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Zesz. 1.

Hadronotus howardi n. sp. (Microhymenopt., Proctotrupidae)

with 3 text-figures

podali

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Described from two damaged females bred from eggs of *Ocneria (Porthetria) dispar* L. at Beiuk Lambat (near Simferopol, Crimea) Nov. 28 1908.

Female: L. of the body: 1.44 mm. General colour black, legs, except of dark coxae brownish red, antennae and mandibles brown, trophi pale testaceous.

Head 0.373 mm by 0.565 mm, a little flattened dorsoventrally, with rounded anterior and posterior borders.

Eyes dorsolateral, 0.226 by 0.18 mm, with sparse, minute hairs l. 0.003 mm, nearly one third of the diameter of a single ommatidium 0.012 mm.

Ocelli in obtuse-angled triangle, lateral ocellus elliptical 0.023 by 0.017 mm distant from the orbita at 0.04 mm; the space between posterior ocelli 0.289 mm.

Occiput not defined from vertex. Temple separated from ventral surface of the head by a longitudinal ridge.

Frons br. at the upper margins of orbitae 0.478 mm, the narrowest place at the level of fore-ocellus 0.33 mm; 0.418 at the oral margins of orbitae. Before the antennal base with a shallow impression.

The whole surface of the head microscopically scally-cellulate. Cells at the occiput, vertex and upper part of forehead nearly 0.007 mm in diameter, with the short and sparse hairs; one hair to 5—6 cells approximately. Temples and lateral parts of occiput with larger cells.

On the frontal impression above the torulithe cells are elongate and with raised longitudinal edges and form concentrically disposed striae. Frontal process to the tip l. 0.034 mm, br. at the tip 0.017 mm.

Clypeus 0.051 by 0.102 mm, broadly rounded orally, with blunt lateral teeth.

Labrum subtrapeziform 0.027 by 0.068 mm, with ten bristles at the rounded anterior border.

Antenna, Scapus elongately cellulate, with short pilosity.

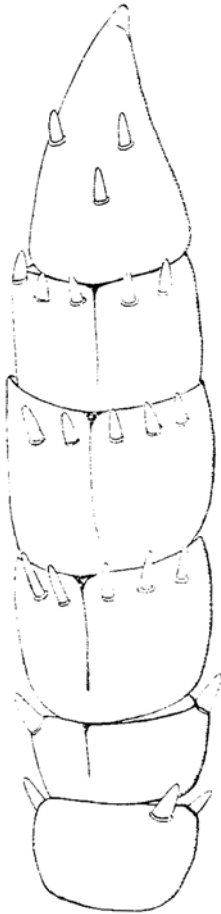


Fig. 1.

Measurements of antennal joints.

	Length.	Br.	R.D.P.	Tr. S.	V.C.S.
Scapus	0.231; 0.040 mm		1		
2 nd	0.075; 0.030 "				
3 rd	0.051; 0.027 "		1	1	
4 th	0.034; 0.027 "			1	
5 th	0.029; 0.029 "			1	
6 th	0.024; 0.029 "			1	
7 th	0.024; 0.034 "			3	
8 th	0.027; 0.040 "			1+1	
9 th	0.044; 0.048 "			2+3	1
10 th	0.044; 0.047 "			2+3	1
11 th	0.044; 0.047 "			3+2	1
12 th	0.068; 0.044 "			3	1

Shortenings: R. D. P. — round dorsal pustulae; Tr. S. — dorsolateral trichoidic sensoria; V. C. S. — ventral coeloconic sensoria.

Mandible 0.151 by 0.071 mm with two large teeth distally, a small tubercle between teeth, with the rest of pulp cavity represent a rudimentary third tooth. Four round sensorial pustulae and four bristles on the dorsal surface, ventral surface with two bristles.

Maxilla I cardo 13 by 4. Stipes 26:18. Palpus two-jointed
 0·034 by 0·014 mm and 0·036 by 0·012 mm.
 Maxilla II 0·088 by 0·037 mm. Palpus 0·02 by 0·007.

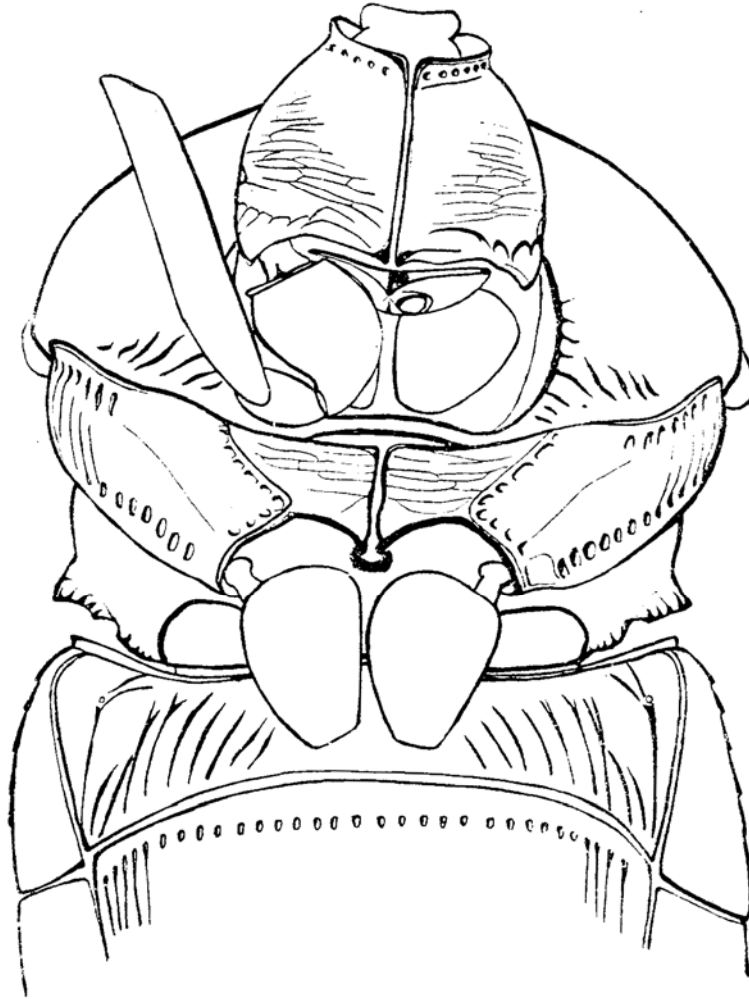


Fig. 2.

Thorax transverse 0·452 by 0·531 mm. Pronotum is visible
 from above only at tegular corners; ventrally 0·248 by 0·452 mm;
 with 6—7 short rugae in the postero-interior angle.

Prepectus 0·204 by 0·229 mm (half) finely transversally

cellulate, orally and caudally with some rugae shown on the fig. 2. Sternum 0.024 by 0.146 mm with a medial tooth directed caudally.

Mesoscutum 0.248 by 0.508 mm orally rounded, twice slightly incised at the border opposite to tegula and very shallowly carved at the caudal margin. Mesoscutum scally cellulate, with fine white pilosity, the l. of hair is nearly equal to the longer diameter of the cell 0.01 mm.

Scutellum 0.18 by 0.45 mm, 4 and 4 grooves at the oral suture; the caudal margin with a row of 14 small grooves. The sculpture like in the mesoscutum but the cells somewhat larger (the largest diameter 0.013 to 0.017 mm).

Mesosternopleurae with the pleural part longitudinally striate in the upper half, smooth in the ventral half. The sternal part divided by a longitudinal medial furrow, finely transversally cellulate l. at the middle 0.124 mm, br. at the anterior border 0.2 mm.

Metanotum 0.158 by 0.508 mm, l. at the middle 0.023 mm; the middle part is elevated and like each of lateral parts with a transversal row of 10 round grooves.

Metapleurae are not separated from the pleural parts of the propodeon; rugulose.

Propodeon 0.237 by 0.475 mm, l. at the middle 0.045 mm, transversally divided by a keel.

The oral half somewhat coarser rugulose than the caudal one and bears latero-dorsal spiracles, the diameter of spiracle 0.022 mm. The caudal part finely rugulose and laterally produced into broad blunt teeth.

Wings. Fore-wing hyaline, with a brownish cloud under marginal and radial veins, caudally reaching until the middle of the wing; l. 0.904 mm by 0.384 mm; the caudal border distinctly carved at the base.

Subcostal vein 0.452 mm, brownish in the basal $\frac{1}{3}$.

Marginal 0.022 mm, a little distant from the cephalic border of the wing. Postmarginal 0.01 mm.

Stigmal vein 0.062 mm, ended with a club-like expansion, which with bears 3 round pustulae.

The longest hair of the fringe 0.085 mm, discal hair 0.029 mm.

Hind wing with the subcostal vein reached 0.452 mm from the base, brownish at the basal fourth and the distal $\frac{1}{3}$. The longest bristle of the fringe 0.085 mm.

Legs. Fore-coxae transversally cellulate, like the trochanters with sparse pilosity. Trochanter with 1+2+2 round sensorial pustulae, femora with 5 close, basal sensorial pustulae and one dorsal pustule, tibia with 2+2+1 round pustulae, distally with a crown of 13 spines. Comb of first tarsal joint of 26 spines followed by 14 spines and 1 thicker. Second tarsal joint with 9+1 spines, third with 4+1, fourth with one spine. Mid tibia with 9 spines; first tarsal joint with 8+1; second with 4; third with 3; fourth with 2 spines. Hind tibia basally with three stout spines (fig. 3.) distally with a crown of 8 spines. First tarsal joint with 10; second with 5; third with 4; fourth with 2 spines.

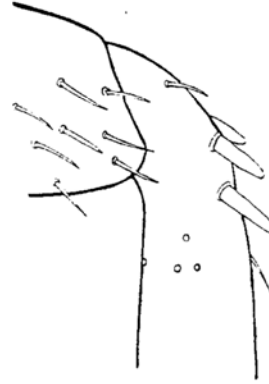


Fig. 3.

Sensorial pustulae like on the fore-leg.

The legs measurements.

	I		II		III		mm
	L.	Br.	L.	Br.	L.	Br.	
Coxa.	0.122;	0.095;	0.136;	0.102;	0.197;	0.126	mm
Trochanter.	0.075;	0.037;	0.085;	0.034;	0.095;	0.04	"
Femur.	0.284;	0.057;	0.283;	0.068;	0.360;	0.071	"
Tibia.	0.210;	0.047;	0.283;	0.040;	0.395;	0.047	"
Spur.	0.085;	0.014;	0.045;	—	0.068;	—	"
First tarsal joint.	0.119;	0.024;	0.080;	—	0.170;	—	"
Second "	0.044;	—	0.068;	—	0.074;	—	"
Third "	0.03 ;	—	0.054;	—	0.058;	—	"
Fourth "	0.027;	—	0.047;	—	0.048;	—	"
Fifth "	0.044;	—	0.058;	—	0.061;	0.017	"
Claw.	0.021;	—	0.02 ;	—	0.021;	—	"
Pulvillus.	0.034;	—	0.034;	—	0.035;	—	"

Abdomen, 0.603 by 0.542 mm. First tergite with sharp oral margin, basally with a transversal row of 24 deep grooves, followed by 29 parallel, longitudinal ridges, most of them not reaching the smooth caudal margin of the tergite. Lateral parts

orally with 6—8 and 6—8 oblique striae, rest coarsely scally. First sternite with 9 and 9 oblique striae. Second tergite basally smooth, with a transversal row of 32 deep grooves, from which run 21 short, longitudinal ridges, not reaching the middle of tergite; rest of surface finely cellulate. Second sternite with a transversal row of 30 deep grooves with a few (4—5) longitudinal striae on each side, finely cellulate with minute pilosity. Tergites III—V evenly cellulate with sparse marginal fringes of white, short bristles. Last tergite, rugulose with minute tubercles, bearing short pili. Cerci small each with 2 long bristles.

Third to sixth sternites finely cellulate with sparse short pilosity.

Ovipositor 0.452 mm, base into second segment.

Dimensions of abdominal segments.

	Tergite		Sternite	
	L.	Br.	L.	Br.
First.	0.180;	0.565;	0.135;	0.452 mm
Second.	0.259;	0.565;	0.259;	0.417 "
Third.	0.102;	0.508;	0.068;	0.271 "
Fourth.	0.054;	0.395;	0.056;	0.226 "
Fifth.	0.034;	0.226;	0.056;	0.203 "
Sixth.	0.023;	0.192;	0.079;	0.158 "

The genus *Hadronotus* A. Förster, comprises species of rather heterogenous value. Comparing, for instance, the member of segments of palpi max' and max'' in the different species, we will find three groups of species.

Hadronotus pedester Kieff. (subg. *Hadronotellus*) and *Hadronotus howardi* n. sp. have

Palpus of max'	2 jointed
Palpus of max''	1 jointed.

North american species according to Dr. H. Ashmead have

Palpus of max'	4 jointed
Palpus of max''	3 jointed.

South american *H. molinai* Bluch and several new species dissected by me have

Palpus of max'	2 jointed
Palpus of max''	2 jointed.

The data of Dr. Ashmead are doubtful.

At present it is impossible to divide this genus until the genotypic species *H. laticeps* (Först.) Kieff. will be revised anew.

The author dedicates this interesting species to his old friend Dr. L. O. Howard, the great American entomologist.

In 1907 at first I bred from the eggs of *Ocneria dispar* the parasite, which in my report provisionally I named *Telenomus* sp. (look Z. Mokrzecki. "Injurious Insects and Diseases of the Plants Observed in the Taurid's Government within the year 1909". Simferopol 1910, p. 22). The eggs were gathered in the south of Crimea at Beiuk-Lambat.

Later I very often obtained this parasite from different places of the plain (the forest district of Berdjansk) as well as of the mountainous parts of the land. Finally I got it from the eggs during the large invasion of *Ocneria dispar* in the woods of Simferopolis forest district in the year 1912. In my report for the year 1912 (page 6) I write "Owing to the immensely efficacious activity of the parasites, the invasion of the *Ocneria dispar* lasts shortly, but in the second year after the massy appearance it already decays". Besides that I mention firstly, the *Hadronotus (Telenomus) howardi* Mokr., which parasite discovered by me annihilates in the Crimea the 75—85% of "Gipsy Moth's" eggs. To the parasites which appear numerously in the Crimea may be still added: *Apanteles fulvipes* Hal., *Ap. solitarius* Rtzb., *Pristomerus vulnerator* Panz., seeking their food on the young caterpillars. Upon the grown-up caterpillars are sponging: *Sarcophaga affinis* Fall., *Roeselia antiqua* Meig., *Scutia saturniae* R. D.

In the work of Dr. L. O. Howard and Fiske: "The importation into the United States of the parasite of the gipsy Moth and the Browntail Moth" 1912, L. O. Howard mentions it (it is my commemorative quotation) *Hadronotus howardi* Mokr. as a parasite of the "Gipsy Moth's" eggs which was bred by me.

N. F. Meyer. Schlupfwespen die in Russland in den Jahren 1891—1926 aus Schädlingen gezogen sind (Fortsetzung). Reports of applied entomology V-o IV, Nr. 1, p. 240 (*Hadronotus howardi* Mokr.), Leningrad 1929, p. 240.

EXPLANATION OF DRAWINGS.

- Fig. 1. Antennal club, dorsal view.
 Fig. 2. Thorax, ventral view.
 Fig. 3. Knee of hind leg.

L'intéressant comportement des mâles de *Bembex*

(Guet-danse nuptial. Orientation. Habitudes. Rythme mnémonique.)

par

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Avant-propos.

1. Bien qu'une quantité d'excellents travaux ont été consacrés à l'éthologie des *Bembex*, dont ceux de Fabre, de Wesenberg-Lund, de Ferton, de Bouvier, il n'est pas un seul qui s'occupe du comportement des mâles. Bouvier ('01) avoue franchement que l'on n'en sait absolument rien. A vrai dire, l'on n'en sait pas grand' chose du comportement des mâles d'autres guêpes solitaires. On dirait, un véritable et exclusif matriarcat qui régit l'intérêt scientifique des étologues, en leur interdisant tout accès à l'androcée.

Eh bien, le côté mâle des Hyménoptères n'est pas toujours aussi négligeable, indolent, pique-assiette et idiot, comme c'est le cas de nos mellifères. Sans l'étudier et l'élucider, on risquerait de graves mésentendues dans la généralisation des conclusions, tirées de l'étude unilatérale du comportement des femelles seules. Et c'est pour mettre fin à ce précaire état de choses que je me suis décidé à publier, dès maintenant, les quelques faits, d'un intérêt — d'ailleurs — tout exceptionnel, qu'un heureux hasard m'a permis de constater, chez les mâles de *Bembex rostrata* L.

Les voici.

Faits.

2. Un matin de la seconde moitié de juillet, en procédant à l'inspection journalière de mon terrain d'études, une dune inclinée, à Sadowne (ca 70 klm au NE de Varsovie), où nidifiait bon

nombre d'Ammophiles¹⁾ dont je m'occupais passionnément. j'ai été frappé par d'étranges manoeuvres d'un *Bembex*, se démenant auprès et autour d'une petite excavation dans le sable. Une minute, il ne tenait pas sur place, bien qu'il se mettait par terre, coup sur coup. Sa position de repos à peine prise, déjà, il repartait, faisait au vol un cercle ou un demi-cercle, ou bien donnait un fort crochet d'un mètre d'envergure, tantôt d'un côté, tantôt de l'autre, puis s'asseyait de nouveau quelque part, pour un instant. Après une petite halte, il reprenait sa manoeuvre, se portait par ci, s'arrêtait, tournait, se portait par là, en bourdonnant fort, tout le temps. Jamais, il ne s'éloignait plus d'un mètre, au maximum, de l'excavation susdite, mais la contournait toujours, en s'abattant sur le sable, soit à l'est de celle-ci, soit à l'ouest, soit au sud, enfin (mais pas au nord, ou tout exceptionnellement!), le front dirigé invariablement vers le centre de l'excavation. Parfois, il s'approchait de celui-ci, presque à même.

Y scrutait-t-il une place pour y creuser un nid?

Non pas! Son comportement aurait été tout autre. Il ne tâtait pas le sable de ses antennes, ni de ses tarsi.

Y cherchait-t-il, peut-être, l'entrée de son nid déjà fait?

Pas plus! Son comportement le défiait. Il ne grattait pas le sable. Il n'y soulevait rien de ses mandibules.

Mais voici, que je viens à y percevoir quelques éboulis et un ébranlement caractéristique du sable, poussé du dedans, par quelque femelle en train de traverser la galerie d'entrée de son nid. Et de fait, à l'instant même, il s'y montra une, émergeant du souterrain. Elle était un peu plus petite, comparée à mon *Bembex*, et portait des couleurs plus ternes, plus grisâtres.

Sitôt émergée, et ayant jeté, hâtivement, un peu de sable sur l'entrée de galerie, selon l'habitude de l'espèce, elle prit le vol, se dirigeant rapidement et tout droit vers le Nord, par delà le bois de pins²⁾. Elle ne partit pas toute seule. Notre *Bembex*

¹⁾ Ainsi que de maintes autres Sphégiens et Apiaires (*Philantes*, *Crabro*, *Halictes* etc.).

²⁾ De l'autre côté de ce petit bois de pins, se trouvait, à une distance d'une cinquantaine de mètres, un champ de blé sarrasin, où butinaient toujours une quantité innombrable de mouches et d'autres insectes. Plus loin, commençaient les jardins potagers et fruitiers.