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Psychotrosia Becker, a new genus of Neotropical Trosiinae, with a description of new species (Lepidoptera: Megalopygidae)

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Abstract

Psychotrosia Becker, gen. nov. [Type-species: *Trosia zernyi* Hopp, 1930], and three new species are described: *Microrape clenchi* Becker, sp. nov.; *M. melanica* Becker, sp. nov., and *P. venata* Becker, sp. nov., are proposed for a group Neotropical Trosiinae.
Keywords: Lepidoptera, Megalopygidae, Trosiinae, *Microrape, Psychotrosia***,** taxonomy, new combination, distribution, new species, Brazil, Peru.

Psychotrosia **Becker, un nuevo género de Trosiinae Neotropical, con descripción de nuevas especies (Lepidoptera: Megalopygidae)**

Resumen

Psychotrosia Becker, gen. nov. [Especie-tipo: *Trosia zernyi* Hopp, 1930] y tres especies nuevas: *Microrape clenchi* Becker, sp. nov.; *M. melanica* Becker, sp. nov., y *P. venata* Becker, sp. nov., son propuestas para un grupo de Trosiinae meotropicales.
Palabras clave: Lepidoptera, Megalopygidae, Trosiinae, *Microrape, Psychotrosia***,** taxonomía, nueva combinación, distribución, nueva especie, Brasil, Perú.

Psychotrosia **Becker, um novo gênero de Trosiinae Neotropical, com descrição de novas espécies (Lepidoptera: Megalopygidae)**

Resumo

Psychotrosia Becker, gen. nov. [Espécie-tipo: *Trosia zernyi* Hopp, 1930], e três espécies novas: *Microrape clenchi* Becker, sp. nov.; *M. melanica* Becker, sp. nov., e *P. venata* Becker, sp. nov., são propostas para um grupo de pequenos, cinza, ou cinza escuros, Trosiinae neotropicais.
Palavras-chave: Lepidoptera, Megalopygidae, Trosiinae, *Microrape, Psychotrosia,* taxonomia, nova combinação, distribuição, espécies novas, Brasil, Peru.

Introduction

Trosia zernyi Hopp, 1930, is a small uniform gray species. As Clench (1956, p. 10) pointed

out: "*This genus differs from all others in the group by the short stalking of M2 and M3 on the fore wing, and M3 and Cu1 in the hind wing. Not having any material before me, it would be unwise to propose a new name for this curious species, small in size and apparently uniformly gray colored"*. Becker (2022) excluded it from *Trosia* Hübner, [1820] and allies, stating that it would be a subject of another article, what is done herein. Examination of similar looking specimens, also gray to blackish, which resemble small Psychidae species, revealed that at least three other species, one congeneric, and two belonging to *Microrape* Dyar, 1910.

Material and methods

This article is based on 29 specimens (14 g. s) in the author's collection (VOB), the type material in NHMW, and on pertinent literature. Genitalia were prepared following the methods described by Robinson (1976). Terms for morphological characters follow Hodges (1971). The type material representing the new taxa described here is currently deposited in the author's collection (VOB) and will be transferred, together with the collection, to a Brazilian institution, in the future.

Abbreviations

BA = Bahia State, Brazil
FW = Forewing
HW = Hind wing
MA = Maranhão State, Brazil
NHMUK = Natural History Museum, London, United Kingdom
NHMW = Naturhistorisches Museum, Wien, Austria
RO = Rondônia State, Brazil
VOB = Vitor O. Becker collection, Serra Bonita Reserve, Camacan, Bahia, Brazil
ZMC = Zoologisk Museum, Copenhagen, Dennmark

Results and discussion

Examination of the material resembling *Trosia zernyi* Hopp, 1930 in the author's collection (VOB) revealed that four species are represented, belonging to two different genera: two belonging to an undescribed genus, and two to *Microrape* Dyar, 1910. All previously known species of *Microrape* are white, or whitish; the two described here are the first melanic species recorded for the genus.

Nomenclatural summary

Microrape Dyar, 1910
***clenchi* Becker**, **sp. nov.**
***melanica* Becker**, **sp. nov.**
***Psychotrosia* Becker**, **gen. nov.**
***venata* Becker**, **sp. nov.**
zernyi (Hopp, 1930) (*Trosia*), **comb. nov.**

Key to genera and species

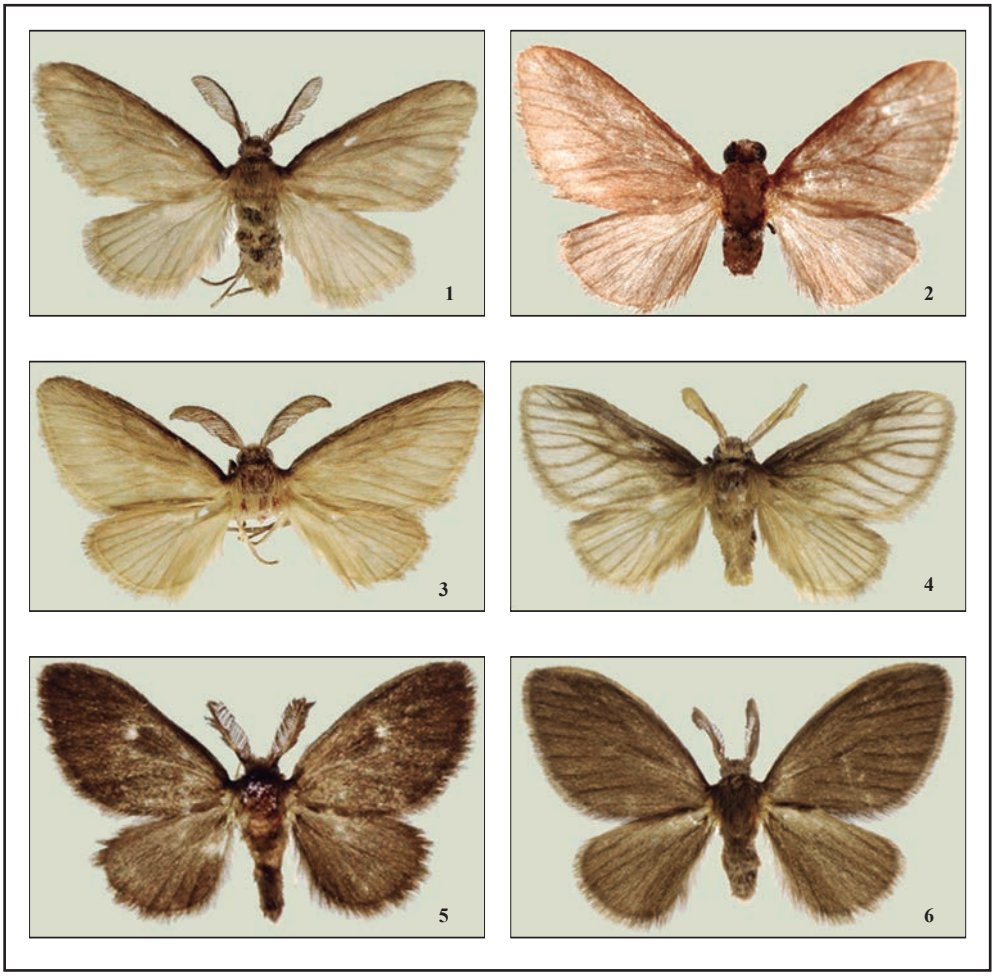
1. Gray, FW with M2+M3 stalked ..... *Psychotrosia* 2
Blackish, FW with M2+M3 connected ..... *Microrape* 3

2. FW plain gray, male genitalia with sacculus longer than uncus tip ..... *zernyi*
FW with veins contrasting gray, male genitalia with sacculus not reaching uncus tip ..... *venata*

3. Male genitalia with sacculus large, flat, almost as long as genitalia..... *clenchi*
Male genitalia with sacculus small, half as long as genitalia..... *melanica*

***Psychotrosia* Becker, gen. nov.**
TS: *Trosia zernyi* Hopp, 1930, here designated.
https://zoobank.org/5955D00A-E92A-4196-B4BB-35E75F65915E

Figures 1-6. *Psychotrosia* and *Microrape,* adults, dorsal view. **1-2.** *P. zernyi* (Hopp). **1.** Brazil, Rondônia. **2.** holotype, Brazil, Pará. **3-4.** *P. venata* Becker, Ecuador, Napo. **3.** Paratype. **4.** holotype. **5.** *M. melanica* Becker, holotype, Brazil, Bahia. **6.** *M. clenchi* Becker, holotype, Brazil, Rondônia.



Diagnosis: Small, plain gray.

Description: Small, plain gray. FW length 6-8 mm (14-16 mm wingspan), M2-M3 stalked halfway between cell and termen, HW with M3-Cu1 stalked halfway between cell and termen.

Male genitalia: Male genitalia with valva split along middle, sacculus well developed, much larger than the costal area.

Distribution: Amazonian (Brazil).

Etymology**.** From the Greek Ψυχή (*Psyche*) =breath, life, soul, in reference to the genus *Psyche* Schrank, for its similarity to several species belonging to the Psychidae, + *Trosia,* a genus; feminine.

Remarks: Hopp (1930, p. 274) stated that this species differs from all the others belonging to *Trosia* not only by its small size, but also by its venation: FW with veins 4-5 [M2+M3], and HW with 3-4 [M3+Cu1] stalked, which led Clench (1956: 10) to suggest that a new genus should be erected to accommodate it. This is confirmed by the characters of the male genitalia, which among others, has the valva split along middle, with smaller costal part ["*harpe*" of Hopp, 1927], and a long, curved, well developed sacculus.

Psychotrosia zernyi (Hopp, 1930) **comb. nov. (**Figures 1, 2, 6, 7)
Trosia zernyi Hopp, 1930. *Ann. Naturhist. Mus. Wien, 44*, 274. Holotype ♂
TL: BRAZIL [PA], Taperinha (Zerny) (NHMV) [image examined].

Material examined (6 ♂, 2 ♀, 2 g. s.). Brazil: RO, Ariquemes, 180 m, 3 ♂, 13-16-IV-1989 (Becker 61818); 2 ♂, 2 ♀, Cacaulândia, 140 m, XI-1991, XI-1994, g. s. 5939, 5940) (Becker 80094, 96258). Ecuador: Napo, Misahualli Lodge, 450 m, 1 ♂, XII-1992 (Becker 102150) (VOB).

Diagnosis: Plain gray, paler ventrally. Wings with no contrasting veins.

Description: Plain gray, paler ventrally. Male FW length 6-7 mm (14-16 mm wingspan) (Figures 1-2), female 10 mm (22 mm wingspan).

Male genitalia (Figures 6-7): Uncus a thin, short, slender digit. Tegumen broad, expanded distal. Valva with costal tiny part as a small bent process, next to distal end of tegumen; sacculus long, slender, curved, reaching beyond uncus tip. Penis (Figure 7) a curved ventrad rod, vesica with no spines.

Female genitalia: Ostium narrow; ductus bursae shorter than diameter of corpus bursae; corpus bursae a large, sclerotized sphere.

Distribution: Amazonian (Brazil, Ecuador).

Remarks: Easily distinguished from *P. venata* by the plain gray color, with contrasting veins in *P. venata.*

***Psychotrosia venata* Becker, sp. nov.** (Figures 3-4, 9-10)
https://zoobank.org/95B9BE81-3C68-475B-9C27-F4306337B4AB

Material examined (5 ♂, 2 g. s.). Holotype ♂, Ecuador: Napo, Misahualli, 450 m, XII-1992 (Becker 102149); Paratypes: 3 ♂, same data as holotype, g. s. 5942. Excluded from the type-series: Brazil: RO, 1 ♂, Cacaulândia, 140 m, XI-1991, g. s. 5941 (Becker 80095) (VOB).

Diagnosis: Gray. FW paler, with contrasting gray veins towards termen.

Description: Gray (Figures 3-4), paler gray ventrally. FW length 7-8 mm (15-18 mm wingspan), paler, with contrasting gray veins towards termen.

Male genitalia (Figures 9, 10): Uncus long, slender, curved ventrad. Valva split along middle: costal part nearly as long as uncus, narrow, angled about middle, covered with sparse, long setae; sacculus robust, twice as long as the costal part, tapering distal into a pair of thin, sharp, twisted processes at apex. Juxta a slender V, as long as costal part of valva, with lateral arms curved. Penis

(Figure 10) a curved rod, as long as juxta.

Distribution: Amazonian (Brazil, Ecuador).

Etymology: From the Latin *vena* =vein, in reference to the marked veins; feminine.

Remarks: The male from Cacaulândia was excluded from the type based on the plain gray ground colour of the wings, which look like a larger *P. zernyi.* Its genitalia are identical to those of the type specimen.

***Microrape clenchi* Becker, sp. nov.** (Figures 6, 13-14)
https://zoobank.org/F045A588-46B0-4C67-A580-96B3725B34A2

Material (11 ♂, 2 g. s.). Holotype ♂, Brazil: RO, Ariquemes, 180 m, 16-IV-1989 (Becker 61817). Paratypes: 9 ♂, Cacaulândia, 140 m, XI-1991, 13-31-XII-1997, 2 g. s. 5943, 5945, 5946 (Becker 80096, 112637) (VOB); 1 ♂, Porto Velho, 180 m, 24-IV-1989, g. s. 5944 (Becker 75945).

Diagnosis: Plain blackish.

Description: Plain blackish (Figure 6). Legs, and abdomen ventrally, whitish. FW length 5-7 mm (11-15 mm wingspan). Legs, and abdomen ventrally, whitish.

Male genitalia (Figures 13-14): Uncus short, split into a pair of socii tapering distal to sharply pointed apex. Valva reduced to a large, twice as long as broad flat sacculus, with costal and apex edges bearing two small, shallow teeth. Penis (Figure 14) longer than sacculus, curved, bulbose at base; vesica with dense pack of sharply pointed spines.

Distribution: Brazil (Amazonian).

Etymology: In honor of the late Dr Harry K. Clench, curator, Carnegie Museum of Natural History (USA), who was the first to call attention to the fact that *T. zernyi* Hopp, the type species, does not belong in *Trosia,* but required a new genus.

Remarks: This and the following are the only blackish species in the genus; almost indistinguishable from *M. melanica,* described below, slightly larger on average. Easily distinguished by the large, flat sacculus, which can be easily seen by rubbing the end of the abdomen. One genitalia preparation (Fig.) was mounted showing the valva and pennis in lateral view, and the tegumen and uncus in ventral view, according to the method described by Pitkin (1986).

***Microrape melanica* Becker, sp. nov.** (Figures 5, 11-12)
https://zoobank.org/8E99ECFC-1DD1-4A16-9EA0-ABA935ED7D7C

Material examined (3 ♂, 2 g. s.): Holotype ♂, Brazil: BA, Camacan, 800 m, 15º23'S, 39º33W, XI-2009, g. s. 5947 (Becker 145144) (VOB). Paratypes: 1 ♂, Porto Velho, 180 m, 24-IV-1989, 5948 (Becker 75944); 1 ♂, MA, Açailândia, 150 m, 19-27-XI-1990 (Becker 77385) (VOB).

Diagnosis: Small, blackish.

Description: Blackish (Figure 5). Legs whitish. FW length 7 mm (15 mm wingspan), with a conspicuous or indistinct, small dot at end of cell dorsally and ventrally; small white dots on veins, along termen, and one at end of cell of HW.

Male genitalia (Figures 11-12): Uncus bifurcate, slightly constricted along middle. Valva with the costal area vestigial; sacculus a digital, slender, straight rod, half as long as tegumen. Penis (Figure 12) evenly curved, broad basally, vesica with dense patch of long spines.

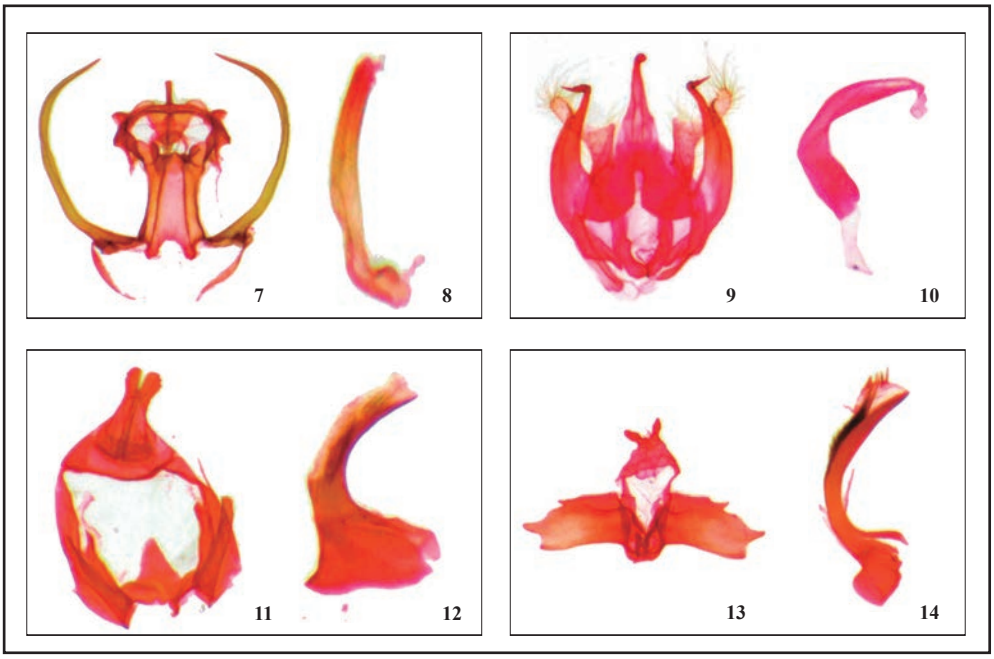
Distribution: Southern Brazil, from the type-locality only.

Etymology: From the Greek μελάνος (*melanos*) =black; feminine.

Remarks: This blackish species is very similar to *M. clenchi,* but easily distinguished by the shape of sacculus: a short, slender process almost identical to those of *M. signata,* a whitish

species. FW has a small whitish dot at end of cell, distinct in the holotype, however hardly noticeable in the paratypes.

Figures 7-14. male genitalia, ventral view. **7-8.** *P. zernyi* (Hopp), Brazil, Rondônia. **9-10.** *P. venata* Becker, paratype, Ecuador, Napo. **11-12**. *M. melanica* Becker, paratype, Brazil, Rondônia: **12**. penis with juxta attached. **13-14.** *M. clenchi* Becker, paratype, Brazil, Rondônia.



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Conflict of Interests

The author declares that he has no financial interest or personal relationship that could influence the work presented in this article.

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