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**NEW SYNONYMY IN THE TRIBE ANARSIINI (LEPIDOPTERA:
GELECHIIDAE: DICHOMERIDINAE)**

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Summary. The holotype of *Nothris flabellifer* Rebel, 1896 kept in the “Grigore Antipa” National Museum of Natural History (Bucharest, Romania) has been examined and taxonomic position of that species, described from Morocco, was specified. The species was transferred to the genus *Anarsia* Zeller on the base of morphological characters of the male genitalia: *Anarsia flabellifer* (Rebel, 1896), **comb. n.** Since *Nothris flabellifer* is the type species of *Dolerotricha* Meyrick, a new generic synonymy has been established: *Anarsia* Zeller, 1839 = *Dolerotricha* Meyrick, 1925, **syn. n.**

Key words: Anarsiini, Gelechiidae, taxonomy, new synonymy, North Africa.

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Резюме. По результатам исследования голотипа, хранящегося в Национальном музее естественной истории имени Григоре Антипа, установлено таксономическое положение описанного из Марокко вида *Nothris flabellifer* Rebel, 1896. На основе характерных признаков морфологии гениталий самца вид перенесен в род *Anarsia* Zeller: *Anarsia flabellifer* (Rebel, 1896), **comb. n.** Поскольку *Nothris flabellifer* является типовым видом *Dolerotricha* Meyrick, установлена новая родовая синонимия: *Anarsia* Zeller, 1839 = *Dolerotricha* Meyrick, 1925, **syn. n.**

INTRODUCTION

The present paper is based on the result of an examination of *Nothris flabellifer* Rebel, 1896 holotype, kept in the “Grigore Antipa” National Museum of Natural History (Bucharest, Romania). The species *Nothris flabellifer* was described on the base of single specimen collected by Hedemann in Mogador (Morocco) (Rebel 1896). In the description Rebel drew attention to peculiar shape of the palpi and noted that this character may require the establishing of a separate genus. E. Meyrick implemented that remark by describing a new genus *Dolerotricha* based on *N. flabellifer*, although, as he noted, he had not seen that specimen. Meyrick had changed species name from masculine to feminine adding an “a” to the end of the word. It was not accepted later (Nye & Fletcher, 1991).

In current work the holotype of *Nothris flabellifer* was examined, morphology of the male genitalia is described and figured, pattern of forewing is illustrated. The taxonomic position of the *N. flabellifer* is specified on the base of the male genitalia. As result, new generic synonymy within tribe Anarsiini is established. In the description the terminology follows to Klots (1970) with changes based on the functional morphological study by Ponomarenko (1992).

TAXONOMY

Tribe Anarsiini

Anarsiidae Amsel, 1977: 234. Type genus: *Anarsia* Zeller, 1839.
Anarsiini: Ponomarenko, 1992: 160.

DIAGNOSIS. In the male genitalia the gnathos is absent; tegumen longitudinally elongated and narrowed distally; cuculli usually asymmetric, roundly inflated, each with more or less developed process on ventral margin or near it and with modified setae on medial side. The wings with an additional wing coupling mechanism. In the female genitalia the tergal area of the 8th abdominal segment is with more or less elongated groove-like notch functionally for fixation of uncus during mating; sternal area is more or less asymmetric.

REMARKS. The tribe includes two genera, *Anarsia* Zeller, 1839 and *Ananarsia* Amsel, 1959, differing by morphology and functioning of male copulative apparatus and by characters of female genitalia.

Genus *Anarsia* Zeller, 1839

Anarsia Zeller, 1839: 190. Type species: *Tinea spartiella* Schrank, 1802, by subsequence designation (Meyrick, 1925: 153).

Dolerotricha Meyrick, 1925: 18 (key), 154. Type species: *Nothris flabellifer* Rebel, 1896 (as *Nothris flabellifera*), by original designation. **Syn. n.**

DIAGNOSIS. In the male genitalia uncus with finger-like distal process; valva (often left only) with medial dorso-basal process; valvella absent; aedeagus with opening for ejaculatory duct shifted dorsally and more or less developed sclerotized ridge-like apodeme for muscles on the basal part; juxta as narrow bridle, not joined with vinculum and aedeagus; vinculum with latero-ventral widenings and developed saccus. Phallic muscles m_5 divided into two bundles m_{5a} and m_{5b} , anterior ends of which attached to the ridge-like apodeme on the basal part of aedeagus; muscles m_6 attached to the saccus. In the female genitalia the tergal area of the 8th abdominal segment with lobe on the anterior margin.

Anarsia flabellifer (Rebel, 1896), comb. n.

Figs 1–3

Nothris flabellifer Rebel, 1896: 175.

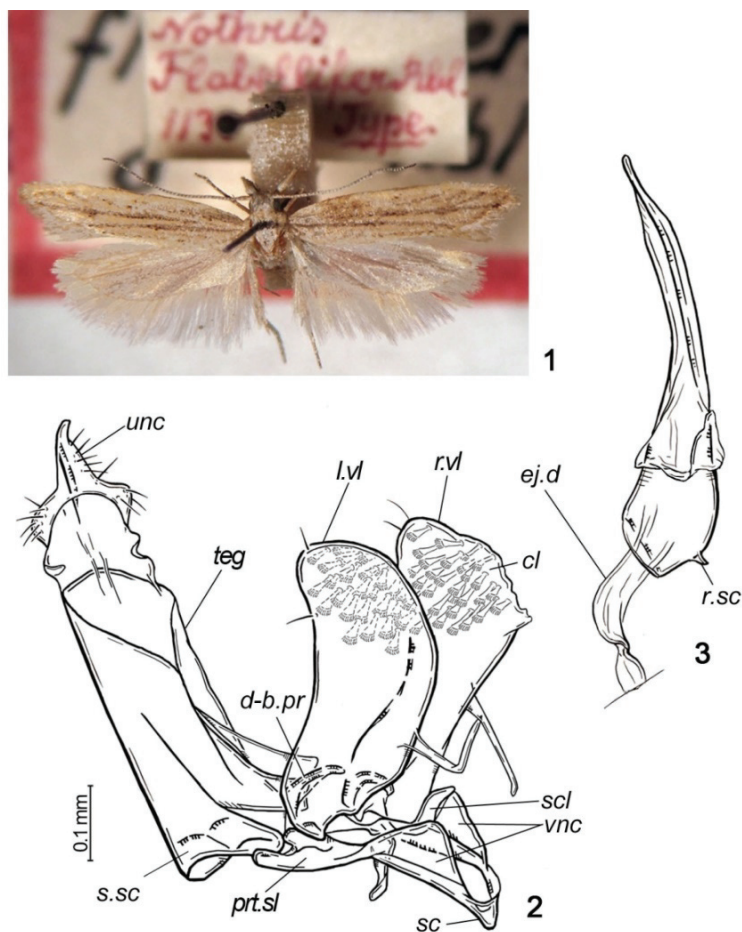
Nothris flabellifer: Nye & Fletcher, 1991: 98.

Dolerotricha flabellifera: Meyrick, 1925: 184; Ponomarenko, 2009: 350.

C. [sic!] *flabellifera*: Meyrick, 1925: 184 (erratum).

MATERIAL. Holotype labeled: “*Nothris flabellifer* Rbl. 113 Type” [written in red], “Magador Marocco 14.v.95”; “Holotype, *Nothris flabellifer* Rbl. ♂”. Genital slide labeled: “*Nothris flabellifera* Rebel, 1896 Holotip (♂), Prep. Dr. Margarita Ponomarenko 2003 Euparal”; “Prep. Genit. Nr. 187.809 Mogador, Morokko, 14.V.(18)95 Coll. Aristide Caradja”.

DIAGNOSIS. The forewing with two distinct dark greyish-brown longitudinal narrow stripes across the entire wing and light greyish-brown streaks along the *R* veins on the pale-yellow background. In the male genitalia valvae are asymmetric; the left valva is almost the same width along the length, with protruding dorso-distal angle; the right valva with expanded cucullus and relatively narrow neck about 2/3 of total length; cucullus with small tooth-like lobe on the ventral margin; aedeagus slightly arcuately curved in distal part, inflated basally.



Figs 1–3. *Anarsia flabellifer*. 1 – adult, holotype; 2, 3 – male genitalia, lateral view: 2 – genitalia without aedeagus, 3 – aedeagus. *cl* – cucullus, *d-b.pr* – medial dorso-basal process of valva, *ej.d* – ejaculatory ductus, *l.vl* – left valva, *prt.sl* – parategminal sclerite, *r.sc* – ring-like sclerotization, *r.vl* – right valva, *s.sc* – semi-oval sclerotization, *sc* – saccus, *scl* – sacculus, *teg* – tegumen, *unc* – uncus, *vnc* – vinculum.

DESCRIPTION. **Adult** (Fig. 1). Wingspan 13 mm. Head with appressed scales. Antenna slightly longer than 2/3 of wing length. Second segment of palpus with tuft of long pale-yellow scales, darker on outer surface; third segment completely hidden in the tuft. Head,

thorax and background of the forewing are pale-yellow with scattered dark greyish-brown scales. The pattern of forewing consists of two longitudinal dark greyish-brown narrow stripes, running through the entire wing: one stripe in the middle of wing from the base to outer edge under the apex, the second stripe below the first one from the base of the wing to the tornus; short light greyish-brown stripes placed along the R-veins. The hindwing greyish-yellow.

Male genitalia (Figs 2, 3). Uncus with setaceous socii and finger-like process widened towards the base and curved ventrally at the apex, with sclerotized dorsal rod along the median axis. Gnathos absent. Tegumen widened towards the base, its distal part is almost equal to uncus in width, posterior margin convex, the proximal part with two semi-oval sclerotizations along anterior margin, ventral wall distinct, antero-lateral lobes joined with parategminal sclerites. Parategminal sclerite of complicated shape and articulated with tegumen, valva and vinculum; its dorsal rounded lobe-like part joined with tegumen, medial trapezoidal part joined with valvar base, ventral part joined with vinculum. Valvae are asymmetric, inflated and with modified setae on the medial surface. The left valva is larger than right one, slightly narrowed in basal part, almost equal in width along the medial part and with protruding dorso-distal angle; the right valva with dilated oval cucullus, the latter with protruding dorsal angle and tooth-shaped lobe on the ventral edge; the typical for anarsiin moths processes on the ventral margins of valvae are rudimentary and faintly distinguishable. Aedeagus slightly arcuately curved in distal part, with narrow longitudinal sclerotization ventrally, and with small ridge-like ventral sclerotization in basal part; inflated basally, its basal part 4 times wider than distal one; the opening for ejaculatory ductus slightly shifted dorsally. Vinculum narrow, band-like in lateral part, which 4 times as wide as latero-ventral triangular widenings; with short triangular saccus.

Female genitalia and host plant unknown.

DISTRIBUTION. North Africa (Morocco).

DISCUSSION

The species *A. flabellifer* possesses the characters of the external morphology and the copulative apparatus typical for anarsiin moths viz. palpi with rudimentary third segment in the male; the male genitalia lacking the gnathos and with asymmetric inflated valvae bearing modified setae on the medial surface. Therefore, its belonging to the anarsiin moths is no doubt. The species is transferred to the type genus of the tribe – *Anarsia* Zeller, because its male genitalia characterized by features similar with those in the type species of the genus, *A. spartiella* (Schrank, 1802) and related species (Fig. 4). They are uncus with finger-like process, vinculum with latero-ventral widenings and with developed saccus, aedeagus with opening of ejaculatory ductus shifted dorsad and with ridge-like ventral sclerotization in basal part (Figs 2, 3). These characters allowing to suppose that the genital structures and phallic musculature are functioning similar to those in the genus *Anarsia*. The functional morphology of anarsiin moths and differences between genera *Anarsia* Zeller and *Ananarsia* Amsel were early described in detail (Ponomarenko, 1992, 2005, 2009). The muscles m_2 , m_3 and m_4 have similar attachment and functioning in both genera. Therefore, the main characters only are emphasized here. The genus *Anarsia* Zeller is differing from related genus by the mechanism of aedeagus protraction that is realized due of the muscle m_5 , splitted into two bundles: m_{5a} attached to the latero-ventral widenings of vinculum and m_{5b} – to the parategminal sclerite by posterior end. The anterior end of both bundles, m_{5a} and m_{5b} , attached to the ventral ridge-like apodeme on the basal part of aedeagus (Fig. 5). That is associated with blind anterior end of aedeagus and shifted dorsad opening for ejaculatory ductus. Whereas

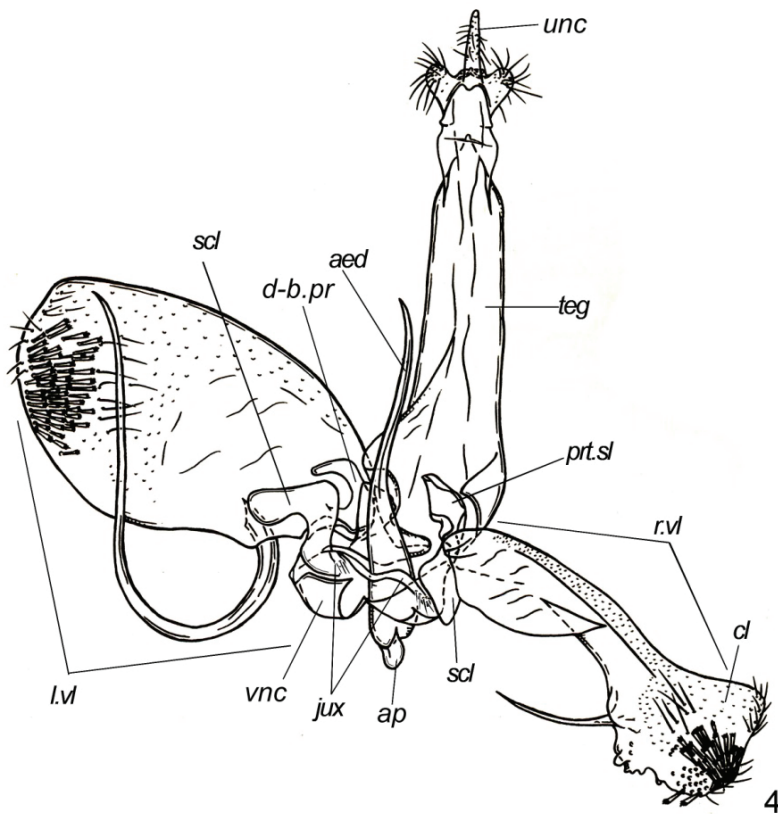
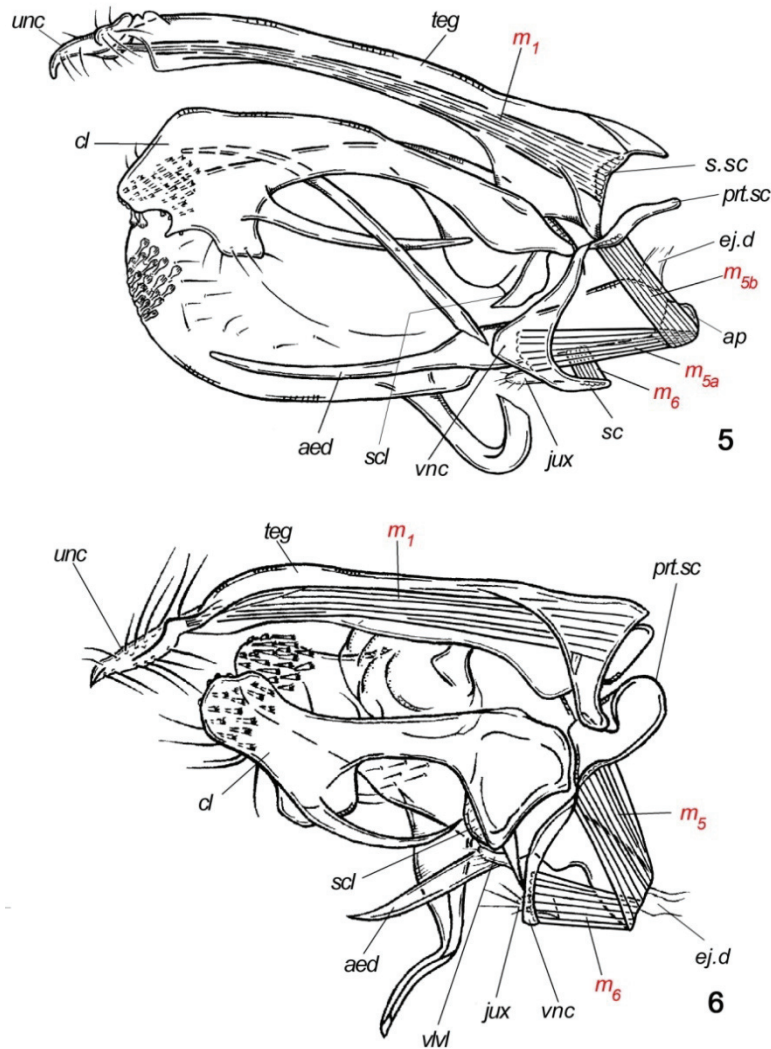


Fig. 4. *Anarsia spartiella*, male genitalia. *aed* – aedeagus, *jux* – juxta; the other symbols as in Figs 2, 3.

protraction of aedeagus in the *Ananarsia* Amsel is realized by muscle m_5 not splited into bundles. This muscle attached to parategminal sclerite by posterior end and to aedeagus by anterior one; besides muscle attached to the edge around the opening for ejaculatory ductus; any special apodeme is absent (Fig. 6). The developed saccus in *Anarsia* served as apodeme for muscle m_6 attached to the ventral side of aedeagus and functioning as its retractor. The genus *Ananarsia* differs by absence of developed saccus and muscle m_6 attached directly to medial surface of vinculum by posterior end, whereas anterior end of this muscle attached to edge of aedeagus around opening for ejaculatory ductus. Additional difference between two related genera is the presence of semi-oval sclerotizations along anterior margin of tegumen in *Anarsia*, which is apodeme for anterior end of muscle m_1 , and absence of such apodeme in the genus *Ananarsia*. Based on the features of the morphology of male genitalia in *flabellifer* viz. presence of semi-oval sclerotizations along anterior margin of tegumen, latero-ventral widening vinculum with developed saccus, small ridge-like ventral sclerotization in basal part of aedeagus, which are probable apodemes for muscles m_1 , m_{5a} , m_{5b} and m_6 , it was concluded that skeleton and musculature of the male genitalia in this species same as their functioning are similar to those in *Anarsia* and species transferred into the latter.

Since the genus *Dolerotricha* Meyrick, 1925 was described on the base of *Nothris flabellifer* Rebel, 1896, and the latter is close to the type species of the *Anarsia* Zeller, the generic name *Dolerotricha* should be treated as junior subjective synonym of the latter.



Figs. 5, 6. Skeleton, tegminal (partly) and phallic musculature of the male genitalia. 5 – *Anarsia halimodendri* Christoph; 6 – *Anarsia lineatella* (Zeller). Muscles: m_1 – depressor of uncus, m_5 , m_{5a} , m_{5b} – protractor of aedeagus, m_6 – retractor of aedeagus; ap – ring-like apodeme for muscles, the other symbols as in Figs 1–4.

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