New braconid wasps (Hymenoptera, Braconidae) in the Hungarian Natural History Museum, 4

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Abstract – Description of eleven new braconid species from both the Old and the New World: Doryctinae: Ecphylus topali sp. n. (India); Exothecinae: Proavga attenuata sp. n. (Australia); Blacinae: Blacus (Tarphion) concors sp. n. (India), Blacus (Ganychorus) topali sp. n. (India); Alysiinae: Alysia (Allysia) luteostigma sp. n. (Romania); Cheloninae: Chelonus pictus sp. n. (Afghanistan), Chelonus setaceus sp. n. (Iran); Microgastrinae: Napamus zomborii gen. et sp. n. (Armenia), Protapanteles praecipuus sp. n. (Italy); Miracinae: Mirax topali sp. n. (Argentina) and Helconinae: Diospilus contractus sp. n. (Australia). Creation of two new genera: (1) Napamus is presented for the species of vipio species-group (type species: Apanteles vipio REINHARD, 1880, Palaearctic Region), (2) Depelbus is erected for the species biroi (Australia) originally assigned to the genus Diospilus by ZEPLIGETI (1905). Faunistic contributions of 13 Blacus species distributed in India and 1 Proavga species in Australia are given. With 79 figures.

subfamily Doryctinae / Ecphylini

Ecphylus topali sp. n. ♂

(Figs 1-2)

Description of the holotype ♂. – Body 1.8 mm long. Head in dorsal view (Fig. 1) cubic, 1.45 times as broad as long, eye 1.22 times as long as temple (or temple 0.81 times as long as eye), latter rounded, occiput with strong carination. Eye in lateral view nearly round, 1.55 times as long as high, temple slightly broadening ventrally and its widest section behind eye somewhat wider than width of eye. Head polished. – Antenna filiform and somewhat longer than body, with 15 antennomeres, second flagellomere 1.5 times as long as first flagellomere, further ones gradually shortening so that penultimate flagellomere five times as long as broad.

Mesosoma in lateral view elongated, 1.96 times as long as high. Notaulix distinct on anterior declivous part of mesonotum, on disc of mesonotum indistinct, mesonotum itself (anteriorly) almost smooth and shiny. Scutellum polished. Sternalix distinct, crenulo-rugulose; mesopleuron polished. Propodeum anteriorly almost smooth, shiny, posteriorly rugo-rugulose, dull. – Hind femur four times as long as broad somewhat distally from its middle. Hind tibia a bit longer than hind tarsus, hind basitarsus as long as tarsal segments 2-4.

Forewing as long as body. Pterostigma five times as long as wide, issuing radial vein distally from its middle; r1 1.4 times as long as width of pterostigma, r2 reaching almost tip of wing. N. bas. issuing n. cu. from its middle; cu3 as long as cu1.

Metasoma as long as head and mesosoma together. First tergite (Fig. 2) somewhat (i.e. 1.1 times) longer than wide from hind, from its base evenly broadening posteriorly, pair of spiracles before its middle, pair of converging keels merging beyond middle of tergite into longitudinal striation of tergite. Second and further tergites polished. – Ovipositor sheath long, in lateral view as long as hind tibia and basitarsus.

δ and host unknown.

Type material. - Holotype ♀: India, West Bengal, Darjeeling District, Kurseong, 1000 m, 18 October 1967, leg. TOPÁL (No. 848). - Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 7503.

Distribution: India.

Etymology. - The new species is dedicated to its collector, Dr. György Topál (Hungarian Natural History Museum, Budapest), mammalogist and ardent collector of insects.

The new species, Ecphylus topali sp. n., stands nearest to E. caudatus RUSCHKA, 1916 (Europe, North Africa, Japan) considering their common features including cubic head, antenna with 14-15 antennomeres and brownish yellow body. The two species are differentiated by the following features:

1 (2) Temple in dorsal view less rounded and 0.81 times as long as eye (i.e. head in dorsal view relatively more cubic) (Fig. 1). Mesosoma in lateral view elongated, 1.9 times as long as high. First tergite somewhat longer than broad at hind, evenly broadening posteriorly (Fig. 2). Ovipositor sheath long, as long as hind tibia + basitarsus. Alar membrane along n. bas. hyaline. Pterostigma brownish, basally pale yellow. ♀: 1.8 mm

E. topali sp. n.

2 (1) Temple in dorsal view more rounded and 0.66 times as long as eye (i.e. head in dorsal view relatively less cubic) (Fig. 3). Mesosoma in lateral view not elongated, 1.4 times as long as high. First tergite somewhat shorter than broad at hind, from base to spiracle strongly and beyond spiracle hardly broadening posteriorly (Fig. 4). Ovipositor sheath short, about as long as three-fourths of hind tibia and at most as long as hind tibia. Alar membrane along n. bas. brownish. Pterostigma pale yellow. ♀♂: 1-2-1.8 mm.

E. caudatus RUSCHKA, 1916.

subfamily Exothecinae

Proavga BELOKOBYLSKIJ


The genus Proavga was created by BELOKOBYLSKIJ (1989) on the basis of two species distributed in Australia. Besides the descriptions of the genus as well as the two species, BELOKOBYLSKIJ constructed a key to promote the separation of the two species in question. This key considerably helped me to recognize the third new Proavga species, three specimens of which were collected also in Australia.

BELOKOBYLSKIJ accomplished a good survey of our current knowledge of the exothecine braconids occurring in the Australian fauna region. At the present time we know 20 hormiine species in Australia which are ranged in the following six genera (the

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numbers of the species are added in brackets): Anhormius Belokobytskii, 1989 (1), Austrohormius Belokobytskii, 1989 (4), Avga Nixon, 1940 (1), Hormius Nees, 1818 (10), Neoavga Belokobytskii, 1989 (1) and Proavga Belokobytskii, 1989 (3, of which 1 species is new.

New faunistic contribution:

Proavga cardalei Belokobytskii, 1989 – 2 ♀ ♂: Australia, Central New South Wales, Round Hill, near Lake Cargillego, taken at night with MV-lamp, 11 January 1981, leg. Hangay et Vojnits (No. 80). – The species was described on the basis of a pair of specimens (1 ♀ + 1 ♂) taken in Northern Territory ("Bessie Spring" and "Goose Lagoon"), Australia.

Proavga attenuata sp. n. (Figs 5-8)

Description of the holotype ♀. – Body 3 mm long. Head in dorsal view (Fig. 5) less transverse, 1.35 times as broad as long, eye twice as long as temple, latter receded. OOL:OD:POL as 7:4:7. Malar space as long as basal width of mandible, or height of eye three times as long as malar space. Face (together with clypeus) quadrate, i.e. as wide as high. Head polished; upper half of face punctate, interspaces shorter than punctures. – Antenna about one-fifth longer than body, with 31 antennomeres. First flagellomere four times as long as broad, further flagellomere faint attenuating so that penultimate flagellomere twice as long as broad.

Mesosoma in lateral view 2.3 times as long as high. Notaulix distinct on anterior declivous part of mesonotum. Mesonotum punctate, shiny, interspaces about as large as punctures. Scutellum polished. Propodeum rugo-rugulose. Mesopleuron polished, sternalix indistinct, epicnemia rugose. – Hind femur (Fig. 6) 2.9 times as long as broad medially. Hind tibia twice as long as hind basitarsus, with relatively long setae. Forewing as long as body. Pterostigma five times as long as wide, issuing radial vein proximally from its middle; r1 as long as width of pterostigma and oblique to fore margin of pterostigma (i.e. directed to tip of wing), r3 1.4 times as long as r2, r2 one-fifth longer than cu1. Vein d2 twice as long as d1. Brachial cell closed. – First section of medallian vein twice as long as second section.

First tergite (Fig. 7) 1.36 times as wide behind as long medially, spiral anteriorly from its middle; pair of keels faintly distinct, far from each other and merging posteriorly into longitudinal rugosity of tergite. Further tergites shrivelled owing to their weak sclerosity. Hypopygium (Fig. 8) medium-sized, apically pointed; ovipositor sheath as long as hind tibia + basitarsus, tip of ovipositor as in Fig. 8: arrow.

Ground colour of body brownish yellow with brownish or dark brownish tints on head, mesopleuron, metanotum and shrivelled tergites. Space, pedicel and first flagellomere (2-3 darkening, rest of flagellum brownish greyish. Ocellar field black. Palpi pale yellow. Legs and tegula yellow. Ovipositor sheath blackish. Wings hyaline, pterostigma and veins opaque yellow.

Description of the female paratypes (2 ♀). – Perfectly similar to the holotype ♀. Body 2.5-3 mm long (2.5: 1 ♀, 3: 1 ♂). Antenna with 24 antennomeres (2 ♂) (31 antennomeres of the holotype is an aberrant extremity?). Hind femur three times as long as broad.

δ and host unknown.


Holotype is deposited in the Australian National Insect Collection, Canberra; 2 ♀ paratypes are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7505-7506 (paratypes).

1 The genus Anhormius was recently synonymized with Hormius (Wharton 1993: 136).
2 See the collecting report by Hangay et al. (1981).
Etymology. – The species name "attenuatus" refers to the elongate form of body as well as to the relatively attenuating (hind) femora.

Distribution: Australia (Queensland).

The new species, Proavga attenuata sp. n., runs to P cardalei BELOKOBYLSKIU with the help of BELOKOBYLSKIU’s key (1989: 390-391) to the Proavga species. The distinction of the new species is presented in a modified key given by BELOKOBYLSKIU (1989) for the two species hitherto known from Australia:

1 (2) Head in dorsal view transverse, twice as broad as long. In lateral view mesosoma less elongated, at most 1.8 times as long as high. Propodeum distinctly areolated. First tergite 1.5-1.8 times as broad as long medially. Ovipositor sheath very short and broadening clubform on its posterior half. ♀♂: 1.2-1.7 mm. (Figs 75-77, 81, 84, 86-88 in BELOKOBYLSKIU 1989: 391)

P lativalva BELOKOBYLSKIU, 1989

2 (1) Head in dorsal view less transverse, 1.35-1.6 times as broad as long (Figs 5, 9). In lateral view mesosoma elongated, at least twice as long as high. First tergite at most somewhat broader behind than long medially. Ovipositor sheath longer and not clubform posteriorly.

3 (4) Temple in dorsal view somewhat more receded, eye 2.1-2.4 times as long as temple (Fig. 9). Hind femur less thick, 3.2-3.3 times as long as broad (Fig. 10). Hypopygium relatively small and less pointed, ovipositor sheath short, as long as hind tarsal segments 1-2 or 2-2.2 times as long as first tergite (Fig. 11). ♀♂: 1.6-2.3 mm

P cardalei BELOKOBYLSKIU, 1989

4 (3) Temple in dorsal view less receded, eye twice as long as temple (Fig. 5). Hind femur thick, 2.9-3 times as long as broad (Fig. 6). Hypopygium relatively large and pointed, ovipositor sheath long, as long as hind tibia + basitarsus (Fig. 8). ♀: 2.5-3 mm

P attenuata sp. n.

Figs 1-11. – Figs 1-2. Ecphylus topali sp. n.: 1 = head in dorsal view, 2 = first tergite.
– Figs 3-4 Ecphylus caudatus RUSCHKA: 3 = head in dorsal view, 4 = first tergite.
– Figs 5-8. Proavga attenuata sp. n.: 5 = head in dorsal view, 6 = hind femur, 7 = first tergite, 8 = hypopygium and oviposition apparatus. – Figs 9-11. Proavga cardalei BELOKOBYLSKIU: 9 = head in dorsal view, 10 = hind femur, 11 = hypopygium and oviposition apparatus

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subfamily Blacinae

Blacus NEES, 1819

Van Achterberg (1988) published a world revision of the subfamily Blacinae summarizing the available taxonomic, systematic, faunistic-zoogeographic and phylogenetic results. From among the 165 blacine species included in the revision (of which 53 species had been described as new to science) 13 species were captured by Dr. Gy. Tópál (mammalogist, Hungarian Natural History Museum, Budapest) in India during his two collecting trips in 1966-1967 and 1980. Subsequently it seems reasonable to disclose the faunistic contributions of these species (the specimens are deposited in the Department of Zoology of the Hungarian Natural History Museum):

Blacus (Tarpheion) albiventris Van Achterberg, 1988 - 1 ♀: India, West Bengal, Darjeeling, below North Point, 1200 m, 16 October 1967 (No. 838). 1 ♂: India, West Bengal, Darjeeling District, Kurseong, 1000 m, 18 October 1967 (No. 849). - Described from Nepal, new to the fauna of India.

Blacus (Tarpheion) antennalis Van Achterberg, 1988 - 2 ♀♂: India, Assam, Mansmai at Cherrapunjee, 1400 m, 18 November 1967 (No. 912). - Described from Nepal, new to the fauna of India.

Blacus (Tarpheion) apicalis Van Achterberg, 1976 - 1 ♂: India, West Bengal, Darjeeling, below North Point, 1200 m, 16 October 1967 (No. 838). 3 ♂♂: India, Assam, Mansmai at Cherrapunjee, 1400 m, 18 November 1967 (No. 913). - Described from Nepal, new to the fauna of India.


Blacus (Ganychorus) brevierenus Van Achterberg, 1988 - 1 ♀: India, Assam, Mansmai at Cherrapunjee, 1400 m, 18 November 1967 (No. 912). - Described from the Philippines, new to the fauna of India.

Blacus (Hysterothorax) fuscitibialis Van Achterberg, 1988 - 1 ♀: India, West Bengal, Darjeeling District, Ghum, Senchal Reserve Forest, 2000 m, 7 October 1967 (No. 772). - Described from Nepal, new to the fauna of India.

Blacus (Ganychorus) hadrolophus Van Achterberg, 1988 - 1 ♀: India, Tamil Nadu, Palni Hills, Kodaikanal, 2300 m, taken with lamp-trap at night, 8 April 1980 (No. 341). - Described from British North Borneo (= now Malaysia: Sarawak), new to the fauna of India.

Blacus (Blagus) instalbis Ruthe, 1861 - 1 ♀: India, Jammu and Kashmir, Srinagar, 1500 m, 28 May 1967 (No. 396). - Widely distributed in the Palaearctic Region, nearest to Srinagar found in Turkmenia and Uzbekistan; new to the fauna of India.

Blacus (Ganychorus) mischocytus Van Achterberg, 1976 - 1 ♀: India, West Bengal, Darjeeling District, Ghum, Senchal Reserve Forest, 12 April 1967 (No. 318). 1 ♀: same locality, 19 April 1967 (No. 340). 1 ♂: same locality, 5 October 1967 (No. 765). 1 ♀: same locality, 7 October 1967 (No. 771). 1 ♀: India, West Bengal, Darjeeling District, Lopchu, 1500 m, 20 October 1967 (No. 856). 1 ♂: India, Tamil Nadu, Palni Hills, Kodaikanal, 2300 m, 8 April 1980 (No. 341). 1 ♂: India, West Bengal, Darjeeling District, Debrapani, 1700 m, 31 May 1980 (No. 438). - Described from Indonesia (Java) and Malaysia (Sarawak), new to the fauna of India.

Blacus (Ganychorus) nitidus Haeselbarth, 1973 - 1 ♀: India, West Bengal, Darjeeling District, Debrapani, 1700 m, 31 May 1980 (No. 438). - A Palaearctic species with preference for high altitude, listed distribution nearest to India is in Korea and Japan. New to the fauna of India.

Blacus (Ganychorus) setosifrons Van Achterberg, 1988 - 1 ♀: India, West Bengal, Darjeeling District, Ghum, Senchal Reserve Forest, 12 April 1967 (No. 318). 1 ♀ + 4 ♂♂: same locality, 19 April 1967 (No. 341). 6 ♀♂ + 2 ♂♂: India, Tamil Nadu, Palni Hills, Kodaikanal, 2300 m, taken with lamp-trap at night, 8 April 1980 (No. 341). - Described from Taiwan (or Republic of China), Nepal, India (Darjeeling).

Blacus (Contochorus) turbidus Papp, 1985 - 3 ♀♂ + 1 ♂: type locality (India, Tamil Nadu, Coonoor, Nilgiri, Black Bridge Reserve Forest, 2130 m), 14 March 1980 (No. 240). - Since its description from India it has been reported from Nepal and Thailand (Van Achterberg 1988: 78).

Blacus (Tarpheion) voirsi Papp, 1985 - 3 ♀♂: India, Assam, Mansmai at Cherrapunjee, 1400 m, 18 November 1967 (Nos 912 and 913). - Described by me from Darjeeling District (India), reported from Taiwan (Van Achterberg 1988: 176.)
Blacus (Tarpheion) concors sp. n. ♀
(Figs 12-15)

Description of the holotype ♀. — Body 2.2 mm long. Head in dorsal view (Fig. 12) 1.65 times as broad as long, eye twice as long as temple, latter receded. Antenna with 19 antennomeres, slightly thickening distally; first flagellomere 1.27 times as long as second flagellomere, length of third, fourth and penultimate flagellomeres 4.6, 3.6 and 2 times as long as broad, respectively. Maxillary palp about as long as height of head. OOL:OD:POL as 7:3:4. Malar space as long as basal width of mandible, malar suture present, ventral margin of cheek pointed (Fig. 13: arrow). Occipital carina completely absent. Head polished.

Mesosoma in lateral view 1.55 times as long as high. Pronotal sides anteriorly rugulose to uneven, otherwise smooth, shiny. Precoxal sulcus distinct and finely carinated. Notaulix evenly deep and broad, with fine crenulation. Mesonotum along notauli and sutures setose, otherwise dispersely setose. Scutellum polished, laterally finely carinated. Propodeum areolated, its postero-median areola twice as long as wide anteriorly (Fig. 14, see arrows), areolae uneven to smooth, shiny; tubercule absent. — Hind femur, tibia and basitarsus 5.75, 14.8 and 8.66 times as long as broad, respectively. Claws setose and without bristles.

Fore wing 2.1 mm long, about as long as body. Pterostigma (Fig. 15) issuing radial vein slightly distally from its middle, rl one-fifth longer than width of pterostigma and somewhat oblique to its fore margin; first discoidal cell truncate at parastigma (arrow); dl very short.

First tergite 2.1 times as long as broad behind, with moderately broadening sides, its surface (except basal fourth) longitudinally strio-rugulose, pair of basal keels merging about middle of tergite into sculpture. Second tergite basally longitudinally strio-rugulose, otherwise polished. Ovipositor sheath as long middle tibia, 0.27 times as long as fore wing; hypopygium medium-sized (cf. Fig. 20).


The single female paratype is in every respect similar to the holotype ♀.

Type material. — Holotype ♀: India, Orissa, Jajpur-Keonjahr District, Daitari, 25 November 1967, leg. TOPÁL (No. 956). 1 ♀ paratype: with same collecting data. — Holotype and 1 ♀ paratype are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7507 (holotype) and 7508 (paratype).

Etymology. — The name "concors" of the new species refers to the occipital region without carina, in this respect conforming ("concors" = congruent) to its closely related species B. incarinaticeps and B. fuscinervis.

Distribution. — India (Indo-Malayan Region).

The new species, Blacus (Tarpheion) concors sp. n., runs to B. (T.) incarinaticeps VAN ACHTERBERG, 1988 (Nepal) and B. (T.) fuscinervis VAN ACHTERBERG, 1988 (Laos) with the help of VAN ACHTERBERG's key (1988: 141-147) to the species of the Palaearctic and Indo-Australian Regions of the subgenus Tarpheion VAN ACHTERBERG, 1976 (genus Blacus NEES, 1818). The three species are distinguished by the following modified key:

1 (2) Vein rl of fore wing long, 1.4 times as long as width of pterostigma (Fig. 983 in VAN ACHTERBERG 1988: 291)³. Antenna with 20 antennomeres. Second tergite entirely smooth, first tergite largely smooth and shiny. Notaulix posteriorly smooth, i.e. without crenulation. Body dark reddish brown with yellowish pattern. ♀: 2 mm

B. (T.) incarinaticeps VAN ACHTERBERG, 1988

³ Vein rl measured in Fig. 983 is, contrasting to 1.4 times given in the key-text, 1.16 times as long as width of pterostigma.

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2 (1) Vein \( r_l \) of fore wing shorter, about as long as width of pterostigma (Fig. 15; Fig. 995 in VAN ACHTERBERG 1988: 292). Antenna with 19 antennomeres. Second tergite basally rugose, first tergite sculptured. Notauli posteriorly with fine crenulation. Body yellowish brown.

3 (4) Temple in dorsal view receded, eye twice as long as temple (Fig. 12). Notauli evenly wide and finely crenulated. Postero-median areola of propodeum twice as long as wide anteriorly (Fig. 14: see arrows). Vein \( r_l \) of fore wing issuing slightly distally from middle of pterostigma (Fig. 15). Alar membrane fully hyaline-subhyaline, pterostigma yellow. \( \delta \): 2 mm

B. (T.) concors sp. n.

4 (3) Temple in dorsal view rounded, eye 1.8 times as long as temple. Notaulix posteriorly widening and crenulated. Postero-median areola of propodeum 1.6 times as long as wide anteriorly (Fig. 1004 in VAN ACHTERBERG 1988: 292). Vein \( r_l \) of fore wing issuing clearly distally from middle of pterostigma (Fig. 995 I.e.). Alar membrane along median veins brownish fumous, pterostigma dark brown. \( \varphi \): 2.2 mm

B. (T.) fuscinervis VAN ACHTERBERG, 1988

**Blacus (Ganychorus) topali sp. n. \( \varphi \)**

*(Figs 16-20)*

Description of the holotype \( \varphi \). – Body 2.1 mm long. Head in dorsal view (Fig. 16) subcubic, 1.45 times as broad as long, eye 1.18 times as long as temple, latter rounded. Antenna with 21 antennomeres, slightly thickening distally; first flagellomere 1.54 times as long as second flagellomere, length of third, fourth and penultimate flagellomeres 5.66, 3.66 and 2 times as long as broad apically, respectively. Maxillar palp as long as head, OOL:OD:POL as 6:3:5. Malar space twice as long as basal width of mandible. Head polished, face with disperse and superficial (i.e. hardly distinct) subpunctures.

Mesosoma in lateral view 1.4 times as long as high. Pronotal sides anteriorly rugose-rugulose, posteriorly smooth, shiny. Precoxal sulcus shallow, with almost indistinct few crenulae. Notaulix evenly deep and very finely crenulated. Mesonotum setose, shiny. Scutellum smooth and shiny, its lateral carina protruding posteriorly. Propodeum areolated, areolae smooth and shiny, medio-posterior areola narrow (Fig. 17), without tubercle behind. – Hind femur, tibia and basitarsus 7.7, 14 and 10 times as long as broad, respectively. Fore claw not pectinate, with brownish bristles.

Fore wing 2.5 mm long, about one-fifth longer than body. Pterostigma (Fig. 18) issuing radial vein distally from its middle, \( r_l \) 1.75 times as long as width of pterostigma; first discoidal cell truncate at para-stigma (Fig. 18: arrow); \( d2 \) 3.6 times as long as \( d1 \).

First tergite (Fig. 19) 3.2 times as long as broad behind, with parallel sides, its surface rugose, pair of basal keels merging anteriorly into sculpture. Second tergite smooth, shiny. Ovipositor sheath somewhat shorter than hind basitarsus, 0.125 times as long as fore wing; hypopygium medium-sized (Fig. 20).


d and host unknown.

Type material. – **Holotype \( \varphi \): India, West Bengal, Darjeeling District, Ghum, Senchal Reserved Forest, 2000 m, 19 April 1967, leg. TOPÁL (No. 341).** – Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 7509.

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4 Eye 1.43 times as long as temple in Fig. 997 (VAN ACHTERBERG 1988: 292.)
Etymology. – The new species is dedicated to my good friend and colleague, Dr. GYÖRGY TOPÁL, mammalogist (Hungarian Natural History Museum, Budapest), an ardent collector of insects too.

Distribution: India (Indo-Malayan Region).

The new species, Blacus (Ganychorus) topali sp. n., runs to B. (G.) fulviceps VAN ACHTERBERG, 1988 (Nepal) and B. (G.) signicornis VAN ACHTERBERG, 1988 (Thailand) with the help of VAN ACHTERBERG’S identification key to the Indo-Malayan species of the subgenus Ganychorus HALIDAY (genus Blacus NEES) (VAN ACHTERBERG 1988: 85-89); the three species are separated with a modified section (couplets 9-10) of VAN ACHTERBERG’S key (1988):

1 (2) Propodeum without median areola posteriorly. Second and third tergites ivory coloured. Alar membrane around vein r of fore wing brownish fumous. First tergite (sub-) parallel-sided. Antenna of female with 21 antennomeres. Head yellowish brown. Pterostigma dark brown. Ψ : 3.2 mm

B. (G.) fulviceps VAN ACHTERBERG, 1988

2 (1) Propodeum with a narrow and long postero-median areola (Fig. 17). Second and third tergites brown. Alar membrane around vein r of fore wing not brownish fumous.

3 (4) Antenna of female conspicuously broadened submedially, its four last antennomeres pale yellowish. Fore claw pectinate (Ψ). First discoidal cell of fore wing widely truncate anteriorly (Fig. 21: arrow). Third antennomere 1.9 times as long as fourth antennomere. Ptero- and parastigma light brown. Ψ : 1.6 mm

B. (G.) signicornis VAN ACHTERBERG, 1988

4 (3) Antenna of female not broadened submedially, i.e. slightly thickening distally as usually, its three last antennomeres dark greyish brownish. Fore claw not pectinate (Ψ). First discoidal cell of fore wing truncate anteriorly (Fig. 18: arrow). Third antennomere 1.33 times as long as fourth antennomere. Ptero- and parastigma straw yellow. Ψ : 2.1 mm

B. (G.) topali sp. n.

subfamily Alysiinae / Alysiiini

Alysia (Alysia) luteostigma sp. n. Ψ

(Figs 22-25)

Description of the holotype Ψ. – Body 3.2 mm long. Head a d in dorsal view (Fig. 22) transverse, 1.84 times as broad as long; eye just shorter than temple, latter somewhat swollen, i.e. head in dorsal view between temple somewhat broader than between eyes. Ocelli small, OOL:OD:POL as 8:2:5. Mandible about one-fourth longer than broad between teeth 1 and 3. Margin between teeth 1 and 2 as well as between 2 and 3 incised (Fig. 23). Head polished, face medially granular-rugose, laterally together with clypeus uneven and shiny. Antenna one-fourth longer than body, with 38 antennomeres. First flagellomere 1.4 times as long as second flagellomere and 4.4 times as long as broad, further flagellomeres gradually shortening so that penultimate flagellomere twice as long as broad.

Mesosoma in lateral view 1.4 times as long as high. Pronotum with a linear transverse impression before suture between pro- and mesonotum. Notaulix distinct anteriorly and finely crenulated, posteriorly fading. Medio-posterior pit also linear, crenulated. Mesonotum polished, poorly haired on its declivous part, along notaulix a few setae. Propodeum and metanotum medially rugose. Sternaulix crenulated. – Hind femur four times as long as broad distally. Hind tibia and tarsus equal in length. Hind basitarsus as long as tarsal segments 2-4.

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Fore wing slightly longer than body, 3.3 mm long. Pterostigma (Fig. 25) 3.4 times as long as wide, issuing radial vein somewhat distally from its middle; \(r1\) short (one-third as long as width of pterostigma), \(r2\) as long as \(cuq.1\), \(r3\) reaching tip of wing and three times as long as \(r2\). N. rec. postfurcal (Fig. 25).

Metasoma as long as mesosoma. First tergite (Fig. 24) broad, slightly longer than broad behind, from its base to spiracles distinctly broadening, beyond spiracles subparallel, pair of spiracles before middle of tergite, pair of converging keels merging into sculpture about middle. First tergite rugo-striate, otherwise metasoma polished. - Ovipositor sheath very short, in latero-ventral view one-third as long as hind tibia or one-fifth shorter than hind basitarsus.


\(\delta\) and host unknown.

Type material. - Holotype \(9:\) Romania, Transylvania, Radnai-havasok (= Mti Rodnei, Borsa), 1600 m, 30 July 1992, leg. J. PAPP. - Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 7510.

Etymology. - The species name "luteostigma" refers to the pale yellow colour of pterostigma.

Distribution: Romania (Transylvania) (Palaearctic Region).

The new species, Alysia (Alysia) luteostigma sp. n., is related to A. (A.) truncator (NEES, 1814) (Holarctic Region) considering their common features as short ovipositor sheath, n. rec. postfurcal, first tergite broad (i.e. only somewhat longer than wide at hind) and granular-rugose face. The two species are differentiated by the following features:

1 (2) Ovipositor sheath very short, one-third as long as hind tibia. Veins \(r2\) and \(cuq.1\) equal in length (Fig. 25). First flagellomere 1.4 times as long as second flagellomere. Between teeth 1 and 2 of mandible margin incised (Fig. 23). Pterostigma pale yellow.

A. (A.) luteostigma sp. n.

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Figs 12-24. - Figs 12-15. Blacus (Tarpheion) concors sp. n.: 12 = head in dorsal view, 13 = cheek with pointed lower margin (arrow), 14 = propodeum with areolae, 15 = distal part of right fore wing. - Figs 16-20. Blacus (Ganychorus) topali sp. n.: 16 = head in dorsal view, 17 = propodeum with areolae, 18 = distal part of right fore wing, 19 = tergites 1-2, 20 = hind part of metasoma. - Fig. 21. Blacus (Ganychorus) signicornis VAN ACHTERBERG: parastigma and upper part of discoidal cell. - Figs 22-24. Alysia (Alysia) luteostigma sp. n.: 22 = head in dorsal view, 23 = mandible, 24 = first tergite.
2 (1) Ovipositor sheath longer, two-thirds as long as hind tibia. Veins cuq 1.5-1.8 times as long as r2 (Abb 24 in FISCHER 1966: 204). First flagellomere 1.2 times as long as second flagellomere. Between teeth 1 and 2 of mandible margin not incised (Fig. 92 in WHARTON 1986: 499). Pterostigma brownish

A. (A.) truncator (NEES, 1814)

The new species is also related to A. (A.) tipulae (SCOPOLI, 1763) (Europe, Asian Russia) considering their few common features (first tergite, n. rec. either postfurcal or interstitial, sculptured face, pterostigma of A. tipulae sometimes pale yellow to yellow), however, the two species are easily differentiated by the following features:

1 (2) Pterostigma issuing radial vein somewhat distally from its middle (Fig. 25). Ovipositor sheath very short, one-third as long as hind tibia. First tergite slightly (or indistinctly) longer than broad at hind, from its base to spiracles more broadening than beyond spiracles (Fig. 24). N. rec. postfurcal (Fig. 25). Pterostigma pale yellow.

A. (A.) luteostigma sp. n.

2 (1) Pterostigma issuing radial vein clearly distally from its middle (Fig. 26). Ovipositor sheath long, about as long as hind tibia. First tergite 1.2-1.3(-1.4) times as long as broad at hind, usually evenly broadening posteriorly (Fig. 27). N. rec. usually interstitial (Fig. 26). Pterostigma usually brown to light brown, sometimes yellow to pale yellow.

A. (A.) tipulae (SCOPOLI, 1763)
subfamily Cheloniinae

Chelonus pictus sp. n. ♂
(Figs 28-34)

Description of the holotype ♂. — Body 5 mm long. Head in dorsal view (Fig. 28) twice as broad as long, eye just less than twice as long as temple, latter constricted, occiput excavated. Ocelli small, round and forming a triangle. Distance between fore and a hind ocelli 1.5 times as long as diameter of an ocellus, POL = OOL. Eye in lateral view 1.8 times as high as wide, width of temple behind eye one-fifth shorter than that of eye. Malar space as long as basal width of mandible. Face clearly twice as wide as high, inner margin of eyes slightly converging ventrally. Clypeus 1.8 times as wide as high. Head roughly rugose, occiput with transverse striate elements. — Antenna about as long as head and mesosoma together, with 25 (right antenna) and 24 (left antenna) antennomeres. First flagellomere three times and penultimate flagellomere 1.3 times as long as broad.

Mesosoma in lateral view 1.37 times as long as high. Notaulix weak. Propodeum with a medio-transverse keel ending laterally in a pair of tuberculiform denticules. Mesonotum strongly punctate, interspaces about as large as punctures, with porcate elements before prescutellar furrow. Scutellum smooth with hardly distinct and disperse subpunctures, shiny. Pronotum, mesopleuron and metapleuron with more or less confluent strong punctuation; propodeum roughly rugose. — Hind femur 3.46 times as long as broad medially. Hind basitarsus as long as tarsal segments 2-4. Pair of spurs of hind tibia unequal in length, inner spur shorter than half basitarsus (Fig. 29).

Fore wing as long as carapace and half of mesosoma. Pterostigma (Fig. 30) 2.36 times as long as wide and issuing radial vein distally from its middle; r2 just longer than r1, metacarp as long as pterostigma, radial cell along metacarp shorter than pterostigma itself (Fig. 30: see arrows), r3 ending far before tip of wing. Nervulus 1.5 times as long as dl. — Distal half of radial cell of hind wing clearly narrower than that of proximal half (Fig. 31).

Carapace in dorsal view (Fig. 33) 1.86 times as long as broad posteriorly, its basal converging pair of keels short; in lateral view (Fig. 34) gradually becoming higher posteriorly, its hind end rounded; apico-ventrally hardly incurved (Fig. 32). Carapace on its anterior half striate with a few anastomoses, interstiate surfaces densely rugose; on its posterior half rugose with more or less longitudinal elements (Fig. 33). Ovipositor sheath in lateral view as long as hind tarsal segments 2-3.

Body tricoloured. Head and carapace black, pair of basal spots of carapace pale yellow. Mesosoma testaceous; prooma and propodeum black; scutellum medially and metanotum anteriorly blackish, small upper spot on mesopleuron black. tegula brownish. mesosternum darkening brownish. Carapace laterally (on its declivous part) beyond pale spot faintly rusty. Wings weakly brownish fumous, pterostigma blackish brown, para stigma yellow; venation proximally yellowish, distally brownish.

♂ and host unknown.

Type material. — Holotype ♂: Afghanistan, Kabul Province, Pul-e Charkhi, 22 km ENE of Kabul city centre, 178 m, netted in flood basin of Kabul river, 19 June 1974, leg. L. PAPP (No. 163). 5 — Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 7511.

Etymology. — The species name "pictus" refers to the tricoloured body.

Distribution: Afghanistan (Palaearctic Region).

Remark. — In 1983 Dr. V. I. TOBIAS (Zoological Institute, Sankt Peterburg) examined the specimen, henceforth holotype of the new species, and gave the provisional name on his label as "Chelonus sp. ?n. aff. medus Tel."

The new species, Chelonus pictus sp. n., runs to Ch. medus TELENGA, 1941 (Iran, Turkmenia) with the help of TELENGA's key to the Chelonus species of the late USSR and the adjacent countries (TELENGA 1941) considering their common features such

5 See L. PAPP's (1975) itinerary report of his collecting trip to Afghanistan.
as the tricoloured body and relatively rough corporal sculpture; the two species are distinguished by the following features:

1 (2) Antenna with 24-25 antennomeres, penultimate flagellomere 1.3 times as long as broad. Temple in dorsal view constricted (Fig. 28). Inner spur of hind tibia shorter than half basitarsus (Fig. 29). Radial cell along metacarp shorter than pterostigma (Fig. 30). Space, pedicel and first flagellomere black. ♀: 5 mm

Ch. pictus sp. n.

2 (1) Antenna with 18 antennomeres, penultimate flagellomere twice as long as broad. Temple in dorsal view weakly rounded-constricted. Inner spur of hind tibia just longer than half basitarsus. Radial cell along metacarp as long as pterostigma. Scape, pedicel and first flagellomere reddish yellow. ♀: 6 mm

Ch. medus TELENGA, 1941

Chelonus setaceus sp. n. ♀♂

(Figs 35-39)

Description of the holotype ♀. – Body 5 mm long. Head in dorsal view (Fig. 35) 1.9 times as broad as long, eye about one-third longer than temple, latter somewhat receded, occiput excavated. Ocelli small and round, distance between fore and hind ocelli almost twice as long as diameter of an ocellus, POL = OOL. Eye in lateral view 1.8 times as high as wide, temple behind eye as wide as eye. Malar space somewhat longer than basal width of mandible. Head rather roughly rugose, clypeus with disperse fine punctures, interspaces smooth and shiny. – Antenna somewhat longer than head and mesosoma together and with 19 antennomeres. First flagellomere four times and penultimate flagellomere 1.33 times as long as broad.

Mesosoma in lateral view 1.4 times as long as high. Notauli indistinct. Transverse keel of propodeum with a pair of median tubercles and a pair of lateral denticules. Mesopleuron and propodeum laterad with erected silvery hairs. Mesosoma rather roughly rugose, mesonotum with small to very small and shiny interspaces. – Hind femur 3.5 times as long as broad at its middle. Inner spur of hind tibia as long as half basitarsus, latter just longer than tarsal segments 2-4.

Wings with usual Chelonus venation. Pterostigma 3.6 times as long as wide and with equal length to metacarp, radial cell along metacarp somewhat shorter than pterostigma, r1 shorter than width of pterostigma and as long as r2.

Carapace in dorsal view (Fig. 36) 1.88 times as long as broad somewhat posteriorly from its middle; in lateral view (Fig. 37) hardly bent ventrally, 2.2 times as long as high behind; ventral cavity almost as long as carapace itself (Fig. 38). Carapace laterally rugose (Fig. 36), this sculpture less rough than that of head and mesosoma, less shiny. Ovipositor sheath as long as hind tarsal segments 2-3.

Body black, carapace anteriorly with rusty-brownish suffusion. Antenna black, palpi blackish. Tegula + parategula brown. Coxae black; hind femur dark brown, apically salmon coloured; femora 1-2 and tibiae 1-3 also salmon coloured, middle femur with brownish tint. Tarsi dark, basitarsi 2-3 salmon coloured. Wings hyaline, medially below pterostigma faintly brownish fumous; pterostigma blackish brown, vein proximo-distally yellow to brownish.

Description of the female paratypes (2 ♀). – Similar to the holotype ♀. Body 4.5-5 mm long (4.5: 1 ♀, 5: 1 ♀). Head in dorsal view transverse, 1.89-2 times as broad as long (1.89: 1 ♂, 2: 1 ♂). r1 one-third shorter than r2 (1 ♀). Carapace in dorsal view 1.77 times (1 ♀) and 1.82 times (1 ♀) as long as broad; in lateral view 2.16 times (1 ♀) and 2.35 times (1 ♀) as long as high behind.

Description of the male paratypes (5 ♂♂). – Similar to the female. Body 4.15 mm long (4.1: 1 ♂, 4.8: 1 ♂, 4.9: 1 ♂, 5: 2 ♂♂). Head in dorsal view transverse, 1.97-2 times as broad as long (1.97: 4 ♂♂, 2: 1 ♂). Antenna with 24-25 antennomeres (24: 2 ♂♂, 25: 1 ♂, 2 ♂♂ with flagellum partly broken). Metacarp some-

6 My knowledge of this species is based on its original description only.

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what longer than pterostigma (3 ♀ ♂). Carapace in dorsal view (Fig. 39) 1.8-2 times as long as broad (1.8: 1 ♂, 1.88: 2 ♀ ♂, 1.9: 1 ♂, 2: 1 ♂); in lateral view 2.35-2.41 times as long as high (2.35: 2 ♀ ♂, 2.37: 1 ♂, 2: 1 ♂, 2.4: 1 ♂). Carapace entirely black.

Type material. - H o l o t y p e ♀: Iran, Teheran, Golhak, 1700 m, 16 June 1961, leg. KLAPPERICH. - Paratypes (2 ♀ ♀ + 5 ♂ ♂): with same data as holotype.

Holotype ♀ and five paratypes (2 ♀ ♀ + 3 ♂ ♂) are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7512 (holotype) and 7513-7517 (paratypes); 1 ♂ paratype in the Natural History Museum, London and 1 ♂ paratype in the Zoological Institute, Academy of Sciences, Sankt Peterburg.

E t y m o l o g y. - The species name "setaceus" refers to the corporal parts covered with erected silvery hairs.

D i s t r i b u t i o n: Iran (Palaearctic Region).

The new species, Chelonus setaceus sp. n., seems to be allied with Ch. subseticornis TOBIAS and Ch. asiaticus TELENGA considering their rough corporal sculpture, number of antennomeres and colour of body. The three species are distinguished with the help of the following key:

1 (2) Body (mesopleuron, propodeum laterally, carapace laterally) with erected hairs. Antenna with 19 (♀ ♀) and 24-25 (♂ ♂) antennomeres. Occiput and temple rather roughly rugose (Fig. 35). Carapace in dorsal view 1.8-1.88 times (♀ ♀) and 1.8-2 times (♂ ♂) as long as broad posteriorly (Figs 36 and 39); in lateral view hardly bent and its hind end truncate (♀: Fig. 37) or weakly convex (♂). Carapace fully dark, i.e. without basal yellow spot, hind femur blackish brown. ♀ ♂: 4.5-5 mm. - Iran

Ch. setaceus sp. n.

Figs 33-39. - Figs 33-34. Chelonus pictus sp. n.: 33 = carapace in dorsal view, 34 = carapace in lateral view. - Figs 35-39. Chelonus setaceus sp. n.: 35 = head in dorsal view, 36 = female carapace in dorsal view, 37 = female carapace in lateral view, 38 = female carapace in ventral view, 39 = male carapace in dorsal view

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2 (1) Body without erected hairs, i.e. hairs adpressed to body as usual. Antenna with 20-26 \((\varphi \varphi)\) and 24-31 \((\delta \delta)\) antennomeres. Occiput and temple with transverse and strong striaion (Figs 40 and 42). Carapace in lateral view more or less bent (Figs 41 and 43).

3 (4) Antenna with 20(-21) antennomeres. Temple in dorsal view more rounded (Fig. 40). Carapace in lateral view somewhat less bent, its hind half somewhat higher, i.e. 2.3 times as long as high posteriorly (Fig. 41). Carapace always entirely black, i.e. never with basal yellow spots. \(\varphi \delta\): 4-4.5 mm. – Western Palaearctic Region.

**Ch. subseticornis** TOBIAS, 1971

3 (4) Antenna with 20(-21) antennomeres. Temple in dorsal view more rounded (Fig. 40). Carapace in lateral view somewhat less bent, its hind half somewhat higher, i.e. 2.3 times as long as high posteriorly (Fig. 41). Carapace always entirely black, i.e. never with basal yellow spots. \(\varphi \delta\): 4-4.5 mm. – Western Palaearctic Region.

4 (3) Antenna with 23-26 antennomeres. Temple in dorsal view less rounded (Fig. 42). Carapace in lateral view somewhat more bent, its hind half somewhat less high, i.e. 2.4 times as long as high posteriorly (Fig. 43). Carapace either black or with a pair of yellow basal spots. \(\varphi \delta\): 3-5 mm. – Palaearctic Region, westwards distributed as far as Hungary

**Ch. asiaticus** TELENGA, 1941

In his revision NIXON (1973, 1976) and in my survey I (PAPP 1981) separated the species-group *vipio* of the genus *Apanteles* FOERSTER s.l. on the basis of the following features: (1) galea rostriform (Fig. 44), (2) metacarp short, shorter than pterostigma (Fig. 45), (3) two spurs of hind tibia conspicuously unequal in length, inner spur three-fourths to four-fifths as long as and outer spur at most half as long as basitarsus (Fig. 46), (4) body strong, antenna thick, (5) body and legs black, wings brownish fumous (Fig. 45) and (6) their hosts cover the lepidopterous scythridids. This assemblage of corporal as well as bionomical features serve for the characterization and creation of the new genus *Napamus* taking decidedly into consideration the cladistic concepts applied first by MASON (1981) in splitting up the systematic-phylogenetically polyphyletic genus *Apanteles* s.l.

Type species: *Apanteles vipio* REINHARD, 1880.

The following two species are assigned in the new genus *Napamus*: *N. vipio* (REINHARD, 1880)\(^7\) comb. n. and *N. zombortii* sp. n.

**Etymology.** – The generic name *Napamus* is a made-up name, gender masculine.

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\(^7\) This species was ranged by me (PAPP 1988: 150) in the genus *Illidops* MASON, 1981 as *I. vipio* (REINHARD). Furthermore, the species *Illidops barcinonensis* (MARSHALL, 1898) superficially reminds of *N. vipio* and *N. zombortii*, however, (1) its galea not rostriform, (2) pair of spurs of hind tibia equal in length (i.e. half as long as basitarsus), (3) body and legs not fully black (see also PAPP 1986).
Napamus zomborii sp. n. ♂
(Fig. 48-50)

Description of the holotype ♂. — Body 3 mm long. Head in dorsal view twice as broad as long, eye 1.9 times as long as temple, latter rounded. Ocelli round and medium sized, OOL:OD:POL as 7:6:13, hind imaginary tangent to fore ocellus touching hind pair of ocelli. Eye in lateral view high, 2.4 times as high as wide and 1.42 times as wide as broadest part of temple behind eye, temple ventrally narrowing. Face 1.6 times as wide as high, inner margin of eyes parallel. Malar space just longer than basal width of mandible. Galea rostriform, about twice as long as broad. Head hair-punctured, shiny. — Antenna as long as body. Flagellum attenuating, first flagellomere twice and penultimate flagellomere 1.6 times as long as broad.

Mesosoma in lateral view 1.44 times as long as high. Mesonotum and scutellum almost smooth (i.e. finely hair-punctured), shiny. Prescutellar furrow narrow, finely crenulated. Propodeum smooth and shiny, laterally finely punctate. Notaulix and sternaulix indistinct. Mesopleuron smooth and shiny. — Hind femur 3.37 times as long as broad medially. Hind tarsus one-fifth longer than hind tibia, basitarus somewhat more than twice as long as second tarsal segment, proportional length of hind tarsal segments 1-4 each as 35:15:11:8 (Fig. 48). Fore and hind wings quite similar to those of *N. vipio* (cf. Fig. 192 in PAPP 1981: 291, Fig. 45).

Metasoma as long as mesosoma. First tergite (Fig. 49) 1.35 times as long as wide at its base, almost evenly narrowing from its base to apex. Second tergite transverse (Fig. 49), almost four times as wide behind as medially, third tergite 1.66 times as long as second tergite. Tergites smooth and shiny. — Hypopygium longitudinally creased, distinctly surpassing last tergite, ovipositor sheath as long as middle tibia, widening posteriorly (Fig. 50).


d and host unknown.

Type material. — Holotype ♂: Armenia, Yerevan, Sovietashen, 1200 m, 12 September 1984, leg. ZOM­-BORI. — Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 7518.
Etymology. — The new species is dedicated to its collector Dr. LAJOS ZOMBORI, Symphyta specialist (Hungarian Natural History Museum, Budapest).

Distribution: Armenia (Palaearctic Region).

The new species, *Napamus zomborii* sp. n., is near to *N. vipio* (REINHARD, 1880), the two species are differentiated and recognizable with the help of the following key:

1 (2) Propodeum with a medio-longitudinal carina, propodeum itself at least medially, usually nearly entirely, rugose. First tergite parallel- to subparallel-sided and only on its posterior third narrowing (Fig. 47). Antenna relatively less attenuating, penultimate flagellomere about 1.4 times as long as broad. Hind tarsus relatively long, second tarsal segment somewhat more than half as long as basitarsus, proportional length of hind tarsal segments 1-4 each as 35:19:14:9 (Fig. 46).  \( \varphi \delta: 3-3.5 \) mm

*N. vipio* (REINHARD, 1880)

2 (1) Propodeum without carina, smooth and shiny, laterally finely punctate. First tergite almost evenly narrowing from base to apex (Fig. 49). Antenna relatively more attenuating, penultimate flagellomere 1.6 times as long as broad. Hind tarsus relatively shorter, second tarsal segment somewhat less than half as long as basitarsus, proportional length of hind tarsal segments 1-4 each as 35:15:11:8 (Fig. 48).  \( \varphi: 3 \) mm

*N. zomborii* sp. n.

**Protapaneles praecipuus** sp. n.  \( \varphi \delta \)

(Figs 51-56)

Description of the holotype \( \varphi \). — Body 2 mm long. **Head** in dorsal view (Fig. 51) transverse, 1.85 times as broad as long, eye 1.8 times as long as temple, latter rounded. Ocelli small and round, hind imaginary tangent of fore ocellus before hind pair of ocelli, POL one-fifth longer than OOL. Eye in lateral view 1.68 times as high as wide, one-fourth wider than temple behind eye. Face almost twice as wide as high, inner margin of eyes parallel. Clypeus (Fig. 52) wide and narrow, five times as wide as high: tentorial pits far from each other, i.e. distance between them about four times as long as shortest distance between a pit and lower point of eye; cleft between clypeus and mandible large (Fig. 52). Head smooth and shiny, face subpunctulate. — **Antenna** somewhat shorter than body. First flagellomere three times as long as broad apically, penultimate flagellomere subcubic, 1.25 times as long as broad.

**Mesosoma** in lateral view 1.5 times as long as high. Notaulix indicated by crowded punctuation; otherwise metanotum medially smooth and shiny, laterally (from notaulix) dispersely subpunctate, shiny. Scutellum smooth and shiny. Propodeum coriarious-subrugulose, around lunule rugulose. Mesopleuron finely coriarious, postero-medially glabrous. — Fifth segment of *fore tarsus* without spine. Hind femur 3.5 times as long as broad. Hind tarsus one-fifth longer than hind tibia. Pair of spurs of hind tibia unequal in length, inner spur half as long as basitarsus.

**Fore wing** about as long as body. Pterostigma (Fig. 53) 2.4 times as long as wide, issuing radial vein from its middle; metacarp short, 0.79 times as long as pterostigma, length of metacarp slightly longer than distance between distal end of metacarp and that of radial vein (Fig. 53: see arrows). Veins *r1* longer than *cuqul* and forming an arched vein, together with *cu3* characteristically thickened (Fig. 53). Vein *cu1* somewhat longer than *n. bas.*, *d2* 1.55 times as long as *dl*. — Nervellus straight. Vannal lobe feebly convex and without fringe of hairs (Fig. 54).

**Metasoma** as long as mesosoma. First tergite (Fig. 55) 1.6 times as long as broad basally, parallel-sided and distally narrowing. Second tergite transverse and with a pair of laterally diverging sulci. Third tergite less transverse, 1.45 times as long as second tergite. First tergite smooth and shiny, its narrowing hind part uneven and dull, further tergites polished. — Hypopygium evenly sclerotized, in lateral view (Fig. 56) apically pointed; ovipositor sheath relatively wide and short, as long as hind tarsal segments 4-5.
Body black, antenna blackish. Palpi dirty yellowish. Tegula black. Coxae black, trochanters blackish, femora 1-2 blackish and apically brownish rusty, femur 3 brownish rusty with blackish tint, tibiae and tarsi brownish rusty, fifth segment of tarsi 1-2 dark. Wings hyaline, pterostigma opaque light yellowish, veins proximo-distally yellowish to brownish yellowish.

Description of the female paratypes (♀♀♀). - Similar to the holotype ♀. Body 2-2.3 mm long (2: 5 ♀♀, 2.1: 2 ♀♀, 2.2: 1 ♀, 2.3: 1 ♀). Head in dorsal view transverse, 1.7-1.92 times as broad as long (1.7: 1 ♀, 1.85: 5 ♀♀, 1.88: 2 ♀♀, 1.92: 1 ♀). First tergite 1.6-1.8 times as long as broad (1.6: 5 ♀♀, 1.7: 2 ♀♀, 1.78: 1 ♀, 1.8: 1 ♀).

Description of the male paratypes (13 ♂♂). - Similar to the female. Body 1.4-2.2 mm long (1.4: 1 ♂, 1.9: 2 ♂♂, 2: 4 ♂♂, 2.1: 3 ♂♂, 2.2: 3 ♂♂). Head in dorsal view transverse, 1.85-1.92 times as broad as long (1.85: 9 ♂♂, 1.86: 1 ♂, 1.89: 2 ♂♂, 1.92: 1 ♂). Antenna somewhat longer than body, flagellum faintly attenuating, first flagellomere three times and penultimate flagellomere 1.75 times as long as broad. First tergite 1.69-1.92 times as long as broad basally (1.69: 1 ♂, 1.7: 1 ♂, 1.77: 1 ♂, 1.78: 4 ♂♂, 1.84: 4 ♂♂, 1.85: 1 ♂, 1.92: 1 ♂). Third femur almost entirely black.


Holotype (♀) and 16 paratypes (6 ♀♀ + 10 ♂♂) are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7519 (holotype) and 7520-7535 (paratypes); 5 ♀ paratypes in the Istituto Sperimentale del Tabacco, Seafati; 3 ♀♀ + 1 ♂ paratypes in the Dipartimento di Entomologia e Zoologia Agraria, Portici; 1 ♀ + 1 ♂ paratypes in the Natural History Museum, London, 1 ♀ + 1 ♂ in National Naturhistorisches Museum, Leiden and 1 ♀ + 1 ♂ paratypes in the Zoological Institute, Academy of Sciences of Russia, Sankt Peterburg.

Etymology. - The species name "praecipuus" refers to the unusual form of the veins r1, cuqu1 and c2 of the fore wing (praecipuus = strange, queer).

Distribution: Italy (Palaearctic Region).

The new species, Protopanteles praecipuus sp. n., runs to P. triangulator (WESMAEL, 1837) (Europe) with the help of my key to the species-group of Apanteles popularis (PAPP 1984). Currently the group represents the genus Protopanteles ASHMEAD, 1898 (MASON 1981, PAPP 1988). The two species are distinguished by a few clear-cut features which are disclosed in a key:

1 (2) Metacarp short, clearly shorter than pterostigma; length of metacarp just longer than distance between its distal and that of radial vein (Fig. 53; see arrows). Vein r1, cuqu1 and cu3 characteristically thickened (Fig. 53). Clypeus conspicuously wide and narrow, five times as wide as high; tentorial pits far from each other, i.e. distance between them about four times as long as shortest distance between a pit and lower point of eye; cleft between clypeus and mandible unusually large (Fig. 52). Penultimate flagellomere subcubic, 1.2-1.25 times as long as broad. Propodeum entirely coriarious-subrugulose, around lunule rugulose. First tergite 1.5-1.8 as long as broad basally (Fig. 55). Mesonotum shiny, medially smooth, laterally dispersely subpunctate. Fifth segment of fore tarsus (♀♀) without spinule. Hypopygium pointed, ovipositor sheath wide (Fig. 56)

P. praecipuus sp. n.
Metacarp long, clearly longer than pterostigma; length of metacarp much (about five times) longer than distance between distal end of metacarp and that of radial vein (Fig. 57: see arrows). Veins r1, cuq1 and cu3 not thickened, i.e. usual in form and size (Fig. 57). Clypeus usual in size, three times as wide as high; tentorial pits less far from each other, i.e. distance between them about three times as long as shortest distance between a pit and lower point of eye; cleft between clypeus and mandible not large (Fig. 58). Penultimate flagellomere cylindric, 1.75-1.8 times as long as broad. Propodeum smooth and shiny, along its hind margin and around lunule rugose. First tergite 1.3-1.5 times as long as broad basally (Fig. 59). Mesonotum usually dull to subshiny and with crowded punctuation. Fifth segment of fore tarsus (♀♀) with a fine and rather hardly distinct spine (Fig. 61). Hypopygium truncate, ovipositor sheath less wide (Fig. 60).

P. triangulator (WESMAEL, 1837)

The new species is related to P. armeniacus (TOBIAS, 1976) (Armenia) and to P. buzurae (YOU, XIONG et ZHOU, 1987) (China: Yunnan Province). Both species differ from the new species mostly by the same features as P. triangulator except as follows:

- P. praecipius sp. n.
  - Propodeum entirely coriarious-subrugulose, around lunule rugulose.
  - Fifth segment of fore tarsus (♀♀) without spine.

- P. praecipius sp. n.
  - Propodeum entirely coriarious-subrugulose, around lunule rugulose.
  - Second tergite smooth and shiny.
  - Fifth segment of fore tarsus (♀♀) without spine.

- P. armeniacus (TOBIAS)
  - Propodeum almost entirely smooth.
  - Fifth segment of fore tarsus (♀♀) with a distinct spine.

- P. buzurae (YOU, XIONG et ZHOU)
  - Propodeum with fine punctuation disregarding its smooth postero-lateral field.
  - Second tergite laterally, parallel with lateral sulci, longitudinally rugulose, subshiny (Fig. 2 in YOU, XIONG & ZHOU 1987: 425).
  - Fifth segment of fore tarsus (♀♀) with a distinct spine (Fig. 5 i.c.).

subfamily Miracinæ

Mirax topali sp. n. ♀♂
(Figs 62-63)

Description of the holotype ♀. – Body 1.9 mm long. Head in dorsal view (Fig. 62) transverse, 1.74 times as broad as long, eye almost twice as long as temple, latter rounded and not bulging. Ocelli small and round, OOL:OD:POL as 9:2:5. Eye in lateral view 1.7 times as high as wide and 1.4 times as wide as temple. Malar space shorter than basal width of mandible. Face about 1.6 times as wide as high, inner margin of eyes faintly converging ventrally. Head polished, face uneven medially subpunctate to laterally. Frons with a slight raised ridge extending between toruli to face. Vertex without polished groove. – Antenna about as long as body, with 14 antennomeres. First flagellomere one-fourth longer than second flagellomere and six times as long as broad apically (Fig. 63), further flagellomeres gradually shortening so that penultimate flagellomere three times as long as broad.

8 I know this species only on the basis of its original description (YOU et al. 1987).

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Mesosoma in lateral view 1.44 times as long as high. Notaulix indistinct also on declivous part of mesonotum. Prescutellar furrow faintly distinct, suture-like. Mesonotum almost smooth (i.e. feebly alutaceous) and pruinose shiny; scutellum polished. Propodeum smooth and shiny, with a medio-longitudinal carina, along carina rather rugo-rugulose. Metasoleon and metapleuron polished, sternaulix indistinct. Hind femur four times as long as broad at middle. Hind basitarsus as long as hind tarsal segments 2-4.

Fore wing somewhat longer than body. Pterostigma 2.6 times as long as wide, issuing first transverse cubital vein (cuqul) proximally from its middle. DI quadratic-form, n. bas. as long as cu1 and 1.54 times as long as rec. d2 1.57 times as long as dl.

Metasoma slightly longer than mesosoma but shorter than head + mesosoma together. First tergite spoon-shaped, its basal narrow and apically broadening part about equal in length. Second tergite weakly sclerotized, i.e. membraneous, its scleritized field like a reserved T-letter. Third tergite also membraneous, further tergites polished. Ovipositor sheath as long as hind basitarsus.

Head blackish brown, face brown, mesosoma blackish. Scape and pedicel straw yellow, flagellum brownish yellow. Clypeus yellow, palpi pale yellow. Tegula yellow, last tarsal segments brownish. Sclerotized tergite 1 yellow and tergite 2 brownish yellow, membranous part of tergites 1-3 pale yellow, further tergites brownish black to black. Stermites 1-2 also pale yellow, further sternites brownish black, hypopygium apically brownish. Wings hyaline, pterostigma straw yellow, veins straw yellow with brownish tint.

Description of the female paratypes (2 ♀). - Similar to the holotype. Body 1.8-1.9 mm long (1.8: 1 ♀, 1.9: 1 ♂). Membranous part of tergites 1-3 dirty brownish. Head brownish black (1 ♀) to black (1 ♂).

Description of the male paratypes (2 ♂♂). - Quite similar to the female paratypes.

Host unknown.


Holotype (♀) and 4 ♀♀ + 2 ♂♂ paratypes are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7536 (holotype) and 7537-7542 (paratypes).

Etymology. - The new species is dedicated to its collector, Dr. GYÖRGY TOPÁL, mammalogist (Hungarian Natural History Museum, Budapest).

Distribution: Argentina (Neotropic Region).

The new species, Mirax topali sp. n., is the third known Mirax species distributed in the Neotropic Region and is related with the two species. They are distinguished with the help of the subsequent key:

1 (2) Notaulix indistinct also on declivous anterior part of mesonotum. Second flagellomere one-fourth shorter than first flagellomere (Fig. 63). Head in dorsal view (Fig. 62) less than twice as broad as long and temple not bulging. First discoidal cell high, i.e. cu1 hardly longer than n. bas. ♀: 1.8-1.9 mm  

M. topali sp. n.

2 (1) Notaulix distinct at least on declivous anterior part of mesonotum. Second flagellomere (almost) as long as first flagellomere. Head other in form. 2-2.5 mm long (♀ ♂).

9 For more details on collecting sites etc. see Topáls itinerary report of his zoological trip to Argentina (TOPÁL 1963).
3 (4) Temple in dorsal view bulging, i.e. head in dorsal view broader between temples than between eyes. Propodeum coarsely rugose, with a strong median carina, not areolated. Mesosoma black. First discoidal cell less high, ca. 1.4 times as long as n. bas. (cf. Fig. 1 in Marsh 1979: 13). ♂ ♀: 2-2.5 mm

**M. malcolmi** Marsh, 1979

4 (3) Temple in dorsal view rounded, i.e. head in dorsal view not broader between temples than between eyes. Propodeum areolated. Mesosoma pale honey yellow. Size of first discoidal cell? ♂: 2.2 mm

**M. brasiliensis** Brues, 1912

subfamily Heliconinae

**DIOSPILINI** Foerster, 1862

Up to the present time, four diospiline species have become known from the Australasian Region. The species were ranged in two genera. Out of the four species the type specimens of two species are housed in the Hungarian Natural History Museum, Budapest, which I reexamined (creating a new genus for an old species). In addition, I discovered one new *Diospilus* species which is housed also in this museum and was taken in Australia. On the basis of all these taxonomic data the subsequent checklist indicates our present knowledge of the diospiline species distributed in the Australian Region:

- *Depelbus* (gen. n.) brioi (Szépligeti, 1902) (*Diospilus*): Papua New Guinea
- *Diospilus antipodum* Turner, 1922: New Zealand
- *Diospilus contractus* sp. n.: Australia
- *Diospilus ruficeps* Szépligeti, 1905: Australia
- *Westwoodiella bicolor* Szépligeti, 1904: Australia

The tribe Diospilini is used in Tobias's (1986: 150) and Belokobylskij's (1990: 32) interpretation.

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**Figs** 50-63. - **Fig.** 50. *Napanus zomborii* gen. et sp. n.: hind end of female metasoma.

- **Figs** 51-56. *Protapanteles praeceps* sp. n.: 51 = head in dorsal view, 52 = clypeus and mandible in frontal view, 53 = distal part of right fore wing, 54 = base of hind wing, 55 = tergites 1-3, 56 = hind end of female metasoma. - **Figs** 57-61. *Protapanteles triangulator* (Wesmael): 57 = distal part of right fore wing, 58 = clypeus and mandible in frontal view, 59 = tergites 1-3, 60 = hind end of female metasoma, 61 = fore tarsal segments (3-)4-5 with spine in lateral view. - **Figs** 62-63. *Mirax topali* sp. n.: 62 = head in dorsal view, 63 = antennomeres 1-4(-5)

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1 (2) *N. cu.* issuing from *n. bas.*, latter vein joining to parastigma by a short vein (1-SR or *n. bas.* "petioled"), i.e. *n. bas.* and *n. cu.* issuing not directly from parastigma; *r1* nearly as long as *r2* (Fig. 64). – One species in Australia: *W. bicolor* Szépligeti, 1904

**Westwoodiella** Szépligeti, 1904

2 (1) *N. cu.* and *n. bas.* issuing directly from parastigma; *r1* distinctly shorter than *r2* (Figs 66, 75).

3 (4) Second segment of maxillar palp flattened. Clypeus angularly produced medially. – One species in New Zealand: *A. hudsoni* Turner, 1922 (taxonomic position needs confirmation)

**Aspigonus** Wesmael, 1835

4 (3) Second segment of maxillar palp not flattened. Clypeus not produced angularly, at most with a median denticule (Fig. 69).

5 (6) Second flagellomere somewhat though distinctly longer than first flagellomere (Fig. 65). First discoidal cell (*DI*) wide, 1.5 times as wide as high (Fig. 66: see arrows). Body large, its length above 5 mm. – One species in Australia: *D. biroi* (Szépligeti, 1902)

**Depelbus** gen. n.

Description. – Second flagellomere somewhat though distinctly longer than first flagellomere (Fig. 65). First discoidal cell (*DI*) at least 1.5 times as wide as high (Fig. 66). Pair of tentorial pits deep. Sternumulix distinct and crenulated. *r1* distinctly shorter than *r2*, *Cu2* rhombus-formed (like that of *Diospilus*). Related to the genus *Diospilus* Haliday, the distinction of the two taxa is detailed in the key compiled for the diospiline genera of the Australian Region (see before).

Type species: *Diospilus biroi* Szépligeti, 1902 (monotypic and original designation).

Etymology. – The generic name "Depelbus" is a made-up name, gender masculine.

**Depelbus biroi** (Szépligeti) ♂, comb. n.

*Diospilus biroi* Szépligeti, 1902: Természetr. Füz. 25: 81 ♂, type locality: "New-Guinea: Sattelberg", holotype is in the Hungarian Natural History Museum, Budapest. – Holotype examined.

Description of the holotype ♂. – Body 10 mm long. Head in dorsal view (Fig. 67) less transverse, 1.76 times as broad as long, eye somewhat protruding and just longer than temple, latter rounded, occiput weakly excavated. Ocelli very near to each other, distance between them clearly shorter than diameter of an ocellus.

**Depelbus** gen. n.

*Depelbus* biroi (Szépligeti) ♂, comb. n.

*Diospilus* biroi Szépligeti, 1902: Természetr. Füz. 25: 81 ♂, type locality: "New-Guinea: Sattelberg", holotype is in the Hungarian Natural History Museum, Budapest. – Holotype examined.

Description of the holotype ♂. – Body 10 mm long. Head in dorsal view (Fig. 67) less transverse, 1.76 times as broad as long, eye somewhat protruding and just longer than temple, latter rounded, occiput weakly excavated. Ocelli very near to each other, distance between them clearly shorter than diameter of an ocellus.

10 Parrott (1953: 198) reported a second *Westwoodiella* species as *W. ruficeps* Brullé (originally described as *Westwoodia ruficeps*) from Tasmania, however, it is an ichneumonid species (subfamily Scolobatinae) (see also Townes et al. 1961: 213).

11 Recently the genus was transferred to the subfamily Homolobinae (Van Achtberg 1992: 363–365).
Eye in lateral view (Fig. 68) nearly round, somewhat higher than wide, temple just longer than width of eye. Vertex somewhat flattened (Fig. 68). Malar space minutely longer than basal width of mandible. Clypeus truncate and with a median denticate (Fig. 69), pair of tentorial pits deep. Head polished, face with disperse subpunctuation, interspaces much larger than punctures. - Antennae about as long as body, with 42 antennomeres. Second flagellomere one-fourth longer than first flagellomere and four times as long as apically broad; further flagellomeres gradually shortening and attenuating so that penultimate flagellomere 1.75 times as long as broad.

Mesosoma in lateral view 1.56 times as long as high. Notaulix distinct on anterior declivous part of mesonotum, on its disc absent. Sternaulix distinct and crenulated. Pronotum smooth and shiny, with a mediodiagonal carina. - Hind femur 4.3 times as long as broad medially, hind tibia as long as hind tarsus, hind basitarsus as long as hind tarsal segments 2-4 and half of fifth segment (Fig. 70).

Forewing as long as body. Pterostigma (Fig. 66) 2.77 times as long as wide, issuing radial vein slightly distally from its middle; r1 half as long as width of pterostigma, r2 and cuq1 equal in length, cuq1-2 weakly S-form, r3 approaching tip of wing. DI wide, 1.54 times as wide as high (Fig. 66: see arrows), n. rec. antefurcal, nervellus just not interstitial. Brachial cell closed, i.e. second section of anal nerv (or 2-1A) fully sclerotized.

Metasoma about as long as head and mesosoma together. First tergite (Fig. 71) long, 1.66 times as long as broad behind; subparallel-sided, i.e. hardly broadening posteriorly, one-third as wide behind as basally; pair of spiracles before its middle; its surface with fine and longitudinal striation, shiny. Further tergites smooth, dorsally subshiny (or very weakly pruinose), laterally polished.

Head, mesosoma and legs 1-2 yellow. Scape and pedicel yellow, flagellomeres 1-3(-4) darkening brown, further flagellomeres blackish, last 5(-6) flagellomeres pale yellowish. Palpi yellow, ocellar field brownish. Metasoma dark brown, first tergite whitish. Colour of hind leg: coxa yellow, trochanters and femur brown, tibia and tarsus blackish brown. Wings brownish fumous, pterostigma and veins dark brown.

♀ and host unknown.

Diospilus contractus sp. n. ♀
(Figs 72-77)

Description of the holotype ♀. - Body 2.7 mm long. Head in dorsal view (Fig. 72) transverse, twice as broad as long, eye distinctly longer than temple, latter constricted, occiput hardly excavated. Ocelli medium-sized, distance between fore and hind ocelli equal to diameter of ocellus; OOL:OD:POL as 12:5:7. Eye in lateral view 1.5 times as high as wide. Malar space 1.66 times as long as basal width of mandible. Margin of clypeus convex. Head (face, vertex, occiput, temple) distinctly punctate, interspaces shorter (face) or about as long as punctures, shiny. - Antenna as long as head and mesosoma together, with 21 (right antenna) and 22 (left antenna) antennomeres, first flagellomere 1.4 times as long as second flagellomere (Fig. 73), further flagellomeres gradually shortening and attenuating so that penultimate flagellomere also 1.66 times as long as broad. 

Mesosoma in lateral view 1.4 times as long as high. Notaulix evenly deep, finely crenulated. Mesonotum with disperse punctation, shiny. Scutellum polished. Mesopleuron polished, sternaillix present and crenulated. Propodeum rugose. - Legs strong. Hind femur 2.8 times as long as broad, hind basitarsus somewhat shorter than hind tarsal segments 2-4 (Fig. 74).

Forewing as long as body. Pterostigma (Fig. 75) 3.3 times as long as wide, issuing radial vein from its middle; r1 short, r2 one-third shorter than cuqu, r3 approaching tip of wing. DI as wide as high.

Mesosoma as long as mesosoma. First tergite (Fig. 76) distinctly broadening posteriorly, somewhat broader behind than long medially, twice wider behind than basally, pair of keels merging medially into fine longitudinal rugulo-striation of tergite. Further tergites polished. Suture between tergites 2-3 almost indistinct. Ovipositor sheath long, as long as antennae or twice as long as hind tibia. Ovipositor apically pointed (Fig. 77).

Ground colour of body black; metasoma, except black first tergite, dark brown. Scape, pedicel and flagellomeres 1-2 brownish yellow, flagellomeres 3-6 darkening, further flagellomeres blackish brown. Palpi, tegula and legs brownish yellow. Wings hyaline, pterostigma dark brown, veins pale.

Figs 71-79. - Fig. 71. Depelbus biroi (SZEPLIGETI): first tergite. - Figs 72-77. Diospilus contractus sp. n.: 72 = head in dorsal view, 73 = antennomeres 1-4(-5), 74 = hind tarsus, 75 = distal part of right fore wing, 76 = first tergite, 77 = ovipositor sheath and ovipositor. - Figs. 78-79. Diospilus ruficeps SZÉPLIGETI: 78 = head in dorsal view, 79 = first tergite.
and host unknown.

Type material. – Holotype ♂: Australia, NE Queensland, Conway Range National Park, E from Proserpine, taken with light at night, 20 February 1981, leg. HANGAY, HERCZEG et VOJNITS (No. 205). – Holotype is deposited in the Australian National Insect Collection, Canberra.

Etymology. – The species name "contractus" refers to the constricted temple.

Distribution: Australia (Queensland).

The new species, Diospilus contractus sp. n., stands nearest to D. ruficeps SZEPLIGETI, 1905. Their specific distinction is given in the following key:

1 (2) Mesopleuron distinctly punctate. Antenna with 29 antennomeres. Propodeum "rugosely punctured" (Turner 1922: 280). Black, mesosoma laterally with testaceous pattern. ♂ ♀: 4-4.5 mm. – New Zealand

D. antipodum TURNER, 1922

2 (1) Mesopleuron polished. Antenna at most with 26 antennomeres. Propodeum rugose. Ground colour of body black, mesopleuron never with testaceous pattern.

3 (4) Temple in dorsal view constricted (Fig. 72), head distinctly punctate. First tergite clearly broadening posteriorly and longitudinally rugo-striated (Fig. 76). Antenna with 22 antennomeres. Head black. ♂: 2.7 mm. – Australia (Queensland)

D. contractus sp. n.

4 (3) Temple in dorsal view rounded, head polished (Fig. 78) (face with a very fine and disperse punctation). First tergite subparallel-sided, i.e. hardly broadening posteriorly, only medially and rather longitudinally rugose (Fig. 79). Antenna with 26 antennomeres. Head reddish yellow. ♂: 2.9 mm. – Australia (New South Wales)

D. ruficeps SZEPLIGETI, 1905

References


See the collecting report by HANGAY et al. (1981)

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