

New species of *Coleophora* (Lepidoptera) from Katanga, Central Africa*

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New species of *Coleophora* (Lepidoptera) from Katanga, Central Africa. - Eight new species of *Coleophora* (Lepidoptera) are described from the province of Katanga, Democratic Republic of Congo: *Coleophora frivolella* sp. n., *C. bantuelia* sp. n., *C. terebrans* sp. n., *C. discopunctata* sp. n., *C. katangica* sp. n., *C. romieuxi* sp. n., *C. tetrodonta* sp. n. and *C. fragilella* sp. n.

Keywords: Moths - new species - *Coleophora* - Democratic Republic of Congo - Katanga.

INTRODUCTION

The Coleophoridae moths in Central Africa are poorly known. Four species were described or reported from the Congo by Meyrick: *Coleophora crossanthes* Meyrick, 1938, *C. ptilocharis* Meyrick, 1938, *C. epiphanopa* Meyrick, 1937 and *C. scaleuta* Meyrick, 1911. We will revise these in our forthcoming revision of the Afrotropical Coleophoridae.

Among material kept in the Museum of Natural History, Geneva, 40 specimens of *Coleophora* were found, collected by J. Romieux. Dr Jean Romieux (1893-1951), a geologist by profession, worked as a prospector in many parts of the world. As a voluntary worker for the Geneva Museum he collected many minerals and ethnological objects, which form part of the Museum collection. He was also a keen entomologist. The small moths, described in this paper, were collected in 1930-31 when Romieux worked for the Tshinkolobwe uranium mine in what was then called "Haut Katanga", "Congo belge". He died suddenly in 1951, in Marseille, on his way home from the Far East. His Lepidoptera collection is deposited in the Geneva Museum.

Of the 40 Coleophoridae specimens in this collection eight belong to *Coleophora scaleuta* Meyrick, 1911, a widespread species in the Afrotropical region. Of two male specimens, probably undescribed species, the genitalia were too badly damaged to enable description. The remainder of the specimens belong to eight new species, which are described below.

* Contribution to the knowledge of Coleophoridae CVIII.

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ABBREVIATIONS

BLDZ coll. Giorgio Baldizzone, Asti, Italy.

MHNG coll. Muséum d'histoire naturelle, Genève, Suisse. (Museum of Natural History, Geneva, Switzerland).

WF coll. Hugo van der Wolf, Nuenen, The Netherlands.

SYSTEMATIC TREATMENT

We have tried to follow Toll's group system for the Coleophoridae (Toll, 1953, 1962) as far as possible. However, many Afrotropical species cannot be placed according to that system. In our forthcoming revision of the Afrotropical Coleophoridae we aim to present a systematic review of the species of this fauna.

Coleophora frivolella sp. n.

Figs 7-10

Material examined: Holotype ♂ (GP Bldz 13408) "Ht Katanga, Tshinkolobwe 23.12. [19]30, J. Romieux", coll. MHNG. Paratype: 1 ex. without abdomen, ibidem, 19.3.[19]31, coll. MHNG.

Diagnosis: The creamy white forewings slightly resemble those of Toll's 8th group. The male genitalia, however, resemble those of *Coleophora byrsostola* (Meyrick, 1931), a species described from India (Baldizzone & van der Wolf, 2003).

Description: Adult (Fig 10). Wingspan 8 mm. Head white. Labial palps internally white, externally almost totally light ochreous; second segment about as long as eye diameter and half length of third segment. Antennae without basal scale tuft; flagellum ringed white and rather light brown, with little contrast between the two colours. Thorax creamy white. Forewings uniformly creamy white, with very light grey fringes. Hindwings and fringes rather light grey (as fringes of forewings). Abdomen dirty white.

Male genitalia (Figs 7-8): Spinose part of gnathos globular. Tegumen medially constricted, with two widened arms with outer right angle. Transtilla slender, long, medially joined. Valvula absent. Cucullus short, stout, with broad base. Saccus broad, on lateral margin ending in a rounded process. Phallosome short, helmet-shaped, ending in a beak-shaped point. Vesica short, transparent. No cornuti.

Structure of abdominal supports (Fig 9): No posterior lateral struts; transverse strut slender, slightly curved. Tergal disks about twice longer than wide, with many short conical spines.

Female genitalia: Not known.

Distribution: This small species is only known from the type locality.

Biology: Not known. Specimens were collected in December and March.

Etymology: Latin frivulus: insignificant, tiny.

Coleophora bantuelia sp. n.

Figs 1, 12-15

Material examined: Holotype ♂ (GP Bldz 13398) "Ht Katanga, Tshinkolobwe 25.12.[19]30, J. Romieux", coll. MHNG. Paratypes: 1 ♂ (GP Bldz 13411) ibidem, 17.12.[19]30; 1 ♂ (GP Bldz 13399) ibidem, 1.3.[19]31; 1 ♂, ibidem, 21.1.[19]31; 1 ♂, 26.1.[19]31. Paratypes in coll. MHNG, BLDZ and WF.

Diagnosis: This light-coloured species belongs to a group that does not occur in the palaearctic region and cannot be placed in any group of Toll's system. However,

several related sp. n. from the afrotropical region await description. For the moment, the only species which resembles *C. bantuella* is *Coleophora crossanthes* Meyrick, 1938, a species described from the Congo, which has a much larger sacculus, a longer phallotheca and smaller and shorter cornuti than *C. bantuella*.

Description: Adult (Fig 1). Wingspan 13-14 mm. Head creamy white, dorsally tinged ochreous. Labial palps internally creamy white, externally dark brown; length second segment about half eye diameter and length third segment. Antennae without basal scale tuft; first segment dorsally white, ventrally brown; flagellum dirty white. Thorax creamy white. Forewings creamy white, on dorsal margin lighter at base, tinged ochreous towards apex; costal fringes ochreous, dorsal fringes rather light grey-brown. Hindwings light grey with very light grey-brown fringes. Abdomen creamy white.

Male genitalia (Figs 12-14): Spinose part of gnathos globular. Tegumen medially constricted, with slightly widened arms. Transtilla slender, medially joined. Valvula small, elongated, strongly chitinised. Cucullus long, narrow, with rounded apex. Sacculus with strongly chitinized straight lateral margin, a rounded ventro-caudal angle and a square dorso-caudal angle. Phallotheca a short, compact single weakly sclerotized structure; cornuti forming a long and wide chain of spines.

Structure of abdominal supports (Fig 15): No posterior lateral struts; transverse strut slender, slightly curved and medially thickened. Tergal disks about 4-5 times longer than wide, with very small conical spines.

Female genitalia: Not known.

Distribution: The species is only known from the type locality.

Biology: Not known. The specimens were collected in December, January and March.

Etymology: The species is named after the Bantus, the indigenous inhabitants of the region.

Coleophora terebrans sp. n.

Figs 2, 16-19

Material examined: Holotype ♂ (GP Bldz 13401) "Ht Katanga, Tshinkolobwe 10.6. [19]31, J. Romieux", coll. MHNG. Paratypes: 1 ♂ (GP Bldz 13412) idem; 1 ♂ (GP Bldz 13418) ibidem, 4.11.[19]30; 2 ♂♂ (GP Bldz 13393, 13396) ibidem, 5.11.[19]30; 1 ♂ (GP Bldz 13400) ibidem, 15.2.[19]31. Paratypes in coll. MHNG, BLDZ and WF.

Diagnosis: The species cannot be placed in any group of Toll's system. It resembles *Coleophora fraternella* Toll & Amsel, 1967, described from Afghanistan, and in the afrotropical fauna *Coleophora halmodes* Meyrick, 1911, differing in a more pointed cucullus and a phallotheca with fewer teeth.

Description: Adult (Fig 2). Wingspan 8-10 mm. Head light brown, dorsally tinged dark brown. Labial palps internally light brown, externally almost totally dark brown, but for the first segment, which is dirty white; length of second segment about half eye diameter and 1.5 times longer than third. Antennae: first segment without basal scale tuft, dorsally light brown, ventrally dark brown; flagellum ringed dirty white and light brown. Forewings with light brown ground colour, with hazel streaks along nerves; costal fringes light brown, dorsal fringes light grey-brown. Hindwings and fringes light grey-brown.

Male genitalia (Figs 16-18): Spinose part of gnathos globular. Tegumen rather short. Transtilla short, slender, medially joined. Valvula small, subtriangular. Cucullus very short, rounded at apex. Sacculus with curved margin, in dorso-caudal angle

ending in subtriangular process. Phallotheca with two flattened rods, distally with many short teeth. No cornuti.

Structure of abdominal supports (Fig 19): No posterior lateral struts. Transverse strut slender, straight. Tergal disks about 2,5 times longer than wide, with small conical spines.

Female genitalia: Not known.

Distribution: The species is only known from the type locality.

Biology: Not known. The specimens were collected in November, February and June.

Etymology: The name (Latin *terebrans*= drill) reflects the shape of the phallotheca.

***Coleophora discopunctata* sp. n.**

Figs 3, 20-24

Material examined: Holotype ♂ (GP Bldz 13397) "Ht Katanga, Tshinkolobwe 11.3. [19]31, J. Romieux", coll. MHNG. Paratypes: 2 ♂♂ (GP Bldz 13414), ibidem, 9.3.[19]31; 1 ♂, ibidem, 29.3.[19]31. Paratypes in coll. MHNG and BLDZ.

Diagnosis: The species, with creamy white ochreous-tinged forewings with a reddish hue and a brown speck in the cell, does not resemble any species from the palearctic or afrotropical region.

Description: Adult (Fig 3). Wingspan 14-15 mm. Head ivory white, dorsally tinged ochreous. Labial palps internally creamy white, externally almost totally dark brown, but for the first segment and the ventral margin of the second, which are creamy white; length second segment about twice eye diameter and 1,5 times longer than third. Antennae without basal scale tuft, uniformly light ochreous; flagellum about 1/8th longer than wing. Thorax light ochreous. Forewings creamy white, tinged ochreous, darker towards apex and costal half, with reddish hue; a small brown oval speck in cell; fringes creamy white, costal ones darker. Hindwings brown, with light brown fringes. Abdomen light ochreous.

Male genitalia (Figs 20-23): Spinose part of gnathos small, globular. Tegumen medially constricted, with widened arms. Transtilla finger-like. Valvula small, narrow, with beak-like apex. Cucullus long, curved downwards, with rounded apex. Saccus with strongly chitinized ventral margin, ending in an oblique point in ventral angle. Phallotheca a single rod, folded into a long canal, widening slightly towards apex, which is covered in small teeth. Cornuti 2 to 4 bundles of spines.

Structure of abdominal supports (Fig 24): No posterior lateral struts; proximal margin of transverse strut slender, slightly sinuous; distal margin gradually widening, medially excavated. Tergal disks about 4 times longer than wide, with small conical spines.

Female genitalia: Not known.

Distribution: The species is only known from the type locality.

Biology: Not known. The specimens were collected in March.

Etymology: The name refers to the brown speck in the cell.

***Coleophora katangica* sp. n.**

Figs 4, 25-30

Material examined: Holotype ♂ (GP Bldz 13403) "Ht Katanga, Tshituru éclosion 12.5. [19]30, J. Romieux", coll. MHNG. Paratype: 1 ♂ (GP Bldz 13413) ibidem, 2.5.[19]30, coll. MHNG.

Diagnosis: The adult resembles *Coleophora flavipennella* Dup., but the genitalia show affinity to the 30th group of Toll's system and resemble *Coleophora pandionella* Baldizzone, 1988, a species described from eastern Siberia.

Description: Adult (Fig 4). Wingspan 10 mm. Head laterally dirty white, dorsally ochreous. Labial palps internally creamy white, externally almost totally hazel, lower margin of second segment dirty white; second segment as long as eye diameter and twice length of third. Antennae: first segment dorsally creamy white, ventrally dark ochreous, with tuft of short scales. Thorax light ochreous. Forewings ochreous, darker towards apex, and lighter, creamy white, at basal half of costa; fringes light ochreous. Hindwings light brown with light grey-brown fringes. Abdomen light ochreous.

Male genitalia (Figs 25-29): Spinose part of gnathos small, oval. Tegumen medially constricted, with widened arms. Transtilla long, crooked, with beak-like apex. Valvula more or less rectangular with sclerotized outer margin. Cucullus straight with rounded apex. Saccus narrow, long, characterized in ventral angle by a long subtriangular point, in dorsal angle by a small tooth. Phallosome with two rods: one long and stout, more sclerotized at base; the second, separating from the first half-way, more slender and chitinized, ending in a tooth at apex. Cornuti one or two long spines.

Structure of abdominal supports (Fig 30): No posterior lateral struts. Proximal margin of transverse strut medially thickened, slightly sinuous; distal margin slender. Tergal disks 1.5 times longer than wide, covered with small specks and triangular spines.

Female genitalia: Not known.

Distribution: The species is only known from the type locality.

Biology: The paratype was collected in March; the holotype was bred in May; the larval case and information on the foodplant are absent.

Etymology: The name of the species refers to the province of Katanga in the Democratic Republic of Congo.

Coleophora romieuxi sp. n.

Figs 5, 31-35

Material examined: Holotype ♂ (GP Bldz 13410) "Ht Katanga, Tshinkolobwe 13.3.[19]31, J. Romieux", coll. MHNG. Paratypes: 1 ♂ (GP Bldz 13415) idem; 1 ♂ ibidem, 4.3.[19]31; 1 ♂ (GP Bldz 13395) ibidem, 11.3.[31]. Paratypes in coll. MHNG and BLDZ.

Diagnosis: The species, with dirty white forewings streaked with hazel lines, does not resemble any known afrotropical species. The male genitalia (a phallosome with two long rods) point to a position in the 30th group of Toll's system.

Description: Adult (Fig 5). Wingspan 10-11 mm. Head laterally dirty white, dorsally hazel. Labial palps internally dirty white variegated brown, externally dirty white, brown on dorsal half of second segment and ventral part of third; second segment about as long as eye diameter and twice length of third. Antennae without basal scale tuft; flagellum ringed dirty white and brown. Thorax dirty white variegated with hazel. Forewings ground colour dirty white, streaked with hazel lines; costal fringes dirty white, dorsal fringes light grey-brown. Hindwings brown with light grey-brown fringes. Abdomen brown.

Male genitalia (Figs 31-33): Spinose part of gnathos big, globular. Tegumen medially constricted, with widened arms. Transtilla broad, ending in anvil-shaped

apices. Valvula weakly delineated. Cucullus short, with rounded apex. Sacculus broad, ventral margin slightly sinuous, with right ventro-caudal angle, slightly sinuous; distal margin with some small teeth; an acute point in dorsal angle at cucullus base. Phallosome with two long rods of unequal lengths: the shorter one slender, the longer one stouter, at 3/4th with chitinized bar topped by a triangular tooth; apex of rod acute, surpassing distal margin of sacculus. Cornutus a strong spine.

Structure of abdominal supports (Fig 35): No posterior lateral struts. Transverse strut with convex margins. Tergal disks 6 times longer than wide, with small conical spines.

Female genitalia: Not known.

Distribution: The species is only known from the type locality.

Biology: Not known. Adults were collected in March.

Etymology: The species is named after Dr Jean Romieux, who collected the eight species described in this paper and whose collection is kept in the Natural History Museum of Geneva.

Coleophora tetrodonta sp. n.

Figs 6, 36-43

Material examined: Holotype ♂ (GP Bldz 13417) "Ht Katanga, Tshinkolobwe 13.2. [19]31, J. Romieux", coll. MHNG. Paratypes: 1 ♂ (GP Bldz 13419) ibidem, 13.12.[19]30; 1 ♀ (GP Bldz 13409) ibidem, 26.12.[19]30, in coll. MHNG.

Diagnosis: The species belongs to the 30th group of Toll's system and is not related to any afrotropical species known. The apices of the phallosome more or less resemble those of the palearctic species *Coleophora taygeti* Baldizzone, 1983 and *C. alticolella* Zeller, 1849.

Description: Adult (Fig 6). Wingspan 9-10 mm. Head dirty white, dorsally variegated brown. Labial palps internally dirty white, third segment dorsally brown, whereas externally the second segment is dorsally brown and ventrally white; second segment about as long as eye diameter and twice length of third. Antennae without basal scale tuft, the basal segments ventrally brown; flagellum ringed dirty white and light brown. Thorax dirty white variegated with hazel. Forewings ground colour dirty white, streaked with some hazel lines; costal fringes dirty white, dorsal fringes light grey-brown. Hindwings brown with fringes light grey-brown. Abdomen light brown.

Male genitalia (Figs 36-39): Spinose part of gnathos globular. Tegumen medially constricted, with widened arms. Transtilla slender, apices divided. Valvula very small, rounded. Cucullus club-like, narrower at base, with rounded apex. Sacculus broad, with more or less straight ventral margin, ending in a ventro-caudal subtriangular process; distal margin concave, in dorso-caudal angle ending in a finger-like process reaching cucullus; a chitinous ridge topped by a subtriangular stout tooth at cucullus base. Phallosome with two strongly chitinized rods of equal lengths slightly surpassing sacculus, each ending in a strongly chitinized cleft; cornuti two or three spines basally reunited.

Structure of abdominal supports (Fig 40, 43): No posterior lateral struts; transverse strut with convex margins. Tergal disks about 4 times longer than wide, covered with small conical spikes.

Female genitalia: (Figs 41-42): Papillae anales broken off. Apophyses posteriores about 4 times longer than anteriores. Sterigma subtrapezoid, its distal margin

medially divided along the ogival ostium bursae; colliculum big, wide, sack-like, its distal margin less chitinized, its proximal part at entrance ductus bursae inflated; two robust chitinous bands covered with very small spines issue from bottom of colliculum into first section of ductus bursae; second segment sinuous, slightly inflated and chitinized; third segment slender, transparent, gradually widening into bursa copulatrix, which is rounded, with a leaf-like signum carrying a slender spine.

Distribution: The species is only known from the type locality.

Biology: Not known. Specimens were collected in December and February.

Etymology: The name tetrodonta (Greek τετρα οδοντα = four teeth) refers to the two teeth on each of the two phallotheca rods, it is a noun in apposition (plural form).

Coleophora fragilella sp. n.

Figs 11, 44-47

Material examined: Holotype ♂ (GP Bldz 13416) "Ht Katanga, Tshinkolobwe 3.4. [19]31, J. Romieux", coll. MHNG.

Diagnosis: The species belongs to the 30th group of Toll's system and is not related to any afrotropical species known. The male genitalia resemble more or less those of the palearctic species *Coleophora scabrida* Toll, 1959.

Description: Adult (Fig 11). Wingspan 8 mm. Head dirty white, dorsally light brown. Labial palps internally white, externally brown variegated darker on ventral margin; second segment about as long as eye diameter and half length of third. Antennae without basal scale tuft, basal segment ventrally dark brown; flagellum ringed dirty white and rather light brown. Thorax light grey-brown. Forewings glossy light beige; fringes concolorous. Hindwings and fringes coloured as forewings. Abdomen light grey. (The specimen is in poor condition).

Male genitalia: (Figs 44-46): Spinose part of gnathos globular. Tegumen medially constricted, with widened arms. Transtilla slender, apices divided. Valvula well-defined, rounded. Cucullus short, wide, not surpassing sacculus. Sacculus broad, with straight ventral margin ending in subtriangular ventro-caudal angle; distal margin concave, at dorso-caudal angle with long horn-like process reaching dorsal margin of cucullus. Phallotheca with two long rods, weakly sclerotized, the longer with rounded apex, with small triangular lateral tooth; the shorter more slender with chitinized apical claw. Six slender cornuti form a long row.

Structure of abdominal supports: (Fig 47): No posterior lateral struts. Transverse strut with slender convex proximal margin; distal margin thick, slightly concave.

Female genitalia: Not known.

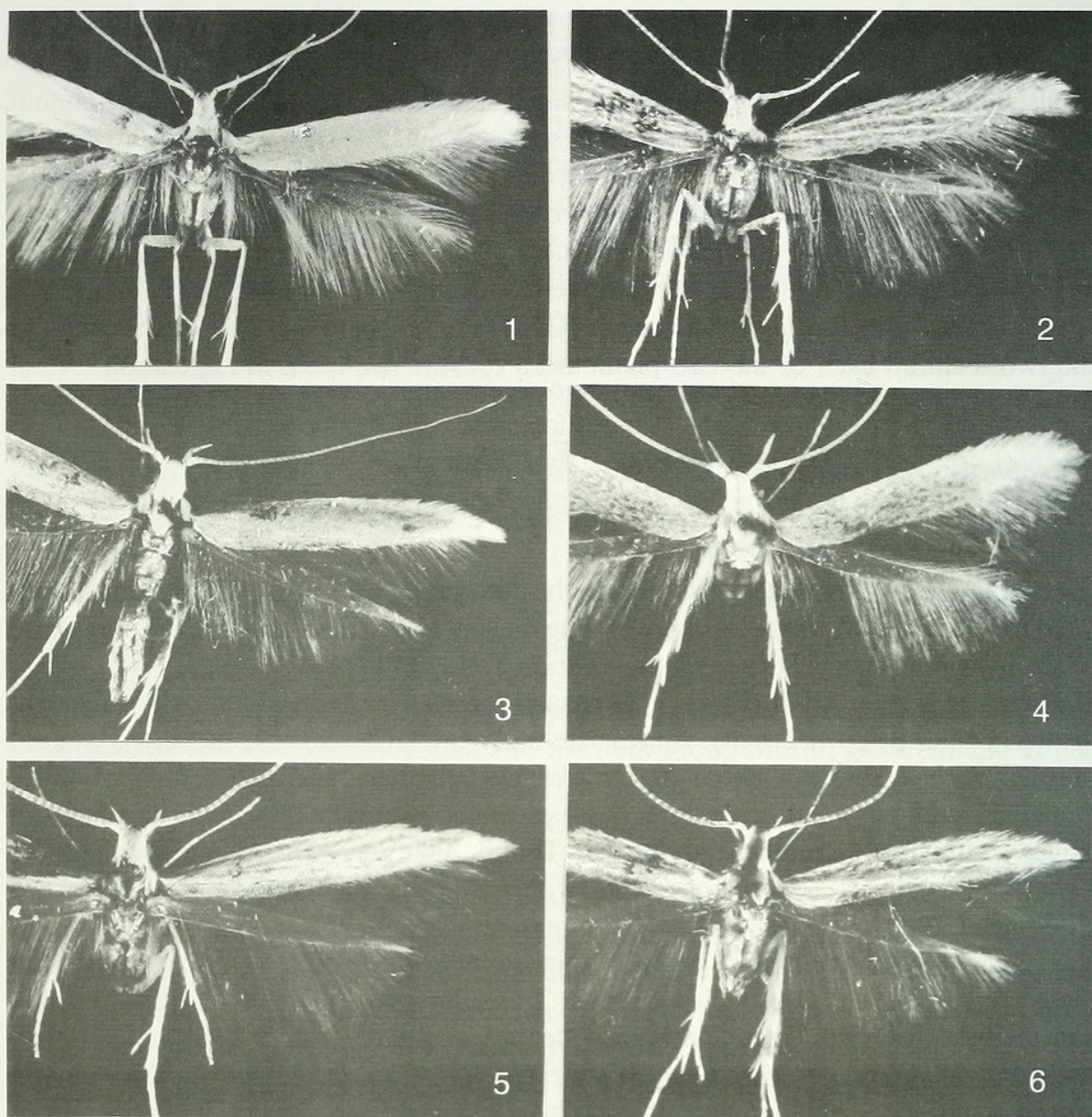
Distribution: The species is only known from the type locality.

Biology: Not known. The specimen was collected in April.

Etymology: The name fragilella (Latin *fragilis* = fragile) refers to the puny aspect of this small species.

ACKNOWLEDGEMENT

We are grateful to Bernard Landry of the Muséum d'histoire naturelle de Genève for enabling us to study the Katanga Coleophoridae in the collection in his care.

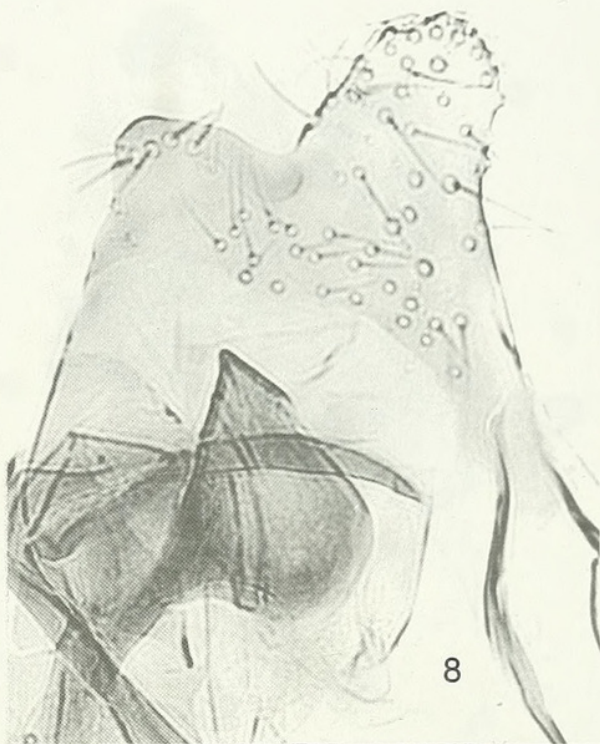


FIGS 1-6

Coleophora spp., imagos. 1. *C. bantuella* sp. n. 2. *C. terebrans* sp. n. 3. *C. discopunctata* sp. n.
4. *C. katangica* sp. n. 5. *C. romieuxi* sp. n. 6. *C. tetrodonta* sp. n.



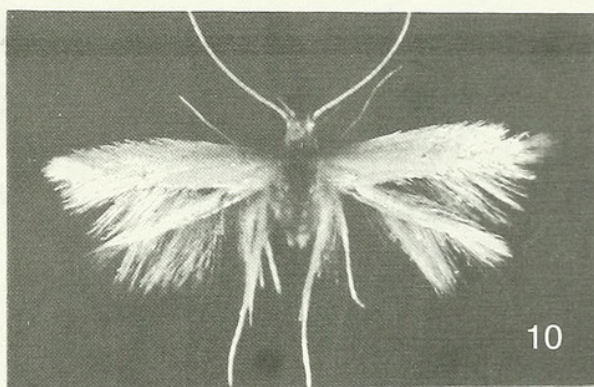
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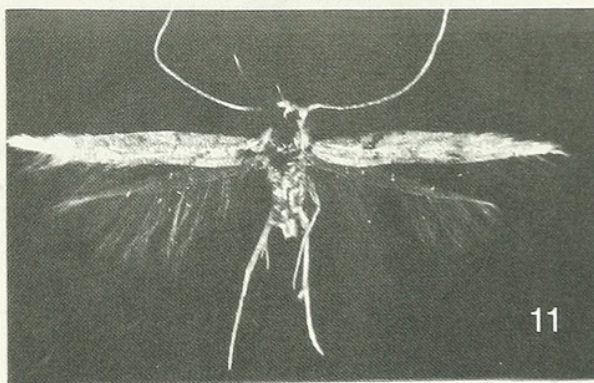
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FIGS 7-11

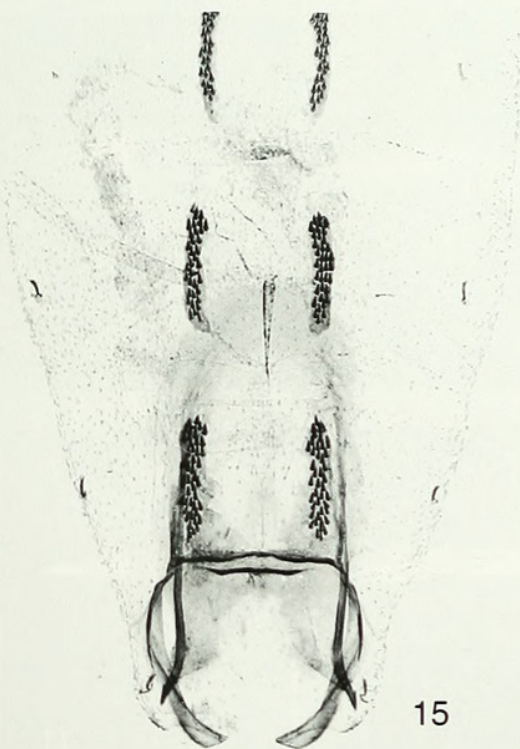
Coleophora spp. 7. *C. frivolella* sp. n., male genitalia (GP Bldz 13408). 8. Idem, enlarged detail of male genitalia. 9. Idem, abdomen. 10. Idem, imago. 11. *C. fragilella* sp. n., imago.



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FIGS 12-15

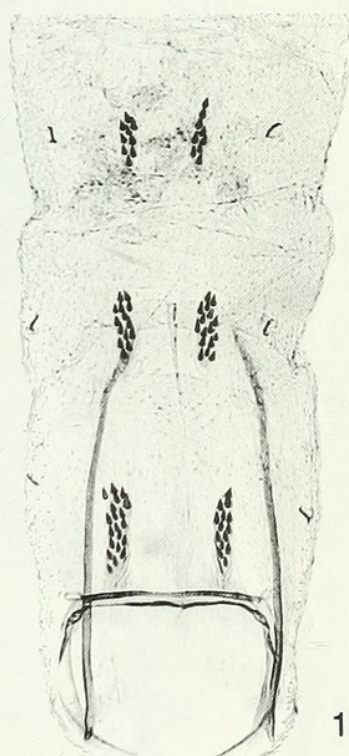
C. bantuella sp. n. 12. Male genitalia (GP Bldz 13411). 13. Enlarged detail of male genitalia. 14. Cornuti, much enlarged. 15. Abdomen.



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19



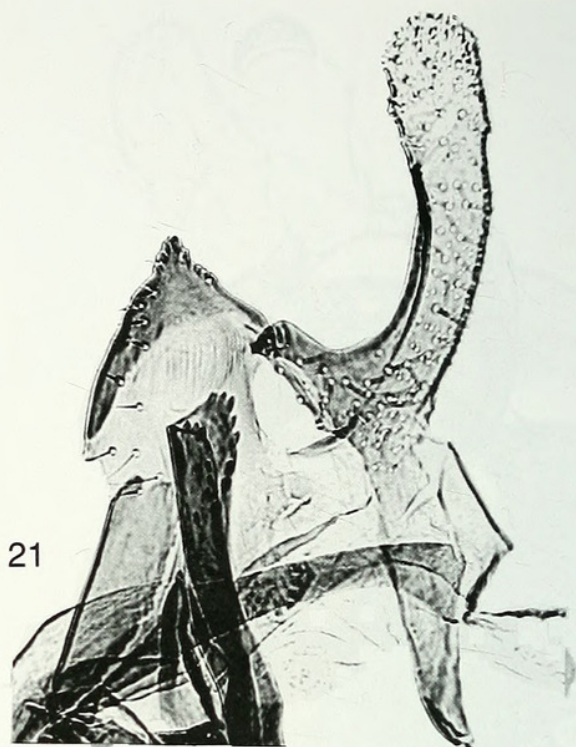
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FIGS 16-19

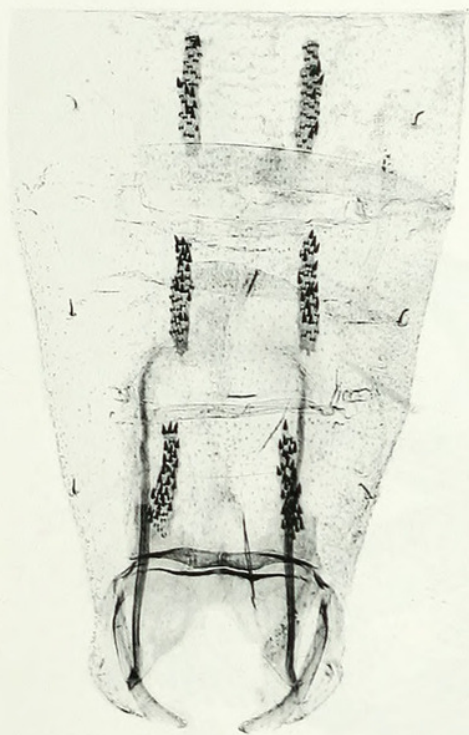
C. terebrans sp. n. 16. Male genitalia (GP Bldz 13400). 17. Male genitalia (GP Bldz 13412). 18. Enlarged detail of male genitalia. 19. Abdomen.



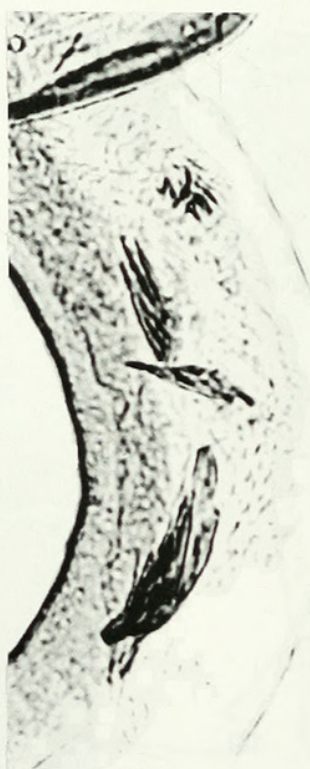
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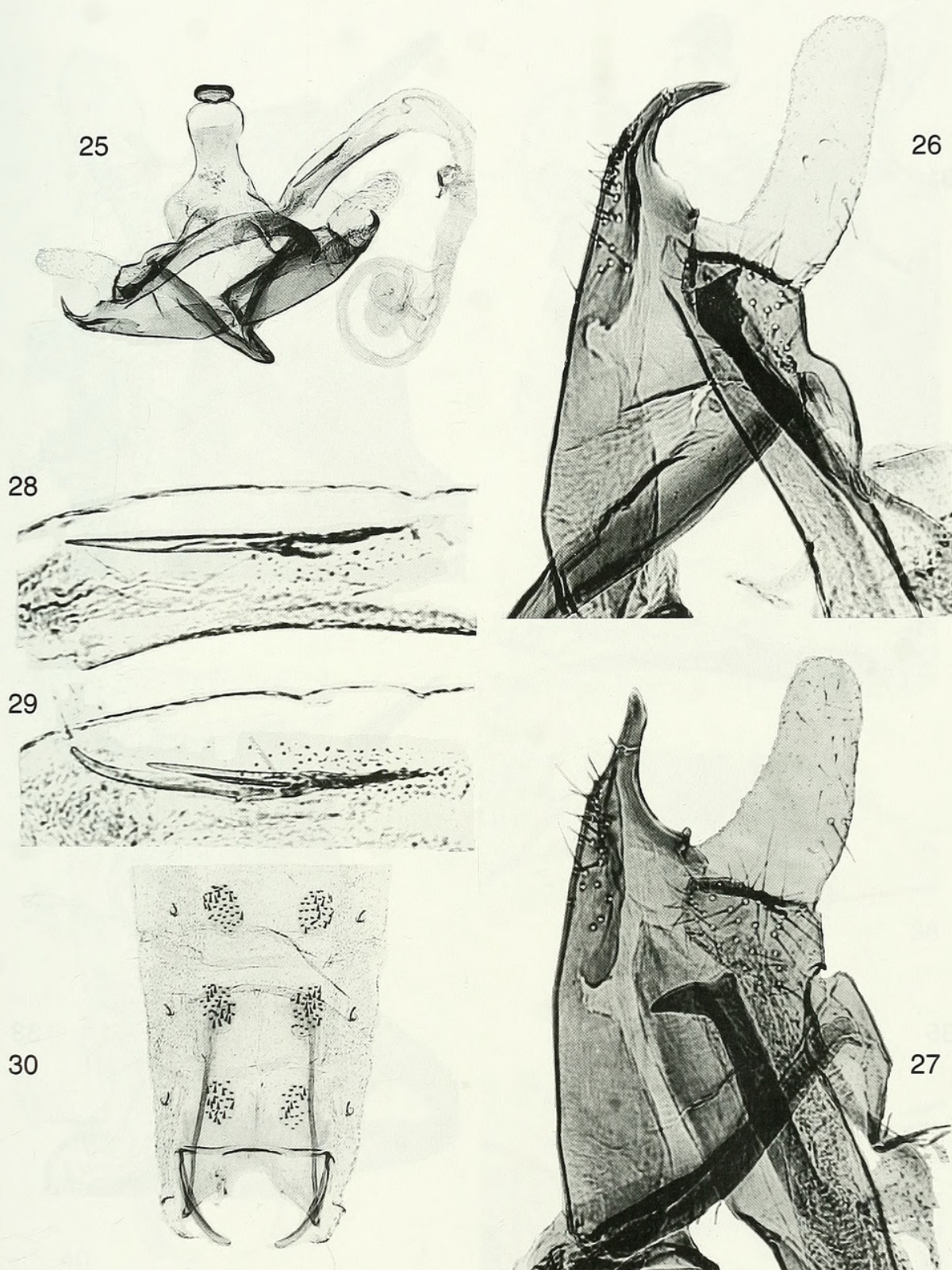
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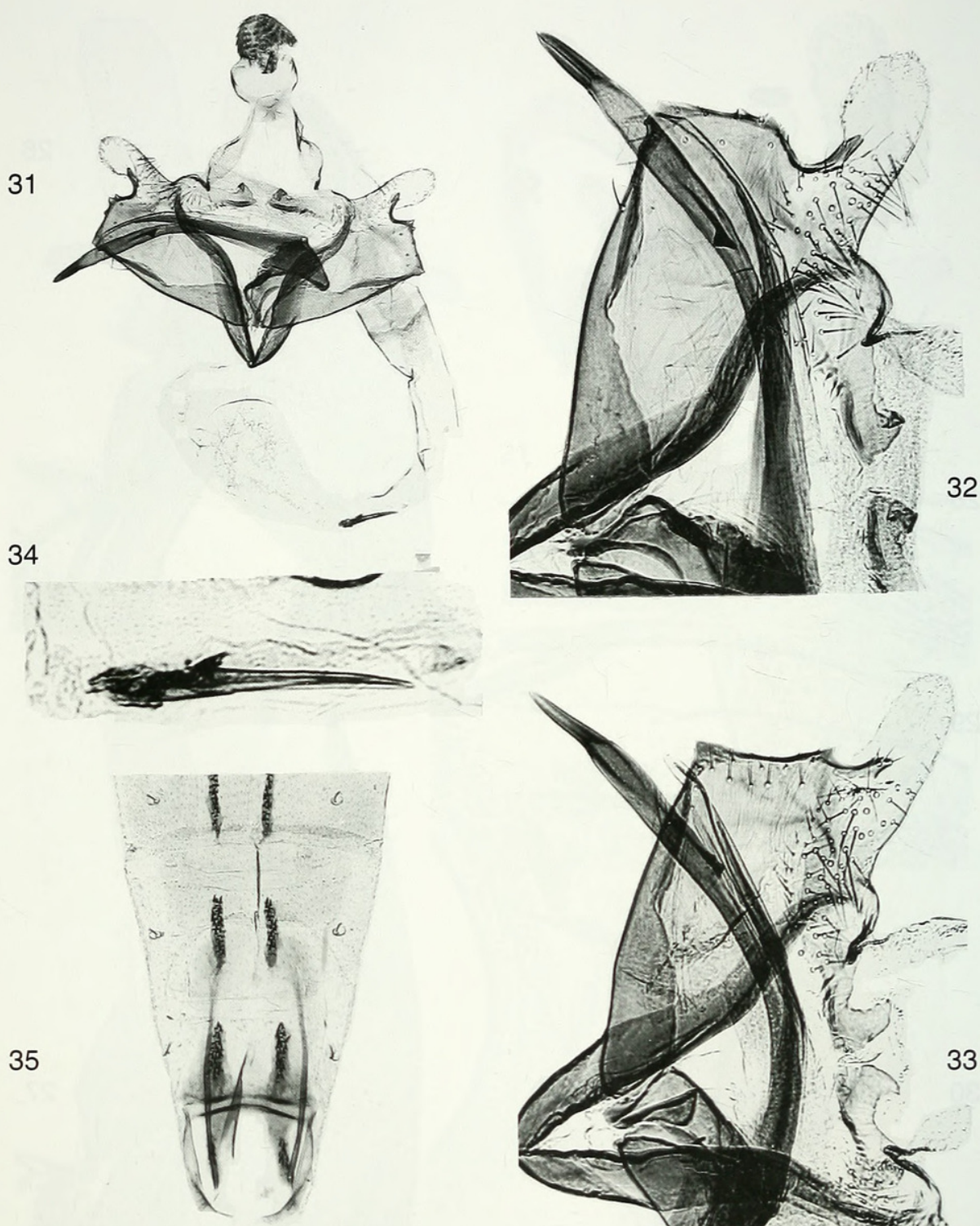
FIGS 20-24

C. discopunctata sp. n. 20. Male genitalia (GP Bldz 13414). 21. Enlarged detail of male genitalia. 22. Cornuti, much enlarged. 23. Same detail (GP Bldz 13397). 24. Abdomen.



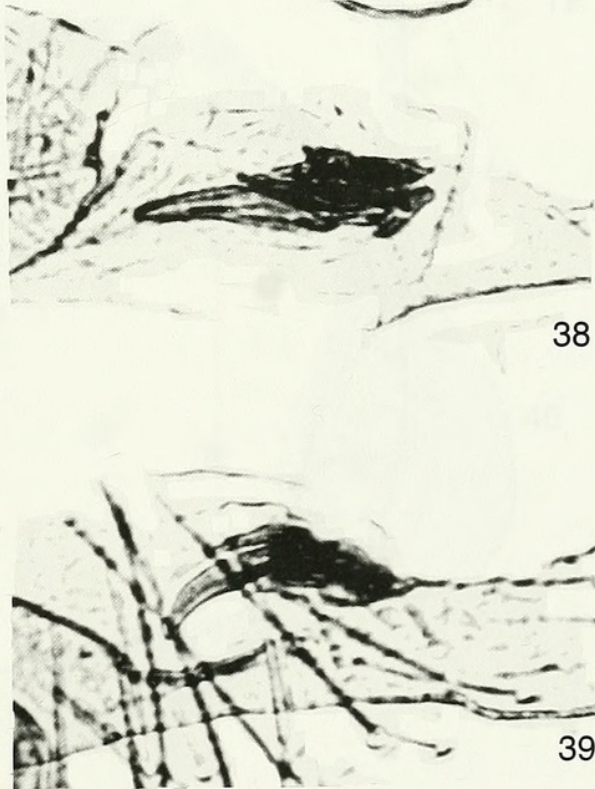
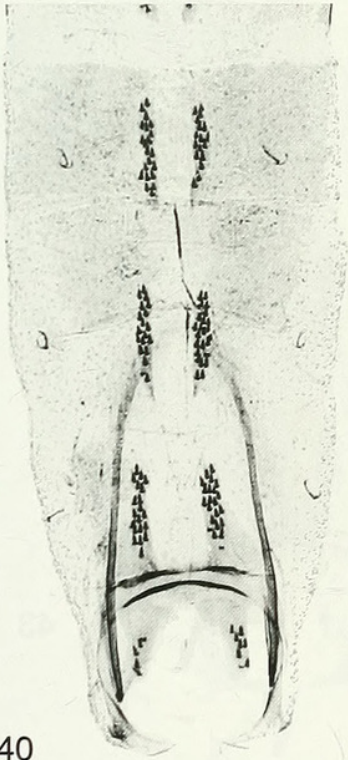
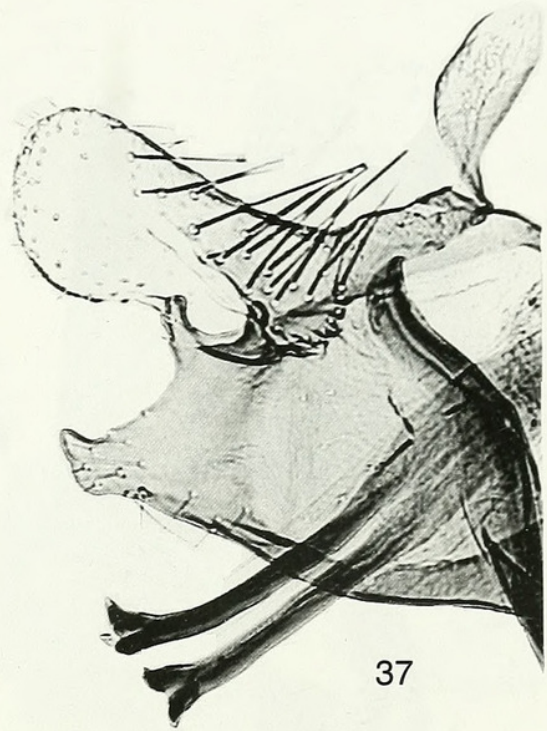
FIGS 25-30

C. katangica sp. n. 25. Male genitalia (GP Bldz 13403). 26. Enlarged detail of male genitalia. 27. Same detail (GP Bldz 13413). 28. Cornuti, much enlarged (GP Bldz 13403). 29. Same detail (GP Bldz 13413). 30. Abdomen.



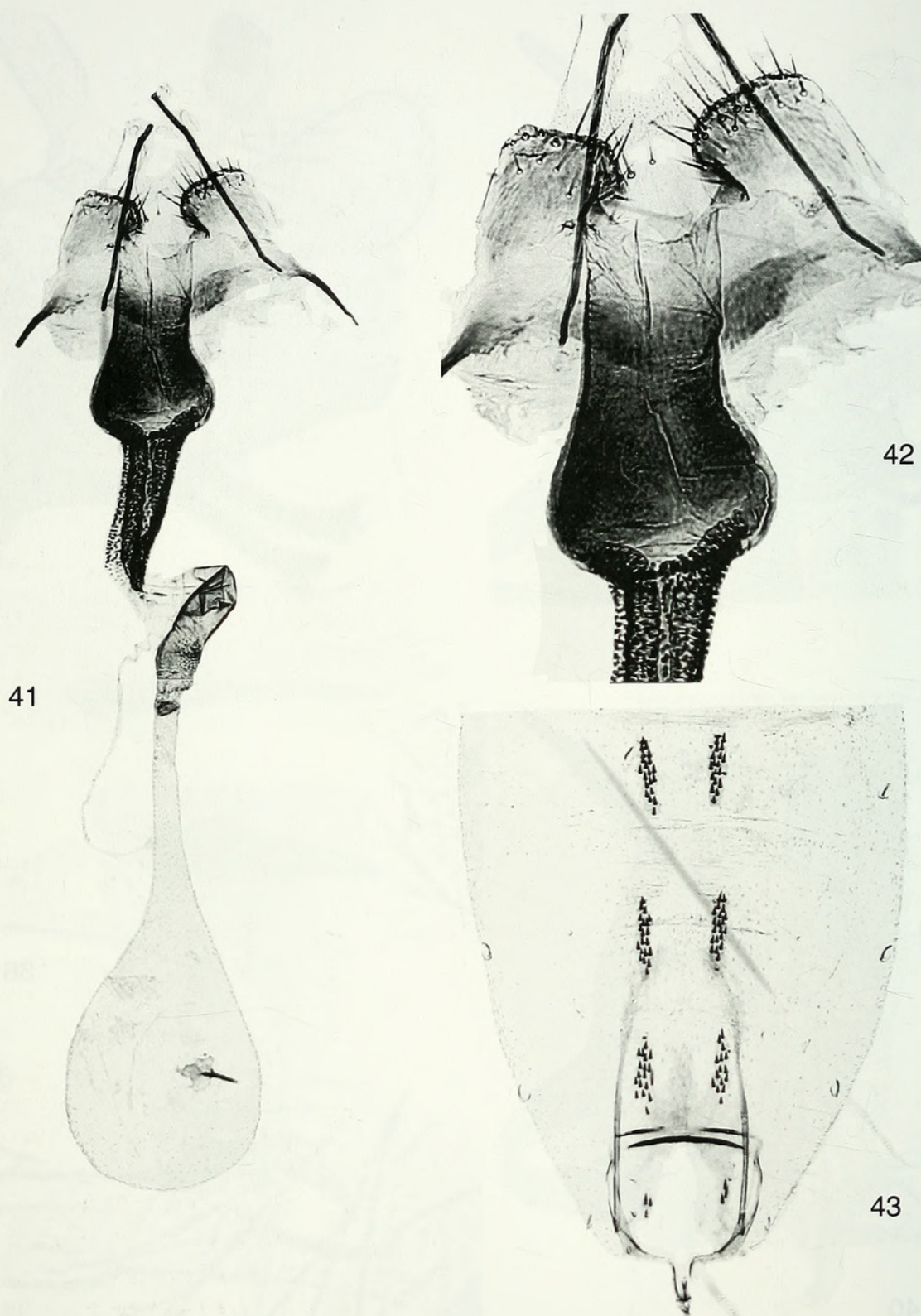
FIGS 31-35

C. romieuxi sp. n. 31. Male genitalia (GP Bldz 13410). 32. Enlarged detail of male genitalia. 33. Same detail (GP Bldz 13395). 34. Cornutus, much enlarged (GP Bldz 13410). 35. Abdomen.



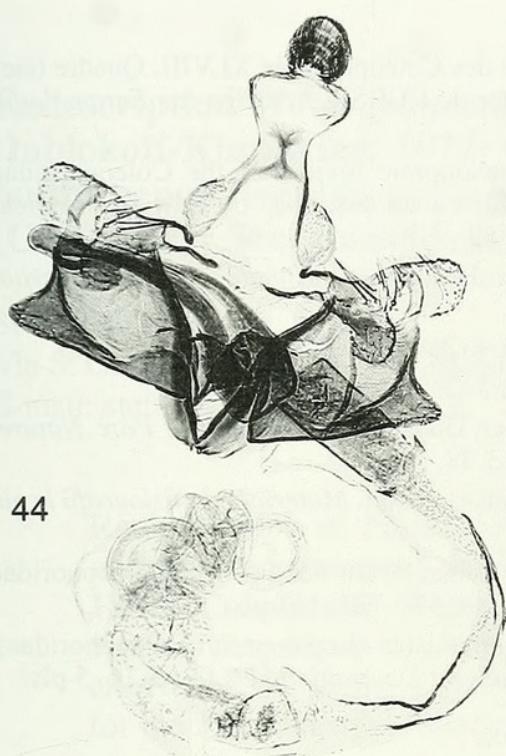
FIGS 36-40

C. tetradonta sp. n. 36. Male genitalia (GP Bldz 13419). 37. Enlarged detail of male genitalia (GP Bldz 13417). 38. Cornutus, much enlarged (GP Bldz 13419). 39. Same detail (GP Bldz 13417). 40. Abdomen.

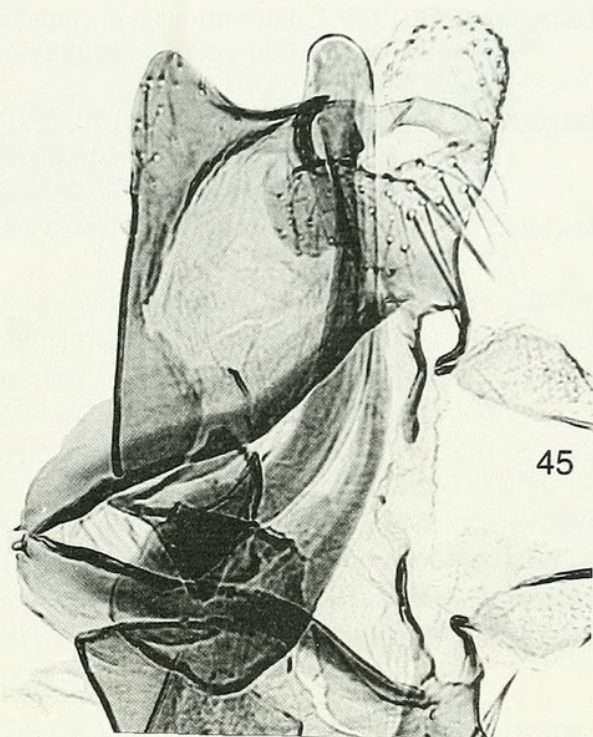


FIGS 41-43

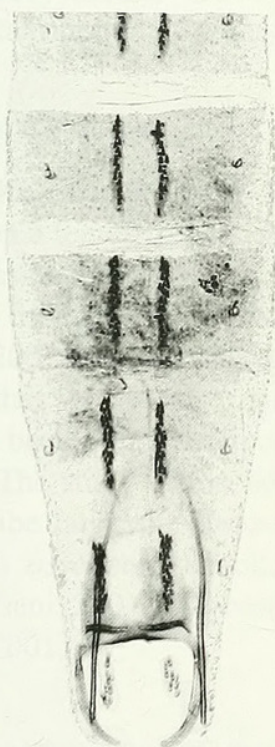
C. tetradonta sp. n. 41. Female genitalia (GP Bldz 13409). 42. Enlarged detail of female genitalia. 43. Abdomen.



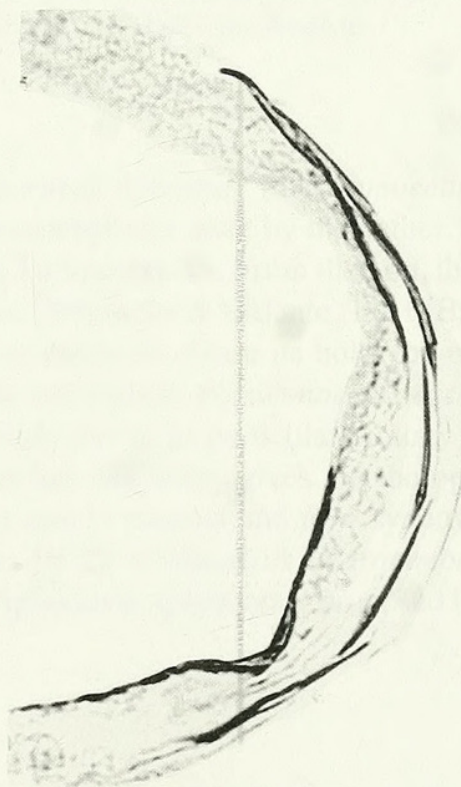
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FIGS 44-47

C. fragilella sp. n. 44. Male genitalia (GP Bldz 13416). 45. Enlarged detail of male genitalia. 46. Cornuti, much enlarged. 47. Abdomen.

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