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## Revision of the Palaearctic species of *Syspasis* TOWNES, 1965 (Hymenoptera, Ichneumonidae, Ichneumoninae)

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**Abstract:** In this publication, the Palaearctic species of the genus *Syspasis* TOWNES are revised (Hymenoptera: Ichneumonidae, Ichneumoninae, Ichneumonini). 13 species are considered as valid.

Four species from the East Palaearctic region are described as new: *Syspasis nigrithorax* nov.sp., *Syspasis nigroapicalis* nov.sp., *Syspasis nigrotibialis* nov.sp. and *Syspasis sinensis* nov.sp.

New synonymies are: *Ctenichneumon maruyamensis* UCHIDA, 1930 is a synonym of *Syspasis albiguttata* (GRAVENHORST, 1820); *Ichneumon rufinus* GRAVENHORST, 1820 is synonym to *Syspasis carinator* (FABRICIUS, 1798); *Ichneumon simulosus* THOMSON, 1886 and *Ichneumon rimulosus* DALLA TORRE, 1902 are synonyms of *Syspasis optica* (GRAVENHORST, 1829) and *Coelichneumon derasus* var. *picta* ROMAN, 1904 is a synonym of *Syspasis puerulus* (KRIECHBAUMER, 1890).

All species are described in detail and keys for ♀♀ and ♂♂ are provided.

**Key words:** *Syspasis*, Palaearctic region, revision, new species

### Introduction

*Syspasis* TOWNES is a small genus of the subfamily Ichneumoninae, tribe Ichneumonini with Holarctic and Oriental distribution. Members of this genus were usually included in the genus *Stenichneumon* THOMSON in the past, until it was separated and defined as new (TOWNES et al. 1965).

The genus *Syspasis* is characterized by the structure of the propodeum with some affinities to the tribe Heresiarchini, e.g. the area dentipara is slanting down backwards in a curved slope running parallel or slightly converging with the pleural carina (HEINRICH 1968), but was traditionally included in the tribe Ichneumonini subtribe Ichneumonina due to other structural (e.g. area basalis with median tubercle, area superomedia large and usually heart-shaped) and biological (♀♀ are overwintering) features (HEINRICH 1968).

Although the definition of the different tribes and subtribes of Ichneumoninae was established mainly by morphological features (HEINRICH 1967, TERESHKIN 2009), actual genomic studies (SANTOS et al. 2021) have substantially questioned this traditional tribal and subtribal classification suggesting morphological convergences in many cases.

Here, I present a new revision of the Palaearctic species of genus *Syspasis* TOWNES with descriptions of some new species from Middle and East Asia.

## Material and Methods

I had the opportunity to study the *Sypsis* material of several institutions such as the collections of the Biologiezentrum Linz/Austria (Linz), the Zoologische Staatssammlung München/Germany (ZSM), the Senckenberg Deutsches Entomologisches Institut at Eberswalde/Germany (SDEI), the Zoological Museum Sankt Petersburg/Russia (St. Petersburg), the Kanagawa Prefectural Museum of Natural History (Kanagawa/Japan) and specimens from several private collections.

For the descriptions below, morphological terms follow BROAD et al. (2018). The distributional records were mainly taken from the catalogue of YU et al. (2016). New distributional records are marked with an asterisk.

For the measurements the following relations were used: length of 1<sup>st</sup> and 2<sup>nd</sup> flagellomeres was measured in lateral view (length without anellus); width of gena and eye were measured in lateral view, width of temples from dorsal, and length and width of hind femur in lateral view. For the punctation of body parts the following definitions were used: very scattered – distance of punctures  $>2\times$  their diameter; scattered – distance 1.1–2 $\times$  their diameter; rather dense – distance about as their diameter; dense – diameter of punctures larger than their distance.

Used abbreviations:

MI .....malar index, e.g. length of malar space in relation to width of mandibular base

OED .....ocellar-eye distance, e.g. distance between lateral ocellus and compound eye

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

## Description of the genus *Sypsis* TOWNES, 1965

**G e n o t y p e :** *Ichneumon scutellator* GRAVENHORST

**D i a g n o s i s :** Medium sized, body length 7–15 mm (rarely larger: *S. albiguttata*). Flagellum bristle-shaped or slightly lanceolate. Temple usually  $\pm$  narrowed behind eye. Clypeus large, flat or slightly convex, with sharp rounded apical margin (rarely with median tooth: *S. leucolomia*). Mandible with two teeth, upper tooth larger, lower tooth sometimes  $\pm$  bent inwards, but always visible. Genal carina reaching hypostomal carina away from mandibular base, rarely obsolete ventrally (in *S. leucolomia*). Scutellum flat or moderately elevated, usually wider than long; without or with lateral carina in basal half, not completely carinate. Propodeum completely carinate, rather short, in profile with  $\pm$  distinct dorsal and posterodorsal faces, but area dentipara is slanting down backwards in a curved slope running parallel or slightly converging with the pleural carina. Propodeal spiracle long-oval or slit-shaped. Area basalis usually with distinct median tubercle. Area superomedia large, usually horseshoe- or heart-shaped. Posterolateral dentiparal edge without apophysis. Hind coxa with or without scopa. Hind femur rather slender, densely punctate. Claws not pectinate. Areolet usually pentagonal, but some-

times veins 2rs-m and 3rs-m meeting frontally. Metasoma strongly oxypygous, hypopygium in ♀♀ short. Petiolus about as wide as deep, postpetiolus usually strongly widened, without distinct latero-median carina; its median field usually ± aciculate, rarely punctate and with obsolete striae. Gastrocoelus strongly impressed, usually with longitudinal ridges. Thyridium large, usually ± wider than the interval between thyridia. Basal tergites usually strongly and densely punctate or rugose-punctate, sometimes 2<sup>nd</sup> tergite ± striate medially.

Color: black. Flagellum often with ivory ring. Head often with narrow ivory stripes on orbits. Mesosoma black or with limited ivory coloration. Metasoma black or ± reddish, rarely basal tergites with ivory spots (in *S. albiguttata*), apical tergites not pale-marked. Usually sexual dimorphism of coloration present: usually basal red coloration of the metasoma in ♀ replaced by black in ♂ and ivory color pattern sometimes more extensive in ♂ than in ♀.

Biology: As far as it is known, the ♀♀ are overwintering (RASNITSYN & SIYTAN 1981). Members of this genus attack larvae of different Lepidopteran families.

### Key for the Palearctic species of *Syspasis* TOWNES

(modified after RASNITSYN & SIYTAN 1981)

Females:

- 1 Mesosoma entirely black (figs 34, 36, 39). Metasoma ± red.....2
- Mesosoma with ivory stripes (figs 35, 37, 38).....4
- 2 Area basalis without distinct median tubercle (fig. 36). Scutellum not carinate. Apical tergites black. Hind femur mainly black. Hind tibia with 2 external denticular spurs. Flagellum with 28-30 flagellomeres. Palearctis.....***S. haesitator* (WESMAEL, 1845)**
- Area basalis with strong median tubercle (fig. 41). Scutellum ± carinate laterally (fig. 41). Hind tibia with multiple external denticular spurs. Hind femur red. Flagellum with at least 32 flagellomeres.....3
- 3 Mid and hind tibiae mainly black. Flagellum with 37 flagellomeres. Hind femur slender, 4.4× longer than wide. Malar space 1.1× as long as width of mandibular base (fig. 8). Areolet quadrilateral: veins 2rs-m and 3rs-m meeting frontally. Kyrgyzstan.....***S. nigrotibialis* nov.sp.**
- Mid and hind tibiae mainly red. Flagellum with 32-33 flagellomeres. Hind femur stout, 3.8-4.2× longer than wide. Malar space 0.9-1.0× as long as width of mandibular base. Areolet ± pentagonal: frontal distance between veins 2rs-m and 3rs-m 2× their width. Middle Asia.....***S. nigrithorax* nov.sp.**
- 4 Metasoma entirely red OR at least 2<sup>nd</sup> to 4<sup>th</sup> tergites red. Prescutellar carina usually ivory. Outer orbit with long ivory stripe. Pterostigma dark. Mesoscutum sometimes with two paramedian ivory stripes. Body length 10-12 mm.....5
- Metasoma usually mainly black, at most basal tergites reddish. Prescutellar carina black. Outer orbit often without long ivory stripes.....7
- 5 Apical margin of clypeus with small median tooth (fig. 15). Hypostomal carina lamelliform elevated; genal carina ± obsolete ventrally (fig. 15). Hind coxa without scopa. West Palearctis.....***S. leucolomia* (GRAVENHORST, 1829)**
- Apical margin of clypeus without median tooth. Hypostomal carina narrow; genal carina complete ventrally, reaching hypostomal carina.....6
- 6 Apical tergites red. Temple strongly narrowed behind eye (fig. 25). Palearctis.....***S. carinator* (FABRICIUS, 1798)**

- 5<sup>th</sup> to 7<sup>th</sup> tergites black. Temples shortly parallel behind eye, moderately narrowed apically (fig. 29). Siberia..... *S. nigroapicalis* nov.sp.
- 7 Thyridium about as wide as the interval between thyridia (fig. 48). Usually hind edge of scutellum and flagellar ring, sometimes postpetiolus and 3<sup>rd</sup> to 5<sup>th</sup> tergites apically with ivory spots. Temple strongly narrowed behind eye (fig. 24). Pterostigma brown, paler centrally. Mesoscutum densely punctate and granulate, dull. 1<sup>st</sup> flagellomere 2.7-2.8× longer than wide. Body length 10-15 mm. Palaearctis.....  
.....*S. albiguttata* (GRAVENHORST, 1820)
- Thyridium much wider than the interval between thyridia (fig. 49). Metasoma without ivory spots.....8
- 8 Mesosoma including scutellum completely black (figs 42, 43). Flagellum with at most 36 flagellomeres.....9
- Side of scutellum ± ivory (figs 38, 44). Flagellum with at least 34 flagellomeres.....11
- 9 2<sup>nd</sup> and 3<sup>rd</sup> tergites superficially punctate, at most narrowly (less than 0.5× tergal width) and finely striate medially, black (fig. 57). Hind coxa without scopa. Body length 10 mm. Palaearctis.....*S. puerulus* (KRIECHBAUMER, 1890)
- 2<sup>nd</sup> and 3<sup>rd</sup> tergites widely (more than 0.5× of tergal width) with distinct longitudinal striae or rugae, usually ± red (figs 56, 60). Hind coxa with or without scopa.....10
- 10 Hind coxa with scopa. 1<sup>st</sup> flagellomere 3.0× longer than wide. Temple distinctly and linearly narrowed behind eye. Frontal orbit without ivory stripe. Metasoma entirely black OR 1<sup>st</sup> to 3<sup>rd</sup> tergites ± reddish. Body length 9-11 mm. West Palaearctis and Kazakhstan.....*S. optica* (GRAVENHORST, 1829)
- Hind coxa without distinct scopa. 1<sup>st</sup> flagellomere 2.0× longer than wide. Temple slightly and roundly narrowed behind eye. Frontal orbit with ivory stripe. Postpetiolus and 2<sup>nd</sup> to 3<sup>rd</sup> tergites red. Body length 11 mm. North China.....*S. sinensis* nov.sp.
- 11 Pterostigma, femora and tibiae red. Temple wide, slightly narrowed apically. Outer orbit black. Flagellum with 35-38 flagellomeres, 1<sup>st</sup> flagellomere long, 3.3-3.8× longer than wide. Basal tergites sometimes ± reddish. Body length 10-14 mm. Palaearctis.....  
.....*S. scutellator* (GRAVENHORST, 1829)
- Pterostigma and often legs ± brown or black. Temple narrower, usually ± narrowed behind eye.....12
- 12 1<sup>st</sup> flagellomere 2.5-2.8× longer than wide. Hind coxa with distinct scopa. Hind femur stout, 3.4-3.8× longer than wide. Inner orbit with small ivory spot opposite antennal groove. Hind edge or upper margin of pronotum yellowish. Body length 9-13 mm. Holarctis.....*S. tauma* (HEINRICH, 1951)
- 1<sup>st</sup> flagellomere 2.9-3.5× longer than wide. Hind coxa with weak and indistinct scopa. Hind femur slenderer, 3.9-4.3× longer than wide. Frontal orbit with ivory stripe. Pronotum without ivory spots. Body length 12-15 mm. Palaearctis.....  
.....*S. lineator* (FABRICIUS, 1781)

Males (unknown for *S. nigroapicalis*, *S. nigrotibialis* and *S. chinensis*):

- 1 Prescutellar carina ivory. Outer orbit with long narrow ivory stripe. Metasoma mainly red.....2
- Prescutellar carina usually black; if ± ivory, then metasoma mainly black. Outer orbit often without long ivory stripe.....3
- 2 Apical margin of clypeus with median tooth. Hypostomal carina lamelliform elevated, genal carina obsolete ventrally. Hind femur slender, 4.4-4.6× longer than wide.....  
.....*S. leucolomia* (GRAVENHORST, 1829)
- Apical margin of clypeus without median tooth. Hypostomal carina not or slightly elevated; genal carina complete, reaching hypostomal carina. Hind femur stouter, 3.7-4.2× longer than wide.....*S. carinator* (FABRICIUS, 1798)
- 3 Thyridium as wide as the interval between thyridia. Scutellum usually with lateral ivory stripes which are confluent apically. Face completely ivory. Tergites often with ivory spots. Body length 10-15 mm.....*S. albiguttata* (GRAVENHORST, 1820)

- Thyridium much wider than the interval between thyridia. Metasoma without ivory spots. ....4
- 4. Scutellum black. 2<sup>nd</sup> tergite widely (more than 0.5× of tergal width) with distinct longitudinal median striae OR without distinct striae.....5
- Scutellum usually with ivory sides. 2<sup>nd</sup> tergite narrowly (less than 0.5× tergal width) with longitudinal median striae. ....6
- 5 2<sup>nd</sup> tergite widely (more than 0.5× of tergal width) with distinct longitudinal striae. Femora and tibiae red, hind tibia black apically. Flagellum with 32-33 flagellomeres. Body length 9-11 mm..... *S. optica* (GRAVENHORST, 1829)
- 2<sup>nd</sup> tergite punctate and granulate, without distinct median striae. Hind femur black. Flagellum with 29 flagellomeres. Body length 9-10 mm.....*S. haesitator* (WESMAEL, 1845)
- 6 Pterostigma, femora and tibiae red. Temple wide, slightly narrowed behind eye. Outer orbit usually with ivory spot ventrally. Face and clypeus usually mainly ivory. Body length 10-14 mm. ....*S. scutellator* (GRAVENHORST, 1829)
- Pterostigma, often also legs brown or blackish. Temple strongly narrowed behind eye. 2<sup>nd</sup> tergite red. Outer orbit usually ivory.....7
- 7 Flagellum with ivory ring or stripe. Prescutellar carina, side and apex of scutellum usually ivory. Legs black. Body length 9-13 mm.....*S. tauma* (HEINRICH, 1951)
- Flagellum without ivory ring or stripe. Prescutellar carina black. Legs often ± red. ....8
- 8 Face black medially (fig. 19). Mesoscutum punctate and distinctly granulate, dull. Flagellum with 35-40 flagellomeres. Tyloids present from 9<sup>th</sup> or 10<sup>th</sup> flagellomeres on. Side of scutellum ivory. Legs often red. Body length 10-15 mm. ....*S. lineator* (FABRICIUS, 1781)
- Face usually entirely ivory (fig. 21). Mesoscutum ± shining. Flagellum with 31-33 flagellomeres. Tyloids present from 6<sup>th</sup> or 7<sup>th</sup> flagellomeres on. Scutellum black or with two triangular posterolateral spots. Legs ± black. Body length 8-12 mm.....*S. puerulus* (KRIECHBAUMER, 1890)

## Description of species

### *Syspasis albiguttata* (GRAVENHORST, 1820) (figs 1, 16, 24, 34, 48)

Original: *Ichneumon albiguttatus* GRAVENHORST, 1820: 280.

H o l o t y p e : (♀) Oe. (Wroclaw), type not studied.

syn. *Ichneumon multicinctus* GRAVENHORST, 1829: 453, synonymized by WESMAEL (1857).

syn. *Amblyteles albostrata* TISCHBEIN, 1881: 185, synonymized by CONSTANTINEANU (1959).

syn. *Ichneumon ebeninus* BERTHOUMIEU, 1895: 284, synonymized by DILLER & HORSTMANN (1997).

syn. nov. *Ctenichneumon maruyamensis* UCHIDA, 1930: 97, high resolution fotos studied.

M a t e r i a l   e x a m i n e d : 80♀♀ and 11♂♂ from Austria, Belgium, Czech Republic, France, Germany, Japan\*, Poland, Russia (Far East), Spain, Switzerland, Turkey\*.

D e s c r i p t i o n : ♀: Body length 9-14 mm. Flagellum slightly lanceolate, with 35-39 flagellomeres; 1<sup>st</sup> flagellomere 2.7-2.8× and 2<sup>nd</sup> flagellomere 2.1-2.4× longer than wide; widest flagellomeres 1.2× wider than long. Temple moderately and roundly narrowed behind eye. OED 1.0× ocellar diameter. Frons granulate and coarsely but superficially punctate dorsally, ± smooth ventrally. Face and clypeus granulate and punctate. Gena 0.65× as wide as eye. MI 1.0. Mesosoma covered with short whitish hairs. Side of pronotum finely punctate dorsally and striate ventrally. Mesoscutum finely granulate and densely but superficially punctate, ± dull. Notaulus indistinctly impressed on mesoscutum. Mesopleuron striate-punctate. Metapleuron punctate, with ± rugose

margins; juxtacoxal carina present. Scutellum slightly elevated, wider than long, punctate, with lateral carina in basal 0.4-0.5. Area basalis with small median tubercle. Area superomedia horseshoe- or sickle-shaped, slightly wider than long, finely rugose or aciculate; anterior transverse carina present, reaching area superomedia slightly posterior to its middle. Area externa smooth, superficially punctate. Area petiolaris rugose-punctate, lateral carina indistinct. Hind coxa densely punctate, without scopa. Hind femur densely punctate, 3.9-4.0× longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 1-2× their width. Vein 2m-cu reaching areolet in its middle. Vein 1cu-a slightly postfurcal. Metasoma strongly oxygygous. Postpetiolus strongly widened. Lateral field finely rugose, 0.6× as wide as median field; median field with c. 11 fine striae and partly punctate. Thyridium oblique, 0.8-1.0× as wide as the interval between thyridia. 2<sup>nd</sup> tergite 0.80-0.85× as long as wide, densely punctate and granulate, dull, often ± aciculate medially. 3<sup>rd</sup> tergite with superficial punctures; 4<sup>th</sup> tergite almost smooth, finely granulate. Ovipositor sheath slightly extending behind metasomal apex (by 0.4-0.8× length of 7<sup>th</sup> tergite).

Color: black. Ivory coloration variable: usually 8<sup>th</sup> to 12/13<sup>th</sup> flagellomeres with ivory rings or stripes; frontal orbit (widened dorsally), outer orbit dorsally, often collar and hind edge of pronotum, often spot on subtegular ridge and apical stripe on scutellum, often median spot on hind margin of postpetiolus, often median spots or stripes on hind margins of 3<sup>rd</sup>/4<sup>th</sup> to 5<sup>th</sup> tergites, fore femur and tibia frontally, mid and hind femora apically ivory. Legs otherwise brown or black. Pterostigma brownish, paler centrally.

♂: Body length 10-14 (18) mm. Flagellum with 36-39 flagellomeres; 1<sup>st</sup> flagellomere 2.5-2.8× and 2<sup>nd</sup> flagellomere 2.0× longer than wide. Tyloids on flagellomeres 9/11-19, linear, maximally 0.9× as long as their flagellomeres. Temple moderately and roundly narrowed behind eye. OED 0.8-1.0× ocellar diameter. Occiput rather deeply excavated medially. Frons with superficial punctures dorsally, ± smooth ventrally. Face and clypeus punctate and granulate. Gena 0.8× as wide as eye. MI 0.3-0.4. Pronotum with fine superficial punctures dorsally, with largely smooth surface, with fine striae ventrally. Scutellum wider than long, with lateral carina in its basal 0.6-0.8. Hind femur 3.8-4.2× longer than wide. Lateral field of postpetiolus 0.7× as wide as median field, the latter aciculate and punctate. Thyridium about as wide as the interval between thyridia. 2<sup>nd</sup> and 3<sup>rd</sup> tergites punctate, partly granulate, ± aciculate medially.

Color: black. Palps, mandible, clypeus, face, wide frontal orbit, outer orbit, scape ventrally, collar and hind edge or upper margin of pronotum, usually ventral edge of pronotum, lateral and apical margins of scutellum, subtegular ridge, often spot on tegula, apical margins of 1<sup>st</sup> to 2<sup>nd</sup>/3<sup>rd</sup> tergites, apical spots on 3<sup>rd</sup>/4<sup>th</sup> to 5<sup>th</sup>/6<sup>th</sup> tergites, spots on fore and mid coxae and trochanters, often spot on hind coxa, fore and mid legs frontally, hind femur in apical 0.2, often apical spot on hind tibia, sometimes spot on mesopleuron, hind edge of area dentipara and postscutellum yellow.

Hosts: *Sphrageidus similis* (FUESSLY, 1775) (Lep., Noctuidae), *Calliteara pudibunda* (LINNAEUS, 1758) (Lep., Erebidae) (RASNITSYN & SIYTAN 1981).

**Taxonomical remark:** The type of *Ctenichneumon maruyamensis* UCHIDA is larger (body length 18 mm) than other ♂♂ of *S. albiguttata*, but structure and coloration are typical. I saw another Japanese ♂ of *S. albiguttata* (from Nagano Prefecture/Japan in Kanagawa Museum) which confirms the occurrence of this species in Japan, but is smaller with a body length of 11 mm. I synonymize both species here.

***Syspasis carinator* (FABRICIUS, 1798)** (figs 3, 4, 17, 25, 35, 49)

Original: *Ichneumon carinator* FABRICIUS, 1798.

L e c t o t y p e : (♂) *carinator* (Kopenhagen), type not studied.

syn. nov. *Ichneumon rufinus* GRAVENHORST, 1820: 336.

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

syn. *Ichneumon helleri* HOLMGREN, 1878: 167, synonymized by HORSTMANN (2001).

syn. *Ichneumon tenuidens* BERTHOUMIEU, 1904: 13, synonymized with *helleri* by DILLER & HORSTMANN (1997).

M a t e r i a l   e x a m i n e d : 52♀♀ and 24♂♂ from Austria, Bulgaria\*, Czech Republic, France, Georgia\*, Germany, Greece, Italy, Mallorca, Norway, Poland, Russia (Caucasus), Sicilia, Slovakia, Sweden, Switzerland\*, Spain, Turkey, United Kingdom, Uzbekistan\*.

D e s c r i p t i o n : ♀: Body length 9-12 mm. Flagellum moderately lanceolate, with 33-39 flagellomeres; 1<sup>st</sup> flagellomere 2.6-3.0× and 2<sup>nd</sup> flagellomere 2.0-2.3× longer than wide; widest flagellomeres 1.4-1.7× wider than long. Temple strongly and roundly narrowed behind eye. OED 0.8-1.5× ocellar diameter. Frons transversely rugose-punctate dorsally, ± smooth ventrally. Face granulate and punctate. Clypeus moderately convex, with weak subapical medial impression. Gena 0.8× as wide as eye. Mandible with two teeth; lower mandibular tooth smaller and slightly bent inwards. MI 0.8. Hypostomal carina slightly elevated. Mesosoma covered with short whitish hairs. Side of pronotum rugose-punctate dorsally, ± striate ventrally. Mesoscutum finely granulate and densely but superficially punctate, shining. Notaulus impressed in frontal 1/4 of mesoscutum. Mesopleuron densely punctate, partly rugose. Metapleuron punctate, partly rugose. Scutellum slightly elevated, square or wider than long, punctate, with lateral carina in basal 0.2-0.6. Area basalis with strong median tubercle. Area superomedia heart- or horseshoe-shaped, as long or slightly longer than wide, granulate; anterior transverse carina reaching area superomedia at its middle. Area externa densely punctate, partly rugulose. Area petiolaris rugose-punctate, without lateral carina. Hind coxa densely punctate and granulate, with large scopa. Hind femur densely punctate, 3.7-4.3× longer than wide. Hind tibia with few external denticular spurs. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 1-2× their width. Vein m-cu reaching areolet in or slightly distad its middle. Vein 1cu-a interstitial. Metasoma strongly oxyptygous. Postpetiolus strongly widened; lateral field punctate, 0.7-1.0× as wide as median field; median field with 10-15 fine striae (rarely almost smooth). Thyridium transverse, 1.3-2.0× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.80-0.85× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites densely punctate and finely granulate. Ovipositor sheath slender, moderately extending behind metasomal apex (by 0.6-1.3× length of 7<sup>th</sup> tergite).

Color: black. Flagellomeres 7/9-12/13, frontal and outer orbits, rarely entire orbits (except malar space), usually collar and hind edge or upper margin of pronotum, usually spot on subtegular ridge, prescutellar ridge, and sometimes lateral and apical stripes on scutellum ivory. Face sometimes and scape ventrally ± reddish. Coxae and trochanters black; legs otherwise blackish or red; sometimes fore tibia frontally, fore and mid femora apically and fore tibiae and tarsi frontally yellowish. Metasoma entirely chestnut-red or 1<sup>st</sup> tergite ± blackish. Pterostigma dark brown.

♂: Body length 10-13 mm. Flagellum with 34-36 flagellomeres; 1<sup>st</sup> flagellomere 2.2-2.5× and 2<sup>nd</sup> flagellomere 1.8-2.2× longer than wide. Tyloids on flagellomeres 6/7-16/19, oval, maximally 0.8× as long as the flagellomere; apical flagellomeres distinctly separated. OED 0.8-1.2× ocellar diameter. Gena 0.7-0.9× as wide as eye. MI 0.4. Hypostomal

carina slightly elevated. Epicnemial carina sometimes slightly elevated behind fore coxae. Scutellum with lateral carina in basal 0.7-0.8. Hind femur 3.7-4.2× longer than wide. Fore metatarsus without apical tooth. Lateral field of postpetiolus 0.7-0.9× as wide as median field. Gastrocoelus distinctly impressed. Thyridium wide, 1.5-2.0× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.9-1.0× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites rugose-punctate, ± aciculate medially (4<sup>th</sup> tergite only basally).

Color: black. Flagellum sometimes ± reddish ventrally. Palps, base of mandible, side of clypeus, wide facial orbit, spot below antennal sockets, scape ventrally, frontal and outer orbits, collar and hind edge or upper margin of pronotum, sometimes two paramedian stripes on mesoscutum, sometimes spot on mesopleuron, subtegular ridge, prescutellar ridge, often margins of scutellum, spot on fore coxa and rarely on mid coxa yellow. 1<sup>st</sup> tergite black, 2<sup>nd</sup> to 7<sup>th</sup> tergites red, sometimes ± infuscate basally or centrally. Legs blackish or ± red, often fore and mid femora and tibiae yellow frontally, Hind femur ± reddish basally, black apically; hind tibia apically and hind tarsus blackish. Pterostigma dark brown.

Hosts: *Thalera fimbrialis* (SCOPOLI, 1763 (Lep., Geometridae), *Hemithea aestivaria* (HÜBNER, 1789) (Lep., Geometridae), *Selenia dentaria* (FABRICIUS, 1775) (Lep., Geometridae) (RASNITSYN & SIYTAN 1981).

Taxonomical remark: *Syspasis rufinus* (GRAVENHORST) and *S. carinator* (FABRICIUS) (as *helleri*) have been separated in the past (see RASNITSYN & SIYTAN 1981) due to a different form of areolet and coloration of 1<sup>st</sup> tergite and hind femur (both black in *S. carinator* and ± red in *S. rufinus*). I found many intermediate forms in the studied material and therefore consider both taxa as variants of a variable species here.

### ***Syspasis haesitator* (WESMAEL, 1845) (figs 2, 18, 26, 36, 50)**

Original: *Ichneumon haesitator* WESMAEL, 1845: 36.

Lectotype: (♀) 119; Monographie exempl. décrit; *Ichneumon haesitator* ♀ dét. C. Wesmael; Lectotype *Ichneumon haesitator* WES. Tow. '65 (Brussels), type studied.

syn. *Ichneumon operosus* BERTHOUMIEU, 1901: 320, type lost, synonymized by DILLER & HORSTMANN (1997).

Material examined: 10♀♀ and 3♂♂ from Austria, Belgium, Finland, Georgia, Germany, Sweden, Russia Far East.

Description: ♀: Body length 8-10 mm. Flagellum with 28-30 flagellomeres, moderately lanceolate; 1<sup>st</sup> flagellomere 2.1-2.4× and 2<sup>nd</sup> flagellomere 2.0-2.1× longer than wide; 7<sup>th</sup> flagellomeres square; widest flagellomeres 1.5× wider than long. Temple moderately and roundly narrowed behind eye. OED 1.3-2.0× ocellar diameter. Frons transversely rugose-punctate. Face punctate and granulate. Clypeus slightly convex, punctate. Gena densely punctate ventrally, 0.85-0.9× as wide as eye. MI 0.9-1.1. Mesosoma with short pale brownish hairs. Side of pronotum punctate dorsally, striate ventrally. Notaulus indistinctly impressed. Lateral field of mesoscutum densely and superficially punctate and granulate. Mesopleuron punctate, partly striate. Metapleuron punctate. Scutellum wider than long, with scattered punctures, shining, without lateral carina. Horizontal part of propodeum rather long. Area basalis without distinct median tubercle. Area superomedia as long as or slightly longer than wide, hexagonal or halfmoon-shaped, finely rugose; anterior transverse carina indistinct. Area externa punctate and granulate. Area petiolaris transversely rugose, without lateral carina. Hind coxa densely

punctate and granulate, without scopa. Hind femur densely punctate,  $3.5\text{--}3.7\times$  longer than wide. Hind tibia with 2-3 denticular spurs apico-externally. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m  $2\text{--}3\times$  their width; vein 2m-cu reaching its middle. Vein 1cu-a slightly postfurcal. Metasoma oxyptygous. Lateral field of postpetiolus c.  $0.5\times$  as wide as median field, the latter finely rugose or aciculate. Gastrocoelus indistinctly impressed. Thyridium transverse,  $1.5\text{--}2.0\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite  $0.70\text{--}0.77\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites superficially punctate, finely granulate and weakly striate medially. Ovipositor sheath moderately extending behind metasomal apex (by  $0.3\text{--}0.7\times$  length of 7<sup>th</sup> tergite).

Color: black. Stripes or rings on flagellomeres 5/7-11, narrow frontal orbit, and often collar ivory. Vertex sometimes paler but without distinct ivory spot. Scape reddish ventrally. Apical half of postpetiolus and 2<sup>nd</sup> to 4<sup>th</sup> tergites red (4<sup>th</sup> tergite sometimes black in apical half); tergites otherwise black. Coxae and trochanters black; legs otherwise red; hind femur mainly black; hind tibia apically and hind tarsus  $\pm$  blackish. Pterostigma brownish.

♂: Body length 9.5-10.0 mm. Flagellum with 29 flagellomeres, bristle-shaped; 1<sup>st</sup> flagellomere  $2.5\times$  longer than wide. Tyloids on flagellomeres 6/7-12, long-oval, centrally situated, maximally  $0.6\times$  as long as their flagellomeres. Temple moderately and roundly narrowed behind eye. OED  $1.4\times$  ocellar diameter. Frons punctate and granulate dorsally, smooth above antennal sockets. Face densely punctate and granulate, dull. Clypeus densely punctate, apical margin sharp, straight. Gena with dense punctures. Malar space  $0.6\times$  as long as width of mandibular base. Mandible with two teeth, lower tooth small and strongly bent inwards, mandible appearing almost sickle-shaped. Genal carina reaching hypostomal carina away from mandibular base. Mesosoma covered with dense grey hairs. Side of pronotum with very superficial punctures dorsally and with longitudinal rugae ventrally and caudally. Notaulus weakly impressed frontally. Mesoscutum with dense punctures and distinct granulation, dull. Mesopleuron densely punctate, partly rugose; speculum partly smooth and shining. Metapleuron punctate, shining. Juxtacoxal carina present. Scutellum moderately elevated,  $1.3\times$  wider than long, punctate, with lateral carina in basal 0.3. Area basalis with distinct median tubercle. Area superomedia heart-shaped, slightly wider than long; anterior transverse carina distinct, in its middle. Hind femur densely punctate,  $3.6\times$  longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m  $3\times$  their width; vein 2m-cu in its middle. Vein 1cu-a almost interstitial. Postpetiolus moderately widened, without dorsal carina, but median field moderately elevated. Lateral field punctate, median field with fine aciculation. Gastrocoelus narrow. Thyridium large, slightly oblique,  $2.0\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite  $0.85\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites coarsely but superficially punctate, granulate, dull. 4<sup>th</sup> tergite with very superficial punctures,  $\pm$  shining.

Color: black. Palps, often lateral spot on clypeus, facial and frontal orbits, often facial spots below antennal sockets, narrow stripe on vertex, sometimes also on outer orbit and on ventral scape, collar, sometimes hind edge of pronotum, spot on subtegular ridge ivory. Tergites black, sometimes with narrow apical dark reddish shine. Coxae, trochanters and trochantelli black; fore and mid legs otherwise red; hind femur black; hind tibia reddish, infuscate in apical 0.2-0.3; mid and hind tarsi brown to black. Wings hyaline; pterostigma brown.

Host: *Panolis flammea* (DENIS & SCHIFFERMÜLLER, 1775) (Lep., Noctuidae) (SACHTLEBEN 1929).

***Sypsasis leucolomia* (GRAVENHORST, 1829)** (figs 14, 15, 27, 37, 51)

Original: *Ichneumon leucolomius* GRAVENHORST, 1829: 479.

H o l o t y p e : (♀) Oe. (Wroclaw), type not studied.

syn. *Ichneumon dissectus* FONSCOLOMBE, 1847: 404, synonymized by BERTHOUMIEU (1894), not studied.

M a t e r i a l   e x a m i n e d : 13♀♀ and 3♂♂ from Algeria\*, Corse\*, France, Italy, Montenegro\*, Sardinia, Sicily, Spain.

D e s c r i p t i o n : ♀: Body length 11 mm. Flagellum with 40-44 flagellomeres, almost filiform; 1<sup>st</sup> flagellomere 2.7-3.0× and 2<sup>nd</sup> flagellomere 2.0-2.1× longer than wide; widest flagellomeres about square. Temple strongly and roundly narrowed behind eye. OED 1.0-1.1× ocellar diameter. Frons rugose-punctate dorsally. Face densely punctate. Clypeus with scattered punctures, smooth; apical margin with small median tooth. Genal carina sinusoid, weak or absent ventrally; gena distinctly concave in profile, with coarse punctures ventrally, 0.8× as wide as eye. MI 1.0. Mesosoma covered with dense whitish hairs. Side of pronotum with coarse punctures dorsally and coarse striation ventrally and caudally. Notaulus distinctly impressed frontally. Side of mesoscutum with dense, partly scattered punctures, not granulate. Mesopleuron mainly rugose-punctate. Metapleuron rugose-punctate, partly striate. Mesosternum sometimes with scattered punctures. Scutellum about as long as wide, with scattered punctures and lateral carina in basal 0.2-0.5. Area basalis with median tubercle. Area superomedia slightly longer than wide, horse-shoe-shaped, punctate; anterior transverse carina ± distinct, reaching area superomedia in its middle. Area externa densely punctate. Area petiolaris rugose-punctate, without lateral carina. Hind coxa densely punctate, without scopa. Hind femur densely punctate, 3.6-4.3× longer than wide. Hind tibia with c. 3 denticular spurs apico-externally. 3<sup>rd</sup> mid tarsomere 1.7× longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 3× their width; vein 2m-cu in its middle. Vein 1cu-a interstitial. Metasoma semi-oxypygous; hypopygium moderately elongate, about as long as the distance from its apical margin to metasomal apex. Postpetiolus strongly widened apically. Lateral field 0.9× as wide as median field, the latter with c. 8 coarse striae. Thyridium transverse, c. 1.5× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.75-0.8× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites densely and coarsely punctate, 2<sup>nd</sup> tergite longitudinally striate medially (3<sup>rd</sup> tergite only in basal half). Ovipositor sheath shortly extending behind metasomal apex (by 0.3× length of 7<sup>th</sup> tergite).

Color: black. Stripes or rings on flagellomeres 10-15, frontal and outer orbits, collar and hind edge or upper margins of pronotum, subtegular ridge, sometimes two paramedian stripes on mesoscutum, prescutellar ridge, side of scutellum, spot on postscutellum, and frontal stripe on fore tibia ivory. Coxae and trochanters black; legs otherwise black or red; if red, than hind tibia apically and hind tarsus darkened. Mid tibia and apical spots on fore or mid femora often ivory. Petiolus ± black, postpetiolus apically and 2<sup>nd</sup> to 7<sup>th</sup> tergites red. Wings hyaline; pterostigma blackish.

♂: Body length 10-12 mm. Flagellum with 42-45 flagellomeres; 1<sup>st</sup> flagellomere 2.6× and 2<sup>nd</sup> flagellomere 1.8× longer than wide. Tyloids on flagellomeres 7/8-20/22, linear, maximally as long as the flagellomeres. Temple strongly and almost linearly narrowed

behind eye. Occiput strongly excavate medially. Frons partly rugose, smooth ventrally. Face punctate, centrally with granulation. Clypeus large, c.  $1.5\times$  wider than long, with scattered punctures; apical margin with small median tooth. Hypostomal carina  $\pm$  lamelliform elevated. Mesosoma with short whitish hairs. Notaulus distinct frontally. Side of mesoscutum with dense and partly scattered punctures. Mesopleuron punctate, partly rugose. Epicnemial carina slightly elevated. Metapleuron rugose-punctate. Posterior transverse carina of mesosternum with dense comb-like hairs ventrally. Scutellum as long as wide, moderately elevated, with lateral carina in basal 0.3. Area superomedia dome-shaped frontally, longer than wide, punctate or finely rugulose; anterior transverse carina  $\pm$  distinct, posterior to the middle. Hind coxa densely punctate. Hind femur densely punctate,  $4.4\text{--}4.6\times$  longer than wide. Fore metatarsus without apical tooth. Areolet almost quadrilateral, frontal distance between veins 2rs-m and 3rs-m  $1\times$  width. Vein 2m-cu slightly proximad its middle. Vein 1cu-a interstitial. Postpetiolus strongly widened, lateral field  $0.8\text{--}1.0\times$  as wide as median field, the latter with 5-8 coarse longitudinal striae. Thyridium slightly oblique,  $1.5\times$  as wide as the interval between thyridia. 2<sup>nd</sup> tergite  $0.80\text{--}0.85\times$  as long as wide. 2<sup>nd</sup> to 5<sup>th</sup>/6<sup>th</sup> tergites coarsely punctate, 2<sup>nd</sup> and 3<sup>rd</sup> tergites and sometimes 4<sup>th</sup> tergite acuminate medially.

Color: black. Flagellum reddish ventrally. Palps, mandible except teeth, side of clypeus, facial and frontal orbits, outer orbit (sometimes entire orbit except malar space), scape ventrally, propleuron  $\pm$ , collar, hind edge and often frontal margin of pronotum, subtegular ridge, often spot on mesopleuron, mesosternum partly, sides and apex of scutellum, postscutellum, spots on fore and mid coxae and fore and mid legs frontally ivory. Femora, tibiae and tarsi reddish-brown; hind femur apically, hind tibia externally and apically and hind tarsus entirely infusate. Tergites chestnut-red, petiolus and 7<sup>th</sup> tergite  $\pm$  infusate. Pterostigma dark brown to black.

Hosts: unknown.

### ***Syspasis lineator* (FABRICIUS, 1781) (figs 5, 19, 38, 52)**

Original: *Ichneumon lineator* FABRICIUS, 1781: 432.

H o l o t y p e : ( $\sigma$ ) (London), type not studied.

syn. *Ichneumon trilineatus* GMELIN, 1790: 2679, type lost, synonymized by HELLÉN (1936).

syn. *Ichneumon umbraculosus* GRAVENHORST, 1829: 199, synonymized by RASNITSYN (1981).

syn. *Ichneumon binotatus* STEPHENS, 1835: 147, type lost, synonymized by PERKINS (1953).

syn. *Ichneumon brischkii* RATZBURG, 1852: 170, type lost, synonymized by YU & HORSTMANN (1997).

syn. *Ichneumon adulator* TISCHBEIN, 1881: 172, type lost, synonymized by YU & HORSTMANN (1997).

syn. *Ichneumon calculosus* BERTHOUMIEU, 1903, synonymized by DILLER & HORSTMANN (1997).

M a t e r i a l e x a m i n e d : 8♀ and 15♂ from Belgium, France, Japan, Netherlands, Poland, Russia (Siberia), Switzerland, Spain, United Kingdom.

D e s c r i p t i o n : ♀: Body length 12-14 mm. Flagellum with 37-40 flagellomeres, slightly lanceolate; 1<sup>st</sup> flagellomere  $2.9\text{--}3.5\times$  and 2<sup>nd</sup> flagellomere  $2.6\text{--}3.0\times$  longer than wide; widest flagellomeres  $1.0\text{--}1.1\times$  wider than long. Temple strongly and roundly narrowed behind eye. OED  $1.0\times$  ocellar diameter. Frons transversely rugose-punctate, granulate. Face punctate, granulate medially. Clypeus with weak preapical median impression. Gena with scattered punctures ventrally. MI  $0.8\text{--}1.0$ . Hypostomal carina

slightly elevated. Mesosoma with short pale brownish hairs. Side of pronotum finely punctate dorsally and rugose ventrally. Notaulus impressed frontally. Lateral field of mesoscutum with superficial punctures, distinctly granulate, dull. Mesopleuron punctate, partly striate-rugose; speculum smooth. Metapleuron rugose-punctate; juxtacoxal carina usually present. Scutellum moderately elevated, slightly wider than long, with scattered punctures and lateral carina in basal 0.2. Area basalis roundly bulging forward medially. Area superomedia large, finely rugose, slightly longer than wide, horseshoe-shaped, usually open apically; anterior transverse carina posterior to its middle. Area externa punctate or finely rugulose. Area petiolaris finely rugose-punctate, without lateral carinae. Coxae densely punctate; hind coxa with diffusely bordered scopa. Hind femur densely punctate, with scattered punctures ventrally, 3.9-4.3× longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 1-2× their diameter; vein 2m-cu reaching its middle. Vein 1cu-a ± interstitial or slightly postfurcal. Lateral field of postpetiolus c. 0.7× as wide as median field, the latter with c. 12 fine longitudinal striae. Gastrocoelus distinctly impressed, with longitudinal ridges. Thyridium slightly oblique, 1.7-2.5× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.80-0.85× as long as wide. 2<sup>nd</sup> to 3<sup>rd</sup> tergites punctate; 2<sup>nd</sup> tergite aciculate medially and 3<sup>rd</sup> tergite only basally. 4<sup>th</sup> tergite almost smooth. Ovipositor sheath shortly extending behind metasomal apex (by 0.2-0.5× length of 7<sup>th</sup> tergite).

Color: black. Stripes or rings on flagellomeres 8/10-13/14, sometimes facial orbit, usually frontal orbit, usually small spot on vertex, sometimes stripe on outer orbit, sometimes collar, hind edge of pronotum, subtegular ridge, and side of scutellum ivory. Tergites blackish; apical margins of 2<sup>nd</sup> and 3<sup>rd</sup> tergites usually reddish. Legs black, sometimes ± reddish; fore tibia yellowish frontally, mid and hind tibiae ± reddish subbasally. Wings hyaline; pterostigma brown or black.

♂: Body length 10-15 mm. Flagellum with 35-40 flagellomeres, 1<sup>st</sup> flagellomere 2.5× and 2<sup>nd</sup> flagellomere 2.0× longer than wide. Tyloids on flagellomeres 8/10-15/17, linear or long-oval, maximally 0.8× as long as the flagellomere. Temple strongly and roundly narrowed behind eye. OED 0.8-1.0× ocellar diameter. Gena with scattered punctures ventrally, 0.75-0.9× as wide as eye. MI 0.3-0.4. Notaulus indistinct. Mesopleuron punctate, slightly rugose. Metapleuron with scattered punctures centrally. Scutellum wider than long, with lateral carina in basal 0.3-0.6. Area basalis bulged forward medially, but without distinct median tubercle. Area superomedia square or wider than long, horseshoe-shaped; anterior transverse carina posterior to its middle. Area externa finely punctate and granulate. Area petiolaris rugose-punctate, with ± distinct lateral carina. Hind femur densely punctate, 3.5-4.0× longer than wide. Fore metatarsus without apical tooth. Lateral field of postpetiolus 0.7-1.0× as wide as median field, the latter with c. 10 fine longitudinal striae. Thyridium oblique, 2.0-2.6× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.9-1.0× as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites densely punctate and granulate, aciculate medially. 4<sup>th</sup> and 5<sup>th</sup> tergites granulate and often ± punctate.

Color: black. Palps, mandible except teeth, side of clypeus, wide facial orbit, sometimes spot below antennal sockets, frontal and outer orbits, often spot on scape, collar and hind edge or upper margin of pronotum, subtegular ridge, sometimes prescutellar ridge, side of scutellum and sometimes spots on fore and mid coxae ivory. Sometimes 2<sup>nd</sup> tergite ± reddish and tergites with narrow reddish apical margins. Hind coxa sometimes partly reddish; legs reddish or brownish; fore (and mid) tibiae yellow frontally, tarsi ±

infusate. Pterostigma brown or black.

Var. ♂ from Japan: Legs black; fore and mid femora apically and fore and mid tibiae frontally yellowish.

Hosts: *Abraxas grossulariata* (LINNAEUS, 1758) (Lep., Geometridae) (Lausanne, ZSM), *Cucullia* sp. (Lep., Noctuidae) (ZSM).

***Syspasis nigrithorax* nov.sp.** (figs 6, 28, 39, 53)

**H o l o t y p e :** (♀) Usbekistan, Aman-Kutan, 29.V.1997, leg. Dolin (ZSM).

**P a r a t y p e s :** (♀) KGZ, Batken, Distr. Batken, Tokhta-Boz-Geb., E Kyzyl-Ayrak, 40°02'25''N/70°10'42'' E, 1630-1700 m MSL, 15.06.2010, 2010/229 TF, leg. H. u. R. Rausch (Linz); (♀) Kazakhstan mer., Issik 3 km S, 22.-23.6.1992, leg. K. Denes (Linz); (♂) Kirgыз. Kirg. Mt, Ala-Archa river, Kahsasi, VI.1999, coll. V. Gurko (Linz); (♂) Kazakhstan mer., Vaneka 80 km E Djambul, 30.6.92, leg. Jirousek (Linz); (♀) Kirgisistan [Kyrgyzstan], Tschatnal, Ala-Buka Umgeb., 1930 m, 09.VI.1998, leg. W. Dolin (ZSM); (♀) NE Kazakhstan, Sargat Mt./Saur Mts., 2000 m, 12.6.1999, leg. Osipov (coll. Riedel); (♀) Tadzshikistan, Ganishob v., 10 km SW of Tadzshikabad/Peter I mt. 2200 m, 18-21.VI.2003 (coll. Riedel).

**M a t e r i a l   e x a m i n e d :** 5♀♀ and 2♂♂ from Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan.

**D e s c r i p t i o n :** ♀: Body length 8.0-9.5 mm. Flagellum with 32-33 flagellomeres, slightly lanceolate; 1<sup>st</sup> flagellomere 2.2-2.5× and 2<sup>nd</sup> flagellomere 2.0× longer than wide, combined length 0.55× eye length; 9<sup>th</sup> to 11<sup>th</sup> flagellomeres square; widest flagellomeres 1.2-1.3× wider than long. Temple moderately and roundly narrowed behind eye, dorsally 0.5-0.6× as wide as eye. OED 1.0× ocellar diameter. Frons transversely rugose, smooth above antennal grooves. Face densely rugose-punctate. Clypeus moderately convex, punctate; apical margin sharp, straight. Gena with scattered or rather dense punctures ventrally, 0.9-1.0× as wide as eye. MI 0.8-1.0. Genal carina reaching hypostomal carina away from mandibular base, sometimes hypostomal carina slightly elevated. Mesosoma with short pale brownish hairs. Side of pronotum mainly striate-rugose; upper margin punctate. Notaulus impressed at frontal margin of mesoscutum. Mesoscutum densely punctate, shining. Mesopleuron and metapleuron densely punctate, partly rugose-punctate; juxtacoxal carina present. Scutellum moderately elevated, 1.2× wider than long, with rather dense punctures and lateral carina in anterior 0.4-0.7. Area basalis bulging forward medially. Area superomedia horseshoe-shaped, 1.2× wider than long; anterior transversal carina in or slightly posterior its middle. Area externa densely punctate. Area petiolaris rugose, lateral border indicated by irregular rugae. Hind coxa densely punctate and pilose, but without distinct scopa. Hind femur densely punctate, 3.7-4.1× longer than wide. Hind tibia with 7-8 denticular spurs externally. Areolet pentagonal, frontal distance between 2rs-m and 3rs-m 2× their width; vein 2m-cu in or distad its middle. Vein 1cu-a interstitial or slightly antefurcal. Metasoma oxygygous, 2<sup>nd</sup> to 5<sup>th</sup> sternites with median folds. Postpetiolus strongly widened, with weak dorsal carinae. Lateral field 0.8-1.1× as wide as median field, punctate; median field finely aciculate and punctate, sometimes almost smooth. Gastrocoelus distinctly impressed, with oblique ridges. Thyridium almost transverse, 0.9-1.3× as wide as the interval between thyridia. 2<sup>nd</sup> tergite 0.75-0.80× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites densely punctate and ± shining. Ovipositor sheath slightly extending behind metasomal apex (by length of 7<sup>th</sup> tergite).

Color: black. Flagellum black, sometimes weak yellow stripes on flagellomeres 10/12-13. Narrow stripes on inner and outer orbits ivory. Mesosoma entirely black. 1<sup>st</sup> tergite

black; postpetiolus apically and 2<sup>nd</sup> to 7<sup>th</sup> tergites entirely red. Coxae and trochanters black; legs including trochantelli otherwise red; hind tibia narrowly infusate apically (by 0.5× tibial width); hind tarsus brown. Wings ± infusate; pterostigma brownish.

Var. ♀ from Tajikistan: legs black; hind femur black; fore tibia with yellow stripe frontally.

♂: Body length 8.5-9 mm. Flagellum with 33 flagellomeres; 1<sup>st</sup> flagellomere 2.5× longer than wide. Tyloids on flagellomeres 7-14, long-oval, maximally 0.7× as long as their flagellomeres. Temple moderately and roundly narrowed behind eye, dorsally 0.45× as long as eye. Distance between lateral ocellus and eye 0.85-1.0× ocellar diameter. Malar space 0.5-0.6× as long as width of mandibular base. Area superomedia heart- or horse-shoe-shaped, slightly longer than wide or wider than long. Hind femur 4.0-4.1× longer than wide. Thyridium transverse, 1.1-1.25× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.85-0.9× as long as wide. 2<sup>nd</sup> to 5<sup>th</sup> tergites with dense punctures, 6<sup>th</sup> tergite with superficial punctures. Apical margin of hypopygium roundly elongate medially. Structure otherwise as in ♀.

Color: black. Flagellum black. Sometimes hind edge of pronotum with small yellowish spot. Color otherwise as described for the ♀.

Hosts: unknown.

***Sypsaspis nigroapicalis* nov.sp.** (figs 7, 29, 40, 54)

H o l o t y p e : (♀) Ridge Alashan, Yamata Gorge, China, 5-6.V.[1]908, leg. Kozlov [in Russian] (St. Petersburg).

P a r a t y p e : (♀) Enisey Gouv., Usun-shul, A. Jacobson, [back side] 12.IV. (St. Petersburg).

M a t e r i a l e x a m i n e d : 2♀♀ from Russia (Siberia) and Northern China.

D e s c r i p t i o n : ♀: Body length 10.5-11.3 mm. Flagellum moderately lanceolate, with 36 flagellomeres; 1<sup>st</sup> flagellomere 2.0-2.3× and 2<sup>nd</sup> flagellomere 2.0× longer than wide; 8<sup>th</sup> flagellomere square; widest flagellomeres 1.5× wider than long. Temple wide, shortly parallel behind eye and moderately narrowed apically, dorsally 0.65× as wide as eye. OED 1.2-1.4× ocellar diameter. Frons densely rugose-punctate. Face densely punctate. Clypeus rather large, slightly convex, with slightly rounded sharp apical margin and scattered punctures. Mandible with two teeth, lower tooth much smaller than upper one, not bent inwards. MI 0.7-0.8. Genal carina reaching hypostomal carina close to mandibular base (distance 0.3-0.4× length of malar space). Mesosoma covered with short whitish hairs. Side of pronotum densely punctate dorsally and striate in ventral 1/2-2/3; epomia present. Mesoscutum finely granulate and densely punctate, slightly shining. Notaulus shortly impressed on frontal 0.15-0.2 of mesoscutum. Mesopleuron densely punctate, shining; speculum with scattered punctures. Metapleuron punctate, juxtacoxal carina present. Scutellum almost flat, 1.1× wider than long, punctate, with almost complete fine lateral carina. Area basalis with blunt but strong median tubercle. Area superomedia rather large, heart-shaped, as long as wide or slightly longer, smooth, sometimes confluent with area basalis; anterior transverse carina present, reaching area superomedia in its middle. Area externa smooth, punctate. Area petiolaris rugose-punctate, lateral carina distinct. Hind coxa densely punctate, with distinct whitish scopa apicoventrally (0.3× as long as coxa). Hind femur densely punctate, 3.8-3.9× longer than wide. Hind tibia with 6-8 denticular spurs apico-externally. Areolet almost quadrangular, frontal distance

between veins 2rs-m and 3rs-m  $1\times$  their width; vein 2m-cu reaching slightly distad its middle. Vein 1cu-a interstitial. Metasoma strongly oxygygous. Petiolus as wide as high, with transverse striae laterally. Postpetiolus strongly widened, without dorsal carina, lateral carina present behind spiracles. Median field slightly elevated, punctate in apical half, with fine superficial striation in anterior half, lateral fields  $\pm$  punctate. Gastrocoelus impressed, with some longitudinal ridges. Thyridium transverse or slightly oblique,  $1.8-2.0\times$  wider than their interval between thyridia. 2<sup>nd</sup> tergite  $0.8\times$  as long as wide, with dense coarse punctation, aciculate between gastrocoeli. 3<sup>rd</sup> tergite coarsely punctate, 4<sup>th</sup> tergite with finer superficial punctures. Ovipositor sheath slightly extending behind metasomal apex (by  $0.3\times$  length of 7<sup>th</sup> tergite).

Color: black. Mandible except teeth and clypeus red; face  $\pm$  reddish; frontal and vertical orbits with narrow yellow stripes. 8<sup>th</sup> to 13<sup>th</sup> flagellomeres with ivory stripes. Collar, hind edge of pronotum and prescutellar carina ivory. Upper margin of pronotum, tegula, lateral and apical margins of scutellum and apical band of postscutellum dark reddish in paratype, blackish in holotype. 1<sup>st</sup> to 4<sup>th</sup> tergites red (apical 0.3 of 4<sup>th</sup> tergite black in holotype), following tergites black. Coxae and trochanters black; fore and mid coxae in holotype with red spots; mid and hind trochantelli reddish. Fore and mid legs reddish; fore tibia yellowish frontally. Hind femur black, red in basal 0.1-0.2; hind tibia reddish, black in apical 0.3-0.5; hind tarsus brownish. Wings with slightly yellowish infuscation; pterostigma yellowish or ochreous.

♂ unknown.

Hosts: unknown.

***Sypsis nigrotibialis* nov.sp.** (figs 8, 41, 55)

**H o l o t y p e :** (♀) S Kirgizstan, NE Altai Mt. mg., Nura vill., 2000 m 12-15.VII.2001, leg. Osipov (ZSM).

**M a t e r i a l e x a m i n e d :** 1 ♀ from Kyrgyzstan.

**D e s c r i p t i o n :** ♀: Body length 8.7 mm. Flagellum with 37 flagellomeres, slightly lanceolate; 1<sup>st</sup> flagellomere  $2.6\times$  and 2<sup>nd</sup> flagellomere  $2.3\times$  longer than wide, combined length  $0.69\times$  eye length; 13<sup>th</sup> flagellomere square; widest flagellomeres  $1.2\times$  wider than long. Temple strongly and roundly narrowed behind eye, dorsally  $0.5\times$  as wide as eye. OED  $1.2\times$  ocellar diameter. Frons rugose-punctate. Face densely punctate and finely granulate. Clypeus moderately convex, punctate; apical margin sharp, straight. Gena with scattered punctures ventrally. MI 1.1. Mandible with two teeth, lower tooth very small and moderately bent inwards (by  $45^\circ$ ). Genal carina reaching hypostomal carina away from mandibular base, hypostomal carina moderately elevated (by width of distal maxillary palp). Mesosoma covered with brownish hairs. Side of pronotum mainly striate-rugose; upper margin punctate. Epomia strong. Notaulus indistinct. Mesoscutum densely punctate, shining. Mesopleuron and metapleuron densely rugose-punctate; speculum punctate; juxtacoxal carina present. Scutellum moderately elevated, slightly longer than wide, with dense punctures and lateral carina in anterior 0.5. Area basalis with strong median tubercle. Area superomedia heart-shaped,  $1.3\times$  wider than long; anterior transversal carina posterior to its middle. Hind coxa densely punctate, without scopa. Hind femur densely punctate,  $4.4\times$  longer than wide. Hind tibia with c. 10 denticular spurs externally. Areolet quadrilateral, veins 2rs-m and 3rs-m meeting frontally; vein 2m-cu distad its middle. Vein 1cu-a slightly antefurcal. Metasoma oxygygous, 2<sup>nd</sup> to

4<sup>th</sup> sternites with median folds. Postpetiolus strongly widened, without dorsal carinae. Lateral field about as wide as median field, punctate; median field aciculate and punctate. Gastrocoelus distinctly impressed, with longitudinal ridges. Thyridium almost transverse, 1.0× as wide as the interval between thyridia. 2<sup>nd</sup> tergite 0.85× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites densely and coarsely punctate and ± shining; basal third of 2<sup>nd</sup> tergite with coarse striae medially. Ovipositor sheath slightly extending behind metasomal apex.

Color: black. Flagellum black. Narrow stripes on vertex and upper outer orbit ivory. Mesosoma entirely black. 1<sup>st</sup> tergite black; 2<sup>nd</sup> tergite red, black between thyridia. 3<sup>rd</sup> to 6<sup>th</sup> tergites entirely red; 7<sup>th</sup> tergite brownish. Coxae, trochanters and trochantelli black; all femora and fore tibia and tarsus reddish; mid and hind tibiae and tarsi black, hind tibia with dark reddish suffusion internally. Wings with brown infuscation; pterostigma black.

♂ unknown.

Hosts: unknown.

**Taxonomical remark:** This new species is closely related to *S. nigrithorax* nov.sp. It differs by wider malar space, slenderer hind femur and mainly black mid and hind tibiae. This species might only represent a subspecies of *S. nigrithorax*, but more material and the knowledge of the associated ♂ might solve this taxonomical question.

***Syspasis optica* (GRAVENHORST, 1829) (figs 9, 20, 42, 56)**

Original: *Ichneumon opticus* GRAVENHORST, 1829: 131.

Lectotype: (♂) [red] Lectotypus *Ichneumon opticus* GRAVENHORST 1829 ♂ (Wroclaw), type studied.

syn. nov. *Ichneumon simulosus* THOMSON, 1886: 16.

Lectotype: (♀) Hbg; *simulosus* (Lund), lectotype herewith designated, type studied.

syn. nov. *Ichneumon rimulosus* DALLA TORRE, 1902.

Material examined: 3♀♀, 9♂♂; Belgium\*, Finland, Germany, Kazakhstan, Poland, Russia (Dnjepr, Caucasus).

**Description:** ♀: Body length 9-10 mm. Flagellum with 31-32 flagellomeres, slightly lanceolate; 1<sup>st</sup> flagellomere 3.0× and 2<sup>nd</sup> flagellomere 2.5-2.7× longer than wide, combined length 0.70-0.74× eye length; 9<sup>th</sup> flagellomere square; widest flagellomeres 1.3× wider than long. Temple strongly and almost linearly narrowed behind eye. OED 1.5× ocellar diameter. Frons transversely rugose-punctate or with superficial punctures. Face and clypeus punctate and granulate. Gena with superficial punctures, 1.0× as wide as eye. MI 0.9. Mesosoma covered with dense whitish hairs. Side of pronotum punctate dorsally and striate in ventral 2/3. Notaulus impressed frontally. Mesoscutum with superficial punctures, granulate. Mesopleuron densely punctate, with striation caudally and dorsally. Metapleuron punctate, sometimes rugose. Scutellum slightly wider than long, punctate, with lateral carina in basal 0.1-0.3. Area basalis bulged forward medially, without distinct median tubercle. Area superomedia large, heart-shaped, about as long as wide, almost smooth; anterior transverse carina caudal to its middle. Area externa with superficial punctures, granulate. Area petiolaris rugose-punctate, without lateral carina. Hind coxa densely pilose, with large, diffuse apico-ventral scopa. Hind femur with scattered punctures ventrally, 3.7-4.3× longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 2-3× their width; vein 2m-cu slightly distad its middle.

Vein 1cu-a interstitial or slightly postfurcal. Metasoma oxygygous. Lateral field of postpetiolus 0.5-1.0× as wide as median field, the latter with c. 8 coarse longitudinal striae. Thyridium transverse, 1.8-2.5× as wide as the interval between thyridia. 2<sup>nd</sup> tergite 0.75-0.80× as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites with very superficial punctures, granulate; 2<sup>nd</sup> and sometimes 3<sup>rd</sup> tergites ± strongly and widely striate. Ovipositor sheath moderately extending behind metasomal apex (by 0.5-0.7× length of 7<sup>th</sup> tergite).

Color: black. Stripes or rings on flagellomeres 7/8-10/11 yellowish. 1<sup>st</sup> to 3<sup>rd</sup> tergites reddish or brownish, 4<sup>th</sup> tergite sometimes reddish basally, following tergites black. Coxae and trochanters black; femora black or reddish, if reddish, then ± infusate apically; tibiae red or darkened, fore and mid tibiae ochreous frontally; tarsi dark. Pterostigma pale brownish.

♂: Body length 11-12 mm. Flagellum with 32-33 flagellomeres; 1<sup>st</sup> flagellomere 2.5× and 2<sup>nd</sup> flagellomere 2.1-2.2× longer than wide, combined length 0.71-0.72× eye length. Tyloids on flagellomeres 7/9-15/18, linear, maximally 0.7-0.8× as long as the flagellomeres. Temple moderately or strongly and roundly narrowed behind eye. OED 1.5× ocellar diameter. Gena slightly concave ventrally, 0.85-0.9× as wide as eye. MI 0.6. Mesosoma with pale brownish hairs. Scutellum about as long as wide, punctate and shortly striate apically, with lateral carina in basal 0.3-0.7. Area superomedia wider than long, hexagonal or horseshoe-shaped, fine rugulose. Area externa with scattered punctures, almost smooth. Hind femur densely punctate, 3.9-4.3× longer than wide. Fore metatarsus without apical tooth. Wings as in ♀. Lateral field of postpetiolus rugose, 0.8-0.9× as wide as median field, the latter with c. 7-8 coarse longitudinal striae. Gastrocoelus distinct, with longitudinal ridges. Thyridium oblique, 2.0-2.8× wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.85-1.05× as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites with fine superficial rugose-punctuation, dull, acuminate medially. Aciculation on 2<sup>nd</sup> (and sometimes 3<sup>rd</sup> tergite) tergites wide (covering about 2/3 of tergal width).

Color: black. Facial orbit, sometimes frontal orbit in ventral half, outer orbit, spot on vertex, sometimes scape ventrally, collar (sometimes weak), hind edge of pronotum, often spot on subtegular ridge yellow. Tergites black, usually narrowly reddish at apical margins, but sometimes 1<sup>st</sup> to 4<sup>th</sup> tergites dark reddish. Coxae and trochanters blackish. Legs otherwise brownish or reddish; fore and mid legs paler frontally; hind tibia apically and hind tarsus completely blackish. Pterostigma reddish-brown.

Hosts: unknown.

### ***Syspasis puerulus* (KRIECHBAUMER, 1890) (figs 10, 21, 30, 43, 57)**

Original: *Ichneumon puerulus* KRIECHBAUMER, 1890: 182.

H o l o t y p e : (♀) [red] Holotypus; Teg. 9.4.58 ex Krchb; *Numer. pulveraria* L.p.; *Stenichneumon puerulus* (KRCHB.) (ZSM), type studied, previously misidentified as *Ichneumon eburnifrons* (auct. non WESMAEL).

syn. nov. *Coelichneumon derasus* var. *picta* ROMAN, 1904, synonymized with *eburnifrons* auct. by ROMAN (1937: 1-2).

M a t e r i a l e x a m i n e d : 3 ♀♀ 3 ♂♂ from Finland, Georgia\*, Germany, Japan\*, Russia (Karelia), Slovenia\*.

D e s c r i p t i o n : ♀: Body length 10 mm. Flagellum with 32-34 flagellomeres, slightly lanceolate; 1<sup>st</sup> flagellomere 2.7-3.0× and 2<sup>nd</sup> flagellomere 2.8-3.0× longer than wide, combined length 0.6-0.67× eye length; 10<sup>th</sup> to 15<sup>th</sup> flagellomeres square, widest

flagellomeres 1.0-1.2 $\times$  wider than long. Temple moderately and roundly narrowed behind eye. OED 1.0 $\times$  ocellar diameter. Frons almost smooth. Face densely punctate, granulate medially. Clypeus densely punctate. Gena with scattered punctures ventrally, 0.65 $\times$  as wide as eye. MI 0.4. Mesosoma with dense pale hairs. Side of pronotum with very superficial punctures dorsally and with longitudinal rugae ventrally and caudally. Notaulus distinctly impressed frontally. Lateral field of mesoscutum with superficial punctures and distinct granulation, dull. Mesopleuron densely punctate, partly rugose. Metapleuron punctate, shining. Scutellum moderately elevated, slightly wider than long, punctate, without lateral carina. Area basalis wide, without distinct median tubercle. Area superomedia large, horseshoe-shaped, rugulose, but shining, open apically; anterior transverse carina  $\pm$  distinct, caudal to its middle. Area externa with scattered punctures, almost smooth. Area petiolaris densely punctate, with lateral carina. Coxae punctate and granulate; hind coxa densely pilose but without distinct scopa. Hind femur densely punctate, with scattered punctures in ventral third, 3.6-3.7 $\times$  longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 2-3 $\times$  their width. Vein 2m-cu slightly distal to its middle. Vein 1cu-a slightly postfurcal. Metasoma oxygygous. Lateral field of postpetiolus c. 0.5 $\times$  as wide as median field, the latter with c. 10 longitudinal striae. Gastrocoelus narrow. Thyridium transverse, 2.2 $\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.85 $\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites coarsely but superficially punctate, aciculate medially; 4<sup>th</sup> tergite granulate,  $\pm$  shining. Ovipositor sheath slightly extending behind metasomal apex (by 0.2 $\times$  length of 7<sup>th</sup> tergite).

Color: black. Stripes on flagellomeres 6-12 and narrow stripe on frontal orbit yellowish. Tergites and legs brown or black; fore tibia yellowish frontally. Pterostigma brownish, paler proximally.

♂: Body length 10 mm. Flagellum with 30-33 flagellomeres; 1<sup>st</sup> flagellomere 2.2 $\times$  and 2<sup>nd</sup> flagellomere 1.6 $\times$  longer than wide, combined length 0.6 $\times$  eye length. Tyloids on flagellomeres 6/7-12/17, linear, maximally 0.5-0.7 $\times$  as long as the flagellomeres. Temple moderately narrowed behind eye. Frons finely and transversely rugose-punctate, granulate. Clypeus flat, slightly impressed preapically. Gena granulate and superficially punctate, 1.0 $\times$  as wide as eye. MI 0.2-0.3. Mesosoma with dense whitish hairs. Speculum smooth. Scutellum slightly wider than long, with scattered punctures, shining, with lateral carina in basal 0.1-0.3. Area basalis with small median tubercle. Area superomedia slightly longer than wide or wider than long, horseshoe-shaped, almost smooth. Area externa smooth and shining, with scattered punctures. Area petiolaris moderately impressed. Hind femur densely punctate, 3.3-3.6 $\times$  longer than wide. Fore metatarsus without apical tooth. Vein 1cu-a interstitial or slightly postfurcal.

Lateral field of postpetiolus 0.7 $\times$  as wide as median field, the latter with c. 15 fine longitudinal striae, finely granulate or almost smooth. Gastrocoelus indistinct. Thyridium transverse, c.2.2 $\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.85 $\times$  as long as wide. 2<sup>nd</sup> to 4<sup>th</sup> tergites with very superficial punctures, granulate. 2<sup>nd</sup> tergite weakly striate medially.

Color: black. Mandibular base, palps, clypeus, entire face (sometimes with two paramedian black stripes), frontal orbit, outer orbit up to vertex, scape ventrally, collar and upper margin of pronotum, subtegular ridge and posterolateral triangular spot on scutellum yellowish. Coxae and trochanters black; fore and mid legs reddish-brown,  $\pm$  yellowish frontally; hind femur black; hind tibia reddish-brown basally and infusate in apical

0.3-0.5; tarsi  $\pm$  infusate. Pterostigma brown, slightly paler centrally.

Host: *Plagodis pulveraria* (LINNAEUS, 1758) (Lep., Geometridae) (ZSM).

**Taxonomical remark:** *Ichneumon zagoriensis* SCHMIEDEKNECHT was synonymized with *Ichneumon eburnifrons* auct. by ROMAN (1937) and others, but the description does not correlate with this species: inner orbits, spots on vertex, ring on flagellum and stripes of upper margin of pronotum ivory; pterostigma reddish. *I. zagoriensis* remains unrevised.

I saw a male from Japan (from Kanagawa Province: Kanagawa Museum) which showed no morphological differences to the description of ♂ above, but differs from West Palaearctic ♂♂ by the coloration of legs: fore and mid femora black; fore and mid tibiae and tarsi black, with yellowish frontal stripes; hind leg entirely black. Its color pattern is otherwise similar. It is the first report of this species from the Eastern Palaearctic region.

***Sypsis scutellator* (GRAVENHORST, 1829)** (figs 11, 22, 31, 44, 58)

Original: *Ichneumon scutellator* GRAVENHORST, 1829: 175.

Lectotype: (♀) OE. (Wroclaw), type not studied.

syn. *Ichneumon scutellator* var. *iberica* SEYRIG, 1927, synonymized by SELFA (1995: 436).

**Material examined:** 99♀♀ and 48♂♂ from Andorra, Austria, Belgium, Bulgaria, Czech Republic, Germany, France, Greece\*, Italy, Kyrgyzstan\*, Poland, Romania, Russia (Karelia, Altai, Irkutsk, Russia Far East), Switzerland, Sicily, Spain, Tunisia, Turkey.

**Description:** ♀: Body length 11-13 mm. Flagellum with 35-38 flagellomeres, moderately lanceolate; 1<sup>st</sup> flagellomere 3.3-3.8 $\times$  and 2<sup>nd</sup> flagellomere 2.6-2.8 $\times$  longer than wide, combined length 0.78-0.85 $\times$  eye length; widest flagellomeres 1.2-1.5 $\times$  wider than long. Temple parallel behind eye and slightly narrowed apically. OED 1.5-2.0 $\times$  ocellar diameter. Frons finely punctate or rugose-punctate. Face punctate and granulate. Clypeus large, 1.8 $\times$  wider than long, apical margins slightly thickened and slightly impressed medially. Gena densely punctate, 1.1 $\times$  wider than eye. MI 1.0-1.2. Lower mandibular teeth moderately turned inwards (by 45°). Genal carina reaching hypostomal carina close to mandibular base; hypostomal carina slightly elevated. Mesosoma covered with short whitish hairs. Side of pronotum punctate dorsally and striate ventrally. Notaulus impressed frontally. Lateral field of mesoscutum densely punctate and granulate. Mesopleuron densely punctate, partly rugose. Metapleuron punctate, partly rugose, juxtacoxal carina  $\pm$  distinct. Scutellum wider than long, moderately elevated, densely punctate, without lateral carina. Area basalis with small and sometimes indistinct median tubercle. Area superomedia heart-shaped, as long or slightly longer than wide, rugose; anterior transverse carina sometimes indistinct, in or caudal to its middle. Area externa punctate and granulate. Area petiolaris rugose or transversely striate, with lateral carina. Hind coxa densely punctate and granulate, with small, often diffuse apico-ventral scopa (c.0.25 $\times$  coxal length). Hind femur densely punctate, (4.0-) 4.3-4.5 $\times$  longer than wide. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 1-2 $\times$  their diameter; vein 2m-cu reaching its middle. Vein 1cu-a interstitial or slightly postfurcal. Metasoma oxypygous. Lateral field of postpetiolus rugose-punctate, 0.6-0.8 $\times$  as wide as median field, the latter with fine longitudinal striae or rugae. Gastrocoelus distinct, with longitudinal ridges. Thyridium transverse or slightly oblique, 1.5-3.0 $\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite 0.85-1.0 $\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites densely rugose-punctate,  $\pm$  dull. 4<sup>th</sup> and 5<sup>th</sup> tergites with superficial punctures, 5<sup>th</sup> tergite often

almost smooth. Ovipositor sheath slightly widened apically and distinctly extending metasomal apex (by 0.8-1.0× length of 7<sup>th</sup> tergite).

Color: black. Basal flagellomeres often pale apically or ± reddish. Stripes or rings on flagellomeres 7/8-12 (sometimes reduced), sometimes side of clypeus, frontal orbit, small spot on vertex, rarely collar, sometimes upper margin or hind edge of pronotum, sometimes spot on subtegular ridge, side of scutellum, rarely postscutellum, often fore femur apically and fore tibia frontally ivory. Coxae and trochanters black, sometimes fore and mid coxae ± reddish. Legs otherwise red; hind tarsus ± infuscate. Tergites black, sometimes postpetiolus, 2<sup>nd</sup> and 3<sup>rd</sup> tergites and base of 4<sup>th</sup> tergite dark reddish or with reddish apical bands. Wings slightly infuscate; pterostigma yellowish or ochreous.

♂: Body length 12-13 mm. Flagellum with 35-38 flagellomeres; 1<sup>st</sup> flagellomere 2.5× and 2<sup>nd</sup> flagellomere 2.1× longer than wide, combined length 0.65× eye length. Tyloids on flagellomeres 7/9-15/17, linear, maximally as long as their flagellomeres. OED 1.0-1.5× ocellar diameter. Frons transversely rugose-punctate. Gena 1.1-1.3× as wide as eye. MI 0.6-0.7. Mesosoma with short pale hairs. Scutellum wider than long, moderately elevated, densely punctate, with lateral carina in basal 0.2-0.5. Coxae densely punctate and granulate, with dense pilosity. Hind femur 3.9-4.1× longer than wide. Fore metatarsus without apical tooth. Lateral field of postpetiolus granulate, 0.5-0.7× as wide as median field. Thyridium slightly oblique, 1.5-2.5× wider than the interval between thyridia. 2<sup>nd</sup> tergite 1.0-1.1× longer than wide. 2<sup>nd</sup> to 4<sup>th</sup>/5<sup>th</sup> tergites superficially rugose-punctate, 2<sup>nd</sup> tergite basally striate.

Color: black. Flagellum reddish or ochreous ventrally. Usually face and clypeus (sometimes except black median stripes), mandibular base, palps, frontal orbit, stripe on vertex, often spot on outer orbit, usually scape ventrally, collar and upper margin of pronotum, subtegular ridge, side of scutellum, often postscutellum, usually fore and mid coxae mainly, and sometimes apical spot on postpetiolus yellow. 2<sup>nd</sup> to 4<sup>th</sup> tergites often diffusely dark reddish. Coxae black, trochanters often ± reddish. Legs otherwise red; fore and mid tibiae yellowish frontally, hind tibia often infuscate apically; hind tarsus blackish. Pterostigma yellow or brownish.

Hosts: *Euproctis chrysorrhoea* (LINNAEUS, 1758) (Lep., Erebidae), *Abraxas grossulariata* (LINNAEUS, 1758) (Lep., Geometridae), *Panolis flammea* (DENIS & SCHIFFERMÜLLER, 1775) (Lep., Noctuidae) (RASNITSYN & SIYTAN 1981).

***Syspasis sinensis* nov.sp.** (figs 12, 32, 45, 60)

**H o l o t y p e :** (♀) China, Beijing munic., Xiaolongmen Nat. Park, 39.58°N 115.26°E, 4-10.VI.2016, leg. E. Jendek & O. Sausa (Linz).

**M a t e r i a l   e x a m i n e d :** 1♀ from Northern China.

**D e s c r i p t i o n :** ♀: Body length 11 mm. Flagellum moderately lanceolate, with 36 flagellomeres; 1<sup>st</sup> flagellomere 2.0× and 2<sup>nd</sup> flagellomere 2.1× longer than wide, combined length 0.48× eye length, c. 11<sup>th</sup> flagellomere square, widest flagellomeres 1.5× wider than long. Temple slightly and roundly narrowed behind eye. OED 1.5× ocellar diameter. Frons densely punctate, transversely rugose medially. Face densely punctate, finely granulate. Clypeus slightly convex, with scattered punctures, shining. Mandible with two teeth; lower tooth very small and slightly bent inwards. MI 1.0. Gena 0.8× as wide eye, with scattered punctures ventrally. Genal carina reaching hypostomal carina

far from mandibular base; hypostomal and genal carinae low. Mesosoma covered with pale brownish hairs. Mesoscutum densely punctate, finely granulate anteromedially. Mesopleuron and metapleuron coarsely and densely punctate, speculum with finer punctures; juxtacoxal carina present. Scutellum slightly elevated, about as long as wide, with fine punctures and lateral carina in anterior 0.2. Propodeum  $\pm$  sloping apically. Area basalis with median tubercle anteriorly. Area superomedia heart-shaped, as long as wide; anterior transversal carina posterior its middle. Hind coxa densely punctate and pilose ventrally, but without distinct scopa. Hind femur densely punctate,  $4.0\times$  longer than wide. Claws not pectinate. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m  $1-2\times$  their width; vein 2m-cu in the middle. Vein 1cu-a interstitial. Metasoma strongly oxypygous. Postpetiolus moderately widened, without distinct dorsal carina; median field  $1.4\times$  as wide as lateral field, finely aciculate, lateral field punctate. Gastrocoelus strongly impressed, with strong ridges. Thyridium almost transverse,  $1.4\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite  $0.82\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites densely rugose-punctate, widely striate medially, 3<sup>rd</sup> tergite only in basal third. 4<sup>th</sup> tergite densely punctate and shining, 5<sup>th</sup> tergite with superficial punctures. Ovipositor sheath reaching behind metasomal apex by  $0.5\times$  length of 7<sup>th</sup> tergite.

Color: black. Flagellomeres 8-13 with ivory rings. Narrow stripes on frontal and upper outer orbits yellowish. Mesosoma entirely black. Petiolus black; postpetiolus and entire 2<sup>nd</sup> and 3<sup>rd</sup> tergites red, 4<sup>th</sup> tergite only laterally. Legs black; fore femur apically and fore tibia and tarsus frontally ochreous. Wings slightly infuscate; pterostigma brown, paler centrally.

♂ unknown.

Hosts: unknown.

**Taxonomical remark:** This new species resembles *Syspasis optica* (GRAVENHORST) which has been found in Europe and Kazakhstan so far. *S. optica* differs from this species by slenderer basal flagellomeres and distinctly and linearly narrowed temple. I propose a new species here, but it is not impossible that the Chinese material represents an East Palaearctic subspecies of *S. optica*.

***Syspasis tauma* (HEINRICH, 1951) (figs 13, 23, 33, 46, 59)**

Original: *Coelichneumon tauma* HEINRICH, 1951: 253, transferred to *Syspasis* by HEINRICH (1969).

**H o l o t y p e :** (♀) [red] Holotypus; *Stenichneumon tauma* ♀ HEINR. det Heinrich; Kaiserau (Admont) Steiermark 1100 m, 10.6.50; [red] Typus Nr. Hym 731 Zoologische Staatssammlung München (ZSM), type studied.

**M a t e r i a l   e x a m i n e d :** Holarctic; 28♀♀ and 3♂♂ from Austria, Germany, Finland, Norway\*, Poland, Sweden, Switzerland\*.

**D e s c r i p t i o n :** ♀: Body length 10-13 mm. Flagellum with 34-38 flagellomeres, moderately lanceolate; 1<sup>st</sup> flagellomere  $2.5-2.8\times$  and 2<sup>nd</sup> flagellomere  $2.1-2.5\times$  longer than wide, combined length  $0.60-0.71\times$  eye length; c. 8<sup>th</sup> flagellomeres square, widest flagellomeres  $1.5-2.0\times$  wider than long. Temple distinctly and roundly narrowed behind eye. OED  $1.3-1.6\times$  ocellar diameter. Frons transversely rugose-punctate and granulate. Face punctate, with granulation medially. Clypeus coarsely punctate, finely and longitudinally rugose medially, smooth. Gena  $1.1\times$  wider than eye, with  $\pm$  scattered punctures ventrally. MI  $1.0-1.1$ . Mesosoma with short pale hairs. Side of pronotum with granulation and superficial punctures dorsally and striate ventrally. Notaulus distinctly

impressed frontally. Lateral field of mesoscutum with superficial punctures and coarse granulation, dull. Mesopleuron punctate, partly with longitudinal rugae. Metapleuron punctate,  $\pm$  rugose; juxtacoxal carina present. Scutellum wider than long, moderately elevated, with scattered punctures, without lateral carina. Area superomedia large, about as long as wide or slightly wider, horseshoe-shaped, almost smooth, often open apically; anterior transverse carina reaching it caudal to its middle. Area externa punctate and granulate or with fine transverse striae. Area petiolaris punctate, sometimes  $\pm$  smoothened, without lateral carina. Coxae densely punctate and granulate; hind coxa with large distinct scopa apico-ventrally ( $1/2$ - $2/5\times$  of coxal length). Hind femur with scattered punctures in ventral third,  $3.4$ - $3.8\times$  longer than wide. Areolet pentagonal, frontal distance between veins  $2rs-m$  and  $3rs-m$   $3$ - $4\times$  their width. Vein  $2m-cu$  reaching in or slightly distal to its middle. Vein  $1cu-a$  usually interstitial. Metasoma oxygygous. Postpetiolus strongly widened apically; lateral field  $0.5$ - $0.7\times$  as wide as median field, the latter with c. 15 fine longitudinal striae. Thyridium slightly oblique, c.  $2.0\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite  $0.87$ - $0.9\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites punctate and with fine granulation; 2<sup>nd</sup> tergite with longitudinal rugae medially, 3<sup>rd</sup> tergite only basally. 4<sup>th</sup> tergite almost smooth or with superficial punctures. Ovipositor sheath slightly reaching behind metasomal apex by  $0.2$ - $0.5\times$  of 7<sup>th</sup> tergite length.

Color: brown or black. Stripes or rings on flagellomeres 7-12/14, usually facial orbit opposite of antennal grooves, collar and hind edge or upper margin of pronotum, subtegular ridge and sides of scutellum ivory. Metasoma black or dark brown; usually 2<sup>nd</sup> tergite  $\pm$  reddish, rarely also postpetiolus and base of 3<sup>rd</sup> tergite reddish. Coxae and trochanters black; legs otherwise blackish or brownish; fore femur apically and fore tibia frontally yellowish; hind tibia ochreous subbasally. Pterostigma brown.

♂: Body length 13-14 mm. Flagellum with 37 flagellomeres; 1<sup>st</sup> flagellomere  $2.4\times$  and 2<sup>nd</sup> flagellomere  $2.1\times$  longer than wide. Tyloids on flagellomeres 9-14/15, long-oval, maximally  $0.7\times$  as long as their flagellomeres. Temple moderately and roundly narrowed behind eye. OED  $1.0\times$  ocellar diameter. Frons rugose-punctate dorsally and smooth ventrally. Face punctate, with granulation medially. Clypeus coarsely punctate, with some longitudinal rugae and slightly impressed subapically. Gena with scattered punctures ventrally,  $0.8\times$  as wide as eye. MI 0.5. Mesosoma with short pale brownish hairs. Side of pronotum densely punctate and granulate dorsally and striate ventrally. Lateral field of mesoscutum with fine rather superficial punctures, strongly granulate and dull. Mesopleuron densely punctate, partly rugose. Metapleuron densely punctate and partly rugose. Scutellum moderately elevated, slightly wider than long, punctate, without lateral carina (1 ex. with carina in basal 0.7). Area basalis without distinct median tubercle. Area superomedia large, halfmoon-shaped; costula caudal to its middle. Area petiolaris centrally impressed, with superficial rugae, lateral carina incomplete. Coxae and femora densely punctate. Hind femur  $3.6\times$  longer than wide. Areolet pentagonal, frontal distance between veins  $2rs-m$  and  $3rs-m$   $2\times$  their width, vein  $2m-cu$  in its middle. Vein  $1cu-a$  almost interstitial. Postpetiolus strongly widened; lateral field c.  $0.9\times$  as wide as median field, the latter with c. 10 longitudinal striae. Thyridium oblique,  $2.0\times$  wider than the interval between thyridia. 2<sup>nd</sup> tergite  $0.95\times$  as long as wide. 2<sup>nd</sup> and 3<sup>rd</sup> tergites longitudinally rugose-punctate. 4<sup>th</sup> and 5<sup>th</sup> tergites with superficial punctures and granulation.

Color: black. Stripes on flagellomeres 13/15-16/19, base of mandible, side of clypeus, wide facial orbit, spots below antennal grooves, frontal orbit, outer orbit up to vertex,

collar and wide upper margin of pronotum, subtegular ridge, prescutellar carina, side of scutellum (often confluent apically), spot on fore coxa, fore and mid femora apically and fore and mid tibiae frontally yellow. Legs otherwise black or reddish; if reddish, than hind femur apically, hind tibia externally and complete hind tarsus black. Pterostigma brown.

Host: *Choristoneura fumiferana* CLEMENS, 1865 (Lep. Tortricidae) (RASNITSYN & SIYTAN 1981)

**Taxonomical remark:** BAUER (1999: 337) described a ♂ as *S. tauma* which belongs to a different species.

### Zusammenfassung

In der vorliegenden Arbeit werden die paläarktischen Arten der Gattung *Syspasis* TOWNES (Hymenoptera, Ichneumonidae, Ichneumoninae) revidiert. 13 Arten werden als valide beschrieben.

Vier Arten aus der ostpaäarktischen Region sind neu: *Syspasis nigrithorax* nov.sp., *Syspasis nigroapicalis* nov.sp., *Syspasis nigrotibialis* nov.sp. und *Syspasis sinensis* nov.sp.

Folgende neue Synonyme werden festgestellt: *Ctenichneumon maruyamensis* UCHIDA, 1930 ist synonym zu *Syspasis albiguttata* (GRAVENHORST, 1820); *Ichneumon rufinus* GRAVENHORST, 1820 ist synonym zu *Syspasis carinator* (FABRICIUS, 1798); *Ichneumon simulosus* THOMSON, 1886 und *Ichneumon rimulosus* DALLA TORRE, 1902 sind Synonyme von *Syspasis optica* (GRAVENHORST, 1829) und *Coelichneumon derasus* var. *picta* ROMAN, 1904 ist synonym zu *Syspasis puerulus* (KRIECHBAUMER, 1890).

Alle Arten werden ausführlich beschrieben und in einem Bestimmungsschlüssel für ♀♀ und ♂♂ differenziert.

### Acknowledgment

I thank E. Ockermüller and M. Schwarz (Biologiezentrum Linz/Austria) and S. Schmidt (Zoologisches Museum München/Germany) for their kind help and allowance to study their collections of Palaearctic Ichneumoninae. Also, I thank D.R. Kasparyan (St. Peterburg/Russia) for the loan of the *Syspasis* material from St. Petersburg, M. Wanat (Wroclaw/Poland) for the loan of Gravenhorst types and K. Watanabe (Kanagawa/Japan) for the loan of Japanese material. I am also indebted to all private collectors who sent their material for determination.

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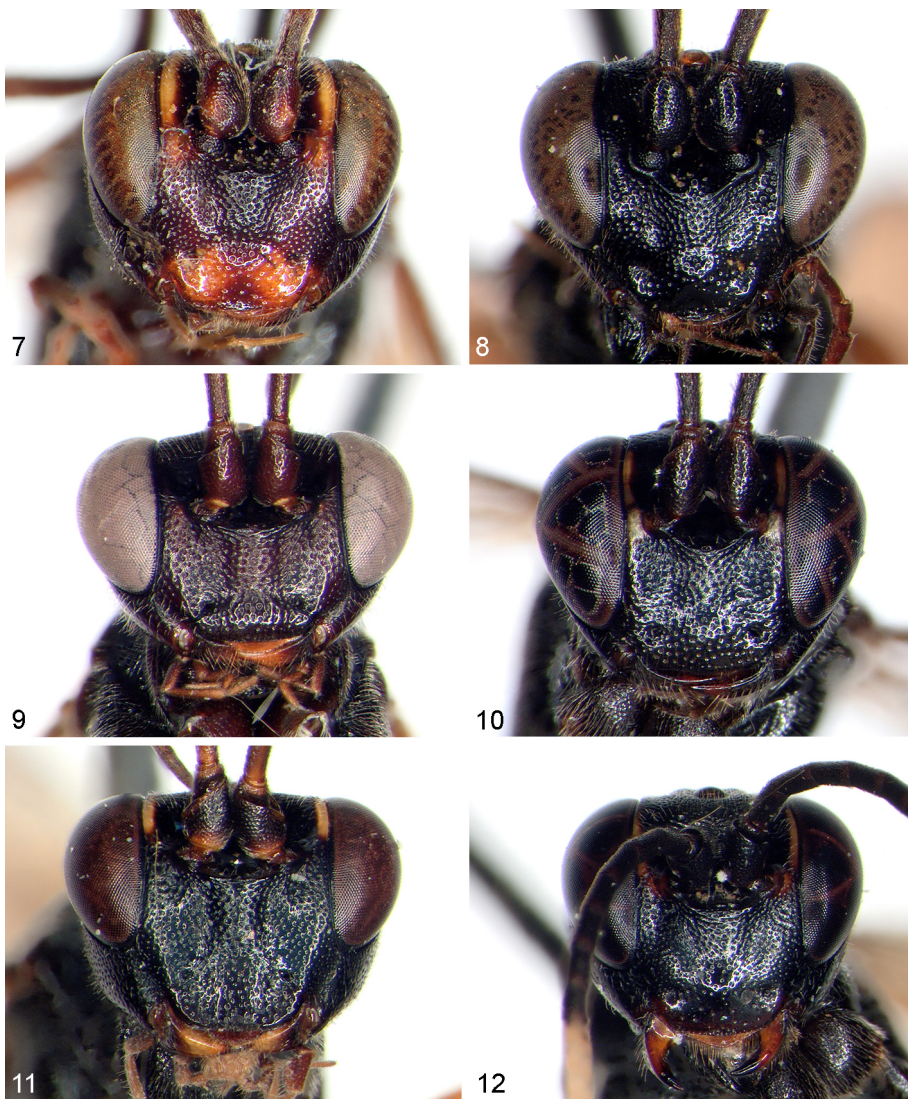
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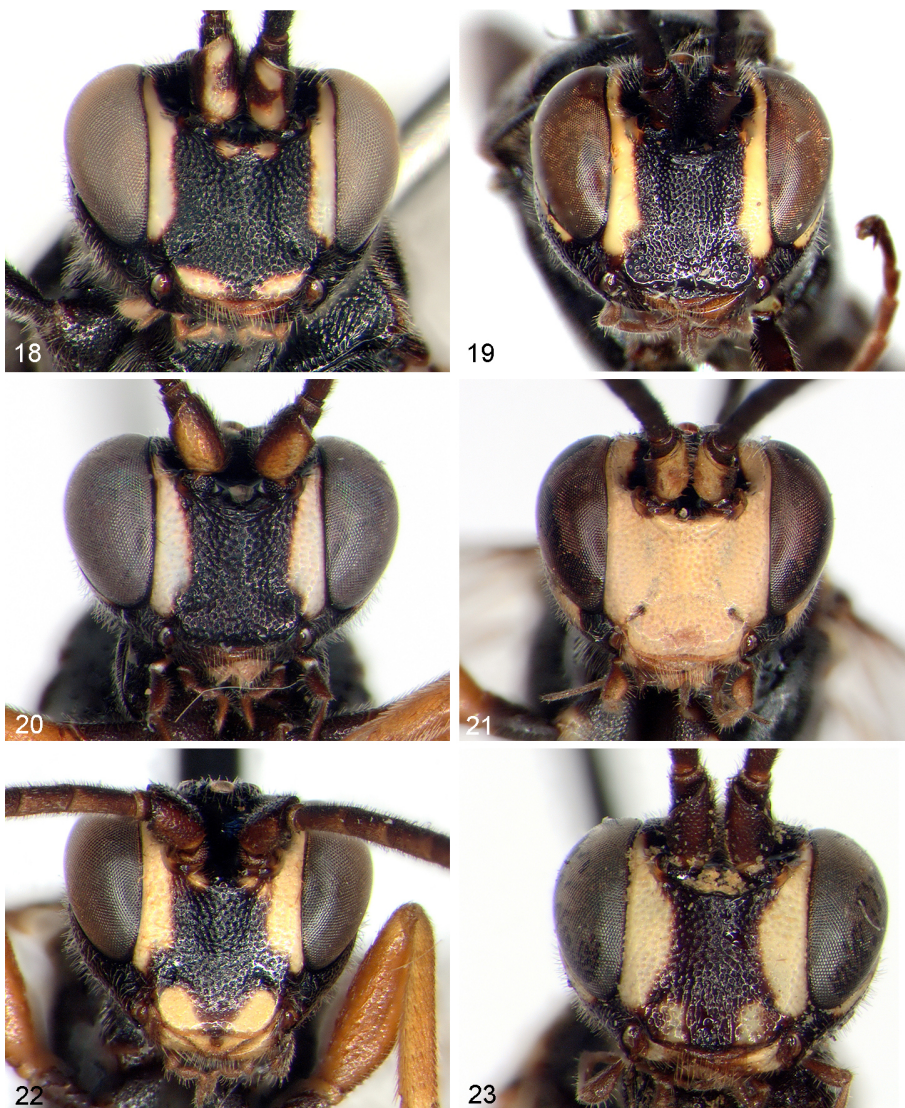
**Figs 1-6:** Faces of ♀♀ of: (1) *Syspasis alboguttata* (GRAVENHORST); (2) *S. haesitator* (WESMAEL); (3 + 4) *S. carinator* (FABRICIUS); (5) *S. lineator* (FABRICIUS); (6) *S. nigrithorax* nov.sp. holotype (HT).



**Figs 7-12:** Faces of ♀♀ of: (7) *S. nigroapicalis* nov.sp. paratype; (8) *S. nigrotibialis* nov.sp. HT; (9) *S. optica* (GRAVENHORST); (10) *S. puerulus* (KRIECHBAUMER); (11) *S. scutellator* (GRAVENHORST); (12) *S. sinensis* nov.sp. HT.



**Figs 13-14:** Faces of ♀♀ of: (13) *S. tauma* (HEINRICH); (14) *S. leucolomia* (GRAVENHORST). **Fig. 15:** Head of *S. leucolomia* (GRAVENHORST) from lateral: genal carina absent ventrally; clypeus with median tooth. **Figs 16-17:** Faces of ♂♂ of: (16) *S. albiguttata* (GRAVENHORST); (17) *S. carinator* (FABRICIUS).



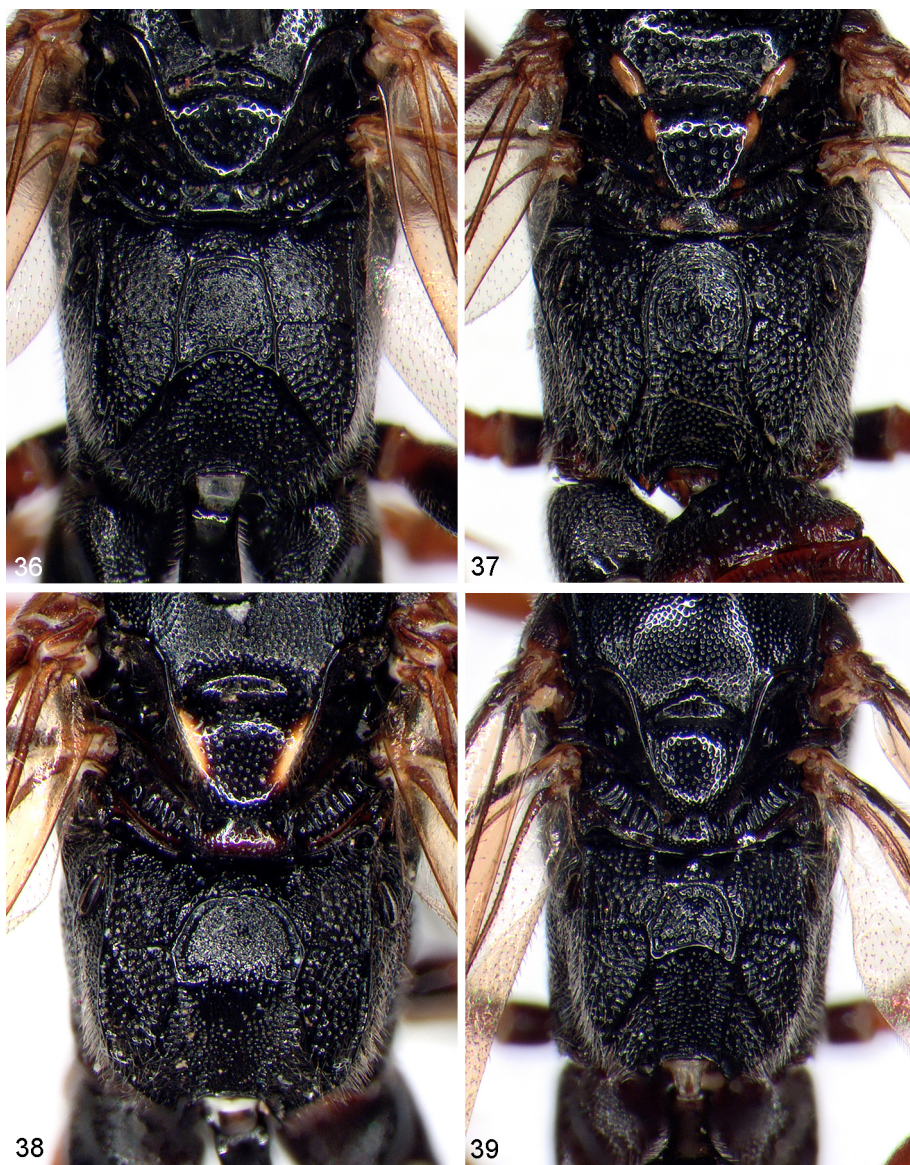
**Figs 18-23:** Faces of ♂♂ of: (18) *S. haesitator* (WESMAEL); (19) *S. lineator* (FABRICIUS); (20) *S. optica* (GRAVENHORST); (21) *S. puerulus* (KRIECHBAUMER); (22) *S. scutellator* (GRAVENHORST); (23) *S. tauma* (HEINRICH).



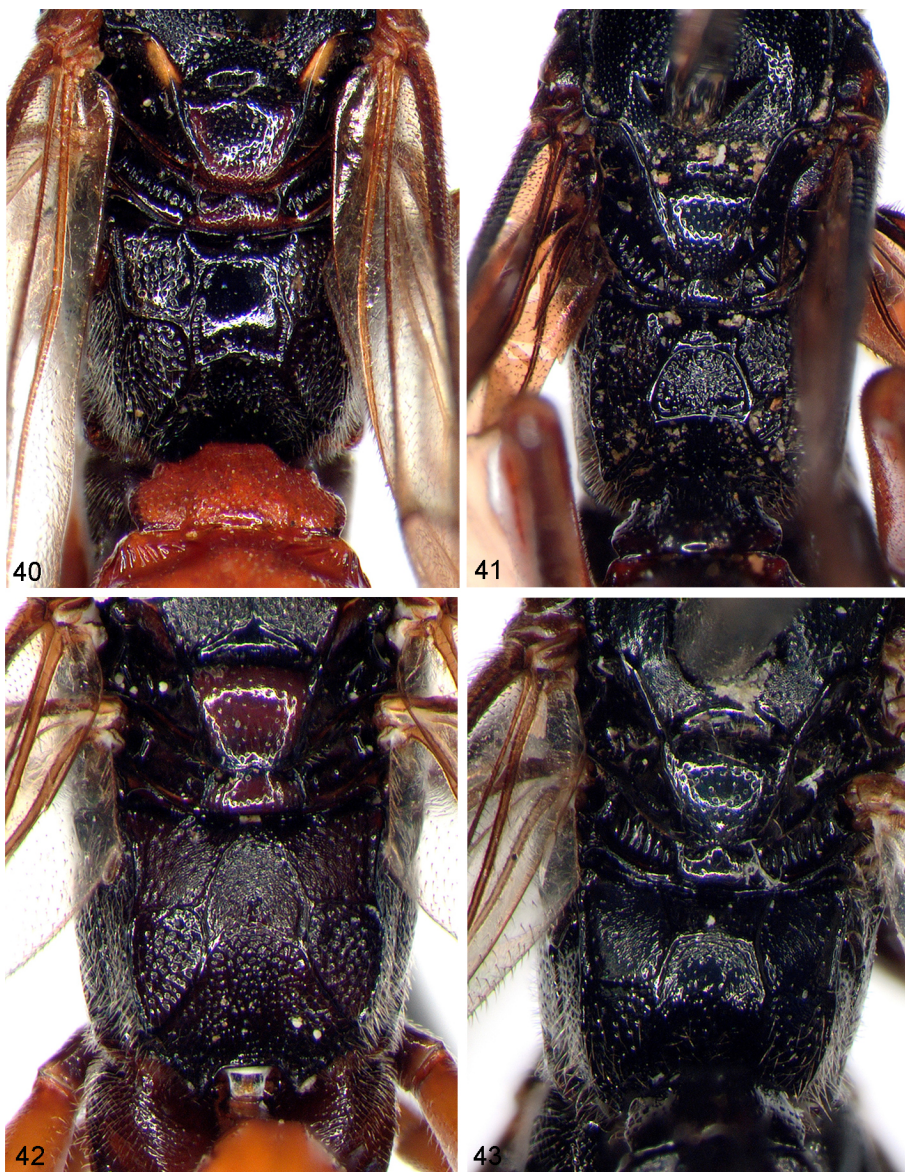
**Figs 24-29:** Heads from dorsal of ♀♀ of: (24) *S. albiguttata* (GRAVENHORST); (25) *S. carinator* (FABRICIUS); (26) *S. haesitator* (WESMAEL); (27) *S. leucolomia* (GRAVENHORST); (28) *S. nigrithorax* nov.sp. HT; (29) *S. nigroapicalis* nov.sp. HT.



**Figs 30-33:** Heads from dorsal of ♀♀ of: (30) *S. puerulus* (KRIECHBAUMER); (31) *S. scutellator* (GRAVENHORST); (32) *S. sinensis* nov.sp. HT; (33) *S. tauma* (HEINRICH). **Figs 34-35:** Propodeum of ♀♀ of: (34) *S. albiguttata* (GRAVENHORST); (35) *S. carinator* (FABRICIUS).



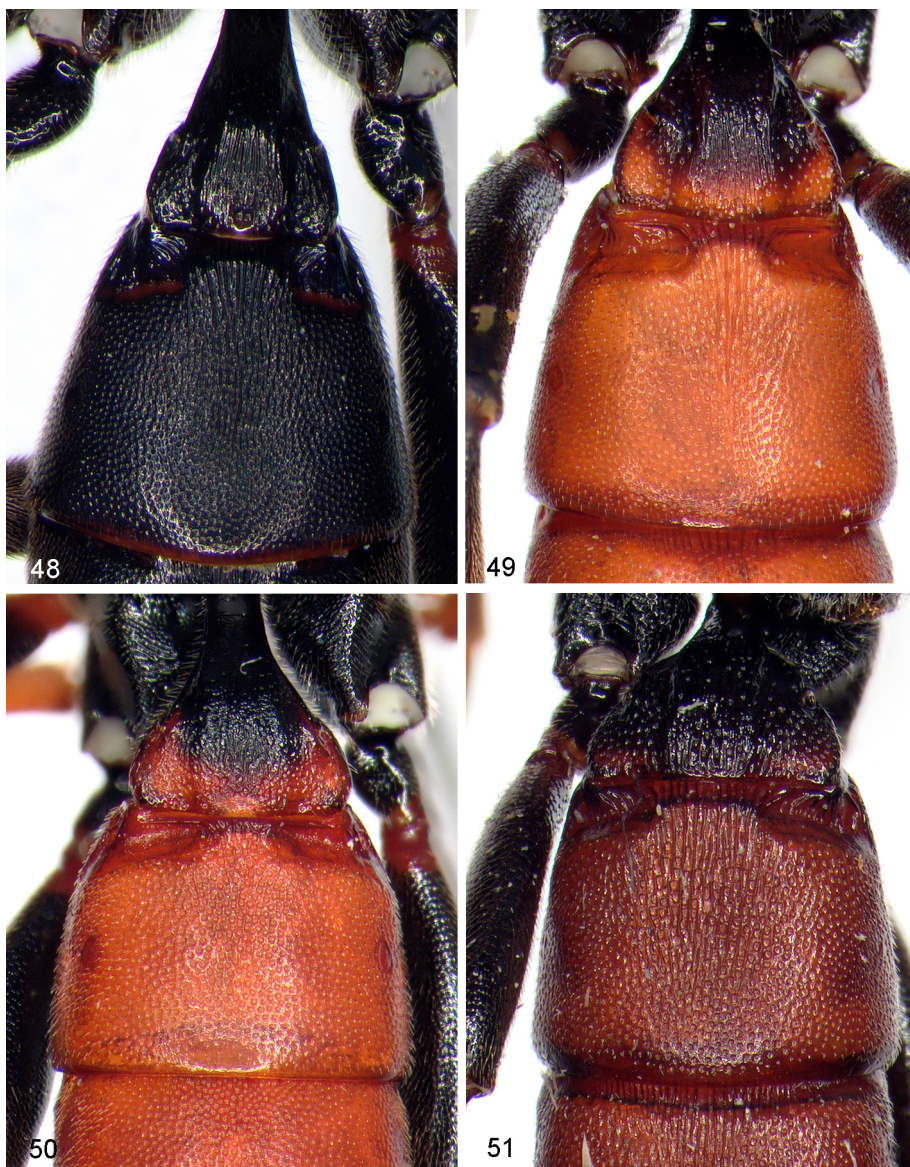
**Figs 36-39:** Propodeum of ♀♀ of: (36) *S. haesitator* (WESMAEL); (37) *S. leucolomia* (GRAVENHORST); (38) *S. lineator* (FABRICIUS); (39) *S. nigrithorax* nov.sp. HT.



**Figs 40–43:** Propodeum of ♀♀ of: (40) *S. nigroapicalis* nov.sp. HT; (41) *S. nigrotibialis* nov.sp. HT; (42) *S. optica* (GRAVENHORST); (43) *S. puerulus* (KRIECHBAUMER).



**Figs 44-46:** Propodeum of ♀♀ of: (44) *S. scutellator* (GRAVENHORST); (45) *S. sinensis* nov.sp. HT; (46) *S. tauma* (HEINRICH). **Fig. 47:** Propodeum of ♂ of *S. puerulus* (KRIECHBAUMER).



**Figs 48-51:** Basal tergites ♀♀ of: (48) *S. albiguttata* (GRAVENHORST); (49) *S. carinator* (FABRICIUS); (50) *S. haesitator* (WESMAEL); (51) *S. leucolomia* (GRAVENHORST).



**Figs 52-55:** Basal tergites ♀♀ of: (52) *S. lineator* (FABRICIUS); (53) *S. nigithorax* nov.sp. HT; (54) *S. nigroapicalis* nov.sp. HT; (55) *S. nigrotibialis* nov.sp. HT.



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**Figs 56-60:** Basal tergites ♀♀ of:  
 (56) *S. optica* (GRAVENHORST);  
 (57) *S. puerulus* (KRIECHBAUMER);  
 (58) *S. scutellator* (GRAVENHORST);  
 (59) *S. tauma* (HEINRICH); (60) *S. sinensis* nov.sp. HT.

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