Contribution to the knowledge of the Ichneumoninae (Hymenoptera, Ichneumonidae) of Yemen

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A b s t r a c t : Faunistic and taxonomical data of nine Ichneumoninae species (Hymenoptera, Ichneumonidae) collected in Yemen are presented, all are new records for the fauna of this country. One genus, three species, and one subspecies are new: *Epomiator* gen. nov., *Epomiator yemeniticus* nov.sp., *Spilothyrateles arabicus* nov.sp., *Stenaoplus harteni* nov.sp., and *Lissosculpta tangana yemeniticus* ssp. nov. The new species are described and illustrated.

K e y w o r d s : Ichneumonidae, Ichneumoninae, Yemen, Arabian Peninsula, new species

Introduction

The Hymenoptera fauna of the Arabian Peninsula is very incompletely known. Although the family Ichneumonidae represents one of the largest and most diverse groups of Hymenoptera in most countries, not more than nine species have been reported from Yemen so far (Yu et al. 2016).

In the last years, collections of Hymenoptera have been performed by A. VAN HARTEN using Malaise traps in several parts of Yemen. I had the opportunity to sort his material in the Nationaal Natuurhistorisch Museum Naturalis in Leiden/Netherlands (Leiden) and found several species of the subfamily Ichneumoninae. Also, one additional specimen from the Biologiezentrum Linz/Austria (Linz) was included.

Material and methods

Most of the material is housed in Leiden or Linz, some paratypes in the collection of the author. The distributional data were taken from YU et al (2016).

For the descriptions, morphological terms follow BROAD et al. (2018). For the measurements the following relations were used: Length of 1st flagellomere (without anellus) was measured in lateral view; length of temple and eye was measured from dorsal view, and length and width of hind femur and ovipositor sheath in lateral view. For the punctuation of body parts the following definitions were used: very scattered - distance of punctures >2× their diameter; scattered - distance 1-2× their diameter; dense - diameter of punctures larger than their distance.

For the measurements an Olympus SZ \times 7 stereo microscope with dividing eyepiece was used. The figures were taken with an Olympus SC 30 CCD-camera using the AnalySIS

getIT software and processed with the Helicon Focus and the Microsoft picture manager softwares.

List of species

Afromevesia lucida (SZÉPLIGETI, 1908)

M a t e r i a l e x a m i n e d : Yemen (6007) Suq Bani Mansour, Malaise trap, 1♀ 28.VIII.-14.XI.2001, leg. A. v. Harten; Yemen (5701) Ar Rujum, Malaise trap, 1♀ 9.IV.-5.VI.2001, leg. A. v. Harten; Yemen (8100) 12 km NW Manakhah, Malaise trap, 1♂ 15.IX.-22.X.2003, leg. A. v. Harten; Yemen (5960, 5962) 12 km NW Manakhah, Malaise trap, 1♂ 3.VII.-21.VIII.2001, leg. A. v. Harten; Yemen (6983) 12 km NW Manakhah, Malaise trap, 1♀ 5.V.-17.VI.2002, leg. A. v. Harten [Leiden and coll. RIEDEL].

D i s t r i b u t i o n : Known from Tanzania and Kenya, new record for Yemen and the Arabian Peninsula.

Epomiator gen. nov.

Type species: Epomiator yemeniticus, new species

Diagnosis: Body length 5 mm. Flagellum slender and filiform, slightly widened beyond middle. Temple strongly narrowed behind eye. Ocelli large. Clypeus flat, very wide, with straight apical margin. Genal carina reaching hypostomal carina far from mandibular base. Mandible with two teeth; lower tooth much smaller than upper one, not bent inwards. Epomia very long and almost reaching hind margin of pronotum. Notaulus indistinct. Mesoscutum punctate and granulate, dull. Mesopleuron densely punctate; speculum almost smooth. Juxtacoxal carina present. Scutellum slightly convex, with lateral carina. Propodeum with clearly differentiated basal horizontal and apical descending parts, similar to *Microlongichneumon* (see Heinrich 1968: 1234, fig. 219), but anterior transverse carina (costula) present in frontal half of area superomedia. Area basalis without median tubercle. Propodeal spiracle oval. Hind coxa without scopa. Claws simple. Areolet of fore wing strongly narrowed frontally. Vein 1cu-a interstitial. Metasoma clearly oxypygous. Postpetiolus almost entirely smooth and shining. Gastrocoelus weak. Thyridium small, 0.5× as wide as interval between thyridia. Ovipositor sheath slightly reaching behind metasomal apex. Male unknown so far.

Remark: This new genus belongs to the tribe Ichneumonini, subtribe Cratichneumonina as defined by HEINRICH (1968). In the key for the African genera of Cratichneumonina provided by HEINRICH (1968: 792-798), this genus runs to couple 45: *Microlongichneumon* HEINRICH.

It resembles that genus in most morphological features, especially the structure of the mandible and propodeum, but differs by its smaller size, very wide clypeus with straight apical margin, and white marks on apical tergites. Especially, the epomia is unusually long and reaches almost the hind border of pronotum (fig. 8).

Epomiator yemeniticus nov.sp. (figs 3, 4, 12)

M a t e r i a l e x a m i n e d : <u>Holotype</u>: (♀) Yemen (5554) Ar Rujum 15.I.-9.IV.2001, Mal. trap, leg. A. v. Harten, RMNH '02 [Leiden].

D e s c r i p t i o n : \bigcirc . Body length 5 mm. Flagellum slender and filiform, with 26 flagellomeres, 1st flagellomere 4.0× and 2nd flagellomere 3.2× longer than wide, combined length 0.69× eye length, preapical flagellomer slightly longer than wide. Temple strongly narrowed behind eye. Distance between lateral ocellus and compound eye 0.9× ocellar diameter. Frons with scattered punctures and shining; face and clypeus densely punctured, smooth and shining between punctures. Clypeus 3× wider than long, flat, with straight apical margin. Malar space 0.8× as long as width of mandibular base. Gena narrow, c. 0.5× as wide as eye in lateral view. Genal carina reaching hypostomal carina far from mandibular base. Mandible slender, with almost parallel sides; upper mandibular tooth much longer than lower tooth.

Side of pronotum with superficial punctures, shining. Epomia very long and almost reaching hind margin of pronotum (fig. 12). Notaulus indistinctly impressed. Mesoscutum with punctures, granulate and dull. Mesopleuron densely punctate, partly with longitudinal striation in ventral part; speculum large, almost smooth and strongly shining. Sternaulus impressed in frontal third of mesopleuron. Metapleuron punctate; juxtacoxal carina present. Scutellum slightly convex, about as long as wide, with strong lateral carina almost to apex, with very scattered punctures, strongly shining. Propodeum with clearly differentiated basal horizontal and apical vertical parts, similar to *Microlongichneumon*, but anterior transverse carina (costula) present in frontal half of area superomedia. Propodeal spiracle c. 2× longer than wide. Mid and hind coxae densely punctate; hind coxa without scopa. Hind femur 4.4× longer than wide, densely punctate. Claws simple. Areolet of fore wing strongly narrowed frontally, frontal distance between vein 2rs-m and 3rs-m 1.5× their width; vein 2m-cu reaching middle of areolet. Vein 1cu-a interstitial.

Metasoma oxypygous. Postpetiolus slightly widened to apex; median field not clearly separated, almost completely smooth and shining. 2^{nd} tergite $0.9 \times$ as long as wide. Gastrocoelus not distinctly impressed. Thyridium small, $0.5 \times$ as wide as interval between thyridia. 2^{nd} and 3^{rd} tergites densely punctate and granulate, dull; 3^{rd} tergite \pm shining apically. 4^{th} and 5^{th} tergites with very superficial punctures, smooth and shining. Ovipositor sheath slightly reaching behind metasomal apex.

Color: yellowish-brown. Stripes or rings on flagellomeres 8-13, stripes on frontal orbit, on vertex and on upper outer orbit ivory. Petiolus yellowish brown. Postpetiolus and following tergites dark brown, 6th and 7th tergites dorsally with large ivory marks. Legs reddish brown, all femora yellowish red in basal 0.1. Wings hyaline; pterostigma yellowish.

 δ unknown.

Ichneumon lautatorius Desvignes, 1856

M a t e r i a l e x a m i n e d : (♀) Yemen, Sana, University campus, 2300 m, 3.XI.2005, leg. J. Halada [Linz].

R e m a r k : 2^{nd} tergite reddish, 3^{rd} tergite diffusely reddish and yellowish; the specimen is otherwise typical.

D i s t r i b u t i o n : A transpalaearctic species, not recorded from Yemen and the Arabian Peninsula before.

Ischnojoppa flavipennis (BRULLÉ, 1846)

M a t e r i a l e x a m i n e d : Yemen (5962) 12 km NW Manakhah, Mal. trap, 1♂ 3.VII.-21.VIII.2001, leg. A. v. Harten [Leiden].

D i s t r i b u t i o n : Widespread in Western, Central, and Eastern Africa, new record for Yemen and the Arabian Peninsula.

Lissosculpta tangana yemeniticus ssp. nov. (figs 5-7)

M a t e r i a l e x a m i n e d : <u>Holotype</u>: (♂) Yemen (8117) 12 km NW Manakhah, Mal. trap, 15.IX.-22.X.2003, leg. A. v. Harten, RMNH '03 [Leiden]. <u>Paratypes:</u> (7♂♂) Yemen (8117) 12 km NW Manakhah, Malaise trap, 15.IX.-22.X.2003, leg. A. v. Harten, RMNH '03 [RMNH and coll. Riedel], (2♂♂) Yemen (6158) Al Lahima, 17.IX.-14.XI.2001, Mal. trap, A. v. Harten, RMNH'02 [RMNH]; (1♂) Yemen (8100) 12 km NW Manakhah, Mal. trap, 4.VIII.-15.IX.2003, leg. A. v. Harten, RMNH '03 [Leiden and coll. RIEDEL].

D e s c r i p t i o n : \circlearrowleft . Body length 11-12 mm. Flagellum slender, with 36-38 flagellomeres, 1st flagellomere 2.1× and 2nd flagellomere 2.0× longer than wide, combined length 0.50-0.52× eye length, all flagellomeres longer than wide. Tyloids broadly oval, present on flagellomeres 9-21/24. Temple strongly narrowed behind eye. Ocelli large, distance between lateral ocellus and compound eye 1.0× ocellar diameter. Frons partly punctate, shining. Face and clypeus coarsely and sparsely punctate, smooth. Malar space 0.2× as long as width of mandibular base. Gena narrow, in profile 0.7× as wide as eye.

Mesosoma covered with short whitish setae dorsally and longer setae ventrally. Notaulus distinctly impressed in frontal 0.25 of mesoscutum. Mesoscutum with coarse but scattered punctures, shining. Mesopleuron and metapleuron coarsely and densely punctate; speculum smooth. Scutellum moderately elevated, about as long as wide, with lateral carina in basal 0.2-0.5. Propodeum with almost complete carination, but areae basalis and superomedia confluent. Area dentipara distinctly slanting downwards toward apex of propodeum (as in *Coelichneumon*). Hind femur $4.0 \times$ longer than wide. Claws simple. Areolet pentagonal, frontal distance between veins 2rs-m and 3rs-m 2-3 × their width; vein 2m-cu reaching areolet distad its middle. Vein 1cu-a postfurcal. Nervellus of hind wing reclivous, intercepted in its apical 0.8.

Postpetiolus strongly widened, median field not clearly separated, with scattered punctures and very fine and superficial aciculation. Gastrocoelus triangularly impressed. Thyridium oblique, about $0.8\times$ as wide as interval between thryidia. 2^{nd} tergite about as long as apically wide. 2^{nd} to 4^{th} tergites coarsely and densely rugulose-punctate; 5^{th} tergite with superficial punctures. Apical margin of hypopygium triangular.

Color: Flagellum black, reddish ventrally. Head black, with \pm dark reddish tint. Mandible except teeth, palps, labrum, clypeus, face, whole orbits (with two narrow interruptions on vertex and malar space) ivory. Mesosoma reddish; collar, subtegular ridge and postscutellum yellowish. 1st tergite reddish; metasoma otherwise dark reddish-brown to black, sometimes with a bluish tint. Posterolateral edges of 1st to 3rd tergites with ivory triangular marks which are sometimes confluent in middle. 5th tergite with ivory apical stripe; 6th and 7th tergites almost entirely ivory. 2nd to 4th sternites ivory apically. Legs blackish; fore and mid legs including coxae and trochanters \pm ivory frontally; hind coxa \pm red. Pterostigma black.

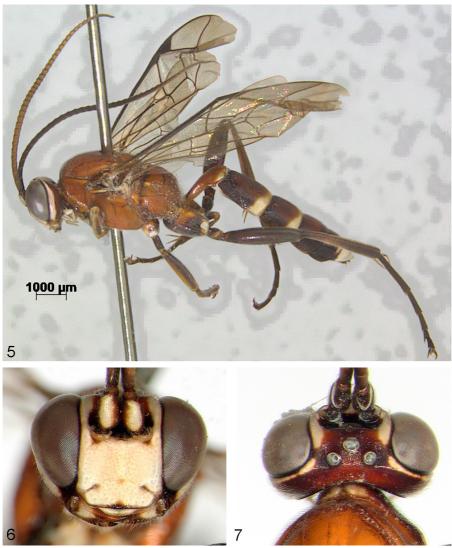


Fig. 1: Habitus of *Spilothyrateles arabicus* nov.sp. \bigcirc from lateral. **Fig. 2**: Habitus of *Stenaoplus harteni* nov.sp. \bigcirc from lateral.





Figs 3-4: Habitus of *Epomiator yemeniticus* nov.sp. $\stackrel{\bigcirc}{\rightarrow}$ (3) from lateral, (4) from dorsal.



Figs 5-7: *Lissosculpta tangana yemeniticus* ssp. nov.♂ (5) habitus from lateral, (6) face from frontal, (7) head from dorsal.

R e m a r k : This new subspecies resembles the nominate species morphologically, it differs mainly by its reduced ivory coloration of mesosoma. Since the associated QQ are unknown yet, this proposed subspecies of *Lissosculpta tangana* (KRIECHBAUMER) might represent a separated but closely related species.

D i s t r i b u t i o n : The nominate subspecies is widely distributed in Central and Southern Africa (Ivory Coast, Guinea, Zimbabwe, Tanzania, and South Africa), the species has not been recorded from Yemen or the Arabian Peninsula before.

Neotypus intermedius sudanensis HEINRICH, 1933

M a t e r i a l e x a m i n e d : Yemen (5843) Al Lahima, Malaise trap, 3♂♂9.IV.-5.VI.2001, leg. A. v. Harten; Yemen (7528) Seyun, light trap, 1♂XI.2002, leg. A. v. Harten; Yemen (5962) 12 km NW Manakhah, Malaise trap, 2♂♂3.VII.-21.VIII.2001, leg. A. v. Harten; Yemen (7585) 12 km NW Manakhah, Malaise trap, 1♀ 1♂15.V.-23.VI.2003, leg. A. v. Harten; Yemen (8100) 12 km NW Manakhah, Malaise trap, 1♀ 4.VIII.-15.IX.2003, leg. A. v. Harten; Yemen (8117) 12 km NW Manakhah, Malaise trap, 3♂♂15.IX.-22.X.2003, leg. A. v. Harten [Leiden and coll. RIEDEL].

D i s t r i b u t i o n : Known from Sudan, Ethiopia, and Uganda, new record for Yemen and the Arabian Peninsula.

Neotypus semirufus KRIECHBAUMER, 1884

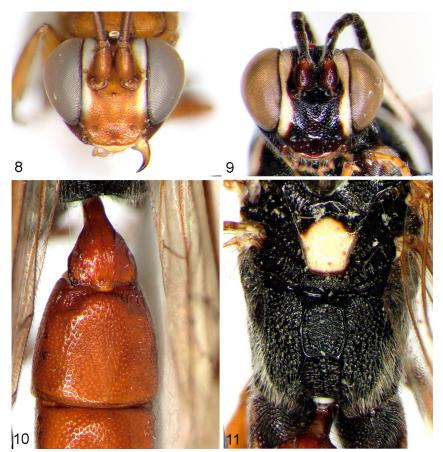
M a t e r i a l e x a m i n e d : Yemen (5843) Al Lahima, Malaise trap, 2♀♀ 9.IV.-5.VI.2001, leg. A. v. Harten; Yemen (6983) 12 km NW Manakhah, Malaise trap, 1♂ 5.V.-17.VI.2002, leg. A. v. Harten; Yemen (7014) 12 km NW Manakhah, Malaise trap, 1♀ 6.VII.-21.VIII.2003, leg. A. v. Harten; Yemen (8100) 12 km NW Manakhah, Malaise trap, 4♀♀ 4.VIII.-15.IX.2003, leg. A. v. Harten [Leiden and coll. RIEDEL].

D is tribution: Widespread in Africa, known from Ethiopia and Eritrea, new record for Yemen and the Arabian Peninsula.

Spilothyrateles arabicus nov.sp. (figs 1, 9, 10, 11)

M a t e r i a l e x a m i n e d : <u>Holotype:</u>(♀) Yemen (5554) Ar Rujum, 15.I.-9.IV.2001, Mal. trap, leg. A. v. Harten, RMNH '02 [Leiden]. <u>Paratypes</u>: (1♀ 3♂♂) Yemen (5554) Ar Rujum, 15.I.-9.IV.2001, Mal. trap, leg. A. v. Harten, RMNH '02 [Leiden and coll. RIEDEL]; (1♀ 1♂) Yemen (5700) Ar Rujum, 9.IV.-5.VI.2001, Mal. trap, leg. A. v. Harten, RMNH '02 [RMNH]; (1♀) Yemen (7551) Sana'a, I.-V.2003, Mal. trap, A. v. Harten, RMNH'03 [Leiden].

Description: \mathcal{Q} . Body length 9-10 mm. Flagellum slender, with 36-38 flagellomeres; 1^{st} flagellomere 2.0-2.2× and 2^{nd} flagellomere 1.7-2.0× longer than wide, combined length 0.45-0.52× length of compound eye; flagellomeres behind middle slightly attenuated, widest flagellomeres almost square. Temple strongly narrowed behind eye. Ocelli large, distance between lateral ocellus and compound eye 0.8× ocellar diameter. Frons coarsely rugose-punctate. Face punctate, partly rugose. Clypeus moderately convex, with scattered punctures, strongly shining. Malar space 1.0× as long as width of mandibular base. Genal carina reaching hypostomal carina far from mandibular base. Mesosoma covered with short whitish setae. Notaulus indistinctly impressed at frontal margin of mesoscutum. Mesoscutum with coarse punctures, shining. Mesopleuron and metapleuron coarsely punctate, partly with longitudinal rugosity. Scutellum flat, about as long as wide, without lateral carina. Propodeum rounded in profile, but with differentiated horizontal and vertical areas. Area superomedia hexagonal, as wide as or slightly wider than long; anterior transverse carina (costula) frontal to its middle. Area petiolaris with longitudinal carina. Mid and hind coxae with scattered punctures in apical halves, strongly shining. Hind coxa without scopa. Hind femura 3.8× longer than wide, almost smooth and without punctures in ventral half. Areolet pentagonal, frontal distance between veins 2rsm and 3rs-m 3-4× their width; vein 2m-cu reaching areolet distad to its middle. Vein 1cua postfurcal by $0.3-0.4\times$ its length. Nervellus of hind wing reclivous, intercepted in its apical 0.8.



Figs 8-9: Face of: (8) *Stenaoplus harteni* nov.sp. \mathcal{Q} and (9) *Spilothyrateles arabicus* nov.sp. \mathcal{Q} . **Figs 10-11**: *Spilothyrateles arabicus* nov.sp.: (10) basal tergites of \mathcal{A} , (11) propodeum of \mathcal{Q} .

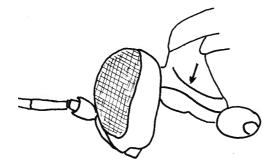


Fig. 12: Lateral view of head and pronotum (elongate epomia see arrow) of *Epomiator yemeniticus* nov.sp. \mathcal{Q} .

Metasoma semi-amblypygous (fig. 1). Lateral field of postpetiolus punctate, wider than median field, the latter finely aciculate. Gastrocoelus triangularly impressed, with longitudinal ridges. Thyridium slightly impressed, $0.8 \times$ as wide as the interval between thyridia. 2^{nd} and 3^{rd} tergites coarsely and densely punctate, polished between punctures. 2^{nd} tergite longitudinally rugose-striate centrally and 3^{rd} tergite only basally. 4^{th} tergite with very scattered punctures, 5^{th} tergite almost impunctate. Ovipositor sheath not reaching behind metasomal apex.

Color: black. Stripes or rings on flagellomeres 8/9-13/14, frontal orbit, usually facial orbit, collar and hind edge or upper border of pronotum, usually spots on tegula and subtegular ridge, scutellum \pm , and usually fore and mid coxae frontally yellow. Metasoma red, 5th or 6th to 7th tergites \pm darkened or black; 6th and 7th tergites with large ivory median spots (rarely 5th tergite with very small ivory spot medially). Coxae and trochanters black; legs otherwise reddish; hind tarsus \pm black. Pterostigma brownish, paler at base.

 \circlearrowleft . Body length 10-11 mm. Flagellum with 36-38 flagellomeres; 1st flagellomere 3.2× and 2nd flagellomere 2.0× longer than wide, combined length 0.55× eye lengt. Linear tyloids on flagellomeres 8-16/18, extending over entire length of flagellomeres. Malar space 0.5× as long as width of mandibular base. Area superomedia hexagonal, slightly longer than wide. Hind femur 3.9-4.0× longer than wide. Lateral field of postpetiolus about as wide as median field. 2nd to 6th tergites with coarse, rather dense punctures, strongly shining between punctures. 2nd and 3rd tergites with longitudinal rugose-striation medially. Hypopygium triangular, hind margin pointed medially. Structure otherwise as in \bigcirc .

Color: black. Distal flagellomeres pale brownish ventrally. Mandible except teeth, palps, clypeus and face except median longitudinal black stripe, scape ventrally, frontal orbit, collar and upper border of pronotum, tegula and subtegular ridge, two paramedian spots on mesoscutum, entire scutellum, fore and mid coxae and trochanters frontally, and sometimes dorsal spot on hind coxa yellowish. Metasoma red, 6th tergite apically and 7th tergite mainly blackish; 5th tergite with narrow ivory stripe apically; 6th tergite with a large triangular ivory mark and 7th tergite largely ivory. Coxae and trochanters black; legs otherwise reddish, hind femur in apical 0.1 and hind tibia at apical 0.3 infuscate; hind tarsus \pm black. Pterostigma brownish, paler at base.

R e m a r k : This species is closely related to *Spilothyrateles tibialis* (CAMERON, 1906) from South Africa and differs slightly by the color pattern, especially in the $\stackrel{\wedge}{\supset}$ (e.g. yellow mesoscutal spots and ivory spot on 6th tergite absent in *Spilothyrateles tibialis*). Probably, the new species is an Arabian subspecies of *S. tibialis*, but more material from the Afrotropical area is necessary to clarify the relationship of these species.

Stenaoplus harteni nov.sp. (figs 2, 8)

M a t e r i a l e x a m i n e d : <u>Holotype:</u> (♀) Yemen (5554) Ar Rujun 15.I.-9.IV.2001, Mal. trap, A. v. Harten, RMNH'02 [Leiden]. <u>Paratype</u>: (♀) Yemen (6007) Suq Bani Mansour, Mal. trap, 28.VIII.-14.XI.2001, A. v. Harten RMNH'02 [coll. RIEDEL].

D e s c r i p t i o n : \bigcirc . Body length 6 mm. Flagellum slender, with 29 flagellomeres; 1st flagellomere 3.8× and 2nd flagellomere 3.0× longer than wide, combined length 0.75× eye length; flagellomeres behind middle slightly attenuated, widest flagellomeres almost square. Temple very strongly narrowed behind eye. Ocelli small, distance between lateral ocellus and compound eye 1.3× ocellar diameter. Face, gena and clypeus with fine punctures, almost smooth, central face finely granulate. Clypeus with medio-apical

impression. Malar space $0.8 \times$ as long as width of mandibular base. Mandible with two teeth, lower tooth much smaller than upper tooth. Gena rather narrow, in profile $0.65-0.7 \times$ as wide as eye. Genal carina reaching hypostomal carina far from the mandibular base.

Mesosoma covered with short whitish setae. Notaulus impressed in frontal 0.3 of mesoscutum. Mesoscutum dull, with very fine superficial punctures and distinct granulation. Mesopleuron and metapleuron punctate and with fine longitudinal rugae. Scutellum moderately convex, about as long as wide, with scattered punctures, smooth, with strong and complete lateral carina. Propodeum with defined basal horizontal and apical descending parts. Coxae and femora with fine and superficial punctures. Hind coxa with scopa. Hind femur 4.4× longer than wide. Claws simple. Areolet almost pointed frontally; frontal distance between veins 2rs-m and 3rs-m $1\times$ their width, vein 2m-cu reaching the middle of areolet. Vein 1cu-a interstitial. Nervellus of hind wing reclivous, intercepted in its apical 0.7.

Metasoma strongly oxypygous (fig. 2). Gastrocoelus indistinctly impressed. Thyridium very wide, $2.0 \times$ times wider than the interval between thyridia. 2^{nd} and 3^{rd} tergites densely granulate, with very superficial punctures, dull. 4^{th} and following tergites \pm shining. Ovipositor sheath reaching far behind metasomal apex, about as long as 2^{nd} hind tarsomere (fig. 2).

Color: reddish-brown. Flagellum brownish, flagellomeres 7-13 with ivory bands. Face and clypeus reddish-brown, gena brownish. Wide facial orbit, frontal orbit, vertex and upper outer orbit ivory. 2nd and 3rd tergites dark reddish-brown; 4th and 5th tergites dark brown. 5th tergite apically, and 6th and 7th tergites almost entirely ivory. Fore and mid legs reddish brown, hind leg brownish. Pterostigma yellowish.

 δ unknown.

R e m a r k : Due to its small size, this new species resembles the genus *Parvaoplus* HEINRICH, but the metasoma is clearly oxypygous, and the spiracle of propodeum elongate. In the key of the African members of *Stenaoplus* (HEINRICH 1968: 1111-1115) this new species runs to couplet 13, but differs from *Stenaoplus impressus* HEINRICH by its much smaller size and the different ivory coloration.

Zusammenfassung

In dieser Arbeit werden neun Arten der Subfamilie Ichneumoninae (Hymenoptera, Ichneumonidae) aus dem Yemen gemeldet, welche bisher in diesem Land nicht nachgewiesen wurden. Eine Gattung, drei Arten sowie eine Unterart sind bisher unbekannt: *Epomiator* gen. nov., *Epomiator yemeniticus* nov.sp., *Spilothyrateles arabicus* nov.sp., *Stenaoplus harteni* nov.sp. und *Lissosculpta tangana yemeniticus* ssp. nov. Die neuen Arten werden ausführlich beschrieben und illustriert.

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References

- BROAD G.R., SHAW M.R. & M.G. FITTON (2018): Ichneumonid wasps (Hymenoptera: Ichneumonidae): their Classification and Biology. — Handbooks for the Identification of British Insects Vol 7, Part 12. Royal Entomological Society, London.
- HEINRICH G.H. (1968): Synopsis and Reclassification of the Ichneumoninae Stenopneusticae of Africa South of the Sahara (Hymenoptera). Vol. 5. Farmington, pp. 945-1258.
- YU D.S., VAN ACHTERBERG C. & K. HORSTMANN (2016): Taxapad 2016 World Ichneumonoidea 2015. Taxonomy, Biology, Morphology and Distribution. Nepean, Ontario, Canada.

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