

New Taxa of the Braconid Subfamilies Doryctinae and Exothecinae (Hymenoptera, Braconidae) from the Western Palaearctic Region

S. A. Belokobylskij

Zoological Institute, Russian Academy of Sciences, St. Petersburg, 199034 Russia

Received June 29, 2000

Abstract—The following new taxa are described from the Western Palaearctic Region: *Mimodoryctes proprius* gen. et sp. n. (Algeria), *Doryctes germanicus* sp. n. (Germany), *Rhoptrocentrus cleopatrae* sp. n. (Egypt), *Rhaconotus hispanicus* sp. n. (Spain), *Rh. arabicus* (Saudi Arabia), *Artocella vladimiri* sp. n. (Turkmenistan), and *Hormius gelechia* sp. n. (Russia, Ukraine, and Bulgaria). A key to species of the formerly monotypical genera *Rhoptrocentrus* and *Artocella* is provided. The lectotype of *Doryctes heydenii* Reinh. is designated. *Hormius* (*Anhormius*) *propodealis* Blkb. is recorded from the Palaearctic fauna for the first time.

The braconid fauna of the Western Palaearctic Region (mainly of West Europe) has been studied over 200 years. Even though the extent to which braconids of this region have been investigated is one of the greatest, the information on this group of entomophages in Europe cannot be considered exhaustive; intensive description of new species and even super-species taxa still continues, with rather great number of these found in the northern and central parts of Europe. Against this background, the rich fauna of the southern part of Europe and the overall Mediterranean Basin remains rather poorly known, despite its distinctness and participation of African faunistic elements in its formation.

The present paper provides descriptions of a new genus and 7 new species of the families Doryctinae and Exothecinae, collected mainly from the southern part of the Western Palaearctic Region. The new North-African genus of the tribe Doryctini is unique in that it lacks 2nd radiomedial vein, the character previously unknown in this tribe. Descriptions of new species in the formerly monotypical genera *Rhoptrocentrus* Marsch. and *Artocella* Ach. are of undoubted interest. Two new peculiar species are described in the genus *Rhaconotus* Ruthe, which shows the maximum species diversity in the tropics of the Old World. It is significant that one of these species possesses strongly shortened wings. In the genus *Rhaconotus*, this character is found for the first time. Records of new species in the genera *Doryctes* Hal. (collected in Germany)

and *Hormius* Ness (reared from *Gelechia senticetella* Staudinger on the Black Sea coast) are rather unexpected. All these indicate the high diversity of braconids in the southern part of the Western Palaearctic.

The paper is based on the material from collections of the British Museum of Natural History, London (BMNH); the Deutsche Entomologische Institut, Eberswalde, Germany (DEI); zoologische Staatssammlung, Munich, Germany (ZSM); Zoologisches Museum der Humboldt Universität, Berlin (ZMB); Institute of Zoology, National Academy of Sciences of the Ukraine, Kiev (IZANU); Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN). The morphological terminology and nomenclature of venation follow those by Belokobylskij and Tobias (1998).

SUBFAMILY DORYCTINAE

Genus *MIMODORYCTES* Belokobylskij, gen. n.

Type species *Mimodoryctes proprius* sp. n.

Description. Head 1.4 times as wide as long, roundly narrowed behind eyes. Ocelli in nearly equilateral triangle (Fig. 3). Frons without depressions and carina. Eyes with very short and sparse hairs. Occipital carina distinct, ventrally not fused with hypostomal one and interrupted along short distance. Malar suture absent. Hypoclypeal depression rather small, rounded. Clypeal suture distinct, entire, with 2 small median depressions above it (Fig. 1). Palpi short; maxillary

palpus 6-segmented, labial one 4-segmented. Third segment of labial palpus shortened, 0.6 times as long as 4th segment (Fig. 2). Postgenal bridge very narrow. Scape rather small, 1.6 times as long as wide, without apical process or emargination. Antennae thin, fili-form; 3rd segment almost straight, nearly cylindrical, 1.4 times as long as 4th (Fig. 4).

Prothorax short, of usual shape. Pronotal carina ill-defined, situated in posterior third of pronotum. Propleural lobe wide and distinct. Mesonotum not highly, gently, and roundly raised above pronotum (Fig. 7). Medial lobe of mesoscutum without anterolateral processes. Notauli vague, very wide and shallow. Prescutellar depression rather short, densely crenulate. Scuto-scutellar suture distinct. Scutellum convex, its length slightly less than its maximum width. Metanotum with oval median tooth. Subalar depression narrow, shallow, coarsely rugose. Prepectal carina distinct, entire. Postpectal carina absent. Sternauli distinct, long, nearly straight, situated along entire ventral length of mesopleura (Fig. 7). Mesopleural pit distinct. Meta-pleural lobe long, narrow, rounded apically. Propodeum without tubercles or depressions, posterior bridge absent. Propodeal spiracles small and rounded.

Fore wing (Fig. 9). Radial vein arising near middle of pterostigma, terminating slightly before wing apex. Pterostigma long and narrow. Radial cell closed distally. Recurrent vein running into 1st radiomedial cell. First medial abscissa strongly arc-curved into 1st radiomedial cell. Second radiomedial vein absent (Fig. 9). Nervulus strongly postfurcal. Parallel vein not interstitial, arising from middle of distal margin of brachial cell, gently curved at base. Brachial cell closed distally. Mediocubital vein not curved toward anal vein. Transverse anal veins absent.

Hind wing (Fig. 10). Nervellus present. First mediocubital abscissa 1.3 times as long as 2nd abscissa. Recurrent vein developed, slanting toward wing base. Medial cell large, widened toward apex, occupied 0.45 of length of hind wing. Radial cell weakly narrowed toward apex, without transverse vein. First costal abscissa 1.1 times as long as 2nd one, extending slightly beyond point of branching of 2nd abscissa. Posterior margin of wing wide and not emarginate in basal third.

Fore and middle tibiae with several distinct spines nearly forming a row. Distal margins of all tibiae bearing fine spines (hind tibia with 2 spines, Fig. 8). Hind coxa with distinct basoventral tooth and distinct median tubercle on dorsal side (Fig. 5). All femora

without obvious dorsal tubercles. Hind femur 2.5 times as long as wide (Fig. 6). Hind tibia with short area of dense white hairs along distal inner margin; its spur short, slender, 0.2 times as long as hind basitarsus which 0.7 times as long as 2nd–5th segments combined. Claws simple.

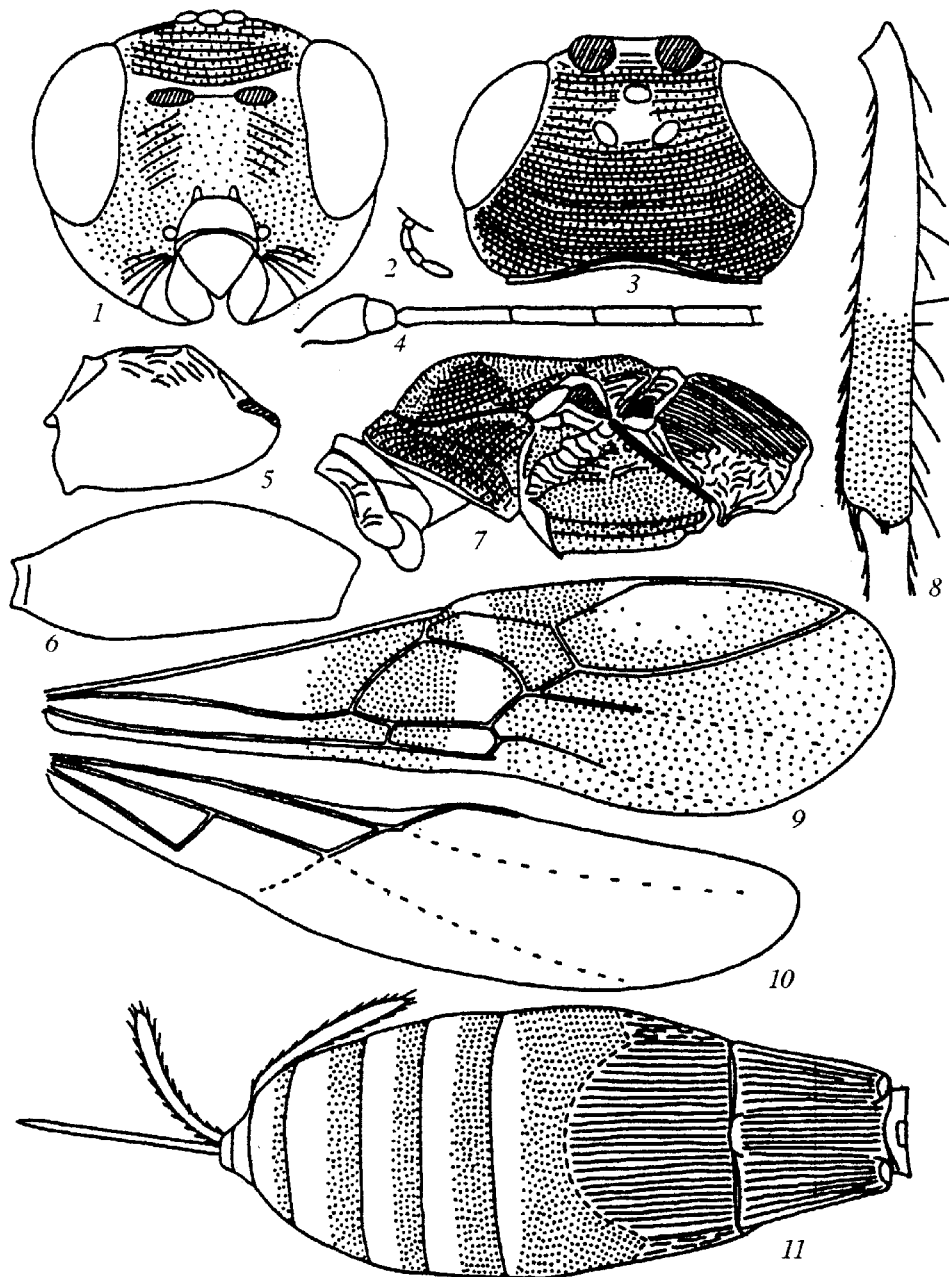
Metasoma (Fig. 11). Abdominal tergite I not petiolate; acrosternite about 0.2 times as long as tergite, not reaching spiracles. Tergite abruptly widened at base, without dorsal carinae; dorsope distinct, rather small; laterobasal processes and spiracular tubercles absent; spiracles situated in basal third. Tergite II without areas. Second suture indistinct, broken laterally. Tergite III without areas (Fig. 11). Laterotergites separated on tergites II–V. Hypopygium rather small, with short pointed process in the middle of posterior margin. Ovipositor considerably shorter than metasoma. Apex of ovipositor with 2 weak obtuse dorsal tubercles, very finely serrate ventrally. Ovipositor sheaths rather narrow.

Vertex densely strigate, with weak granulation between striae. Mesosoma sculptured. Propodeum without areas.

Diagnosis. The new genus is most closely related to *Doryctes* Hal., differing in the absence of 2nd radiomedial vein in the fore wing, shortened 3rd segment of the labial palpus, absence of the dorsal lobe of the pronotum, abruptly widened basally tergite I, absence of a rounded depression on the posterior end of the sternauli, and the parallel vein arising from the middle of the distal margin of the brachial cell. The genus described can also be related to *Hemidoryctes* Blkb., being distinguished by the absence of 2nd radiomedial vein in the fore wing, shortened 3rd segment of the labial palpus, vague notauli, large submedial cell in the hind wing, and presence of a distinct basoventral tooth on the hind coxa.

Mimodoryctes proprius Belokobylskij, sp. n.
(Figs. 1–11)

Description. Female. Body length 4.0 mm, fore wing 2.8 mm long. Transverse eye diameter nearly twice temple length. POL 1.3 times Od, 0.75 times OOL. Diameter of antennal socket about equal to distance between sockets, 1.25 times distance from socket to eye. Longitudinal eye diameter 1.3 times transverse one, 2.5 times malar space, 1.1 times face width; malar space 0.9 times basal width of mandible. Face width 1.3 times its height with clypeus. Clypeus with projecting flange along anterior margin. Width of



Figs. 1–11. *Mimodoryctes proprius* gen. et sp. n.: (1) head, front view; (2) labial palpus; (3) head, dorsal view; (4) 6 basal antennal segments; (5) hind coxa, (6) hind femur; (7) mesosoma, lateral view; (8) hind tibia; (9) fore wing; (10) hind wing; (11) metasoma, dorsal view.

hypoclypeal depression 0.8 times distance between margin of depression and eye. Tentorial pits small.

Antennae formed by more than 18 segments (apical segments missing). First flagellar segment nearly 7 times as long as wide.

Mesosoma twice as long as high. Sternauli narrowly and weakly crenulate. Propodeum roundly narrowed backwards.

Wings. Length of pterostigma 4 times its maximum width, nearly equal to metacarp length. First radial

abscissa 0.2 times as long as arcuate 2nd abscissa, somewhat longer than 1st radiomedial vein, about as long as recurrent vein. Discoidal cell 2.3 times as long as wide. Second medial abscissa short. Sclerotized part of 3rd median abscissa long, twice as long as recurrent vein. Distance from nervulus to basal vein 2.3 times length of nervulus.

Legs. Fore femur 3.3 times as long as wide. Hind tarsus weakly narrowed apically, 1.2 times as long as thickened hind tibia. Second segment of hind tarsus

half as long as basitarsus, 1.6 times as long as 5th segment (without pretarsus).

Metasoma. Apical width of tergite I 2.2 times its basal width and 1.1 times its length. Length of tergites II and III combined 1.2 times their basal width, 0.9 times maximum width of tergite III. Ovipositor sheaths 0.35 times as long as metasoma; 1.5 times, as tergite I; about half, as mesosoma length; and 0.27 times, as fore wing.

Sculpture and pubescence. Vertex and frons densely strigate, with dense granulation between striae; temples densely granulate; face densely strigate-granulate. Mesoscutum densely granulate, with wide coarse strigation along traces of notauli and on posteromedian area. Scutellum densely granulate, with rugae anteriorly. Mesopleura with dense granulation becoming weaker downwards. Metapleura densely irregularly areolate. Propodeum densely striate. Hind leg with dense granulation becoming less distinct backwards; hind coxa rugose dorsally. Metasomal tergites I and II with densely striate; larger part of tergite III with fine dense granulation; tergites IV–VI with very weak granulation at base. Mesoscutum with short, rather dense semi-erect hairs covering wide areas along notauli and at sides of mesoscutum. Dorsal side of hind tibia with short and long sparse semi-erect hairs; length of hairs 0.5–0.8 times maximum width of tibia.

Coloration. Body pale reddish brown, yellow brown in places. Antennae yellow, darker to apex. Palpi more or less infusate, reddish brown, paler toward apex. Legs pale reddish brown; hind coxa and femur darker; all tibiae yellowish at apex and base. Fore wing hyaline, distinctly infusate around basal vein, below pterostigma, and at apex. Pterostigma brown, pale yellow at base and apex.

Male unknown.

Material. ♀, North Africa, "S. O. Algerien, Tig'amaiin-en-tisita, 25–30.IV[19]14. v. Geyr S. G." (ZMB).

Genus *DORYCTES* Haliday, 1836

This is a rather small braconid genus represented in nearly all zoogeographical regions of the World (Shenefelt and Marsh, 1976). The taxonomy of the genus is complicated by a significant infraspecific polymorphism in the coloration of body parts (primarily, head and metasoma), extent of the sculpturation of the metasomal tergites (primarily, II and III), and

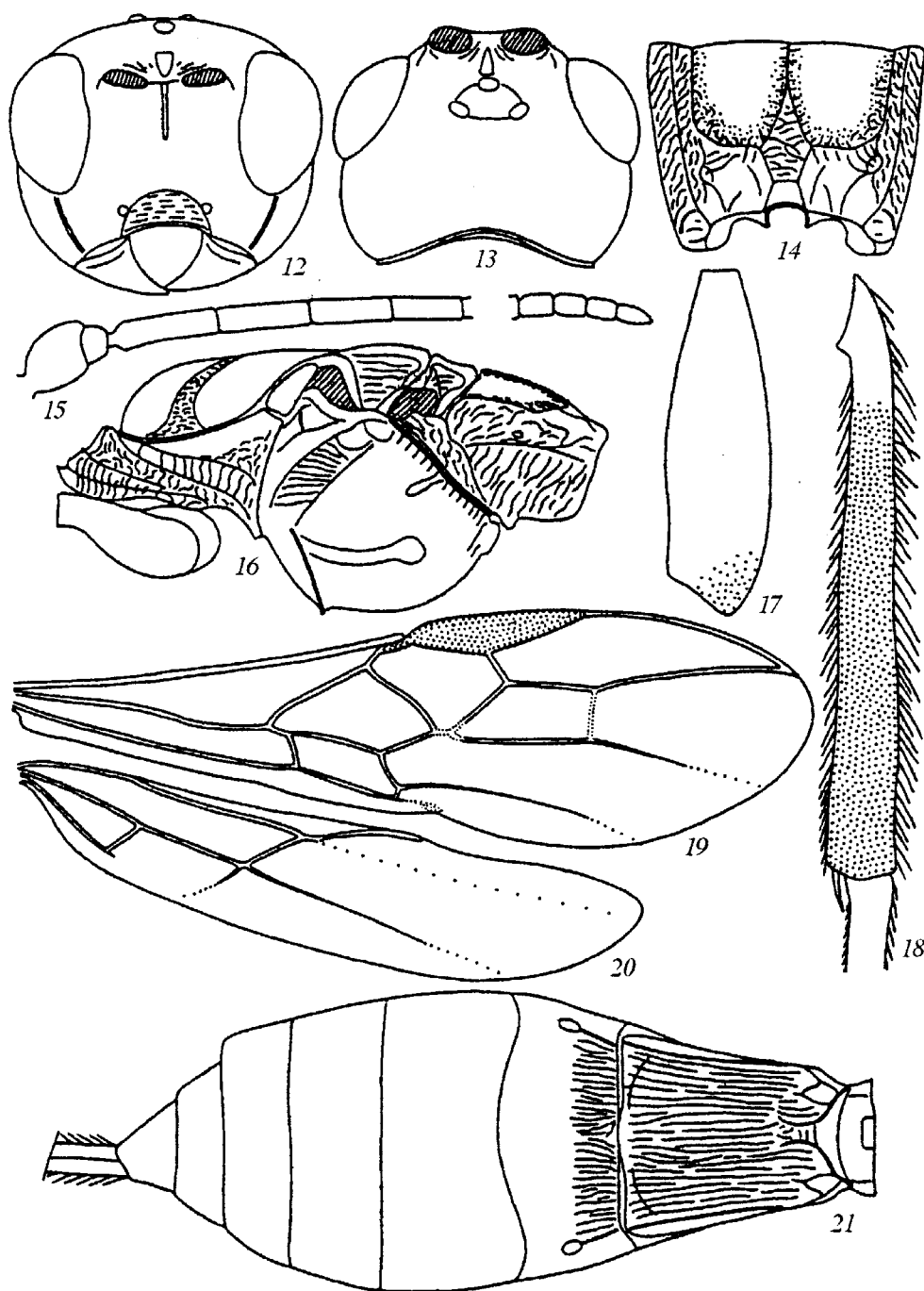
length of the ovipositor. Therefore, forms and even individuals of different sexes of the same species received separate species names. In addition, the insufficiently distinct morphological limits of the genus have been (and, sometimes, still are) the reason for inclusion in *Doryctes* of species from other genera (*Ontsira* Cam., *Neodoryctes* Szépl., *Jarra* Marsh, *Paradoryctes* Granger, and *Parallorhogas* Marsh).

In the Western Palaearctic Region (mostly, in West Europe), 9 valid species of *Doryctes* have been known (Shenefelt and Marsh, 1976) [except *D. fuscatus* (Nees) and *D. nobilis* (Nees) whose status is not entirely known]. A record of a new species in the fauna of Germany is of undoubted interest.

Doryctes germanicus Belokobylskij, sp. n. (Figs. 12–21)

Description. Female. Body 4.8–6.5 mm long; fore wing 4.6–5.7 mm long. Head width 1.4–1.5 times its length in the middle; head weakly convex behind eyes and then roundly narrowed. Length of temple about equal to, or slightly exceeding, transverse eye diameter. Ocelli forming triangle whose base 1.2–1.3 times as long as its sides; POL 1.5–1.7 times Od, 0.6–0.7 times OOL. Diameter of antennal socket 1.2–1.5 times distance between sockets, 1.6–1.8 times as long as distance from socket to eye. Eyes with very short sparse hairs; longitudinal eye diameter 1.3–1.4 times transverse one, 3.0–3.3 times malar space, 1.2 times height of face and clypeus combined, about equal to face width. Malar space 0.6–0.8 basal width of mandible. Face with 2 distinct depressions above clypeus, bearing narrow vertical median stripe in upper half; width of face 1.2–1.4 times its height with clypeus. Hypoclypeal depression rounded, its width 1.1–1.4 times distance from margin of depression to eye. Malar suture weak but distinct. Clypeal suture more or less distinct. Tentorial pits rather small. Occipital carina not fused ventrally with hypostomal one. Hypostomal lobe absent. Length of maxillary palpus 1.5 times head height.

Antennae nearly filiform, with ill-defined rhinaria, entirely covered with short dense pubescence, 41–46-segmented, about 1.2 times as long as body. Length of scape 1.4–1.5 times its maximum width. Length of 1st flagellar segment 3.5–3.8 times its apical width, 1.10–1.25 times length of 2nd segment. Length of subapical segment 1.7–2.0 times its median width, 0.3–0.4 times length of 1st segment, and 0.7–0.8 times length of apical segment bearing short thick spine at apex.



Figs. 12–21. *Doryctes germanicus* sp. n.: (12) head, front view; (13) head, dorsal view; (14) propodeum, dorsal view; (15) basal and apical antennal segments; (16) mesosoma, lateral view; (17) hind femur; (18) hind tibia; (19) fore wing; (20) hind wing; (21) metasoma, dorsal view.

Mesosoma 1.8–2.0 times as long as high. Dorsal side of pronotum with narrow high lobe (shallowly depressed medially) in posterior third and distinct pronotal carina in anterior third. Mesonotum arcuately raised above pronotum to form gentle declivity. Notauli deep, entire, crenulate. Prescutellar depression

rather long, weakly rugose, with 3 carinae, 0.35–0.40 times as long as scutellum. Metanotum medially with 3 longer converging carinae in anterior part and 3 short diverging ones, in posterior part. Subalar depression deep, coarsely and densely rugose. Mesopleural pit distinct. Sternauli narrow, with wide rounded

depression posteriorly, nearly smooth, occupying 2/3 of length of mesopleura along ventral side.

Wings. Fore wing 3.1–3.3 times as long as wide. Pterostigma 4.0–4.5 times as long as wide. Radial cell nearly reaching wing apex. Radial vein arising slightly before middle of pterostigma. Second radial abscissa 2.8–3.1 times as long as 1st abscissa, half as long as 3rd abscissa, and 1.3–1.4 times as long as 1st radio-medial vein. Second radiomedial cell rather small, 2.4–2.8 as long as wide, 1.2–1.4 times as long as the wide brachial cell. Distance from nervellus to basal vein 0.3–0.7 times nervellus length. Hind wing 4.2–4.5 times as long as wide. First mediocubital abscissa 1.1–1.3 times as long as 2nd abscissa. First costal abscissa 0.65–0.70 times as long as 2nd one. Recurrent vein distinct, nearly interstitial, slanting toward wing base.

Legs. Hind femur 3.3–3.5 times as long as wide, with rather small tubercle dorsally. Hind tarsus as long as hind tibia. Hind basitarsus 0.8–0.9 times as long as 2nd–5th segments combined; 2nd segment 0.4 times as long as basitarsus, nearly twice as long as 5th (without ptetarsus).

Metasoma about as long as, or 1.3 times longer than head and mesosoma combined. Tergite I with deep dorsope, uniformly and almost linearly widened to apex, with weak spiracular tubercles in basal third. Apical width of tergite I about twice its basal width, its length 1.1–1.2 times apical width. Length of tergite II 0.50–0.55 times its basal width, nearly equal to length of tergite III. Second suture very ill-defined, arcuate in the middle, somewhat partly broken laterally. Ovipositor sheaths rather wide, 0.60–0.65 times as long as fore wing, 1.2–1.5 times as long as metasoma, 1.4–1.5 times as long as mesosoma.

Sculpture and pubescence. Head smooth, face weakly punctate, clypeus with dense obsolete rugae. Mesoscutum densely weakly punctate; scutellum nearly smooth. Larger part of mesopleura smooth. Propodeum with distinct areas; larger part of basolateral areas smooth; rest of propodeal surface with rather sparse irregular rugae; areola long and narrow (occasionally very narrow), petiolar area separated; median basal carina 0.7–1.1 times as long as fork of areola. Legs smooth. Metasomal tergite I with high distinct dorsal carinae at base; tergite I entirely and tergite II in basal 1/2–2/3 striate. Rest of metasoma smooth. Mesoscutum entirely covered with short dense hairs. Hairs on dorsal surface of hind tibia rather short, semi-erect; their length 0.5–0.6 times maximum width of tibia.

Coloration. Head, mesosoma, and metasomal tergite I black; rest of metasoma red, brown to black only at apex. Antennae black. Palpi pale brown, dark at base. Coxae (except for dark bases) and femora pale reddish brown; trochanters brownish yellow; tibiae and tarsi dark reddish brown to black, bases of all tibiae and of all tarsal segments yellow, apical half of fore tibia reddish. Ovipositor sheaths uniformly black. Wings hyaline. Pterostigma dark brown to black.

Male. Body 4.4–4.8 mm long, fore wing 3.7–3.8 mm long. Antennal segments in basal half with dense distinct rhinaria, covered with very short sparse hairs; flagellar segments with more or less distinct (occasionally, very indistinct) median constriction in basal third. Length of 1st flagellar segment 2.7 times its maximum width. Hind femur 3.7–3.9 times as long as wide. Length of metasomal tergite I 1.5 times its apical width; 2nd suture not broken laterally. Length of tergite II 0.8 times its basal width, 1.2–1.3 times length of tergite III. Metasoma uniformly black. Other characters as in female.

Material. Holotype: ♀, Germany, "Germania / SA / Dubener Heide, Torfhaus, Zwischenmoor, ex l. *Frangula alnus*, 1.3.1999. leg. F. Burger" (DEI). Paratypes: 1 ♀, "Frankenhausen, Kyffh., 1/8.8[19]55. K. Ermisch. leg." (DEI); 1 ♀, "DDR: Thür., Bad Blankenburg, 18.6.1985; A. Taeger leg., 633" (DEI); 4 ♀, 3 ♂, "Germania / SA / Dubener Heide, Torfhaus, Zwischenmoor, ex l. *Frangula alnus*, leg. F. Burger, 10 and 18.02, 3.03.1999" (DEI, ZIN).

Diagnosis. The new species is most closely related to *D. heydenii* Reinh. [the lectotype of *D. heydenii* (designated here): ♀, "Danzig" (hand-written), "Type" (red), "Coll. H. Rhd.", "26750," "Heydenii Rhd" (hand-written) (ZMB)]; differing in the metasomal tergite II sculptured only in basal 1/2–2/3, smooth tergite III, long ovipositor (distinctly longer than metasoma), longer 2nd segment of the hind tarsus, pale reddish brown coxae and femora, and only punctate mesoscutum. The species described is also closely related to *D. molorchi* Fi., differing from it in the same characters as from *D. heydenii* Fi., except for the coloration of the legs.

Genus *RHOPTROCENTRUS* Marshall, 1897

This genus has been considered monotypical up to now. It is distributed in the Holarctic Region, occupying in the tribe Doryctini a rather separate position among genera of this zoogeographical region. It was of

undoubted interest to reveal in representatives of the genus the fact of parazitation on larvae not only of the coleopteran families Scolytidae and Cerambycidae (usual hosts of Doryctinae), but also of the family Xiphydriidae (known as hosts in some Doryctinae groups) and, which is especially interesting, of the lepidopteran families Tortricidae and Coleophoridae (Belokobyl'skij, 1998).

Rhoptrocentrus cleopatrae Belokobyl'skij, sp. n.
(Figs. 22–30)

Description. Female. Body length 2.9 mm; fore wing 2.1 mm long. Head 1.3 times as wide as long in the middle, convex behind eyes and then roundly narrowed. Length of temple 1.3 times transverse eye diameter. Ocelli small, arranged in nearly equilateral triangle; POL nearly twice Od, 0.3 times OOL. Eyes small, shortly and sparsely pubescent; longitudinal eye diameter 1.4 times transverse one, 1.4 times malar space, 0.9 times height of face and clypeus combined, and 0.8 times face width. Malar space 1.3 times basal width of mandible. Face distinctly convex, its width 1.1 times its height with clypeus. Hypoclypeal depression small, rounded, its width 0.6 times distance from margin of depression to eye and 0.4 times face width. Malar suture indistinct. Clypeal suture distinct. Occipital carina obscure in lower part, not fused with hypostomal suture over wide area. Hypostomal lobe absent. Palpi short.

Antennae thickened, filiform, 25-segmented, 0.8 times as long as body. Scape distally with small lobe on underside; scape length 1.7 times its maximum width. Length of 1st flagellar segment nearly 3 times its apical width, equal to length of 2nd segment. Length of penultimate segment 1.7 times its median width, 0.6 times length of 1st segment and 0.8 times length of the slightly pointed apical segment.

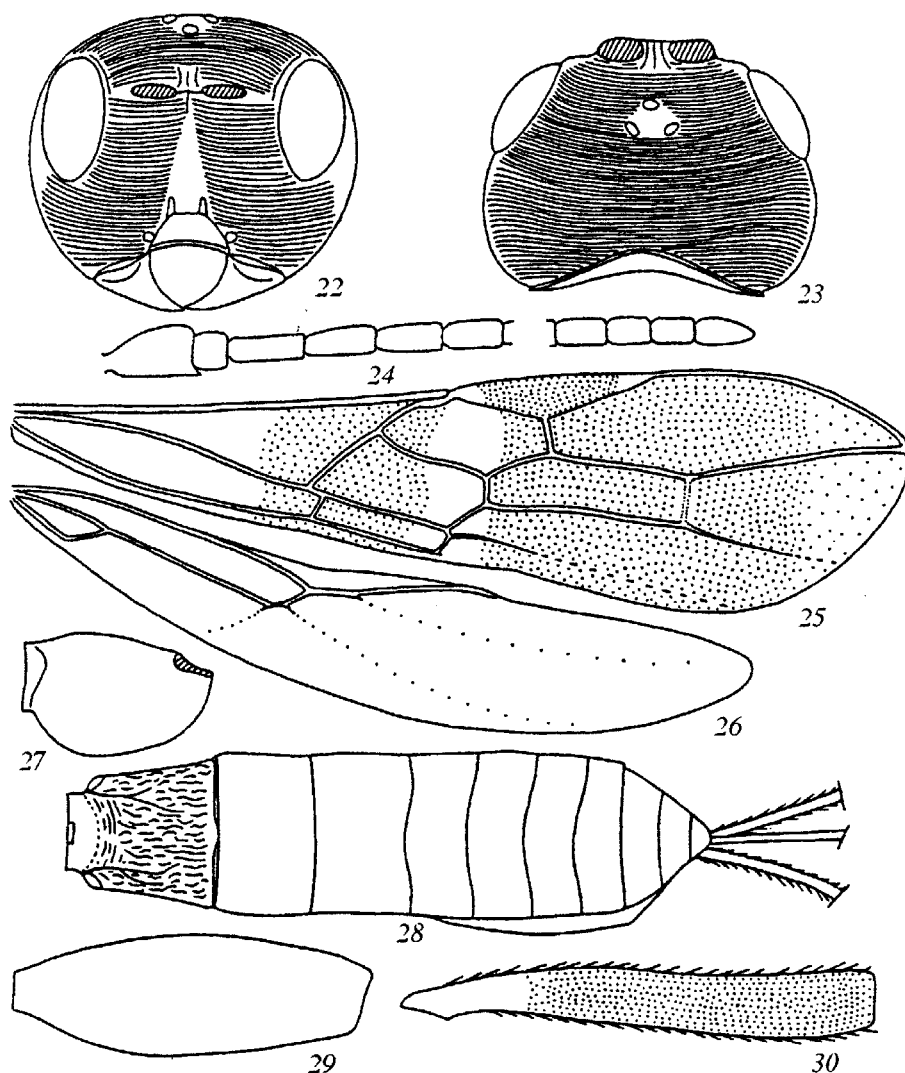
Mesosoma 1.8 times as long as high. Propleura distinctly convex. Mesonotum highly and almost perpendicularly raised above pronotum. Notauli distinct, crenulate, fused in the middle of mesoscutum to form fine sculptured groove. Prescutellar depression short, densely rugose, with weak median carina, 0.3 times as long as scutellum. Scutellum weakly convex. Metanotum without median tooth. Subalar depression shallow, rather narrow, irregularly rugose. Sternauli shallow, slightly curved, finely and densely areolate, occupying nearly entire length of ventral side of mesopleura. Metapleural lobe small, rounded at apex.

Wings. Fore wing 3.5 times as long as wide. Pterostigma narrow, 4.5 times as long as wide. Radial vein arising slightly before middle of pterostigma. Second radial abscissa 3.3 times as long as 1st one, 0.65 times as long as 3rd, twice as long as 1st radiomedial vein. Second radiomedial cell 3.7 times as long as wide, 1.6 times as long as the closed, rather narrow brachial cell. Recurrent vein 1.8 times as long as 2nd medial abscissa. Distance from nervulus to basal vein 0.7 times nervulus length. Parallel vein arising before middle of distal vein of brachial cell. In hind wing, 2nd medio-cubital abscissa twice as long as 1st one; 1st costal abscissa 0.4 times as long as 2nd abscissa. Recurrent vein somewhat antefurcal, nearly straight, directed toward wing base.

Legs. Fore tibia with numerous fine spines forming more or less wide row. Hind coxa without basoventral tubercle. Hind femur wide, 3 times as long as wide. Hind tarsus as long as hind tibia. Hind basitarsus as long as 2nd–5th segments combined; 2nd segment 0.3 times as long as basitarsus, 1.2 times as long as 5th segment (without basitarsus). Claws small.

Metasoma about as long as head and mesosoma combined. Tergite I abruptly narrowed at base, uniformly linearly narrowed to apex, with small dorsope, bearing weak spiracular tubercles in basal third. Apical width of tergite I 2.2 times its basal width, slightly exceeding its length. Length of tergite II 0.6 times its basal width, subequal to length of tergite III. Second suture very weak. Ovipositor sheaths rather narrow, 1.3 times as long as fore wing, 1.8 times as long as metasoma, and 0.9 times as long as body.

Sculpture and pubescence. Vertex and temples with very dense distinct regular rugulae (transverse on vertex and longitudinal on temples). Frons with weak interrupted, in places irregular, strigosity; face with dense rugae directed downwards from its middle to sides. Mesoscutum densely and rather weakly granulate, its lateral lobes nearly smooth over narrow median and posterior areas; scutellum smooth. Mesopleura granulate and finely irregularly rugulose, nearly smooth above sternauli over rather narrow area. Metapleura nearly smooth, with fine rugulae only ventrally and in anterior part. Propodeum without areas or carinae, entirely finely and densely irregularly areolate, granulate in anterior part. Legs smooth; metasomal tergite I with fine dense, mainly irregular rugae; other tergites smooth. Mesoscutum almost entirely with rather short semi-erect hairs. Hind tibia with very short, dense semi-erect hairs.



Figs. 22–30. *Rhoetrocentrus cleopatrae* sp. n.: (22) head, front view; (23) head, dorsal view; (24) basal and apical antennal segments; (25) fore wing; (26) hind wing; (27) hind coxa; (28) metasoma, dorsal view; (29) hind femur; (30) hind tibia.

Coloration. Body dark reddish brown, head paler. Antennae reddish brown, 2 basal segments yellowish brown. Palpi yellow. All femora and larger part of all tibiae (except for bases) reddish brown; fore and middle coxae and trochanters and all tarsi brownish yellow; hind coxa and trochanter and basal $1/3$ – $1/5$ of all tibiae pale yellow. Ovipositor sheaths brownish yellow, dark brown only at apex. Fore wing pale infusate, with large dark areas around basal vein and at the level of 2nd radiomedial cell. Pterostigma brown, yellow in basal $1/5$ and at apex.

Male unknown.

Material. Holotype: ♀, Egypt, "Alexandria, C. P., 20.12.[19]62. Ac. P. E. 884," "C. I. E. Coll. N 19160" (BMNH).

Diagnosis. The species described differs from the type species in the characters listed in the key below.

- 1(2). Scape without apical lobe. First flagellar segment 1.3–1.5 times as long as 2nd. Palpi long; length of maxillary palpus about equal to height of head. Metasomal tergite I more or less uniformly widened to apex; its length 1.1–1.2 times its apical width or, rarely, nearly equal to it. Tergite II sculptured at base. Ovipositor longer, its sheaths longer than body, (1.4)1.5–1.7 times as long as fore wing. Propodeum with more or less distinct areas or, at least, distinct longitudinal carinae in posterior $1/2$ – $1/3$. Hind tibia pale yellow in basal $2/5$ – $1/2$. Fore wing evenly pale infusate. Body length 1.8–4.5 mm. Parasite of *Phoeotribus sca-*

rabaeoides Bern. (Scolytidae), *Hylotrupes ba-julus* L., *Chlorophorus annularis* F. (Cerambycidae), *Xiphydria camelus* L. (Xyphydriidae), *Eupoecilia ambiguella* Hbn. (Tortricidae), *Coleophora tadhikiella* Danil. (Coleophoridae).—Spain, Germany, Austria, Italy, Slovenia, Czech, Moldova, Ukraine, Israel, Russia (European part, Urals), Armenia, Turkmenistan, China, Japan (Kyushu Island), USA *Rh. piceus* Marsh.

- 2(1). Scape on underside with small but distinct apical lobe. First flagellar segment as long as 2nd segment. Palpi short; length of maxillary palpus nearly half of head height. Metasomal tergite I abruptly widened at base, less strongly and more regularly widened to apex; its length 0.9 times apical width. Tergite II entirely smooth. Ovipositor shorter, its sheaths shorter than body, 1.3 times as long as fore wing. Propodeum without areas and carinae. Hind tibia pale yellow in basal third. Fore wing weakly infuscate, with large dark areas around basal vein and at the level of 2nd radiomedial cell. Body length 2.9 mm. Egypt *Rh. cleopatrae* sp. n.

Genus *RHACONOTUS* Ruthe, 1854

This is one of the largest Doryctinae genera, occurring in most of zoogeographical regions of the World (except for the Neotropical Region). Most of representatives of this genus are known as ectoparasites of larvae of the beetle family Buprestidae (most frequently), Curculionidae, and Brentidae; even though some of specialized species parasitize on larvae of the lepidopteran family Pyralidae (most frequently, stem-borers, including economically important pests of tropical crops) and Gelechiidae. The Palaearctic species of *Rhaconotus* have been revised on the basis of the material collected mainly from the territory of the former USSR (Belokobylskij, 1990, 1994). For the Palaearctic Region, 13 species have been indicated; however, examination of the southern territories of this zoogeographical region must increase the number of the known *Rhaconotus* species. This is also confirmed by the two peculiar species from Spain and Saudi Arabia described below.

Rhaconotus hispanicus Belokobylskij, sp. n. (Figs. 31–40)

Description. Female. Body length 4.2 mm; fore wing 0.6 mm long. Head 1.4 times as wide as long in the middle, roundly narrowed behind eyes. Transverse eye diameter 1.6 times length of temple. Ocelli small,

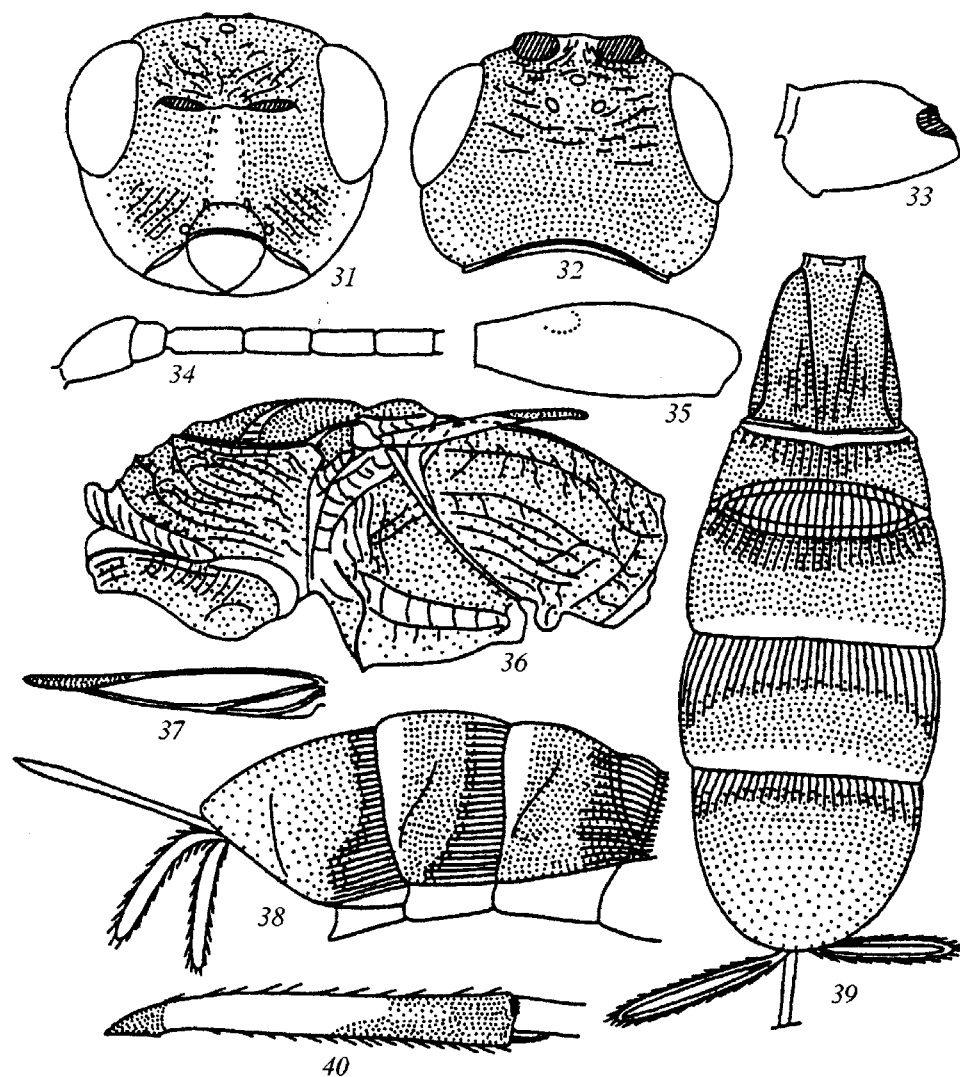
arranged in triangle with base 1.2 times as long as sides; POL nearly twice Od, half OOL. Eyes glabrous, longitudinal eye diameter 1.3 times transverse one, nearly twice malar space, 1.3 times height of face and clypeus combined. Malar space 1.1 times basal width of mandible. Width of face 1.4 times its height with clypeus. Hypoclypeal depression rather small, rounded; its width 0.6 times distance from margin of depression to eye. Malar suture absent. Clypeal suture distinct. Occipital carina fused ventrally with hypostomal carina by additional ruga. Vertex distinctly convex.

Antennae thickened, filiform, more than 26-segmented (apical segments missing). Scape wide, its length 1.8 times maximum width. Length of 1st flagellar segment 2.8 times its apical width, 1.2 times length of 2nd segment. Subapical segments about 1.8 times as long as wide.

Mesosoma weakly reduced, 2.2 times as long as high. Pronotum straight in anterior part (in dorsal view), nearly straight dorsally (in lateral view). Pronotal carina distinct, entire, situated nearly middle of dorsal part of pronotum. Mesonotum weakly gently sloping above pronotum. Notauli shallow, wide, entire, crenulate. Mesoscutum with deep median groove in posterior 1/4. Prescutellar depression deep, weakly and almost linearly beveled along posterior margin, with high median carina, nearly smooth, 0.3 times as long as scutellum. Scutellum convex, with lateral carinae in anterior half. Metanotum with short obtuse median tooth. Sternauli shallow, nearly straight, coarsely crenulate, situated along nearly entire length of ventral surface of mesopleura, connected in anterior part with lower margin of subalar depression. Subalar depression narrow, deep, crenulate. Prepectal carina distinct, rather wide ventrally, without lobes opposite fore coxae. Metapleural lobe distinct, rather narrow, rounded apically. Wings strongly shortened, lanceolate; fore wing with 3 longitudinal veins, distinctly sclerotized in apical 1/4.

Legs. All femora with small but distinct dorsal tubercles. Hind femur 2.8 times as long as wide. Hind tibia with 4 apical spines on outer side, slightly longer than hind tarsus. Hind basitarsus half as long as 2nd–5th segments combined; 2nd segment 0.55 times as long as 1st, twice as long as 4th, and 1.2 times as long as 5th segment (without pretarsus).

Metasoma about as long as head and mesosoma combined, with 5 visible tergites, widened toward



Figs. 31–40. *Rhaconotus hispanicus* sp. n.: (31) head, front view; (32) head, dorsal view; (33) hind coxa; (34) 6 basal antennal segments; (35) hind femur; (36) mesosoma, lateral view; (37) fore wing; (38) apical half of metasoma, lateral view; (39) metasoma, dorsal view; (40) hind tibia.

apex of tergite III. Tergite I with very small dorsope; its apical width 2.6 times basal width, 0.9 times its length. In basal 1/5, tergite II with distinct curved furrow separating narrow basal area; near the middle, tergite bearing wide weakly convex transverse furrow separating oval apical area; median length of apical area 0.9 times length of the rest part of tergite. Median length of tergite II 0.65 times its basal width and 0.9 times length of tergite III. Second suture wide and deep. Tergite V large, uniformly rounded along posterior margin, without depressions or posterolateral lobes, 1.4 times as long as tergite IV and 1.6 times as long as tergite III. Ovipositor sheaths 0.3 times as long as metasoma, 1.2 times as long as tergite I.

Sculpture and pubescence. Vertex densely granulate, with sparse fine rugulae near ocelli; frons densely rugose, with granulation; temples granulate, rugose in posterior 2/3; face finely rugulose, with dense granulation. Sides of pronotum entirely coarsely rugose, granulate in part between rugae. Mesonotum finely granulate, without rugosity posteriorly. Scutellum granulate. Mesopleura weakly granulate in middle and below sternaui. Metapleura granulate, with rugosity. Propodeum without areas, with 1 median and 2 lateral high longitudinal carinae in basal half, rugose-granulate, without rugosity (only granulate) over narrow anterolateral areas. Hind leg weakly densely granulate-coriaceous. Metasomal tergite I with entire,

high, closed dorsal carinae, densely and rather finely granulate, with short striae at apex. Larger part of tergite II longitudinally striate, granulate. Tergites III–V striate at base, densely and finely granulate on most part; tergites III and IV nearly smooth in apical 1/4–1/5. Tergites II–IV densely and finely striate at sides, with rather weak granulation between striae. Vertex with short sparse semi-erect pale hairs directed forwards. Mesoscutum with rather sparse semi-erect yellowish hairs along notauli and at sides. Hind tibia dorsally with short sparse semi-erect pale hairs; length of hairs 0.50–0.55 times maximum width of hind tibia, nearly as long as the denser hairs on underside of tibia.

Coloration. Body dark reddish brown; face, lower part of head, narrow areas around eyes, and propleura pale reddish brown. Antennae pale reddish brown, becoming slightly darker to apex. Palpi dark, reddish brown. Legs reddish brown; all femora dark; fore and middle tibiae in basal 1/4 and hind tibia in basal 3/5 brownish yellow. Ovipositor sheaths black, pale brown at base.

Male unknown.

Material. Holotype: ♀, Spain, "E. Huesca, 10–12.5.[19]78, Grasland m. Laubbäumen, Söderl.[und]" (ZSM).

Diagnosis. The new species differs from all the Palaearctic species in the strongly shortened wings, presence of the narrow basal area on the metasomal tergite II, and short ovipositor.

Rhaconotus arabicus Belokobylskij, sp. n.
(Figs. 41–50)

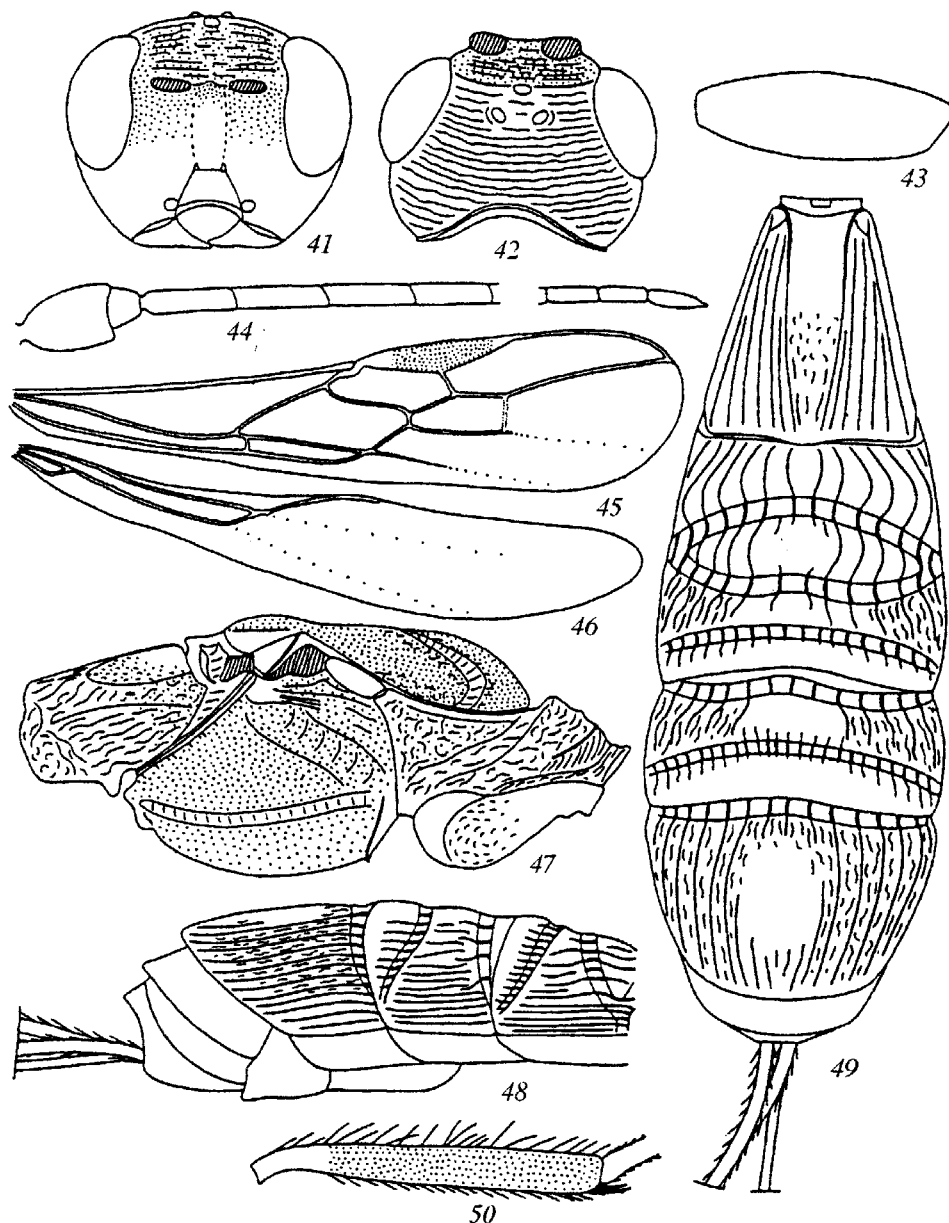
Description. Female. Body length 2.9 mm, fore wing 2.1 mm long. Head 1.4 times as wide as long in middle; behind eyes, nearly parallel-sided in anterior 1/3, roundly narrowed in posterior 2/3. Transverse eye diameter 1.5 times length of temple. Ocelli small, arranged in triangle with base 1.3 times as long as sides; POL nearly 1.5 times Od, 0.6 times OOL. Eyes very shortly and sparsely pubescent, longitudinal eye diameter 1.25 times transverse one, nearly 3 times malar space, 1.2 times height of face and clypeus combined. Malar space nearly equal to basal width of mandible. Width of face 1.2 times its height with clypeus. Hypoclypeal depression rounded; its width 0.9 times distance from margin of depression to eye. Malar suture absent. Clypeal suture distinct. Occipital carina not fused ventrally with hypostomal one, reduced along

long distance. Vertex distinctly convex. Palpi short; length of maxillary palpus about 0.9 times height of head.

Antennae fine, filiform, 29-segmented, 1.2 times as long as body. Scape wide, its length 1.6 times its maximum width. Length of 1st flagellar segment nearly 4 times its apical width, equal to length of 2nd segment. Penultimate segment 3.3 times as long as wide, 0.6 times as long as 1st flagellar segment, and 0.9 times as long as apical segment bearing short distinct apical spine.

Mesosoma 2.3 times as long as high. Pronotum long, straight in anterior part (in dorsal view), more or less distinctly convex dorsally (in lateral view). Pronotal carina distinct, but fine; distance from it to anterior margin of pronotum half that to mesoscutum. Mesonotum highly raised above pronotum to form gentle declivity. Notauli deep, entire, crenulate. Mesoscutum without median depression. Prescutellar depression distinct, rather deep, weakly and roundly beveled along posterior margin, without median carina, rugose, 0.3 times as long as scutellum. Scutellum convex. Metanotum with short median tooth pointed only posteriorly. Mesopleural pit absent. Sternauli shallow, weakly curved, crenulate, situated along nearly entire length of ventral surface of mesopleura, connected anteriorly with lower margin of subalar depression. Subalar depression shallow, rather narrow, crenulate. Prepectal carina distinct, wide ventrally, without lobes opposite fore coxae. Metapleural lobe distinct, narrow, rounded apically.

Wings. Fore wing 4.5 times as long as wide. Radial cell not shortened, metacarp 1.1 times as long as pterostigma. Radial vein arising nearly from middle of pterostigma. First radial abscissa forming distinct angle with 2nd abscissa. Second radial abscissa nearly twice as long as 1st abscissa, 0.3 times as long as 3rd abscissa, 1.2 times as long as 1st radiomedial vein. Second radiomedial cell short, almost not widened to apex, 2.5 times as long as wide, 0.9 times as long as the narrow brachial cell. First medial abscissa clearly S-shaped. Mediocubital vein distinctly curved toward anal vein. Distance from nervulus to basal vein nearly equal to nervulus length. Brachial cell gently-sloping and roundly closed slightly before recurrent vein; short desclerotized distal area (bulla) absent. Apical process of longitudinal anal vein (behind brachial vein) absent. Hind wing 5.7 times as long as wide. First mediocubital abscissa 0.35 times as long as 2nd one. Recurrent vein absent.



Figs. 41–50. *Rhaconotus arabicus* sp. n.: (41) head, front view; (42) head, dorsal view; (43) hind femur; (44) basal and apical antennal segments; (45) fore wing; (46) hind wing; (47) mesosoma, lateral view; (48) apical half of metasoma, lateral view; (49) metasoma, dorsal view; (50) hind tibia.

Legs. All femora with more or less distinct dorsal tubercles. Hind femur 2.8 times as long as wide. Hind tibia with 3 apical spines on outer side, nearly as long as hind tarsus. Hind basitarsus half as long as 2nd–5th segments combined; 2nd segment 0.6 times as long as 1st one, 2.2 times as long as 4th, and 1.1 times as long as 5th segment (without pretarsus).

Metasoma about as long as head and mesosoma combined, with 5 visible tergites, widened as far as apex of tergite IV. Tergite I nearly flat, with distinct

dorsope; its apical width 2.2 times its basal width, 0.83 times its length. Tergite II with distinct, forward-curved furrow separating oval area near the middle; median length of apical area 1.1 times length of the rest part of tergite. Median length of tergite II 0.7 times its basal width and 1.5 times length of tergite III. Second suture wide and deep. Tergites III and IV with distinct transverse crenulate and weakly arcuate furrows near the middle. Tergites IV and V with deep crenulate furrows at base. Tergite V large, uniformly

rounded along posterior margin, without median depressions or posterolateral lobes, 1.7 times as long as tergite IV and near twice as long as tergite III. Ovipositor sheaths 0.6 times as long as metasoma; twice, as tergite I; 0.8 times, as mesosoma, and 0.4 times, as fore wing.

Sculpture and pubescence. Vertex with coarse, more or less undulate (especially, laterally) strigae and fine rugulae in between. Frons densely strigose. Temples densely strigose in upper part, nearly smooth in lower part. Face smooth on larger part, more or less densely granulate only in upper part. Sides of pronotum entirely coarsely rugose, partly granulate between rugae. Mesonotum finely granulate, rugose posteriorly along short median area. Scutellum granulate. Mesopleura almost entirely densely granulate. Metapleura with irregular rugae and granulate. Propodeum with indistinctly outlined basolateral areas smooth on larger part and weakly rugose posteriorly, coarsely rugose in posterior 1/3, with median carina in basal half. Hind leg densely granulate, hind femur nearly smooth ventrally. Metasomal tergite I with entire, high, somewhat closed carinae, sparsely striate laterally, weakly or very weakly areolate to shagreened in the middle between carinae, nearly smooth in basal half. Tergites II (except for nearly smooth narrow median stripe on oval area) and III sparsely striate. Tergite IV shagreened and rugulose on narrow areas. Tergite V smooth in the middle, with sparse, weakly curved striae over wide lateral areas and, mainly, with additional faint sculpture between rugulae. Tergites II–IV with dense distinct striae at sides. Vertex with short sparse semi-erect pale hairs directed forward. Mesoscutum with rather dense semi-erect yellowish hairs over wide areas along notauli and at sides. Hind tibia dorsally with rather dense semi-erect pale hairs; length of hairs 0.6–0.8 times maximum width of hind tibia, slightly exceeding length of denser hairs on ventral side of tibia.

Coloration. Body dark reddish brown, black in places; face pale reddish brown over wide area around eyes and ventrally. Scape reddish brown; flagellum yellowish brown in basal 1/4, gradually becoming darker to apex. Palpi brownish yellow. Legs reddish brown, trochanters paler, all tibiae at bases and all tarsi yellow or pale yellow. Wings hyaline. Pterostigma brown, yellow in basal 1/4 and at apex.

Male unknown.

Material. Holotype: ♀, "Saudi Arabien, W. Büttiker," "Wadi Uqdah, 18.II.1980" (BMNH).

Diagnosis. The new species clearly differs from the all species of the genus *Rhaconotus* possessing an oval area on tergite II in the transversely rugose vertex, deep notauli, presence of crenulate transverse median furrows on tergites III and IV, and finely sculptured longitudinal median area on tergite I.

SUBFAMILY EXOTHECINAE

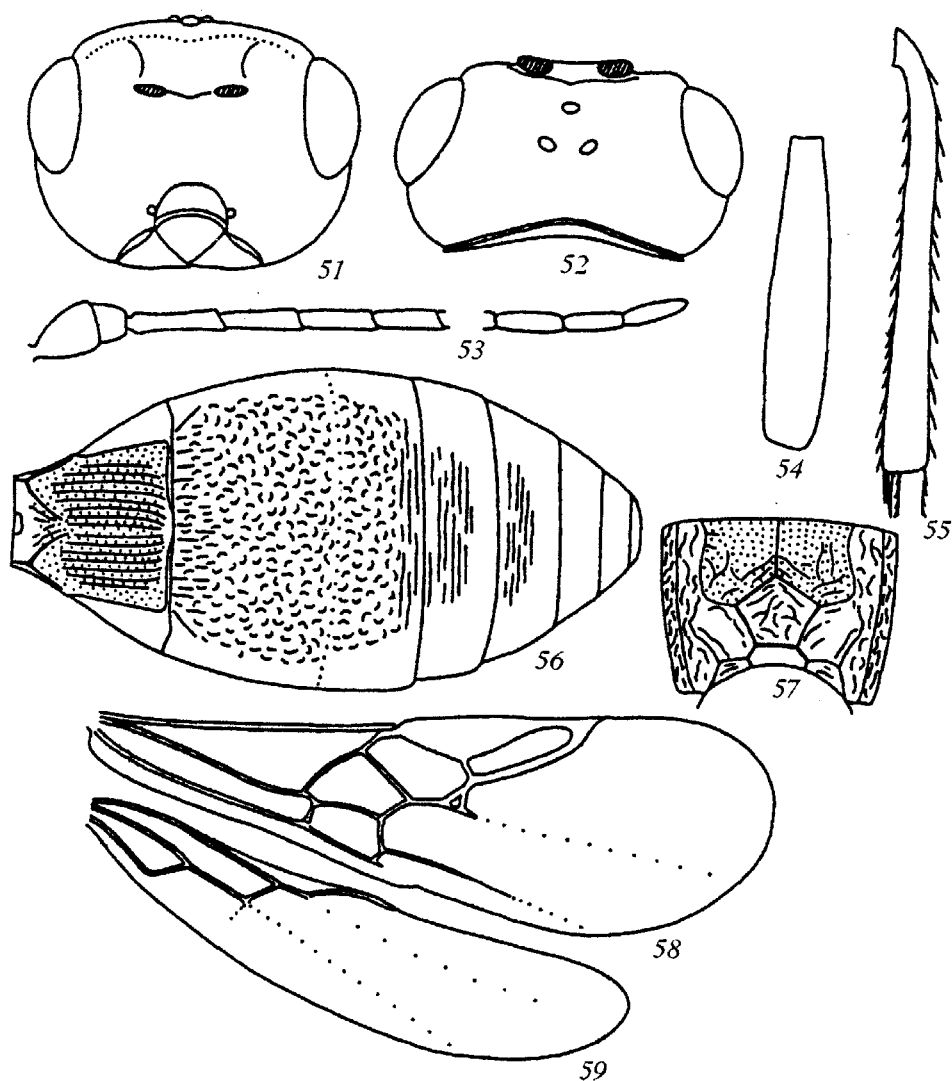
Genus *ARTOCELLA* Achterberg, 1980

Up to now, the genus has been considered monotypical in the tribe Clinocentrini. The type species of the genus (*A. brevipalpis* Acht.) has been described from Tunisia. The genus differs from the all representatives of the tribe in the shortened palpi with reduced number of segments and strongly shortened radial and 2nd radiomedial cells (Achterberg, 1980). It should be noted that the shortened radial cell (even though to not so great extent as that in *A. brevipalpis*) is also present in species of the closely related genus *Clinocentrus* Hal., inhabiting arid and semi-arid areas (*C. kozlovi* Blkb. and *C. kalmyk* Blkb.) (Belokobylskij, 1995). The new species of the genus *Artocella* has been found in Turkmenistan, in arid areas of the wider Mediterranean Basin, which significantly widens eastwards its range.

Artocella vladimiri Belokobylskij, sp. n. (Figs. 51–59)

Description. Male. Body length 2.3 mm, fore wing 2.1 mm long. Head 1.8 times as wide as long in middle, roundly narrowed behind eyes. Transverse eye diameter 1.5 times length of temple. Ocelli small, arranged in triangle with base slightly shorter than sides; POL 1.3 times Od, 0.33 times OOL. Occipital carina dorsally almost straight in middle. Frons weakly concave. Eyes small, rounded, glabrous; maximum eye diameter 1.1 times minimum one, 1.25 times malar space, 0.6 times face width. Malar space nearly 1.5 times basal width of mandible. Malar suture absent. Width of face 1.8 times its height with clypeus. Hypoclypeal depression small, rounded; its width half distance from margin of depression to eye. Clypeal suture distinct and entire. Tentorial pits small. Occipital carina developed in lower part, fused with hypostomal one near mandibles. Head strongly convexly-roundly narrowed below eyes. Palpi very short.

Antennae fine, filiform, 21-segmented. Scape 1.5 times as long as wide, 1.8 times as long as pedicel. Length of 1st flagellar segment nearly 4 times its api-



Figs. 51–59. *Artocella vladimiri* sp. n.: (51) head, front view; (52) head, dorsal view; (53) basal and apical antennal segments; (54) hind femur; (55) hind tibia; (56) metasoma, dorsal view; (57) propodeum; (58) fore wing; (59) hind wing.

cal width, 1.15 times length of 2nd segment. Penultimate segment 3.2 times as long as wide in middle, 0.9 times as long as apical segment. Apical segment pointed apically, without any process.

Mesosoma 1.6 times as long as high. Mesonotum highly, almost perpendicularly raised above pronotum. Notauli shallow, entire, crenulate. Prescutellar depression rather shallow, with 1 median and 2 lateral carinae, nearly smooth, 0.3 times as long as the weakly convex scutellum. Mesoscutum without posterolateral lobes. Metanotum without median tooth. Sternauli short, narrow, very shallow, finely crenulate. Propodeum more or less uniformly, roundly narrowed backwards (in lateral view).

Wings. Fore wing nearly 3 times as long as wide. Radial cell strongly shortened. Pterostigma rather small, 3.3 times as long as wide, 2.5 times as long as the distinctly thickened metacarp. Radial vein arising near middle of pterostigma, consisting of 2 abscissa. Second radial abscissa distinctly thickened, mainly straight, arcuate only at apex, 0.9 times as long as pterostigma and 7.7 times, as 1st abscissa. Second radiomedial cell very small, triangular, petiolate. Recurrent vein as long as 2nd medial abscissa. Discoidal cell distinctly petiolate, twice as long as wide. Distance from nervulus to basal vein equal to half nervulus length. Brachial cell short, distinctly widened to apex. Parallel vein arising from posterior 1/4 of distal vein of brachial cell. In hind wing, 1st mediocubital

abscissa 1.7 times as long as 2nd one. Recurrent vein absent. Radial vein very weakly sclerotized.

Legs. Hind femur 4.8 times as long as wide. Inner spur of hind tibia slender, pubescent, 0.3 times as long as hind basitarsus. Hind tarsus nearly as long as hind tibia. Hind basitarsus half as long as 2nd–5th segments combined; 2nd segment half as long as 1st one, 1.1 times as long as 5th segment (without pretarsus). Claws narrow, weakly curved in apical part.

Metasoma slightly shorter than head and mesosoma combined. Tergite I uniformly, almost linearly widened to apex, with dorsal carinae and distinct spiracular tubercles in basal third and distinct dorsope; its apical width 1.8 times its basal width, 1.1 times its length. Suture between tergites II and III obsolete. Length of tergites II and III combined equal to basal width of tergite II.

Sculpture. Head smooth. Mesoscutum almost entirely smooth, with rather small rugulose area in the middle of posterior third. Scutellum and mesopleura smooth. Propodeum densely granulate, also bearing rugae in the middle; areas developed but outlined by weak carinae; areola short and wide; median basal carina 1.5 times as long as anterior fork of areola. Metasomal tergite I with dense striae and fine granulation between rugulae; tergites II and III very finely and densely areolate, with short longitudinal and transverse rugulae in places, nearly smooth at sides; tergites IV and V with very fine transverse striae.

Coloration. Body pale reddish brown, propodeum and metasomal tergite I dark. Antennae black except for pale reddish brown 2 basal segments. Palpi dark. Legs pale brown, all femora in apical 1/3 and all tibiae (except for bases) darkened. Wing weakly infusate. Pterostigma yellow, infusate along margins (especially anteriorly).

Female unknown.

Material. Holotype: ♀, Turkmenistan, Repetek, sands, 9.IV.1993 (V. Perepechaenko) (ZIN).

Diagnosis. The new species differs from the type one in the characters listed in the key below.

- 1(2). Transverse eye diameter 3 times length of temple. Head below eyes almost linearly narrowed. Malar space less than basal width of mandibles. Width of hypoclypeal depression about equal to distance from margin of depression to eye. Scape

very wide apically, its length subequal to its maximum width. Second radiomedial cell larger, trapeziform, sessile anteriorly. Metacarp and 2nd radial abscissa not thickened. Propodeum without basal median carina. Body length 4.1 mm. Tunisia *A. brevipalpis* Acht.

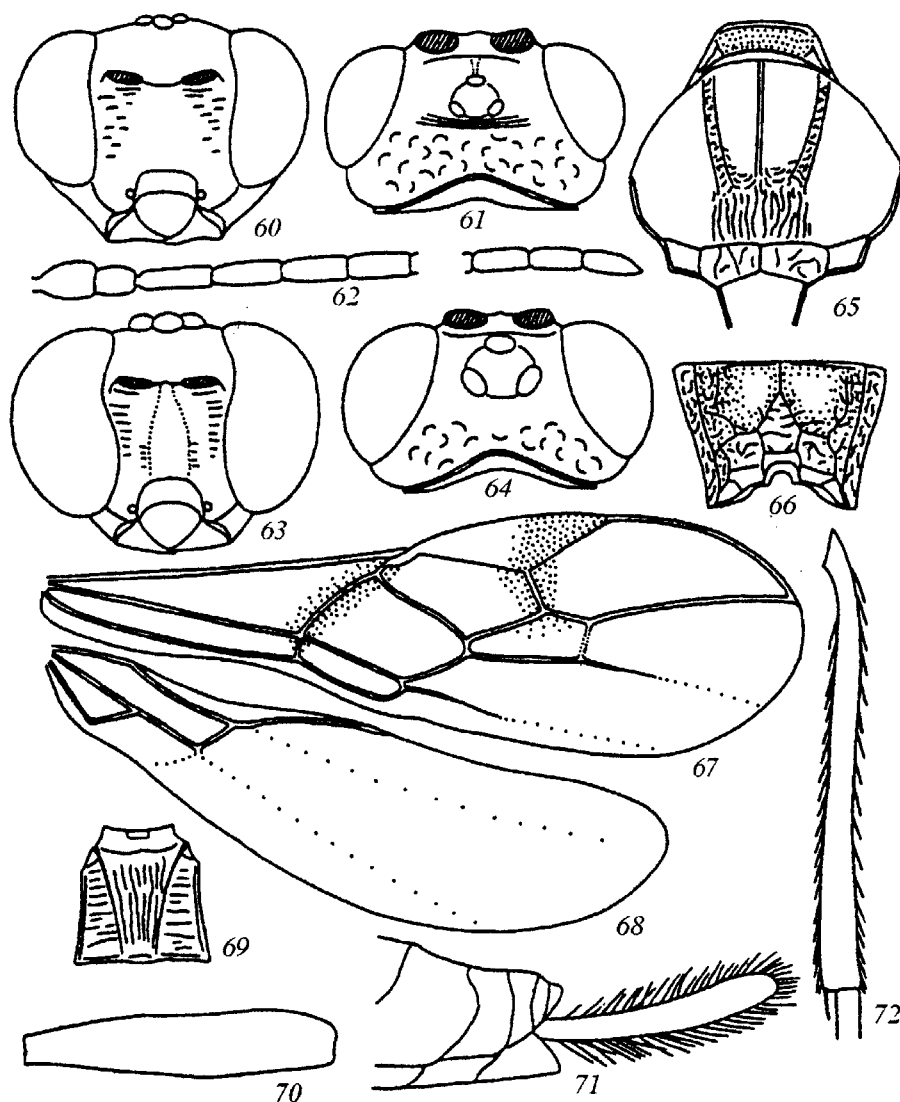
- 2(1). Transverse eye diameter 1.5 times length of temple. Head below eyes convex-roundly narrowed. Malar space exceeding basal width of mandibles. Width of hypoclypeal depression half distance from margin of depression to eye. Scape narrower apically, its length 1.5 times maximum width. Second radiomedial cell small, triangular, petiolate. Metacarp and 2nd radial abscissa distinctly thickened. Propodeum with basal median carina. Body length 2.3 mm. Turkmenia
..... *A. vladimiri* sp. n.

Genus *HORMIUS* Nees, 1818

This is the largest genus of the tribe Hormiini, comprising 3 subgenera (*Hormius* s. str., *Hormisca* Tel., and *Anhormius* Blkb.) and over 60 species from all zoogeographical regions of the World. In the Palearctic Region, 13 species have been known, including *H. (A.) propodealis* Blkb. described from Australia and also recorded for the first time in India (1 ♀, "India: Karnataka: Bangalore, 930 m, 10 Feb. 1989. L.E. Carroll"), Ethiopia (1 ♀, "Ethiopia: Illubabor Prov., Alwera River, 25 km W Akobo, 6–19.12.1986, L. Rybalov"), and Turkey (1 ♀, "W Turkey, Aband b. Bolu, 30.VII.[19]65, J. Klapperich"). The new species *Hormius*, described below, is the most frequently occurring parasite of larvae of *Gelechia senticetella* Staudinger, a serious pest of the *Juniperus excelsa* in the Black Sea coast.

Hormius gelechiae Belokobylskij, sp. n. (Figs. 60–72)

Description. Female. Body length 1.8–2.5 mm, fore wing 1.8–2.4 mm long. Head 1.7–1.8 times as wide as long in the middle, distinctly roundly narrowed behind eyes. Transverse eye diameter 2.5–2.8 times length of temple. Ocelli arranged in nearly equilateral triangle: POL 1.0–1.3 times Od, 0.5–0.6 times OOL. Occipital carina dorsally arc-curved toward ocelli. Occiput weakly depressed. Frons with obsolete median groove. Eyes glabrous, slightly depressed opposite antennal sockets; maximum eye diameter 1.3 times minimum one, 5.5–6.3 times malar space, and about 1.3 times face width. Malar space



Figs. 60–72. *Hormius gelechia* sp. n.: (60–62, 65–72) female; (63, 64) male. (60, 63) Head, front view; (61, 64) head, dorsal view; (62) basal and apical antennal segments; (65) mesoscutum; (66) propodeum; (67) fore wing; (68) hind wing; (69) metasomal tergite I; (70) hind femur; (71) metasomal apex and ovipositor, lateral view; (72) hind tibia.

0.5–0.6 times basal width of mandible. Malar suture distinct. Width of face slightly greater than its height with clypeus. Clypeus distinctly convex. Hypoclypeal depression rounded; its width 1.5 times distance from margin of depression to eye. Occipital carina entire ventrally, not fused with hypostomal carina, running in parallel rather far from hypostomal carina and reaching lower margin of head capsule. Length of maxillary palpus about 0.8 times head height. Third segment of labial palpus nearly spherical.

Antennae rather fine, filiform, 18–21-segmented. Scape 1.1–1.4 times as long as pedicel. Length of 1st flagellar segment nearly 3.2–3.4 times its apical width,

1.4–1.7 times length of large pedicel, subequal to length of 2nd flagellar segment. Penultimate segment 2.8–3.3 times as long as wide in the middle, 0.9 times as long as apical segment. Apical segment with very short apical process.

Mesosoma 1.6–1.7 times as long as high. Pronotal neck short, straight anteriorly. Oblique median depressions at sides of pronotum distinct and crenulate. Mesonotum highly, uniformly, and roundly raised above pronotum. Median lobe of mesoscutum usually with distinct longitudinal entire groove occasionally smoothed in anterior part. Notauli deep, entire, crenulate. Prescutellar depression long, shallow, with 1–3

carinae, weakly sculptured, 0.3–0.4 times as long as scutellum. Scutellum nearly flat, with distinct lateral carinae. Mesoscutum without posterolateral lobes. Metanotum without median tooth. Subalar depression shallow, wide, irregularly densely rugose, with regular arcuate rugae in upper part. Sternauli narrow, deep, straight, smoothed, with rounded pit posteriorly, occupying 2/3 of ventral length of mesopleura. Propodeum weakly roundly narrowed backwards (in lateral view).

Wings. Fore wing 3.0–3.2 times as long as wide. Radial cell not shortened. Pterostigma wide, 3.5–3.7 times as long as wide, about as long as metacarp. Radial vein arising near middle of pterostigma. First radial abscissa forming nearly right angle with inner anterior side of pterostigma. Second radial abscissa as long as, or 1.2 times longer than 1st one, 0.25–0.30 times as long as straight 3rd abscissa, 0.6–0.7 times as long as weakly curved radiomedial vein. Second radiomedial cell 2.5–3.1 times as long as wide. Recurrent vein weakly arcuate. Nervulus interstitial or slightly postfurcal. Brachial cell not or weakly widened to apex. Parallel vein non-interstitial, arising from anterior 1/4–1/5 of distal vein of brachial cell. In hind wing, 1st mediocubital abscissa 1.1–1.3 times as long as 2nd one. Recurrent vein strongly desclerotized, interstitial, curved toward wing base.

Legs long and narrow. Hind femur 5.0–5.6 times as long as wide. Hind tarsus 0.8 times hind tibia. Hind basitarsus 0.6–0.7 times as long as 2nd–5th segments combined; 2nd segment 0.35 times as long as 1st one, 0.9–1.0 times as long 5th segment (without pretarsus).

Metasoma about as long as head and mesosoma combined. Tergite I rather weakly, more or less gently, and uniformly widened to apex, with obsolete spiracular tubercles near basal 1/3; dorsal carinae distinct, entire, distinctly converging backwards. Apical width of tergite I 1.5–1.7 times its basal width and 0.8–1.0 times its length. Suture between tergites II and III obsolete. Length of tergites II and III combined 1.3 times basal width of tergite II. Ovipositor sheaths weakly thickened, 1.6–2.0 times as long as metasomal tergite I, 1.4–1.7 times as long as hind basitarsus, 0.45–0.50 times as long as hind tibia, and 0.15–0.18 times, as fore wing.

Sculpture and pubescence. Vertex with more or less coarse punctation and short arcuate rugae, occasionally with striae (usually near ocelli). Frons and temples smooth. Face smooth over wide middle area, with punctation and irregular rugae on (occasionally wide)

lateral areas. Mesothorax smooth, mesoscutum irregularly rugose over wide median posterior area. Propodeum entirely rather densely and irregularly rugose, often with granulation; rugae weaker in anterior part; 5-angled areola clearly outlined by high carinae; anterolateral areas weakly outlined; median basal carina 0.8–1.3 times as long as anterior fork of areola. Metasomal tergite I with more or less distinct dense striae in middle; on sides, rugae sparse, transverse, curved. Hind tibia with dense short semi-erect hairs; length of hairs on dorsal side about half maximum width of tibia. Ovipositor sheaths with rather long, dense, semi-erect hairs.

Coloration. Body pale reddish brown, metasomal tergites II and III yellow, metasomal apex yellowish brown. Antennae pale brown at base, becoming distinctly darker toward apex. Palpi and legs yellow. Wings hyaline, distinctly infuscate near basal vein and 1st radial abscissa. Pterostigma brown in apical 1/2–2/5, pale yellow in the rest part.

Male. Body length 2.1–2.3 mm, fore wing 2.0–2.1 mm long. Temples short; transverse eye diameter 3.8–4.3 times length of temple. Ocelli larger; POL 0.8–0.9 times Od, 1.3–1.5 times OOL. Eyes large; longitudinal eye diameter 10–13 times malar space. Malar space 0.3 times basal width of mandible. Width of face half longitudinal eye diameter, 0.8–0.9 times height of face and clypeus combined. Width of hypoclypeal depression nearly twice distance from margin of depression to eye.

Antennae 24–26-segmented. First flagellar segment 3 times as long as wide, subapical segment 3.5 times as long as wide. Metasomal tergite I usually with distinct spiracular tubercles, more or less distinctly narrowed to apex, 1.1–1.2 times as long as wide at apex. Vertex occasionally smooth. Other characters similar to those in female.

Material. Holotype: ♀, Krasnodar Territory, Anapa, reared from *Gelechia senticetella* Staudinger larva on *Juniperus excelsa*, 15.VII.1999 (V. Shchurov) (ZIN). Paratypes. Russia: 3 ♀, Novorossiisk, from *Gelechia senticetella* larva, 1978 (Zelenov) (ZIN). Ukraine: 3 ♀, Crimea, Mart'yan Cape, from *G. senticetella* larva, 29.V.1979 (E. Vasil'eva) (ZIN); 2 ♀, Crimea, Sudak, from *G. senticetella* larva, 24.IV.1979 (E. Vasil'eva) (ZIN); 6 ♀, 3 ♂, Crimea, Novyi Svet, 46th square, *Juniperus excelsa*, collected 11.V.1988, reared 23–30.V.1988 from *G. senticetella* (V. Kornilov) (IZANU, ZIN); 3 ♂, same locality, sweeping on

J. excelsa, 28.IV.1990 (V. Kornilov) (ZIN); 9 ♀, 5 ♂, Crimea, Sudak, Uyutnoe, from *G. senticetella*, 13 and 22.V.1989 (S. Smirnov) (ZIN, IZANU); 1 ♀, Crimea, 5 km W of Karadagskaya Biostation, Echkidag, forest, 7.VI.1990 (A. Kotenko) (IZANU), Bulgaria: 1 ♀, Kresno, 14.VI.1972 (I. Kerzhner) (ZIN).

Diagnosis. The new species is most closely related to the eastern-Palaearctic *H. orientalis* Blkb. (Belokobyskij, 1980) in the short temples, distinctly arcuate dorsally occipital carina, presence of a longitudinal groove on the median lobe of the mesoscutum, and presence of a distinct areola on the propodeum. The distinctions of these species are listed in the key below.

- 1(2). Vertex entirely smooth. Subalar depression and posterior upper corner of pronotum sides mainly smooth. Area of metasomal tergite I coarsely irregularly rugose between dorsal carinae. Parallel vein interstitial or nearly so. Body length 1.9–3.0 mm.—Russia (Chita Province, Khabarovsk and Primorskii Territories), Korea *H. orientalis* Blkb.
- 2(1). Vertex with coarse punctation and short arcuate rugae, occasionally with strigae near ocelli. Subalar depression finely densely rugose-granulate over wide area; posterior upper corner of pronotum sides mainly rugose. Area of metasomal tergite I finely densely striate between dorsal carinae. Parallel vein not interstitial, arising from anterior 1/4–1/5 of distal vein of brachial cell. Body length 1.8–2.5 mm.—Russia (Krasnodar Territory), Ukraine (Crimea), Bulgaria *H. gelechia* sp. n.

ACKNOWLEDGMENTS

The author is grateful to Dr. D. Quicke (Askot), Dr. M. Fitton (London), Dr. A. Taeger (Eberswalde),

Dr. F. Koch (Berlin), Drs. E. Haeselbarth and E. Diller (Munich), and Dr. A.G. Kotenko (Kiev) for the material supplied for preparing and studying.

REFERENCES

1. Achterberg, C. van, Three New Palaearctic Genera of Braconidae (Hymenoptera), *Ent. Bericht.*, 1980, vol. 40, pp. 72–80.
2. Belokobyskij, S.A., Braconid Genus *Hormius* Nees (Hymenoptera, Braconidae) from the Southern Part of the Far East of the USSR, *Entom. Obozr.*, 1980, vol. 59, no. 2, pp. 368–371.
3. Belokobyskij, S.A., Review of the Braconid Genus *Rhaconotus* Ruthe (Hymenoptera, Braconidae) of the Palaearctic Region, *Entom. Obozr.*, 1990, vol. 69, no. 1, pp. 144–163.
4. Belokobyskij, S.A., Supplement to a Revision of the Braconid Genus *Rhaconotus* Ruthe (Hymenoptera, Braconidae) of the Palaearctic Region, *Entom. Obozr.*, 1994, vol. 73, no. 2, pp. 340–351.
5. Belokobyskij, S.A., Revision of the Palaearctic Species of the Genus *Clionocentrus* (Hymenoptera, Braconidae), *J. Natur. Hist.*, 1995, vol. 29, pp. 803–836.
6. Belokobyskij, S.A., Subfamily Doryctinae, *Opredelitel' nasekomykh Dal'nego Vostoka Rossii. Setchatokrylye, skorpionnitsy, pereponchatokrylye* (Key to Insects of the Russian Far East, Neuroptera, Mecoptera, and Hymenoptera), Vladivostok, 1998, Vol. 4, Part 3, pp. 50–109.
7. Belokobyskij, S.A. and Tobias, V.I., Introduction, *Opredelitel' nasekomykh Dal'nego Vostoka Rossii. Setchatokrylye, skorpionnitsy, pereponchatokrylye* (Key to Insects of the Russian Far East, Neuroptera, Mecoptera, and Hymenoptera), Vladivostok, 1998, Vol. 4, Part 3, pp. 8–25.
8. Shenefelt, R.D. and Marsh, P.M., Hymenopterorum Catalogus, Pars 13, Braconidae 9, Doryctinae, Gravenhage: Dr. W. Junk, 1976, pp. 1263–1424.