaarschmidt (BMNHE 2003-192), NHMUK014165432, in NHMUK.

**Distribution.** New Britain in the Bismarck Archipelago (Fig. 76, where it is combined with the Rook Island population under *vityaz* s.l.).

**Diagnostic remarks.** Forewing length 36.5 mm. Habitus as in *P. vityaz* sp. n. (described above). Male genital apparatus and phallus fully matching those of *P. vityaz* sp. n., except for the main corpus of vesica that lacks a small swelling tipped by a cornutus (Figs 37, 65).



**Figs 50-65** – Phalli of *Platyja* (vesicae from old preparations in figs 51-53 and 62 not fully everted; red lines point to extra swelling and cornutus in figs 63-64 compared to 65): **50**, *P. lecerfi* stat. n., same as fig. 31; **51**, idem, same as fig. 32; **52**, *P. togutila* sp. n., same as fig. 33; **53**, idem, same as fig. 34; **54**, *P. subtracta* sp. n., same as fig. 40; **55**, idem, same as fig. 41; **56**, idem, same as fig. 43; **57**, idem, same as fig. 44; **58**, *P. yaleyambae* sp. n., same as fig. 46; **59**, idem, same as fig. 47; **60**, idem, same as fig. 48; **61**, *P. cyanocraspis*, same as fig. 38; **62**, idem, same as fig. 39; **63**, *P. vityaz* sp. n., same as fig. 35; **64**, idem, same as fig. 36; **65**, *Platyja* sp. (*vityaz* sp. n. or close), same as fig. 37. Scale bar = 1 mm.



**Figs 66-70** – Female genitalia of *Platytja*: **66**, *P. lecerfi* stat. n., Moluccas, Buru, Kako Tagalago; **67**, *P. cyanocraspis*, topotypus, New Guinea, near Oetakwa River; **68**, *P. subtracta* sp. n., paratypus, New Guinea, Saiko, Bubu River; **69**, *P. yaleyambae* sp. n., paratypus, Sudest Island, Mt Riu; **70**, *P. sumatrana*, without locality. Scale bar = 1 mm.

**Taxonomic remarks.** A singleton available from New Britain agrees in all respects to the two males (both dissected) of *P. vityaz* sp. n. from Rook Island (= Umboi, Siassi) described above but shows an important difference, that is the absence of a swelling tipped by a cornutus from the central corpus of vesica (Figs 63-65). Careful examination of the vesical membrane and features of the cornuti, that are not deciduous in this group, exclude an accidental loss. Much slighter differences in the vesical configurations are always treated as valuable clues unveiling the existence of different species, but there are also cases of species described on single individuals whose only difference was to show one less cornutus that eventually turned out to be invalid, e.g. *Apamea wasedana* Sugi, 1982 vs *A. rubrirena* (Treitschke, 1825) (Kononenko, 2005). Taxa are also known with almost endless combinations of number of diverticula, whether tipped by cornuti or not, such as *Periphanes delphinii* (Linnaeus, 1758) and *Aedophron rhodites* (Eversmann, 1851) or a single population of *Odontelia* from Jordan (Fibiger et al., 2009; Zilli & Fabiano, 2010). All other features being the same, the colour difference visible in figs 11-12 being likely ascribable to the different age of the museum specimens, it is considered more parsimonious not to proceed with the erection of a further species from New Britain based on that specimen alone. Nonetheless, attention is brought to the issue in case other specimens from such island became available, to assess whether the difference in the vesica is fixed in such population or not. Irrespective of the status to be conferred to the New Britain population, this case further shows the great potential for the diversification of the *cyanocraspis* sub-group in the Papuan Region.

### *Platyja yaleyambae* sp. n.

#### Description

Male (Figs 13-15)

*Habitus.* Forewing length 28-32 mm. Outward form and pattern indistinguishable from male *P. subtracta* sp. n.

*Male genitalia* (Figs 46-48, 58-60). Apparatus, phallus sheath and vesica as in *P. subtracta* sp. n., except for the diverticulum bearing more cornuti which is long and gradually tapered towards the apex and bears a continuous stripe of very small cornuti up to its tip.

Female (Figs 23-24)

*Habitus.* Forewing length 28-32. Outward form and pattern indistinguishable from female *P. subtracta* sp. n.

*Female genitalia* (Figs 69, 74). As in *P. subtracta* sp. n., with more weakly sclerotised cervical part of bursa copulatrix.

**Material examined.** Type material. [Papua New Guinea: Milne Bay Province]: Holotypus: ♂, Louisiade Archipela-

go: Sudest Isl. [= Vanatinai, Tagula], Jan.-May 1916, Eichorn Bros. (Rothschild Bequest 1939-1), NHMUK014165473, in NHMUK (Fig. 13);

Paratypes (9♂♂, 12♀♀): 2♂♂, 2♀♀, Sudest Isl., Mt. Riu, Jan.-Feb. 1916; 4♂♂, 5♀♀, idem, 2000 ft, March 1916, Eichorn Bros.; 1♂, 1♀ idem, April 1916; 1♂, idem, Jan.-May 1916; 2♀♀, Sudest Isl., Jan.-May 1916, Eichorn Bros.; 1♂, 2♀♀, Sudest Isl., Mt. Riu, Jan.-Feb. 1916, Eichorn Bros. (recu de Janson); these (9♂♂, 12♀♀) in NHMUK;

Non-type material (2♂♂): 1♂, Rossel Isl. [= Yela], Mt Rossel, 2100 ft, Nov. 1915-Jan.-[1]916, W.F. Eichorn; 1♂, idem, Dec. 1915; both in NHMUK.

**Distribution.** Sudest (= Vanatinai, Tagula) and Rossel (= Yela) islands in the southeastern sector of the Louisiade Archipelago (Fig. 76).

**Diagnostic remarks.** The only real diagnostic feature of *P. yaleyambae* sp. n. from its allopatric sibling *P. subtracta* sp. n. has so far been found in the configuration of the vesical diverticulum bearing more cornuti. This is short and abruptly constricted before thin, finger-like tip in *subtracta*, contrary to the much elongate conical one of *yaleyambae*. The cornuti are fewer and much bigger in *subtracta*, and do not extend into the finger-like tip, while those of *yaleyambae* are numerous, much smaller and reach the tip of the diverticulum. The other main diverticulum branching from the vesical corpus, that tipped by a single stout cornutus, is also comparatively smaller and shorter in the Louisiades species, so that actually the two main diverticula in this species are of comparable length, while in *subtracta* such diverticulum is twice as long as the other. In the female genitalia there is indication of some allomorphic differences between the two species in the posterior trochoidal section of the bursa copulatrix, but the membranous constitution of this part makes it difficult to parameterise any shape differences. More evident though is the stronger sclerotization of the cervical part in *subtracta*.

**Taxonomic remarks.** The background for erection of *P. yaleyambae* sp. n. as a new species distinct from *P. subtracta* sp. n. looks similar to that between *P. vityaz* sp. n. and the yet unnamed population from New Britain (see above), differences essentially regarding one single vesical diverticulum or swelling and its cornuti. However, in this case the availability of several specimens from the type locality and the assessment of the range of variability of that diverticulum in *subtracta* across whole New Guinea (specimens from the Milne Bay area facing the Louisiade Archipelago having also been dissected) indicate that such differences are fixed. It is worth noting that in Fergusson Island (D'Entrecasteaux group), not far from the SE Louisiades but much closer to New Guinea, *P. subtracta* sp. n. has been found. *Platyja yaleyambae* appears therefore to be a close sibling of *P. subtracta* that has likely originated

as an offshoot of the species in the main island that diversified by virtue of the stronger isolation, and currently is the most easterly distributed species of the *sumatrana*-group.

**Etymology.** The species is named after the Local Level Government area “Yaleyamba”, which comprises the eastern part of the Louisiade Archipelago, with Sudest (= Vanatinai, Tagula) and Rossel (= Yela) islands. The name is a noun in the genitive case.

## Conclusions

The present review of the *Platyja sumatrana* species group allowed to assess that richness of this assemblage has to be set to at least seven species from the three taxa that either at specific or subspecific level had previously been described. The likely presence of another species in New Britain could not be worked out any further due to paucity of the available material. Composition of the group can be therefore summarised as follows.

### *sumatrana* sub-group

*Platyja sumatrana* ([C. & R.] Felder & Rogenhofer, 1874) (Malayan-Sundan)

### *cyanocraspis* sub-group

*Platyja lecerfi* A.E. Prout, 1922 stat. n. (Moluccas: Buru and Seram)

*Platyja togutila* sp. n. (Moluccas: Halmahera)

*Platyja vityaz* sp. n. (Bismarck Archipelago: Rook Island [= Umboi, Siassi])

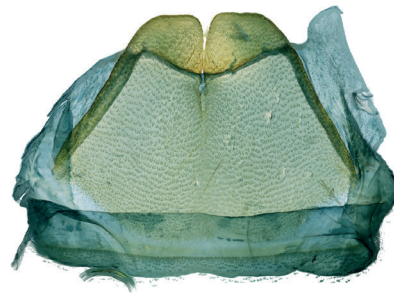
*Platyja* sp. (*vityaz* sp. n. or close) (Bismarck Archipelago: New Britain)

*Platyja cyanocraspis* Hampson, 1922 (New Guinea)

*Platyja subtracta* sp. n. (New Guinea, Waigeo, Jobi [= Yapen], Dampier = Karkar, and Fergusson islands)

*Platyja yaleyambae* sp. n. (Louisiade Archipelago: Sudest Island [= Vanatinai, Tagula] and Rossel Island [= Yela])

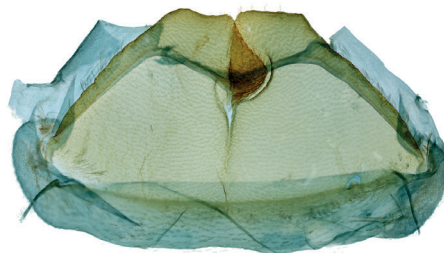
The group is a strictly Indo-Australian one, with the *sumatrana* and *cyanocraspis* sub-groups that segregate in the western and eastern parts of the range, respectively, but with no representatives known to date between them, greater Sunda islands like Java or the main Wallacean one like Sulawesi seemingly not hosting any species. The discovery that the old concept of *cyanocraspis* consists of two sibling species in New Guinea, with true *cyanocraspis* being actually scarcer than *subtracta* sp. n., has been a most surprising outcome of this taxonomic assessment. This finding was even surpassed by realisation that phenotypes resembling in antennal and pattern features *subtracta* correspond to additional undescribed species, a circumstance that further confirms the Papuan Region as a biodiversity hotspot whose ecogeographic complexity promoted speciation in many groups.



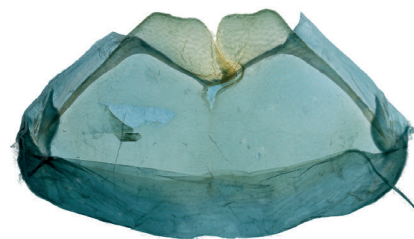
71



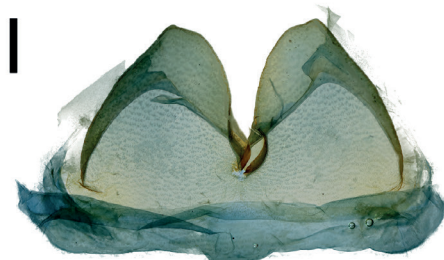
72



73

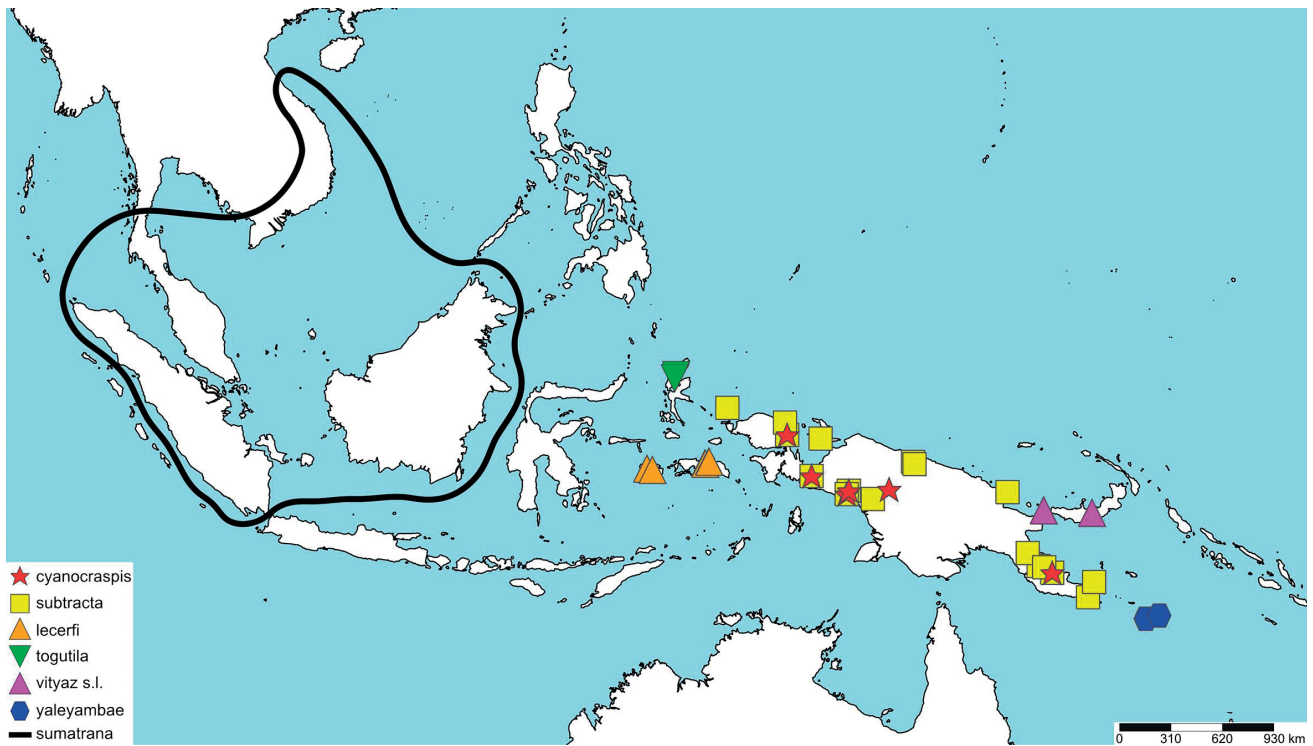


74



75

**Figs 71-75** – Lodices (female sternite A7) of *Platyja*: **71**, *P. lecerfi* stat. n., same as fig. 66; **72**, *P. cyanocraspis*, same as fig. 67; **73**, *P. subtracta* sp. n., same as fig. 68; **74**, *P. yaleyambae* sp. n., same as fig. 69; **75**, *P. sumatrana*, same as fig. 70. Scale bar = 1 mm.



**Fig. 76** – Distribution of species of the *Platyja sumatrana*-group (populations from New Britain and Rook Island [= Umboi, Siassi] combined as *vityaz* s.l.; see explanation in text).

**Acknowledgements** – Gratitude goes to Bernard Landry for communication of a new country record for Thailand from the holdings of the then Jacques Plante collection, now in Muséum d'histoire naturelle (Geneva). This work has been partly supported by an internal NHMUK grant to AZ (DIF 2019: SCR13057).

## References

- Fibiger M., Ronkay L., Steiner A., Zilli A. 2009. Noctuidae Europaeae 11. Pantheinae-Bryophilinae. Entomological Press, Sorø, 504 pp.
- Holloway J.D. 1976. Moths of Borneo with special reference to Mount Kinabalu. Malayan Nature Society, Kuala Lumpur, viii + 264 pp.
- Holloway J.D. 2005. The Moths of Borneo [Parts 15 & 16]: Family Noctuidae, subfamily Catocalinae. The Malayan Nature Journal, 58 (1/4): 1–529.
- Kononenko V.S. 2005. Noctuidae Sibiricae 1. An annotated check list of the Noctuidae (s.l.) of the Asian part of Russia and the Ural Region. Entomological Press, Sorø, 243 pp.
- Poole R.W. 1989. Lepidopterorum catalogus (n.s.) 118. Noctuidae. 3 vols. E.J. Brill–Flora & Fauna, Leiden & New York, 1314 pp.
- Roepke W. 1951. Lepidoptera Heterocera, gesammelt von Dr. F. Schneider in Sumatra. Mitteilungen der Schweizerischen Entomologischen Gesellschaft, 24 (4): 379–400.
- Shorthouse D.P. 2010. SimpleMappr, an online tool to produce publication, quality point maps. <https://www.simplemappr.net> [Accessed 2 July 2021].
- Zilli A. 1993. Remarks on the taxonomic value of male abdominal brush-organs: the case of *Apamea maroccana* (Zerny, 1934), bona sp. (Lepidoptera, Noctuidae). Esperiana, 3 (1992): 19–32.
- Zilli A., Fabiano F. 2000. How many species of *Odontelia* (Lepidoptera, Noctuidae) live sympatrically in the Jordanian desert? XII European Congress of Lepidopterology, Białowieża (Poland): 1 p. (appended to printed programme).
- Zilli A., Vos R., de, Edwards E.D. 2021. The *torsilinea* species group (subgenus *Mocrendes* Nye, 1975) of the genus *Platyja* Hübner, [1823] (Lepidoptera: Erebidae), with descriptions of four new species, pp. 413–430. In: Telnov D., Barclay M.V.L., Pauwels O.S.G. (eds), Biodiversity, biogeography and nature conservation in Wallacea and New Guinea 4. The Entomological Society of Latvia, Riga.

## Appendix

Museum inventory codes for the specimens illustrated in this paper (nos/figs; all NHMUK except when otherwise stated).

014165436 (1), 014165438 (2, 29), 014165469 slide BMNH Noct. 6347 (3, 33, 52), RMNH INS.1108646 (4, 34, 53), 010918637 (5, 27), 014165435 (6), 014165467 (7), 014165433 (8, 28), 010918648 slide 010316328 (9, 43, 56), 010918645 slide 010316329 (10, 44, 57), 010918649 slide 010316562 (11, 36, 64), 014165432 slide 010316564 (12, 37, 65), 014165473 (13), 010918650 (14), 014165472

(15), 010914400 (16, 30), 014165437 (17), 014165439 (18), 014165470 (19), 014165471 (20), 014165468 (21), 014165434 (22), 014165474 (23), 014165440 (24), 010914401 (25), 010918857 slide 010316565 (26, 70, 75), 014165430 slide 010316571 (31, 50), slide BMNH Noct. 6346 (32, 51), 010918644 slide 010316563 (35, 63), 010918640 slide 010316325 (38, 61), slide BMNH Noct. 6348 (39, 62), 010918638 slide 010316324 (40, 54), 010918647 slide 010316318 (41, 55), slide BMNH Noct. 6344 (42), slide BMNH Noct. 6345 (45), 010918642 slide 010316569 (46, 58), 010918651 slide 010316570 (47, 59), 010918646 slide 010316568 (48, 60), slide BMNH Noct. 19133 (49), 014165431 slide 010316315 (66, 71), 010918641 slide 010316326 (67, 72), 010918639 slide 010316327 (68, 73), 010918643 slide 010316567 (69, 74).