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A NEW GENUS AND TWO NEW SPECIES OF BRACONIDAE (HYMENOPTERA) DEDICATED TO LÁSZLÓ GOZMÁNY

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Descriptions of the new braconine genus *Gozmanycomp* based on the species *Bracon vulpinus* SZÉPLIGETI (from Bolivia and Brazil) and the two new species *Chorebus gozmanyi* (from Egypt) and *Leiophron gozmanyi* (from Honduras) are presented. The species *Gozmanycomp vulpinus* (SZÉPLIGETI) **comb. n.** is redescribed. The three new taxa are dedicated to Dr. L. GOZMÁNY, the well-known Hungarian specialist of Lepidoptera celebrating his 85th birthday in 2006. With 35 original figures.

Key words: new genus, species and combination, nearest allies, descriptions, keys

INTRODUCTION

The following three new braconid taxa are described: (1) *Gozmanycomp* gen. n. (Braconinae) based on the species *Bracon vulpinus* (SZÉPLIGETI, 1902) distributed in Bolivia and Brazil; the species forms a monobasic new genus. (2) *Chorebus gozmanyi* sp. n. (Alysiinae) from Egypt based on two male specimens. (3) *Leiophron gozmanyi* sp. n. (Euphorinae) from Honduras based on a single male specimen.

The type specimens of the new taxa are deposited in the Department of Zoology, Hungarian Natural History Museum, Budapest.

Dedication – The new genus and the two new species are dedicated to Dr. LÁSZLÓ GOZMÁNY, the world-famous Hungarian specialist of Lepidoptera celebrating his 85th birthday in November 2006. Dr. L. GOZMÁNY, my good collegue, was always ready to give me up-to-date informations on the identity of the butterfly and moth species turning up as hosts of different braconids. Furthermore, he was always kind enough to clear up complicated nomenclatural problem whenever they came to light concerning braconid, hymenopterous or other taxa. His death in December 2006 is a great loss to the Hungarian as well as to the all over world entomologists.

Abbreviations applied in the description of the new taxa (after VAN ACHTERBERG 1979: 248–249):

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Fore wing -m-cu = recurrent vein; r = first section of the radial vein; 1-RI = first section of the metacarpal vein; 2-IA = second section of the submedian vein; 2-SR = first transverse cubital vein; 3-SR = second section of the radial vein; SRI = third section of the radial vein; 1-M = basal vein; 1-SR-M = first section of the cubital vein; CUIb = second section of the subdiscal vein.

Ocelli – OOL = ocellar–ocular line (i.e. shortest distance between hind ocellus and compound eye; POL = postocellar line (i.e. shortest distance between hind two ocelli).

DESCRIPTIONS OF THE NEW TAXA

Subfamily Braconinae: Braconini

Gozmanycomp gen. n. (Figs 1, 4, 6–9)

Type species: Bracon vulpinus SZÉPLIGETI, 1902 (monobasic, present designation).

Diagnosis of the generic features – Scape in lateral view globulose, dorsally longer than ventrally, just emarginate apically (Fig. 1). Flagellum filiform, flagellomeres longer than broad. Face rather finely sculptured: rugulose with a few rugose elements, with a pair of vertical keels between antennal sockets and clypeus (near to tentorial pit) (cf. fig. 33 in QUICKE 1997: 163). Propodeum with a medio-posterior carina (Fig. 4). Claw downcurved with distinct basal lobe (Fig. 6). Fore wing: second submarginal cell long, *1–SR–M* bent (Figs 7–8). First tergite somewhat longer than broad behind, second and third tergites laterally equal in length; suture between them clearly trisinuate, median sinuation deep; second ter-gite antero-medially "pinched up"; tergites polished (Fig. 9). Hypopygium pointed.

Taxonomic position – QUICKE (1991: 173) has indicated that the species *Bracon vulpinus* "belongs to an undescribed genus of the *Compsobraconoides* group". The examination of the type-series (one female + two males) of *B. vulpinus* convinced me that it differs of both genera *Bracon* and *Compsobraconoides*, the new genus, *Gozmanycomp*, is nearest to this latter genus. The three genera are distinguished by a few features keyed:

1(2) Face usually smooth to subpunctate-punctate, less frequently rugulose to rugose – never with a pair of vertical keels. Second submarginal cell (of fore wing) less long, 3–SR (1.4–)1.6–1.8 times (exceptionally twice) as long as 2–SR. Antenna usually with (15–)20–30 flagellomeres. – Cosmopolitan

Bracon FABRICIUS, 1804

2 (1) Face rather transversely rugulose to rugose and with a pair of vertical keels between antennal sockets and clypeus (cf. Fig. 30–33 in QUICKE 1997: 163).

Second submarginal cell (of fore wing) long, 3-SR 2-2.3(-2.5) times as long as 2-SR (Fig. 7). Antenna with (30–)35–45 flagellomeres.

- 3(4) Propodeum entirely polished, i.e. without any carina. Second tergite not ,,pinched up" antero-medially, shorter than third tergite. Suture between tergites 2–3 straight (cf. fig. 75–76 in QUICKE 1997: 170). Species distributed in the Nearctic and Neotropic regions Compsobraconoides QUICKE, 1989
- 4 (3) Propodeum polished and with a distinct carina medio-posteriorly (issuing from lunule) (Fig. 4). Second tergite "pinched up" antero-medially, tergites 2–3 equal in their length laterally (Fig. 9). Suture between tergites 2–3 trisinuate, median sinuation deep (Fig. 9). Bolivia, Brazil Gozmanycomp gen. n.

The new genus, *Gozmanycomp*, is also near to the genera *Cyclaulax* and *Cyclaulacidea* considering their common features: face rather transversely rugulose to rugose and laterally with a pair of vertical keels (cf. figs 30–33 in QUICKE l.c.). The three genera are separated as follows (after QUICKE 1997, somewhat modified):

- 1 (2) Scape apically with a ledge-form false margin separated from the real margin (cf. fig. 37 in QUICKE 1997: 164). Face above with a deep groove between antennal sockets (cf. figs 34–35 in QUICKE 1997: 163–164). Basitarsus of fore leg laterally compressed (Fig. 14). Species distributed in the Neotropic region *Cyclaulax* CAMERON, 1911
- 2 (1) Scape apically only with a real margin (Fig. 1). Face above without deep groove between antennal sockets. Basitarsus of fore leg laterally not compressed (Fig. 13).
- 3 (4) Face between vertical pair of keels rugose, medially with a tear-drop-like raised and coriaceous field (cf. fig. 1 in QUICKE & DELOBEL 1995: 219). Raised median field of first tergite square in cross-section, i.e. first tergite without scutum, its lateral margin posteriorly rather weakly carinated; second tergite antero-medially at most weakly "pinched up"; suture between tergites 2–3 at most moderately arched (cf. figs 2–4 in QUICKE & DELOBEL l.c.). Species distributed in the Neotropic region

Cyclaulacidea QUICKE et DELOBEL, 1995

4 (3) Face between vertical pair of keels finely sculptured: rugulose with a few rugose elements. Raised median field of first tergite more or less convex in cross-section, i.e. first tergite with scutum, its lateral margin carinated; second tergite antero-medially "pinched up"; suture between tergites 2–3 trisinuate, median sinuation deep (Fig. 9). – Single species distributed in Bolivia and Brazil

Etymology – The affix "comp" after the name Gozmany indicates that the new genus is a representative of the *Compsobraconoides* genus-group within the subfamily Braconinae.

Gozmanycomp vulpinus (SZÉPLIGETI) comb. n. (Figs 1–13)

Bracon vulpinus SZÉPLIGETI, 1902: 41 ♀♂, type locality: Brazil: Tonantis (lectotype) and Brazil: Fonteboa (two paralectotypes), female lectotype (and two male paralectotypes, designated by PAPP in 1969, see SHENEFELT 1978 l.c.) in the Hungarian Natural History Museum, Budapest; examined. – SZÉPLIGETI 1906: 590 (in key). SHENEFELT 1978: 1550 (as *Bracon vulpinus*, literature up to 1953). QUICKE 1991: 173 (taxonomic position, type depository).

Type designation of *Bracon vulpinus*. – Designation of the female lectotype: (first label, handwritten) "Tonantis / Brasil"; second label is the lectotype card, third label is with the inventory number 1292 (both labels were attached by me); fourth label (reverse the third label) "I. vulpinus" (SZÉPLIGETI's handscript, "I." is supposedly the abbreviated generic name *Iphiaulax* and, certainly, is a slip of pen) / "det. Szépligeti" (printed); fifth label is with the actual name *Gozmanycomp vulpinus* (SZÉPLIGETI) comb. n. – The lectotype is in good condition: (1) pinned by the mesosoma; (2) both flagelli deficient distally; (3) tarsomeres 4–5 of right hind leg missing.

Designation of the two male paralectotypes: (first label, handwritten) "Fonteboa / Brasil"; second label is the paralectotype card and the third label is with the inventory numbers 1293 and 1294 (both labels were attached by me); fourth label is with the actual name *Gozmanycomp vulpinus* (SZÉP-LIGETI) comb. n. – The two paralectotypes are in good condition: (1) micropinned by mesosoma; (2) both flagelli deficient distally; (3) right hind wing of one paralectotype (no. 1294) somewhat creased longitudinally; (4) right eye deeply (artificially?) indented (no. 1294).

Material examined: 1 \bigcirc + 4 \bigcirc (including the types) from Bolivia and Brazil.

Redescription of the female lectotype. – Body 6 mm long. Both antennae deficient distally, right flagellum with 18 and left flagellum with 16 flagellomeres. Scape globose, clearly broadening anteriorly, 1.5 times longer dorsally than broad apically, weakly emarginate apically, ventrally shorter than dorsally (Fig. 1). First flagellomere 1.4 times and 18th flagellomere 1.3 times as long as broad. – Head in dorsal view (Fig. 2) transverse, 1.8 times as broad as long, eye somewhat protruding and 2.3 times longer than temple, temple rounded. OOL just less than three times as long as POL. Eye in lateral view 1.3 times as high as wide and twice wider than temple (Fig. 3, see arrows). Horizontal width of oral opening a bit longer than shortest distance between opening and compund eye. Face and clypeus sculptered (cf. fig. 33 in QUICKE 1997: 163), otherwise head polished.

Mesonotum in lateral view 1.5 times as long as high. Notaulix faintly distinct. Propodeum postero-medially with a carina issuing from lunule, postero-laterally with a pair of short carinae (issuing from hind margin of propodeum), otherwise propodeum polished (Fig. 4). Hind femur 3.3 times as long as broad medially (Fig. 5). Pair of spurs of hind tibia equal in length and shorter than length of basitarsus. Claw as in Fig. 6.

Fore wing as long as body. Pterostigma (Fig. 7) 4.1 times as long as wide and issuing *r* proximally from its middle, *r* one-sixth shorter than width of pterostigma. Second submarginal cell long, 3-SR twice as long as 2-SR and four times as long as *r*; SR1 1.5 times as long as 3-SR, faintly bent and reaching tip of wing. First discal cell (Fig. 8) moderately high, 1-M nearly 1.7 times longer than m-cu, 1-M indistinctly bent, 1-SR-M clearly arched.

First tergite (Fig. 9) as long as broad behind, beyond pair of spiracles moderately broadening posteriorly, scutum clearly convex and with a medio-longitudinal fairly wide and rather shallow furrow, lateral margin of tergite carinated. Second tergite somewhat more than twice as broad behind as long laterally, third tergite a bit longer than second tergite, suture between them clearly trisinuate and deep, medially deeper, uneven (Fig. 9). Tergites polished. Hypopygium small and pointed. Ovipositor sheath as long as tarsomeres 1–3 of hind leg.

Ground colour of body testaceous. Antenna brownish black. Palpi and face + clypeus yellowish. Tergites 6–7 dark brown. Legs testaceous, coxae rather yellowish. Hind tibia + tarsus dark brown. Wings brownish fumous, pterostigma ad veins brown.

Redescription of the two male paralectotypes. – Similar to the female lectotype. Body 4.5 mm long. Flagelli deficient, with 16 and 14 (no. 1293), with 18 and 20 flagellomeres (no. 1294), respectively. First flagellomere twice and 20th flagellomere 1.5 times as long as broad. Head in dorsal view 1.66–1.7 times as broad as long, eye less protruding and 2.6 times longer than temple, temple receded (Fig. 10). Hind femur nearly 3.6 times as long as broad medially (Fig. 11). First tergite almost 1.4 times as long as broad behind, evenly broadening posteriorly. Pterostigma (Fig. 12) almost 3.6 times as long as wide and issuing r proximally from its middle, r shorter than width of pterostigma. Hind tibia + tarsus brown to dark brown.



Figs 1–14. 1–13 = Gozmanycomp vulpinus (SZÉPLIGETI) lectotype ♀: 1 = scape in outer-lateral view, 2 = head in dorsal view, 3 = head in lateral view, 4 = propodeum, 5 = hind femur, 6 = claw, 7 = distal part of right fore wing, 8 = first discal cell, 9 = tergites 1–3; paralectotype ♂: 10 = head in dorsal view 11 = hind femur, 12 = pterostigma + r, 13 = basitarsus and second tarsomere of fore leg. 14 = Cyclaulax grandiceps CAMERON: basitarsus and second tarsomere of fore leg

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Two male specimens (without type status) from the locality Bolivia: Mapiri ("Bracon vulpinus" det. SZÉPLIGETI) are similar to the male paralectotype (micropinned by mesosoma, pin covered with vitriol copper crystals). Body 4.6 (1 3) and 6.5 mm (1 3) long. Flagelli deficient except one flagellum with 30 flagellomeres. First flagellomere 1.5 times and penultimate flagellomere 1.9 times as long as broad.

Host unknown. Distribution: Bolivia, Brazil.

Subfamily Alysiinae: Dacnusini

Chorebus gozmanyi sp. n. ♂ (Figs 15–24)

Material examined $(2 \ \cite{C} \ \cite{C})$. – Male holotype + one male paratype: Egypt, Berollos lake, Balteem, 22 March 2003 (holotype) and 1 April 2002 (paratype), leg. SAYED; inventory numbers: 11015 (holotype) and 11016 (paratype). – Holotype is in excellent condition, glued on a pointed card by mesosternum. Paratype is in fairly good condition: (1) glued by right metapleuron on a pointed card; (2) both flagelli deficient distally; (3) left hind leg missing.

Description of the male holotype. – Body 2.5 mm long. Antenna about one-sixth longer than body and with 29 (right antenna) and 28 (left antenna) antennomeres, respectively. Flagellum filiform, first flagellomere clearly three times and penultimate flagellomere 2.5 times as long as broad. – Head in dorsal view (Fig. 15) 1.5 times as broad as long, eye as long as temple, temple rounded and between temples head minutely broader than between eyes. OOL clearly twice as long as POL, hind pair of ocelli just before imaginary line between hindest point of compound eyes. Mandible evenly broad, twice as long medially as broad between upper and lower teeth, upper tooth rounded (Fig. 16). Face 1.5 times wider than high, inner margin of compound eyes parallel. Eye in lateral view 1.75 times as high as wide, temple 1.2 times wider than eye and ventrally indistinctly narrowing (Fig. 17, see arrows).

Mesosoma nearly 1.7 times as long as high. Pronope of pronotum present. Mesoscutum very finely granulose, notaulix faintly distinct on fore part of mesoscutum; mesoscutal pit short dash-shaped. Precoxal suture wide and crenulate, mesopleuron finely granulose. Propodeum areolate-rugose, together with metapleuron less hairy and metapleuron without hair-rosette. – Hind femur 3.8 times as long as broad distally, i.e. distally broadening (Fig. 18).

Fore wing as long as body. Pterostigma cuneiform (Fig. 19) almost six times as long as wide, r shorter than width of pterostigma, marginal cell short. Subdiscal cell open distally, *CU1b* entirely and 2–1A distally effaced (Fig. 20).

First tergite 1.5 times as long as broad behind and moderately broadening posteriorly, dispersely hairy, longitudinally striate, dorsope deep, scutum less distinct (Fig. 21). Second tergite trapeziform, twice broader behind than long medially, finely granulose (Fig. 21). Third tergite one-fifth shorter than second tergite, subgranulose to almost polished. Further tergites polished.

Body light brownish yellow. Scape + pedicel ventrally testaceous, dorsally brown. Flagellum dark brown. Palpi yellow. Ocellar field black. Legs somewhat lighter brownish yellow. Wings subhyaline, pterostigma and veins light brownish.

Description of the male paralectotype. – Similar to the male holotype. Body 2.2 mm long. Both flagelli deficient, right flagellum with 9 and left flagellum with 12 flagellomeres. Head in dorsal view 1.53 times as broad as long, eye a bit shorter than temple (Fig. 22). Hind femur nearly 3.6 times as long as broad distally (Fig. 23). Scutum of first tergite more distinct (Fig. 24).

Female and host unknown.

Distribution: Egypt.

Taxonomic position – The new species, *Chorebus gozmanyi*, is nearest to *Ch. rostratae* GRIFFITHS viewing their cubic head, elongate mesosoma and testaceous or light brownish yellow corporal colour; the two species are separated by the features keyed:

1 (2) Mandible narrowing distally, its upper tooth pointed (Fig. 25). Head in dorsal view equally broad between eyes and temples; fore ocellus just beyond imaginary line between hindest point of compound eyes, eye somewhat longer than temple (Fig. 26). Mesoscutum and second tergite polished, notaulix nearly evenly distinct. First tergite parallel-sided, 1.7–1.8 times as long as broad behind (Fig. 27). Body testaceous to brown. ♂: 2.2 mm. – Germany, Hungary



Figs 15–27. 15–24 = *Chorebus gozmanyi* sp. n., lectotype 3: 15 = head in dorsal view, 16 = mandible, 17 = head in lateral view, 18 = hind femur, 19 = distal part of right fore wing, 20 = first subdiscal cell, 21 = tergites 1–3; paralectotype 3: 22 = head in dorsal view, 23 = hind femur, 24 = first tergite. – 25–27 = *Chorebus rostratae* GRIFFITHS: 25 = mandible, 26 = head in dorsal view, 27 = first tergite

2 (1) Mandible evenly broad, its upper tooth blunt (Fig. 16). Head in dorsal view between temples a bit broader than between eyes; hind pair of ocelli just before imaginary line between hindest point of compound eye, eye as long as temple (Figs 15, 22). Mesoscutum and second + third tergites finely granulose (Fig. 21), notaulix less distinct. First tergite broadening posteriorly, 1.5 times as long as broad behind (Figs 21, 24). Body light brownish yellow. ♂: 2.5 mm. – Egypt

Subfamily Euphorinae: Euphorini

Leiophron gozmanyi sp. n. ♂ (Figs 28–35)

Material examined (1 ♂). – Male holotype: Honduras, Francisco Morazan, Parque Nacional La Tigra, 14°15'N 87°05'W, 9 April 1996, leg. R. CAVE; inventory number: 11017. – Holotype is in good condition: (1) glued by its right meso- and metapleuron on a pointed card; (2) tarsomeres 2–5 of right hind leg missing.

Description of the male holotype. – Body 3 mm long. Antenna as long as head + mesosoma + first tergite combined and with 16 antennomeres. Flagellum filiform, every flagellomere clearly longer than broad; first flagellomere four times as long as broad, further flagellomeres gradually shortening so that penultimate flagellomere just less than three times as long as broad. – Head in dorsal view (Fig. 28) subcubic, 1.5 times as broad as long, head between temples somewhat broader than between eyes, temple 1.2 times as long as eye; occipital carina distinct, beyond ocellar field weakened. Eye in lateral view small, 1.7 times as high as wide, temple twice as wide as eye (Fig. 29). Head polished.

Mesosoma in lateral view 1.4 times as long as high. Notaulix evenly deep, posteriorly slightly widening, crenulate. Prescutellar furrow with one median keel. Propodeum areolate rugulose (Fig. 30). – Hind femur 4.1 times as long as broad somewhat distally (Fig. 31). Hind basitarsus almost as long as hind tarsomeres 2–5. Claw curved and with basal lobe as in Fig. 32.

Fore wing as long as body. Pterostigma (Fig. 33) twice as long as wide, issuing two veins from its middle; marginal cell short and narrow, I-RI one-fourth length of pterostigma. Nervulus slightly postfurcal (Fig. 33). Basal and subbasal cells along effaced vein M-CUI less setose to almost glabrous. Vein m-cu antefurcal, joining to first submarginal cell near to vein 2-SR (Fig. 33). Hind wing: nervellus effaced.

First tergite petiolate, 2.7 times longer than broad behind, slightly broadening posteriorly, dorsally rugo-rugulose (Fig. 34), ventrally not fused or open up to its base (Fig. 35). Rest of metasoma globose and polished. Tergites 2–3 fused and, beyond petiole, distinctly forming two-thirds of metasoma.

Body ochreous. Antenna ochreous, ultimate three flagellomeres brownish. Face, cheek, clypeus and mandible straw yellow, palpi pale yellow. Legs yellow. Wings hyaline, pterostigma brown with a pale basal spot. Veins light brown.

Female and host unknown. Distribution: Honduras.

Taxonomic position. – With the keys to the euphorine genera by MUESEBECK (1936) and SHAW (1997) the new species runs unambiguously to the genus *Leiophron* NEES, 1818 (= *Euphorus* NEES, 1834 sensu MUESEBECK). The Nearctic species of *Leiophron* were reviewed by LOAN (1974) and with the help of his key the new species, *L. gozmanyi*, is near to *L. tuberculatus* (MUESEBECK). The males of the two species are distinguished as follows:

- 1 (2) Male: Head in dorsal view (Fig. 28) subcubic, 1.5 times as broad as long. Notaulix evenly impressed and distinct as a crenulate furrow. Vein *1–R1* of fore wing one-fourth as long as pterostigma, i.e. marginal cell very narrow (Fig. 33); *m–cu* well sclerotized, i.e. clearly visible (Fig. 33). Body unicolorous ochreous, legs yellow. ♂: 3 mm. Honduras
 L. gozmanyi sp. n.
- 2 (1) Male: "Head transverse. Notauli distinctly impressed only anteriorly" (MUE-SEBECK 1936: 31). Vein *1–R1* of fore wing one-third as long as pterostigma, i.e. marginal cell less narrow; *m–cu* weakly sclerotized, i.e. less visible (cf. fig. 31 in LOAN 1974: 843). Body bicolorous, head "yellow ferrugineous", rest of body piceous to castaneous, "mesonotum and mesopleuron ferrugineous" (MUESEBECK l.c.). *3*: 2 mm. U.S.A. (Florida, Georgia, Kentucky, New Hampshire)

With the help of MUESEBECK's key (1936) to the Nearctic species of the genus *Euphorus* (=*Leiophron*) the new species runs to *L. cephalicus* (PROVANCHER)



Figs 28–35. *Leiophron gozmanyi* sp. n.: 28 = head in dorsal view, 29 = head in lateral view, 30 = propodeum, 31 = hind femur, 32 = claw, 33 = median part of right fore wing, 34–35 = first tergite or petiole in dorsal view (34) and in ventral view (35)

(= *L. spiniscapus* MUESEBECK, cf. LOAN 1974: 830), the males of the two species are separated by the features keyed:

- 1 (2) Male: Temple in lateral view twice as wide as eye (Fig. 29). Scape hairy as usually. Fore tarsus and tibia equal in length. First tergite 2.7 times as long as broad behind, less broadening posteriorly (Fig. 34). Vein *m*-*cu* joining to first submarginal cell near to 2–*SR* (Fig. 33). Body unicolorous ochreous. ♂: 3 mm. Honduras
- 2 (1) Male: Temple in lateral view as wide as eye (Fig. 2D in MUESEBECK 1936: 3). Scape "covered with short spines" (MUESEBECK l.c.). Fore tarsus shorter than tibia. First tergite 2.2 times as long as broad behind, more broadening posteriorly (cf. Fig. in LOAN 1974: 827). Vein *m*-*cu* postfurcal, i.e. joining to second submarginal cell near to 2–*SR*. Body bicolorous: blackish to black with much ferrugineous pattern. ♂: 2.5 mm. Canada (Ontario), U.S.A. (Colorado)

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