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**Brazilian *Polyorthini* (Lepidoptera, Tortricidae)**

(with 27 text-figs.)

**Brazylijskie *Polyorthini* (Lepidoptera, Tortricidae)\***

**Abstract.** The Brazilian *Polyorthini* are reviewed; 8 species and 1 genus are described as new.

INTRODUCTION

This paper is the first publication in a series of publications on the Neotropical *Tortricidae*, mainly of the BECKER collection. The material on which this series is based been collected by J. and A. RAZOWSKI in Brazil (1973 and 1975/1976) and in Mexico during two monthly trips, and in Central and South America during the last ten years by the second author. Apart from this material, some specimens belonging to other collections have been studied. The holotypes are deposited in the collection of the second author, if not mentioned otherwise.

To date only 7 species of *Polyorthini* have been described from Brazil. One of them, viz., *mollinediella* is synonymous with *viridescens* (cf. BECKER, 1970). Only one species (*cryptsilitha*) has not been found during our research.

***Histura xanthotypa* sp. nov.**

Labial palpus 2.5, yellowish brown, median segment very broad, terminal segment slender, cream with brownish median ring. Remaining parts of head ochreous or brownish yellow, thorax concolorous or more brown proximally. Forewing 7—9 mm, expanding terminally; costa curved at 2/3, weakly so towards base; apex short, acute; termen long, concave before middle. Ground colour ochreous-brown, distinct in dorsal fourth of wing, suffused brownish olive in costal half; large whitish suffusion extending from 2/3 of costa to beyond

\* Praca wykonana w ramach problemu MR. II. 3.

disc. Pattern in form of various brown spots, arranged obliquely and representing costal portion of basal blotch and costal half of median fascia. Subapical blotch dark brown, elongate, reaching end of termen, weaker costally, accompanied by two tornal concolorous spots. Apical area suffused ochreous-ferruginous. Transverse rows of large tufts of scales in postbasal and submedian areas of wing. Fringes ochreous, browner at tornus and partially at apex, mixed with cream in median part of termen. Hindwing brown to brown-grey, with paler fringes.

Widely variable. White suffusion mixed grey or pink, more or less distinct, in one specimen accompanied by smaller antemedian concolorous area. Strigulation of costa and subapical pattern more or less dark. Ferruginous spots subapically in one specimen.

Male genitalia (figs. 1, 2): tegumen proportionally large; uncus slender; socius rather small; gnathos with slender arm protruding ventrally. Valva broad with long dorsal split, internal wall provided with weak postbasal sclerite marked with small dents ventrally. Transtilla slender, fused with rather well sclerotized dorsal part of vallum penis, developed in form of a pair of pocket-shaped lobes; juxta small. Aedeagus slender, weakly sclerotized distally, with large opening for ductus ejaculatorius; coecum penis almost completely atrophied.

Female genitalia (fig. 15): sterigma with fairly broad lateral extensions and weakly sclerotized, minutely spined dorsal area immediately beyond ostium bursae. Long, funnel-shaped concavity developed in membrane between middle of sterigma extension and subgenital sternite. Pair of membranous prominences beyond sterigma. Antrum fairly broad, membranous in proximal half; ductus bursae slender, minutely sculptured posteriorly, coiled two and half times proximally, provided with cestum reaching to before middle of its length. Ductus seminalis at  $2/3$  of ductus bursae; corpus bursae broadening distally; signum dorsal, situated in a concavity of corpus bursae just before end of ductus bursae.

Holotype, male: "Banhado, Quatro Barras, Paraná, Brasil, 800 m, 1. VIII. 1970, BECKER & LAROCA"; paratypes, 4 females, one labelled identically as the holotype, remaining ones as follows: "Tibagi, PR., 30. I. 1970, V. O. BECKER", Curitiba, Paraná, Brasil 920 m, 9. IX. 1975, V. O. BECKER col." and "Brasilia, Santa Catarina, 6 km N. Rio Natal, 800 m, 6. II. 1976, A. & J. RAZOWSKI leg."

### *Histura doriae* sp. nov.

Labial palpus as in preceding species, brown-black laterally, ferruginous at base, remaining parts of head brownish, thorax brown. Forewing 8 mm, broadest at  $2/3$  where costa is strongly angled; apex short, termen weakly oblique, not sinuate. Ground colour brownish grey, sprinkled dark brown and brown-grey, paler, hardly mixed olive before subapical blotch and apically. Pattern brown, ill-defined, developed in form of two dorsal triangles and two

smaller pale edged spots situated in distal part of median cell, all probably representing median fascia. Subapical blotch long, reaching end of  $cu_2$ , ferruginous-brown, partially dark edged; similarly coloured but weaker and smaller subterminal pattern present. Fringes brownish. Hindwing greyish brown, paler basally; fringes concolorous with middle of wing.

Female genitalia (fig. 16): similar to those in preceding species but with ductus bursae only twice coiled proximally, provided with short cestum not reaching middle of its length. Sterigma more delicate; sack-shaped, membranous concavity small, short; antrum broad, slightly expanding posteriorly, weakly but uniformly sclerotized.

Holotype, female: "Brazylia, Santa Catarina, 6 km N. Rio Natal, 800 m, 6. II. 1976, A. & J. RAZOWSKI leg."

The species is closely related to *H. limosa* (MEYR.) from Peru but differs in the shape of the forewing, having a shorter apex and the termen not sinuate. The differences in the female genitalia are in the shape of the antrum. The species is named in honour of Dr. Adam DORIA-DERNAŁOWICZ of Warsaw and Ceres, Goias.

### *Histura chlorotypa* sp. nov.

Labial palpus as in *doriae*, greyish green; remaining parts of head and thorax concolorous, the latter marked with indistinct, darker, transverse fascia medially and grey-cream posterior scales. Forewing 8—9 mm, somewhat expanding terminally, broadest at  $2/3$ , with costa distinctly curved postbasally and termen somewhat oblique, hardly concave postapically. Ground colour grey, dark grey postmedially, suffused green along costa, at base, and in distal part of wing, with some three transversely oblique, indistinct, concolorous fasciae. Black-grey, dots subterminally; large greenish tufts of erect scales arranged in three transverse rows present; minute groups of appressed scales towards tornus. Fringes brownish grey or mixed with green. Hindwing brownish grey with greyer fringes.

Female genitalia (fig. 17): as in preceding species but with long ductus bursae characterized by several spirals in proximal half, and long cestum reaching to ductus seminalis. Sterigma accompanied by thin funnel like pockets; antrum weakly sclerotized, rounded proximally. Signum as in other species of this genus but situated in middle part of corpus bursae, laterally.

Holotype, female: "Banhado, Quatro Barras, Paraná, Brasil, 800 m, 22. V. 1971, BECKER & LAROCA"; paratype (female): "Marumbi, Merretes, Paraná, Brasil, 500 m, 17. XII. 1969, BECKER & LAROCA".

### *Ardeutica crypsilitha* (MEYRICK)

*Polyortha crypsilitha* MEYRICK, 1932, Exot. *Microlepid.*, 4: 264. RAZOWSKI, 1964: 468, fig. 47.

The species described from Santa Catarina (Jaraguá) has not been collected by us. It has a characteristic long, thin uncus.



*Ardeutica sphenobathra* (MEYRICK)

*Peronea sphenobathra* MEYRICK, 1917, Trans. ent. Soc. London, 1917: 13.

This species was described from Bartica, British Guiana and has now been found in Banhado, Quatro Barras in Paraná. Our specimen does not differ from the type-specimen. We have also collected over 30 specimens which externally strongly differ from the lectotype but some match the paralectotype. These specimens show only slight genital differences or are identical with one another. For the time being we do not determine them as *sphenobathra*. The genitalia are shown in figs. 3—5 and 18.

*Ardeutica* ? *spumosa* MEYRICK

*Ardeutica spumosa* MEYRICK, 1913, Trans. ent. Soc. London 1913: 173.

The species was to date known from a single male collected in Huancabamba, Peru. Our specimen collected in Joinville, Santa Catarina (coll. Museu Nacional Rio de Janeiro) is externally identical with the holotype, but unfortunately is a female and thus the determination is uncertain.

Female genitalia (fig. 19): papilla analis broad; sterigma in form of a narrow plate tapering towards apophyses, membranous dorsally and posteriorly, concave medially. Antrum with short, dorsally folding sclerite opening through ostium situated in membranous part of sterigma. Ductus bursae very long, slender; ductus seminalis from dorsal broadening of ductus bursae just before antrum.

*Ardeutica emphantica* sp. nov.

Labial palpus 3, median segment whitish dorsally and internally, brown laterally, terminal segment brownish; antenna brown, remaining parts of head whitish. Thorax whitish medially, brown proximally, distal portion of tegula densely sprinkled brown. Forewing 12 mm (in paratypes 14 mm) slender, broadest medially, with costa rather uniformly curved outwards throughout; termen short, weakly oblique, tolerably straight to middle. Ground colour dirty whitish pink, sprinkled ferruginous and white or grey. Large white suffusion in costal half of wing reaching to before middle, marked with olive-grey triangle extending from costa; similar but smaller suffusion subapically. Base of wing and tornal area purple ferruginous mixed with black. Remnants of basal blotch (preserved in dorso-median area) and of median fascia (at costa) purple mixed with black; subapical blotch reduced to two spots, concolorous and fusing with costal markings of median fascia. Row of rust spots along termen. Fringes ferruginous grey mixed with white terminally, with brown divisions. Hindwing brownish with similar fringes. Refractive pattern of forewings in form of gold-green spots.



Variation. In female paratype whitish areas large, reaching dorsum except for anterior, costal area forming an ovate blotch, all suffused with olive-grey. Basal area dark grey spotted with ferruginous, connected with postmedian costal ferruginous-purple blotch by radial streak. Rust terminal suffusion developed. Male paratype similarly coloured to the type of *eupeplana* MEYR., e. a. with olive grey ground colour marbled with black-grey and with broad cinnamon blotch developed in costal part of basal area of wing.

Male genitalia (figs. 6, 7). Uncus club-shaped with sharp ventral rib; socius proportionally small; arm of gnathos slender, terminal plate broad, sculptured. Valva long with indistinct sacculus. Transtilla band-shaped. Aedeagus short; cornutus in form of plate with terminal dent.

Female genitalia (fig. 20): sterigma membranous except for terminal portions of the lateral arms. Sclerite of antrum broad; ductus bursae short and broad with several longitudinal folds and long dorsal sclerite provided with internal, vertically arranged plate. Corpus bursae large, weakly differentiated from bursa copulatrix, with small, laterally arranged signum.

Holotype, male: "Quatro Barras, PR. 850 m., Banhado, Brasil, 4. VII. 1970, LAROCA & BECKER"; paratypes, male and female labelled "Coleção J. F. ZINKAN" and dated 6. VI. 21 and 20. XI. 1920 respectively, both in the collection Instituto Oswaldo Cruz, Rio de Janeiro.

Comments. This species differs distinctly from the remaining known representatives of *Ardeutica*, especially in the shape of the uncus. In the forewing the veins  $m_3$ — $cu_1$  are separate.

### *Polyortha halianassa* MEYRICK

*Polyortha halianassa* MEYRICK 1934, *Exotic Microlepid.*, 4: 264; RAZOWSKI, 1964: 268, fig. 48.

Known to date from the type locality, Jaraguá in Santa Catarina. Two examples now collected in Paraná: Banhado, Quatro Barras and Curitiba, in late September and early October. The female genitalia (fig. 21) have a characteristic convex ventral portion of sterigma with distinctly sclerotized edge. Antrum sclerite short; weak lateral sclerite in distal portion of ductus bursae present; signum small, variable in size.

### *Polyortha larocae* sp. nov.

Labial palpus ca. 4, brownish grey, greyish above and beneath, remaining parts of head concolorous; thorax darker, suffused with black proximally. Forewing 10 mm, uniformly broad throughout with distinctly oblique, straight termen. Coloration similar to that in *halianassa*: ground colour brownish suffused with white-grey except for terminal third of wing and before disc, delicately strigulated with brown-grey. Pattern blackish, in form of long costal blotch

extending from 1/3 to 2/3 costa, marked with two pale costal spots postmedially; similarly coloured spots at base of median veins and at tornus. Dorsal half of median fascia ill-defined, consisting of some diffuse brown-grey spots. Fringes brownish. Hindwing brownish, fringes somewhat paler.

Variation slight. The paratype characterised with broad black, shining greenish blue, costal blotch fused with rather well developed dorsal portion of median fascia.

Female genitalia (figs. 22, 23): sterigma with weakly sclerotized median portion of antevaginal lamella; antrum sclerite developed; bursa copulatrix long; signum small, scarcely spined plate situated proximally.

Holotype, female: "Banhado, Quatro Barras, Paraná, Brasil 800 m, 29. VIII. 1970, BECKER & LAROCA"; paratype, female: "Quatro Barras, PR, Brasil, 600 m, 5. VIII. 1975, V. O. BECKER leg."

We name this species in honour of our friend Dr. Sebastião LAROCA of Curitiba.

### *Polyortha nigriguttata* WALSINGHAM

*Polyortha nigriguttata* WALSINGHAM 1914, Biologia cent.-am. *Lepidopt. Heterocera*, 4: 271, pl. 8 fig. 10.

This species was described from single female collected in Panama (Volcan de Chiriqui). It is widely distributed in Central America but for the first time recorded from Brazil. The Brazilian specimens are less variable than those from Central America and the dominating form is that with pale whitish grey, dark grey marbled forewing. The differences in the genitalia are slight and must be treated as of infrasubspecific importance. Our specimens have been collected in Paraná (Banhado, Quatro Barras and Castro) and Santa Catarina (Rio Vermelho) in February, June, August and October. The genitalia of this species were unknown to date, and the holotype lack the abdomen. Their characteristics are as follows.

Male genitalia (figs. 8, 9): uncus long, very slender in basal half, club-shaped posteriorly, provided with distinct apical dent accompanied by large soft process; socius large; gnathos slender, with long terminal plate. Valva long; sacculus slender. Aedeagus with fairly long terminal process; cornutus provided with strong terminal thorn.

Female genitalia (fig. 24): papilla analis broad; sterigma rather weakly sclerotized ventrally, except for ventral edge; sclerite of antrum long; ductus bursae broad, minutely sculptured and rather well sclerotized subterminally; signum absent.

Comments. This species resembles some Peruvian species externally and shows similar variability. It has been incorrectly determined by DIAKONOFF (1974: 18) who recorded it under the name *P. chiriquitana* (Z.) from Castro, Paraná (specimen in coll. of the British Museum, N. H.).

*Polyortha paranae* sp. nov.

Labial palpus as in preceding species, whitish, grey scaled, white beneath; remaining parts of head and upper side of palpus dark grey; thorax black-grey, paler posteriorly. Forewing ca 10 mm, very slender, not wider terminally; costa curved distinctly at base, then weakly so; apex pointed; termen short, weakly oblique, hardly convex or straight. Ground colour ash-grey, with weak white admixture in middle area of wing and apically, sprinkled and strigulated with grey. Pattern ill-defined: blackish basal blotch preserved in dorsal half of wing, atrophying basally; three paler spots representing costal triangle accompanied by small spots at tornus and before disc. Ferruginous scales on subapical and costal transverse lines. Fringes white-grey, median line grey. Hindwing brownish grey, paler basally; fringes paler with distinct median line.

Variation. Three female paratypes are characterised by paler head, thorax and ground colour of forewing. Pattern indistinct in form of diffuse brownish grey spots and fascias extending from costa. Pale ochreous, weak suffusion between basal area and median part of wing. Indistinct bluish gloss in basal field and rather violet refraction towards termen.

Male genitalia (figs. 10, 11): uncus fairly short, gradually expanding terminally; socius broad. Aedeagus proportionally long; cornutus with fairly large basal plate.

Female genitalia (fig. 25): papilla analis slender; sterigma expanding ventro-medially, with distinctly sclerotized ventral edge. Antrum sclerite short; dorsal, plate-shaped sclerite in terminal part of ductus bursae; no signum in bursa copulatrix.

Holotype, male: "Curitiba, Paraná, Brasil — 920 m, 10. I. 1975, V. O. BECKER leg.". Paratypes, 3 females similarly labelled to the holotype but dated 26. IX. 1974.

*Polyortha radiata* sp. nov.

Labial palpus ca 4, brownish; remaining parts of head and thorax concolorous. Forewing 13 mm, not expanding terminally; costa curved distinctly at base, less so before apex; termen strongly oblique, rather straight. Ground colour brownish, mixed ochreous along median cell; several black radial lines from middle of base of wing to beyond disc, one reaching middle of  $m_2$ , one along  $r_4$  accompanied by two brownish ochreous spots, one at base, another subterminally. Fringes concolorous with ground colour. Hindwing brownish with similarly coloured cilia.

Variation. Paratype with paler, more yellowish ochreous suffusion along middle of wing and ochreous brown admixture in terminal area.

Female genitalia (fig. 26): papilla analis slender; sterigma with well developed lamella antevaginalis forming with dorsal, membranous wall a cup-shaped



concavity; sclerite of antrum fairly large; bursa copulatrix with weakly differentiated ductus bursae; signum in form of long thread like agglomeration of minute dents extending from before antrum sclerite to before middle of corpus bursae dorsally.

Holotype, female: "Coleção J. F. ZIKAN, 6. VI. 1921", coll. Instituto Oswaldo Cruz, Rio de Janeiro.

The new species has similar genitalia to *P. gradatulana* (Z.), but differs by the lack of the sclerite of the ductus bursae and in the shape of the sterigma.

*Polyortha biezankoi* BECKER

*Polyortha biezankoi* BECKER 1970, Bol Univ. Paraná, Zool., 4 (1): 7.

The species was described from numerous specimens collected in Marumbi, Paraná. A new locality is Banhado, Quatro Barras, in the same state. The specimens were collected in late December at an altitude of 800 m.

To complete the original description (in Portuguese) we provide the following data. Externally this species is distinct from *viridescens* by the orangeish hindwings and somewhat darker, more brownish abdomen. The forewing is usually much darker than in the following species. In the male genitalia, uncus club-shaped, provided with strong terminal thorn and well developed membranous sack. Female genitalia (fig. 27): median, antevaginal portion of sterigma fairly small, rounded; ductus bursae broadening subterminally, provided with numerous folds and partially rather strongly sclerotized, marked with large dorsal sclerite provided with median, longitudinal rib.

*Polythora viridescens* (MEYRICK)

*Peronea viridescens* MEYRICK 1912, Trans. ent. Soc. London, 1912: 686.

The holotype of this species comes from Nova Friburgo, whereas the type locality of the synonym, *Polyortha mollinediella* BUSCK, is Rio de Janeiro. Our specimens were collected in Vila Velha and Quatro Barras in Paraná, Joinville in Santa Catarina and Pelotas in Rio Grande do Sul, as listed by the second author (BECKER, 1970: 7). Further specimens were collected in Rio Vermelho and Rio Natal, Santa Catarina in late January and early February (RAZOWSKI).

The above mentioned paper provides the morphology of the early stages and adult as well as some bionomic data; DIAKONOFF (1974) illustrated the male and female genitalia.

*Monortha* gen. nov.

Type species: *Monortha funesta* sp. nov.

Forewing weakly expanding posteriorly; costa somewhat convex basally

Venation: in forewing two last radial veins approached basally; in hindwing  $rr-m_1$  stalked to middle,  $m_3-cu_1$  from one point.

Male genitalia: uncus very short; socius subterminal, provided with flattened spines externally; pair of short, strongly sclerotized processes between bases of socii representing probable the hami. Gnathos weak, without distinct terminal process. Valva elongate-ovate with distinct external fold; sacculus armed with slender, directed proximally process; tegumen provided with large, plate-shaped prominences of proximal edge of pedunculus deserving as apodemes of muscle 4; vinculum slender with long, upcurved saccus; transtilla in form of thin, median sclerite; juxta delicate with produced dorso-lateral portions.

Praegenital segment (fig. 12) with small tergite and weakly sclerotized sternal part developing subtriangular, directed distally dorso-lateral pocket on each side. Between tergite and pocket like process a vertical shallow lateral fold covered with scent scales present. Indistinct invagination of proximal portion of segment in tergal area laterally. No coremata noticed.

Two species belong in this genus, viz. *M. funesta*, and *Cnephasia corusca* MEYRICK — comb. nov., known from Guiana. In the latter the transtilla is better developed.

#### *Monortha funesta* sp. nov.

Head brownish cream, vertex more grey, labial palpus 2, cream, striped with yellow-brown; thorax yellowish brown; legs paler, with brown rings. Forewing 8 mm, somewhat expanding terminally; costa weakly curved outwards; apex very short; termen fairly long, weakly oblique, indistinctly sinuate. Ground colour pale brownish yellow, paler towards dorsum, with weak pearl-pink shine, partially whitish at the edges of pattern. Weak brown suffusion at apex; brownish oblique fascias from 1/3, middle and 3/4 of costa atrophying in middle breadth of wing, broad costally; some other brownish divided with white costal spots among them. Pattern in form of brown dorsal triangle situated postbasally and much smaller, brownish triangle at tornus. Fringes brownish paler at tornus. Hindwing grey-brown with somewhat paler fringes.

Male genitalia (figs. 13, 14): socius broad, armed with strong spines, scarcely hairy; gnathos broad, rather weakly sclerotized, partially minutely spined in middle. Anellus membranous except for very thin median sclerite representing transtilla and rather delicate juxta. Sacculus delicately sinuate ventrally. Aedeagus provided with strongly sclerotized ventral rib marked with minute lateral dent subapically; anellus beyond zone densely spined, especially dorsally. Otherwise as for the genus.

Holotype, male: "Brusque, Sc, Brasil, 28. XII. 1969, V. O. BECKER leg."; G. S. 6149.

Comments. The new species differs from *corusca* in weaker forewing pattern (especially in atrophied subterminal fascia), in the shorter and much broader socius, thinner transtilla, shorter valva and longer aedeagus. The spines of socii are in *funesta* much longer and thicker.

## ACKNOWLEDGMENTS

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## REFERENCES

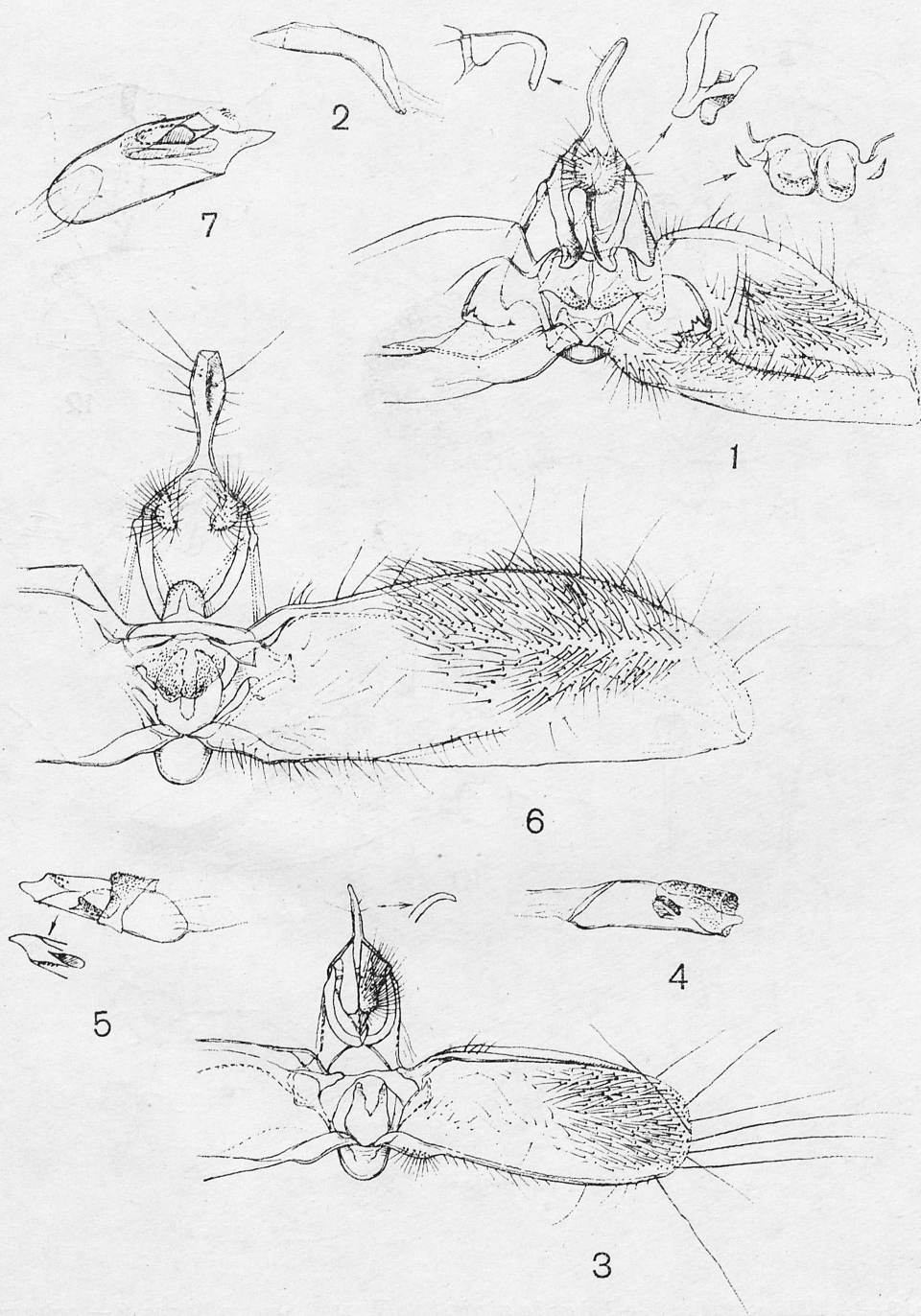
- BECKER V. O. 1970. Sobre duas espécies brasileiras de género *Polyortha* (Lepidoptera, Tortricidae) Bolm Univ. Paraná, Zool., Curitiba, 4 (1): 1—11.  
DIAKONOFF A. 1974. The South Asiatic *Polyorthini* with notes on species of *Polyortha* DOGNIN (Lepidoptera, Tortricidae). Zool. Verh., Leiden, nr. 131.  
RAZOWSKI J. 1964. MEYRICK types of *Tortricoidea* (Lepidoptera) in the Vienna Museum. Annls zool. Warsz., 22 (21): 451—481.

## STRESZCZENIE

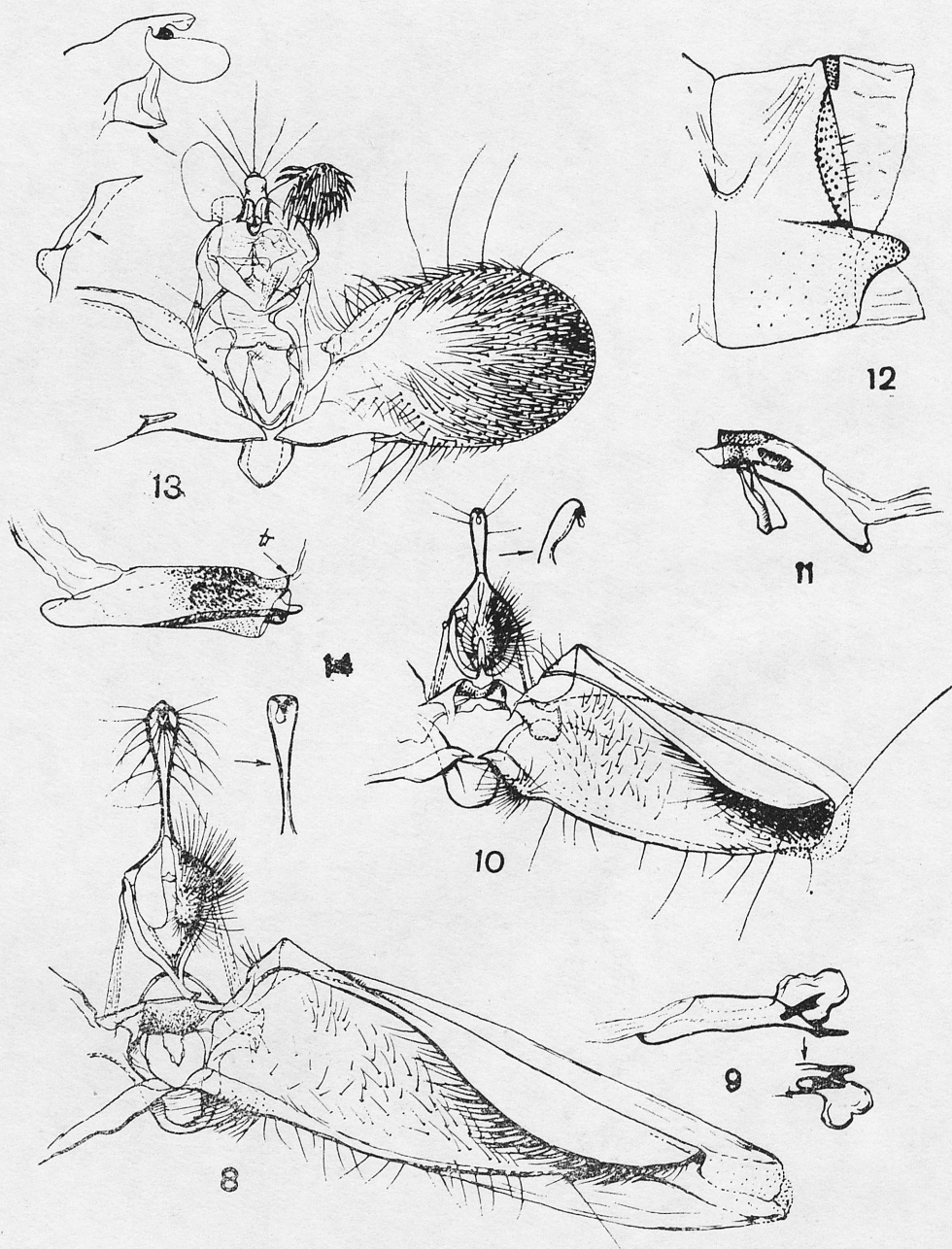
Praca zawiera przegląd brazylijskich gatunków *Polyorthini*. Z 15 znanych obecnie gatunków 8 zostało opisanych jako nowe. Ponadto opisano jeden nowy rodzaj.

Redaktor pracy: doc. dr A. Krzanowski

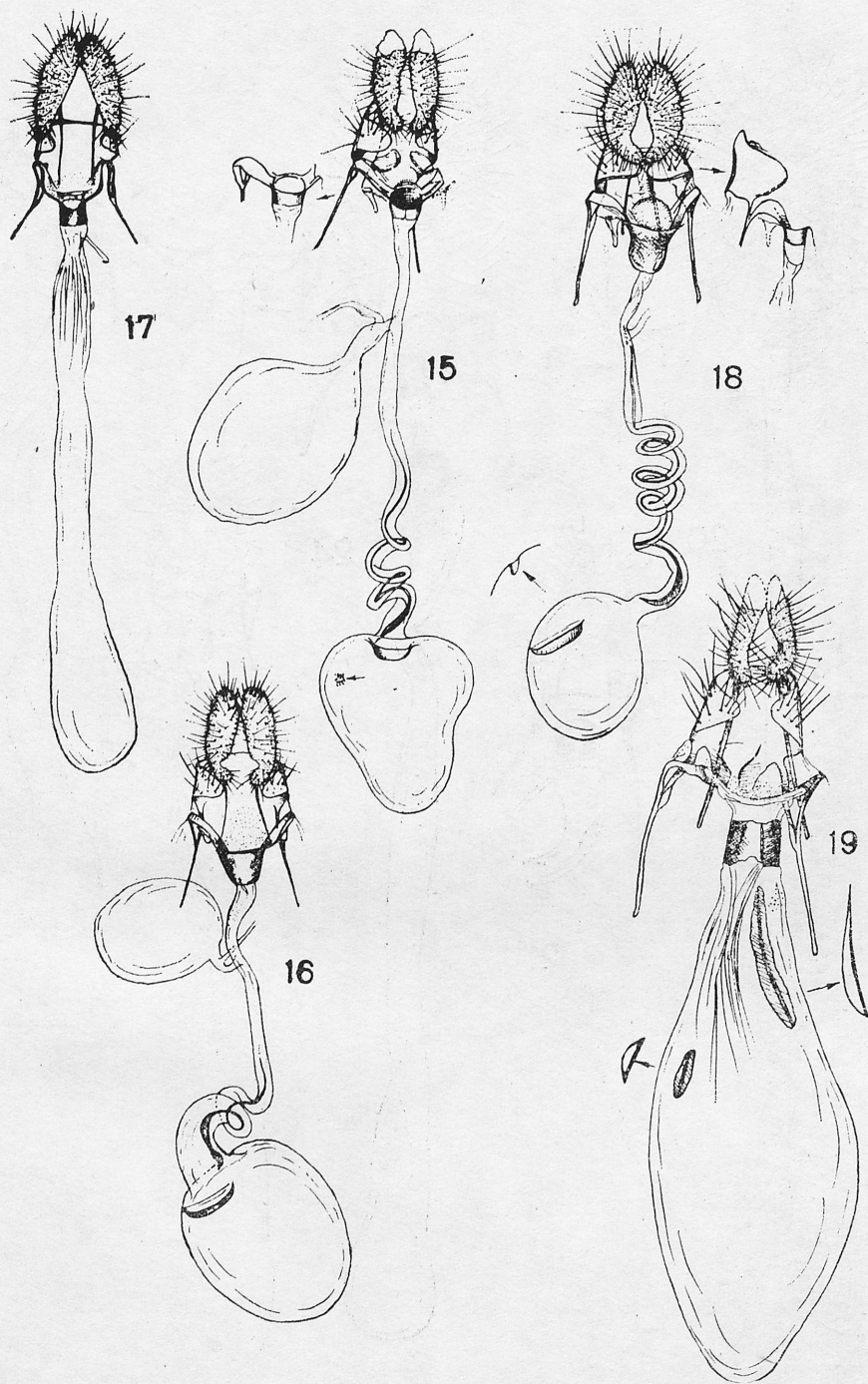




Figs. 1—7. Male genitalia: 1 — *Histura xanthotypa* sp. nov., holotype, 2 — aedeagus of same specimen, 3 — *Ardeutica sphenobathra* (MEYR.), Brazil, Curitiba, 4 — aedeagus of same specimen, 5 — aedeagus of same species, Quatro Barras, Paraná, 6 — *A. emphantica* sp. nov., holotype, 7 — aedeagus of same specimen

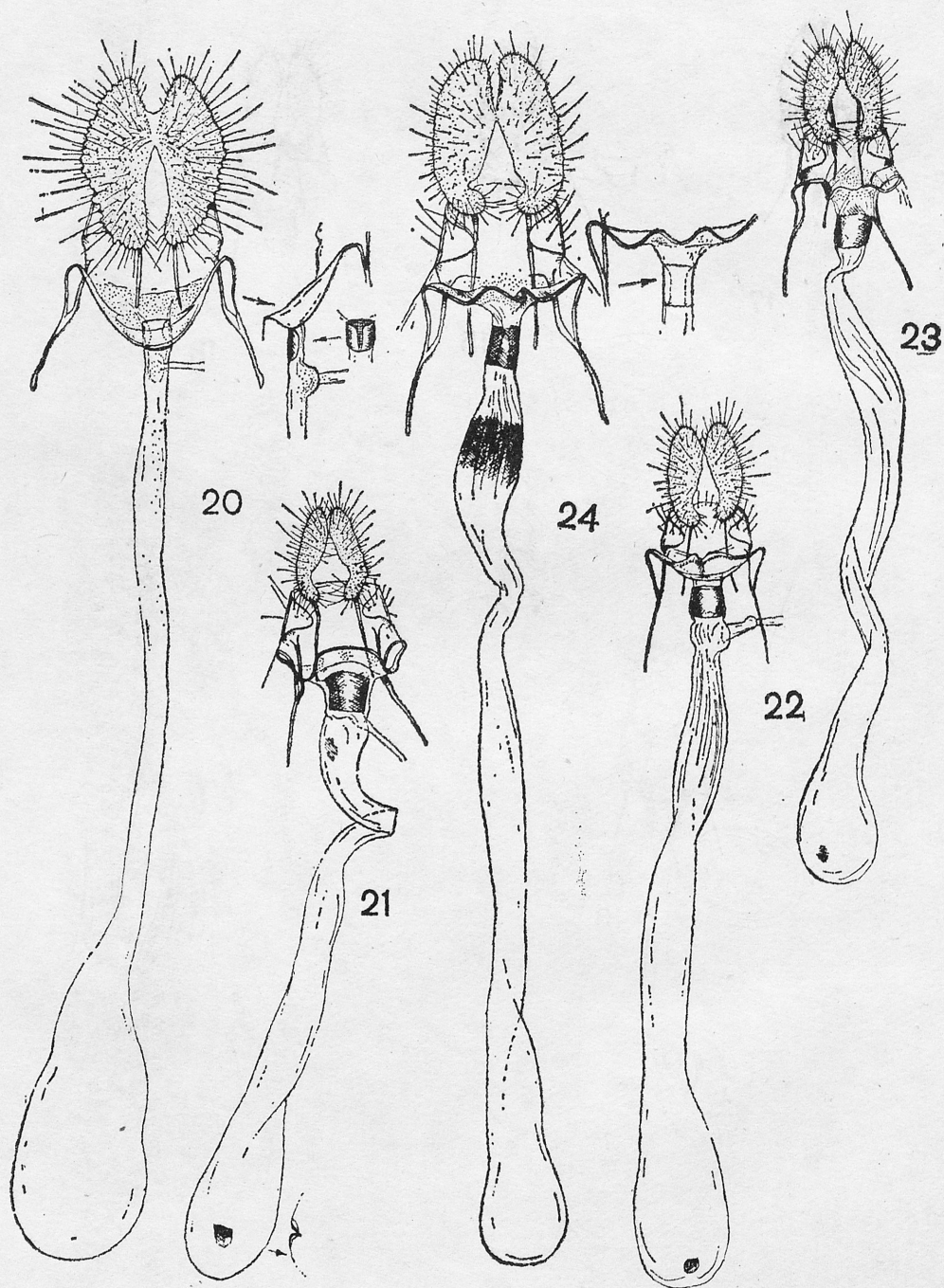


Figs. 8—14. Male genitalia: 8 — *Polyortha nigriguttata* WALSM., Quatro Barras, 9 — aedeagus of same specimen, 10 — *P. paranae* sp. nov., holotype, 11 — aedeagus of same specimen, 12 — praegenital segment of *Monortha funesta* sp. nov., 13 — genitalia of same species, holotype, 14 — aedeagus of same specimen

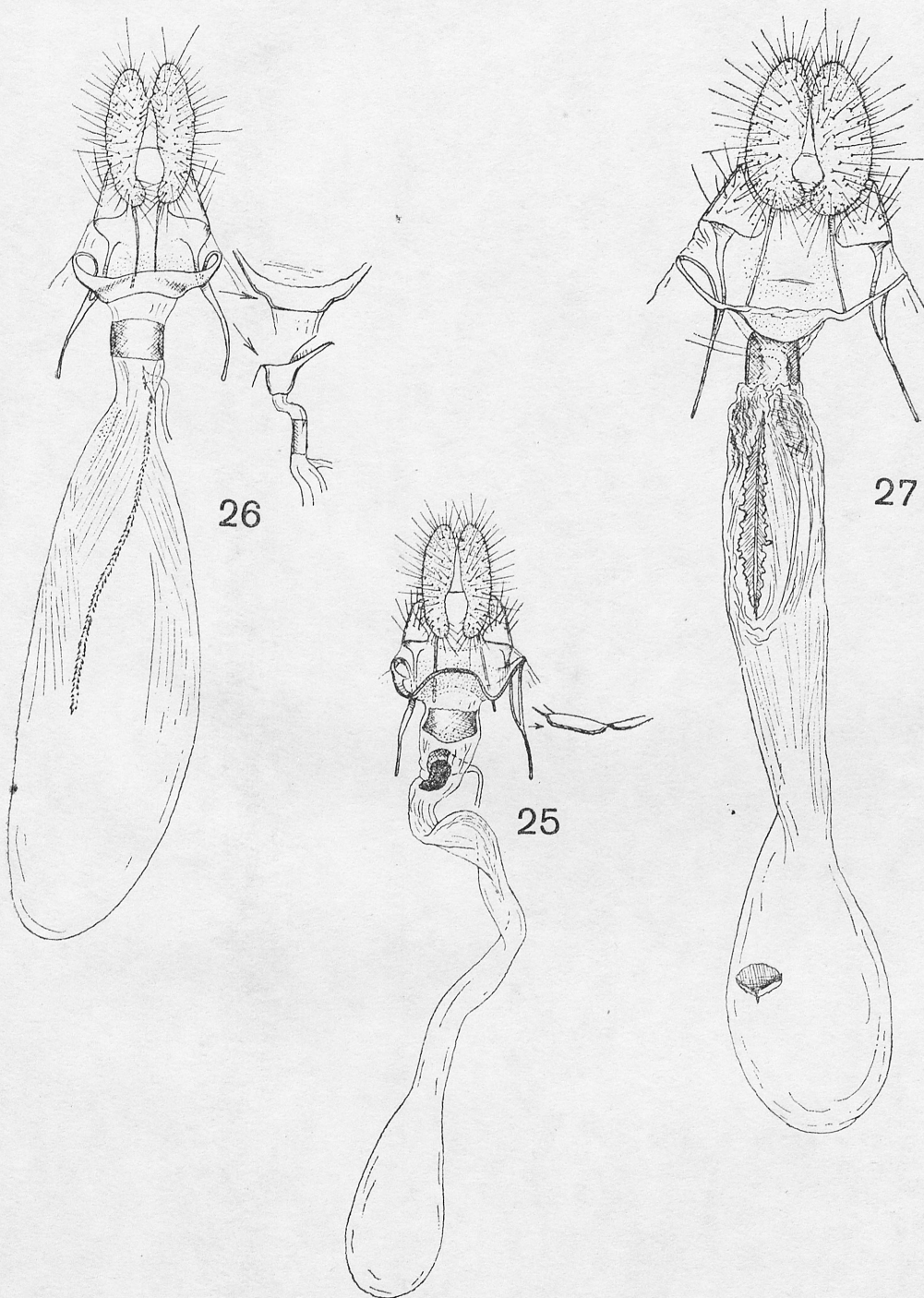


Figs. 15—19. Female genitalia: 15 — *Histura xanthotypa* sp. nov., paratype from Tibagi, 16 — *Histura doriae* sp. nov., holotype, 17 — *H. chlorotypa* sp. nov., holotype, 18 — *Ardeutica sphenobathra* (MEYR.), Quatro Barras, Paraná, 19 — *A. emphantica* sp. nov., paratype





Figs. 20—24. Female genitalia: 20 — *Ardeutica* ? *spumosa* MEYR., Joinville, Paraná, 21 — *Polyortha halianassa* Meyr., Quatro Barras, Paraná 22 — *P. larocae* sp. nov., holotype, 23 — same species, paratype, 24 — *P. nigriguttata* WALSM., Quatro Barras



Figs. 25—27. Female genitalia: 25 — *Polyortha paranae* sp. nov., paratype, 26 — *P. radiata* sp. nov., holotype, 27 — *P. biezankoi* BECKER, Quatro Barras, Paraná

