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The Western Palaearctic species of the subtribe *Hoplismenina* HEINRICH (Hymenoptera, Ichneumonidae, Ichneumoninae)

Matthias RIEDEL

A b s t r a c t : In this publication, the Western Palaearctic genera and species of the subtribe *Hoplismenina* HEINRICH are revised (Hymenoptera: Ichneumonidae, Ichneumoninae, Ichneumonini). Two genera and eight species are considered as valid.

New combinations and synonymies are: *Rhysaspis* TISCHBEIN, 1874 is synonymized with *Hoplismenus* GRAVENHORST, stat. rev. *Peritaenius tyrolensis* CLÉMENT, 1927, *Peritaenius caucasicus* CLÉMENT, 1927 and *Hoplismenus armatorius corsicator* AUBERT, 1960 are new synonyms of *Hoplismenus bidentatus* (GMELIN, 1790). *Cryptus crassicornis* RUDOW, 1883, *Peritaenius istrianus* CLÉMENT, 1927 and *Hoplismenus armatorius insulator* AUBERT, 1960 are new synonyms of *Hoplismenus bispinatorius* (THUNBERG, 1824). *Hoplismenus cornix* KRIECHBAUMER, 1890 is a new synonym of *Hoplismenus rugosus* (TISCHBEIN, 1874).

K e y w o r d s : *Hoplismenus*, *Zanthojooppa*, Western Palaearctic, revision

Introduction

Although the subtribe *Hoplismenina* HEINRICH (1967) with the genera *Hoplismenus* GRAVENHORST and *Zanthojooppa* CAMERON contains only few species in the Western Palaearctic region, the taxonomy of some species of *Hoplismenus* is still unclear due to their variability which gave reason to establish different species concepts in the past. PFANKUCH (1914) – after studying the GRAVENHORST types – interpreted all European *Hoplismenus* forms with \pm red metasoma as variants of one variable species (*Hoplismenus bispinatorius*), whereas RASNITSYN & SIYTAN (1981) differentiated at least three species in this group (*Hoplismenus bispinatorius*, *H. albifrons* and *H. bidentatus*). In addition, CLÉMENT (1927) described several new genera and taxa in this species-group by few or single ♂♂ without referring to a potential variability of these proposed new species, a procedure that have already been questioned by HEINRICH (1949).

HEINRICH (1967) characterized the subtribe *Hoplismenina* within the tribe Ichneumonini by the presence of a distinctly convex clypeus, strongly raised scutellum, pentagonal areolet, and strong apophyses. Actual genomic studies (SANTOS et al. 2021) have substantially questioned this traditional tribal and subtribal classification of Ichneumoninae suggesting morphological convergences in many cases. Therefore, the phylogenetic relations of this subtribe and its genera remain questionable.

Here, I present a new revision of the genera and species of the subtribe *Hoplismenina* using a larger amount of specimens to establish the variability and taxonomical state of the Western Palaearctic species.

Material and methods

For this revision, material from the following collections was studied: private collections of M. Schwarz/Austria and C. Thirion/Belgium, Zoologische Staatssammlung München, Munich/Germany (ZSM), Senckenberg Deutsches Entomologisches Institut Münchenberg/Germany, National Museums Edinburgh/Scotland, Zoological Museum Lausanne/Switzerland, Museum Gembloux/Belgium, Naturkundemuseum Stuttgart/Germany, Biologiezentrum Linz/Austria, Naturhistorisches Museum and Bundesanstalt für Pflanzenschutz, Vienna/Austria, and my personal collection.

For the descriptions below, morphological terms follow BROAD et al. (2018). For distributional and host records, only data from original publications and my own determinations were included here.

For the measurements the following relations were used: length of 1st flagellomere (without anellus) was measured in lateral view; width of gena and eye were measured in lateral view, length and width of hind femur in lateral view, and length of ovipositor sheath from lateral view. For the punctuation of body parts the following definitions were used: very scattered: distance of punctures >2× their diameter; scattered: distance 1.1-2× their diameter; rather dense: distance about as their diameter; dense: diameter of punctures larger than their distance.

Used abbreviations and indices: MI: length of malar space in relation to width of mandibular base; OED: distance between lateral ocellus and compound eye; FI: flagellar index, e.g. the relation of combined length of 1st and 2nd flagellomeres and length of compound eye.

For the measurements, an Olympus SZX 7 stereo microscope with dividing eyepiece was used. The figures were taken with an Olympus SC 50 CCD camera using the cellSens Imaging software and processed with the HeliconPro software and Microsoft Office Picture Manager.

Key for the Western Palearctic genera and species

- 1 Gastrocoelus indistinctly impressed. Thyridium far from base of 2nd tergite (fig. 28). Postpetiolus slightly widened apically, 0.6× as wide as distance between apophyses. Mesoscutum densely and finely punctate, dull. Carinae of propodeum weak (fig. 20). Head (fig. 8) and mesosoma often ∇ reddish. In ♂, apical margin of hypopygium rounded. *Zanthojoppa lutea* (GRAVENHORST, 1829)
- Gastrocoelus distinctly impressed. Thyridium close to base of 2nd tergite (figs 21-27). Postpetiolus distinctly widened apically, at least 0.7× as wide as distance between apophyses (if shorter in *H. rugosus*, then epicnemial carina strongly elevated behind fore coxa). Punctuation of mesoscutum less dense, mesoscutum often ± shining. Carinae of propodeum strong. Head and mesosoma black, often with yellow or ivory spots. In ♂, apical margin of hypopygium tongue-like extended medially (fig. 12).....2
- 2 Epicnemial carina strongly elevated behind fore coxa (fig. 31). Genal carina concavely bent ventrally, gena therefore narrowed in ventral half (fig. 11). In ♂, tyloids beginning on flagellomeres 2 to 4. *Hoplismenus rugosus* (TISCHBEIN, 1874)
- Epicnemial carina low or slightly elevated behind fore coxa (fig. 32). Genal carina ± straight (fig. 9), but rarely concave ventrally (fig. 10). In ♂, tyloids beginning on flagellomeres 5 to 9.3

- 3 Metasoma mainly black; postpetiolus and usually 2nd tergite with dorso-lateral ivory spots (fig. 26). In ♂, flagellar ring and face ± yellow *Hoplismenus pica* WESMAEL, 1855
- Metasoma black or ± reddish, without ivory spots 4
- 4 Frontal orbit black, without yellow spots (figs 4, 5, 7). Body with metasoma black, rarely some tergites with dark reddish suffusion. Scutellum usually black, rarely with yellow spot. Hind femur red; hind tibia entirely or mainly black. Usually larger, body length >12mm 5
- Frontal orbit with yellow spots or stripes (figs 1, 2, 3, 6). Scutellum usually ± yellow. Metasoma usually partly red, rarely entirely black. Usually smaller, body length 7-12 mm 6
- 5 ♀: flagellum with 38-40 flagellomeres, without yellow ring. 1st flagellomere 3.1-3.3× longer than wide. ♂: Notaulus weakly impressed, present in frontal 0.3 of mesoscutum. Horizontal part of propodeum coarsely rugose, shining, at area dentipara with irregular transverse rugae (fig. 17). 3rd tergite strongly transverse, 2.0× wider than long. 4th tergite with moderately dense and fine punctures, ± shining between punctures. Hind tarsus black *Hoplismenus lamprolabus* WESMAEL, 1857
- ♀: flagellum with 41-43 flagellomeres and with yellow ring or stripe on flagellomeres 9/11-12 (rarely very weak). 1st flagellomere 4.2-4.4× longer than wide. ♂: Notaulus distinctly impressed, present in at least frontal 1/3 of mesoscutum. Horizontal part of propodeum less shining, with irregular reticular and less coarse rugae (fig. 19). 3rd tergite 1.7× wider than long. 4th tergite ± dull. Usually 2nd or 3rd to 5th hind tarsomeres yellowish *Hoplismenus terrificus* WESMAEL, 1848
- 6 Frontal orbit in both sexes with yellow stripe which is widened dorsally opposite anterior ocellus (fig. 3). Basal flagellomeres shorter, 1st flagellomere in ♀ 2.1-2.7× longer than wide. Coxae and trochanters black, legs otherwise entirely red. Epicnemial carina slightly elevated behind fore coxa. *Hoplismenus krapinensis* HENSCH, 1928
- Frontal orbit with narrow yellow stripe, not widened dorsally. Basal flagellomeres longer, 1st flagellomere at least 3.5× longer than wide. At least hind legs with ± extended black coloration. Epicnemial carina low behind fore coxa 7
- 7 Larger, body length 10-12 mm. Flagellum in ♀ with 37-40 flagellomeres, in ♂ with 35-39 flagellomeres. Hind femur in ♀ 4.9-5.5×, in ♂ 4.7-5.6× longer than wide, often diffusely infusate, sometimes entirely black. Metasoma with red tergites, rarely entirely black. Flagellum of ♀ black, with ivory ring, basal flagellomeres not reddish. In ♂, face black with yellow facial orbit, clypeus black. Scutellum pyramidal, usually with transverse carina on top. *Hoplismenus bidentatus* (GMELIN, 1790)
- Smaller, body length 7-10 mm. Flagellum in ♀ with 33-37 flagellomeres, in ♂ with 33-36 flagellomeres, Hind femur in ♀ 4.4-5.0×, in ♂ 4.1-4.8× longer than wide. In ♀ hind femur usually red, narrowly infusate apically and basal flagellomeres sometimes reddish. In ♂ clypeus and face mainly or entirely yellow. Scutellum elevated, but often rounded on top and without transverse carina *Hoplismenus bispinatorius* (THUNBERG, 1824)

Descriptions of genera

Hoplismenus GRAVENHORST, 1829

Type species: *Hoplismenus maestus* GRAVENHORST, 1829.

syn. *Peritaenius* FÖRSTER, 1869.

Type species: *Peritaenius bavaricus* CLÉMENT, 1927, monobasic, synonymized by HEINRICH (1949).

syn. *Taeniaspis* CLÉMENT, 1927

Type species: *Taeniaspis flavitarsis* CLÉMENT, 1927, monobasic, synonymized by TOWNES et al. (1961).

Description: Flagellum in ♀ slender and bristle-shaped, usually slightly widened centrally and pointed apically. Flagellum in ♂ with tyloids. Temple strongly narrowed behind eye. Gena narrowed ventrally. Genal carina straight, sometimes concave ventrally, reaching hypostomal carina away from mandibular base. Malar space long, at least as long as width of mandibular base. Clypeus moderately convex, with sharp and rounded apical margin. Mandible narrowed behind base, lower tooth usually smaller than upper tooth. Mesoscutum longer than wide, convex. Notaulus usually present in the frontal third of mesoscutum. Scutellum distinctly elevated, sometimes pyramidal, usually with ± complete lateral carina, in ♂ often with a transverse carina on top. Area superomedia about as long as wide or transverse, heart- or halfmoon-shaped, often hexagonal. Anterior transverse carina (costula) present or absent. Area dentipara with distinct apophysis. Hind coxa in ♀ without scopa. Legs long and slender, claws at most with short basal teeth.

Metasoma oval, usually ± narrowed apically, oxypygous or semi-amblypygous (hypopygium short or slightly elongate, at most as long as distance between apical margin of hypopygium and metasomal apex). Postpetiolus strongly widened, with separated median field, usually punctate or finely rugose. Gastrocoelus ± impressed and often with longitudinal ridges. Thyridium present, ± transverse, usually shorter than the interval. Ovipositor sheath rather long, usually reaching behind metasomal apex. Apical margin of hypopygium in ♂ with tongue-like or triangular median extension.

Color: Basic coloration black, sometimes ± reddish. Head and mesosoma with reduced yellow or ivory spots, apical tergites without ivory spots. Hind tarsomeres sometimes ± ivory. Sexual dimorphism small, ivory coloration usually more extended in ♂ than in ♀.

Biology: The ♀♀ overwinter as imagines. As far as known, species are mostly parasitoids of Nymphalidae (Lepidoptera), rarely of other lepidopteran families (Erebidae).

***Zanthojoppa* CAMERON, 1901**

Type species: *Zanthojoppa trilineata* CAMERON, 1901.

According to HEINRICH (1975) this genus can be differentiated from *Hoplismenus* GRAVENHORST by three features: (1) The scutellum is distinctly narrowed to apex in both sexes; (2) the thyridium is shorter than in *Hoplismenus* and distinctly separated from the basal margin of 2nd tergite so that the gastrocoelus is elongate and only slightly impressed; and (3) the body including the metasoma is slenderer than in *Hoplismenus*. In addition, the apical margin of the hypopygium of ♂ – at least in the European species – is not elongate medially, but moderately rounded.

This genus otherwise shows the features described for *Hoplismenus* above. The separation of both genera is accepted here, but for a definite taxonomical analysis of these genera, further studies of the Palearctic and Oriental faunas as well as additional molecular data will be necessary.

Descriptions of species

***Hoplismenus bidentatus* (GMELIN, 1790) (*Ichneumon*)**, (figs 1, 9, 12, 13, 21, 29, 32, 33)

Type lost, interpretation due to original description.

syn. *Hoplismenus moestus* GRAVENHORST, 1829

H o l o t y p e : (♀) [red] Holotypus Oe. & *Hoplismenus moestus* GRAV. 7.65 Holotyp & des. Oehlke (Wroclaw), synonymized by YU & HORSTMANN (1997), type studied.

syn. *Mesostenus maurus* MARSHALL, 1873

L e c t o t y p e : (♀) near Carlsile (London), lectotype designated and synonymized by PERKINS (1953), not studied.

syn. *Cryptus ichneumonoides* RUDOW, 1883

H o l o t y p e : (♀) Sicilia 83 (Jena), synonymized by HORSTMANN (1993), type not studied.

syn. *Hoplismenus berthoumieu* PIC, 1897

H o l o t y p e : (♀) Bougie 19 mai 97; type; *H. Berthoumieu* PIC n sp. & (Paris), synonymized by HILPERT et al. (1993), not studied.

syn. *Dinotomus spinosus* MORLEY, 1903

H o l o t y p e : (♂) New Forest (London), synonymized by PERKINS (1953), not studied.

syn. *Peritaenius alpinus* CLÉMENT, 1927

H o l o t y p e : (♂) [red] typ; *Hoplismenus bidentatus* (= *alpinus* = *bavaricus*) JF Aubert det; 89 678; Teg 4.7.89 Krchb; *Peritaenius alpinus* CLEM. % (ZSM), synonymized by AUBERT (1981), type studied.

syn. *Peritaenius bavaricus* CLÉMENT, 1927

H o l o t y p e : (♂) [red] Type; M. Isar 7.9.72 Krchb.; *Peritaenius bavaricus* Clem. ♂ (ZSM), synonymized by AUBERT (1981), type studied.

syn. nov. *Peritaenius tyrolensis* CLÉMENT, 1927

H o l o t y p e : (♂) Schluderbach 1876 ex Arg. *euphrosyne* (Vienna), type studied.

syn. nov. *Peritaenius caucasicus* CLÉMENT, 1927

H o l o t y p e : (♂) Transkauk. Kussari 1886 (Vienna), type studied.

syn. nov. *Hoplismenus armatorius corsicator* AUBERT, 1960

S y n t y p e : (♀) Type; *Hoplismenus bidentatus* GMEL.; *corsicator* AUB. (Lausanne), types not seen, material in ZSM determined by Aubert studied.

M a t e r i a l e x a m i n e d : 70♀♀, 27♂♂ from Austria, Belgium, Bulgaria, Corsica, Crete, Czech Republic, France, Georgia, Germany, Mongolia, Netherlands, Italy, Kyrgyzstan, Russia, Sweden, Sicily, Spain, Turkey, United Kingdom.

D e s c r i p t i o n : ♀: Body length 9-11 mm. Flagellum with 37-41 flagellomeres; 1st flagellomere 3.5-3.7× and 2nd flagellomere 2.8-3.0× longer than wide, FI 0.83-0.96; widest flagellomeres 1.2-1.4× wider than long. Temple distinctly and almost linearly narrowed behind eye. Frons rugose-punctate, dull. Face and clypeus punctate and granulate. MI 1.4-1.8. Hypostomal carina slightly elevated.

Mesosoma covered with pale hairs. Side of pronotum rugose-punctate dorsally, striate ventrally. Notaulus distinct frontally. Lateral lobe of mesoscutum very densely and superficially punctate, granulate, dull. Mesopleuron rugose-punctate and granulate, dull. Sternaulus impressed in frontal 0.4 of mesopleuron. Epicnemial carina low. Metapleuron rugose-punctate. Juxtacoxal carina usually distinct. Scutellum distinctly elevated, with lateral carina in basal 0.2-0.5, with scattered punctures. Area superomedia ± transverse,

narrowed in front, usually heart-shaped; anterior transverse carina distinct, behind its middle. Apophysis slightly longer than basally wide. Coxae with fine dense punctures, granulate. Hind femur $4.9\text{--}5.5\times$ longer than wide. Hind tibia with multiple external denticular spurs. Postpetiolus $0.75\text{--}0.80\times$ as wide as distance between apophyses, median field separated, finely granulate or with longitudinal fine rugae, \pm densely punctate. Thyridium slightly oblique, $0.6\text{--}0.7\times$ as wide as the interval. 2nd tergite $1.25\times$ wider than long. 2nd and 3rd tergites densely and superficial punctate, granulate, \pm dull. 4th and 5th tergites with very superficial punctures, finely granulate. Ovipositor sheath $0.5\text{--}0.6\times$ as long as hind metatarsus.

Color: black. Scape sometimes reddish ventrally. Flagellomeres 7/10-11/14, frontal orbit, sometimes collar and subtegular ridge, and apical 2/3 of scutellum cream-yellow. Petiolus black; metasoma otherwise red, sometimes \pm black (in some specimens from Corse, Northern Germany and United Kingdom). Ovipositor sheath black. Coxae and trochanters black. Fore and mid legs otherwise red or black; hind femur usually brown or black, rarely entirely red; hind tibia usually black, sometimes reddish subbasally; hind tarsus black. Pterostigma brown or chestnut-reddish.

♂: Body length 11-12 mm. Flagellum with 36-39 flagellomeres; 1st flagellomere $3.1\text{--}3.5\times$ and 2nd flagellomere $2.4\times$ longer than wide, FI 0.85-0.90. Tyloids on flagellomeres 7/8-17/20, oval, $0.7\times$ as long as their flagellomere. OED $1.0\times$ ocellar diameter. MI 1.0-1.1. Genal carina slightly concave ventrally. Scutellum pyramidal, in profile with rectangular tip and with \pm distinct transverse ridge on top. Area superomedia halfmoon-shaped, transverse; anterior transverse carina behind its middle. Area petiolaris with lateral carina, rugose. Hind femur $4.8\text{--}5.6\times$ longer than wide. Postpetiolus $0.8\times$ as wide as distance between apophyses, median field \pm punctate. Thyridium $0.5\text{--}0.6\times$ as wide as the interval. 2nd tergite $1.25\times$ wider than long. 2nd and 3rd tergites densely punctate and granulate, 2nd tergite \pm aciculate between thyridia.

Color: black. Flagellum blackish, reddish ventrally; flagellomeres 12-14 sometimes with weak ivory stripe or ring. Wide facial orbit, small spot on outer orbit, sometimes collar or frontal margin and usually hind edge of pronotum, spot on subtegular ridge, spot on scutellum and on fore coxa, sometimes 2nd to 4th mid tarsomeres and usually 2nd to 4th or 5th hind tarsomeres ivory. Metasoma red, sometimes 4th to 7th tergites \pm dark. Coxae and trochanters black; hind coxa sometimes partly reddish. Legs otherwise red or reddish-brown; hind femur red or \pm blackish; hind tibia black in apical 0.7; hind tarsus black. Pterostigma ochreous.

Taxonomical remark: There are sometimes \pm melanistic specimens with blackish hind leg and metasoma (e.g. from Northern Germany, British Isles and Italy). Due to multiple intermediate forms, a separation of these melanistic forms as different species or subspecies is not possible in my opinion.

An unequivocal determination of specimens belonging to *Hoplismenus bidentatus* and *H. bispinatorius* is sometimes difficult. Usually, members of *H. bidentatus* are larger and have a higher number of flagellomeres and slenderer hind femora, but there is some overlap of these features (fig. 33). Both species seem to be closely related and further rearing results and molecular data might be helpful for a clear separation of both taxa.

Hosts: *Aphantopus hyperanthus* (LINNAEUS, 1758) (Lep., Nymphalidae) (ZSM), *Maniola jurtina* (LINNAEUS, 1758) (Lep., Nymphalidae) (ZSM), *Lasiommata maera* (LINNAEUS, 1758) (Lep., Nymphalidae) (Vienna), *Boloria euphrosyne* (LINNAEUS, 1758) (Lep., Nymphalidae) (Vienna).

***Hoplismenus bispinatorius* (THUNBERG, 1824) (*Ichneumon*)** (figs 2, 14, 22, 33)

H o l o t y p e : (♀) [red] Uppsala Univ. Zool. Mus. Thunbergsaml nr. 24788 *Ichneumon bispinatorius* SV. Type; *Hoplismenus armatorius* PZ. & (Uppsala), type studied.

syn. *Ichneumon armatorius* FABRICIUS, 1787, praecoccupied by FORSTER, 1771

H o l o t y p e : (♀) [Copenhagen], not studied.

syn. *Hoplismenus albifrons* GRAVENHORST, 1829

L e c t o t y p e : (♂) [red] Lectotypus OE ♂; *Hoplismenus albifrons* Grav. des. Oehlke 7.65 Lectotypus ♂; MZW 78 (Wroclaw), designated by Rasnitsyn (1981), type studied.

syn. *Hoplismenus perniciosus* GRAVENHORST, 1829

L e c t o t y p e : (♀) [red] Lectotypus *Hoplismenus perniciosus* GRAV. & design. A. Rasnitsyn, '79 (Wroclaw), type studied.

syn. nov. *Cryptus crassicornis* RUDOW, 1883

L e c t o t y p e : (♂) without original labels (Jena), designated and synonymized with *H. albifrons* by HORSTMANN (1993), type not studied.

syn. *Ichneumon bellicosus* DE STEFANI, 1885

Type probably lost, synonymized by YU & HORSTMANN (1997).

syn. nov. *Hoplismenus armatorius insulator* AUBERT, 1960

Type not seen, material in ZSM determined by AUBERT studied.

syn. nov. *Peritaenius istriani* CLÉMENT, 1927

H o l o t y p e : (♂) Pola Schlett. (Vienna), type studied.

M a t e r i a l e x a m i n e d : 109♀♀, 40♂♂ from Austria, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Kazakhstan, Kyrgyzstan, Romania, Sweden, Slovakia, Turkey, Ukraine, United Kingdom.

D e s c r i p t i o n : ♀: Body length 7.5-10 mm. Flagellum with 33-37 flagellomeres; 1st flagellomere 3.1-4.0× and 2nd flagellomere 2.3-2.7× longer than wide, FI 0.83-0.90; widest flagellomeres 1.3-1.5× wider than long. Temple distinctly and almost linearly narrowed behind eye. Frons with fine transverse rugae, granulate, dull. Face and clypeus densely punctate, granulate, dull. Gena 0.75-0.85× as wide as eye. MI 1.5-1.8. Genal carina straight ventrally. Hypostomal carina slightly elevated.

Mesosoma covered with pale hairs. Side of pronotum finely rugose-punctate, not striate. Notaulus indistinct. Mesoscutum with dense and superficial punctures, granulate, dull. Mesopleuron densely punctate and granulate, dull. Sternaulus impressed in frontal 0.4 of mesopleuron. Epicnemial carina low. Metapleuron punctate, margins partly rugose, centrally ± smooth and shining. Juxtacoxal carina distinct. Scutellum distinctly and roundly elevated, with lateral carina in basal 0.1-0.4, with scattered punctures. Area superomedia heart-shaped, about as long as wide; anterior transverse carina distinct, reaching area superomedia behind its middle. Apophysis slightly longer than basally wide. Coxae with fine dense punctures, granulate. Hind femur 4.0-5.0× (rarely 5.2×) longer than wide. Postpetiolus 0.85-0.90× as wide as distance between apophyses, lateral field 0.3-0.5× as wide as median field, median field finely granulate, ± densely punctate. Thyridium transverse, 0.5-0.7× as wide as the interval. 2nd tergite 1.25-1.35× wider than long. 2nd and 3rd tergites densely and superficially punctate, granulate, ± dull. 4th tergite almost smooth. Ovipositor sheath 0.6-0.62× as long as hind metatarsus.

Color: black. Scape and flagellomeres 1-3/4 sometimes reddish ventrally. Flagellomeres 6/8-9/11, frontal orbit, sometimes collar and hind edge of pronotum, sometimes spot on subtegular ridge and scutellum mainly cream-yellow. Petiolus black; postpetiolus and 2nd

to 4th tergites red; following tergites often \pm brown. Ovipositor sheath black. Coxae and trochanters black, sometimes \pm reddish. Legs otherwise usually red; hind femur usually infusate apically; hind tibia infusate in apical 0.2-0.5; hind tarsus brown (sometimes hind leg entirely black). Pterostigma brown or reddish-brown.

♂: Body length 7-9 mm. Flagellum with 33-35 flagellomeres (32 in var. *insulator*); 1st flagellomere 3.0 \times and 2nd flagellomere 2.0 \times longer than wide, FI 0.85. Tyloids on flagellomeres 5/7-15/20, oval, 0.6-0.8 \times as long as their flagellomere. OED 1.0-1.2 \times ocellar diameter. MI 1.0. Genal carina straight or slightly concave ventrally. Notaulus indicated frontally by transverse rugae. Scutellum pyramidal, in profile with rounded tip and usually without transverse carina or ridge on top. Area superomedia heart-shaped, slightly longer than wide or \pm transverse; anterior transverse carina in its middle. Area petiolaris with lateral carina, with transverse rugae. Hind femur 4.1-4.8 \times longer than wide. Postpetiolus 0.8 \times as wide as distance between apophyses, lateral field 0.4 \times as wide as median field, median field \pm punctate. Thyridium 0.5-0.6 \times as wide as the interval. 2nd tergite 1.25 \times wider than long. 2nd and 3rd tergites densely punctate and granulate, 2nd tergite \pm aciculate between thyridia.

Color: black. Flagellum blackish, usually reddish ventrally. Palps, mandible except teeth, clypeus \pm , face (sometimes with brown median stripe, rarely only facial orbit), frontal orbit, scape ventrally, usually frontal margin and hind edge of pronotum, often subtegular ridge, scutellum mainly, spots on fore and mid coxae, often 2nd to 4th mid tarsomeres and hind 2nd or 3rd to 4th or 5th tarsomeres yellowish. Petiolus black; metasoma otherwise red, sometimes 4th to 7th tergites \pm dark. Coxae and trochanters black; fore and mid legs otherwise red, yellowish frontally; hind femur red or apically \pm infusate; hind tibia black, diffusely reddish subbasally; hind tarsus except pale parts black. Pterostigma ochreous to brown.

Taxonomic remark: The taxon *Hoplismenus albifrons* GRAVENHORST was often separated from *Hoplismenus bispinatorius* (THUNBERG) as a valid species, mainly due to small color differences (e.g. RASNITSYN & SIYTAN 1981). ♀♀ of typical *H. bispinatorius* have reddish basal flagellomeres and black coxae whereas the basal flagellomeres and coxae are black in specimens determined as *H. albifrons*. I studied a large number of specimens from the Palaearctic region and found all intermediate forms of color patterns. In addition, the melanistic variants with black hind legs and \pm darkened metasoma – a color pattern also found in *H. bidentatus* (GMELIN) – were sometimes distinguished as different taxa by former authors (e. g. *Hoplismenus moestus* GRAVENHORST and *Hoplismenus istrianus* CLÉMENT). The form of the elevated scutellum is very variable in the studied ♂♂: some have a \pm rounded tip, others a pyramidal form with a \pm distinct transverse carina on top. In addition, these ♂♂ show several color patterns of face and hind legs, but I was not able to separate different taxa using these features.

Here, I propose these differences as color and structural variants of one variable species with the valid name *Hoplismenus bispinatorius* (THUNBERG). The typical specimens of *H. bispinatorius* with reddish basal flagellomeres and black hind coxae are quite rare (10% of specimens), but are found in whole Europe. The most common form (75% of specimens: var. *albifrons* GRAVENHORST) has black coxae and basal flagellomeres and is also found in the Eastern Palaearctic region. A few specimens with reddish basal flagellomeres and red coxae (3 specimens: var. *ruficoxalis* nov.) were found in Southwestern

Ukraine and the Caucasus region. The variant with entirely black hind legs (15% of specimens: var. *moestus* GRAVENHORST) is mainly distributed in the Alps and Southern Europe.

Hosts: *Coenonympha tullia* (MÜLLER, 1764) (Lep. Nymphalidae) (Edinburgh), *Coenonympha pamphilus* (LINNAEUS, 1758) (Lep. Nymphalidae) (Edinburgh).

***Hoplismenus krapinensis* HENSCH, 1928** (figs 3, 10, 15, 23)

Lectotype: (♀) Krapina 25.5.25 Tokaj (Zagreb), designated by HORSTMANN (1982), paratype in ZSM studied.

syn. *Taeniaspis flavitarsis* CLÉMENT, 1927, praecoccupied by *Hoplismenus morulus flavitarsis* CRESSON, 1865.

Holotype: (♂) Nordtirol, Innsbruck, ...[not readable] 3.8.1921 E. Clément (Vienna), synonymized by HORSTMANN (1982), type studied.

Material examined: 12♀♀, 2♂♂ from Austria, Croatia, Germany, Romania*, Switzerland*.

Description: ♀: Body length 9-11 mm. Flagellum with 37-38 flagellomeres; 1st flagellomere 2.1-2.7× and 2nd flagellomere 1.7-2.1× longer than wide, FI 0.62-0.72; widest flagellomeres 1.2-1.5× wider than long. Temple distinctly and linearly narrowed behind eye. OED 1.2-1.3× ocellar diameter. Frons with fine transverse rugae and punctures. Face rugose-punctate. Clypeus densely punctate, smooth and shining between punctures. Genal carina ± concave ventrally, reaching hypostomal carina in an edge of 80°, hypostomal carina moderately elevated (as wide as distal maxillary palpomere). Gena 0.8× as wide as eye. MI 1.0.

Mesosoma covered with dense and short pale brownish hairs. Side of pronotum densely punctate dorsally, with longitudinal rugae ventrally. Notaulus impressed in frontal 0.3 of mesoscutum. Lateral lobe of mesoscutum densely punctate and coarsely granulate, dull. Mesopleuron and metapleuron densely punctate and ± rugose. Epicnemial carina low. Juxtacoxal carina present. Scutellum moderately elevated, with lateral carina in basal 0.3-0.5. Area superomedia hexagonal, slightly wider than long, rugose; anterior transverse carina in or behind its middle. Area petiolaris with lateral carina, transversely rugose. Coxae rugose-punctate. Hind femur 4.7-4.9× longer than wide. Postpetiolus 0.62-0.67× as wide as distance between apophyses; lateral field 0.6× as wide as median field, median field striate and punctate. Thyridium slightly oblique, 0.7× as wide as the interval. Gastrocoelus weakly impressed, with some ridges. 2nd tergite 1.25-1.35× wider than long. 2nd and 3rd tergites densely punctate and granulate; 4th tergite with very superficial punctures. Ovipositor sheath 0.46× as long as hind metatarsus.

Color: black. Stripes or rings on flagellomeres 6/8-10/12, narrow facial orbit, frontal orbit (widened dorsally), short stripe on outer orbit, collar, hind edge or upper margin of pronotum and scutellum yellowish. Petiolus black, metasoma otherwise red. Coxae and trochanters black, trochanters partly reddish; legs otherwise red. Pterostigma ochreous.

♂: Body length 9 mm. Flagellum with 36 flagellomeres; 1st flagellomere 2.3× and 2nd flagellomere 1.9× longer than wide, FI 0.75. Tyloids on flagellomeres 5/7-17/21, oval, maximally 0.7× as long as the flagellomere. Temple distinctly and roundly narrowed behind eye. Frons finely rugose. Face and clypeus rugose-punctate, clypeus 1.7× wider than long, apical margin slightly concave. MI 1.0. Gena narrowed ventrally. Genal carina concave ventrally, hypostomal carina moderately elevated.

Mesosoma covered with dense short yellowish hairs. Side of pronotum rugose-punctate. Lateral lobe of mesoscutum very finely rugose, dull. Mesopleuron and metapleuron densely punctate, partly rugose. Juxtacoxal carina indistinct. Scutellum moderately pyramidal, lateral carina complete, without transverse carina or ridge on top. Area superomedia slightly transverse, hexagonal; anterior transverse carina indistinct. Apophysis rather short. Hind femur $5.0\times$ longer than wide. Postpetiolus $0.65\times$ as wide as distance between apophyses; lateral field $0.7\times$ as wide as median field, median field superficially aciculate. Thyridium slightly oblique, $0.7\times$ as wide as the interval. 2nd tergite $1.1\times$ wider than long. 2nd and 3rd tergites finely rugose-punctate, dull. 4th and 5th tergites superficially punctate, \pm shining

Color: black. Flagellum reddish ventrally. Palps, mandible except teeth, labrum, clypeus, face, frontal orbit (widened dorsally), scape ventrally, collar, hind edge of pronotum, subtegular ridge, entire scutellum and spots on fore and mid coxae yellow. Petiolus black, postpetiolus apically and following tergites red, sometimes median tergites \pm infusate. Coxae and trochanters black; femora red, tibiae and tarsi yellowish. Pterostigma ochreous.

H o s t s : unknown.

***Hoplismenus lamprolabus* WESMAEL, 1857 (figs 4, 17, 25)**

H o l o t y p e : (♀) (Paris), not studied.

syn. *Amblyteles violaceus* RUDOW, 1888

L e c t o t y p e : (♂) Graecia (Jena), synonymized by HORSTMANN (1993), not studied.

M a t e r i a l e x a m i n e d : 10♀♀, 12♂♂ from Austria, France, Georgia*, Germany, Greece, Italy, Kyrgyzstan, Russia (Siberia), Switzerland, Tajikistan, Uzbekistan.

D e s c r i p t i o n : ♀: Body length 12-14 mm. Flagellum with 38-40 flagellomeres; 1st flagellomere $3.1-3.4\times$ and 2nd flagellomere $2.4-2.5\times$ longer than wide, FI 0.84-0.94, widest flagellomere square or slightly longer than wide. Temple distinctly and linearly narrowed behind eye. OED $1.8-2.0\times$ ocellar diameter. Frons moderately concave, rugose-punctate and granulate. Face punctate and granulate. Clypeus punctate, smooth between punctures. Gena with longitudinally punctured striae. MI 2.0. Hypostomal carina slightly elevated.

Mesosoma covered with short brownish hairs. Side of pronotum rugose-punctate dorsally, partly striate ventrally. Notaulus indicated by transverse rugae in frontal 1/3 of mesoscutum. Lateral lobe of mesoscutum densely punctate, granulate. Mesopleuron rugose-punctate, speculum with fine punctures. Sternaulus impressed in frontal 0.4 of mesopleuron. Epicnemial carina low. Metapleuron rugose. Juxtacoxal carina present or absent. Scutellum moderately elevated, with lateral carina in basal 0.2, rounded in profile, punctate. Area superomedia slightly transverse, hexagonal; anterior transverse carina indistinct. Area petiolaris coarsely rugose. Apophysis about as long as basally wide. Coxae densely punctate. Hind femur $4.3-5.2\times$ longer than wide. Metasoma semi-amblypygous. Postpetiolus moderately widened, $0.72-0.88\times$ as wide as distance between apophyses, median field with fine worm-like rugae. Gastrocoelus indistinctly impressed. Thyridium transverse, $0.35-0.5\times$ as wide as the interval. 2nd tergite $1.5-1.7\times$ and 3rd tergite $2.0\times$ wider than long. 2nd tergite densely rugose-punctate, but \pm shining. 3rd tergite with superficial punctures, finely granulate, shining; 4th to 7th tergites almost smooth. Hypopygium moderately elongate, about as long as distance between its apical margin

and metasoma apex. Ovipositor sheath wide, 0.28-0.36× as long as hind metatarsus.

Color: black. Flagellum black, sometimes ± reddish centrally. Femora, tibiae and tarsi reddish; hind tibia infusate in apical 0.5-0.7; hind tarsus black. Pterostigma ochreous.

♂: Body length 15-17 mm. Flagellum with 38-44 flagellomeres; 1st flagellomere 2.9-3.2× and 2nd flagellomere 1.7-1.9× longer than wide, FI 0.81-0.90. Tyloids on flagellomeres 8/9-19/21, oval. OED 1.5× ocellar diameter. Hind femur 4.6-5.0× longer than wide. Notaulus impressed in frontal 0.35 of mesoscutum. Propodeum coarsely rugose. Area superomedia halfmoon-shaped, transverse. Thyridium narrow, 0.3× as wide as the interval. 2nd tergite 1.5-1.7× and 3rd tergite 1.8-2.3× wider than long. 2nd and 3rd tergites finely rugose, with indistinct punctures. 4th tergite finely granulate and punctate, ± shining.

Color: black. Scape and flagellum sometimes reddish ventrally. Side of clypeus, facial and/or frontal orbits sometimes yellow. Femora, tibiae and tarsi reddish-brown; hind tibia infusate in apical 0.7; hind tarsus black.

H o s t s : *Aglais urticae* (LINNAEUS, 1758) (Lep., Nymphalidae) (ZSM), *Argynnis aglaja* (LINNAEUS, 1758) (Lep., Nymphalidae) (EDI).

***Hoplismenus pica* WESMAEL, 1855 (figs 5, 18, 26)**

H o l o t y p e : (♀) v. Siebold; *Hoplismenus pica* WESM. ♀ det. Kriech; [red] *Hoplismenus pica* WESM. Holotypus 1983 R Hinz ♀ (ZSM), type studied.

syn. *Hoplismenus septemguttatus* TASCHENBERG, 1871

Holotype lost, synonymized by BERTHOUMIEU (1894).

M a t e r i a l e x a m i n e d : 33♀♀, 4♂♂ from Austria, China, France, Germany, Italy, Romania, Russia Far East.

D e s c r i p t i o n : ♀: Body length 14-15 mm. Flagellum with 39-42 flagellomeres; 1st flagellomere 3.4-4.1× and 2nd flagellomere 2.6-3.3× longer than wide, FI 0.95-1.0; widest flagellomeres 1.2× longer than wide. Temple distinctly and linearly narrowed behind eye. OED 1.9-2.0× ocellar diameter. Frons distinctly concave, superficially punctate, granulate. Face and clypeus punctate and granulate. Gena finely rugose or with longitudinally striate punctures. MI 1.8-2.0. Hypostomal carina low.

Mesosoma covered with fine pale brownish hairs. Side of pronotum finely rugose-punctate dorsally, coarsely rugose or striate ventrally. Notaulus only frontally indicated by fine rugae. Lateral lobe of mesoscutum finely rugose-punctate, dull. Mesopleuron finely rugose, dull; speculum rugose-punctate. Epicnemial carina low. Sternaulus indistinctly impressed. Metapleuron rugose. Juxtacoxal carina often indistinct. Scutellum distinctly elevated, rounded in profile, punctate, without lateral carina. Area superomedia slightly elevated, horseshoe-shaped, about square, coarsely rugose; anterior transverse carina indistinct. Area petiolaris coarsely rugose. Apophysis about as long as basally wide. Coxae densely punctate and granulate. Hind femur 4.5-5.2× longer than wide. Metasoma semi-amblypygous. Postpetiolus moderately to strongly widened, 0.75-0.90× as wide as distance between apophyses, median field coarsely punctate, ± rugose basally, almost smooth apically. Gastrocoelus distinctly impressed, with ridges. Thyridium transverse, 0.75-1.0× as wide as the interval. 2nd tergite 1.3-1.4× and 3rd tergite 2.0-2.1× wider than long. 2nd tergite finely rugose-punctate; 3rd tergite densely and finely punctate, with microsculpture; 4th tergite with very superficial punctures, shining. Hypopygium about as

long as distance between its apical margin and metasomal apex. Ovipositor sheath $0.24\text{--}0.32\times$ as long as hind metatarsus.

Color: black. Flagellomeres 7/8-12/13, sometimes clypeus apically, often short stripes on facial and frontal orbits, spot on subtegular ridge, sometimes collar, hind edge of pronotum and spot on tegula, apical $3/4$ of scutellum, sometimes postscutellum, apophysis, posterolateral spots and apical margins of 1st and 2nd tergites yellow. Legs black; mid coxa sometimes with yellowish spot; fore leg and sometimes mid tibia \pm ochreous frontally. Pterostigma ochreous.

♂: Body length 15 mm. Flagellum with 40 flagellomeres; 1st flagellomere $3.0\times$ longer than wide. Tyloids on flagellomeres 8/10-18/19, long oval, maximally $0.6\times$ as long as the flagellomere. OED $1.6\times$ ocellar diameter. MI 1.0. Scutellum without lateral carina. Hind femur $4.4\text{--}5.0\times$ longer than wide. 3rd tergite $2.1\times$ wider than long.

Color: black. Stripes or rings on flagellomeres 9-14, sometimes tyloids, face and clypeus mainly or entirely, frontal orbit, scape ventrally, collar, upper margin or hind edge of pronotum, subtegular ridge, scutellum, apophysis, dorsolateral edges of 1st and 2nd tergites, spots on coxae sometimes apical spot on hind femur yellow. Legs otherwise black, fore and mid legs \pm ochreous frontally. Pterostigma ochreous.

Hosts: *Argynnis ? niobe* (LINNAEUS, 1758) (Lep., Nymphalidae) (Vienna), *Argynnis paphia* (LINNAEUS, 1758) (Lep., Nymphalidae) (Vienna), *Calliteara pudibunda* (LINNAEUS, 1758) (Lep., Erebididae) (ZSM).

***Hoplismenus rugosus* (TISCHBEIN, 1874) (*Rhysaspis*), stat. rev.** (figs 6, 11, 16, 24, 31)

Type lost, identification due to the description of CLÉMENT (1927).

syn. *Hoplismenus rugosus* var. *obscuriventris* PIC, 1908

Holotype: (♂) La Grave; type; *H. rugosus* v. *obscuriventris* PIC (Paris), synonymized by HILPERT et al. (1993), type not studied.

syn. *Rhysaspis krieckbaumeri* CLÉMENT, 1927

Lectotype: (♀) Cotype; Tegernsee 27.7.54 Freud; *Rhysaspis krieckb.* CLÉMENT (ZSM), type studied and herewith designated.

syn. nov. *Hoplismenus cornix* KRIECKBAUMER, 1890

Holotype: (♂) Dfstr. 1879 Aflenz; *Hopl. cornix* m. ♂ n. sp. det. Krieckbaumer; [red] *Hepiopelmus cornix* KR. ♂ Holotype JF Aubert 1980 (Vienna), type studied.

Material examined: 2♀♀, 24♂♂ from Austria, Belgium, Croatia, France, Germany.

Description: ♀: Body length 11-12 mm. Flagellum with 40-43 flagellomeres; 1st flagellomere $3.2\text{--}3.4\times$ and 2nd flagellomere $2.5\text{--}2.7\times$ longer than wide, FI $0.81\text{--}0.88$; widest flagellomere $1.2\times$ wider than long. Temple strongly and almost linearly narrowed behind eye. OED $1.3\text{--}1.5\times$ ocellar diameter. Frons finely and transversely rugose. Face and clypeus rugose-punctate. Gena distinctly concave ventrally, $0.70\text{--}0.75\times$ as wide as eye. MI $1.3\text{--}1.5$. Genal carina reaching hypostomal carina at 90° , hypostomal carina elevated (about as wide as distal maxillary palp). Mesosoma covered with short grey hairs. Side of pronotum rugose-punctate dorsally, longitudinally rugose ventrally. Notaulus distinctly impressed in frontal 0.5 of mesoscutum. Lateral lobe of mesoscutum rugose-punctate, dull. Mesopleuron including speculum coarsely rugose-punctate, dull. Sternaulus impressed in frontal 0.5 of mesopleuron. Epicnemial carina distinctly elevated behind fore coxa. Juxtacoxal carina present. Scutellum pyramidal, punctate, with lateral

carina in basal 0.3-0.5. Area superomedia rectangular, about as long as wide, rugose; anterior transverse carina reaching its middle. Apophysis distinct, about as long as basally wide. Area petiolaris coarsely and transversely rugose. Coxae rugose-punctate. Hind femur 5.5-5.9× longer than wide. Metasoma oxygygous. Postpetiolus moderately widened, 0.60-0.72× as wide as distance between apophyses, lateral field 0.9-1.2× as wide as median field, median field rugose, with few punctures apically. Gastrocoelus distinctly impressed, with ridges. Thyridium slightly oblique, 0.7× as wide as the interval. 2nd tergite 1.0-1.3× and 3rd tergite 1.6-1.8× wider than long. 2nd tergite coarsely rugose-punctate, 3rd tergite densely and rather superficially punctate, with microsculpture; 4th tergite with very superficially punctures, almost smooth. Ovipositor sheath 0.32-0.34× as long as hind metatarsus.

Color: black. Flagellomeres 9-14/15, spot on frontal orbit, spot on scutellum yellow. 1st tergite black, following tergites red. Legs reddish-brown, often hind femur, hind tibia and mid and hind tarsi ± infusate. Pterostigma brown to blackish.

♂: Body length 13-14 mm. Flagellum with 41-42 flagellomeres; 1st flagellomere 3.0× and 2nd flagellomere 2.5× longer than wide, FI 0.80-0.83. Tyloids on flagellomeres 2/4-23/25, long oval, maximally 0.7× as long as flagellomere. Temple almost linearly narrowed behind eye. OED 1.0× ocellar diameter. Frons finely and transversely rugose. Face and clypeus rugose-punctate. MI 1.6. Gena concave ventrally, 0.85× as wide as eye. Side of pronotum rugose-punctate dorsally, longitudinally rugose ventrally. Notaulus impressed in frontal 0.3-0.5 of mesoscutum. Scutellum distinctly pyramidal, triangular in profile, with complete lateral carina, without transverse carina or ridge on top. Area superomedia wider than long, hexagonal, coarsely rugose; anterior transverse carina slightly basad its middle. Apophysis slightly longer than basally wide. Hind femur 5.3-5.6× longer than wide. Postpetiolus moderately widened, 0.7× as wide as distance between apophyses, lateral field as wide as median field, median field with few punctures, mainly smooth. Gastrocoelus impressed, with ridges. Thyridium slightly oblique, 0.4× as wide as the interval. 2nd tergite 1.15× wider than long. 2nd tergite coarsely rugose-punctate, with some longitudinal rugae medially. 3rd tergite rugose-punctate basally, punctate apically. 4th tergite punctate, with microsculpture.

Color: black. Facial orbit, spot on frontal orbit and usually spot on scutellum yellow. 1st tergite black, 2nd to 7th reddish-brown, partly infusate centrally. Fore and mid legs brownish, hind leg black. Pterostigma dark brown.

Taxonomical remark: The monobasic genus *Rhysaspis* was synonymized with *Hoplismenus* by TOWNES (1961) and HEINRICH (1962), but re-established as a separate genus by HEINRICH (1975), mainly due to the strongly concave form of ventral genal carina and the elevated ventral epicnemial carina, but the modified form of genal carina is also found in other *Hoplismenus* species such as *H. krapinensis* (see figs 11 and 12). He also argued a proposed different biology: in contrast to the Nymphalid parasitizing *Hoplismenus* species, *H. rugosus* was found to parasitize also other lepidopterous families, e.g. Pieridae and Satyridae. But as confirmed in this study, some *Hoplismenus* species, such as *H. pica*, also have a wider host range (Nymphalidae and Erebididae).

Therefore, I accept the synonymizing of *Hoplismenus* and *Rhysaspis* here. I also suppose that a separation of the monobasic *Rhysaspis* from *Hoplismenus* would probably let the latter genus as a paraphyletic assemblage of species.

Hosts: *Lasiommata maera* (LINNAEUS, 1758) (Lep., Nymphalidae) (CLÉMENT 1927).

***Hoplismenus terrificus* WESMAEL, 1848** (figs 7, 19, 27, 30)

L e c t o t y p e : (♀) (Bruxelles), designated by TOWNES et al. (1965), type not studied.

syn. *Hoplismenus satoi* UCHIDA, 1929

L e c t o t y p e : (♂) Suigen 3/VI.1928; Corea, K. Sato (Sapporo), synonymized by TOWNES et al. (1965), type not studied.

syn. *Hoplismenus miokensis* UCHIDA, 1932

H o l o t y p e : (♂) 17.VII.1927 Mt. Myoko, Takeuchi (Sapporo), synonymized by TOWNES et al. (1965), type not studied.

syn. *Hoplismenus terrificus* var. *karafutensis* UCHIDA 1955

H o l o t y p e : (♂) Saghalin, N Ota; Tobuchi 5/IX 1928 (Sapporo), synonymized by TOWNES et al. (1965), type not studied.

syn. *Pyramidophorus szepligetii* GYÖRFI, 1955

H o l o t y p e : (♀) Szepligeti Budapest; XVI. *Pyramidophorus* n. sp.; *Pyramidophorus szepligetii* det dr Györfi (Budapest), synonymized by HORSTMANN (2001), type not studied.

M a t e r i a l e x a m i n e d : 35♀♀, 8♂♂ from Austria, Belgium, Corsica, Georgia, Germany, Mongolia, Poland, Russia (Ural and Far East), Switzerland.

D e s c r i p t i o n : ♀: Body length 15-17 mm. Flagellum with 41-43 flagellomeres; 1st flagellomere 4.2-4.4× and 2nd flagellomere 3.4-3.5× longer than wide, FI 1.0-1.1; widest flagellomeres about as long as wide. Temple distinctly and linearly narrowed behind eye. OED 1.3-1.6× ocellar diameter. Frons moderately concave, coarsely rugose-punctate. MI 1.2-1.5. Hypostomal carina slightly elevated.

Mesosoma covered with short brown hairs. Notaulus impressed in frontal 0.4 of mesoscutum. Lateral lobe of mesoscutum finely rugose-punctate, dull. Mesopleuron rugose-punctate. Sternaulus impressed in frontal 0.4 of mesopleuron. Scutellum distinctly elevated, conical in profile, lateral carina in basal 0.2. Juxtacoxal carina indistinct. Area superomedia hexagonal, about as long as wide or slightly longer than wide; anterior transverse carina partly distinct. Area petiolaris transversely rugose. Apophysis slightly shorter than basally wide. Coxae rugose-punctate. Hind femur 5.0-5.5× longer than wide. Metasoma semi-amblypygous. Postpetiolus distinctly widened, 0.85-0.90× as wide as the distance between apophyses; median field longitudinally rugose. Thyridium 0.75-1.1× as wide as the interval. 2nd tergite 1.4-1.5× and 3rd tergite 1.7-2.0× wider than long. 2nd and 3rd tergites coarsely rugose-punctate, 2nd tergite medially with coarse longitudinal rugae; 4th tergite superficially punctate and finely granulate, 5th tergite almost smooth. Hypopygium about as long as distance between its apical margin and metasomal apex. Ovipositor sheath 0.33-0.38× as long as hind metatarsus.

Color: black. Flagellomeres 9/11-12 (sometimes weakly) and sometimes spot on scutellum yellowish. Coxae and trochanters black; legs otherwise red; hind tibia black, reddish in basal 0.2; hind tarsus black, sometimes apical half of 2nd tarsomere and 3rd to 4th or 5th tarsomeres yellowish. Pterostigma reddish-brown.

♂: Body length 16-17 mm. Flagellum with 41-43 flagellomeres; 1st flagellomere 3.0× and 2nd flagellomere 2.3× longer than wide, FI 0.80-0.90. Tyloids on flagellomeres 9/11-18/19, often indistinct, linear, maximally 0.6× as long as the flagellomere. Notaulus reaching center of mesoscutum. Scutellum pyramidal, with transverse carina on top. Hind femur 4.9-5.5× longer than wide. 2nd tergite 1.7-1.8× wider than long. 2nd to 4th tergites rugose-punctate, dull. 5th tergite with very superficial punctures, with micro-sculpture.

Color: black. Wide facial orbit, labrum, often small apical spot on scutellum and 2nd or 3rd to 5th hind tarsomeres yellow. Apical margin of 2nd tergite sometimes reddish. Coxae and trochanters black; legs otherwise reddish; hind tibia dark reddish-brown, often blackish externally. Pterostigma brownish, with darker margins.

H o s t s : *Nymphalis antiopa* (LINNAEUS, 1758) (Lep., Nymphalidae) (Vienna).

***Zanthojoppa lutea* (GRAVENHORST, 1829) (*Hoplismenus*)** (figs 8, 20, 28)

H o l o t y p e : (♀) no label (Wroclaw), studied by RASNITSYN (1981), type not studied.

syn. *Hybophorus piceus* BERTHOUMIEU, 1904: 13

L e c t o t y p e : (♀) Caucase; Type; *Hybophorus piceus* BERT. (Paris), synonymized by DILLER & HORSTMANN (1997), type not studied.

syn. *Hoplismenus setaceus* TELENGA, 1927

synonymized by MEYER (1933), type not studied.

M a t e r i a l e x a m i n e d : 20♀♀, 4♂♂ from Austria, France, Germany, Italy, Russia (Siberia).

D e s c r i p t i o n : ♀: Body length 12-13 mm. Flagellum with 38-40 flagellomeres; 1st flagellomere 3.9-4.0× and 2nd flagellomere 3.1-3.3× longer than wide, FI 0.85-0.95; widest flagellomeres 1.0-1.2× wider than long. Temple strongly and linearly narrowed behind eye. OED 1.0× ocellar diameter. Frons coarsely granulate, dull. Face and clypeus densely rugose-punctate. Gena rugose-punctate, in profile 0.65× as wide as eye. MI 0.8-1.0 Genal carina straight ventrally, hypostomal carina low.

Mesosoma covered with short pale hairs. Side of pronotum finely rugose dorsally, partly striate ventrally. Notaulus impressed in frontal 0.3 of mesoscutum. Lateral lobe of mesoscutum coarsely granulate, dull. Mesopleuron densely and finely rugose-punctate. Speculum punctate, usually smooth between punctures. Epicnemial carina low. Metapleuron rugose-punctate. Juxtacoxal carina usually absent. Scutellum slightly longer than wide, distinctly elevated, with lateral carina in basal 0.1-0.3. Area superomedia wider than long, rectangular or halfmoon-shaped. Anterior transverse carina weak or absent. Area petiolaris rugose. Apophysis present. Coxae densely rugose-punctate. Hind femur 5.1-5.6× longer than wide. Postpetiolus slightly widened, 0.6× as wide as distance between apophyses, lateral field 0.3× as wide as median field, median field granulate or finely rugose. Gastrocoelus indistinct. Thyridium weakly impressed, slightly oblique, 0.4× as wide as the interval. 2nd tergite 1.2× wider than long. 2nd tergite finely rugose-punctate, 3rd tergite granulate, 4th tergite almost smooth and shining. Ovipositor sheath 0.65-0.7× as long as hind metatarsus.

Color: black or ± reddish (often head, meso- and metasoma, flagellum and legs). Flagellomere 7/8-11/12, wide stripe on frontal orbit, sometimes spot on vertex and on outer orbit, scutellum and sometimes postscutellum yellowish. Tergites reddish, 4th to 7th tergite often ± infusate. Femora often ± blackish. Pterostigma ochreous.

♂: Body length 11-12 mm. Flagellum with 36-38 flagellomeres; 1st flagellomere 2.9-3.1× and 2nd flagellomere 2.2-2.5× longer than wide, FI 0.78-0.82. Tyloids on flagellomeres 7/8-15/16, oval, based on flagellomere and maximally 0.7× as long. OED 1.0-1.2× ocellar diameter. Gena 0.6× as wide as eye. MI 0.6. Mesopleuron densely and finely rugose-punctate, speculum partly smooth and shining. Scutellum about as long as wide, distinctly elevated, with lateral carina in basal 0.1. Area superomedia slightly transverse,

halfmoon-shaped. Anterior transverse carina absent. Hind femur $4.9\times$ longer than wide. Postpetiolus slightly widened, $0.6\times$ as wide as distance between apophyses. 2nd tergite $1.1\times$ wider than long. Apical margin of hypopygium rounded medially.

Color: as in ♀, but yellow coloration usually more extended: flagellomeres 10-12 (in one specimen flagellomeres 3-7 dorsally), clypeus, face, frontal orbit, vertex, outer orbit, scape ventrally, frontal and upper margins of pronotum, subtegular ridge, scutellum, postuscutellum, often fore and mid coxae and legs yellowish.

H o s t s : *Calliteara pudibunda* (LINNAEUS, 1758) (Lep. Erebidae) (ZSM), *Maniola jurtina* (LINNAEUS, 1758) (Lep., Nymphalidae) (ZSM).

Excluded species

Ichneumon axillatorius THUNBERG, 1824

H o l o t y p e : (♂) [red] Uppsala Univ. Zool. Mus. Thunbergsaml. nr. 25283 *Ichneumon axillatorius* Westm. Hall. Typ; *Hoplismenus axillatorius* THBG. (Uppsala), type studied.

T a x o n o m i c a l r e m a r k : This species has been wrongly synonymized with *Hoplismenus armatus* auct. (*albifrons* GRAVENHORST) by ROMAN (1912). A recent study of the type (RIEDEL 2014) had shown that this species does not belong to *Hoplismenus*, but is a synonym of *Cyclolabus pactor* (WESMAEL, 1845).

Valid name: *Cyclolabus axillatorius* (THUNBERG, 1824) syn. *Platylabus pactor* WESMAEL, 1845.

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Zusammenfassung

In dieser Arbeit wird eine Revision der westpaläarktischen Gattungen und Arten der Subtribus Hoplismenina HEINRICH (Hymenoptera: Ichneumonidae, Ichneumoninae, Ichneumonini) vorgelegt. Zwei Gattungen und acht Arten werden als valide betrachtet.

Neue Kombinationen und Synonyme sind folgende: *Rhyasaspis* TISCHBEIN, 1874 ist ein Synonym von *Hoplismenus* GRAVENHORST, stat. rev. *Peritaenius tyrolensis* CLÉMENT, 1927, *Peritaenius caucasicus* CLÉMENT, 1927 und *Hoplismenus armatorius corsicator* AUBERT, 1960 sind neue Synonyme von *Hoplismenus bidentatus* (GMELIN, 1790). *Cryptus crassicornis* RUDOW, 1883, *Peritaenius istrianus* CLÉMENT, 1927 und *Hoplismenus armatorius insulator* AUBERT, 1960 sind neue Synonyme von *Hoplismenus bispinatorius* (THUNBERG, 1824). *Hoplismenus cornix* KRIECHBAUMER, 1890 ist synonym zu *Hoplismenus rugosus* (TISCHBEIN, 1874).

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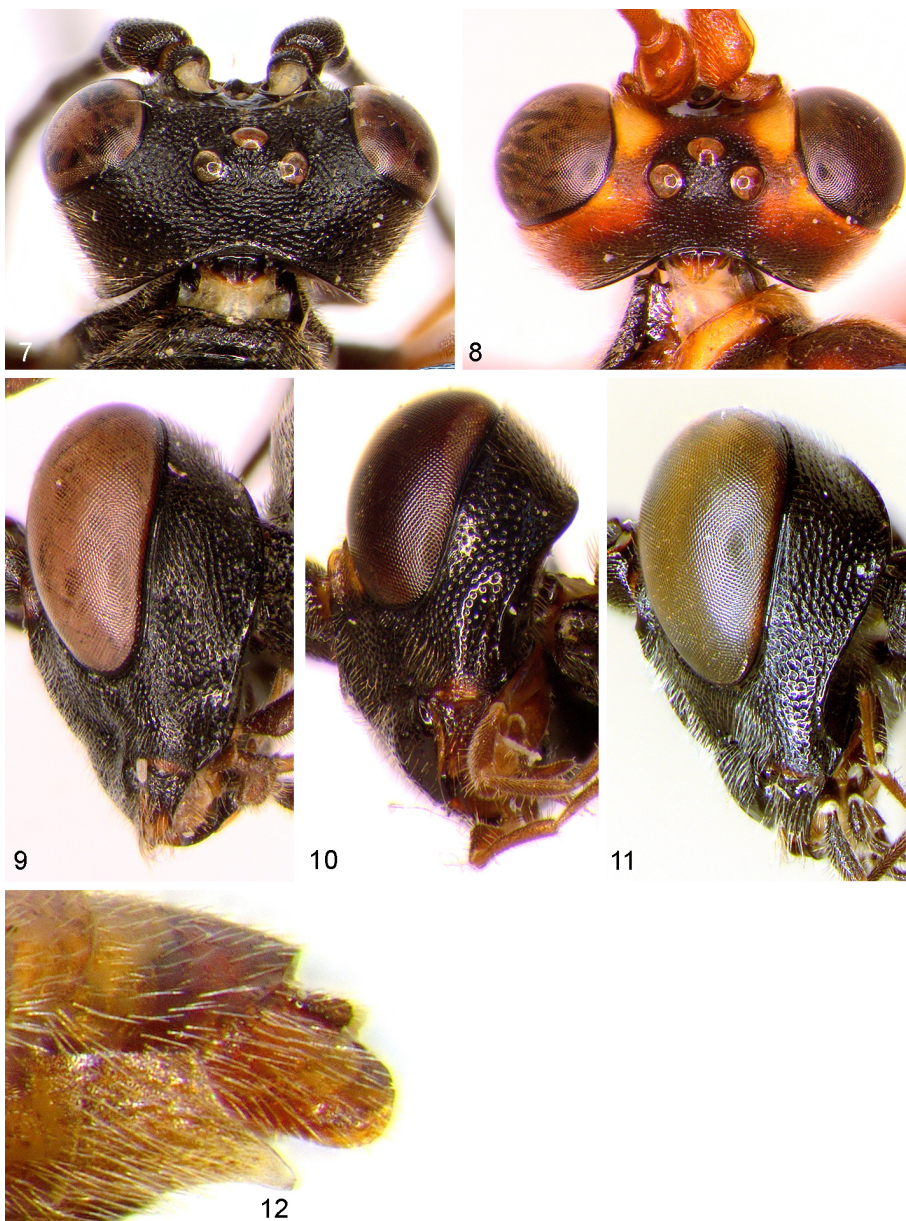
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Author's address:

Dr. med. Matthias RIEDEL
Blumenlage 22 C
D-29683 Bad Fallingb., Germany
E-Mail: mamaflo.riedel@t-online.de



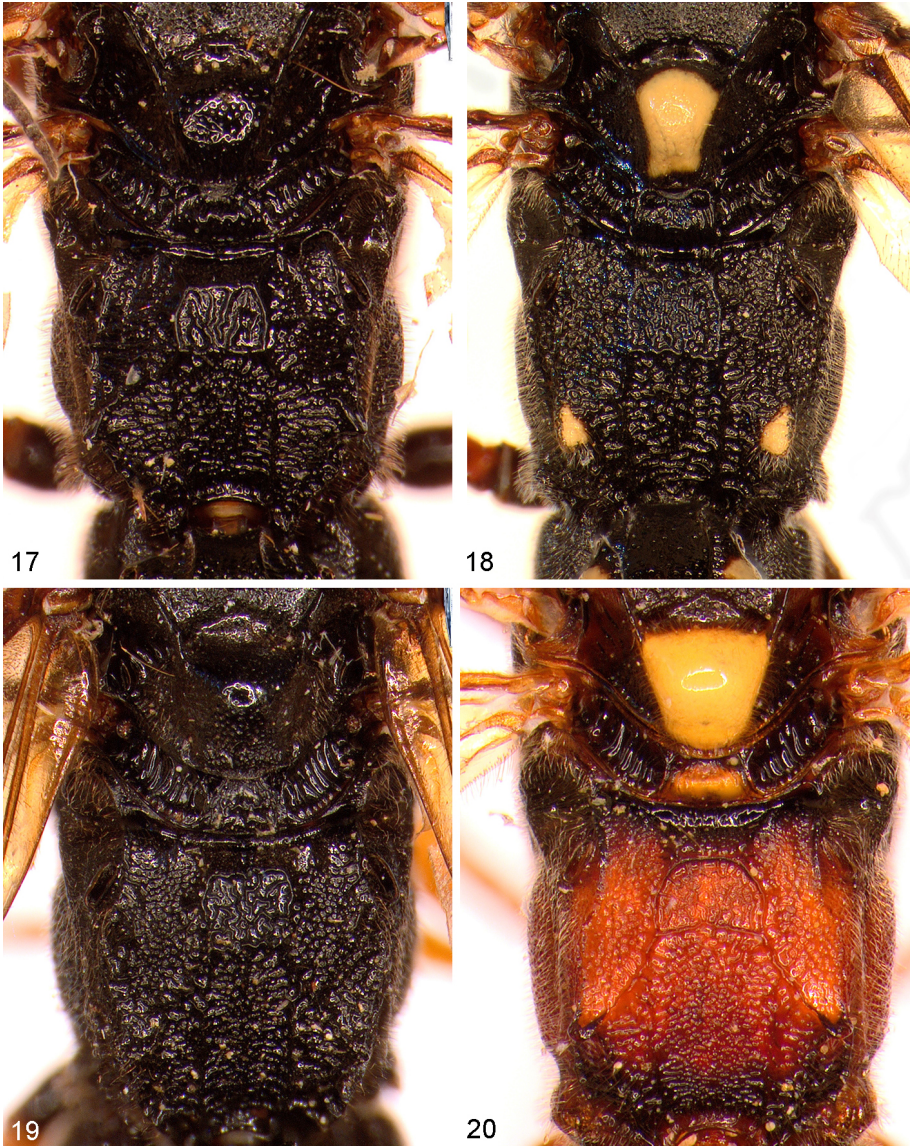
Figs 1-6: Head of ♀ from dorsal: (1) *Hoplismenus bidentatus* (GMELIN), (2) *H. bispinatorius* (THUNBERG), (3) *H. krapinensis* HENSCH, (4) *H. lamprolabus* WESMAEL, (5) *H. pica* WESMAEL, (6) *H. rugosus* (TISCHBEIN).



Figs 7-8: Head of ♀ from dorsal: (7) *Hoplismenus terrificus* WESMAEL, (8) *Zanthojoppa lutea* (GRAVENHORST). **Figs 9-11:** Gena of ♀ from lateral: (9) *Hoplismenus bidentatus* (GMELIN), (10) *H. krapinensis* HENSCH, (11) *H. rugosus* (TISCHBEIN). **Fig 12:** Hypopygium of ♂ of *Hoplismenus bidentatus* (GMELIN).



Figs 13-16: Propodeum of ♀♀ from dorsal: (13) *Hoplismenus bidentatus* (GMELIN), (14) *H. bispinatorius* (THUNBERG), (15) *H. krapinensis* HENSCH, (16) *H. rugosus* (TISCHBEIN).



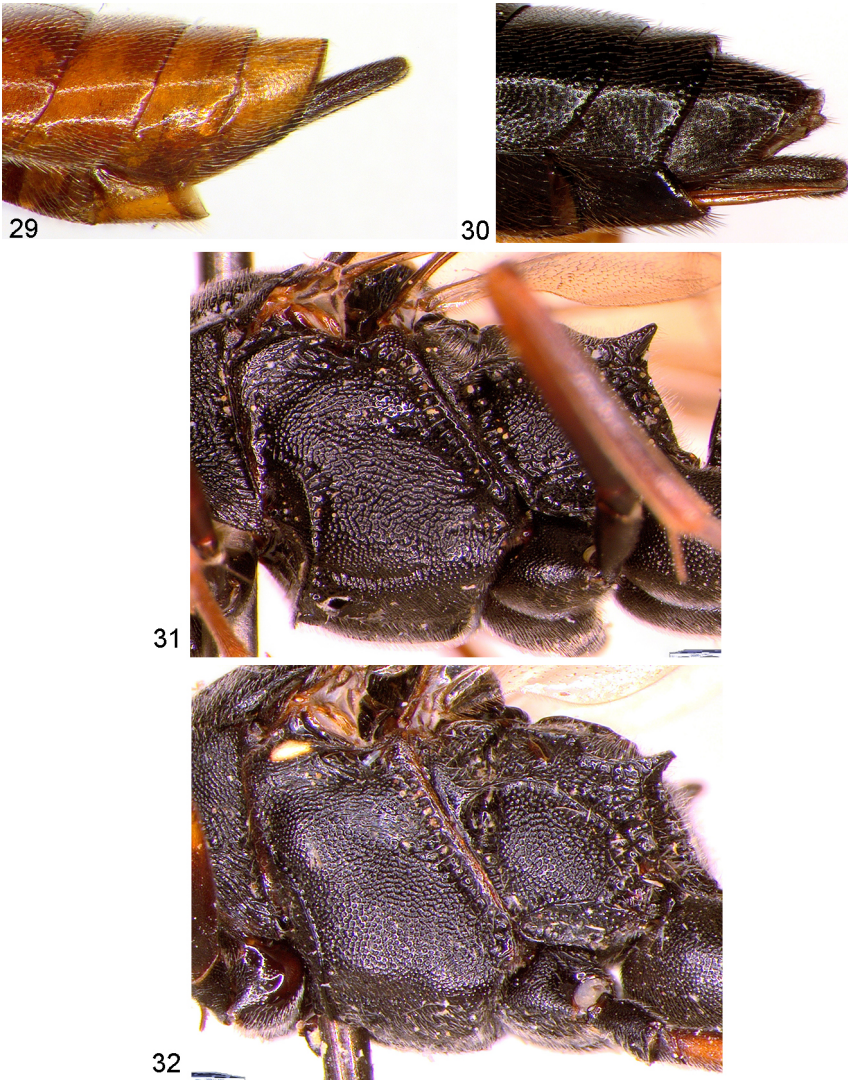
Figs 17-20: Propodeum of ♀♀ from dorsal: (17) *Hoplismenus lamprolabus* WESMAEL, (18) *H. pica* WESMAEL, (19) *H. terrificus* WESMAEL, (20) *Zanthojoppa lutea* (Gravenhorst).



Figs 21-24: Basal tergites of ♀♀ from dorsal: (21) *Hoplismenus bidentatus* (GMELIN), (22) *H. bispinatorius* (THUNBERG), (23) *H. krapinensis* HENSCH, (24) *H. rugosus* (TISCHBEIN).



Figs 25-28: Propodeum of ♀♀ from dorsal: (25) *Hoplismenus lamprolabus* WESMAEL, (26) *H. pica* WESMAEL, (27) *H. terrificus* WESMAEL, (28) *Zanthojoppa lutea* (GRAVENHORST).



Figs 29-30: Metasomal apex from dorsal: (29) *Hoplismenus bidentatus* (GMELIN) with oxypygous metasoma, (30) *H. terrificus* WESMAEL with semi-amblypygous metasoma.

Figs 31-32: Mesosoma of ♀♀ from lateral: (31) *Hoplismenus rugosus* (TISCHBEIN), (32) *Hoplismenus bidentatus* (GMELIN).

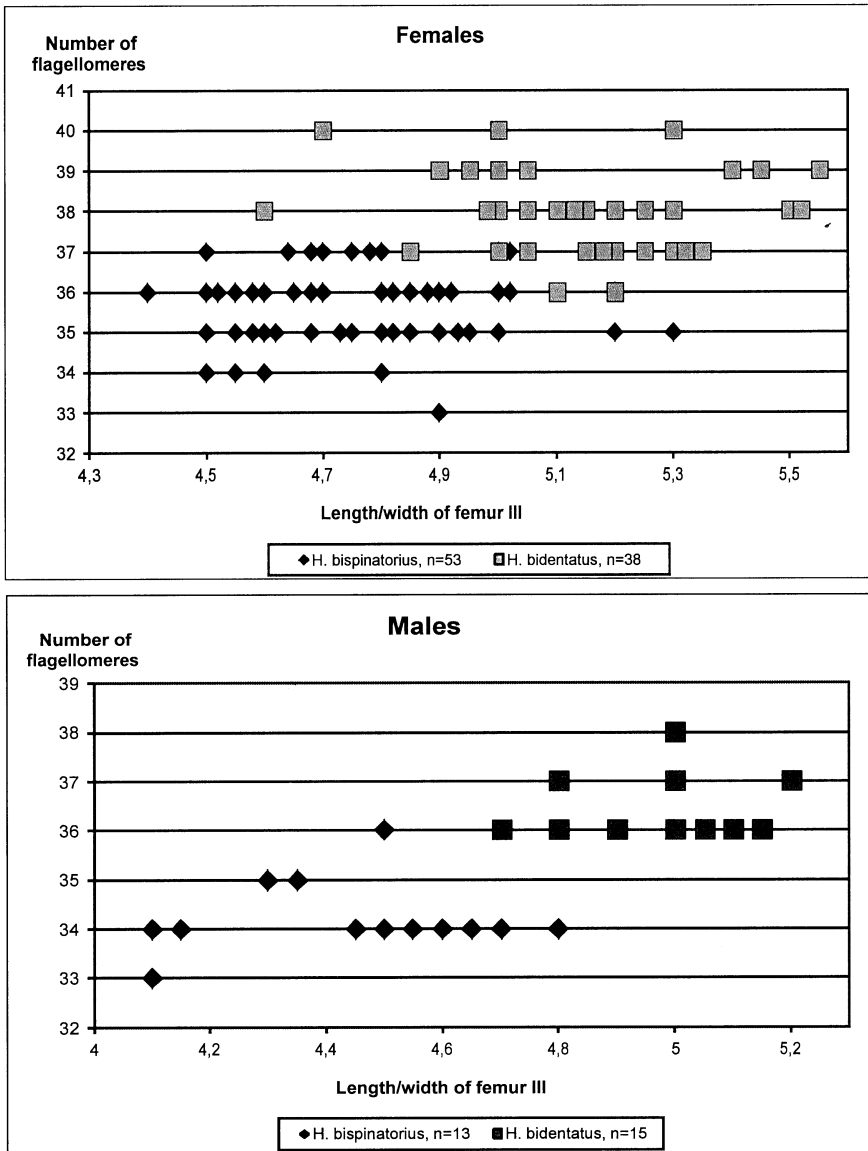


Fig. 33: Correlation between number of flagellomeres and size of hind femur in *Hoplismenus bispinatorius* (THUNBERG) and *H. bidentatus* (GMELIN).

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