

Five new species of the New World genus *Thyridopyralis* Dyar, 1901 (Lepidoptera: Pyralidae, Galleriinae)

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Abstract

Five new species of *Thyridopyralis* Dyar, 1901 from Brazil are described, including diagnosis and illustrations: *Thyridopyralis bonita* Becker, sp. n., *T. leucophthalma* Becker, sp. n., *T. minor* Becker, sp. n., *T. proxima* Becker, sp. n. and *T. viridescens* Becker, sp. n.; the range of *T. gallaerandialis* Dyar, 1901 is extended to Mexico and the Antilles (Guana Id., British Virgin Islands).

KEY WORDS: Lepidoptera, Pyralidae, Galleriinae, Megarthriini, taxonomy, new species, distribution, Brazil, Mexico, Antilles.

Cinco nuevas especies del género del Nuevo Mundo *Thyridopyralis* Dyar, 1901 (Lepidoptera: Pyralidae, Galleriinae)

Resumen

Cinco especies nuevas de *Thyridopyralis* Dyar, 1901 de Brasil son descritas, incluyendo diagnosis y ilustraciones: *Thyridopyralis bonita* Becker, sp. n., *T. leucophthalma* Becker, sp. n., *T. minor* Becker, sp. n., *T. proxima* Becker, sp. n. y *T. viridescens* Becker, sp. n.; se amplía la distribución de *T. gallaerandialis* Dyar, 1901 a México y las Antillas (Guana, Islas Vírgenes Británicas).

PALABRAS CLAVE: Lepidoptera, Pyralidae, Galleriinae, Megarthriini, taxonomía, especies nuevas, distribución, Antillas, Brasil, México.

Introduction

Thyridopyralis Dyar, 1901, established as monotypic, in the Thyrididae, was transferred to the Megarthriini (Galleriinae) by WHALLEY (1964: 570). It included two species from Florida and Mexico (MUNROE, 1995). Megarthriini are poorly represented in the New World: five species in two genera (WHALLEY, 1964; MUNROE, 1995). The material examined in the collections revealed five more species from Brazil, all undescribed, doubling the number of species in the tribe for the New World fauna. New records for the genus in the Antilles and Mexico were also found.

Material and methods

This work is based on 65 specimens (12 g. s.) in the author's collection (VOB), 40 in the USNM, 6 in the AMC, and one in the CPAC. Specimens representing all the species were taken to the CMNH, NHMUK and USNM to be compared with the material deposited there. Except for *T. gallaerandialis*

Dyar, 1901 and *T. illustrata* Dyar, 1920, nothing was found that matched them. 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).



Fig. 1.- *Thyridopyralis* distribution

Abbreviations

- AMC Alfred Moser collection, São Leopoldo, Rio Grande do Sul, Brazil
- CMNH Carnegie Museum of Natural History, Pittsburgh
- CPAC Centro de Pesquisa Agropecuária dos Cerrados, Planaltina DF, Brazil
- FW Forewing
- g. s. genitalia slide

HW	Hind wings
Misspl.	misspelling
NHMUK	Natural History Museum, United Kingdom
TS	Type species
USNM	United States National Museum, Washington DC
VOB	Vitor O. Becker collection, Serra Bonita Reserve, Camacan, Bahia, Brazil

Results and discussion

The material studied revealed five undescribed species from Brazil, and the distribution of *T. gallaerandialis* Dyar, 1901 extended to Mexico and the Antilles. Except for *T. illustrata* Dyar, 1920, apparently known from the type specimen only, images of the adults and genitalia of all species are given.

Thyridopyralis Dyar, 1901

Thyridopyralis Dyar, 1901. *Jl. N. Y. ent. Soc.*, **9**: 23

TS: *Thyridopyralis gallaerandialis* Dyar, 1901. *Jl. N. Y. ent. Soc.*, **9**: 23, by monotypy.

Diagnosis: Small to large (FW length 9-20 mm; wingspan 19-45 mm). Brightly colored, with conspicuous dark blotch, or silvery dot, on FW cell. Male genitalia with uncus short, broad, blunt, densely haired dorsally; valva long, narrow, straight of slightly bent dorsad; juxta a narrow, obtuse arc; vinculum round, slightly expanded basad; manica spined distad; phallus long, thin, straight. Female genitalia with papillae anales long, narrow; ostium wide, antrum sclerotized, ductus bursae narrow, as long as bursae diameter; corpus bursae oblong or globose.

Remarks: Despite the strong phenotypic differences, male genitalia are very similar throughout the group, often showing little differences between species. The sclerotized manica (Figs 3, 18), spined distad, shows some differences between species. In order to extract the phallus the genitalia had to be boiled in KOH for almost one hour, to make possible to revert it avoiding damage to the phallus or to the manica, a procedure that was not always possible.

Thyridopyralis leucophthalma Becker, sp. n. (Figs 2-5, 7-8)

Material examined (24 specimens, 4 g. s.): Holotype ♂, BRAZIL: Bahia, Camacan, 15°23'S - 39°33'W, 800 m, 6-II-2018 (Becker 114320) (VOB); paratypes: 1 ♂, same data as holotype, but IV-2019, g. s. 5665 (Becker 158580) (VOB); 1 ♂, Idem, Porto Seguro, Arraial d'Ajuda, 16°27'S - 39°03'W, 40 m, 23-XI-2013 (Becker 150444) (VOB); 7 ♂♂, Distrito Federal, Planaltina, 15°35'S - 47°42'W, 1100 m, 26-II-1976, 10-III-1977, 15-II-1994, 24-II-1998, 18-III-1999, g. s. 337, 1957 (Becker 19225, 97052, 114949, 118404; CPAC 4684) (VOB, CPAC); 3 ♂♂, 1 ♀, Goiás, Formosa, 800 m, 28-III-1993 (Becker 89778) (VOB); 1 ♂, Mato Grosso, 60 km S Poconé, 100 m, 1-7-XII-1997 (Becker 111293) (VOB); 1 ♂, Mato Grosso do Sul, Rio Brilhante, 23-I-1971 (Becker 15719) (VOB); 5 ♂♂, Rio de Janeiro, Cachoeira do Macacu, 700 m, 23-I-1998 (Becker 113300) (VOB, USNM); 1 ♂, Rio Grande do Sul, Derrubadas, Parque do Turvo, 400 m, 14-18-I-2000 (Moser) (AMC).

Diagnosis: Large. FW brownish fuscous, costa moss-green, small, silvery dot at end of cell; HW light brown.

Description: Male (Fig. 7) FW length 13-16 mm (wingspan 30-36 mm), female (Fig. 8) FW length 20 mm (wingspan 45 mm). Labial palpi and frons dark brown; vertex with rough ferruginous scales; antenna fuscous. Thorax pale yellow, patagia dark brown; legs brown. FW violasceus, costa moss-green from near base to postmedial band; diffuse, brown fascia below costa, from base to apex; conspicuous silvery dot at end of cell; small blotch of erect, brown scales below base of cell; postmedial band hardly visible, marked with ill-defined brown lunules; termen concave between apex and M3; line of thin lunules along margin, with two large dots between M1-M2, Cu1-Cu2. Genitalia (Fig. 2): uncus short, broad, tapering distad, pair of small teeth at apex; valva long, nearly straight;

short, curved flap on articulation with sacculus; vinculum round; juxta a narrow, obtuse “U”; manica (Fig. 3) expanded distad, apex with several large teeth; phallus (Fig. 4) long, thin, straight, vesica with no spines. Female similar, larger, darker. Genitalia (Fig. 5): ostium wide, antrum conical, sclerotized along middle; ductus bursae narrow, twisted, longer than oblong corpus bursae.

Distribution (Fig. 1): Brazil, central, southeastern, and south.

Etymology: From the Greek λέκος [leukos] = white + οφθαλμός [ophthalmos] = eye; in reference to the white dot at the end of the cell of FW.

Remarks: This is the most distinct species in the genus. The conspicuous white dot at the end of cell on FW is unique to the genus.

Thyridopyralis proxima Becker, sp. n. (Figs 6, 10-12, 17-18)

Material examined (13 specimens, 2 g. s.): Holotype ♂, BRAZIL: Camacan, 15°23'S - 39°33'W, 800 m, 1-15-XII-2020 (Becker 162453) (VOB); Paratypes: 2 ♂♂, same data as holotype, but XI-2009, g. s. 5237 (Becker 145136) (VOB); 3 ♀♀, Rio Grande do Norte, Pipa, 20 m, 28-31-III-1994, g. s. 1962 (Becker 91410) (VOB); 1 ♀, Paraná, Telemaco Borba, 13-19-X-1995 (Becker 97577); 5 ♂♂, 1 ♀, Rio Grande do Sul, Morro Reuter, Fazenda Padre Eterno, 29°32'S - 50°58'W, 12-II-1983, 24-28-XII-1996, 7-11-II-1997, 8-9-I-2010, 10-11-I-2016 (Moser) (AMC).

Diagnosis: Medium size. Body and FW violasceus. HW light gray, postmedial band diffuse.

Description: Male (Fig. 11) FW length 14-15 mm (wingspan 32-35 mm); female (Figs 10, 12) FW 17-19 mm (wingspan 38-42 mm). Head, thorax and abdomen dark violasceus; labial palpi with some pale yellow scales on articulations, antenna fuscous; legs brown, hind tibia, and tarsi articulations pale yellow. FW violasceus, costa dark violasceus, sparsely mixed pale yellow scales from base to near apex; dark reddish brown, mixed with golden ochreous scales on and below cell; whitish dot containing short brown dash beyond cell; postmedial band and subterminal line spotted, pale yellow; termen with black lunules between veins along margin; cilia brown, mixed with pale yellow scales. HW pale yellow dusted fuscous; postmedial band ill-defined; smoked dark fuscous distad of it; cilia pale yellow. Female similar, HW dusted fuscous along margin. Male genitalia (Fig. 17): apex of uncus constricted to small tip; valva long, straight; sacculus prominent, nearly half length of valva; vinculum slightly expanded to a small saccus; transtilla with spatulate, long, middle process; juxta a slender, obtuse U-shape; manica (Fig. 18 left) expanded distad, apex with multiple small spines, pair of large spines at tip; phallus (Fig. 18 right), long, straight, slightly expanded distad; vesica with multiple small spines. Female genitalia (Fig. 5): ostium wide; antrum broad, sclerotized; ductus bursae as long as corpus diameter, expanded gradually towards oblong corpus bursae.

Distribution (Fig. 1): Brazil, along the eastern coast, south to Rio Grande do Sul.

Etymology: From the Latin *proximus* = nearest; in reference to the similarity to *bonita*.

Remarks: Similar to *bonita*, smaller; HW slightly dusted gray, with diffuse postmedial line.

Thyridopyralis bonita Becker, sp. n. (Figs 13, 19-20)

Material examined (7 specimens, 3 g. s.). Holotype ♂, BRAZIL: Bahia, Camacan, 15°23'S - 39°33'W, 800 m, XI-2011 (Becker 147541) (VOB); Paratypes: 3 ♂♂, same data as holotype, but 15-XII-2005, X-2011, XII-2013, g. s. 5662, 5663 (Becker 136795, 147371, 151203) (VOB); 2 ♂♂, São Paulo, Ubatuba, 20 m, 23°22'S - 44°50'W, 10-12-XI-2001, g. s. 5538 (Becker 134136) (VOB); 1 ♀, PERU: Napo, Parque Nacional Yasuni, Rio Tiputini, 400 m, 11-V-1996 (Hillman) (CMNH).

Diagnosis: Large. FW violaceous, with a golden ochreous patch on the basal half, below costa; brown and golden ochreous blotch filling cell. HW cream, fine, dark gray line along termen.

Description: Male (Fig. 13) FW length 20-22 mm (wingspan 45-50 mm); female FW length 20 mm (wingspan 45 mm). Head mixed brown and pale yellow long scales; labial palpi brown, pale yellow dorsally; antenna with flagellum pale yellow, brown on articulations. Thorax and abdomen pale

yellow, patagia and tegula brown; whitish below; legs brown, tarsi ringed pale yellow on articulations; fore coxae, internally, hind tibia and fore tarsi pale yellow. FW violaceous; costa dark red brown from base to $\frac{3}{4}$, then mixed pale yellow scales; basal half, below cell, above As, golden ochreous; cuneiform blotch filling cell, with a brown dot in center, edged golden yellow; U-shape white mark distad of cell; termen mixed pale yellow scales; margin with dark brown lunules between veins. HW cream yellow; margins bordered with thin fuscous line; cilia golden yellow. Genitalia (Fig 19): uncus constricted distad; valva long straight, slightly expanded near apex; juxta an obtuse "V"; manica (Fig. 20) densely spined distad; phallus (Fig. 20) long, thin, straight [phallus inside manica]. Female unknown.

Distribution (Fig. 1): Brazil, southeastern; eastern Peru.

Etymology: From the Portuguese *bonita* =beautiful; in reference to Serra Bonita, the type locality.

Remarks: The larger species in the genus; similar to *proxima*, but without diffuse postmedial band on HW.

Thyridopyralis viridescens Becker, sp. n. (Figs 9, 21-22)

Material examined (5 specimens, 2 g. s.): Holotype ♂, BRAZIL: São Paulo, Campos do Jordão, 32°46'S – 45°31'W, 1600 m, 23-27-I-2001 (Becker 131391) (VOB); Paratypes: 4 ♂♂, same data as holotype, g. s. 5236, 5664 (VOB).

Diagnosis: Medium size. FW pale yellow, costa greenish, blackish diffuse band from mid costa to termen between M1-Cu1.

Description: Male (Fig. 9) FW length 14-16 mm (wingspan 32-36 mm). Frons brown, vertex with rough ferruginous scales; labial palpi and antenna fuscous. Thorax, FW and abdomen pale yellow; patagia ferruginous, tegula pale yellow; legs dark brown, hind tibia and tarsi articulations pale yellow. FW pale yellow, dusted brown scales below cell and Cu1 from base to termen; costa greenish; blackish, wide fascia from mid costa to termen, between M1-Cu1. Hind wings pale yellow dusted brown scales; postmedial band diffuse; costa and margins, distad of postmedial band, darker. Genitalia (Fig. 21): uncus broad, subtriangular, lateral margins slightly convex; valva long, narrow, slightly bent dorsad; sharp process at the end of sacculus; vinculum round, slightly expanded basad; juxta a subrectangular plate, small process distad, on each lateral side; manica (Fig. 22) expanded, spined distad; phallus (Fig. 22) long straight, distal half slightly thicker; vesica with no spines [phallus inside manica]. Female unknown.

Distribution (Fig. 1): Brazil, known from the type locality only, at the cool, high elevation in the Atlantic Forest.

Etymology: From the Latin *viridis* =green; in reference to the green tinge of FW.

Remarks: The greenish tinge on FW is unique in the genus.

Thyridopyralis gallaerandialis Dyar, 1901 (Figs 15-16, 23-24)

Thyridopyralis gallaerandialis Dyar, 1901: *Jl. N. Y. ent. Soc.*, **9**: 23

Lectotype ♂, USA: Florida, Key West (Schwartz) (USNM), designated by WHALLEY, 1964: 570 [examined].

= *Thyridopyralis randialis*; Dyar, 1920. *Insecutor Inscit. mestr.*, **8**: 30-35. 34, misspl.

Material examined (63 specimens, 4 g. s.): Type; 55 ♂♂ (4 g. s.), 1 ♀. BRITISH VIRGIN ISLANDS: 53 ♂♂, 1 ♀, Guana, X-1989, gs. 1963, 5660 (Becker 70866) (VOB, USNM); 24-X-5-XI-1990 (S. Miller & T. Kuklenski) (VOB, USNM). MEXICO: 1 ♂, Campeche, Escarcega, 85 m, 17-21-VI-1981 (Becker 42832) (VOB); 2 ♂♂, Tamaulipas, El Encino, 250 m, 4-12-VIII-1988, g. s. 1964, (Becker 68864) (VOB); 1 ♂, Chiapas, El Chorradero, 680 m, 12-VI-1997 (Becker 109824) (VOB); 4 ♂♂, Tamaulipas, San Fernando, 50 m, 28-VI-1997, g. s. 5661 (Becker 110532) (VOB).

Diagnosis: Male FW length 8-10 mm (wingspan 19-24 mm) (Figs 15, 16). Whitish. FW heavily dusted brown and gray scales; large, round brown dot on cell. HW white, fuscous margin, broadening toward apex. Genitalia (Fig. 23): uncus broadly triangular; valva long, narrow, slightly curved dorsad;

manica Fig. 24) expanded, densely spined distad; phallus (Fig. 24) long, thin, straight [phallus inside manica].

Distribution (fig. 1): USA (Florida Keys), Mexico, Antilles, in dry biomes.

Remarks: This small species is easily distinguished by the whitish FW with a conspicuous round, brown dot in the middle. The author collected moths at Guana Id. in 1989, just one month after Hurricane Hugo had devastated the region. It was a surprise to find this species, not recorded for the Antilles previously, in great numbers at light. In the first night over 10 specimens arrived, followed by large numbers in the subsequent nights. Collecting was stopped when 40 specimens had been collected (surprisingly not a single female). In the following year, Scott E. Miller and Tina Kuklenski collected 15 specimens more, including the single female specimen known to the species.

Thyridopyralis illustrata Dyar, 1920

Thyridopyralis illustrata Dyar, 1920. *Insecutor Inscit. mestr.*, **8**: 34

Holotype ♂, MEXICO: Mexico, Zacualpan (Müller) (USNM, 22761) [examined].

Diagnosis: Similar to *gallaerandialis* but larger.

Material examined: Type.

Distribution (fig. 1): Mexico, from the type locality only.

Thyridopyralis minor Becker, sp. n. (Figs 14, 25-26)

Material examined (1 specimen, 1 g. s.): Holotype ♂, BRAZIL: Rondônia, Vilhena, 600 m, 24-V-1998, g. s. 5666 (Becker 116845) (VOB).

Diagnosis: Small. Whitish, dusted fuscous. FW costa greenish, dark gray band from basal third of costa along costa to termen, above M3.

Description: Male (Fig. 14) FW length 11 mm (wingspan 25 mm). Labial palpi fuscous; frons and vertex ferrugineous; antenna pale yellow. Thorax and abdomen pale yellow, legs whitish, fore and mid tibia brown. FW pale yellow dusted fuscous; costa greenish; dark gray band from mid costa to termen, above M3; brown blotch of erected scales on cell; termen and cilia dark fuscous. HW dusted fuscous, cilia pale yellow. Genitalia (Fig. 25): uncus broad, base as wide as tegumen, apex sharp; valva long, thin, slightly bent dorsad; small, sharp process on articulation with sacculus; vinculum slightly expanded basad; juxta a shallow, obtuse "V"; manica (Fig. 26) slightly expanded distad, minutely spined towards distal third; phallus (Fig. 26) long, thin, nearly straight, vesica with minute spines [phallus inside manica]. Female unknown.

Distribution (Fig. 1): Brazil, southwestern amazons, in the Cerrado biome.

Etymology: From the Latin *minor* = little; in reference to the proportionally small size.

Remarks: The smaller species in the genus, resembling a small *viridescens*. Genitalia also similar, except for the shape of uncus and the small process on articulation of valva with sacculus.

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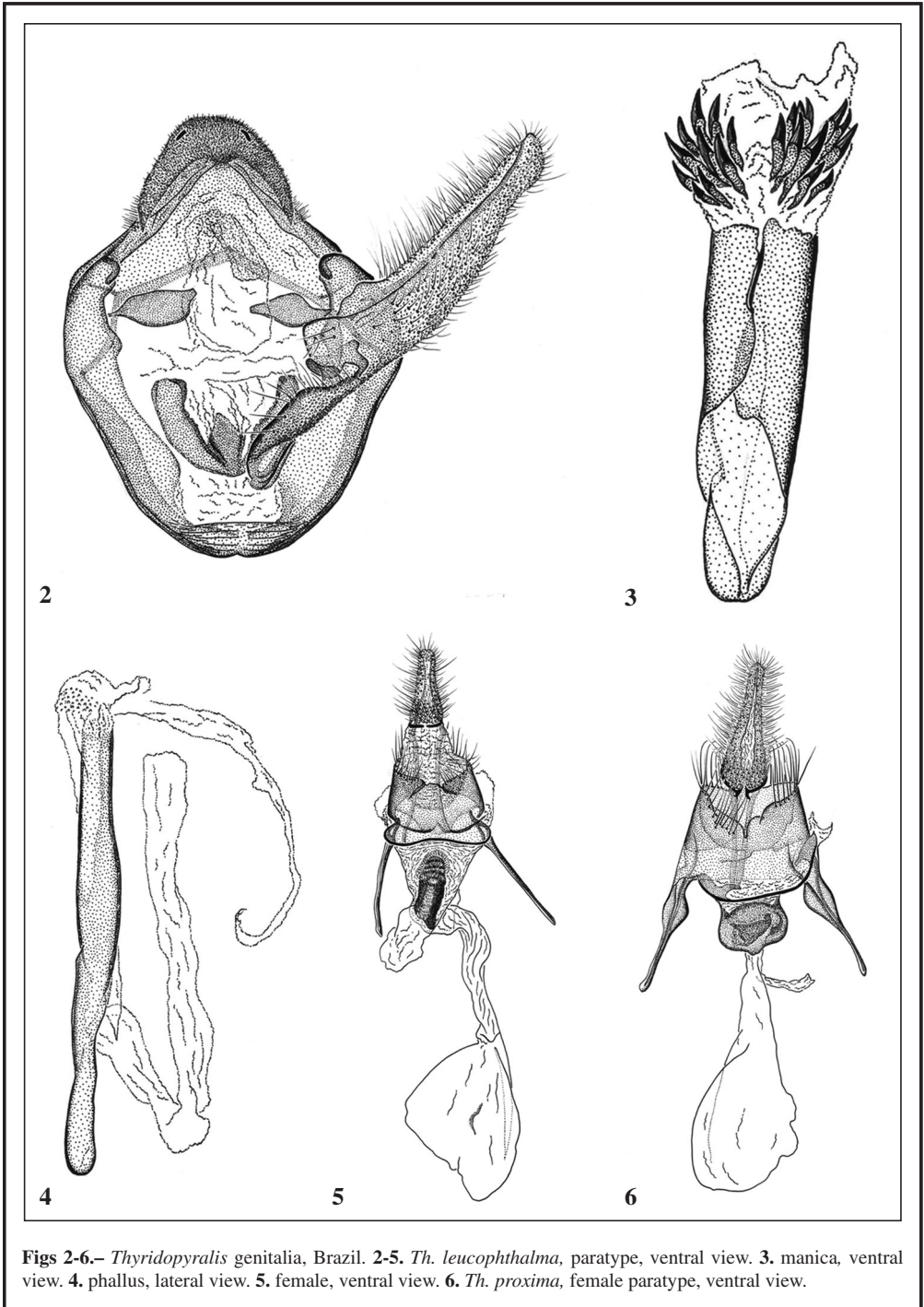
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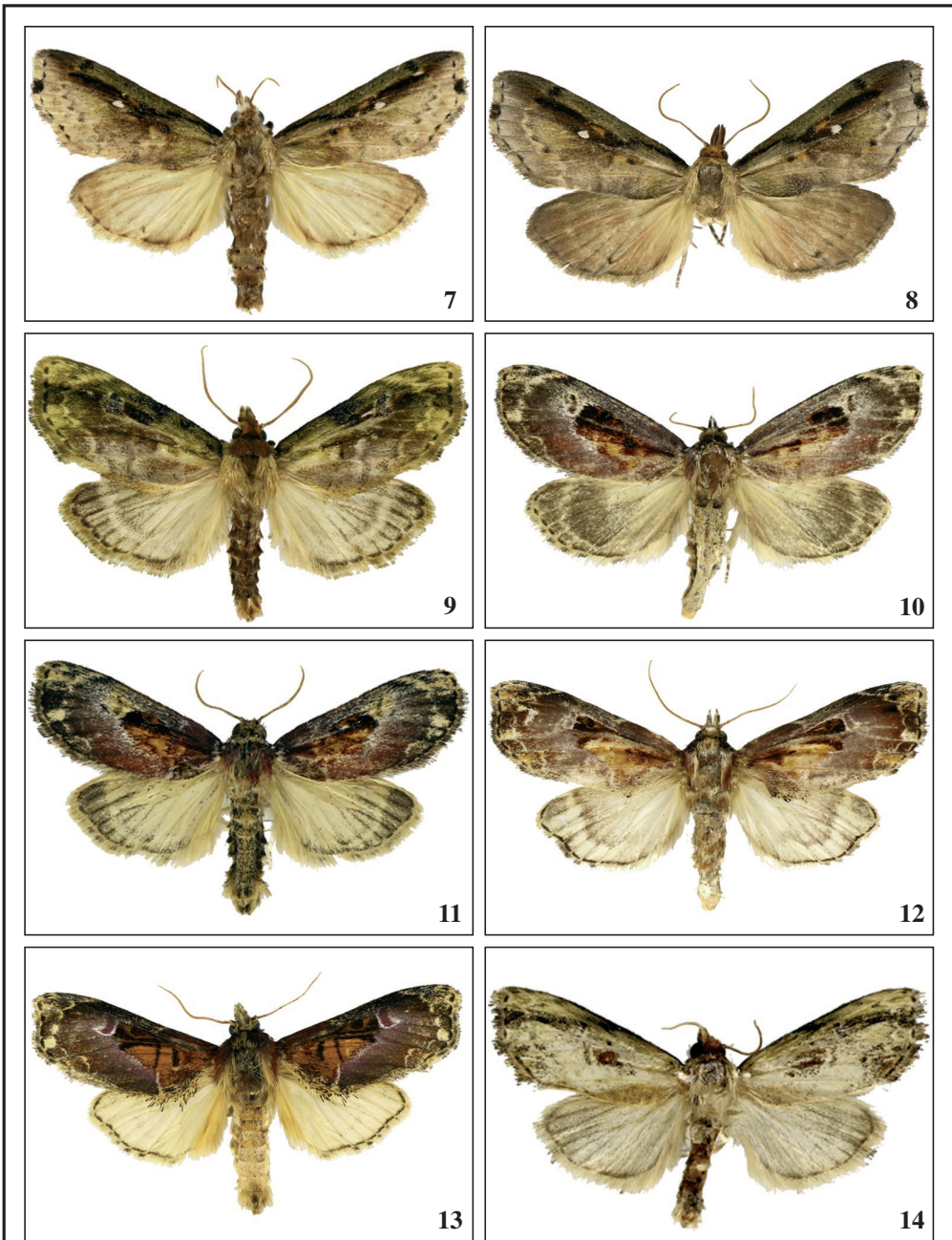
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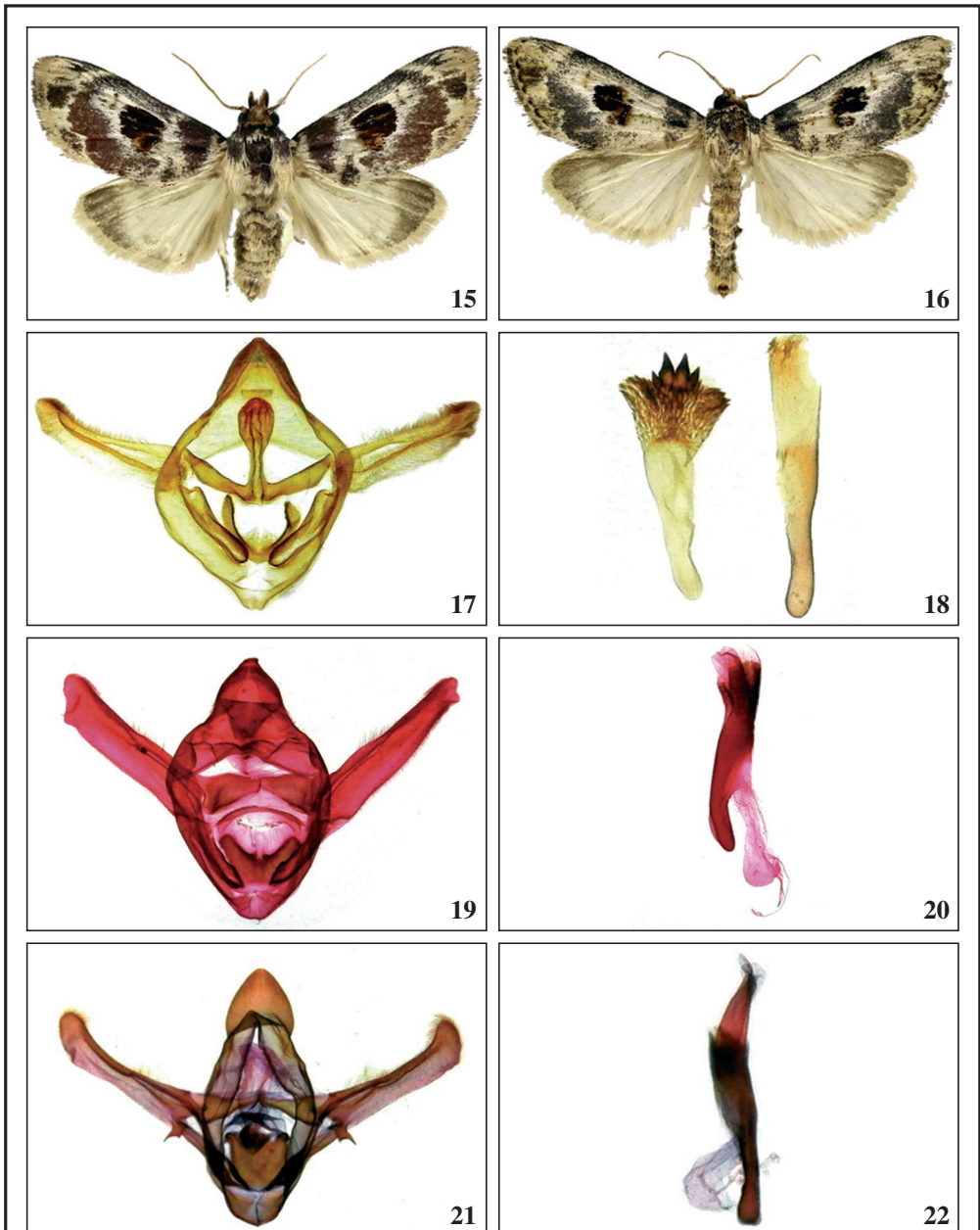
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Figs 2-6.– *Thyridopyralis* genitalia, Brazil. **2-5.** *Th. leucophthalma*, paratype, ventral view. **3.** manica, ventral view. **4.** phallus, lateral view. **5.** female, ventral view. **6.** *Th. proxima*, female paratype, ventral view.



Figs 7-14.– *Thyridopyralis* adults. 7-8. *Th. leucophthalma*, Brazil: 7. male holotype. 8. female paratype. 9-14. *Thyridopyralis* adults 9. *Th. viridescens*, male holotype, Brazil. 10-12. *Th. proxima*, Brazil: 10, 12, female paratypes. 11. male holotype. 13. *Th. bonita*, male holotype, Brazil. 14. *Th. minor*, male holotype, Brazil.



Figs 15-22.– 15-16. *Th. gallaerandialis*, males: 15. Guana Id. 16. Mexico. 17-22. *Thyridopyralis* male genitalia. 17-18. *Th. proxima*, paratype, Brazil: 17. ventral view. 18. left. manica, ventral view. 18. right. phallus, lateral view. 19-20. *Th. bonita*, paratype, Brazil: 19. ventral view. 20. manica and phallus, lateral view. 21-22. *Th. viridescens*, paratype, Brazil: 21. ventral view. 22. manica and phallus, lateral view.

