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***Hypochrosis hannelorae* sp. n. from Tanzania**
(Lepidoptera, Geometridae, Ennominae)

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Abstract

Hypochrosis hannelorae sp. n. from Tanzania is described and illustrated. A differential diagnosis is given. With this new species the number of Tanzanian *Hypochrosis* species is raised to 14.

Introduction, material and methods

Extensive scientific collecting of moths in Tanzania from 2003 to 2008 by Dr. Philippe DARGE (Clenay, France) brought very interesting results, yielding a total of more than 50,000 specimens (DARGE 2005). In these samples, the geometrid genus *Hypochrosis* is represented by 32 specimens and 12 species. After the revision of the 24 afro-tropical species of the genus *Hypochrosis* (HAUSMANN 2003), data on three interesting Tanzanian species were presented in HAUSMANN (2006). Species diagnosis was basing, so far, on morphometrical analysis (including dissections, standard method). In the run of the geometrid campaign of the Barcode of Life programme molecular data could be generated for 14 afro-tropical species (mtDNA, COI 5' barcode fragment, 658 bp), 12 of them from Tanzania. Sequencing was performed at CCDB, University of Guelph (Paul HEBERT) using standard high-throughput protocol (IVANOVA et al. 2006) and analysed in the Barcode of Life Datasystems (BOLD; RATNASINGHAM & HEBERT 2007).

Images of habitus and genitalia, neighbor joining tree, and further details such as voucher hosting institution, GPS coordinates and trace files can be obtained online from BOLD (2008), and from the webpage of Tanzanian geometrids (HAUSMANN et al. 2009a). That strategy of multimedial publication was chosen for accelerating taxonomy (see HAUSMANN & HEBERT 2009; HAUSMANN et al. 2009b; 2009c).

Abbreviations

ZSM = Zoologische Staatssammlung München, Germany
CCDB = Canadian Centre for DNA Barcoding, University of Guelph, Canada

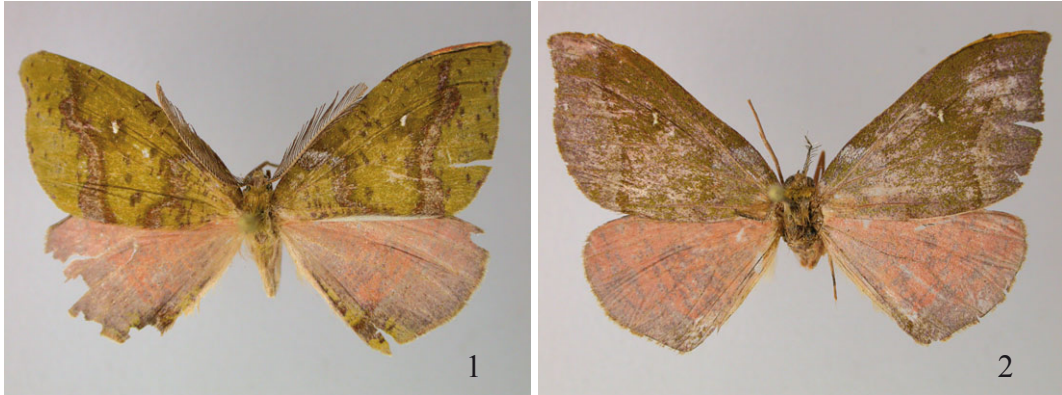
***Hypochrosis hannelorae* sp. n.**

Holotype: ♂, Tanzania: Dar-es-Salaam Pro- / vince, Kisarawe forest, 267 m, / 06°53.877' S 039°05.189' E / 6-VI-2004 (Ph. DARGE) // BC ZSM Lep 00032 [green label] // ZSM G 11470 [genitalia slide], coll. ZSM

Paratypes: 1 ♀, Tanzania: Morogoro Re- / gion, Uluguru Mts. Bondwa / 2000 m local collector / 14-XII-2004 (Ph. DARGE) // BC ZSM Lep 00045 [green label], coll. ZSM; 1 ♀, Tanzania: Morogoro Pro- / vince, Monts Uluguru, Pla- / teau de Bondwa IV-2004 / ex coll. PHILIPPE DARGE // BC ZSM Lep 00046 [green label] // ZSM G 14101 [genitalia slide], coll. ZSM.

Description (Figs 1-2):

Wingspan ♂ 32 mm, ♀ 33-34 mm. Forewing apex falcate. Ground color of forewing olive green in ♂, dark green with grey suffusion in ♀. Ground colour of hindwing in both sexes rosy, towards termen grey. Forewing of ♂ with transverse lines broad, dark brown green. Antemedial line zigzagging, postmedial line slightly waved, double with light grey filling, but towards costa simple. Cell ring on forewing conspicuous, with whitish filling.



Figs 1-2: *Hypochrosis hannelorae* sp. n.; Fig. 1: ♂ holotype, Fig. 2: ♀ paratype.

Underside in both sexes red brown, darker towards termen, with sharply bordered and whitish filled cell rings on all wings. ♂ antennae long bipectinate, length of branches approx. 3 mm, i.e. 20 times width of flagellum. ♀ antennae bipectinate, length of branches approx. 1.25 mm, i.e. 8 times width of flagellum.

Male genitalia: Uncus broad over the whole length, posteriorly bilobous, with deep invagination between lobes. Gnathos sclerotised, hook-shaped, tapered medially. Valva tapering at tip, costa with short, strongly sclerotised, spinose projection at base. Aedeagus short, ending in two strongly sclerotised elongate sclerites, both hooked at tip.

Female genitalia: Antrum strongly sclerotised, latero-posteriorly with hook-shaped projections. Corpus bursae pyriform, longitudinally wrinkled towards ductus bursae. Signum small, irregularly bordered, with central ridge.

Differential diagnosis

So far, this is the only African *Hypochrosis* species with male hindwings rosy. The large cell ring on the olive green ground colour of forewing is unique, too. Male genitalia slightly reminiscent of *H. roberti* HAUSMANN, 2003 with which it shares the long, double, hooked sclerites of vesica and the tapered shape of valva. The new species, however, is unique within the genus in the shape of uncus and in the presence of a sclerotised dorsobasal projection on the valva. Molecular data of the new species (so far successfully sequenced from female paratypes only) suggest *H. haderleini* HAUSMANN, 2003, *H. roberti* HAUSMANN, 2003 and the unnamed *Hypochrosis* sp. 5 to be the nearest neighbours at equal genetic distances of 6.0% each (minimum pairwise distances). Conspecificity of females and males within the type series of the new species appears certain, considering several unique habitus features, such as rosy ground colour of hindwings turning to grey towards termen, waved shape of postmedial line, coloration of underside, and conspicuous cell rings. Furthermore the females do not match, genetically, with any of the 11 other Tanzanian *Hypochrosis* species, which have been barcoded so far. Successful sequencing of a male of the new species will have to corroborate this attribution.

Phenology, habitat and distribution:

Collected in April, June and December. So far recorded only from Tanzania, Morogoro and Dar-es-Salaam provinces, in lowland and mountainous forest from 267 m up to 2,000 m above sea-level.

Etymology:

The species is dedicated to my mother HANNELORE HAUSMANN who was supporting me and my work over so many years.

Acknowledgements

The author thanks Dr. Philippe DARGE (Clenay, France) for the collection of the material and its deposition at the ZSM. Mr. Eckhard WIERIG (Munich) mounted, with great enthusiasm and dedication, thousands of specimens from these samples. Paul HEBERT (University of Guelph, Canada) and his competent team kindly performed sequencing of the material. The 'friends of the Bavarian State Collection of Zoology' generously helped in the acquisition of parts of the Tanzanian material.

Zusammenfassung

Hypochrosis hannelorae sp. n. wird nach Material aus Tansania beschrieben, abgebildet und einer Differentialdiagnose unterzogen. Mit dieser Art erhöht sich die Artenzahl tansanischer Vertreter der Gattung *Hypochrosis* auf 14.

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