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Institut für Pflanzenschutzforschung Kleinmachnow
der Akademie der Landwirtschaftswissenschaften der DDR
Bereich Eberswalde
Abteilung Taxonomie der Insekten

Centro de Pesquisa Agropescuaria dos Cerrados
Caixa Postal 70-0023
73300 Planaltina, DF, Brasil

REINHARD GAEDIKE & VITOR OSMAR BECKER[1]

New neotropical Epermeniidae (Lepidoptera)

With 35 figures

Our previous knowledge of the occurrence of Epermeniidae in the Neotropical Region was very poor.

A revision of the family in that region (GAEDIKE, 1977) demonstrates the presence of three *Parochromolopis*-species. HEPPNER (1980) described a further species of that genus from Costa Rica. The examination of material collected by the South America-Expedition of the Zoological Museum Copenhagen made it possible to establish for the first time the presence of a species of the genus *Epermenia* in that region (GAEDIKE, 1984).

This study of 39 specimens from Brazil and Mexico, collected in the last few years, increases the number of neotropical Epermeniidae by a further species of *Epermenia* and four species of *Parochromolopis* described below.

Additions and corrections to some of the previously known *Parochromolopis*-species are also given. Based on an analysis of morphological characters the monophyly of *Parochromolopis* and its position within the subfamily Ochromolopinae is discussed.

Epermenia (Calotripis) brasiliana sp. n.

Type: Museu Nacional, Rio de Janeiro.
Type locality: Brazil/Sao Joaquim.

Wingspan 10—13 mm; head, inner surface of labial palpi and thorax ochreous, tegulae and outer surface of labial palpi dark; fore wing with three black patches of raised scales at 1/3, 1/2 and 2/3 at dorsum; dark grey-brown fascia from first raised scale-patch angled towards costa, wing from fascia to apex suffused with brown and grey-brown scales, brown scales forming two obscure distal streaks at and beneath margin; in the middle, oblique above third raised scale-patch, a small black scale-tip; cilia at apex black, forming sickle-like edge; first third of wing above dorsum from light-ochreous to sand coloured. Coloration sometimes lighter, with only small black scale-tip and sickle-shaped edge dark.

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♂ (fig. 1—3): Uncus long, thin, pointed; valva with rounded pointed ampulla and distinct sclerotized border; sacculus with marked top; aedeagus with long cornutus (about 1/2 length of aedeagus), weakly sclerotized.

♀ (fig. 4—7): Last sternite deeply invaginated about range of ostium, ostium broad sclerotized; signum triangular, with wedge-shaped strongly sclerotized edge, outer surface minutely dentate, of variable size.

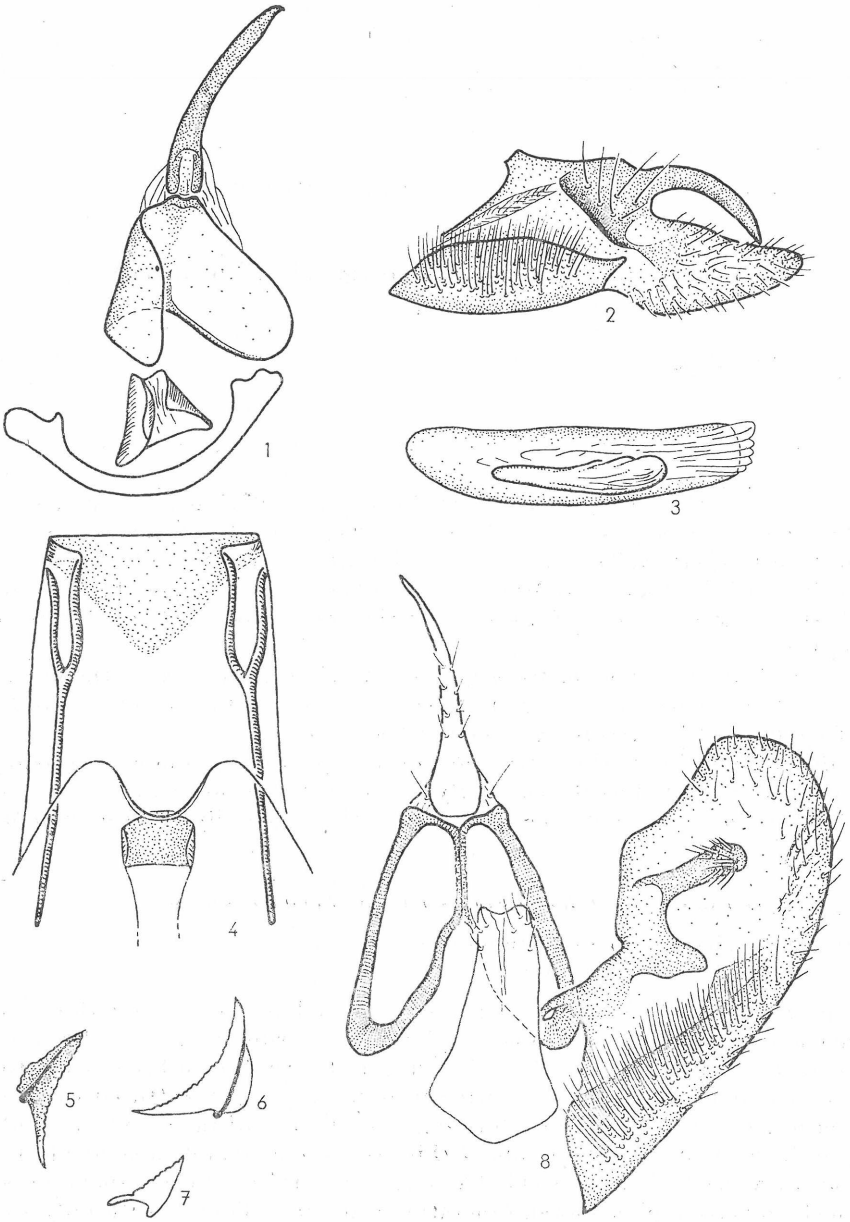

Fig. 1—7: *Epermenia brasiliana:* fig. 1—3 ♂ genitalia (Uncustegumen, gnathos, vinculum, right valva, aedoeagus); fig. 4—7 ♀ genitalia (fig. 5—7 shows various, size of signum). — fig. 8: ♂ genitalia (left valva removed) of *Parochromolopis syncrata.*

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Examined material: 1♂, 4♀

♂ holotype, Brazil, SC, Sao Joaquim, 1400 m, 22.–24. 1. 1983, leg. V. O. BECKER (No. 52336), genital prep. R. GAEDIKE No. 3187; paratypes: 3♀ same locality (No. 52333, 52335); 1♀ Brazil, SP, Campos de Jordao, 1500 m, 8. 1. 1983, leg. V. O. BECKER (No. 51567).

Holotype in Museu Nacional, Rio de Janeiro, 2 paratypes in coll. BECKER, 2 paratypes in the collection of the Abteilung Taxonomie der Insekten des Bereichs Eberswalde des Instituts für Pflanzenschutzforschung Kleinmachnow.

The new species differs distinctly from *E. banzi*, described from Argentinia and Chile, in the size of the genitalia: *E. banzi* has a shorter and thicker uncus, longer cornutus and rather differed signum.

***Parochromolopis mexicana* sp. n.**

Type: Museum of National History, Washington, No 100680.
Type locality: Mexico/Chiapas.

Wingspan 12—13 mm; head, labial palpi and thorax brownish grey, inner surface of labial palpi and middle of thorax lighter; fore wing with three raised scale-patches at 1/3, 1/2 and 2/3 at dorsum, an indication of the fourth one at 3/4; wing area from base to first raised scale-patch ligther grey, suffused with darker scales, rest of wing distinctly darker, in middle, between first and second and between second and third raised scale-patch with single black spot, above indication of fourth raised scale-patch black linear mark; apex with dark middle-line lined with brown; ♀ paratype altogether lighter, posterior half of wing with more brown around black spots, dorsum at base and tegulae also dark.

♂ (fig. 9—12): Uncus long, pointed, tegumen relatively narrow, with more strongly sclerotized edges; valva oval, mostly narrower at base, transtilla and basal edge more sclerotized, at costal edge before 1/2 with fingerlike setose appendix, one-half wight of the valva; aedeagus shorter than valva, cornutus very long, at base narrow, at apex broadly truncate, at 1/2 forked and with strongest sclerotization.

♀ (fig. 13—14): Apophyses relatively short, ostium in a broad area with numerous semicircular hump-like sclerotizations, corpus bursae delicately textured, signum large, elliptical, one side dentate, tapering in middle, upper edge with triangular spines arranged in several rows.

Examined material: 1♂, 1♀

♂ holotype, Mexico: Chiapas, San Cristobal de las Casas, 2300 m, 23.–27. VI. 1981, leg. V. O. BECKER (No. 83803), genital prep. R. GAEDIKE No. 3190, National Museum of Natural History Washington, No. 100680; 1♀ paratype, Mexico: Chiapas, Teopisca, 1900 m, 23.–26. VI. 1981, leg. V. O. BECKER (No. 43314), in the coll. BECKER.

P. mexicana is related to *P. psittacanthus* HEPPNER from Costa Rica. There are differences in the genital structures: *P. mexicana* has a longer uncus, different shape of cornutus, ostium with typical sclerotization and differently shaped signum.

Parochromolopis syncrata (MEYRICK, 1921)

(Exot. Microlep. 2 (1921), p. 465; *Epermenia*)

GAEDIKE, 1977, p. 307, fig. 46–48.

An examination of the genitalia slide of the lectotype shows, that there are some differences in the size of valva contrary to the above mentioned figures: (fig. 8).

The costal edge of valva immersed behind the transtilla and curved above the fingerlike appendix. The transtilla seems to be less distinctly lobed. The examination of additional material is necessary to state whether those differences are preparation artefacts or the result of variation.

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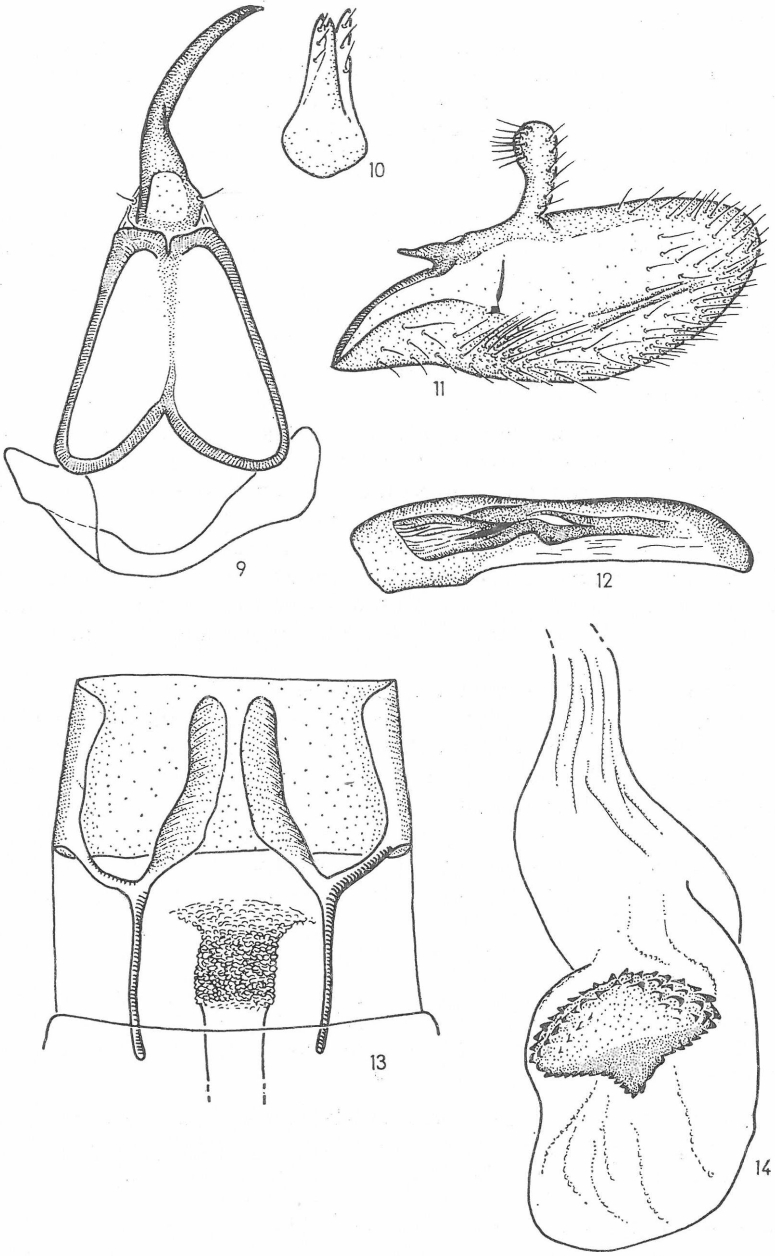

Fig. 9—14: *Parochromolopis mexicana:* fig. 9—12 ♂ genitalia (left valva removed); fig. 13—14 ♀ genitalia.

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***Parochromolopis bicolor* sp. n.**

Type: Museu Nacional, Rio de Janeiro.
Type locality: Brazil/Planaltina.

Wingspan 11—13 mm; head, thorax and inner surface of labial palpi light sand-coloured, tegulae suffused with few, outer surface of labial palpi with numerous darker scales; fore wing with four black raised scale-patches before and after 1/2, at 2/3 and at 3/4 at dorsum; light sand colour of basal third of wing limited by dark brown band, reaching from first raised scale-patch oblique to above; at costa shading into brown area, reaching apex; in middle above second and third patch a nearly blackish oval dot, above the fourth patch a short black streak, apex and oscillated band on cilia below apex also black; below black dotes some lighter areas, narrow light streak from costal edge to dorsum before apex. Sometimes specimens ligther coloured in apical part of wing, but black dots not variable, the wing distinctly two-coloured, because of presence of oblique band as borderline.

♂ (fig. 15—19): Uncus long, pointed, tegumen with sclerotized upper edge, valva next to transtilla with narrow setose appendix; middle of costal margin with two hooks, reaching nearly ventral margin, second hook always thinner, sometimes (fig. 19) striking different; sacculus with pointed tooth, pointing upwards to base of hooks; anellus narrow, with two setose cones; aedeagus as long as valva, cornutus more than 1/2 length of aedeagus, with broad basic part and narrower, almost hook-like apical part; this part sometimes separated from basic part, size varies according to preparation (fig. 18).

♀ (fig. 20—21): Forked apophyses short; ostium enlarged cap-like, with numerous pointed spines more strongly sclerotized; corpus bursae with many small teeth, signum broad band with triangularly extended edge.

Examined material: 17♂, 11♀, 2 specimens without abdomen.

♂ holotype, Brazil: DF, Planaltina, 15°35′ S, 47°42′ W, 1000 m, 25. X. 1984, leg. V. O. Becker (No. 56968), genital prep. R. Gaedike No. 3201; paratypes: 5♂, 1♀ the same locality, VII. 1983 (No. 41167); 1♂, 1♀ the same locality, 15. V. 1983 (No. 40992); 4♂, 5♀, 1 specimen without abdomen, the same locality, 10. VI. 1983 (No. 41042); 1♂, 1 specimen without abdomen, the same locality, 26. VI. 1984 (No. 56461); 1♀ the same locality, 20. VII. 1984 (No. 56596); 1♀ the same locality, 20. XI. 1984 (No. 57001); 1♀ the same locality, 15. III. 1985 (No. 57372); 2♂ the same locality, 15. IV. 1985 (No. 57408); 1♂ the same locality, 15. V. 1985 (No. 57501); 1♂ the same locality, 15. VI. 1985 (No. 57602); 1♂, 1♀ Brazil: MG, Unai, 700 m, 27. IX. 1983, leg. V. O. Becker (No. 49575). Holotype in Museu Nacional, Rio de Janeiro, paratypes in coll. Becker/Brazil, National Museum of Natural History, Washington and Abteilung Taxonomie der Insekten des Bereichs Eberswalde des Instituts für Pflanzenschutzforschung Kleinmachnow.

P. bicolor is related to *P. floridana*, but differs distinctly in the greater size of the genitalia: the hooks on the valva are twice as large, the anellus narrower and the size of the signum differs.

***Parochromolopis floridana* Gaedike, 1977**

(Beitr. Ent. Berlin 27 (1977), 306–307, fig. 43–45, 53–54)

The examination of material necessitate a comparison of the generic type. Following preparation of another specimens from the type series it is necessary to correct the previously published figures (see above) in some details. Figs. 22—25 show the ♂ genitalia completely new and figs. 26—27 show some improved details of ♀ genitalia. The description must also supplemented.

♂: Sacculus with pointed sclerotized tooth directed upwards reaching nearly base of the two hooks; anellus with rounded base and two setose tips.

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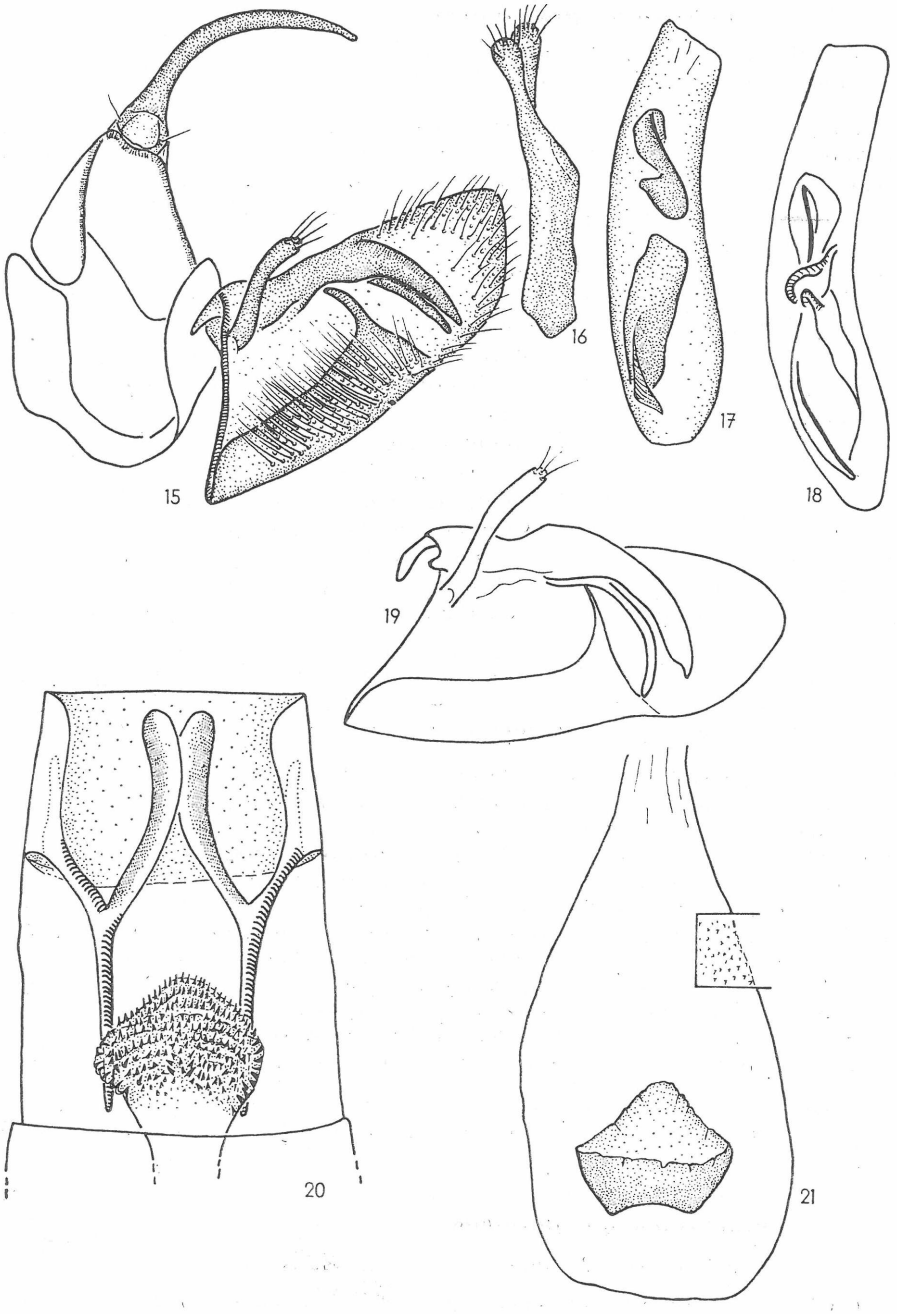

Fig. 15—21: *Parochromolopis bicolor:* fig. 15—17 ♂ genitalia (left valva removed); fig. 18—19 shows various size of valva and aedoeagus. — fig. 20—21 ♀ genitalia.

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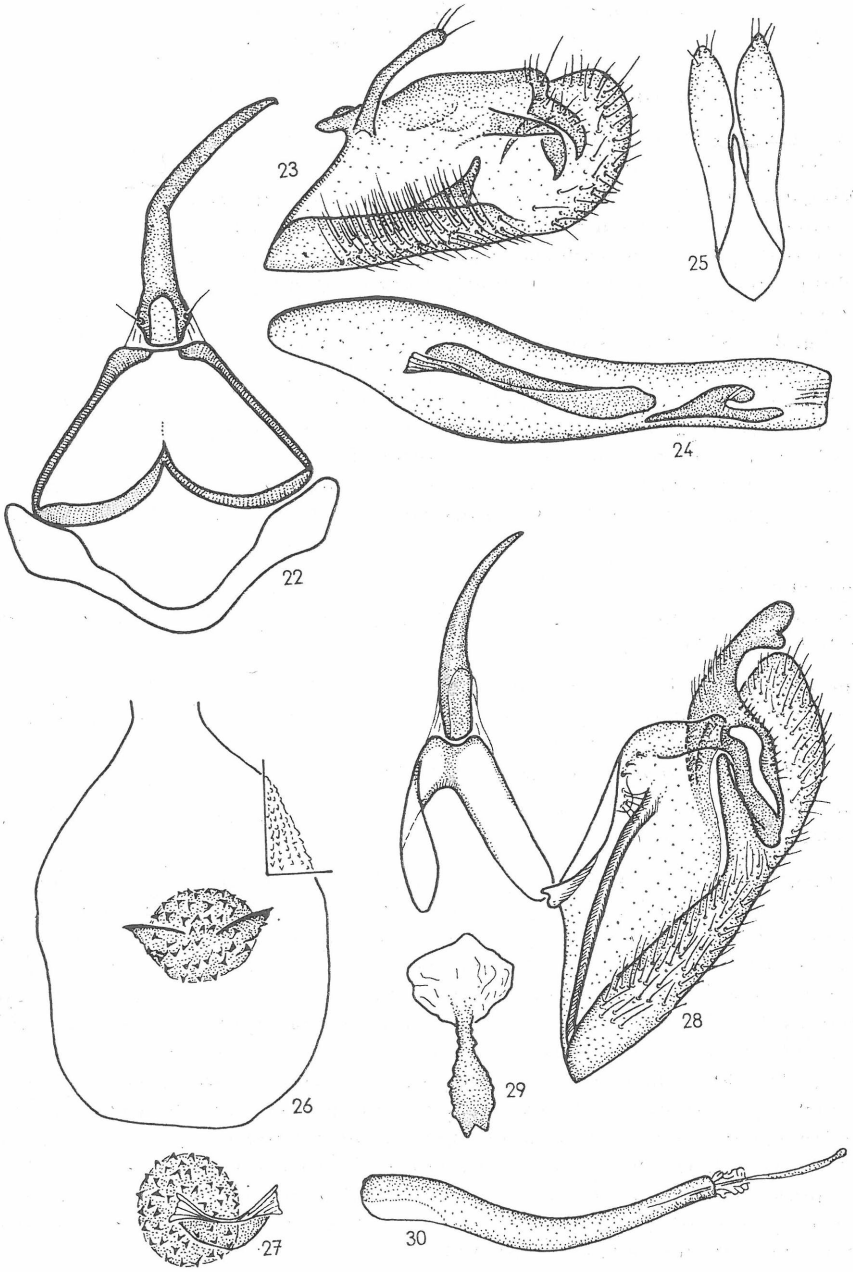

Fig. 22—27: *Parochromolopis floridana:* fig. 22—25 ♂ genitalia (left valva removed), fig. 26—27 ♀ genitalia (various size of signum). — fig. 28—30: ♂ genitalia (left valva removed) of *P. fuscocostata*

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♀: Corpus bursae with fine tooth-like structure; the two signa situated mostly one upon another, that is why it seems to be unique structure.

***Parochromolopis parva* sp. n.**

Type: Museu Nacional, Rio de Janeiro.
Type locality: Brazil/Nova Lima.

Wingspan 9 mm; head, labial palpi, thorax sand coloured, mixed with grey scales; fore wing at dorsum with raised scale-patches at 1/3, 1/2 and 2/3, the area from base to first scale-patch sand-coloured, suffused with grey, distal part of wing, separated by oblique border from base, distinctly darker; costal margin grey brown, on margin three larger grey areas, otherwise brown.

♂ (fig. 31—34): Uncus very long, pointed, tegumen broad, with sclerotized upper edge; anellus small, nearly heart-shaped, above hyaline valva with big divided transtilla and long setose appendix; costal edge more strongly sclerotized, a little vaulted before large rounded apex, without fingerlike or hooklike appendages; cucullus before apex with spiny area, in middle of valva more strongly sclerotized area, enlarged towards base and towards apex to two tips, above setose area; aedeagus distinctly longer than valva, with spiny vesica and riblike sclerotized edges internally.

♀ unknown.

Examined material:

♂ holotype, Brazil: MG, Nova Lima, 850 m, 8. X. 1985, leg. V. O. BECKER (No. 63194), genital prep. R. GAEDIKE No. 3199.

The absence of the finger- and hooklike appendages on the costal edge of the valva distinguishes *P. parva* from all other *Parochromolopis*-species.

***Parochromolopis fuscocostata* sp. n.**

Type: Museu Nacional, Rio de Janeiro.
Type locality: Brazil/Planaltina.

Wingspan 13 mm; head, thorax and inner surface of labial palpi light ochre, tegulae and outer surface of labial palpi suffused with brown and dark scales; fore wing at dorsum with three raised scale-patches at 1/3, 1/2 and 2/3, light brown pointed black; ground colour of the wing yellow brown, entire costal edge with dark grey scales, above raised scale-patches dark colour extended nearly to margin, before apex interrupted by fine brown transverse lines; cilia around apex brown with dark border, apex sickle-shaped, dorsal edge at base also with dark scales.

♂ (fig. 28—30): Uncus long, pointed, tegumen narrow, small, with sclerotized edges and sclerotized middle line; valva very big, broad; costal edge in the middle vaulted, posteriorly reaching nearly to upper edge as a sclerotized area, at the apical third of the valva inserts a little curved processus, ending in two rounded tips; it could represent an ampulla; sacculus narrow, with an above directed oblique blunt appendix below the base of ampulla; anellus with sclerotized shaft, above hyaline; aedeagus thin, with a very thin, rod-shaped cornutus.

♀ unknown.

Examined material:

♂ holotype, Brazil: DF: Planaltina, 15°35′ S, 47°42′ W, 1000 m, 15. V. 1985, leg. V. O. BECKER (No. 57502), genital prep. R. GAEDIKE No. 3189.

P. fuscocostata cannot be confused with any other species in the genus. The size of the genitalia shows some specialities, which are absent in another species: there is a complicated new structure instead of the fingerlike appendix or the hooks at the costal

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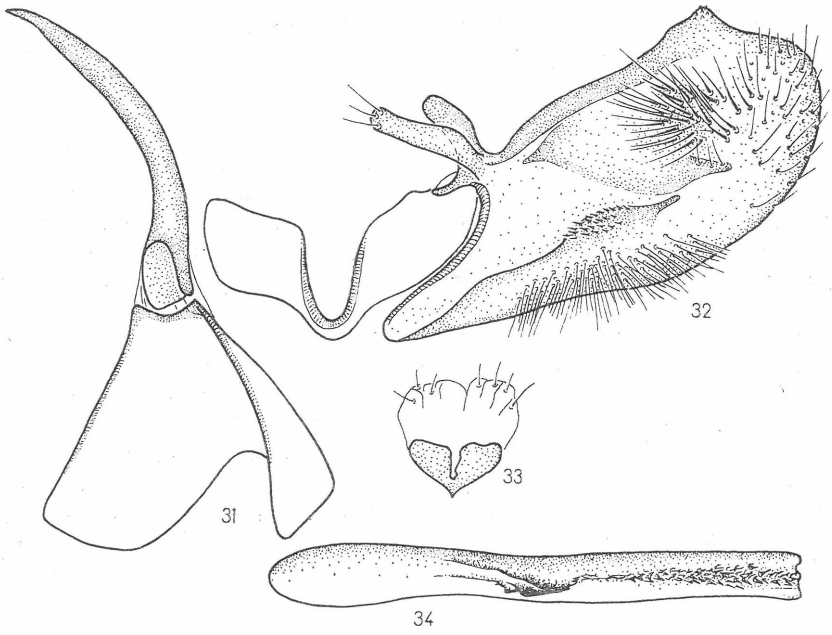

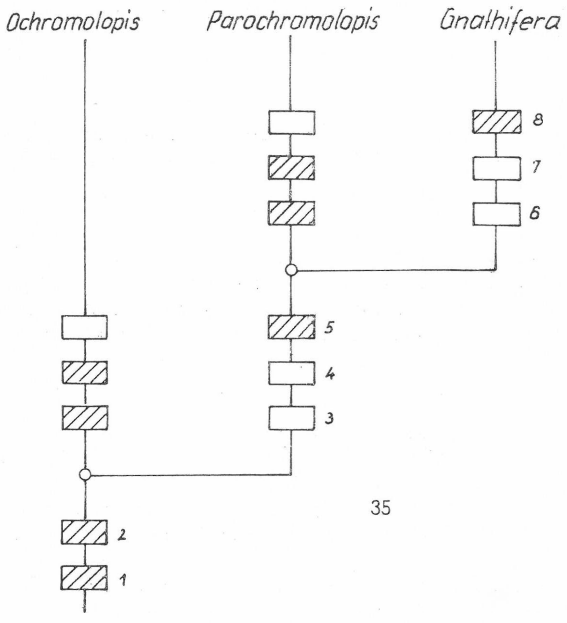

Fig. 31—34: ♂ genitalia (left valva removed) of *Parochromolopis parva*. — fig. 35 phylogenetic relations within the subfamily Ochromolopinae

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edge. It could be taken as a modifikation of these appendices. The examination of additional specimens will show either the connection between these different structures or the necessity to establish a new genus.

The present study permit us to discuss the systematic position of the genus *Parochromolopis* within the family Epermeniidae.

It is considered certain, that this genus together with *Ochromolopis* and *Gnathifera* represents a monophyletic unit. Synapomorphic structures are the presence of only 11 veins in the fore wing (1) and the enlarged ventral parts of the forked apophyses (2).

The absence of signa in the bursa (3) is an apomorphic character because the presence of signa is the normal condition in the Epermeniidae. The normal structure of the male genitalia includes a simple uncus without socii and a simple ampulla on the valva. The presence of socii (4) and the absence or a strong modification of the ampulla (5) are apomorphic characters. The synapomorphics 3 and 4 are the basis of the monophyly of *Ochromolopis*, as opposite to the two other genera, which are characterized as a monophyletic unit by the synapomorphic structure 5.

The monophyly of *Parochromolopis* is based on two synapomorphic structures: the valva with finger- or hooklike appendices at the costal edge or with highly modified sclerotizations (6); the enlarged penultimate segment of the labial palpi (7). *Gnathifera* is characterized as monophyletic by the presence of a gnathos (8).

Fig. 35 shows the relationships within the subfamily Ochromolopinae.

Summary

There were described one species of genus *Epermenia* and 4 species of *Parochromolopis* from Brazil and Mexico. The monophyly of *Parochromolopis* and its position within the subfamily Ochromolopinae is discussed.

Zusammenfassung

Es werden eine neue *Epermenia*-Art und vier *Parochromolopis*-Arten aus Brasilien und Mexiko beschrieben. Die Monophylie von *Parochromolopis* sowie ihre Stellung innerhalb der Unterfamilie Ochromolopinae wird diskutiert.

Резюме

Описани новый вид рода *Epermenia* и 4 новых вида рода *Parochromolopis* из Бразилии и Мехики, которые были собраны за последние годы. На основе анализа признаков рода *Parochromolopis* обсуждалась монофилия рода и его положение внутри подсемейства Ochromolopinae.

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