NEW SUBGENUS OF THE GENUS *DINOTREMA* FOERSTER (HYMENOPTERA, BRACONIDAE, ALYSIINAE) FROM EAST PALAEARCTIC WITH DESCRIPTION OF A NEW SPECIES

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New subgenus *Synaldotrema* subgen. n. (type species – *Dinotrema speciosum* sp. n. from Russian Far East and Eastern Siberia) of the genus *Dinotrema* Foerster with original metasomal structure is described.

KEY WORDS: Braconidae, *Dinotrema*, East Palaearctic, taxonomy.

**INTRODUCTION**

Subfamily Alysiinae has extremely peculiar construction of the mandible and has not special varieties of the another morphological transformations. Besides numerous variants of the mandible structures, the most important diagnostic characters...
for alysiine taxa are wing venation and metasomal structures. The richness of species in the subtribe Aspilotina shows an example of the different combinations of not so numerous states of morphological characters, which in many cases have appreciable variations (Fischer, 1967, 1969a, 1969b, 1969c, 1969d, 1971a, 1971b, 1972; Achterberg, 1988; Fischer, 1993a, 1993b; Chen & Wu, 1994; Papp, 1994, 1996; Belokobylskij, 2002). In these cases the discoveries in such group of any morphological characters leaving for frameworks of these combinations (for example: enlarged paraclypeal areas, reduced first radiomedial vein, etc.) are becoming basic for the describing new or supporting former superspecies taxa (Achterberg 1988; Fischer, 1993a, 1993b).

The example of the peculiar metasomal structure is showed in new species, described below. This species has intermediate position between genera Dinotrema Foerster, 1862 and Synaldis Foerster, 1862, because, together with small paraclypeal areas on the face, first radiomedial vein of fore wing usually present, but sometimes lacking entirely. Metasoma in subfamily Alysiniace has not distinct patterns of morphological variety. Only Hylcalosia Fischer, 1967 and Trachionus Haliday, 1833 (= Symphya Foerster, 1862) have the carapace with tergites 1-3, which is almost covered by apical metasomal segments and completely or almost completely sculptured. An additional usual element of transformation is compressed metasoma (many taxa of Aspilotina, Coelinitus Nees, 1818 s.l., especially strongly metasoma compressed and elongate in Eucoeliniidea Tobias, 1979). In other alysiine genera the significant metasomal transformations are unknown, except sometimes the appearing of sculpture on usually smooth tergite 2 or (rarely) (Trachyusa Ruthe, 1854, Asyntactus Marshall, 1898, Parasymphya Tobias, 1998) tergites 2-4 (the given character has also generic weight in the discussed group).

In this case a metasomal structure of Dinotrema speciosum sp. n. is interest concerning its position in the alysiine system. Metasoma of new species is compressed (it is rather usual) with distinctly elongated tergite 4 (feature which is unknown in other alysiine) and with strongly protruding and narrowed posteriorly apical tergites, while sternites (together with ovipositor) are considerably retracted under metasoma. Quite possible to suggest, that the metasomal structure in Aspilota Foerster, 1862 and Dinotrema Foerster, 1862 is related with specification of infection of the dipterous hosts (mainly Phoridae and Drosophilidae), which are developing in agaric fungi. Probably similar behavior has D. speciosum sp. n., and the peculiar shape of its metasoma allows to penetrate between more long lamellae of the similar agaric fungi.

The metasomal shape, as considerably elongated tergite 4 of a new species can testify to a more isolated systematic position of a new species in subtribe Aspilotina. The similar metasomal structure is known also in some Dacnusini species: Chorebus falcator Tobias, 1998 and Ch. terebrator Tobias, 1998 (Russian Far East), and two undescribed European species of Chorebus Haliday, 1833. But the metasomal transformation in these species connects with elongation apical tergites only, metasoma almost not compressed, and tergite 4 short. These data indicate, that tendency for elongation of the metasomal apical part in Chorebus is going by different ways then in D. speciosum sp. n. The way marked at described below new
species is morphologically more peculiar and has arisen evolutionally by more complicated way, that indicated on his systematic isolate position within genus *Dinotrema*. As result, the new subgenus *Synaldoitrema* subgen. n. is described below for this species.

The terminology for wing venation follows that of Belokobylskij & Tobias (1998). The following abbreviation are used: POL - postocellar line; OOL - ocular-ocellar line; Od - maximum diameter of lateral ocellus. All type material is deposited in the collection of Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia). The present work was partly supported by Russian Foundation of Fundamental Investigation (Grant No 01-04-49655).

*Synaldoitrema* Belokobylskij et Tobias, subgen. n.

Типовой вид: *Dinotrema (Synaldoitrema) speciosum* sp. n.

DESCRIPTION. Paraclypeal areas small, oval, widely separated from eye margin. Furrow between antennal socket and eye very shallow, almost indistinct. Mesoscutal pit present. First radiomedial vein of fore wing usually present, rarely absent in posterior half or entirely. Metasoma compressed, lanceolate, distinctly narrowed toward apex, apical sternites (with ovipositor) distinctly retracted under long apical tergites. Fourth tergite significantly elongate. Propodeum at most part rather finely rugose-striate, with small or large smooth areas anteriorly and posteriorly, with distinct short median and strongly divergent lateroposterior (following to spiracles) carinae.

SPECIES INCLUDED. Type species only.

ETYMOLOGY. From united generic names *Synaldis* and *Dinotrema*, because this subgenus has intermediate position between them.

*Dinotrema (Synaldoitrema) speciosum* Belokobylskij et Tobias sp. n.

Figs 1-12

MATERIAL. Holotype: ♀, Russia: Primorskiy krai, 10 km SSW of Partizansk, border of forest, 12-13.VII 1996 (S. Belokobylskij). Paratypes. Russia: 1 ♀, Primorskiy krai, 50 km N of Olga, mixed forest, 29.VII 1979 (S. Belokobylskij); 1 ♀, Primorskiy krai, Pogranichnyi District, Barabash-Levada, forest, 3-6.VI 1980 (S. Belokobylskij); 1 ♀, Primorskiy krai, 42 km S of Plastun, forest, 24.VI 1979 (S. Belokobylskij); 1 ♀, Tuva, 14 km E of Kyzyl, lowland of Ka Khem River, 31.V 1975 (D. Kasparyan).

DESCRIPTION. FEMALE. Body length 1.9-3.4 mm; fore wing length 2.1-2.5 mm. Head width 1.7-1.8 times its median length,1.5-1.6 times its maximum length, 1.3-1.4 times width of mesoscutum. Head behind eyes almost parallel-sided in anterior half, roundly narrowed in posterior half. Transverse diameter of eye equal to or weakly larger than length of temple. Ocelli in almost equilateral triangle. POL equal
Figs 1-12. Dinotrema (Synalodotrema) speciosum sp. n., female. 1) head, frontal view; 2) head, dorsal view; 3) mandible, showed upper tooth; 4) mandible, showed lower tooth; 5) basal and apical segments of antenna; 6) fore wing; 7) hind wing; 8) mesonotum; 9) first metasomal tergite; 10) metasoma, lateral view; 11) mesosoma, lateral view; 12) propodeum.
to Od, 0.25-0.35 times OOL. Maximum diameter of eye 1.4-1.5 times its minimum
diameter. Face width 1.5-1.6 times its median height (with antennal tubercles), 1.3-
1.4 times maximum diameter of eye. Width of clypeus about 3 times its median
height. Mandible more or less distinctly widened toward apex, its median length 1.2-
1.5 times maximum width. Upper tooth rather small or medium size, more or less
distinctly directed upper, shorter than median tooth, almost as long as lower tooth,
rounded apically. Median tooth rather narrow or more or less wide, pointed,
longest. Lower tooth wide, widely rounded.

Antennae filiform, rather thick, without distinct constrictions in base of segments,
19-20-segmented, about 0.7 times as long as body. Scapus 1.3-1.6 times as long as
its maximum width, 0.7-0.8 times as long as first flagellar segment. First flagellar
segment rather thick, 3.4-4.2 times as long as its apical width, 1.2-1.3 times as long
as second segment. Second segment 2.5-2.8 times as long as its width. Penultimate
segment 1.5-1.6 times as long as wide, 0.5-0.55 times as long as first flagellar
segment, 0.8-1 times as long as apical segment, the latter weakly pointed apically.

Mesosoma. Length 1.3-1.35 times its height. Mesoscutum wide, its width 1.1-1.2
times median length. Notauli on vertical surface of mesoscutum deep and crenulate,
absent on horizontal surface. Mesoscutal pit rather long, narrow, smooth. Prescutellar
depression deep, smooth, with 3-5 carinae, 0.3-0.35 times as long as scutellum, 0.3-
0.45 times as long as maximum width. Sternauli rather long, oblique, crenulate,
situated nearly middle of below half of mesopleura. Mesopleural suture very finely
crenulate in upper half. Spiracles of propodeum small, its diameter 0.3-0.4 times
distance from spiracle to base of propodeum.

Wings. Fore wing 2.4-2.6 times as long as wide. Radial vein arising not far from
base of pterostigma. Second radial abscissa 3.2-4.2 times as long as first radial
absissa, 0.4-0.45 times as long as third radial abscissa, 1.8-2 times as long as first
radiomedial vien. Second radial cell strongly narrowed toward apex, 2.4-2.6 times
as long as wide. First radiomedial vein present usually, but often discolorated at
most part; sometimes this vein absent in posterior half or entirely. Discoidal cell
1.3-1.4 times as long as wide. Recurrent vein strongly postfurcal, 1.5-2.3 times as
long as second abscissa of medial vein. Distance from nervulus to basal vein 0.3-0.7
times nervulus length. Parallel vein arising before middle of distal vein of brachial
cell. Hind wing 4.4-4.8 times as long as wide. Second mediocubital abscissa about
half first abscissa, 1.2-1.7 times basal vein.

Legs. Hind femur 4-4.8 times as long as maximum width. Hind tibia weakly
widened toward apex, 7.5-9 times as long as maximum width, with row of long and
dense hairs on its apical inner margin. Hind tarsus 1.1-1.15 times as long as hind
tibia. Hind basitarsus 0.6-0.7 times as long as second-fifth segments combined.
Second tarsal segment 0.4-0.5 times as long as basitarsus, 1.3-1.6 times as long as
fifth segment (without pretarsus). Claw slender, rather short and weakly curved.

Metasoma compressed, lanceolate, distinctly narrowed apically, apical sternites
(with ovipositor) distinctly retracted under apical tergites. First tergite rather weakly
widened toward apex, its length 1.5-1.7 times apical width, 1.3-1.5 times length of
propodeum; apical width 1.6-2 times its minimum width. Second tergite with small
semiround basolateral depressions. Second suture absent medially. Fourth tergite 0.75-1.0 times as long as second-third tergites combined. Ovipositor sheath rather long, weakly curved up, shortly following behind top of metasoma, about twice as long as first tergite, about 0.9 times as long as hind tibia, 0.27-0.3 times as long as fore wing.

Sculpture and pubescence. Head, pro- and mesothorax smooth, rarely (in large specimens) face finely rugulose submedially and frons near antennal sockets finely granulate. Mesopleura smooth. Propodeum at most part rather finely rugose-striate, with small or sometimes rather large smooth areas anteriorly and posteriorly, with distinct short median and strongly divergent irregular lateroposterior (following to spiracles) carinae. Legs smooth. First metasomal tergite longitudinally striate at most part, with distinct, almost complete and weakly convergent dorsal carinae. Antennae with rather short, semi-erect, quite dense hairs. Face densely setose on wide median part. Mesoscutum with rather dense hairs on anterior vertical part, and with very sparse hairs along trace of notafuli. Ovipositor sheath in apical 1/3-1/2 with several very sparse short hairs.


MALE unknown.


REFERENCES


SHORT COMMUNICATION


Three species of the genus Microchelonus Szepligeti, 1908 with round apical metasomal aperture in male have been described from the Russian Far East: M. vitasi Tobias, 2000 with dark colored legs, M. rotundifossa Tobias, 2000 and M. maculibasis Tobias, 2000 which differ by predominance of yellowish brown colour of legs [1]. Two new species from Russian Far East are described here (M. circumfossa sp. n. and M. lamellosus sp. n.) as well as hitherto unknown male of M. capsulifer Tobias, 2000. All material cited in this work was collected by S. Belokobylskij in the same locality during one day. This coincidence may be evidence that form of apical metasomal aperture is connected with some ecological habits.

All material including holotypes are deposited in the Zoological Institute (St. Petersburg). The terms of the wing venation used here are defined by V. Tobias [2]. The following abbreviations are used in the text: OOL – ocellar-ocellar line, POL - postocellar line. The study was supported by the Russian Foundation of Fundamental Investigation (Grant No 01-04-49655).

Microchelonus capsulifer Tobias, 2000
Figs 1-3

Microchelonus capsulifer Tobias, 2000: 512, ♂.

MATERIAL. 1 ♂, 6 ♀, Primorski krai, 30 km SE of Ussuriysk, forest, fringe, 13-17.VII 2001 (S. Belokobylskij).

DESCRIPTION. MALE (hitherto unknown). Body length 2.8 mm. Head roundly narrowed behind eye in dorsal view, 1.45 times as wide as high, twice as wide as long, somewhat wider than mesonotum (22 : 21). Transverse eye diameter 1.4 times the length of temple in dorsal view, 1.25 times the length of temple in lateral view. Ocellar triangle somewhat wider than OOL (6 : 5). POL twice as long as ocellar diameter. Longitudinal eye diameter 1.3 times the transverse diameter, 2.5 times height of malar space. Face 1.5 times as wide as high, 1.3 times as wide as longitudinal eye diameter, 1.7 times as high as clypeus. Length of maxillary palpi somewhat longer than width of face. Antenna with 20-21 segments; first flagellar segment 3.5-4.0 times, middles - 2.5-3.0 times, three subapical segments twice as long as wide correspondingly.

Mesosoma 1.3 times as long as high. Propodeum with transverse carina, pair of widely rounded lateral tubercles and pair of the same size median tubercles. Radial cell 2.5-3.0 times as large as second radiomedial cell. Pterostigma as long as metacarpus or slightly longer. Third abscissa of radial vein 4.5-6.0 times as long as second one, twice as long as first radiomedial vein; first abscissa of radial vein somewhat or twice as long as second one. Hind femora 3.5 times as long as wide. Hind tibia 4.5 times as long as apical width, 1.1 times as long as hind tarsus. Inner spur of hind tibia half as long as hind basitarsus. Apical segment of hind tarsus
as long as third one. Carapace of metasoma oval, but linearly cut off apically in dorsal view, and linearly oblique apicolaterally, incurved apicoventrally in 0.3-0.35 of carapace length; apical aperture large, almost 0.6 times as high as carapace, round or suboval (maximum 0.7 as wide as high), 0.4-0.5 times as wide as carapace; middle tubercle of apical aperture depressed laterally.

Head faintly rugulose-punctate frontally, with faint wrinkles along eye or as well in lower half of face; vertex behind ocelli with faint transverse rugulae. Mesoscutum rugose-punctate, areolate-rugose before scutellum and along notauli. Carapace with undulate and anastomosed longitudinal folds, faintly reticulate-rugulose apically. Body black. Scapus of antenna, fore and middle legs, trochanters and basal part of femora of hind legs yellowish brown. Palpi, basitarsus middle and hind legs brownish yellow. Basal third of hind tibia with yellow band. Mandible and second-fifth segments of hind tarsus brown. Carapace with pair of yellow stains. Wings infuscate, pterostigma and veins brown.

DISCUSSION. New species is close to *M. subflagellaris* Tobias, 2000, described from Russian Far East [1] and differs by the carapace of male more incurved apicoventrally and by round or almost round apical abdominal aperture.

REMARKS. One specimen from the environs of Spassk [*♂*, Primorski krai, 20 km ESE of Spassk, forest, fringe, 8.VII 2001, (S. Belokobylskij)] differs by more transverse apical abdominal aperture, which 0.6 times as wide as carapace. Probably it is an aberration of *M. capsulifer*, but possibly belong to new, undescribed species.

*Microchelonus circumfossa* Tobias, sp. n.  
Figs 4-7

MATERIAL. Holotype: *♂*, Primorski krai, 30 km SE of Ussuriysk, forest, fringe, 12-17. VII 2001 (S. Belokobylskij). Paratype: 1 *♂* with the same data as holotype.

DESCRIPTION. MALE. Body length 2.3 mm. Head in front view oval, in dorsal view behind eye rounded narrowed, 1.5 times as wide as high, twice as wide as long, 1.2 times as wide as mesonotum. Transverse eye diameter 1.5 times the length of temple. Ocellar triangle 1.5 times wider than OOL. POL twice as long as ocellar diameter. Longitudinal eye diameter 1.3 times the transverse diameter, 0.8 times face width, almost 3 times height malar space. Face 1.6 times as wide as high, twice as high as clypeus. Maxillary palpi short, as long as height of face. Antenna with 20 segments; first segment 2.5 times, middles - twice, fifteenth-eighteenth segments 1.3 times as long as wide correspondingly.

Mesosoma 1.5 times as long as high. Propodeum with fine transverse carina and pair of small lateral tubercles. Radial cell 3 times as large as second radiomedial cell. Pterostigma 1.2 times as long as metacarpus. Third absissa of radial vein 6.0 times as long as second one, twice as long as first radiomedial vein; first absissa as long as second one. Hind femora 3.0 times as long as wide. Hind tibia as long as hind tarsus, 4.5 times as long as its apical width. Inner spur of hind tibia half as long as hind basitarsus. Apical segment of hind tarsus as long as third one, shorter than second segment. Carapace of metasoma elongate-oval, incurved apicoventrally in 0.2-0.3 carapace length, 2.1-2.25 times as long as wide, 3.0 times as long as high. Apical metasomal aperture round, 0.25 times as wide as carapace; middle tubercle conic.

Head behind eye and face transversally striate. Mesoscutum rugulose-punctate, before scutellum longitudinally rugulose. Carapace with numerous thin undulate and anastomosed folds and granulate sculpture. Body black, fore and middle legs brown. Wings infuscate, with brown pterostigma and veins.

FEMALE unknown.
Figs 1-12. Microchelonus ssp.: 1-3) *M. capsulifer*; 4-7) *M. circumfossa* sp. n.; 8-12) *M. lamellosus* sp. n.; 1, 6, 11) carapace, dorsal view; 2) carapace, lateral view; 3, 7, 12) carapace, caudal view; 4, 8) head, dorsal view; 5) fore wing; 9) mesonotum, dorsal view; 10) part of fore wing.
DISCUSSION. New species is closely related to *M. rotundifossa* Tobias, 2000 from Primorskiy krai [1], but differs by the head strongly narrowed behind eye, by denser sculpture of mesoscutum, by dark colored palpi, basal part of antennae and legs. This species is also similar to *M. vitasi* Tobias, 2000 from Sakhalin [1], but differs by the head strongly narrowed behind eye, by shorter temple, by smaller body length, by longer metasomal carapace with more even sculpture (almost without longitudinal folds), and by less coarse sculptured mesoscutum.

*Microchelonus lamellosus* Tobias, sp. n.
Figs 8-12

MATERIAL. Holotype: ♂, Primorskiy krai, 30 km SE of Ussuriysk, forest, fringe, 12-17 VII 2001 (S. Belokobylskij).

DESCRIPTION. Male. Body length 3.2 mm. Head in front view oval, rounded narrowed behind eye in dorsal view, twice as wide as long, 1.3 times as wide as high, 1.1 times as wide as mesonotum. Temple in dorsal view 1.5 as long as transversal eye diameter. Ocellar triangle wider than OOL by ocellus diameter. POL 3.0 times as long as ocellus diameter. Longitudinal eye diameter 1.3 times the transverse diameter, equal to face width, 2.5 times as long as malar space. Face 1.7 times as wide as high, 1.5 times as high as clypeus. Maxillary palpi a little longer than face width. First flagellar segment 2.5 times and thirteenth - 1.5 times as long as wide correspondingly (apical segments missing).

Mesosoma 1.2 times as long as high. Mesoscutum with pair projections posterolaterally. Propodeum with transverse carina, pair of small lateral tubercles and pair of rather large median tubercles. Radial cell 2.5 times as large as second radiomedial cell. Metacarpus 0.9 times as long as pterostigma. Third abscissa of radial vein 4.0 times as long as second one, 2.3 times as long as first radiomedial vein; first abscissa as long as second one. Hind femora 4.0 times as long as wide; hind tibia 1.1 times as long as hind tarsus, 5.5 times as long as wide. Internal spur of hind tibia 0.4 times as long as hind basitarsus. Apical segment of hind tarsus as long as third segment, shorter than second segment. Carapace of metasoma oval, somewhat pointed apically, apicoventrally incurved in 0.1 carapace length, 1.75 times as long as wide, 3.0 times as long as high. Apical metasomal aperture round, without border furrow and visible median tubercle, situated in the middle carapace, 0.1 times as wide as carapace.

Head behind ocelli transversely striate. Face with divergent folds in upper part laterally and with median carina in upper half. Mesoscutum reticulate-rugulose, with faint longitudinal folds before scutellum. Scutellum longitudinally rugulose. Carapace with faint undulate and anastomosed numerous folds, near apical aperture with smoothed sculpture, shining, punctate. Body black. Fore and middle tibiae, all trochanters and tarsi, and basal half of hind tibia yellowish brown; fore and middle femora brown. Wings infuscate, pterostigma and veins brown.

FEMALE unknown.

DISCUSSION. New species is close to *M. maculibasis* Tobias, 2000, described from Japan [1] by having a pair of posterolateral projections of mesoscutum and the apical metasomal aperture without border furrow and median tubercle, but differs by the smaller apical metasomal aperture, by shorter hind femora and tibiae, by carapace of metasoma without basal yellow stains and by darker colored legs.


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