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Taxonomic studies on six genera of Braconini (Insecta: Hymenoptera: Braconidae)

With 18 figures

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Abstract. The second female specimen of *Aphrastobracon jacobsoni* TOBIAS is reported from Turkmenia. New combination and new synonyms were established: *Glabriolum guttiventris* (THOMSON, 1894) comb. n. and sen. syn. of *Pseudovipio biroi* SZÉPLIGETI, 1896 jun. syn.; *Iphiaulax tauricus* SHESTAKOV, 1927 sen. syn. of *Iphiaulax incisorus* SHENEFELT, 1978 jun. syn.; *Vipio humerator* (A. COSTA, 1884) sen. syn. of *Bracon (Vipio) rimulosus* THOMSON, 1894 jun. syn. Three braconine taxa, *Glabriolum* SHESTAKOV, *Glyptomorpha* HOLMGREN and *Pseudovipio* SZÉPLIGETI, are accepted as valid genera and a key was constructed to promote their recognition. Two species, *Pseudovipio castrator* (FABRICIUS) and *P. inscriptor* (NEES) are distinguished by features recently detected. Lectotype and paralectotype designations are presented for the type-series of *Agathis variegatus* BOHEMAN, *Bracon incisus* MARSHALL (= *Iphiaulax incisorus* SHENEFELT), *Bracon (Vipio) rimulosus* THOMSON and *Pseudovipio biroi* SZÉPLIGETI.

Key words. Hymenoptera, Braconidae, Braconini, *Aphrastobracon*, *Glabriolum*, *Glyptomorpha*, *Iphiaulax*, *Pseudovipio*, *Vipio*, new combination, new synonyms, identification key, type designations.

Aphrastobracon jacobsoni TOBIAS, 1968

This species was described by TOBIAS (1968) from Uzbeghistan (Kizil-Kum: Sir-Darya) on the basis of a single female taken by G. JACOBSON on 12 May 1903. In his description TOBIAS emphasized that since the year 1903 no further specimens were collected albeit, during the soviet time, several entomological expeditions have been working in this region, i.e. in the former Soviet Middle Asia.

Hungarian coleopterist and lepidopterist collectors were successfull to take the second female specimen of this species trapped with mercury vapour lamp at night. Its collecting data are as follows: "Turkmenia, Kopet Dag Mts, 800–1500 m, valley of the rivers Ipay-Kala and Point-Kala, 59°54-57′E – 38°13-15′N, 30.06–04.07.1992, No. L63, leg. Gy. Fábián, B. Herczig, A. Podlussány and Z. Varga" The specimen is deposited in the Hungarian Natural History Museum.

TOBIAS (l.c.) pointed out that *Aphrastobracon jacobsoni* is a true tertiary tropic relict in the fauna of Middle Asia (Turkmenia, Uzbeghistan, SE Kazakhstan). The genus *Aphrastobracon* comprises a total of 22 species in the Old World Tropics, in the Ethiopian Region 15 and in the Indo-

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Australian Region 6 species are distributed (SHENEFELT 1978: 1425–1430, disregarding *Megalommum* sp.). In the middle Palaearctic Region *Aphrastobracon jacobsoni* is the 22nd species departing far away from its likely Ethiopian species *A. gratiosus* ENDERLEIN, 1920. – In 1972 I reported *Aphrastobracon antefurcalis* SZÉPLIGETI, 1915 from the sea port Rijeka (= Fiume), Croatia, i.e. from the western Palaearctic Region, however, I consider it as an introduced species from tropical Africa imported with timber or something else cargo, i.e. I do not consider it as an indigenous species here in South Europe (PAPP 1972).

Glabriolum guttiventris (THOMSON) **comb. n.** (figs 1–14)

Bracon (*Vipio*) *guttiventris* THOMSON, 1894: Opusc. entom. (Lund) **17** (1892): 1796 ♀ ♂ (syntype series: four females and three males), type locality: "Skåne" and "Öland" (Sweden), female lectotype (and three female + three male paralectotypes) (present designations) in Zoologiska Museet, Lund; examined. – Synonymized with *Agathis variegata* BOHEMAN by ROMAN (1910): 125. Revalidated by SHAW & QUICKE (1999): 99, see below the entry of *Agathis variegata* BOHEMAN.

Agathis variegata BOHEMAN, 1853 (nec BRULLÉ, 1846, senior homonym): Vetensk. Sv. Akad. Handl. (1851): 179 ♀ (syntype series: one female), type locality: "Käseberga" (Sweden), female holotype (present designation) in Naturhistoriska Riksmuseet, Stockholm; examined. Junior homonym of *Agathis variegata* BRULLÉ, 1846 (see also SHENEFELT 1970: 365; homonymy established by SHAW & QUICKE 1999: 99).

Glyptomorpha variegata (BOHEMAN): ROMAN 1910: 125 (comb. n.).

Pseudovipio biroi SZÉPLIGETI, 1896: Természetr. Füz. **19**: 286 (in Hungarian) and 360 (in German), type locality: "Kecskemét" (Hungary), designation of female lectotype by PAPP in SHENEFELT (1978): 1805, desigation of four female and four male paralectotypes: present designation, types (five females + four males) in Hungarian Natural History Museum, Budapest; examined, **syn. n.**

Designation of the female lectotype of *Bracon* (*Vipio*) *guttiventris* (on one insect pin there are five specimens: two males and three females from above to bottom; the lectotype is the first female from above): (first label, printed) "Ö." (= Öland) – (second label attached by me): "Sweden" (printed) "Öland" (my handwriting). – Designation of two female and one male paralectotypes (on the pin the two female paralectotypes are the first and second females from the bottom and one male paralectotype is the first male from above). – Second male from above (on the pin) is a representative of *Vipio appellator* (NEES). – There are further three paralectotypes (one female and two males) of *B.* (*V.*) *guttiventris* separately on three pins. Their designation are as follows: 1.) One female paralectotype: (first label with handwriting) "Gbg." (= Göteborg) – second label is with the locality name Sweden Göteborg attached by me – Third label with printed red frame and with the handwriting "guttiventris m." – fourth label is my paralectotype card and fifth label is with the actual name *Glabriolum guttiventris* (THOMSON) given by me. 2.) One male paralectotype: (first label with handwriting) "Pal" (= Palsjö) – second label with the locality name Sweden Palsjö attached by me; one male paralectotype: (first label with handwriting) "Tko." (= Torekov) second label with the locality name Sweden Torekov attached by me – both male paralectotype with similar third and fourth labels to those of the female paralectotype.

Condition of the female paralectotype of *Bracon (Vipio) guttiventris* is fairly good: 1.) right antenna with 46 and left antenna with 45 antennomeres, 2.) fifth tarsomere of right middle tarsus missing, 3.) left pair of wings and right fore wing apically somewhat teared. – Condition of the paralectotypes (three females + three males) are more or less good, as species unambiguously recognizable.

Designation of the female holotype of *Agathis variegata* BOHEMAN: (first label, printed): "Sc. ar." (= ?) – (second label, printed): "Bhn" (= Boheman) – (third label, printed) "Typus" – fourth label is with the locality name Sweden Käseberga adopted by me after the original description – fifth

card is the holotype card – sixth label is with the actual name *Glabriolum guttiventris* (THOMSON) identified and attached by me. – In his original description BOHEMAN (1853) indicated "In floribus Umbellatarum ad Käseberga S.27. Julii individuum unicum legi." BOHEMAN's statement warrants that the description of *A. variegata* was based on a single specimen on one hand and, on the other, from among the three females and one male (under the name *A. variegata*) deposited in the Naturhistoriska Riksmuseet (Stockholm) only one female bears the label "Type", consequently this female specimen was designated as the holotype.

Condition of the female holotype of *Agathis variegata* is fairly good: 1.) fore right wing missing, 2.) both antennae damaged, right antenna with 40 and left antenna with 30 antennomeres.

Designation of four female and four male paralectotypes of *Pseudovipio biroi*: (first labels partly printed and partly with handwriting) "Kecskemét l2 V. [1]897 Biró L." – second labels are the paralectotype cards attached by me – (third labels) Hym. Typ. Nos 411 (lectotype) and 412–415 (female paralectotypes) + 416–419 (male paralectotypes) – (fourth labels partly printed and partly with handwriting and attached by me) *Glyptomorpha biroi* SZÉPL. 4 ♀♀ and 4 ♂♂ det. SZÉPLIGETI, 1904 – fifth labels are with the actual name *Glabriolum guttiventris* (THOMSON) given and attached by me. – Designation of the female lectotype of *P. biroi* was published in SHENEFELT (1978): 1805.

Condition of the female lectotype of *Pseudovipio biroi* is good. – Condition of the paralectotypes (four females + four males) are fairly good: one female in good condition (i.e. not damaged), three females + three males with damaged antennae or legs.

TOBIAS (1986: 97 and 111) placed in junior synonymy the generic name *Glabriolum* SHESTAKOV with *Pseudovipio* SZÉPLIGETI on one hand and, ten years earlier, he (TOBIAS 1976: 26 and 55) applied the name *Glabriolum* in the sense *Pseudovipio*, i.e. he considered the generic name *Glabriolum* valid over *Pseudovipio*, on the other hand. In this taxonomic case I follow QUICKE's conception (1987: 94 and 113) who considers the three taxa, *Glabriolum*, *Glyptomorpha*, *Pseudovipio*, as valid generic names. To promote the unambiguous recognition of these three genera subsequently I constructed a key for them applying traditional and new features for their separation:

1 (2) Veins *1–M* and *1–SR–M*[1)] of fore wing distinctly more or less bent (figs 1–2, see arrows). Terminal flagellomere apically blunt (fig. 3) and laterally more or less compressed (fig. 4). ***Glyptomorpha*** HOLMGREN, 1868

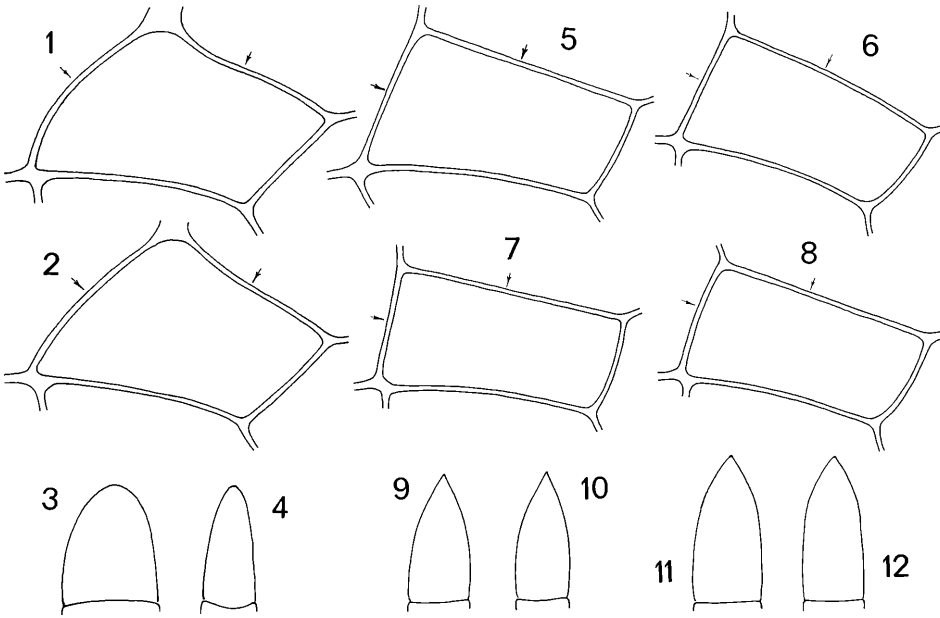
2 (1) Veins *1–M* and *1–SR–M*[1)] of fore wing straight or at most just bent (figs 5–8, see arrows). Terminal flagellomere apically pointed (figs 9, 11) and laterally at most weakly compressed (figs 10, 12).

3 (4) Second and third sutures (between tergites 2–3 and 3–4, respectively) crenulate; tergites 2–4(–5) rugose (fig. 14). ***Pseudovipio*** SZÉPLIGETI, 1896

4 (3) Second and third sutures (between tergites 2–3 and 3–4, respectively) smooth and sutures themselves less distinct (to indistinct); tergites smooth or first two (or three) tergites (sub)rugulose to uneven (fig. 13). ***Glabriolum*** SHESTAKOV, 1932

Both TELENGA (1936: 48–52 in key and 63–65 redescriptions) and TOBIAS (1986: 111–113) in their keys to the *Glyptomorpha* and *Pseudovipio* species of the former USSR, respectively, distinguished the two taxa *G.* seu **(?)** *P. biroi* and *G.* seu **(?)** *P. variegatum* (= *guttiventris*). The

[1)] Abbreviation of the alar veins: *1–M* = basal vein of fore wing, *1–SR–M* = first abscissa of the cubital vein of fore wing.



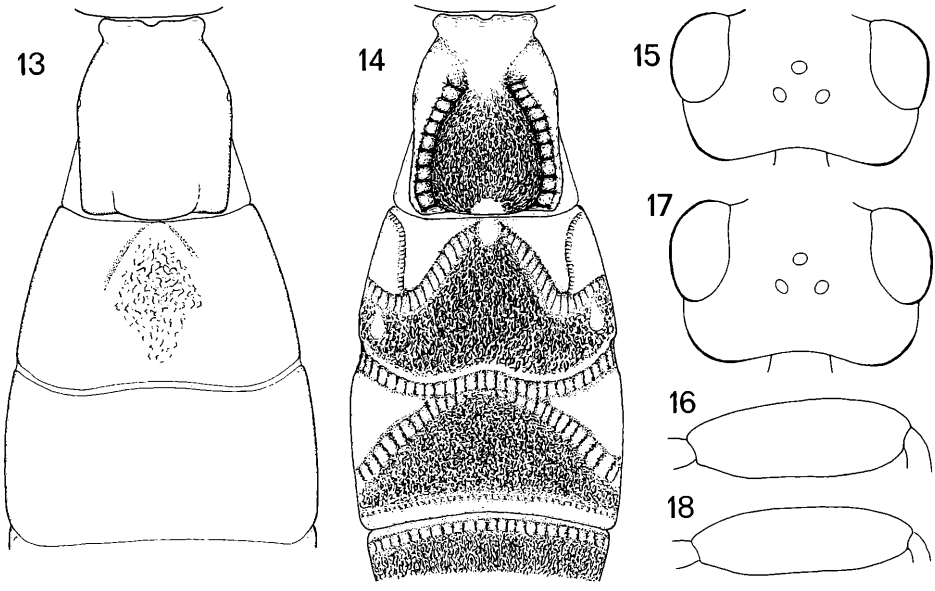
Figs 1–12.
Figs 1–2: First discal cell (*D1*): 1 = *Glyptomorpha pectoralis* (BRULLÉ), 2 = *G. gracilis* SZÉPLIGETI. – Figs 3–4: Terminal flagellomere of *Glyptomorpha pectoralis* (BRULLÉ): 3 = dorsal view, 4 = lateral view. – Figs 5–8: First discal cell (*D1*): 5 = *Pseudovipio inscriptor* (NEES), 6 = *P. castrator* (FABRICIUS), 7 = *P. gorgoneus* (MARSHALL), 8 = *Glabriolum guttiventris* (THOMSON). – Figs 9–12: Terminal flagellomere of *Pseudovipio inscriptor* (NEES) (9–10) and *P. gorgoneus* (MARSHALL) (11–12): 9 and 11 = dorsal view, 10 and 12 = lateral view.

distinctive features presented by them restrict to colour differentation and a minimum length difference of the ovipositor sheath between the two taxa. The type examinations of the two taxa in question led me to the recognition that all differences between them exposed in the literature are only infraspecific variation; i.e. *G. guttiventris* (= *variegatum*) is a highly variable species considering the size of its black(ish) pattern, length of its ovipositor sheath and the strength + extension of the weak sculpture of its tergites 1–2(–3). By the way, *G. guttiventris* (= *variegatum*) is easy to identify with the help of both TELENGA's and TOBIAS's keys (l.c.) running either to *G. biroi* or *G. guttiventris* (= *variegatum*), hence I disregard its redescription as well as to construct and place it in a new key.

Distinction of two *Pseudovipio* species (figs 15–18)

Two species, *Pseudovipio castrator* (FABRICIUS, 1798) and *P. inscriptor* (NEES, 1834), are somewhat difficult to separate, first of all the male forms. Below I present a key which perhaps may promote the distinction of the two species in question with possibly well recognizable features:

1 (2) Head in dorsal view (fig. 15) slightly more transverse, 1.8 times as broad as long, temple somewhat more rounded. Hind femur thick, 2.7–2.8(–3) times as long as broad (fig. 16). Ovipositor sheath short, as long as metasoma. ♀: (5–)6–8(–10) mm, ♂: 4–8(–10) mm. ***P. castrator*** (FABRICIUS)



Figs 13–18.
Fig. 13: *Glabriolum guttiventris* (THOMSON): tergites 1–3. – Fig. 14: *Pseudovipio inscriptor* (NEES): tergites 1–3. – Figs 15–16: *Pseudovipio castrator* (FABRICIUS): 15 = head in dorsal view, 16 = hind femur. – Figs 17–18: *Pseudovipio inscriptor* (NEES): 17 = head in dorsal view, 18 = hind femur.

2 (1) Head in dorsal view (fig. 17) slightly less transverse, 1.6–1.7 times as broad as long. Hind femur less thick, 3.1–3.3(3.5) times as long as broad (fig. 18). Ovipositor sheath long, as long as body. ♀: (4–)5–8(–10) mm, ♂: 3–7(–11) mm. ***P. inscriptor*** (NEES)

These specific distinctive features are usually applicable to distinguish the two species. However, there may come to hand specimens of both species which are more or less transitional towards the other species. These specimens, mainly the male forms, are sometimes unidentifiable.

Iphiaulax tauricus SHESTAKOV

Iphiaulax tauricus SHESTAKOV, 1927: Rev. Russ. Ent. **21**: 203 E (syntype series: one female), type locality: Crimea, Kerch (Ukraine), female lectotype (designated by TOBIAS 1986: 105) in Zoological Institute, Sankt Petersburg; not examined. – SHENEFELT (1978): 1798 (literature up to 1971). TOBIAS (1986): 105 (in key, in Russian).

Bracon incisus MARSHALL, 1897 (nec BRULLÉ, 1846, homonymy): Spec. Hym. Eur. Alg. **5**: 40 ♂ (syntype series: three males), type locality: "Sicile (Motta)" (Italy), male lectotype (and two male paralectotypes; present designations) in Naturhistorisches Museum, Bern; examined.

Iphiaulax incisorus SHENEFELT, 1978: Hym. Cat. (n. ed.) Pars **15** Brac. 10: 1772 (new name for *Bracon incisus* MARSHALL, literature up to 1969); **syn. n.**

Designation of the male lectotype of *Bracon incisus*: (first label, printed) "Marshall det." – (second label with handwriting) "Motta 13. VI. [18]77" – (third label, printed) "Isenschied Morutz Sig. 1878" – fourth label is my lectotype card – fifth label is with the actual name, *Iphiaulax tauricus* SHESTAKOV, given by me.

Designation of the two male paralectotypes of *B. incisus*: with similar labels that of the male lectotype.

Condition of the male lectotype of *B. incisus* is good: left antenna damaged and with 46 antennomeres. – Condition of the two male paralectotypes is fairly good: 1.) one male with damaged antennae: right antenna with 23 and left antenna with 27 antennomeres; 2.) one male with damaged left antenna (with 44 antennomeres), fifth tarsomere of left fore tarsus and hind tibia + tarsus missing.

Material of *Iphiaulax tauricus* examined (1 ♀ + 3 ♂♂): 1.) Three males (in Museum Bern): lectotype and two paralectotypes, Sicily (Italy); 2.) One female (in Museum Budapest): Turkey, Gallipoli, Cape Helles, 14 September 1926, leg. G. A. K. MARSHALL.

Distribution Ukraine (Crimea), Armenia, Azerbaidzhan, Kazakhstan, Turkey and Italy (Sicily).

Taxonomic remark – *Iphiaulax tauricus* was described on the basis of the female and *Bracon incisus* on the basis of the male form. A meticulous examination of the three males of *B. incisus* and, furthermore, using the identification keys of the genus *Iphiaulax* by TELENGA (1936: 106–109) and by TOBIAS (1986: 104–105) as well as collating the original description (by SHESTAKOV l.c.) and redescription (by TELENGA 1936: 111–112) of *I. tauricus* and that of *Bracon incisus* (by MARSHALL l.c.) the conspecificity of the two taxa was unambiguously revealed. Considering the homonymy and synonymy expounded above SHESTAKOV's name *I. tauricus* has objective priority over MARSHALL's name *B. incisus* and SHENEFELT's name *I. incisorus*. Otherwise, the species is easy to determine with the help of TELENGA's and TOBIAS's keys (l.c.).

Vipio humerator (A. COSTA)

Bracon humerator A. COSTA, 1884: Rendic Accad. Sci. Fis. Matem. Napoli **23**: 172 ♂, type locality: "Sardegna" (Italy), male lectotype was designated by PAPP (1993: 46) and in Museo Zoologia, Napoli. – PAPP (l.c.): comb. n., taxonomic remarks.

Bracon (*Vipio*) *rimulosus* THOMSON, 1894: Opusc. Entom. **17** (1892): 1795 ♀♂ (syntype series: one female + one male), type locality: "norra Italien" (or northern Italy), female lectotype (and male paralectotype) (present designations) in Zoologiska Museet, Lund; examined and **syn. n.**

Additional three synonyms (in details see PAPP 1993: 46): *Vipio frivaldszkyi* SZÉPLIGETI, 1896; *Vipio marshalli* SCHMIEDEKNECHT, 1896 and *Isomecus schlettereri* KRIECHBAUMER, 1895.

Designation of the female lectotype of *B.* (*V.*) *rimulosus* THOMSON: (first label) "Graecia" – second label with somewhat effaced handwritten and illegible note – (third label with red frame and handwriting) "rimulosus m." – fourth label is my lectotype card and fifth label is with the actual name *Vipio humerator* given by me.

Designation of the male paralectotype of *B.* (*V.*) *rimulosus*: (first label) "Dalm." – (second label) "59" – (third label attached by me) "Croatia Dalmatia" – fourth label is my paralectotype card and fifth label is with the actual name *V. humerator* given by me.

Condition of the female lectotype is fairly good: 1.) Right antenna missing, left antenna damaged and with 26 antennomeres; 2.) Left fore wing distally torn, i.e. its marginal and second submarginal cells missing, wings apically somewhat creased; 3.) Tarsomeres 3–5 of right hind leg missing; 4.) left ovipositor sheath glued separately onto the second label, greater half of the ovipositor broken and missing. – Condition of the male paralectotype is good: antennae damaged, right antenna with 23 antennomeres and left antenna with 24 antennomeres.

Concerning the localities of *B.* (*V.*) *rimulosus* there is a striking contradiction between the localities of the two type specimens on one hand and the original description, on the other. According to the description the locality is North Italy and, conspicuously differently, the locality of the lectotype is Graecia (or Greece) and that of the paralectotype is Dalmatia (in Croatia). Certainly C. G. THOMSON either mislooked or miswrote the locality of this species in his description (l.c.) and its present rectification as Graecia for the female lectotype and Croatia Dalmatia for the male paralectotype coincide with the true original localities.

Distribution Italy, Greece, Croatia, ?Montenegro, Hungary, Algeria.

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