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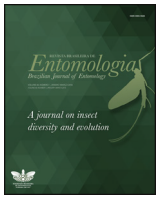

Notes and synonymy on the Neotropical moth genus *Xylodonta* Becker (Notodontidae, Nystaleinae), with special reference to the species occurring in Brazil

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ABSTRACT

The Notodontidae genus *Xylodonta* Becker, 2014 is represented by 20 species, five of them new, four from Brazil: X. *giffordi* **sp. n.**, *X. imitans* **sp. n.**, *X. ochreibasis* **sp. n.**, and *X. robustoides* **sp. n.**; and one from Guatemala: *X. monzoni* **sp. n.**; one species: *X. pythia* (Druce, 1894) **stat. rev.**, is removed from the synonymy with *X. xylinata* (Walker, 1865), three: *X. placida* (Schaus, 1911) **syn. n.** and *X. riparia* (Druce, 1906) **syn. n.** (=*X. guarana* (Schaus, 1892)) and *X. patrickgoodwilliei* Chacón, 2017 **syn. n.** (=*X. xylinata* (Walker, 1865)) are synonymized; and one: *N. russula* (Dognin, 1909) **comb. n.** is transferred to *Nycterotis* Felder. Diagnosis and illustrations of adults and genitalia of all species recorded from Brazil are provided to allow their identification.

The species belonging to *Xylodonta* Becker, 2014 were treated by Draudt (1932: 931-935) in *Dasylophia* Packard, 1864, a polyphyletic group that included species currently associated with at least three genera: true *Dasylophia, Nycterotis* Felder, and *Xylodonta* Becker (Becker, 2014). Draudt's work included, for the first time, colour illustrations of most of them (pl. 146b-d). However, as characters of genitalia were not in full usage at that time, he incurred in several mistakes, maintaining all the synonymies established by previous authors, and recognizing all the others as good species. Part of these problems were clarified in a checklist by Becker (2014: 19-20) who, based on the characters of male genitalia, reduced *Dasylophia* to three species, transferring nine of them, not that could be associated with any of the described genera, to the new genus *Xylodonta*. The species belonging to this genus are not easy to identify as most of them show similar pattern and also present strong sexual dimorphism, making association of sexes difficult. The most difficult of them is the complex of species that have been generally identified in the collections as *xylinata* Walker. Chacón et al. (2017) carried out a detailed study of this complex for the species ocurring in Costa Rica and found that they represent at least eight species, six of them undescribed, bringing the number to 14 species for the genus. Chacon, in the article for which he was the author responsable for the taxonomy part of the work, adopted the synonymy followed by previous authors, what led him to misinterpret the identity of two species: *xylinata*, and *pythia* Druce. These two species were regarded as synonyms, a mistake that is discussed below.

This work treats the species of the genus ocurring in Brazil, represented by eight species, four of them described as new, brings new information on the classification of the species belonging to the genus and provides illustrations, both of adults and their male genitalia, to allow the identification of the Brazilian species. In order to clarify the identity of the species, other taxa, not ocurring in Brazil, had to be examined and some useful information about them is also included here. To summarise: with this work, plus that of Chacón et al. (2017), which in reality treats all the Central American and Mexican species, and the catalogue by Schintlmeister (2016), which illustrates all the types of Notodontidae deposited in the collections of the National Museum of Natural History, Washington, information about all the species of *Xylinota* is currently available, allowing their identification.

Material and methods

This review is based on 241 specimens (99 g. s.) in VOB[1], and on the type-material in the USNM and the NHMUK. Synoptic collections representing all the species in VOB were taken to the last two institutions

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[1] Abbreviations: AL = Alagoas State, Brazil; AMC = Alfred Moser Collection, São Leopoldo, RS, Brazil; BA = Bahia State, Brazil; CE = Ceará State, Brazil; DF = Distrito Federal, Brazil; ES = Espirito Santo State, Brazil; FW = Forewing; GO = Goiás State, Brazil; g. s. = genitalia slide; HW = Hind Wing; MA = Maranhão State, Brazil; MG = Minas Gerais State, Brazil; MNCR = Museo Nacional, Costa Rica; MS = Mato Grosso do Sul State, Brazil; MT = Mato Grosso State, Brazil; NHMUK = Natural History Museum, United Kingdom; PR = Paraná State, Brazil; RJ = Rio de Janeiro State, Brazil; RO = Rondônia State, Brazil; RS = Rio Grande do Sul State, Brazil; SLP = Sán Luiz Potosi State, Mexico; SP = São Paulo State, Brazil; USNM = United States National Museum, Washington, USA; VOB = Vitor O. Becker collection, Serra Bonita Reserve, Camacan, Bahia, Brazil

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and compared with their collections. The holotypes of the new species are provisionally deposited in VOB, and will be transferred, together with the collection, to a Brazilian institution in the future. Genitalia were prepared following the methods described by Robinson (1976). Terms for morphological characters follow Hodges (1971).

Results and discussion

As shown in the summary presented below, this study brings to 20 the number of species known to *Xylodonta,* among them five described as new here. Synonymy and other useful information are also presented.

Nomenclatural summary

NYCTEROTIS Felder, 1874

russula (Dognin, 1909) (*Dasylophia*) **comb. n.** French Guiana to Brazil

XYLODONTA Becker, 2014

Dasylophia Authors [partim].

andrewrusselli Chacón, 2017 Costa Rica

angustipennis (Schaus, 1911) (*Dasylophia*) Costa Rica

billhaberi Chacón, 2017 Costa Rica

castrena (Jones, 1912) (*Rifargia*) Central and southern Brazil

giffordi Becker **sp. n.** Peru, Brazil (West Amazons)

guarana (Schaus, 1892) (*Oedemasia*) Southern Mexico to Southern Brazil

placida (Schaus, 1911) (*Dasylophia*) **syn. n.**

riparia (Druce, 1906) (*Dasylophia*) **syn. n.**

inca (Schaus, 1892) (*Oedemasia*) Peru

imitans Becker **sp. n.** Brazil

markvanputteni Chacón, 2017 Costa Rica

mocosa (Dognin, 1895) (*Dasylophia*) Ecuador

monzoni Becker **sp. n.** Guatemala

ochreibasis Becker **sp. n.** Brazil

pythia (Druce, 1894) (*Notodonta*) Southern Mexico to Costa Rica

robertodelgadoi Chacón 2017 Costa Rica

robusta (Jones, 1908) (*Dasylophia*) Southern Brazil to Argentina

ligea (Dognin, 1911) (*Dasylophia*)

robustoides Becker **sp. n.** Brazil, western Amazons

rufitincta (Dyar, 1913) (*Dasylophia*) Southern Mexico to Costa Rica

blaizea (Schaus, 1928) (*Dasylophia*)

scottmilleri Chacón, 2017 Costa Rica to Brazil

terrena (Schaus, 1892) (*Oedemasia*) Southern Mexico to Costa Rica

dares (Druce, 1894) (*Notodonta*)

maxtla (Schaus, 1892) (*Oedemasia*)

xylinata (Walker, 1865) (*Nystalea*) Costa Rica to Ecuador

patrickgoodwilliei Chacón, 2017 **syn. n.**

Taxonomy

XYLODONTA Becker

Xylodonta Becker, 2014: 28. Type-species: *Nystalea xylinata* Walker, 1865: 759, by original designation.

Diagnosis. Brown; forewings elongate, narrow, with a woody pattern; basal half of antenna strongly pectinate; male genitalia with uncus digitiform, long, bent ventrad, bearing a thorn distally; socii vestigial; valvae rod like, long; distal margin of 8th sternite, in male, strongly bifurcate, each arm with serrate margins, often asymmetrical. Sexually dimorphic. Females larger, antenna with basal half of most species pectinate, though pectination shorter than in males; abdomen bulky, 8th sternite thick, strongly sclerotized, often longer than wider; genitalia proportionally small in relation to the size of the abdomen, usually shorter than the lengh of 8th sternite.

Distribution. Mexico, throughout Central America, south to Argentina; absent in the Antilles.

Food plants. Chacón et al. (2017) reared the larvae of six species belonging to the genus on the leaves of several genera of Fabaceae.

Remarks. The species included here resemble those belonging to *Dasylophia* Packard, to which they were formerly associated. In the female genitalia, the connection of 8th to 9th sternite is strongly sclerotized, making it difficult, when dissecting, to remove the genitalia leaving the 8th sternite connected with the rest of the abdomen. This would not be a serious problem if the sternite was less sclerotized -more transluscent- or if the genitalia were longer. Therefore, if the 8th sternite is left in place, it superposes the genitalia in the slide preparation, making the characters difficult to access.

Xylodonta castrena (Jones)

(Figs. 1A, 1B, 3A-C, 5A)

Rifargia castrena Jones, 1912: 430. Holotype ♀, **BRAZIL: PR**, Castro (*Jones*) (BMNH) [type watercolor examined].

Diagnosis. This is the only species in the genus with wings showing blackish pattern (Figs. 1A, 1B); male HW pure white; female antenna short ciliated, HW dusted gray. Distal margin of 8th male sternite (Fig. 3C) asymmetrical, with sharp pointed expansions, edged hairy. Male genitalia (Fig. 3A) with uncus modified into spiny bifurcate tip; valvae symmetrical, long, narrow, curved ventrad; aedoeagus (Fig. 3B) nearly straight, apex curved, sharp pointed. Female genitalia (Fig. 5A) with both lamellae vaginalis wide; corpus bursae an elongate bag, strongly constricted on one lateral side.

Material examined. 10 ♂♂ (4 g. s. 4160, 5260, 5447, 5448), 4 ♀♀ (3 g. s. 5449-5451) (VOB, AMC).

Distribution. Central and Southern Brazil, mostly in the Cerrado biome.

Remarks. The type material has not been located, however, there is a good watercolor of the type, in the USNM collection, ordered by Schaus. A very distinct species for the genus, either externally and in the shape of genitalia, as shown by the illustrations, which cannot be confused with any other from it's range.

Xylodonta ochreibasis sp. n.

(Figs. 1C, 1D, 3D-F, 5B)

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Diagnosis. FW with ochreous blotch at base contrasting yellow; area distad of postmedial band pale yellow; HW whitish, veins marked fuscous, especially in the females.

Description. Male (Fig. 1C) 15-18 mm (34-40 mm wingspan), female (Fig. 1D) 20-22 mm (44-48 mm wingspan). Labial palpi pale yellow, dark fuscous dorsally; frons fuscous; vertex pale yellow; antenna fuscous. Thorax pale yellow; patagia ochreous, tegula pale yellow, dorsal margin fuscous; legs pale yellow, tarsi ringed fuscous. FW with area basad of postmedial band ochreous, tinged blackish towards it; antemedial band well defined below cell only, forming a strong arc between CuA and 2A; postmedial band whitish, edged black, curved from costa to anal fold, then straight to dorsum before tornus; area distad of postmedial band pale yellow, spotted yellow and fuscous along costa; irregular, dark patch before apex and pair of small, irregular, blackish dots between M3 and Cu1, and between Cu1 and Cu2, before termen; cilia dark fuscous,

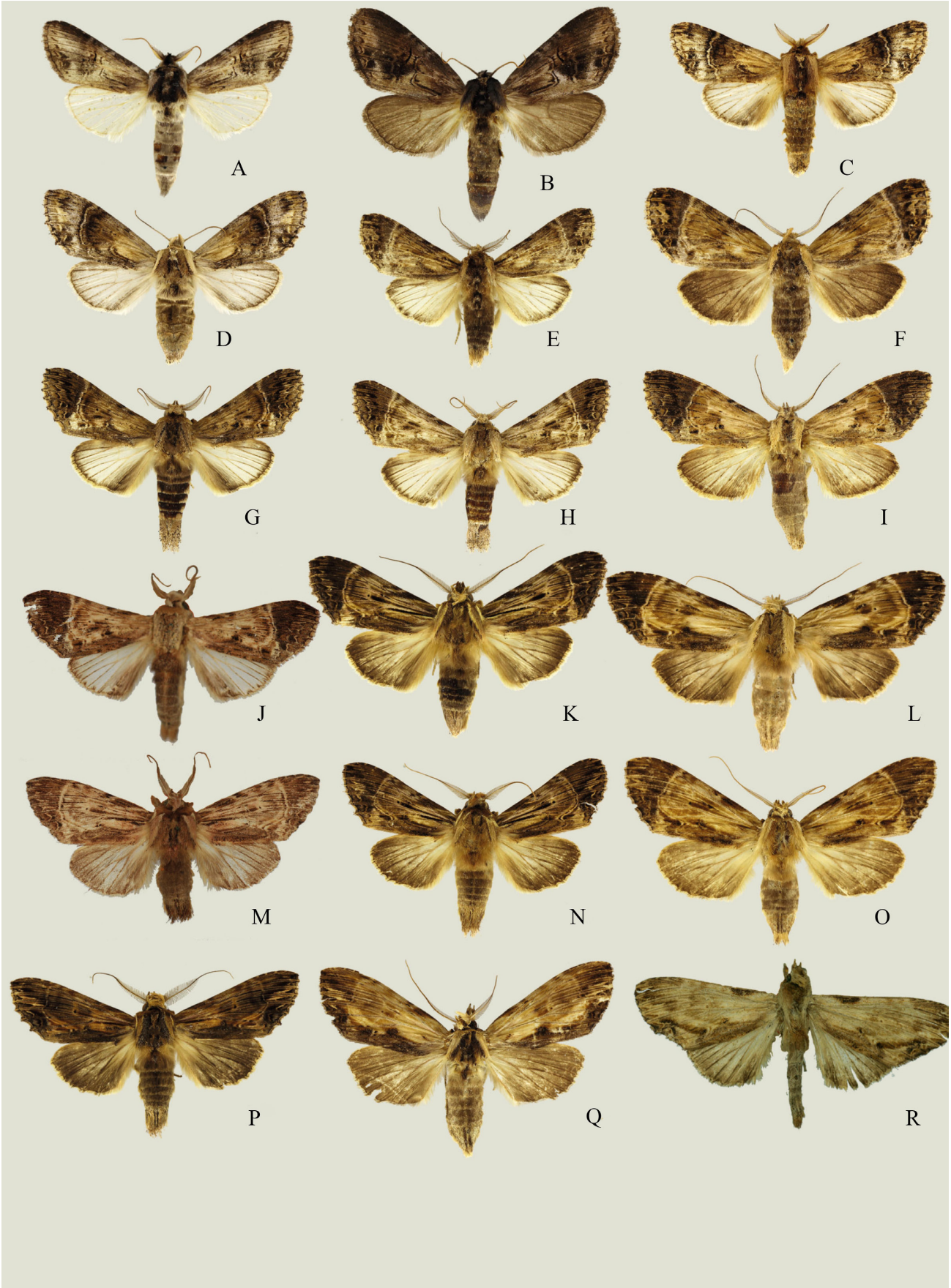

Figure 1 *Xylodonta* adults, dorsal view. A, B. *castrena*: male, female (Brazil); C, D. *ochreibasis*: male, female (Brazil); E, F: *imitans,* male, female (Brazil); G-J. *guarana*: males, female (Brazil), male holotype of *riparia* (Peru); K-M. *robusta*: male, female, male holotype (Brazil); N, O. *robustoides*: male holotype, female paratype (Brazil); P-R. *xylinata*: male (Ecuador), female (Costa Rica), female holotype (Colombia).

Figure 2 *Xylodonta* (A-L) and *Nycterotis* (M-O) adults, dorsal view. A. *xylinata*: female (Ecuador); B-D. *pythia*: male (Costa Rica), female (Mexico), lectotype male (Mexico); E, F. *scottmilleri*: male, female (Brazil); G, H. *giffordi*: holotype male, paratype female (Brazil); I, J. *mocosa*: male, female (Ecuador); K, L. *monzoni*: male holotype, female paratype (Guatemala); M-O. *russula*: female, male, female (Brazil).

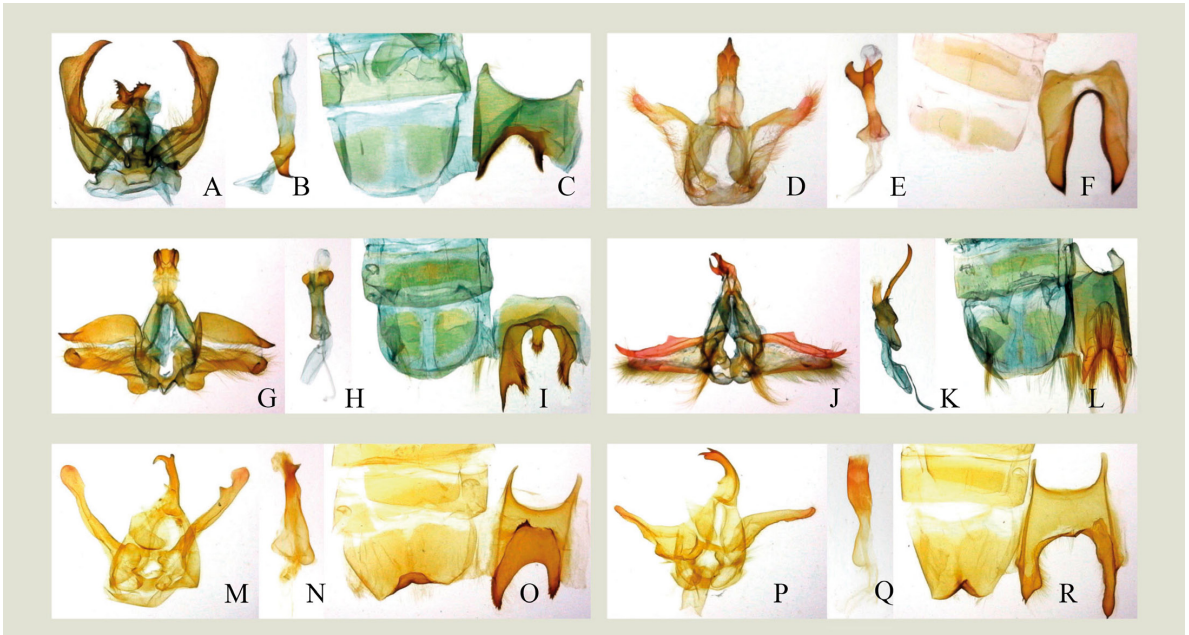

Figure 3 *Xylodonta* (A-R) male genitalia, aedoeagus, 8th male abdominal segment. A-C. *castrena* (Brazil); D-F. *ochreibasis*, paratype (Brazil); G-I. *imitans,* paratype (Brazil); J-L. *guarana* (Brazil); M-O. *robusta* (Brazil); P-R. *robustoides,* paratype (Brazil).

Figure 4 *Xylodonta* (A-U) and *Nycterotis* (V-X), male genitalia, aedeagus, 8th male abdominal segment. A-C. *xylinata* (Ecuador); D-F. *pythia* (Mexico); G-I. *giffordi,* paratype (Peru); J-L. *giffordi,* paratype (Brazil); M-O. *mocosa* (Ecuador); P-R. *monzoni,* holotype (Guatemala); S-U. *scottmilleri* (Brazil); V-X. *russula* (Brazil).

interrupted pale yellow on veins; underside pale yellow, slightly dusted fuscous towards costa; postmedial band faded. HW semitransluscent whitish, dusted fuscous towards margins, tornus and dorsum tinged gray. Abdomen dark fuscous dorsally, slightly ringed pale yellow; pale yellow ventrally. Distal margin of 8th sternite (Fig. 3F) expanded as two large, flat plates, tapered distad to a sharp pointed tip.

Male genitalia (Fig. 3D): Uncus tapering distad, ending in a thin tip; socii flat, slightly widened distad, curved dorsad; valvae symmetrical, narrow, elongate, covered with long setae distaly; sacculus indistinct; vinculum wide, rounded; aedoeagus (Fig. 3E) cylindrical, bent dorsad, apex expanded dorsally to large, horn-shaped expansion; vesica with no cornuti.

Female genitalia (Fig. 5B): Both lamellae vaginalis expanded, folded; ostium bursae at one side; ductus bursae short, narrow; corpus bursae globose; signum a contorted, small plate.

Material examined. 11 ♂♂ (5 g. s. 4663, 4680, 5442-5444), 3 ♀♀ (2 g. s. 5445, 5446). Holotype ♂, **BRAZIL: PR**, Curitiba, 920 m, 8.i.1975 (*Becker* 1338); Paratypes: 1 ♂, 2 ♀♀, same data as holotype, but 10.i.;1, 20, 30.iv.1975 (*Becker* 1339-1341); 1 ♂, Quatro Barras, Banhado, 800 m, 12.iv.1970 (*Becker* 1335); 1 ♂, Foz do Iguaçu, 29-31.i.1975 (*Laroca* & *Jensen,* VOB 21648); 2 ♂♂, **BA**, Igaporã, 750 m, 28.iii.2000 (*Becker* 120595); 2 ♂♂, **MG**, Aiuruoca, 22°00'S – 44°38'W, 1300 m, 10-12.x.2018, 24.i.2019 (*Becker* 157262, 157569); 1 ♂, Jaíba, Mocambinho, 7-16.i.1997 (*Tangerini*); 1 ♂, **MS**, Corumbá, 600 m, 20-22.iv.1985 (*Becker* 63408); 1 ♂, **SP**, Jundiaí, 23°13'S – 46°56'W, 900 m, 13-16.ii.2001 (*Becker* 131772) (VOB).

Distribution. Central and southern Brazil, in high elevations.

Etymology. From the Greek *ochros*= pale yellow, ocher + *basis* = base; neuter.

Remarks. This, *imitans* **sp. n.** and *guarana* form a group of similar species that lack the conspicuous blackish dashes on FW, below cell. Similar to *guarana* but the ochreous basal area more contrasting yellowish; area distad of postmedial band pale, not dark gray as in the other two. Female antenna short ciliated -basal half pectinate in the other two. Genitalia and 8th sternite of both sexes strongly distinct, as shown by the illustrations.

Xylodonta imitans sp. n.

(Figs. 1E, 1F, 3G-I, 5C)

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Diagnosis. Male FW with basal blotch diffuse; area distad of postmedial band fuscous, followed by a pale yellow patch on termen, below apex. Male HW whitish, veins marked gray; female HW gray, veins contrasting.

Description. Male (Fig. 1E) 16-18 mm (36-40 mm wingspan), female (Fig. 1F) 20-23 mm (46-52 mm wingspan). Labial palpi pale fuscous, darker dorsally; frons fuscous, vertex pale yelow; antenna fuscous, flagellum pale yellow basally. Thorax and abdomen fuscous dorsally, pale yellow ventrally; legs fuscous; tegula pale yellow. FW pale yellow, dusted fuscous; area basad of antemedial band, below costa and above CuA, pale yellow; postmedial band whitish, double; dark fuscous distad of postmedial band; pale yellow patch before termen, below apex;

Figure 5 *Xylodonta* (A-L) and *Nycterotis* (M), female genitalia, ventral view. 7A. *castrena* (Brazil); B. *ochreibasis,* paratype (Brazil); C. *imitans,* paratype (Brazil); D. *guarana* (Brazil); E. *robusta* (Brazil); F. *robustoides,* paratype (Brazil); G. *xylinata* (Costa Rica); H. *pythia* (Mexico); I. *scottmilleri* (Brazil); J. *giffordi,* paratype (Brazil); K. *mocosa* (Ecuador); L. *monzoni,* paratype (Guatemala); M. *russula* (Brazil).

series of dark fuscous lunules between veins, before and on termen; cilia fuscous, pale yellow basally. HW semitranslucid whitish, dusted gray towards margins, veins darker. Females FW broader; HW dusted fuscous. Distal margin of 8th sternite (Fig. 3I) with three expansions covered with long setae towards tip; the lateral ones asymmetrical; central a short digit.

Male genitalia (Fig. 3G): Uncus short, broad, with a cavity in the middle; socii as short as uncus, straight; valvae symmetrical, long; costa elongate; tip sharp; sacculus as long as costa; a round expansion at base, on ventral margin, densely covered internally with long setae; vinculum thin, round; aedoeagus (Fig. 3H) straight, expanded into a flat plate distaly; vesica without cornuti.

Female genitalia (Fig. 5C): Distal margin of lamella antevaginalis rounded, with sparse setae; lamella postvaginalis short, wide; ductus bursae as long as corpus bursae; corpus bursae elongate; signum a small, round, indistinct plate.

Material examined. 5 ♂♂ (4 g. s. 4677, 5424-5426), 8 ♀♀ (3 g. s. 5427-5429). Holotype ♂, **BRAZIL: SP**, Bertioga, 5 m, 7-9.x.1996 (*Becker* 99506). Paratypes, 1 ♂, same data as holotype, but 15-17.v.1996 (*Becker* 99199); 1 ♀, **AL**, Ibateguara, 400 m, 10-20.iii.1994 (*Becker* 90120); 1 ♀, **BA**, Morro do Chapéu, 1400 m, 23-24.iv.1991 (*Becker* 78183); 1 ♂, 1 ♀, Camacan, Reserva Serra Bonita, 15°23'S – 39°33'W, 800 m, 9-20.iv.2005 (*Becker* 136222); 1 ♀, Jequié, 13°56'S – 40°11'W, 800 m, 21.xi.2001 (*Becker* 147592); 1 ♂, 2 ♀♀, **CE**: Guaramiranga, 1000 m, 9.iv.1994 (*Becker* 91772); 1 ♀, **MA**, Açailândia, 150 m, 19-27.xi.1990 (*Becker* & *Dubois* 76537); 1 ♀,

RO, Cacaulândia, 15-18.x.1993 (*Becker* 87927); 1 ♂, **PERU: Loreto**, Jenaro Herrera, 04°54'S – 73°39'W, 04-14.viii.2014 (*Becker* 151298) (VOB).

Distribution. Brazil, from Rondônia and Maranhão, south to São Paulo, and in the Peruvian Amazonia.

Etymology. From the Latin *imitor -atus* = copy, mimic; neuter.

Remarks.Very similar to *guarana,* but on average smaller; the conspicuous pale patch on termen, below apex of FW, makes it readily distinct from this and *ochreibasis* **sp. n.**; female FW broader than those of *guarana* and *ochreibasis,* HW dusted gray -yaline in the other two. Genitalia and 8th sternite very distinct from any other in the genus, as shown by the illustrations.

Xylodonta guarana (Schaus)

(Figs. 1G-J, 3J-L, 5D)

Oedemasia guarana Schaus, 1892: 331. Lectotype ♀, **BRAZIL: RJ** (*Schaus*) (USNM), designated by Schintlmeister, 2016: 230 [examined].

Dasylophia placida Schaus, 1911: 265. Lectotype ♂, **COSTA RICA: Sán José**, Avangarez, 4,000 ft (*Schaus* & *Barnes*) (USNM), designated by Schintlmeister 2016: 413 [examined]. **Syn. n.**

Dasylophia riparia Druce.1906: 409. Holotype ♂, **PERU: [Puno]**, Carabaya, Quinton, 5,000 ft (BMNH) [image examined]. **Syn. n.**

Diagnosis. FW (Figs. 1G-J) with basal area, below cell, missing blackish dashes along veins; ochreous area basad of postmedial band with diffuse, ill defined, irregular marks; area distad of postmedial band with a broad fuscous area, broader on costa, tappering towards tornus; HW whitish, veins marked gray. Distal margin of 8th male sternite (Fig. 3L) with two sharp pointed prongs, densely covered with long setae. Male genitalia (Fig. 3J) resemble those of *imitans,* but with uncus thinner, socii thin and long, curved ventrad, and valvae much narrow with long, sharp tip; aedoeagus (Fig. 3K) short, thick, with a unique, thin, long digit. Female genitalia (Fig. 5D) with ostium narrow; ductus bursae short, slightly expanded at middle; corpus bursae oblong, large, constricted on one side, where the indistinct signum is located.

Material examined. 38 ♂♂ (11 g. s. 4664, 4670, 4675, 4676. 4679, 5430-5435), 10 ♀♀ (9 g. s. 4669, 5436-5441) (VOB).

Distribution. Southern Mexico to Southern Brazil.

Food plants. *Platymiscium pinnatum, P. parviflorum* Fabaceae) (Chacón et al., 2017: 54).

Remarks. This is the species of the genus with the broadest range, and with the male genitalia and 8th sternite much distinct from all the others, as shown by the illustrations. Both *guarana* and *placida* were described by an unspecified number of males, however the lectotype of the first, the only specimen traced, is a female, and a further female of *placida*, not mentioned in the original description, was found together with the male lectotype. It is very likely that Schaus regarded the specimen of *guarana* as male because the female has pectinate antennae, like the males, though shorter. Among the specimens in the author's collection there are 3 males and one female from Mexico: Campeche, Escárcega, 30.ix.1973 (*Becker,* 23970); Veracruz, Estación Biológica de los Tuxtlas, 11-16.vi.1981 (*Becker,* 41972). These specimens, that match the types of *placida* are smaller and paler than the typical form, a feature that is common in populations from dry areas. In the dry areas of Mexico and Central America it can be easily confused with the pale form of *Nycterotis lupia* (Druce), a polymorphic species, of which specimens were collected together. Females can be readily distinguished by the antenna, filiform in *lupia*.

Xylodonta robusta (Jones)

(Figs. 1K-M, 3M-O, 5E)

Dasylophia robusta Jones, 1908: 168. Holotype ♂, **BRAZIL: PR**, Castro (*Jones*) (BMNH) [examined].

Dasylophia ligea Dognin, 1911: 20. Holotype ♂, **ARGENTINA: Misiones**, Sán Ignacio (USNM) [examined]. Synonymized by Becker, 2014: 23.

Diagnosis. FW ochreous dusted fuscous; postmedial band ochreous with a thin, well defined, fuscous line along middle; area distad of this band dark fuscous, extending to termen; FW male (Figs. 1K, 1M) with two thin black dashes: short one along middle of cell, longer just below cell, reaching back to base; HW whitish dusted fuscous towards margins; veins marked fuscous. Female FW (Fig. 1L) less dusted fuscous, more ochreus. Distal margin of male 8th sternite (Fig. 3O), forked, asymmetrical, minutely dentate at tips. Male genitalia (Fig. 3M) asymetrical; uncus long, forked at tip; socii vestigial; left valva a rod, twisted distad; right valva bent basally; sacculus membranous, vestigial; vinculum concave in the middle; aedoeagus (Fig. 3N) cylindrical, slightly sinuose; short, acute tooth at tip; vesica scobinate. Female genitalia (Fig. 5E) small; ostium located slightly to one side; ductus bursae very short, sclerotized; corpus bursae large, pear-shaped; signu a short, vestigial line.

Material examined. 7 ♂♂ (4 g. s., 4678, 5255, 5501, 5502), 6 ♀♀ (2 g. s., 5503, 5504) (VOB).

Distribution. Brazil, from BA to PR, along the Atlantic Forest, into northern Argentina.

Remarks. This and *robustoides* are similar to the species related to the *xylinata-terrena* group, but in those the postmedial band is indistinct. This and *robustoides* **sp. n.** are externally indistinct, but genitalia and 8th sternite of both sexes quite different, as shown in the illustrations. One indication to separate them is distribution: *robusta* ranges along the Atlantic Forest of southern Brazil and northern Argentina; *robustoides* **sp. n.** is an Amazonian species.

Xylodonta robustoides sp. n.

(Figs. 1N, 1O, 3P-R, 5F)

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Diagnosis. Ochreus, dusted dark fuscous brown, male FW with two black dashes: one along the lower margin of cell, followed by a black round dot; second below cell, from base to base of CuA2; postmedial band pale ochreous, double, followed by a triangular dark fuscous patch, from costa to before termen; female with a large, oval, pale ochreus patch at base.

Description. Male (Fig. 1N) 20-22 mm (44-48 mm wingspan), female (Fig. 1O) 24-26 mm (52-56 mm wingspan). Ochreus, dusted dark fuscous. Labial palpi dark fuscous dorsally, two dark thin lines laterally; frons and vertex brown; antenna fuscous. Thorax fuscous; patagia brown; tegula pale yellow, dorsal margin brown; FW veins marked blackish; postmedial band pale ochreus, double, rounded outwards from costa to CuA1, then curved inwards to A1, and straight to dorsum; followed by a triangular dark fuscous patch, from costa to before termen; four minute, white dots along costa, distad of postmedial band; termen with blackish lunules between veins; cilia pale ochreus, intermixed with blackish scales, interrupted on veins; male with two black dashes: one along the lower margin of cell, followed by a black round dot; second below cell, from base to CuA2; underside pale yellow, pattern faint; female with a large, oval, pale ochreus patch at base. HW pale yellow, heavily dusted fuscous, especially towards margins. Abdomen dorsally dark fuscous, slightly banded pale yellow; a dorsal, diffuse pale yellow band, from 4th segment to tip; underside pale yellow, a line of diffuse dots along middle; distal margin of 8th male sternite (Fig. 3R) asymmetrical, branches widely apart; small teeth at tip.

Male genitalia (Fig. 3P): Asymmetrical; uncus curved ventrad, two small, acute spines at tip; socii vestigial; left valva straight, slightly tappering distad, sacculus broad; right valva a long rod; sacculus almost indistinct; vinculum slightly concave in the middle; aedoeagus (Fig. 3Q) straight, slightly constricted at middle; vesica finelly scobinate.

Female genitalia (Fig. 5F). Ostium small; ductus bursae broad; corpus bursae globose; signum a short, thin line.

Material examined. 4 ♂♂ (4 g. s. 4671, 5256, 5498), 2 ♀♀ (2 g. s. 5499, 5500). Holotype ♂, **BRAZIL: RO**, Cacaulândia, 200 m, 15-20. iv.1996 (*Becker* 107229); Paratypes: 2 ♂♂, same data as holotype but xi.1991 (*Becker* 78739); 1 ♂, 1♀, Jaru, 16°27'S – 62°28'W, 250 m, 4-12. ix.1977 (*Gifford* & *Negrett;* VOB 21200, 21201) (VOB).

Distribution. Brazil, western Amazon.

Etymology. In reference to it's extremely similarity to *robusta.*

Remarks. Externally indistinct from *robusta.* Genitalia and 8th abdominal segment, of both sexes quite different, as shown by the illustrations. One indication to separate them is distribution: this is an Amazonian species, whreas *robusta* ranges along the Atlantic Forest of southern Brazil and northern Argentina.

Xylodonta xylinata (Walker)

(Figs. 1P-R, 2A, 4A-C, 5G)

Nystalea xylinata Walker, 1865: 759. Holotype ♀, **COLOMBIA**: Bogota (BMMH) [examined].

Xylodonta patrickgoodwilliei Chacón, 2017. Holotype ♂, **COSTA RICA: Guanacaste**, San Cristóbal, Rio Areno, 460 m, 8.viii.2006 (MNCR) [images examined]. **Syn. n.**

Diagnosis. Male FW (Fig. 1P) ochreous, heavily dusted fuscous; two thin dashes: one inside the cell, toward the end, the other just below, reaching base; postmedial band ill-defined. HW dark gray. Distal margin of 8th male sternite (Fig. 4C) with symmetrical lateral processes, curved outwards into a sharp tip. Female FW (Figs. 1Q, R, 2A) with large, oval, pale ochreous area on basal third.

Material examined. 13 ♂♂ (4 g. s. 4674, 5470, 5471), 3 ♀♀ (2 g. s. 5472, 5473) (VOB).

Distribution. Costa Rica to Ecuador.

Food plants. *Dioclea macrocarpa, D. wilsonii* (Fabaceae) (Chacón et al., 2017: 40).

Remarks. This and *terrena* are almost indistinct, however with very different genitalia. A complex of species has been included in all collections under this name, as well shown by Chacón et al. (2017), who identified eight species in Costa Rica alone, six of them undescribed. By accepting the synonymy proposed by Druce (1897: 454) and followed by subsequent authors, regarding *pythia* as a junior synomym, they incurred in a mistake and described the true *xylinata* as a different species. The distribution of both *xylinata* and *pythia* overlap in Costa Rica, but no specimen of the former has been recorded north of Costa Rica, neither any *pythia* specimen has been recorded from south of this country. The identification established here is based on a series of 13 males and one female from Ecuador, that matches both the holotype of *xylinata* -including their genitalia- and the species described by Chacón as *patrickgoodwilliei.*

Xylodonta pythia (Druce) stat. rev.

(Figs. 2B-D, 4D-F, 5H)

Notodonta pythia Druce, 1894: 356. Lectotype ♂, **MEXICO: [Ver]**, Orizaba (BMNH), here designated [examined].

Dasylophia xylinata; Auctorum [partim].

Diagnosis. Male (Figs. 2B, 2D) FW pale ochreous, dusted fuscous; postmedial band ill-defined; two thin dashes: one inside the cell, toward the end, the other just below, reaching base; female FW (Fig. 2C) less dusted and less lined basad of postmedial band, looking more ochreous.

Material examined. 2 ♂♂ (1 g. s. 5484), 5 ♀♀ (2 g. s. 5478, 5485, 5486) (VOB).

Distribution. Southern Mexico to Costa Rica.

Remarks. All specimens known were collected in Central America only, from Costa Rica north to Mexico. The species treated as *xylinata* by Chacón et al. (2017: 44-46, figs. 49-57) in reality represents this, that is confirmed by his statement: "*This identification is based on barcode results from 7 of these specimens, which showed a barcode similar to that of the holotype of* Notodonta pythia, *synonymous with* X. xylinata *according to* Becker (2014)*"*. A correction is needed here: the first author who synonymized both names was Druce (1897: 454), what has been followed by all subsequent authors. The genitalia illustrated here, which match those presented by Chacón et al. (2017: 44-46, figs. 49-57), belong to specimens from Mexico: the male (Fig. 4D, E) from Campeche, 30 km N of Escarcega; the female (Fig. 5H) from Veracruz, Huatuzco. This and *scottmilleri* are almost indistinct externally, so specimens from Costa Rica, where the two overlap, should have their genitalia examined for identification.

Xylodonta scottmilleri Chacón

(Figs. 2E, F, 4S-U, 5I)

Xylodonta scottmilleri Chacón, 2017: 40. Holotype ♂, **COSTA RICA**: **Guanacaste**, La Cruz, Bosque Nuevo, 350 m, 15.iv.2008 (*Azofeifa*) (MNCR) [images examined].

Diagnosis. Male FW (Fig. 2E) pale yellow, heavily dusted gray; postmedial band ill-defined; two thin dashes: one inside the cell, toward the end, the other just below, reaching base; female FW (Fig. 2F) less dusted and less lined basad of postmedial band, looking more ochreous.

Material examined. 12 ♂♂ (6 g. s. 4672, 4673, 5463-5466), 11 ♀♀ (5 g. s. 5467-5469, 5495) (VOB).

Distribution. Costa Rica to Southern Brazil.

Food plants. *Glyricidia sepium* (Fabaceae) (Chacón et al. 2017: 42)

Remarks. Similar to the other species in the *xylinata* group, especially to *giffordi*. Male genitalia (Fig. 4S) of Brazilian specimens have the tip of valvae less indented than those of specimens from Costa Rica, otherwise identical, including the peculiar shape of the 8th sternite (Fig. 4U). Easily separated by the lack of postmedial fascia on male FW, and faded in the female. Both males and females can be distinguished from *giffordi* by the HW dusted gray (whitish in the latter).

Xylodonta giffordi sp. n.

(Figs. 2G, 2H, 4G-L, 5J)

urn:lsid:zoobank.org:act:369479D4-6929-4281-8329-EAA4036B625E

Diagnosis. FW pale yellow, heavily dusted gray; postmedial band pale yellow; area distad of this band dark gray, reaching apex; HW white, cilia dusted gray. Female FW with area basad of postmedial band slightly dusted gray, looking pale yellow.

Description. Male (Fig. 2G) 17-20 mm (38-42 mm), female (Fig. 2H) 22-24 mm (45-50 mm wingspan). Pale yellow; labial palpi pale, dark fuscous dorsally, two thin, dark fuscous lines externally; frons and vertex fuscous; scape brush pale yellow; antenna with basal half of flagellum pale yellow; pectination fuscous; thorax pale yellow; patagia dark fuscous; dorsal margin of tegula with a thin, dark fuscous line; legs fuscous; hind tibia and tarsi pale yellow; FW with veins marked dark; postmedial band double, thin, pale yellow; inverted triangular, dark fuscous patch distad of postmedial band, with four minute pale dots along costa; dark fuscous lunules along termen between veins; underside pale yellow, pattern more diffuse; female with area basad of postmedial band, above CuA, nearly pale yellow, except for an alongate blackish mark at basal third of costa. HW white, slightly dusted fuscous along margins; veins slightly darker. Abdomen fuscous dorsally, pale; ventrally with a thin dark line along middle; distal margin of 8th male sternite (Figs. 4I, 4L) strongly indented at middle, asymmetrical.

Male genitalia (Figs. 4G, 4J) Asymmetrical; uncus constricted at middle, expanded distad, with two prongs at apex: dorsal, conical, serrate, and ventral, a curved, sharp pointed hook; valvae covered with long setae, patch of densely haired at middle, sacculus indistinct, membranose; left valva with costa curved; right with costa less so; aedoeagus (Figs. 4H, 4K) straight, expanded distad; vesica with a half-moon sclerotized structure.

Female genitalia (Fig. 5J). Ostim small; ductus bursae broad, short; corpus bursae globose; signum a small, narrow, transversal band.

Material examined. 5 ♂♂ (3 g. s. 4668, 5460, 5461), 6 ♀♀ (2 g. s. 5496, 5497) (VOB). Holotype ♂, **BRAZIL: GO**, Goiás, 500 m, 13-15.x.1984 (*Becker* 52567); Paratypes: 1 ♂, Formosa, 800 m, 19.iii.1977 (*Becker* 20222); 1 ♂, **DF**, Planaltina, 15°35'S, 1100 m, 26.ii.1976 (*Becker*18432); 1 ♂, MG, Unaí, 700 m, 27.ix.1983 (*Becker* 49301); 2 ♀♀, **MT**, Chapada dos Guimarães, 800 m, 26.x.1993, 20.xi.1994 (*Becker* 88953, 93670); 2 ♀♀, **RO**, Cacaulândia, 140 m, 15-18.x.1993 (*Becker* 87914); 2 ♀♀, Jaru, 16°27'S – 62°28'W, 250 m, 4-12.ix.1977 (*Gifford* & *Negrett;* VOB 21202); 1 ♂, **PERU: Cuzco**, Chotachaca, Manu-Park, 800 m, i.1999 (*R. Marx)* (VOB).

Distribution. Peru and Brazil: western Amazonia to Central Brazil, in the Cerrado biome.

Etymology. Named after the late Scott biologist David Gifford, Professor of Ecology at the Universty of Brasília. Dave, who, among other activities, was a dedicated collector of Lepidoptera, often offered moths specimens to add to the VOB collection.

Remarks. Similar to *scottmilleri* but HW whitish, not dusted gray as in this.

Xylodonta mocosa (Dognin)

(Figs. 2I, 2J, 4M-O, 5K)

Dasylophia mocosa Dognin, 1895: 107. Holotype ♂, **ECUADOR: Loja**, El Monje (USNM) [examined].

Diagnosis. FW (Figs. 2I, J) ochreous, heavily dusted dark fuscous; postmedial band ill-defined; HW dark fuscous, cilia ochreus. Antenna strongly bipectinate.

Material examined. Type; 3 ♂♂ (2 g. s. 5479, 5480), 1 ♀ (g. s. 5481) (VOB).

Distribution. Ecuador at high (1500-2000 m) elevations in the Andes.

Remarks. This belongs to a group of high elevation species which share strong pectinate antenna, a feature common among moths flying at such altitudes. Externally this species is almost identical to *robertodelgadoi, billhaberi* and *monzoni,* species from high elevations in Central America. So far, *mocosa* is the only species of the group with strong pectinate antennae in Ecuador. The specimens studied match the holotype, including genitalia, illustrated again here, based on a better preparation.

Xylodonta monzoni sp. n.

(Figs. 2K, 2L, 4P-R, 5L)

urn:lsid:zoobank.org:act:6F136046-B972-4E73-86AA-9D851FEB2F5B

Diagnosis. FW dark ochreus, heavily dusted dark fuscous; HW dark fuscous. Antenna strongly pectinate.

Description. Male (Fig. 2K) 20 mm (44 mm wingspan), female (Fig. 2L) 25 mm (55 mm wingspan). Ochreous, heavily dusted fuscous. Labial palpi fuscous, thin dark lines externally and ventrally; frons and vertex pale yellow; antenna fuscous; thorax pale fuscous; patagia fuscous; dorsal margin of tegula dark fuscous; legs fuscous, blackish dorsally; FW heavily dusted fuscous; antemedial and postmedial bands indistinct; triangular patch distad of postmedial band slightly contrasting; underside paler, pattern more diffuse; female with large pale yellow area basad of antemedial band; HW fuscous; cilia pale; abdomen fuscous; distal margin of 8th male sternite (Fig. 4R) an asymmetrical plate, margins minutely dentate.

Male genitalia (Fig. 4P): Slightly asymmetrical; uncus thin, tip slightly forked; valvae twisted, left broader and shorter than the right; sacculus vestigial; aedoeagus (Fig. 4Q) thin, long, bent at distal third; vesica with an area slightly sclerotized.

Female genitalia (Fig. 5L): Small; ostium a wide ring; ductus bursae almost absent; corpus bursae globose.

Material examined. Holotype ♂, **GUATEMALA: Guatemala**, Guatemala, 1800 m, 5-9.viii.2000 (*Becker* 124377, g. s. 5476). Paratype ♀, **Huehuetenango**, Ixcansan, 16°00'N – 91°29'W, 1630 m, 26.vii.2000 (*Becker* 123872, g. s. 5477) (VOB).

Distribution. Guatemala, at high elevations.

Etymology. In honour to the Guatemalan biologist José Monzón, who collaborated with the author during a collecting expedition to several localities in his and other Central American countries.

Remarks. This belongs to a group of high elevation species which share strongly pectinate antenna, a feature common among moths flying at high elevation. Externally this species is almost identical to *robertodelgadoi, billhaberi* and *mocosa,* species also from high elevations, the first two from Costa Rica and last one from Ecuador. So far, *monzoni*, the smaller of them, is the only one found north of Costa Rica.

NYCTEROTIS Felder

Nycterotis russula (Dognin) comb. n.

(Figs. 2M-O, 4V-X, 5M)

Dasylophia russula Dognin, 1909: 78. Holotype ♂, **FRENCH GUIANA**: St. Laurent du Maroni (*Le Moult*) (USNM) [examined].

Diagnosis. Male FW (Fig. 2N) almost devoid of transverse bands, dusted ochreous, with a conspicuous black dot near tornus preceded by a small white one. Female FW (Figs. 2M, 2O) with a contrasting pale blotch at base followed by a broad, ill defined, dark fuscous area along costa reaching apex; also devoid of transverse fasciae. Distal margin of 8th male sternite (Fig. 4X) with pair of symmetrical, horn-shaped processes. Male genitalia (Figs. 4V) with uncus tappering distad, a thin, curved protrusion ventrad, forming a ring; valva symmetrical, short, broad, membranous between costa and sacculus; costa with long, curved process from basal third to ventral margin; sacculus subtriangular; aedoeagus (Fig. 4W) cylindrical, slightly sinuose; vesica with a curved, digital process. Female genitalia (Fig. 5M) with distal margin of lamella postvaginalis serrate, with sharp pointed tooth on each corner; corpus bursae a long, wide bag.

Material examined. Type; 22 ♂♂ (7 g. s. 4660, 4665-4667, 5452-5454), 17 ♀♀ (4 g. s. 5455-5458) (VOB).

Distribution. French Guiana to Brazil, south to SP.

Remarks. Both sexes similar to those of the Central American *X. rufitincta* and *X. angustipennis,* but genitalia clearly a *Nycterotis.* The females of these three species have antennae short ciliated, looking filiform. Specimens of *russula* from the caatinga biome, of Northeast Brazil (Fig. 2O) are smaller and paler. Both male and female genitalia very distinct from any other species from Brazil.

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Conflicts of interest

The author declares no conflicts of interest.

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