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Two new species  
of the genus *Misetus* Wesmael, [1845],  
from Bulgaria  
(Hymenoptera, Ichneumonidae)

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## Abstract

In the present paper two new species of the genus *Misetus* WESMAEL, [1845], from Bulgaria are described: *Misetus tyloidalis* sp.n. and *Misetus nigriritulus* sp.n. A key of all known species is given.

## Zusammenfassung

In dieser Arbeit werden zwei neue Arten der Gattung *Misetus* WESMAEL, [1845], beschrieben: *Misetus tyloidalis* sp.n. und *Misetus nigriritulus* sp.n., beide aus Bulgarien. Ein Bestimmungsschlüssel aller bekannten Arten der Gattung wird erarbeitet.

For a long time the genus *Misetus* WESMAEL, [1845], has been represented by a single species, *Misetus oculatus*

WESMAEL,[1845], from Europe. Ten years ago another one, *Misetus borealis* KUSIGEMATI,1974, was described from Japan (KUSIGEMATI 1974). After studying the type material of *Misetus oculatus* WESMAEL,[1845], preserved in the Institut Royal de Sciences Naturelles de Belgique, the specimens of my collection and those, kept in the collection of Department of Zoology, University of Plovdiv, two new species were found, which are described below.

***Misetus* WESMAEL,[1845]**

*Misetus* WESMAEL, Nouv.Mem.Acad.Sci.Belg.Bruxelles, 18: 212,[1845] 1844. Type species: *Misetus oculatus* WESMAEL,[1845].

The genus can be identified from the other *Phaeogenini* as following: Head clearly restricted behind, occipital carina strong, joining hipostomal carina at base of mandible. Clypeus with a strong median apical tooth. Mesoscutum with notauli well developed. The last abdominal tergites weakly concave in their apical edge in female. Ovipositor projected out, recurved.

***Misetus oculatus* WESMAEL,[1845]**

*Misetus oculatus* WESMAEL,[1845] 1844, Nouv.Mem.Acad.Sci. Belg.Bruxelles, 18:212. Lectotype examined (♂), designated by AUBERT, Nr.944 R.Mus.Hist.Nat.Belg., I. G. 3. 317.

Male. Body 6,7 mm., front wing 5,1 mm. long. Head strongly restricted behind. Vertex strongly excavate behind ocelli, occipital carina regulary curved in the middle (Fig.1a), lameliform. Temple strongly narrowed down, in the lowest part 1,1 as long as malar space length. Antenna 29-segmented, as long as front wing, first segment 1,8 as long as wide, last ten segments square. Tyloids wide, but not clearly visible, on the 8-15 segments situated. Antennal socket well defined, polished.

Notauli deep, reaching in the middle of mesoscutum. The last dense and coarse punctured, brilliant. Mesopleurum and lower half of propleurum strongly striated,

speculum shining. Scutellum and postscutellum brilliant, rare punctured. Sternauli reaching half of mesopleurum. Front wing with pale stigma, areolet pentagonal, wider than high, ramellus present, nervulus interstitial. Nervellus broken below the middle, reclivous, discoidella straight.

Propodeum wrinkled with trapezium-shaped areola, wider in front than behind, longer than wide (Fig.2a). Costula inserted in front half of areola. Area basalis not defined, but subconvex. Area petiolaris transversally striated, spiracle nearer lateral carina.

First tergite with postpetiolus separated in middle and lateral parts, strongly striated longitudinally, together with basal half of second tergite. The last 1,63 as long as wide, apical half slightly striated and moderately dense punctured. The rest tergites only punctured. Legs moderately stout, hind femur 3,75 as long as wide.

Black, with brownish, especially face and mesosternum. Inner orbits of eyes, palpi, tegulae, front and middle coxae with except of the base, apical 3/4 part of upper surface of hind coxae and apical fourth of coxae entirely yellow. The base of front and middle coxae, legs, mandible, 2nd, 3rd and 7th tergites reddish, the rest tergites dark brown, hind tibia apically and hind tarsal segments slightly darkened. Some specimens have a diversion of the colour: Scutellum and scapus yellow, stigma and base of hind coxa blackish, abdomen almost entirely black.

Female: Antenna short and stout, 29-segmented, three coloured fifth segment square, next segment transversal, with except of the last. Temple almost not narrowed down, second tergite 1,56 as long as wide, third tergite also longer than wide. Ovipositor curved upward. Head and thorax dark brown to black, legs and abdomen red. Coxae and trochanters white, stigma bright.

Material examined: R.Mus.Hist.Nat.Belg., Nr.942, I.G. 3.317, 2 ♂♂; Nr.943, 1 ♀. Bulgaria: Peshtera (500 m), 4.05.1978, 1 ♂. The Rhodopi Mountains: The village of Boyno (600 m), 16.05.1978, 1 ♂; 22.05.1977, 1 ♂; the village of Hrabrino (450 m), 25.05.1978, 1 ♂; the village of Konush (250 m), 9.09.1977, 5 ♂♂; Tschervena

skala (900 m), 22.07.1969, 1 ♂; hut Zdravets (1200 m), 30.07.1978, 1 ♂. (In coll. KOLAROV).

Distribution: Europe.

*Misetus tyloidalis* sp.n.

Male: Body 6,7 mm., front wing 5,3 mm. long. Flagellum with 29-30 segments, tapered to apex. Tyloids on 4-18 segments situated, first segment 2,3 as long as wide. Head restricted behind, occipital carina not lameliform, almost angled in the middle (Fig.1b). Vertex moderately excavate behind. Malar space short, 0,5 as long as minimal width of temple.

Notauli deep, reaching centre of mesoscutum. The last brilliant and covered with bright hairs, densely and coarsely punctured. Propleurum transversely crenulated in lower half, smooth and luscious in upper one. Mesopleurum brilliant, covered with fine and rare punctures, the distance between them larger than their diameter. Sternauli well developed, reaching about middle of mesopleurum. Speculum luscious and impunctured. Scutellum rare punctured, brilliant. Stigma brown, areolet pentagonal, wider than high, second recurrent vein basad of the middle of areolet, ramellus absent. Nervulus interstitial, parallel vein in the middle of postnervulus. Nervellus broken in lower third, its upper part almost vertical, discoidella curved.

Propodeum wrinkled, only with apical carina well developed, areola not well defined, but observable, not widened in front, rectangular (Fig.2b). Postpetiole not separated of middle and lateral parts, coarse longitudinally striated together with basal third of second tergite. The last as long as wide, third tergite transversal.

Legs stout, hind femur only 3,35 as long as wide, strongly punctured on upper surface and laterally, smooth and luscious below. Maximal apical width of hind tibia as long as last tarsal segments of hind legs together with claws.

Black; inner orbitae of eyes, basal half of mandible, palpi, hind corner of pronotum, two spots below base of front wings, scutellum, front and middle coxae and trochanters, hind coxae apically and apical half of upper

surface of them and first hind trochanters yellow. Front and middle leg and second trochanter orange, basal half of hind tibia and hind tarsal segments below brown coloured. Abdominal tergites except first fuscous, darkened in the base, reddish apically.

Female: Unknown.

The new species is distinguished from *Misetus oculatus* WESMAEL, [1845], by length of antennal segments, situation of tyloids, smooth mesopleurum, weaker areolation of propodeum and areola, length of hind femurs and genae and body colouration.

Material examined: Holotype ( $\delta$ ), the Srandja Mountains, Malko Tarnovo (350 m), 26.06.1980, J.KOLAROV leg., (coll. KOLAROV). Paratypes: 3  $\delta\delta$ , the same data, place, and collection (one of them is deposited in R.Mus.Hist.Nat. Belgique, Bruxelles).

Distribution: Bulgaria.

### *Misetus nigrutilus* sp.n.

Male: Body 6,25 mm., front wing 5,0 mm. long. Flagellum stout, tapered to apex, 26-27 segmented, first segment 1,8 as long as wide, the middle segments quadratic. Tyloids wide, but difficultly visible, on the 8-14 segments situated, not occupied all length of segments. Scapus short and globular. Antennal sockets excavate, polished, their and raised and forming a ring with height as long as scapus length on inner side. Head restricted behind eyes, occipital carina almost lameliform in the middle, not angled, vertex slightly excavated behind (Fig.1c). Temple narrowed down, its lower part longer than malar space and basal width of mandible.

Mesosternum luscious, moderate densely punctured, notauli well indicated in almost front half of mesosternum. Propleurum luscious, very rarely punctured in upper half, slightly striated in lower one. Mesopleurum coarse striated longitudinally, brilliant. Sternauli reaching middle of mesopleurum. Front wing with stigma dark brown, areolet regulary pentagonal. Nervellus vertical, broken below middle.

Propodeum wrinkled, well areolated, areola pentagonal, prolonged, costula in front third of areola connected

(Fig.2c). Spiracle nearer to lateral carina. All pleural area coarse wrinkled and punctured. Postpetiolus coarse wrinkled and punctured, with median and lateral parts well indicated. Second tergite quadratic, dense and coarse wrinkled and punctured. Rest tergites transversal, punctured.

Legs stout, hind femur 3,4 as long as wide. Only hind lower half of hind femur lucious and inpunctured.

Black; second and third tergites apically, front and middle legs except coxae and first trochanters, hind first trochanters, hind femurs below and basally and hind tibiae without apex reddish.

Female: Unknown.

It is distinguished from *Misetus oculatus* WESMAEL, [1845], by number of antennal segments, areolation of propodeum, length of second abdominal tergite and absence of yellow colour on the body.

Material examined: Holotype ( $\delta$ ), the Rhodopi Mountains, the village of Tschernootschene (500 m), 22.05.1977, J. KOLAROV leg., (coll. KOLAROV). Paratypes: The same data and place as holotype, 1  $\delta$ ; the Rhodopi Mts.: the village of Popsko (800 m), 21.05.1977, 2  $\delta\delta$ ; the village of Boykovo (1200 m), 12.06.1977, 1  $\delta$  (coll. KOLAROV) (one of them is deposited in R.Mus.Hist.Nat.Belg.Bruxelles).

Distribution: Bulgaria.

### A key for identification of the species of *Misetus* WESMAEL, [1845]

#### Male

(Male of *Misetus borealis* KUSIGEMATI, 1974, is unknown)

- 1 Body without yellow colouration, propodeum with strong areolation, areola pentagonal, pointed in front (Fig. 2c), Bulgaria.....*Misetus nigrifulus* sp.n.
- Body with yellow colouration, areola not pointed in front or not well defined.....2
- 2 First flagellar segment 2,3 as long as wide, tyloids on 4-18 segments, areola not widened in front or not well defined (Fig.2b), Bulgaria.....  
.....*Misetus tyloidalis* sp.n.
- First flagellar segment 1,8 as long as wide, tyloids

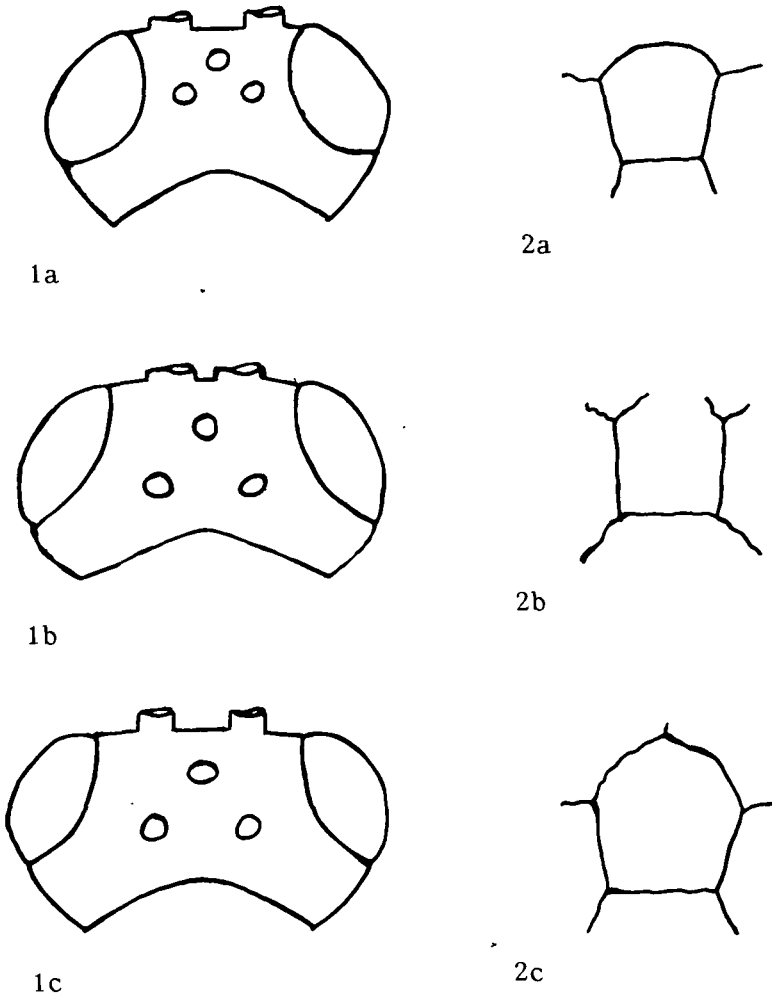


Fig.1: Head, dorsal view: a) *Misetus oculatus* WESMAEL, [1845]; b) *Misetus tyloidalis* sp.n.; c) *Misetus nigritulus* sp.n.

Fig.2: Areola: a) *Misetus oculatus* WESMAEL, [1845]; b) *Misetus tyloidalis* sp.n.; c) *Misetus nigritulus* sp.n.

on 8-15 segments, areolation of propodeum stronger, areola widened in front (Fig.2a).....  
.....*Misetus oculatus* WESMAEL, [1845]

**Female**

(I have not seen *Misetus borealis* KUSIGEMATI, 1974, and inclusion of it here is relatively. Females of *Misetus tyloidalis* sp.n. and *Misetus tyloidalis* sp.n. are unknown.)

- 1 Face and scutellum entirely black, antenna slender, first flagellar segment 2,4 - 2,6 as long as wide. Japan.....*Misetus borealis* KUSIGEMATI, 1974
- Face and scutellum often yellow marked, antenna stout, three coloured, first flagellar segment shorter. Europe.....*Misetus oculatus* WESMAEL, [1845]

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**Literature**

KUSIGEMATI, K. - 1974. A new species of the genus *Misetus* Wesmael from Japan. - Mem.Agr.Kag.Univ., 10(19): 57-60.

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