

## The types of *Mesochorus* GRAVENHORST (Hymenoptera, Ichneumonidae, Mesochorinae) described by W. SCHWENKE and deposited in the Senckenberg Deutsches Entomologisches Institut

With 13 color plates

MATTHIAS RIEDEL

<sup>1</sup> Zoologische Staatssammlung München, Münchhausenstraße 21, 81247 München, Germany. – mamaflo.riedel@t-online.de

Published on 2018–08–01

DOI: 10.21248/contrib.entomol.68.1.001-029

### Abstract

For this study, 24 holotypes and 2 paratypes of the genus *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the Senckenberg Deutsches Entomologisches Institut/Müncheberg were re-described in detail and illustrated.

The following new synonyms are established here: *Mesochorus diluvius* SCHWENKE, 1999 is a new synonym of *Mesochorus ovimaculatus* SCHWENKE, 1999; *Mesochorus luminis* SCHWENKE, 1999 is a new synonym of *Mesochorus provocator* AUBERT, 1965; *Mesochorus opacus* SCHWENKE, 1999 is a new synonym of *Mesochorus rubeculus* HARTIG, 1838; and *Mesochorus pungens* SCHWENKE, 1999 is a new synonym of *Stictopisthus flavescens* (FONSCOLOMBE, 1852).

### Key words

Hymenoptera, Ichneumonidae, Mesochorinae

### Zusammenfassung

24 Holotypen und 2 Paratypen der Gattung *Mesochorus* GRAVENHORST, welche von W. SCHWENKE beschrieben wurden und sich im Senckenberg Deutsches Entomologisches Institut in Müncheberg befinden, werden ausführlich revidiert und illustriert.

Folgende Synonyme wurden dabei festgestellt: *Mesochorus diluvius* SCHWENKE, 1999 ist ein neues Snynonym von *Mesochorus ovimaculatus* SCHWENKE, 1999; *Mesochorus luminis* SCHWENKE, 1999 ist ein neues Synonym von *Mesochorus provocator* AUBERT, 1965; *Mesochorus opacus* SCHWENKE, 1999 ist ein neues Synonym von *Mesochorus rubeculus* HARTIG, 1838 und *Mesochorus pungens* SCHWENKE, 1999 ein neues Synonym von *Stictopisthus flavescens* (FONSCOLOMBE, 1852).

### Introduction

*Mesochorus* is a very large genus of the subfamily Mesochorinae (Hymenoptera, Ichneumonidae) containing more than 300 taxa in the Western Palearctic region

(YU et al., 2016). The species of *Mesochorus* are usually hyperparasitoids, but some cases of primary parasitism have been described so far (QUICKE, 2015).

Due to the large size of the genus and the rather uniform structure and colouration of many species, an unequivocal determination of the species was impossible until W. SCHWENKE revised this genus in the last decades of 20th century. His studies resulted in the description of 206 new *Mesochorus* species (SCHWENKE, 1999) supplemented by some additions in the following years (SCHWENKE, 2000, 2002, 2004). But as has already been shown by the first subsequent studies (HORSTMANN, 2002, 2003, 2006, VIKBERG & VARDAL, 2017), his work is not more than a first important step to a modern taxonomy of the Palearctic *Mesochorus* taxa.

Although SCHWENKE's studies were certainly large improvements of our knowledge of this large genus, his revisions are difficult to use in practice due to very short descriptions and an almost complete lack of illustrations. A correct use of his keys is even more complicated by the fact that SCHWENKE had estimated many important morphological features (such the relations of length of ovipositor sheaths to hind metatarsi, length of temples related to eyes, size of lateral ocelli etc.) by eye-ball guessing (personal communication by K. HORSTMANN and K. ZWAKHALS) but did not measure these relations. As a result, some of these estimations are questionable or even incorrect, leading to wrong paths in his short determination keys.

Therefore, it seemed necessary to re-study his types in greater detail in order to stabilize the taxonomy of this difficult genus. Here, I present some results of my revision dealing with the species of the genus *Mesochorus* GRAVENHORST described by W. SCHWENKE.

## Material and methods

Some years ago, W. SCHWENKE received extensive *Mesochorus* material collected by Dipl.-Biol. H. ZOERNER (Dessau) and housed in the Senckenberg Deutsches Entomologisches Institut/Müncheberg (SDEI) for determination. From this material, he described 27 new species in his revision (SCHWENKE, 1999). I was recently able to study this material and re-described and illustrated the holotypes (but had to use paratypes of *Mesochorus flexus* SCHWENKE and *Mesochorus gilvus* SCHWENKE since holotypes of these species and *Mesochorus gibbosus* SCHWENKE were actually not found in the *Mesochorus* material from the SDEI or in the SCHWENKE or HORSTMANN collections in Munich). Other paratypical and non-typical material of the genus *Mesochorus* in the collection of the SDEI was not used for the descriptions below. Therefore, the variability of the species is not documented here.

For all holotypes, all missing parts are mentioned. Length of flagellomeres was measured in lateral view (length of 1<sup>st</sup> flagellomere without anellus) and width of flagellomeres in the distal 0.8 of flagella. Length of temples and width of eyes were measured from dorsal; facial width and combined length of face and clypeus from frontal, and length and width of femora, metatarsi and oviposi-

tor sheaths in lateral view. A correct measurement of the pterostigma is often impeded by a more or less developed fold of the frontal wing margin, so the relations could not always be estimated correctly. The pectination of claws is often difficult to see (especially in basal parts of the claws) and would usually require preparation and further analysis with a compound microscope (see VIKBERG & VARDAL, 2017). Here, I noted the visible teeth of the hind claws (usually the outer ones) of types seen in a stereo microscope with 70x magnification. For the description of the punctures of body parts the following relations were used: scattered - distances larger than diameter of punctures; moderately dense - diameter of punctures approximately as their distance; dense - punctures larger than their distances. The following indices were used in the descriptions: OOD - distance of lateral ocelli to eyes in relation to their diameter; MI - length of malar spaces related to width of mandibular bases.

For the measurements below I used an Olympus<sup>7</sup> SZX 7 stereo microscope with eyepiece reticle. The figures were taken with an Olympus<sup>7</sup> SC 30 CCD-camera using the AnalySIS getIT<sup>7</sup> and Helicon<sup>7</sup> Focus Pro softwares and processed with the Microsoft<sup>7</sup> Office Picture manager.

## Descriptions of species

### 1. *Mesochorus albifacies* SCHWENKE, 1999 (Figs 1a-d)

**Holotype:** "(♂) Eisenberg Thü 19.8. 196/88 Zoerner" [♂, no. 196/88, Germany: Thuringia, Eisenberg, 19.8.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Right flagellomeres from 25th on. Body length 4.8 mm. Left flagellum with 35 flagellomeres; 1<sup>st</sup> flagellomere 6.0x longer than wide and 0.8x the length of eye; 2<sup>nd</sup> flagellomere 4.0x longer than wide; preapical flagellomeres ca. 2x longer than wide. Temple roundly narrowed behind eye, 0.6x as long as the eye width. OOD 1.05. Face 1.1x wider than the length of clypeus+face and as wide as the eye length, with parallel sides. Malar space and ventral 0.2 of facial orbit narrowly striate. MI 0.4. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine dense punctures; mesopleuron with fine dense punctures dorsally and moderately dense and fine punctures ventrally; metapleuron with superficial punctures. Area basalis trapezoid, longer than wide; area superomedia ca. 2.0x longer than wide and 1.2x longer than area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 1.1x longer than wide. Hind femur 5.2x longer than wide; hind metatarsus 0.46x as long as hind tibia; hind tarsal claws without visible teeth. Areolet widely sessile, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma ca. 4.0x longer than wide, radial

vein in its distal 0.6. 1<sup>st</sup> tergite 3.1x longer than wide; postpetiolus 1.5x longer than wide, smooth; 2<sup>nd</sup> tergite 1.35x longer than wide, thyridium transversal-oval. Stylet stab-shaped, clubbed apically, 1.4x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Flagellum blackish, basal flagellomeres yellow-brown. Head brown; face, clypeus, mandible except teeth, malar space and gena cream-yellow; orbits otherwise reddish. Mesosoma black; hind edge of pronotum, tegula and wing base cream-yellow; sides of pronotum and ventral 2/3 of mesopleuron reddish, dorsal 1/3 of mesopleuron brownish; metapleuron brownish; mesoscutum with reddish-brown central spot. Metasoma black; 2<sup>nd</sup> tergite with narrow yellow hind margin. Legs reddish-yellow; fore and middle coxae and all trochanters cream-yellow; hind tibia cream-yellow, brownish basally and in the apical 2/10 of tibial length (2x of tibial width); hind tarsus brown. Pterostigma brownish.

**Remark:** The species is correctly placed in the key for the *angustatus*-group (SCHWENKE, 1999: 72–73).

## 2. *Mesochorus amnicolaris* SCHWENKE, 1999

(Figs 2a–d)

**Holotype:** "(♀) Sebnitz 9 km N 8.8.1993 283/93 H. Zoerner" [♀, no. 283/93, Germany: Saxony, 9 km N of Sebnitz, 8.8.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Both antennae. Body length 3.5 mm. Temple moderately and roundly narrowed, 0.75x as long as the eye width. OOD 1.5. Face punctate, about as wide as the length of face+clypeus and 0.9x the length of eye, with parallel sides. Ventral half of facial orbit and malar space widely striate. MI 0.3. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine scattered hair-punctures; mesopleuron with few fine punctures dorsally and with very scattered small hair-punctures ventrally; metapleuron almost smooth. Area basalis trapezoid, as long as wide; area superomedia short, almost diamond-shaped, 1.15x as long as wide and 0.8x as long as the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris large, 1.25x longer than wide and ca. 0.4x as long as the propodeum. Hind femur 4.6x longer than wide; hind metatarsus 0.4x as long as the hind tibia; fore claws with some basal teeth. Areolet shortly stalked, 2<sup>nd</sup> recurrent vein in its middle; nervulus slightly antefurcal; pterostigma wide, 2.8x longer than wide, radial vein in its distal 0.65. 1<sup>st</sup> tergite 2.8x longer than wide, postpetiolus with some rugae; 2<sup>nd</sup> tergite 0.86x as long as wide; thyridium comma-shaped. Ovipositor sheath stab-shaped, pilose (less densely apically), 9.3x longer than wide and 1.2x longer than the hind metatarsus, slightly narrowed over the whole length.

**Colour:** Black. Face reddish; facial orbit, mandible except teeth and malar space cream-yellow; gena and

orbita otherwise reddish. Mesosoma blackish; pronotum reddish; hind edge of pronotum, tegula and wing base yellowish. Metasoma black; 2<sup>nd</sup> tergite yellow in apical 1/10 of tibial length; 3<sup>rd</sup> tergite yellow-red in basal 0.15 (slightly wider medially); following tergites blackish with indistinct dark-greyish hind margins. Legs yellow-red, hind coxa more reddish; hind tibia yellow, narrowly infuscate in apical 1/10 of tibial length (0.5x of tibial width). Pterostigma hyaline-brownish.

**Remark:** The position of this species within the different species-groups sensu SCHWENKE (1999: 34) is questionable. The metasoma is mainly black with narrow pale bands on 2<sup>nd</sup> and 3<sup>rd</sup> tergites. It therefore can be placed in the *angustatus*-group where it runs to no. 35 (*Mesochorus tetricus* sensu SCHWENKE non THOMSON: recte *Mesochorus marginatus* THOMSON) but differs from that taxon by its pale face and form of ovipositor sheath. If the position in the *pectoralis*-group would be accepted, it can be correctly identified in the key for this group (SCHWENKE, 1999: 95–98). The taxon is further characterized by its long and continuously narrowed ovipositor sheath and the short and almost diamond-shaped area superomedia.

## 3. *Mesochorus canalis* SCHWENKE, 1999

(Figs 3a–d)

**Holotype:** "(♀) Oppach 1.3. ONO 8.6.1993 165/93 H. Zoerner" [♀, no. 165/93, Germany: Saxony, 1.3 km ENE of Oppach, 8.6.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellum, right antenna, right fore wings, ovipositor sheaths artificially folded centrally. Body length 3.8 mm. Temple moderately but linearly narrowed behind eye, 0.6x as long as the eye width. OOD 1.3. Face very wide, punctate, with centrally smoothed structure, 1.05x wider than the length of clypeus+face and about as wide as the eye length, with parallel sides. Facial orbit and malar space striate. MI 0.35. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesopleuron with moderately dense punctures dorsally and scattered to moderately dense punctures ventrally; metapleuron with fine punctures. Area basalis narrowly triangular, ca. 2x longer than wide, with long stalk apically; area superomedia 1.45x longer than wide and 1.3x longer than the area petiolaris, costula in frontal 3.5/10 of length of area superomedia; area petiolaris 0.85x as long as wide. Hind femur 4.4x longer than wide; hind metatarsus 0.45x as long as hind tibia; hind claws with ca. 4 small basal teeth. Areolet oblique, pointed, 2<sup>nd</sup> recurrent vein distinctly proximal to its middle; nervulus interstitial; postnervulus intercepted widely basal to its middle; pterostigma 3.2x longer than wide, radial vein in its distal 0.6. 1<sup>st</sup> tergite short, 1.9x longer than wide; postpetiolus almost square, with a long and

wide central (artificial?) impression; 2<sup>nd</sup> tergite 0.85x as long as wide, with short basal impression; thyridium roundish. Ovipositor sheath pilose, artificially folded, almost not narrowed apically, ca. 7.2x longer than wide and ca. 1.1x longer than the hind metatarsus.

**Colour:** Black. Face blackish; facial orbit, clypeus apically, mandible except teeth, malar space and gena in ventral half yellow. Mesosoma black; hind edge of pronotum, tegula and wing base yellow; mesoscutum with central H-shaped red spot. Metasoma black; 2<sup>nd</sup> tergite narrowly reddish-yellow apically. Legs reddish; hind tibia yellowish, slightly darkened basally, subbasally and in apical 2/10 to 3/10 of tibial length. Pterostigma brownish.

**Remark:** This species belongs to the *angustatus*-group and is correctly placed in the key for this group (SCHWENKE, 1999: 72–73). It is characterized by stalked area basalis, the venation of fore wings and structure of 1<sup>st</sup> tergite. However, some of these features are probably artificial or results of a teratogenic abnormality.

#### 4. *Mesochorus castellanus* SCHWENKE, 1999

(Figs 4a–d)

**Holotype:** "(♀) Wittenberg-Lu 10–30.8.1964 Lichtfalle H. Zoerner" [♀, without no., Germany: Saxony-Anhalt, Lutherstadt Wittenberg, light trap, 10–30.8.1964, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Both flagella, both fore legs and fore wings. Body length 4.5 mm. Temple strongly and almost linearly narrowed behind the eye, 0.5x as long as the eye width. OOD 0.9. Face coarsely punctate, 1.05x wider than the length of clypeus+face and 0.9x as wide as the eye length, with parallel sides. Malar space and ventral 0.2 of facial orbit striate. Mandible with two equal teeth. MI 0.3x. Genal carina reaching the hypostomal carina far from mandibular base. Mesosoma rather stout, ca. 1.66x longer than high; mesoscutum densely punctate apico-medially, with scattered hair-punctures laterally; mesopleuron with dense punctures dorsally and scattered fine hair-punctures ventrally; metapleuron with fine scattered punctures. Area basalis trapezoid, slightly longer than wide; area superomedia 2.0x longer than wide and 1.1x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 1.1x longer than wide. Hind femur 5.0x longer than wide; hind metatarsus 0.52x as long as the hind tibia; hind claws with three long visible tooth. Areolet shortly stalked, oblique, 2<sup>nd</sup> recurrent vein distal to its middle; nervulus interstitial; pterostigma 2.9x longer than wide, radial vein in its distal 0.7. 1<sup>st</sup> tergite 2.7x longer than wide; postpetiolus 1.3x longer than wide, smooth; 2<sup>nd</sup> tergite 1.05x longer than wide, thyridium transversal-oval. Ovipositor sheath densely pilose, sabre-shaped, 6.1x longer than wide and 0.86x as long as the hind metatarsus, slightly narrowed apically.

**Colour:** Black. Face red-brown; orbits, clypeus, gena, malar space, mandible without teeth reddish-yellow. Mesosoma black; hind edge of pronotum, tegula and wing base yellow; mesoscutum with H-shaped dark reddish spots centrally, scutellum with dark reddish sides. 1<sup>st</sup> and 2<sup>nd</sup> tergites black, 2<sup>nd</sup> tergite reddish in apical 2.5/10 of tibial length; following tergites completely reddish. Legs reddish-yellow; hind tibia yellow, brownish in apical 1/10 of tibial length (0.5x of tibial width). Pterostigma hyaline to hyaline-ochreous.

**Remark:** The species is correctly placed in the key of the *declinans*-group (SCHWENKE, 1999: 80–83), but contrary to the description given by SCHWENKE (1999: 86), the ocelli are slightly larger than their distance to the compound eyes.

#### 5. *Mesochorus dessauensis* SCHWENKE, 1999

(Figs 5a–d)

**Holotype:** "(♀) Dessau 4 km SW 19.9.85 K.H. Zoerner; 366/85 Taubeufer" [♀, no. 366/85, Germany: Saxony-Anhalt, 4 km SW of the district Dessau of town Dessau-Roßlau, shore of the river Taube, 19.9.1985, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellomeres from 23<sup>th</sup> on, right flagellomeres from 15<sup>th</sup> on. Body length 4.0 mm. 1<sup>st</sup> flagellomere 6.1x longer than wide and 0.64x as long as eye 2<sup>nd</sup> flagellomeres 4.1x longer than wide; central flagellomeres ca. 2x longer than wide. Temple short, strongly narrowed behind eyes, 0.3x as long as the eye width. Ocelli very large, OOD 0.5. Face with superficial punctures, 1.05x wider than the length of clypeus+face and 0.8x as wide as the eye length, sides convergent ventrally. Mandible with two equal teeth. Malar space and ventral 0.3 of facial orbit striate. MI 0.2. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine superficial punctures; mesopleuron smoothed dorsally, with few fine hair-punctures ventrally; metapleuron smooth. Area basalis trapezoid, wider than long; area superomedia 1.7x longer than wide and 0.95x as long as the length of area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 1.05x longer than wide. Hind femur 4.5x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with two long visible tooth. Areolet shortly sessile, oblique, 2<sup>nd</sup> recurrent vein proximal to its middle; nervulus interstitial; pterostigma 3.1x longer than wide, radial vein in its distal 0.62. 1<sup>st</sup> tergite 3.1x longer than wide; postpetiolus 1.6x longer than wide, smooth; 2<sup>nd</sup> tergite 0.95 as long as wide; thyridium roundish. Ovipositor sheath pilose, 8.4x longer than wide and 1.2x longer than the hind metatarsus, slightly bent upwards and moderately narrowed in the apical 3/10 of tibial length.

**Colour:** Black. Flagellum brownish-yellow. Face reddish; clypeus, inner orbit, mandible except teeth, malar space

and gena cream-yellow; outer orbit yellow. Mesosoma brownish; hind edge of pronotum, tegula and wing base cream-yellow; mesoscutum with 4 yellow stripes which are confluent frontally; scutellum yellow, with brown central stripe. 1<sup>st</sup> tergite black, reddish basally; 2<sup>nd</sup> tergite black, with arched yellow band in the apical 2.5/10 of tibial length; 3<sup>rd</sup> tergite yellowish-red in the basal 0.6, brownish apically; following tergites brown, with grey apical bands. Legs reddish-yellow; hind coxa with brownish spot dorsally; hind tibia cream-yellowish, brownish in apical 2/10 of tibial length (1.5x of tibial width). Pterostigma brown, proximal and distal corners hyaline.

**Remark:** Due to the brownish dorsal spots on hind coxae, this species runs to no. 14 (*Mesochorus callis* SCHWENKE) in the key for the *orbitalis*-group (SCHWENKE, 1999: 62–63). It differs from *M. callis* SCHWENKE by its very large ocelli and reddish face.

#### 6. *Mesochorus diluvius* SCHWENKE, 1999

(Figs 6a–d)

**Holotype:** "(♀) Köthen 46/88 19.5. Zoerner" [♀, no. 46/88, Germany: Saxony-Anhalt, Köthen, 19.5.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellomeres from 6<sup>th</sup> on, right antenna completely. Body length 4.2 mm. Basal flagellomeres short; 1<sup>st</sup> flagellomere 4.6x longer than wide and 0.6x as long as the eye, 2<sup>nd</sup> flagellomeres 3.2x longer than wide. Temple roundly narrowed behind eyes, 0.63x as long as the eye width. OOD 1.5. Face coarsely punctate, with parallel sides, about as wide as the length of clypeus+face length and 0.86x as wide as the eye length. Ventral 0.5 of facial orbit and malar space widely striate. MI 0.5. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with rather dense punctures apico-medially and with finer scattered punctures laterally; mesopleuron with fine dense punctures dorsally and very scattered fine punctures ventrally; metapleuron with fine scattered punctures. Area basalis triangular, about as long as wide; area superomedia 1.6x longer than wide and 1.4x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.8x as long as wide. Hind femur 4.3x longer than wide; distal fore tarsomere slightly swollen, ca. 2.4x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with four teeth (2<sup>nd</sup> basal tooth longest). Arolet pointed sessile, 2<sup>nd</sup> recurrent vein slightly distal to its middle; nervulus interstitial; pterostigma 3.2x longer than wide, radial vein in its distal 0.67. 1<sup>st</sup> tergite 2.5x longer than wide; postpetiolus 1.15x longer than wide, smooth; 2<sup>nd</sup> tergite 0.86x as long as wide; thyridium roundish. Ovipositor sheath completely pilose, sabre-shaped, 5.5x longer than wide and 1.03x longer than the hind metatarsus, slightly narrowed in the apical 4/10 of tibial length.

**Colour:** Black. Flagellum yellow-brown. Face blackish; orbit and clypeus reddish-yellow, pale colour widened on vertex. Frons medially, ocellar field and occiput black. Palps, mandible except teeth, gena, hind edge of pronotum, tegula, and wing base yellow. Mesosoma black, mesoscutum with H-sized dark reddish suffusion centrally. Legs reddish-yellow; hind femur with indistinct brownish suffusion; hind tibia yellow, brownish in the apical 2/10 of tibial length (1.5x of tibial width). Tergites blackish; 2<sup>nd</sup> tergite with yellow-red band in the apical 2.5/10 of tibial length; 3<sup>rd</sup> tergite reddish basally and apically, blackish centrally; following tergites blackish basally and reddish apically. Pterostigma hyaline-ochreous.

**Remark:** This species is not placed correctly in the key of the *pectoralis*-group (SCHWENKE, 1999: 95–98) since the ovipositor sheath is about as long as the hind metatarsus and the pterostigma is hyaline with a light brownish tint. If the pterostigma is accepted as hyaline, this species would run to no. 10 (*Mesochorus septentrionalis* SCHWENKE) but differs by its brownish face and stouter ovipositor sheath. If the pterostigma is valued as darkened, it runs to no. 92 (*Mesochorus ovimaculatus* SCHWENKE). Comparison of the holotypes of both taxa does not reveal significant differences in morphology and coloration and are synonymized here.

**Valid name:** *Mesochorus ovimaculatus* SCHWENKE, 1999, syn. nov. *Mesochorus diluvius* SCHWENKE, 1999.

#### 7. *Mesochorus falcatus* SCHWENKE, 1999

(Figs 7a–d)

**Holotype:** "(♂) Dessau 4 km SSW, 7.8.86, K.H. Zoerner; 100/86 Taubeufer" [♂, no. 100/86, Germany: Saxony-Anhalt, 4 km SSW of the district Dessau of town Dessau-Roßlau, shore of the river Taube, 7.8.1986, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Right flagellomeres from the 19th on, tip of right stylet broken off. Body length 8.2 mm. Flagellum with 40 flagellomeres; 1<sup>st</sup> flagellomere 7.5x longer than wide and 0.64x as long as the eye; 2<sup>nd</sup> flagellomere 5.0x longer than wide; preapical flagellomeres 2.5–3.0x longer than wide. Temple moderately and roundly narrowed behind eye, 0.56x as long as the eye width. Ocelli large, OOD ca. 0.7. Face coarsely and densely punctate, with parallel sides, about as wide as the length of clypeus+face and 0.86x as wide as eye length. MI 0.25. Mandibular teeth of equal size. Malar space finely striate. Genal carina reaching the hypostomal carina close to mandibular base. Mesoscutum with dense and fine punctures; mesopleuron densely punctate dorsally and with coarse but scattered punctures ventrally; metapleuron with fine scattered punctures. Area basalis almost rectangular, ca. 1.5x longer than wide; area superomedia 1.9x longer

than wide and 1.35x longer than the area petiolaris, costula in frontal 3.5/10 of length of area superomedia; area petiolaris 0.95x as long as wide. Hind femur 5.3x longer than wide; hind metatarsus 0.54x as long as the hind tibia; hind claws with two long basal teeth, apices strongly falcate. Areolet slightly sessile, slightly oblique; 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; subbasal cell of front wing completely bare in basal half. 1<sup>st</sup> tergite 2.9x longer than wide; postpetiole 1.4x longer than wide, smooth; 2<sup>nd</sup> tergite 1.25x longer than wide; thyridium indistinct. Stylet pointed, ca. 1.25x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Completely reddish. Pterostigma hyaline.

**Remark:** The taxon is correctly placed in the key of the *fulvus*-group (SCHWENKE, 1999). The males can easily be identified by the falcate claws.

**Valid name:** *Mesochorus pelvis* SCHWENKE, 2002 syn. *Mesochorus falcatus* SCHWENKE, 1999 (preoccupied by *Mesochorus falcatus* DASCH, 1974), synonymized by HORSTMANN (2006).

#### 8. *Mesochorus flexus* SCHWENKE, 1999

(Figs 8a–d)

**Holotype:** "(♀) Dessau 4,5 km NW, 21.6.88 H. Zoerner" [♀, without no., Germany: Saxony-Anhalt, 4.5 km NW of the district Dessau of town Dessau-Roßlau, 21.6.1988, leg. K.H. Zoerner] (SDEI?).

The holotype is missing in the material from the SDEI and has not been found in the ZSM or in the HORSTMANN collection either. Although SCHWENKE (1999: 40) stated paratypes from the same locality, they were not found in the available material (probably he confused the localities of his material).

**Paratype:** "(♀) Oppach 1.2 km O 10.6.1993 171/93 H. Zoerner" [♀, no. 171/93, Germany: Saxony, 1.2 km E of Oppach, 10.6.1993, leg. K.H. Zoerner] (ZSM).

**Description:** Complete. Body length 2.8 mm. Flagellum with 25 flagellomeres; 1<sup>st</sup> flagellomere 6.7x longer than wide and 0.58x as long as the eye; 2<sup>nd</sup> flagellomere 4.2x longer than wide; preapical flagellomeres ca. 2.0x longer than wide. Temple slightly narrowed behind eye, 0.8–0.9x as long as the eye width. OOD 1.8. Face 1.2x wider than the length of clypeus+face and about as wide as the length of eye, sides parallel, with superficial punctures. MI 0.8. Whole facial orbit and malar space striate. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine superficial punctures; mesopleuron with moderately coarse, superficial punctures dorsally and almost smooth ventrally; metapleuron with superficial punctures. Area basalis trapezoid, slightly wider than long; area superomedia 1.6x longer than wide and 0.9x as long as the area petiolaris, costula in frontal 4/10 of length of

area superomedia; area petiolaris 1.1x longer than wide. Hind femur 4.4x longer than wide; hind metatarsus 0.47x as long as the hind tibia. Areolet pointed, 2<sup>nd</sup> recurrent vein in its middle; nervulus slightly postfurcal (0.5x of its width); pterostigma 2.7x longer than wide, radial vein in its distal 0.57, distal parts of radial vein distinctly sinusoid. 1<sup>st</sup> tergite 2.7x longer than wide; postpetiolus 1.2x longer than wide, smooth; 2<sup>nd</sup> tergite 0.85x as long as wide; thyridium comma-shaped, oblique. Ovipositor sheath with scattered hairs in apical half, 8.6x longer than wide and about as long as the hind metatarsus, in apical 2/3 with concavely narrowed dorsal margin, strongly narrowed ventrally.

**Colour:** Blackish. Scape and flagellum ochreous basally, brownish in apical 3/4. Face reddish-yellow, slightly darker below antennae; orbit, wide gena, malar space and mandible except teeth reddish-yellow. Mesosoma brown; tegula and wing base yellowish. Metasoma blackish; 1<sup>st</sup> sternite completely and 1<sup>st</sup> tergite dark reddish basally; 2<sup>nd</sup> tergite with narrow yellow band in the apical 2/10 of tibial length; 3<sup>rd</sup> tergite with yellow band in the basal 0.2. Legs reddish-yellow; hind tibia cream-yellow, ochreous in apical 1.5/10 of tibial length (1x of tibial width). Pterostigma hyaline.

**Remark:** This species runs to *Mesochorus frondosus* SCHWENKE in his key for the *curvulus*-group (SCHWENKE, 1999: 35–37) because the pronotum is blackish as the rest of the mesosoma. It can be differentiated from other members of the *curvulus*-group by the characteristic form of the ovipositor sheaths.

#### 9. *Mesochorus frondosus* SCHWENKE, 1999

(Figs 9a–d)

**Holotype:** "(♀) Dessau 7.5 km S 25.7.88 K.H. Zoerner; 154/88 Waldwege" [♀, no. 154/88, Germany: Saxony-Anhalt, 7.5 km S of the district Dessau of town Dessau-Roßlau, on forest trails, 25.7.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellomeres from the 6<sup>th</sup> on. Body length 2.5 mm. Flagellum with 23 flagellomeres; 1<sup>st</sup> flagellomere 7.5x longer than wide and 0.59x as long as the eye; 2<sup>nd</sup> flagellomere 5.0x longer than wide; preapical flagellomeres ca. 2.0x longer than wide. Temple long, moderately and roundly narrowed behind eye, 0.8x as long as the eye width. OOD 1.8. Face smoothed centrally, 1.05x as wide as the length of clypeus+face and 0.88x as wide as the eye length, with parallel sides. Clypeus with scattered coarse punctures, apical margin straight. MI 0.8. Mandible with two equal teeth. Facial orbit completely and widely and malar space widely striate. Genal carina reaching the hypostomal carina far from mandibular base. Mesosoma stout, ca. 1.5x longer than high. Mesoscutum almost smooth, with few fine hair-punctures; side of pronotum, mesopleuron and metapleuron smooth. Area

basalis almost rectangular, slightly longer than wide; area superomedia ca. 1.7x longer than wide and 0.85x as long as the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 1.1x longer than wide. Hind femur 4.1x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with few short basal teeth. Areal short stalked, oblique, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma 2.9x longer than wide, radial vein in its distal 0.5; distal part of radial vein long, sinusoid. 1<sup>st</sup> tergite 3.2x longer than wide, postpetiolus 1.3x longer than wide, smooth; 2<sup>nd</sup> tergite 0.85x as long as wide; thyridium comma-shaped. Ovipositor sheath with scattered hairs, 7.1x longer than wide and 0.95x as long as the hind metatarsus; slightly narrowed and bent upwards apically.

**Colour:** Black. Face brown, with blackish central spot; facial orbit, mandible except teeth, malar space and gena yellow. Flagellum brownish. Mesosoma blackish; hind edge of pronotum, tegula and wing base yellow. 1<sup>st</sup> sternite yellow-red; 1<sup>st</sup> tergite black, dark reddish basally, narrowly yellow apically; 2<sup>nd</sup> tergite black, yellow basally and in the apical 2/10 of tibial length; 3<sup>rd</sup> tergite brown, yellow in the basal 0.3; following tergites blackish. Legs reddish-yellow; hind tibia yellow, pale brownish in apical 1.5/10 to 2/10 of tibial length (1–1.5x of tibial width). Pterostigma brownish.

**Remark:** This species is correctly placed in the key of the *curvulus*-group (SCHWENKE, 1999: 35–37), but seen from dorsal, the temples are slightly shorter than the eye width.

#### 10. *Mesochorus gibbosus* SCHWENKE, 1999

**Holotype:** "(♀) Oppach 2,2 km NNE 12.8.93, 294/93 H. Zoerner" [♀, no. 294/93, Germany: Saxony, 2.2 km NNE of Oppach, 12.8.1993, leg. K.H. Zoerner] (SDEI?). Some years ago, the female holotype had been studied by K. HORSTMANN (unpublished notes) but was actually not found in the material from SDEI, the ZSM or in the HORSTMANN collection. Since all paratypes are males, I was not able to study females of this taxon. Here, I give a translation of the short unpublished notes made by HORSTMANN:

As small as some specimens of *Mesochorus dispar* BRISCHKE but differs from *M. dispar* by: hind coxae black ventrally, face densely punctate, facial orbits only ventrally striate.

Ovipositor sheath stab-like, narrow, in the last quarter very slightly narrowed and bent towards dorsal, as long as hind metatarsi (but somewhat retracted). Hind claws without teeth.

**Colour:** Clypeus, mandible, malar space and gena yellow; face pale brownish; orbits partly yellow (indistinct); frontal orbit widely yellow-reddish; frons medially, ocellular field and vertex black; temple dorsal darkened (head somewhat darker than in *dispar*). Mesosoma black; hind edge of pronotum yellow; propodeum black. 1<sup>st</sup> tergite

and 1<sup>st</sup> sternite reddish in front of glymma (as in *dispar*); 2<sup>nd</sup> tergite black basally, apical 2/3 tongue-like yellow; 3<sup>rd</sup> tergite yellow in the basal third; apical tergites with narrow yellow apical margins. Fore and middle legs yellowish-red; hind femora pale red; hind coxae blackish; hind tibiae ivory medially, basally not darkened, at apex with blackish ring (0.5x of tibial width); hind tarsomeres ivory, distally brownish, distal tarsomere brown. Pterostigma almost without pigmentation, slightly darker than wing, its margins somewhat darker.

**Remark:** This species seems to be correctly placed in the key of the *dispar*-group (SCHWENKE, 1999: 48–51).

#### 11. *Mesochorus gilvus* SCHWENKE, 1999

(Figs 10a–d)

**Holotype:** "(♀) Guttau Zucht, 4295 Zoerner 7.1976" [♀, no. 4295, Germany: Saxony, Malschwitz, district Guttau, breeding, 7.1976, leg. K.H. Zoerner] (SDEI?).

The holotype was studied by K. HORSTMANN some years ago who made some unpublished notes. I tried to locate the holotype but it was not found in SDEI, the ZSM or in the HORSTMANN collection. For the description and figures, I used a paratype from the reared type-series with similar features as noted for the holotype.

**Paratype:** (♀) Guttau Zucht 4295 Zoerner 22.7.1976 (ZSM).

**Description:** Body length 3.6 mm. Flagellum with 30 flagellomeres; 1<sup>st</sup> flagellomere 6.9x longer than wide and 0.85x as long as the eye; 2<sup>nd</sup> flagellomere 5.0x longer than wide; preapical flagellomeres ca. 2.0x longer than wide. Temple short and strongly narrowed behind eye, 0.55x as long as the eye width. OOD 1.5. Face with moderately dense punctures, 1.05x wider than the length of clypeus+face and 1.05x wider than the length of eyes. Ventral 0.3 of facial orbit, base of mandible and malar space with fine striation. Mandible with two equally sized teeth. MI 0.9. Genal carina joining the hypostomal carina far from mandibular base. Mesoscutum almost completely with fine and scattered punctures; mesopleuron with moderately dense coarse punctures dorsally and ventrally; metapleuron with fine scattered punctures. Area basalis trapezoid, about as long as wide; area superomedia 1.6x longer than wide and 1.1x longer than the area petiolaris; area petiolaris 1.13x longer than wide. Hind femur 4.4x longer than wide; hind metatarsus 0.53x as long as the hind tibia; hind claws small, with 1 distinct basal tooth. Areal short stalked, 2<sup>nd</sup> recurrent vein in its middle; nervulus postfurcal (by 2x its width); postnervulus intercepted in its basal 0.3; radial vein reaching the pterostigma at its distal 0.6. 1<sup>st</sup> tergite 2.8x longer than wide; postpetiolus 1.2x longer than wide, with some fine rugae; 2<sup>nd</sup> tergite 0.88x as long as wide; thyridium transverse. Ovipositor sheath stab-shaped, pilose, ca. 10.0x longer than

wide and 1.1x longer than the hind metatarsus, slightly narrowed apically.

**Colour:** Head yellowish-red; mandibular teeth and ocellar field black; clypeus, gena and inner orbit slightly paler. Mesosoma yellowish-red; mesoscutum with frontal parts of median field and central parts of lateral field pale brownish; propodeum yellowish-red, somewhat darker fronto-dorsally. 1<sup>st</sup> tergite black, petiolus yellow basally, postpetiolus narrowly yellowish-red apically; 2<sup>nd</sup> tergite black in the basal third, with large arched yellowish mark apically; 3<sup>rd</sup> tergite yellowish basally, more reddish apically, following tergites reddish. Legs yellow; hind tibia narrowly dark brownish at apex (1/3 of tibial width); apical tarsomere slightly darkened at apex. Pterostigma very pale ochreous, margins not darkened.

**Remark:** This species is difficult to identify in the key of the *dispar*-group (SCHWENKE, 1999: 48–51) since the ovipositor sheath is slightly longer (1.1x) than the hind metatarsus. In this key, it runs to no. 42 (*Mesochorus velox* HOLMGREN), but differs from *M. velox* by the different coloration of the 3<sup>rd</sup> tergite and the narrower temples.

#### 12. *Mesochorus gravis* SCHWENKE, 1999

(Figs 11a–d)

**Holotype:** "(♂) Dessau 2.2 SO 5.8.1992 130/92 H. Zoerner" [♂, no. 130/92, Germany: Saxony-Anhalt, 2.2 km SE of the district Dessau of town Dessau-Roßlau, 5.8.1992, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Both antennae. Body length 4.8 mm. Temple roundly narrowed behind eye, 0.55x as long as the eye width. OOD 1.2. Face coarsely and densely punctate, with parallel sides, about as wide as the length of clypeus+face and 0.87x as wide as the eye length. Malar space and ventral 0.3 of facial orbit striate. MI 0.25. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with rather dense coarse punctures; mesopleuron with dense coarse punctures dorsally and ventrally on frontal part with dense puncture getting scattered in caudal half; metapleuron with finer but dense punctures. Area basalis trapezoid, about as long as wide; area superomedia 2.2x longer than wide and about as long as the area petiolaris, costula in frontal 3/10 of length of area superomedia; area petiolaris 1.2x longer than wide. Hind femur 4.7x longer than wide; hind metatarsus 0.46x as long as the hind tibia; hind claws with three short but strong basal teeth. Areolet pointed, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma 3.4x longer than wide, radial vein in its distal 0.65, distal parts of radial veins slightly sinusoid. 1<sup>st</sup> tergite 2.5x longer than wide; postpetiolus 1.3x longer than wide, with central rim; 2<sup>nd</sup> tergite 0.95x

as long as wide; thyridium transversal-oval. Stylet long, stab-shaped, not clubbed apically, 1.5x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Black. Face and clypeus reddish and brownish; palps, mandible except teeth, gena, malar space and facial orbit cream-yellow. Frontal orbit with large ivory spots in ventral half; outer orbit reddish. Mesosoma reddish; hind edge of pronotum, tegula and wing base cream-yellow; mesoscutum with three brownish stripes; propodeum in basal 2/3 blackish, apically and metapleuron brownish. Metasoma black; 1<sup>st</sup> tergite narrowly brownish at apex; 2<sup>nd</sup> tergite yellowish in the apical 2.5/10 of tibial length; 3<sup>rd</sup> tergite mainly yellowish, brown laterally and apically, following tergites blackish. Legs yellowish; hind coxa and hind femur reddish-yellow; hind tibia and hind metatarsus cream-yellow, only slightly and narrowly brownish at their apices. Pterostigma pale brownish, proximally and distally paler.

**Remark:** This taxon is correctly placed in the key for males (SCHWENKE, 1999: 115–118) and is characterized by the long stylet and ivory spots on frontal orbit.

#### 13. *Mesochorus hyalinus* SCHWENKE, 1999

(Figs 12a–d)

**Holotype:** "(♀) Jena 10 km NO 19.6.88 K.H. Zoerner" [♀, without no., Germany: Thuringia, 10 km NE of Jena, 19.6.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left antenna completely, right flagellum. Body length 6.0 mm. Temple strongly and linearly narrowed behind eye, 0.3x as long as the eye width. OOD 0.8, ocellar field elevated. Face with parallel sides, superficially punctate, 0.98x as wide as the length of clypeus+face and 0.77x as wide as the eye length. MI 0.2. Lower mandibular tooth slightly longer than the upper one. Malar space and mandible except teeth striate. Mesoscutum with rather coarse but superficial punctures; mesopleuron and metapleuron almost smooth. Area basalis triangular, narrow, 1.5x longer than wide; area superomedia 2.4x longer than wide and 2.0x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.8x as long as wide. Hind femur 4.7x longer than wide; hind metatarsus 0.48x as long as the hind tibia. Hind claws with five basal teeth. Areolet pointed; 2<sup>nd</sup> recurrent vein in its middle; nervulus interstitial; pterostigma 3.6x longer than wide, radial vein in its distal 0.68. 1<sup>st</sup> tergite slender, 3.0x longer than wide; postpetiolus 1.65x longer than wide; smooth; 2<sup>nd</sup> tergite 1.05x longer than wide; thyridium large, transversal-oval. Ovipositor sheath densely pilose, 7.0x longer than wide and 0.88x as long as the hind metatarsus, slightly narrowed in the apical 3/10 of tibial length.

**Colour:** Reddish. Metasoma reddish; 1<sup>st</sup> tergite in apical half and 2<sup>nd</sup> tergite in basal half with diffuse brownish

tints, 2<sup>nd</sup> tergite with a large triangular reddish mark apically. Legs yellowish, hind coxa more reddish; hind tibia and tarsus pale-yellow, hind tibia in apical 1/10 of tibial length (0.5x of tibial width) and tips of hind tarsomeres brownish-red. Pterostigma hyaline.

**Remark:** This species does not belong to the *orbitalis*-group, but should be included in the *declinans*-group sensu SCHWENKE. In the key for the *declinans*-group (SCHWENKE, 1999: 80–83) it runs to no. 31 (*Mesochorus boreomontanus* SCHWENKE), but differs by the reddish mesosoma and almost smooth meso- and metapleuron.

**Valid name:** *Mesochorus jenensis* SCHWENKE, 2002, new name for *Mesochorus hyalinus* SCHWENKE, 1999, preoccupied by DASCH, 1974.

#### 14. *Mesochorus illustris* SCHWENKE, 1999

(Figs 13a–c)

**Holotype:** "(♂) Stiege 1.5 SO Harz 15.5.1988 37/88 H. Zoerner" [♂, no. 37/88, Germany: Saxony-Anhalt, Harz Mountains, 1.5 km SE of the district Stiege of town Oberharz, 15.5.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Head with antennae. Body length 3.2 mm. Mesoscutum coarsely and densely punctate; mesopleuron with coarse dense punctures dorsally and coarse but scattered punctures ventrally; metapleuron with superficial punctures. Area basalis almost rectangular, 1.5x longer than wide; area superomedia 2.3x longer than wide and 1.7x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris ca. 0.9x as long as wide. Hind femur 5.5x longer than wide; hind metatarsus 0.47x as long as the hind tibia; hind claws with two basal teeth. Areolet shortly sessile, 2<sup>nd</sup> recurrent vein proximal to its middle; nervulus interstitial; pterostigma ca. 3.5x longer than wide, radial vein in its distal 0.6. 1<sup>st</sup> tergite 3.0x longer than wide; postpetiolus 1.5x longer than wide, with central rim; 2<sup>nd</sup> tergite 1.4x longer than wide; thyridium roundish. Stylet stab-shaped, not distinctly clubbed apically, 1.3x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Black. Pronotum and mesopleuron brownish-red; hind edge of pronotum, tegula and wing base yellow; metapleuron brownish; mesoscutum blackish, with reddish central spot; scutellum reddish. Metasoma black; 2<sup>nd</sup> tergite with narrow yellow apical margin. Legs yellowish. Pterostigma hyaline.

**Remark:** The species is correctly placed in the key of the *curvulus*-group (SCHWENKE, 1999: 35–37).

#### 15. *Mesochorus luminis* SCHWENKE, 1999

(Figs 14a–d)

**Holotype:** "(♂) Wittenberg-Lu 10–30.8.1964 Lichtfalle H. Zoerner" [♂, without no., Germany: Saxony-Anhalt, Lutherstadt Wittenberg, light trap, 10–30.8.1964, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: One antenna completely (one antenna with 25 flagellomeres and without tips glued on needle), left wings. Body length 3.3 mm. Flagellum with more than 25 flagellomeres; 1<sup>st</sup> flagellomere 6.8x longer than wide and 0.66x as long as the eye; 2<sup>nd</sup> flagellomere 4.7x longer than wide. Temple strongly narrowed behind eye, 0.4x as long as the eye width. Ocelli very large, OOD 0.65. Face with coarse dense punctures, slightly convergent ventrally, 0.95x as wide as the length of clypeus+face and 0.75x as wide as the eye length. Clypeus smooth, with few coarse punctures. Facial orbit with transverse rugae, malar space striate. MI 0.2. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with scattered fine hair-punctures; mesopleuron with few fine punctures dorsally, almost smooth ventrally; metapleuron with fine scattered punctures. Areae basalis and superomedia confluent; area basalis trapezoid, as long as wide; area superomedia 2.1x longer than wide and 1.5x longer than the area petiolaris, costula in its middle; area petiolaris 1.15x longer than wide. Hind femur 4.5x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws without visible teeth. Areolet pointed, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma ca. 3.5x longer than wide, radial vein in its distal 0.6. 1<sup>st</sup> tergite 3.0x longer than wide, postpetiolus 1.5x longer than wide, completely and strongly striate; 2<sup>nd</sup> tergite 1.05x longer than wide; thyridium transversal-oval. Stylet spatula-shaped, strongly clubbed apically; 1.4x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Flagellum yellow, slightly infuscate apically. Face reddish; palps, mandible except teeth, malar space, gena and facial orbit cream-yellow; orbits otherwise reddish. Mesosoma reddish; hind edge of pronotum, wing base and tegula cream-yellow; mesoscutum with two lateral and one fronto-medial brownish spots; propodeum brownish; mesopleuron ventrally and metapleuron reddish-brown. 1<sup>st</sup> tergite red basally; 2<sup>nd</sup> tergite yellow in the apical 2.5/10 of tibial length; 3<sup>rd</sup> tergite mainly yellow, brownish apically; following tergites blackish. Legs yellow; hind tibia cream-yellow, brownish in the apical 1/10 of tibial length. Pterostigma hyaline.

**Remark:** This species cannot be identified with the keys published by SCHWENKE (1999) and is misplaced there. SCHWENKE included the taxon in the *dispar*-group, probably due to the striate postpetiolus, but the venation of fore wing in *Mesochorus luminis* SCHWENKE is untypical for this species-group. The holotype of *M. luminis*

belongs to the *pectoralis*-group sensu SCHWENKE and runs to no. 30 (*Mesochorus pharaonis* SCHWENKE) in the key for males (SCHWENKE, 1999: 115–118). However, the type of *M. pharaonis* has a completely different colour pattern. Although SCHWENKE (1999: 100) (erroneously) mentioned a smaller size of ocelli for *Mesochorus provocator* AUBERT males (which would run to no. 32 in his key), a comparison of the available material shows no relevant differences.

**Valid name:** *Mesochorus provocator* AUBERT, 1965  
syn. nov. *Mesochorus luminis* SCHWENKE, 1999.

#### 16. *Mesochorus martinus* SCHWENKE, 1999

(Figs 15a–d)

**Holotype:** "(♀) Lu-Wittenberg 7.1964 Lichtfalle H. Zoerner" [♀, without no., Germany: Saxony-Anhalt, Lutherstadt Wittenberg, light trap, 7.1964, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left antenna. Body length 5.1 mm. Flagellum with 33 flagellomeres; 1<sup>st</sup> flagellomere 6.6x longer than wide and 0.67x as long as the eye; 2<sup>nd</sup> flagellomere 3.8x longer than wide; preapical flagellomeres ca. 2.0x longer than wide. Temple strongly narrowed behind eyes, 0.45x as long as the eye width. OOD 1.3. Face coarsely punctate, about as wide as the length of face+clypeus and 0.9x as wide as the eye length, sides convergent ventrally. Clypeus with scattered punctures. Ventral 0.4 of facial orbits mandibular base and malar space widely striate. MI 0.5. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with moderately dense punctures apico-medially and scattered punctures laterally. Mesopleuron with fine dense punctures dorsally and scattered small hair-punctures ventrally; metapleuron with very fine scattered punctures. Area basalis rectangular, slightly longer than wide; area superomedia 1.9x longer than wide and 1.3x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.8x as long as wide. Hind femur stout, 4.0x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with three long and widely spaced teeth. Areolet shortly sessile, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma 3.2x longer than wide, radial vein in its distal 0.65. 1<sup>st</sup> tergite 2.4x longer than wide; postpetiolus 1.2x longer than wide, smooth; 2<sup>nd</sup> tergite 0.8x as long as wide; thyridium transversal-oval. Ovipositor sheath pilose, ca. 6.8x longer than wide and 0.95x as long as the hind metatarsus, slightly narrowed in the apical 4/10 of tibial length.

**Colour:** Black. Face reddish; wide facial orbit, mandible except teeth and malar space yellow; gena and orbits widely reddish. Mesosoma blackish; pronotum reddish; hind edge of pronotum, tegula and wing base yellowish;

mesopleuron brownish, reddish fronto-dorsally. 1<sup>st</sup> tergite narrowly dark reddish basally; 2<sup>nd</sup> tergite yellow in the apical 2/10 of tibial length; 3<sup>rd</sup> tergite yellowish, sides brownish; following tergites brownish, reddish-brown centrally and apically. Legs yellowish, hind tibia brown in apical 2/10 of tibial length. Pterostigma brownish.

**Remark:** This taxon is difficult to identify in the key for the *pectoralis*-group (SCHWENKE, 1999: 95–98) since the mesopleuron is not completely black. In this key, it runs to no. 60 (*Mesochorus venerandus* SCHWENKE), but differs from *M. venerandus* by shorter temples and a different coloration of the mesosoma.

#### 17. *Mesochorus obscurus* SCHWENKE, 1999

(Figs 16a–d)

**Holotype:** "(♀) Dessau 1,3 SO 15.9.1993 347/93 H. Zoerner" [♀, no. 347/93, Germany: Saxony-Anhalt, 1.3 km SE of the district Dessau of town Dessau-Roßlau, 15.9.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Right flagellum. Body length 3.1 mm. Flagellum with 26 flagellomeres; 1<sup>st</sup> flagellomere 6.7x longer than wide and 0.62x as long as the eye; 2<sup>nd</sup> flagellomere 4.0x longer than wide; preapical flagellomeres ca. 1.5x longer than wide. Temple strongly narrowed behind eye, ca. 0.5x as long as the eye width. OOD 1.0. Face narrow, coarsely punctate, sides convergent ventrally, 0.95x as wide as the length of clypeus+face and 0.85x as the eye length. Clypeus with coarse punctures. MI 0.2. Malar space striate. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine dense punctures apico-medially, with scattered punctures laterally; mesopleuron with fine punctures dorsally, almost smooth ventrally; metapleuron with very fine scattered punctures. Area basalis trapezoid, slightly longer than wide; area superomedia 1.9x longer than wide and 1.6x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.86x as long as wide. Hind femur 4.1x longer than wide; hind metatarsus 0.47x as long as the hind tibia. Claws without visible teeth. Areolet shortly sessile, 2<sup>nd</sup> recurrent vein in its middle; nervulus slightly postfurcal (by 0.5x its width); pterostigma 3.1x longer than wide, radial vein in its distal 0.68. 1<sup>st</sup> tergite 2.6x longer than wide; postpetiolus ca. 1.3x longer than wide, with central rim and some rugae; 2<sup>nd</sup> tergite about as long as wide; thyridium transverse-oval. Stylet stab-shaped, clubbed apically, 1.3x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Black. Flagellum brownish yellow, basal two flagellomeres yellowish. Face reddish; wide facial orbit, wide spot opposite to antennal base, base of mandible, and malar space yellow. Orbita otherwise yellowish-red. Mesosoma black; pronotum reddish-brown; hind edge of

pronotum, tegula and wing base yellow. 1<sup>st</sup> tergite black; 2<sup>nd</sup> tergite with yellow-red band in the apical 2.5/10 of tibial length; 3<sup>rd</sup> tergite yellow-red basally and centrally, sides and hind margin brown; following tergites blackish, with dark-grey hind margins. Legs reddish-yellow; hind coxa and hind femur with some reddish-brown suffusion dorsally; hind tibia yellow, basally and in the apical 1/10 of tibial length (1x its width) brownish; hind tarsus except basal half of metatarsus brownish. Pterostigma pale brownish.

**Remark:** The inclusion of this species into the *dispar*-group is questionable because the ocelli are large, the areolet is only shortly sessile and the nervulus is slightly postfurcal. If one accepts this position, the species are correctly placed in the key for the *dispar*-group (SCHWENKE, 1999: 48–51). Using the other key for males (SCHWENKE, 1999: 115–118), this taxon would run to no. 58 (*Mesochorus caliginosus* SCHWENKE) but differs by its smaller size and smoothed mesopleuron.

**Valid name:** *Mesochorus anhaltinus* SCHWENKE, 2002, new name for *Mesochorus obscurus* SCHWENKE, 1999, preoccupied by DASCH, 1974.

#### 18. *Mesochorus opacus* SCHWENKE, 1999

(Figs 17a–d)

**Holotype:** "(♀) Oppach 1,3 km O 8.1993 275/93 H. Zoerner" [♀, no. 275/93, Germany: Saxony, 1.3 km E of Oppach, 8.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left and right flagellomeres from 26<sup>th</sup> on, right 4<sup>th</sup> and 5<sup>th</sup> fore tarsomeres. Body length 4.7 mm. 1<sup>st</sup> flagellomere 6.1x longer than wide and 0.69x as long as the eye; 2<sup>nd</sup> flagellomere 4.0x longer than wide. Temple very short and strongly narrowed behind eye, ca. 0.3x as long as the eye width. Ocelli very large, OOD 0.5. Face with coarse and dense punctures, with distinct central ridge, slightly convergent ventrally, facial orbit superficially punctate and shining, about as wide as the length of clypeus+face and 0.75x as wide as the eye length. Clypeus almost smooth. MI 0.2. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine scattered punctures; mesopleuron with fine and dense punctures dorsally and very scattered small hair-punctures ventrally; metapleuron with fine scattered punctures. Area basalis rectangular, 1.5x longer than wide; area superomedia 2.4x longer than wide and 1.4x longer than the area petiolaris, costula in frontal 3/10 of length of area superomedia; area petiolaris 0.8x as long as wide. Hind femur 4.2x longer than wide; hind metatarsus 0.49x as long as the hind tibia; hind claws with four basal teeth. Areolet pointed sessile, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma 3.3x longer than wide, radial vein in

its distal 0.67. 1<sup>st</sup> tergite 2.3x longer than wide; postpetiolus 1.25x longer than wide, smooth; 2<sup>nd</sup> tergite 1.05x longer than wide, thyridium transversal-oval. Ovipositor sheath pilose, sabre-shaped, ventrally rounded, 5.3x longer than wide and 0.85x as long as the hind metatarsus, narrowed in the apical 3/10 of tibial length.

**Colour:** Black. Flagellum blackish, basal flagellomeres reddish-brown. Head with face blackish; mandible except teeth and malar space yellowish, clypeus reddish. Mesosoma blackish. Hind edge of pronotum, tegula and wing base cream-yellow, fronto-dorsal edge of the mesopleuron reddish-brown. Legs reddish; hind tibia yellow, brownish basally and in the apical 2/10 of tibial length. Metasoma black; 2<sup>nd</sup> tergite yellowish in the apical 1/10 of tibial length. Pterostigma brownish.

**Remark:** The species is correctly placed in the key of the *angustatus*-group (SCHWENKE, 1999: 72–73). SCHWENKE separated this taxon from *Mesochorus rubeculus* HARTIG mainly by its dark facial orbits. The colour of facial orbits is variable in *M. rubeculus*, and both species are synonymized here.

**Valid name:** *Mesochorus rubeculus* HARTIG, 1838  
syn. nov. *Mesochorus opacus* SCHWENKE, 1999.

#### 19. *Mesochorus oppacheus* SCHWENKE, 1999

(Figs 18a–d)

**Holotype:** "(♀) Oppach 1,3 O 15.8.1993 304/93 H. Zoerner" [♀, no. 304/93, Germany: Saxony, 1.3 km E of Oppach, 15.8.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellum, right antenna completely. Body length 5.1 mm. Temple very short, strongly narrowed behind eye, 0.25x as long as the eye width. Ocelli very large, OOD 0.35. Face with fine, moderately dense punctures, 0.92x as wide as the length of face+clypeus, and 0.66x as wide as the length of the eye, sides slightly convergent ventrally. Clypeus with scattered punctures. Ventral 0.2 of facial orbit, mandibular base and malar space striate. MI 0.15. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with coarse dense punctures caudal-medially, with strongly smoothed structure laterally. Mesopleuron with fine punctures dorsally, almost smooth ventrally; metapleuron with fine scattered punctures. Area basalis triangular, as long as wide, stalked apically; area superomedia 2.3x longer than wide and 2.0x longer than the area petiolaris, costula in frontal 3/10 of length of area superomedia; area petiolaris 0.9x as long as wide. Hind femur 4.5x longer than wide; hind metatarsus 0.46x as long as the hind tibia; hind claws with ca. 4 small basal teeth. Areolet shortly sessile, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma narrow, 3.4x longer than wide, radial vein in its distal 0.7. 1<sup>st</sup> tergite 2.3x longer

than wide; postpetiolus 1.2x longer than wide, smooth; 2<sup>nd</sup> tergite 1.1x longer than wide; thyridium transversal-oval. Ovipositor sheath 5.9x longer than wide and 0.85x as long as the hind metatarsus, narrowed in the apical 3/10 of tibial length.

**Colour:** Reddish-brown. Head blackish; palps, mandible except teeth, malar space, clypeus and narrow facial orbit cream-yellow. Mesosoma reddish; propleuron brownish; hind edge of pronotum, tegula and wing base cream-yellow. 1<sup>st</sup> and 2<sup>nd</sup> tergites dark reddish-brown, 3<sup>rd</sup> tergite reddish-brown basally, blackish apically; following tergites blackish. Legs reddish; hind tibia pale yellow, brown in the apical 2/10 of tibial length (2.5x of tibial width). Pterostigma hyaline-ochreous.

**Remark:** This species is correctly placed in the key for the *angustatus*-group (SCHWENKE, 1999: 72–73), although the pterostigma is not clearly hyaline, but has an ochreous tint.

#### 20. *Mesochorus ovimaculatus* SCHWENKE, 1999

(Figs 19a–d)

**Holotype:** "(♀) Dessau-Anh. 108/88 23.8. leg. Zoerner" [♀, no. 108/88, Germany: Saxony-Anhalt, district Dessau of town Dessau-Roßlau, 23.8.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Complete. Body length 3.5 mm. Flagellum with 30 flagellomeres, preapical flagellomeres ca. 1.5x longer than wide; 1<sup>st</sup> flagellomere 6.4x longer than wide and 0.6x as long as the eye; 2<sup>nd</sup> flagellomere 3.4x longer than wide. Temple slightly and roundly narrowed behind eye, 0.65x as long as the eye width. OOD 1.45. Face coarsely punctate, with parallel sides, 1.05x wider than the length of clypeus+face and 0.9x as wide as the length of the eye, coarsely punctate. MI 0.5. Clypeus with scattered punctures. Ventral 0.4 of facial orbit and malar space striate. Upper mandibular teeth slightly larger than the lower ones. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with moderately dense punctures apico-medially, superficially punctate laterally; mesopleuron with dense coarse punctures dorsally and very scattered fine hair-punctures ventrally; metapleuron more or less smooth. Area basalis trapezoid, slightly longer than wide; area superomedia 1.8x longer than wide and 1.3x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.8x as long as wide. Hind femur 4.1x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with about three short teeth. Areolet pointed, slightly oblique, 2<sup>nd</sup> recurrent vein in its middle; nervulus interstitial; pterostigma 3.1x longer than wide, radial vein in its distal 0.7. 1<sup>st</sup> tergite 2.75x longer than wide; postpetiolus 1.25x longer than wide, smooth; 2<sup>nd</sup> tergite 0.95x as long as wide; thyridium roundish. Ovipositor sheath

pilose, 5.4x longer than wide and as long as the hind metatarsus, slightly narrowed in the apical 4/10 of tibial length.

**Colour:** Flagellum yellowish, darkened in distal half. Face dark brownish. Clypeus and narrow orbits reddish; mandible except teeth, malar space and gena yellow. Mesosoma black; hind edge of pronotum, tegula and wing base yellow. Metasoma black; 2<sup>nd</sup> tergite with yellow-red band in the apical 2/10 of tibial length; 3<sup>rd</sup> tergite yellow-red, with brownish sides and yellowish-grey apical band; following tergites brown basally and yellow-grey apically. Legs reddish-yellow; hind femur with brownish suffusion; hind tibia yellow, brown basally and in the apical 1.5/10 of tibial length (1x of tibial width). Pterostigma hyaline-ochreous.

**Remark:** This species is correctly placed in the key for the *pectoralis*-group (SCHWENKE, 1999: 95–98).

#### 21. *Mesochorus pungens* SCHWENKE, 1999

(Figs 20a–d)

**Holotype:** "(♂) Dessau-Anh. 4.7. leg. Zoerner 117/88" [♂, no. 117/88, Germany: Saxony-Anhalt, district Dessau of town Dessau-Roßlau, 4.7.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Complete. Body length 3.9 mm. Flagellum with 28 flagellomeres; 1<sup>st</sup> flagellomeres ca. 3.7x longer than wide and 0.5x as long as the eye; 2<sup>nd</sup> flagellomere ca. 3x longer than wide; preapical flagellomeres ca. 1.7x longer than wide. Temple moderately and roundly narrowed behind eye, 0.7x as long as the eye width. OOD 1.7. Transversal carina below antennae not dipped medially. Face coarsely punctate, very wide, 1.25x wider than the length of face+clypeus and 1.1x wider than the length of eye, with parallel sides. Frons and occiput with scattered punctures. Mandible with two equal teeth. MI 0.4. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with dense and coarse punctures apico-medial, punctuation less dense and coarse laterally; mesopleuron with coarse but scattered punctures; metapleuron with slightly denser punctures. Prescutellar groove slit-shaped. Areae basalis and superomedia confluent; area superomedia ca. 2.9x longer than wide; costula in its middle; area petiolaris large, hexagonal, about as long as wide. Hind femur 3.9x longer than wide, hind claws without visible teeth. Areolet pointed sessile, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus strongly postfurcal (1x its length); postnervulus intercepted behind its middle; pterostigma 2.8x longer than wide. 1<sup>st</sup> tergite 2.25x longer than wide; postpetiolus 1.1x longer than wide, with coarse longitudinal striae, almost appearing as dorsolateral carinae; 2<sup>nd</sup> tergite 0.75x as long as wide; thyridium large, transverse. Stylet pointed at apex, 1.6x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Face yellow; orbits cream-yellow; head otherwise yellowish-red. Mesosoma yellow; mesoscutum with brownish spots laterally and frontal-medially; pronotum pale yellowish apically; propodeum brown, apical 1/3 yellowish. 1<sup>st</sup> tergite black, 1<sup>st</sup> sternite dark rufous; 2<sup>nd</sup> tergite brown, yellow in the apical 3/10 of tibial length; 3<sup>rd</sup> tergite yellow, with brownish band in the apical half; following tergites yellowish-brown and slightly vespoid. Legs yellow; hind tibia cream-yellow, brownish in the apical 1/10 of tibial length (0.5x of tibial width); hind tarsomeres cream-yellow with brownish tips. Pterostigma hyaline.

**Remark:** This taxon belongs to the genus *Stictopisthus* Thomson (e.g. transversal carina below antennae not dipped medially, prescutellar groove slit-shaped, nervulus of fore wing strongly postfurcal, and postpetiolus strongly striate) and is identical with the male of *Stictopisthus flavescens* (FONSCOLOMBE, 1852).

**Valid name:** *Stictopisthus flavescens* (FONSCOLOMBE, 1852) syn. nov. *Mesochorus pungens* SCHWENKE, 1999.

with coarse longitudinal striae; 2<sup>nd</sup> tergite about as long as wide; thyridium very large, transversal-oval. Ovipositor sheath pilose, 7.7x longer than wide and 0.92x as long as the hind metatarsus, slightly narrowed in the apical 4/10 of tibial length.

**Colour:** Black. Flagellum yellowish, slightly darkened apically. Head reddish; face and clypeus brown, more blackish centrally; orbits yellow-red; frons medially, ocellar field and occiput blackish. Mesosoma black; pronotum reddish-brown, upper margin yellow-red; tegula brownish, wing base yellow; mesoscutum with H-shaped central reddish spot. Metasoma black; 2<sup>nd</sup> tergite reddish-yellow in the apical 2/10 of tibial length; 3<sup>rd</sup> tergite reddish-yellow in the basal 0.5, brown laterally and apically; following tergites black. Legs reddish-yellow; hind coxa brown; hind femur reddish; hind tibia cream-yellow, brownish in the apical 1/10 of tibial length (0.5x of tibial width). Pterostigma hyaline.

**Remark:** This species is correctly placed in the key of the *pectoralis*-group (SCHWENKE, 1999: 95–98) and is characterized by its narrow face, large ocelli and striated postpetiolus.

## 22. *Mesochorus riparius* SCHWENKE, 1999

(Figs 21a–d)

**Holotype:** "(♀) Dessau 4 km SSW 19.9.85 K.H. Zoerner" [♀, without no., Germany: Saxony-Anhalt, 4 km SSW of the district Dessau of town Dessau-Roßlau, 19.9.1985, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellomeres from 23<sup>th</sup> on and right flagellomeres from 25<sup>th</sup> on. Body length 4.1 mm. 1<sup>st</sup> flagellomere 6.2x longer than wide and 0.63x as long as the eye; 2<sup>nd</sup> flagellomere 4.0x longer than wide. Temple very short and very strongly narrowed behind eye, only 0.2x as long as the eye width. Ocelli very large, OOD 0.4. Face narrow, coarsely punctate, sides convergent ventrally, 0.86x as wide as the length of clypeus+face and 0.65x as wide as the length of the eye. Clypeus smooth centrally. Facial orbit completely, base of mandible and malar space striate. MI 0.2. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with dense but superficial punctures; mesopleuron with fine dense punctures dorsally and with fine scattered punctures ventrally; metapleuron with very fine scattered punctures. Area basalis trapezoid, about as long as wide; area superomedia 2.3x longer than wide and 1.25x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris about as long as wide. Hind femur 4.4x longer than wide; hind metatarsus 0.45x as long as the hind tibia; hind claws with three or four rather long teeth. Arolet pointed, oblique, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus interstitial; pterostigma 3.0x longer than wide, radial vein in its distal 0.65. 1<sup>st</sup> tergite 2.5x longer than wide; postpetiolus 1.4x longer than wide,

## 23. *Mesochorus sedis* SCHWENKE, 1999

(Figs 22a–d)

**Holotype:** "(♂) Roßlau 4,5 km NNO 1992 144/92 H. Zoerner; Fläming, feu. Waldwege" [♂, no. 144/92, Germany: Saxony-Anhalt, Fläming, 4.5 km NNE of the district Roßlau of town Dessau-Roßlau, moist forest trails, 1992, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Right antenna completely. Body length 2.9 mm. Flagellum with 26 flagellomeres, preapical flagellomeres ca. 2.0x longer than wide; 1<sup>st</sup> flagellomere 5.8x longer than wide and 0.7x as long as the eye; 2<sup>nd</sup> flagellomere 3.9x longer than wide. Temple roundly narrowed behind the eye, 0.5x as long as the eye width. OOD 1.0. Face narrow, with fine dense punctures and distinct central ridge, 0.9x as wide as the length of clypeus+face and 0.73x as wide as the length of eye, sides slightly convergent ventrally. Clypeus with rather dense punctures. MI 0.4. Malar space and ventral 0.5 of facial orbit striate. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with fine scattered punctures; mesopleuron with fine punctures dorsally, almost smooth ventrally; metapleuron with superficial and scattered punctures. Area basalis trapezoid, wider than long; area superomedia 1.6x longer than wide and 0.8x as long as the area petiolaris, costula in the middle; area petiolaris very large, almost 0.5x as long as propodeum and 1.25x longer than wide. Hind femur 5.3x longer than wide; hind metatarsus short, 0.35x as long as the hind tibia; hind claws without visible teeth. Arolet stalked, 2<sup>nd</sup> recurrent vein slightly distal to its middle; nervulus

interstitial; pterostigma 3.2x longer than wide, radial vein in its distal 0.55, distal part of radial vein long and weakly sinusoid. 1<sup>st</sup> tergite 2.7x longer than wide; postpetiolus 1.5x longer than wide, with some rugae; 2<sup>nd</sup> tergite 1.1x longer than wide; thyridium comma-shaped. Stylet stab-shaped, clubbed apically, 1.6x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Face and orbits reddish-yellow; ocellar field and occiput dorsally brownish. Mesosoma reddish; hind edge of pronotum, tegula and wing base yellow; mesoscutum with two lateral and one frontomedial reddish-brown spots. 1<sup>st</sup> tergite yellow-red, centrally brownish; 2<sup>nd</sup> tergite brown, yellow in the apical 3/10 of tibial length; 3<sup>rd</sup> tergite yellow, brownish in the apical 1/3; following tergites brown, with wide grey apical bands (slightly vespid). Legs pale yellow; hind tibia not distinctly darkened apically. Pterostigma hyaline, apical margin ochreous.

**Remark:** The correct position of this species is questionable. SCHWENKE (1999) included *Mesochorus sedis* in the *curvulus*-group, but the ocelli are large and the distal part of radial veins only slightly sinusoid. In my opinion, it is better placed in the *pectoralis*-group. In the key for the males (SCHWENKE, 1999: 115–118) it runs to no. 34 (*Mesochorus subfuscus* SCHWENKE), but differs from that species by its smaller size, rugose postpetiolus, and different colour of the metasoma.

#### 24. *Mesochorus solus* SCHWENKE, 1999

(Figs 23a–d)

**Holotype:** "(♀) Dessau 1,7 NW 29.9.1993 395/93 H. Zoerner" [♀, no. 395/93, Germany: Saxony-Anhalt, 1.7 km NW of the district Dessau of town Dessau-Roßlau, 29.9.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Both antennae completely (head broken off and glued on card). Body length 4.0 mm. Temple strongly narrowed behind eye, ca. 0.4x as long as the eye width. OOD 1.15. Face with dense fine punctures, 1.03x wider than the length of clypeus+face and 0.86x as wide as the eye length, with parallel sides. Clypeus with scattered punctures. Malar space striate. MI 0.3. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from the mandibular base. Mesoscutum with fine scattered punctures, strongly shining; mesopleuron with scattered fine hair-punctures dorsally and very scattered hair-punctures ventrally; metapleuron with scattered and fine punctures. Area basalis rectangular, about as long as wide; area superomedia 2.3x longer than wide and 1.8x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.92x as long as wide. Hind femur 4.3x longer than wide; hind metatarsus 0.47x as long as the hind tibia; hind claws with four or five small teeth, middle tooth longest. Arolet

pointed, 2<sup>nd</sup> recurrent vein slightly proximal to its middle; nervulus slightly postfurcal (0.5x of its width); pterostigma 3.5x longer than wide, radial vein in its distal 0.6. 1<sup>st</sup> tergite 2.5x longer than wide; postpetiolus 1.2x longer than wide, smooth; 2<sup>nd</sup> tergite 0.9x as long as wide; thyridium transversal-oval. Ovipositor sheath pilose, hairs about as long as width of sheath, 6.7x longer than wide and about as long as the hind metatarsus, slightly narrowed in the apical 3/10 of tibial length.

**Colour:** Black. Face reddish, with brownish stripes; clypeus, facial orbit, ventral half of frontal orbit, mandible except teeth, malar space and gena cream-yellow; outer orbit reddish-yellow. Mesosoma blackish; hind edge of pronotum, tegula and wing base cream-yellow. Metasoma black; 2<sup>nd</sup> tergite yellowish in the apical 1.5/10 of tibial length; 3<sup>rd</sup> tergite and following tergites yellow-red centrally, with greyish-yellow hind margins. Legs yellow-red, hind coxa and femur more reddish; hind tibia yellow, brownish basally and in the apical 2/10 of tibial length. Pterostigma brownish.

**Remark:** The species is misplaced in the key for *pectoralis*-group (SCHWENKE, 1999: 95–98) because the ovipositor sheath is about as long as the hind metatarsus. It runs to no. 68 (*Mesochorus bracatus* SCHWENKE) but differs from *M. bracatus* by its pale hind coxa and pale hind femur.

#### 25. *Mesochorus sordidus* SCHWENKE, 1999

(Figs 24a–d)

**Holotype:** "(♂) Oppach 1,2 km O 10.6.1993 174/93 H. Zoerner" [♂, no. 174/93, Germany: Saxony, 1.2 km E of Oppach, 10.6.1993, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left antenna completely, right flagellomeres from 3<sup>rd</sup> on. Body length 3.3 mm. 1<sup>st</sup> flagellomere 7.3x longer than wide and 0.71x as long as the eye; 2<sup>nd</sup> flagellomere 4.4x longer than wide. Temple moderately narrowed behind eye, 0.55x as long as the eye width. OOD 1.0. Face coarsely punctate, 1.1x wider than the length of clypeus+face and 0.87x as wide as the eye length, with parallel sides. MI 0.35. Clypeus with scattered punctures. Malar space striate. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from the mandibular base. Mesoscutum with coarse dense punctures apico-medially and with scattered punctures laterally; mesopleuron with dense fine punctures dorsally and moderately dense but superficial punctures ventrally. Area basalis triangular, slightly longer than wide, shortly stalked apically; area superomedia 1.7x longer than wide and 1.3x longer than the area petiolaris, costula in frontal 4/10 of length of area superomedia; area petiolaris 0.87x as long as wide. Hind femur 5.2x longer than wide; hind metatarsus 0.47x as long as the hind tibia. Hind claws without visible teeth. Arolet shortly sessile, 2<sup>nd</sup> recurrent vein slightly prox-

imal to its middle; nervulus slightly postfurcal (by 1x its width); pterostigma 2.9x longer than wide, radial vein in its distal 0.68. 1<sup>st</sup> tergite 2.9x longer than wide; postpetiolus 1.4x longer than wide, smooth; 2<sup>nd</sup> tergite 1.05x longer than wide; thyridium roundish. Stylet long, stab-shaped, slightly clubbed apically, 1.4x longer than the 2<sup>nd</sup> hind tarsomere.

**Colour:** Black. Basal flagellomeres yellowish. Face pale yellow, partly with reddish-yellow suffusion; wide facial orbit, mandible except teeth, malar space and gena cream-yellow. Frontal orbit opposite to lateral ocelli yellowish. Mesosoma black; pronotum reddish; propleuron, anterior margin and hind edge of pronotum, tegula and wing base cream-yellow; mesopleuron reddish, brownish in dorsal third; metapleuron brownish; mesoscutum with reddish H-shaped central spot. 1<sup>st</sup> tergite black; 2<sup>nd</sup> tergite with red band in the apical 1.5/10 of tibial length; 3<sup>rd</sup> tergite red, brownish centrally; following tergites blackish, with dark-greyish hind margins. Legs reddish; hind tibia yellow, brownish basally and in the apical 2/10 of tibial length; hind tarsus except pale base of metatarsus brownish. Pterostigma brownish, distal edge pale.

**Remark:** The species is correctly placed in the key for the *dispar*-group (SCHWENKE, 1999: 48–51), though the pterostigma is not blackish-brown as stated by SCHWENKE but brownish with paler distal edge.

#### 26. *Mesochorus virgatus* SCHWENKE, 1999

(Figs 25a–d)

**Holotype:** "(♀) Dessau 4 SSO 16.8.88 K.H. Zoerner; 92/88 Muldauenwald" [♀, no. 92/88, Germany: Saxony-Anhalt, 4 km SSE of the district Dessau of town Dessau-Roßlau, car woodland of river Mulde, 16.8.1988, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Both antennae, both fore legs. Body length 3.2 mm. Temple slightly narrowed behind eye, 0.7x as long as the eye width. OOD 1.8. Face very wide, sides divergent ventrally, 1.2x wider than the length of clypeus+face and 1.1x wider than the eye length, densely and coarsely punctate, with weak sublateral impressions below antennae. Ventral 0.5 of facial orbit and malar space widely striate. MI 0.9. Mandible with two equal teeth. Genal carina reaching the hypostomal carina far from mandibular base. Mesoscutum with dense coarse punctures apico-medially and laterally; mesopleuron with fine punctures dorsally and almost smooth ventrally; metapleuron with superficial punctures. Area basalis triangular, about as long as wide; area superomedia short, 1.5x longer than wide and 0.8x as long as the area petiolaris, costula in the middle; area petiolaris very large (ca. 0.5x as long as propodeum), 0.95x as long as wide. Hind femur 4.8x longer than wide; hind metatarsus 0.38x as long as the hind

tibia; hind claws with one visible basal tooth. Areolet shortly stalked; 2<sup>nd</sup> recurrent vein in its middle; nervulus slightly postfurcal (by 1x its width); pterostigma 3.0x longer than wide, radial vein in its distal 0.62; distal part of radial vein long and weakly sinusoid. 1<sup>st</sup> tergite 2.4x longer than wide; postpetiolus 1.25x longer than wide, with central rim; 2<sup>nd</sup> tergite about as long as wide; thyridium roundish. Ovipositor sheath pilose, 8.4x longer than wide and 1.2x longer than the hind metatarsus, narrowed over its whole length.

**Colour:** Head yellow; face with some brownish spots; facial orbit and ventral half of frontal orbit widely, clypeus, malar space, mandible except teeth, and gena cream-yellow; frons medially, ocellar field and dorsal stripe of occiput brown. Mesosoma reddish; pronotum and frondorsal and ventral spots on mesopleuron yellow. Tegula with brownish spots. Basal 2/3 of propodeum brown. Metasoma black; 2<sup>nd</sup> tergite with reddish band in the apical 2.5/10 of tibial length; 3<sup>rd</sup> and 4<sup>th</sup> tergites reddish, with central brownish bands; following tergites brown, with yellowish hind margins. Legs reddish-yellow; hind tibia slightly darker in the apical 1.5/10 of tibial length. Pterostigma hyaline.

**Remark:** This species is correctly placed in the key for the *pectoralis*-group (SCHWENKE, 1999: 95–98).

#### 27. *Mesochorus zoernerii* SCHWENKE, 1999

(Figs 26a–d)

**Holotype:** "(♀) Dessau 6,6 SSW 13.8.85 K.H. Zoerner; 78/85 frische Waldwege" [♀, no. 78/85, Germany: Saxony-Anhalt, 6.6 km SSW of the district Dessau of town Dessau-Roßlau, mesophilic forest trails, 13.8.1985, leg. K.H. Zoerner] (SDEI).

**Description:** Missing: Left flagellum broken off, glued on card; left flagellomeres from 24<sup>th</sup> on and right flagellomeres from 28<sup>th</sup> on, right fore wing. Body length 4.8 mm. 1<sup>st</sup> flagellomere 5.0x longer than wide and 0.53x as long as the eye, 2<sup>nd</sup> flagellomere 3.4x longer than wide. Temple strongly narrowed behind eye, 0.48x as long as the eye width. OOD 1.1. Face coarsely and densely punctate, wide, 0.85x as wide as the eye length and 1.15x wider than the length of face+clypeus, sides slightly convergent ventrally. MI 0.5. Mandible with two equal teeth. Genal carina reaching the hypostomal carina close to mandibular base. Mesoscutum with coarse and moderately dense punctures; mesopleuron with finer and dense punctures dorsally and coarse and moderately dense punctures ventrally; metapleuron with fine superficial punctures. Scutellum with apical tubercle. Hind femur 4.7x longer than wide; hind metatarsus 0.43x as long as the hind tibia; hind claws with about 7 long and dense teeth. Area basalis almost rectangular, slightly wider than long; area superomedia 1.5x longer than wide and 0.75x as long as the area petiolaris, costula in frontal

7/10 of length of area superomedia; area petiolaris very large (0.5x propodeal length), 1.25x longer than wide. Areolet pointed, oblique, 2<sup>nd</sup> recurrent vein proximal to its middle; nervulus slightly postfurcal (by 0.5x its width); pterostigma wide, 2.6x longer than wide, radial vein in its distal 0.67. 1<sup>st</sup> tergite 2.8x longer than wide; postpetiolus 1.15x longer than wide, smooth; 2<sup>nd</sup> tergite 0.8x as long as wide; thyridium comma-shaped. Ovipositor sheath long and narrow, pilose, 8.4x longer than wide and 1.3x longer than the hind metatarsus, slightly narrowed in its apical 3/10 of tibial length.

**Colour:** Black. Antennae brown. Face reddish-brown; facial orbit, triangular orbital spot opposite to antennae, malar space, clypeus, mandible except teeth and gena cream-yellow; outer orbit reddish-yellow. Mesosoma blackish; pronotum yellowish frontally; hind edge of pronotum, tegula and wing base cream-yellow. 1<sup>st</sup> sternite completely and 1<sup>st</sup> tergite basally reddish-yellow, 2<sup>nd</sup> tergite with cream-yellow band in the apical 1.5/10 of tibial length. Legs reddish-yellow, hind tibia not darkened apically. Pterostigma brown, proximal and distal edges paler.

**Remark:** This taxon is correctly placed in the key for the *politus*-group (SCHWENKE, 1999: 46).

### Acknowledgement

I want to thank A. TAEGER (SDEI/Müncheberg) for the generous loan of the important *Mesochorus* material determined by SCHWENKE and S. SCHMIDT (ZSM/ Munich) for his help and kind allowance to work with the Hymenoptera collection in Munich.

### References

DASCH, C. E. 1974: Neotropic Mesochorinae (Hymenoptera, Ichneumonidae). – Memoirs of the American Entomological Institute **22**: 1–509.

HORSTMANN, K. 2001: Revisionen von Schlupfwespen-Arten V (Hymenoptera: Ichneumonidae). – Mitteilungen der Münchener Entomologischen Gesellschaft **91**: 77–86. – [http://www.zobodat.at/pdf/MittMuenchEntGes\\_091\\_0077-0086.pdf](http://www.zobodat.at/pdf/MittMuenchEntGes_091_0077-0086.pdf).

HORSTMANN, K. 2002: Revisionen von Schlupfwespen-Arten VI (Hymenoptera: Ichneumonidae). – Mitteilungen der Münchener Entomologischen Gesellschaft **92**: 79–91. – [http://www.zobodat.at/pdf/MittMuenchEntGes\\_092\\_0079-0091.pdf](http://www.zobodat.at/pdf/MittMuenchEntGes_092_0079-0091.pdf).

HORSTMANN, K. 2003: Revisionen von Schlupfwespen-Arten VII (Hymenoptera: Ichneumonidae). – Mitteilungen der Münchener Entomologischen Gesellschaft **93**: 25–37. – [http://www.zobodat.at/pdf/MittMuenchEntGes\\_093\\_0025-0037.pdf](http://www.zobodat.at/pdf/MittMuenchEntGes_093_0025-0037.pdf).

HORSTMANN, K. 2006: Revisionen einiger europäischer Mesochorinae (Hymenoptera, Ichneumonidae). – Linzer Biologische Beiträge **38**: 1449–1492. – [https://www.zobodat.at/pdf/LBB\\_0038\\_2\\_1449-1492.pdf](https://www.zobodat.at/pdf/LBB_0038_2_1449-1492.pdf).

QUICKE, D. L. J. 2015: The Braconid and Ichneumonid parasitoid wasps. Biology, systematics, evolution and ecology. – Wiley Blackwell, Chichester: 1–681.

SCHWENKE, W. 1999: Revision der europäischen Mesochorinae (Hymenoptera, Ichneumonoidea, Ichneumonidae). – Spixiana, Suppl. **26**: 1–124. – [http://www.zobodat.at/pdf/SpixSupp\\_026\\_0001-0124.pdf](http://www.zobodat.at/pdf/SpixSupp_026_0001-0124.pdf).

SCHWENKE, W. 2000: Eine neue *Mesochorus*-Art aus Käfern, mit einer Betrachtung der aus Käfern bekannten Mesochorinae (Hymenoptera, Ichneumonidae, Mesochorinae). – Entomofauna **21**: 49–56. – [http://www.zobodat.at/pdf/ENT\\_0021\\_0049-0053.pdf](http://www.zobodat.at/pdf/ENT_0021_0049-0053.pdf).

SCHWENKE, W. 2002: Neue europäische Mesochorinae-Arten (Hymenoptera, Ichneumonidae, Mesochorinae). – Entomofauna **23**: 85–92. – [http://www.zobodat.at/pdf/ENT\\_0023\\_0085-0092.pdf](http://www.zobodat.at/pdf/ENT_0023_0085-0092.pdf).

SCHWENKE, W. 2004: Eine neue Gattung und 19 neue Arten und Geschlechter europäischer Mesochorinae (Hymenoptera, Ichneumonidae). – Entomofauna **25**: 81–88. – [http://www.zobodat.at/pdf/ENT\\_0025\\_0081-0088.pdf](http://www.zobodat.at/pdf/ENT_0025_0081-0088.pdf).

VIKBERG, V. & VÅRDAL, H. 2017: Taxonomy of some European species of *Mesochorus*, including three new species from Finland and Sweden (Hymenoptera: Ichneumonidae: Mesochorinae). – W-album **20**: 3–42. – <http://nrm.diva-portal.org/smash/get/diva2:1133785/FULLTEXT01.pdf>.

YU, D.; VAN ACHTERBERG, C. & HORSTMANN, K. 2016: Taxapad 2016 – World Ichneumonoidea 2015. Taxonomy, Biology, Morphology and Distribution. – On USB Flash drive. [www.taxapad.com](http://www.taxapad.com). Nepean, Ontario, Canada. – [www.taxapad.com](http://www.taxapad.com).

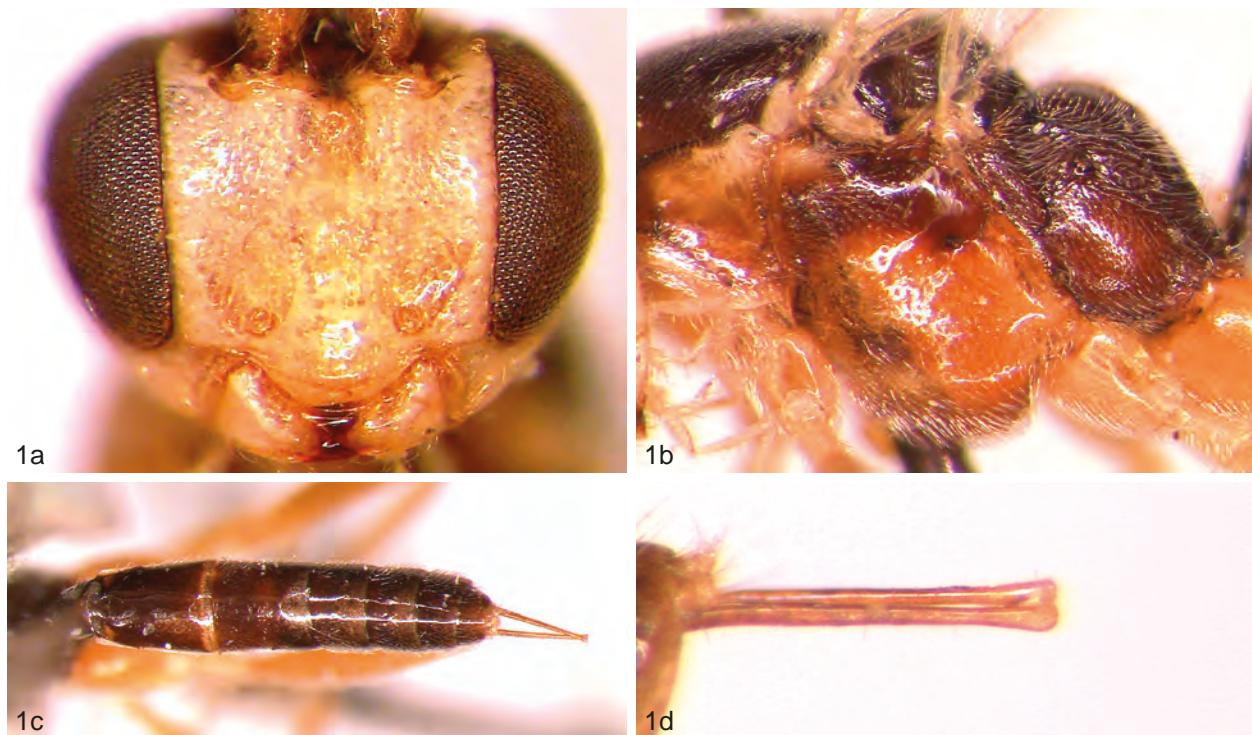


Fig. 1a-d: Holotype of *Mesochorus albifacies* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. stylet.



Fig. 2a-d: Holotype of *Mesochorus amnicolaris* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

RIEDEL, M.: The types of *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the SDEI

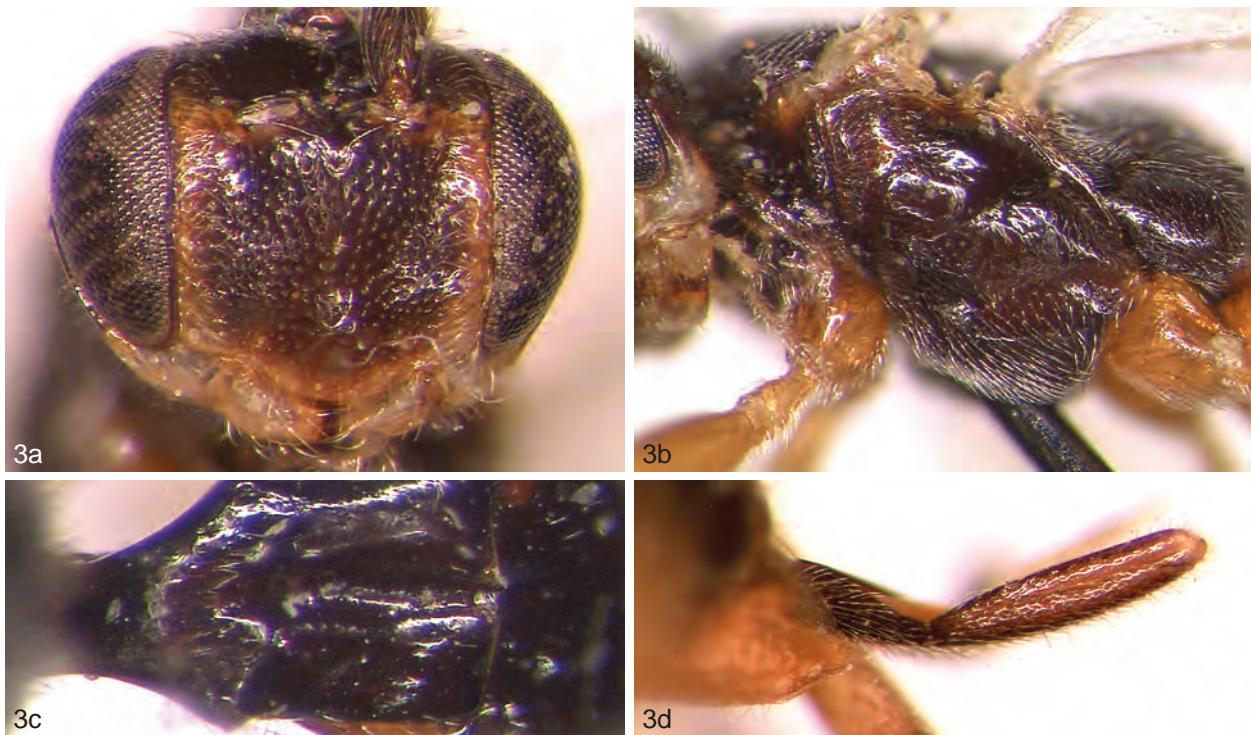


Fig. 3a-d: Holotype of *Mesochorus canalis* SCHWENKE: a. face; b. mesosoma; c. postpetiolus; d. ovipositor sheath.

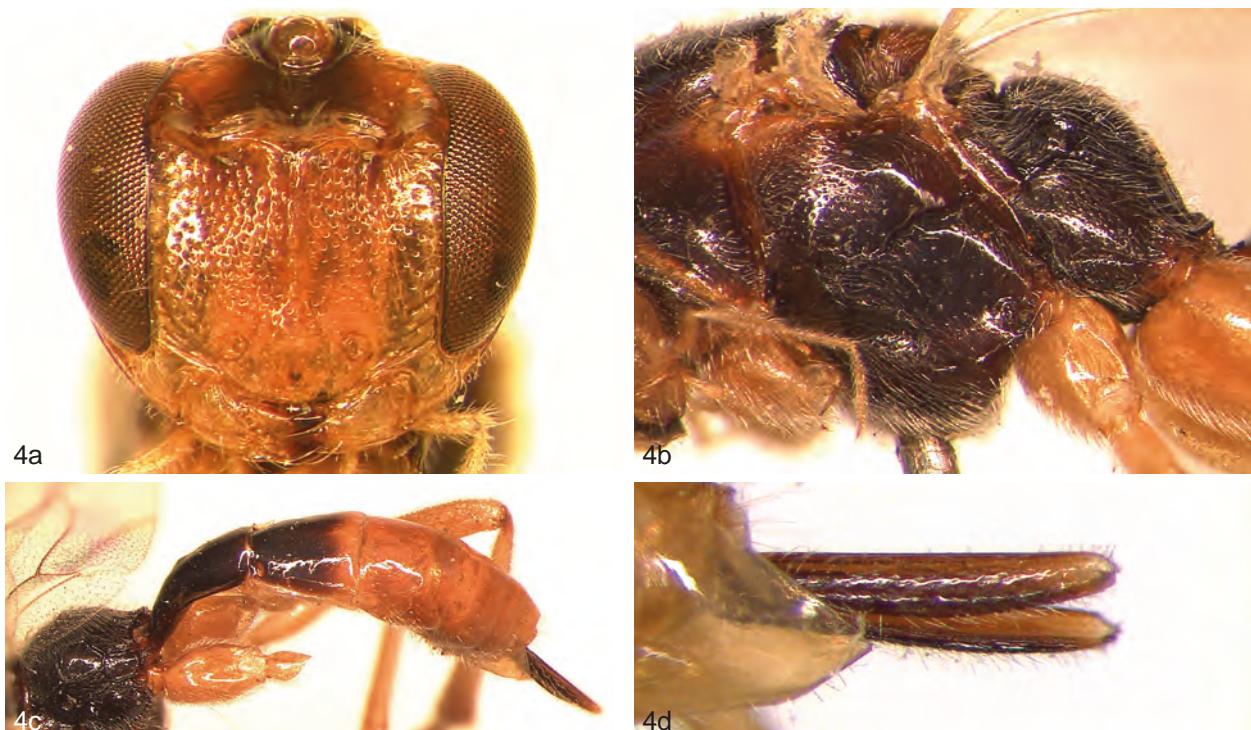


Fig. 4a-d: Holotype of *Mesochorus castellanus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

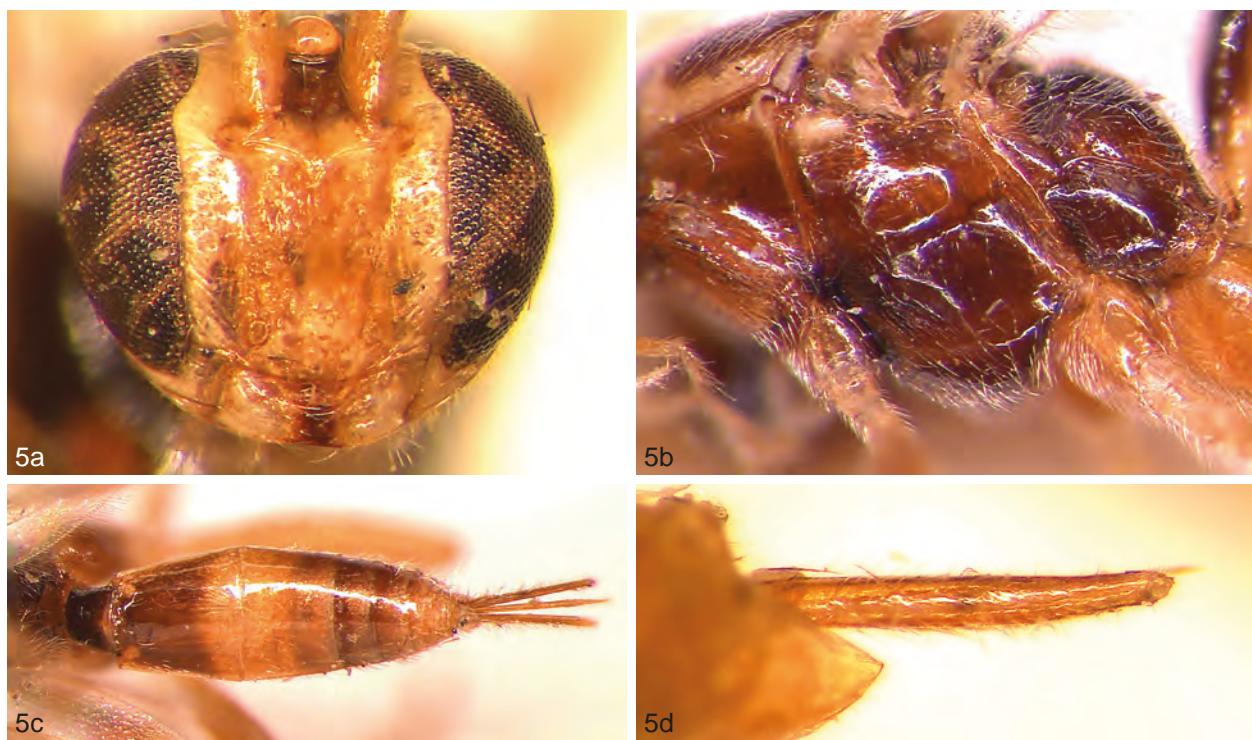


Fig. 5a-d: Holotype of *Mesochorus dessauensis* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

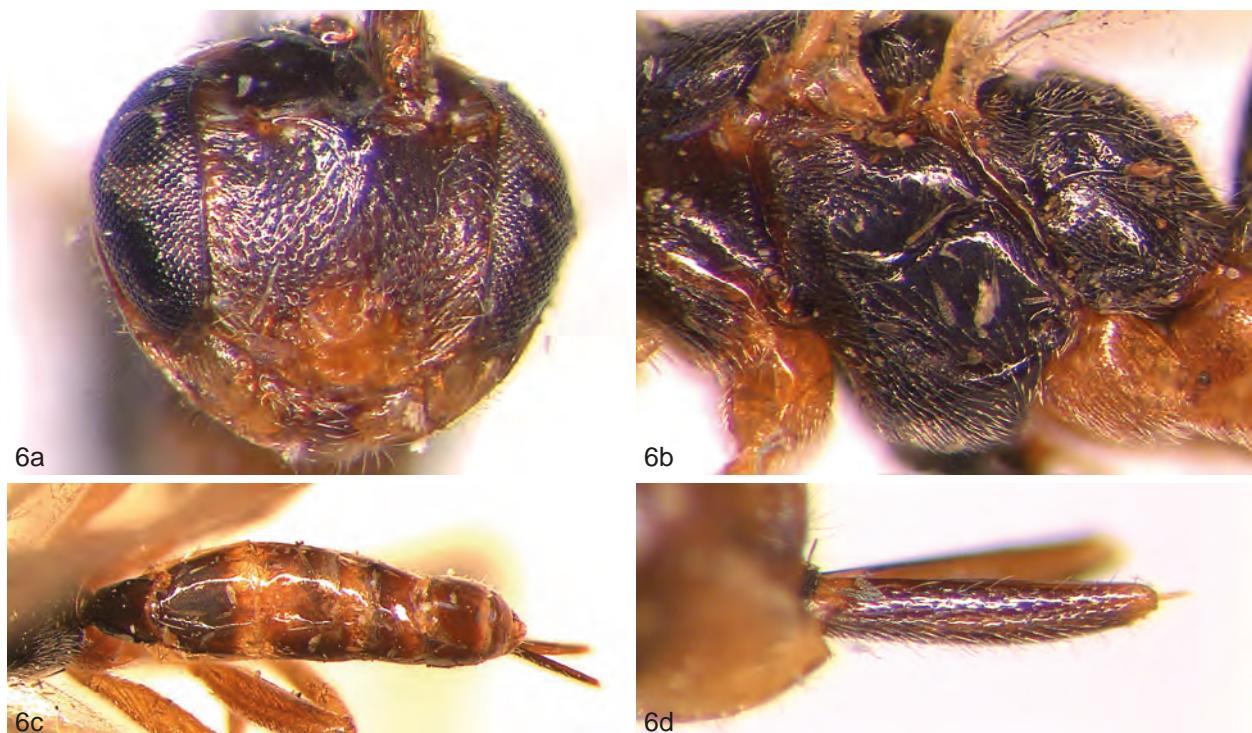


Fig. 6a-d: Holotype of *Mesochorus diluvius* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

RIEDEL, M.: The types of *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the SDEI

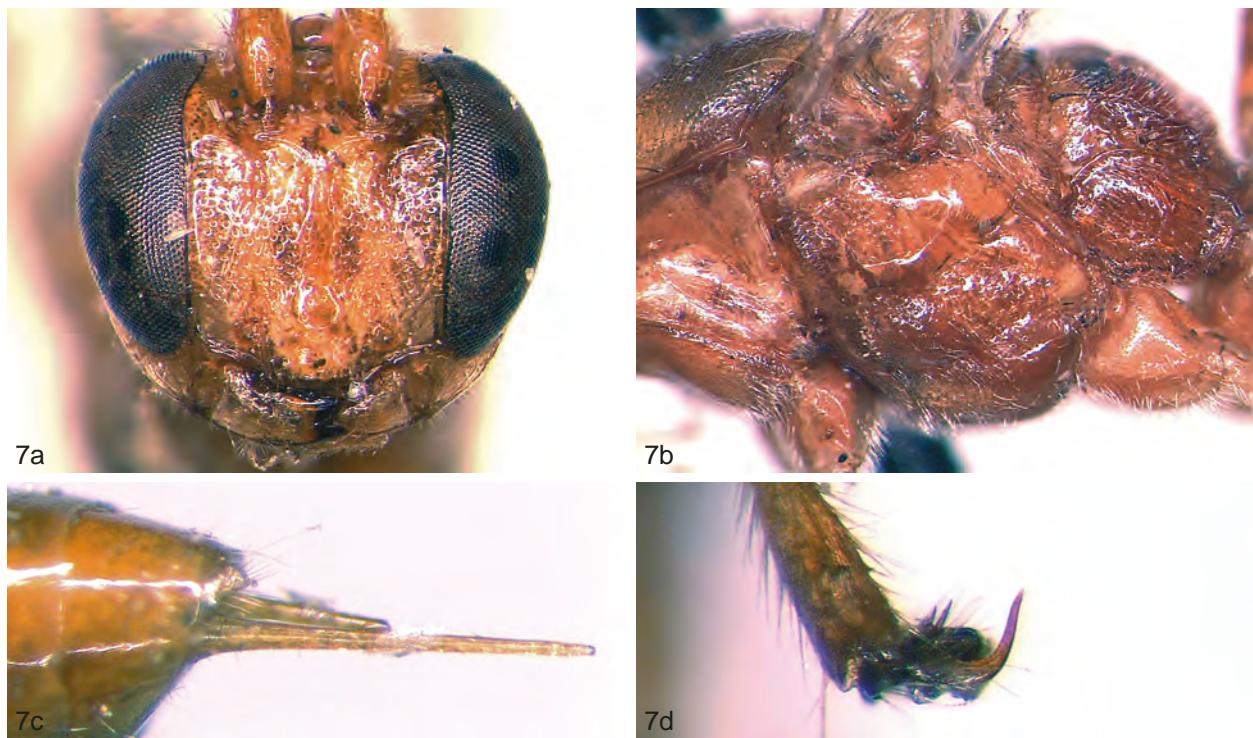


Fig. 7a-d: Holotype of *Mesochorus falcatus* SCHWENKE: a. face; b. mesosoma; c. stylet, d. right hind claw.

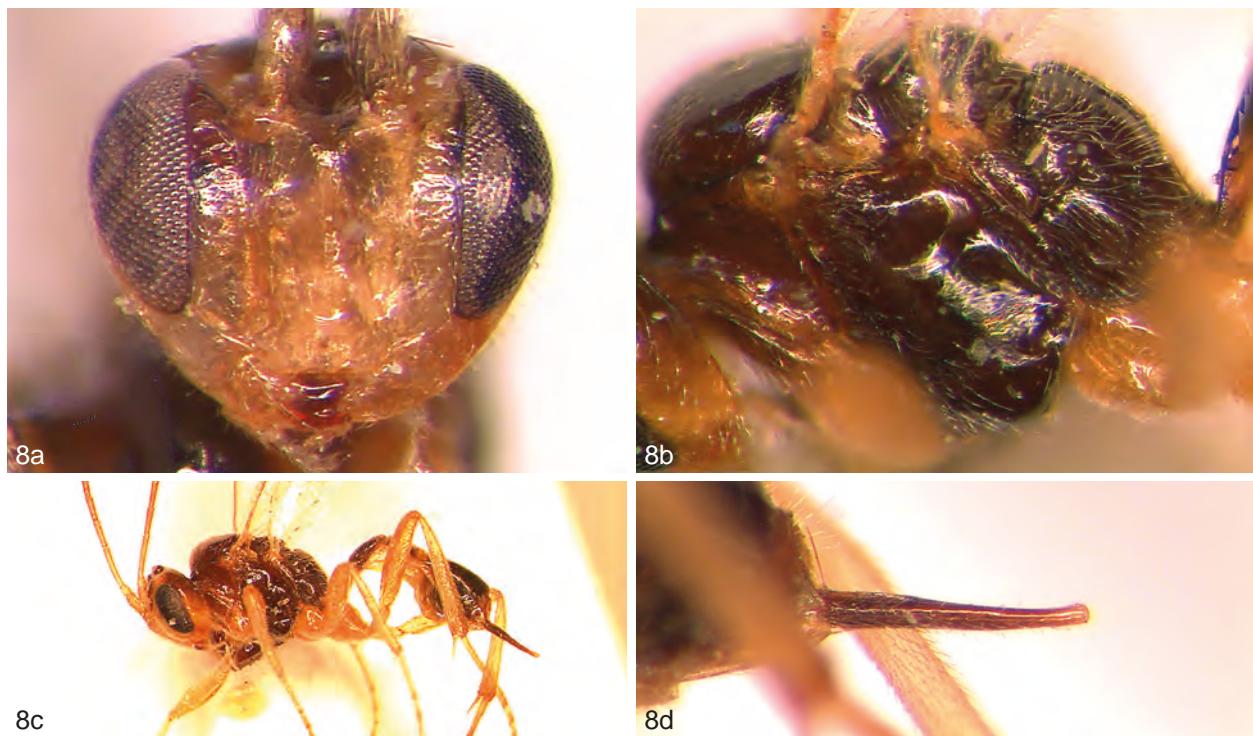


Fig. 8a-d: Paratype of *Mesochorus flexus* SCHWENKE: a. face; b. mesosoma; c. habitus; d. ovipositor sheath.

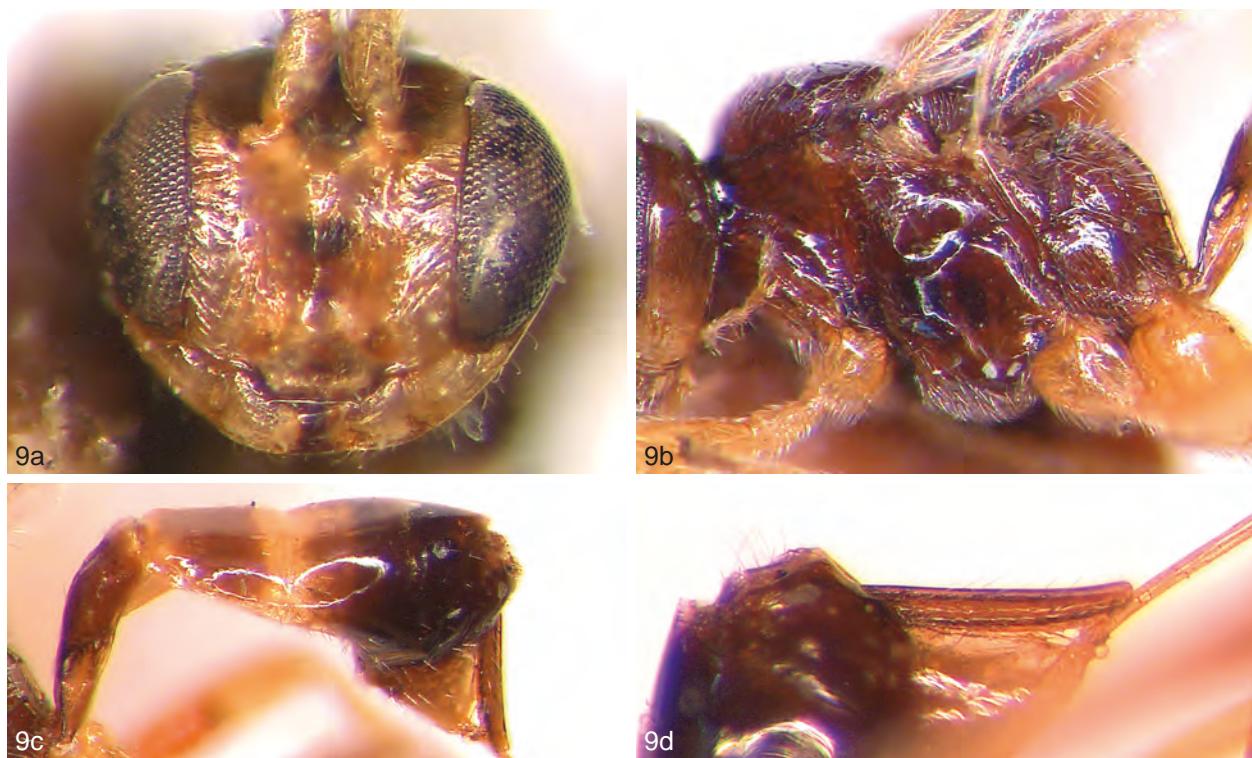


Fig. 9a-d: Holotype of *Mesochorus frondosus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

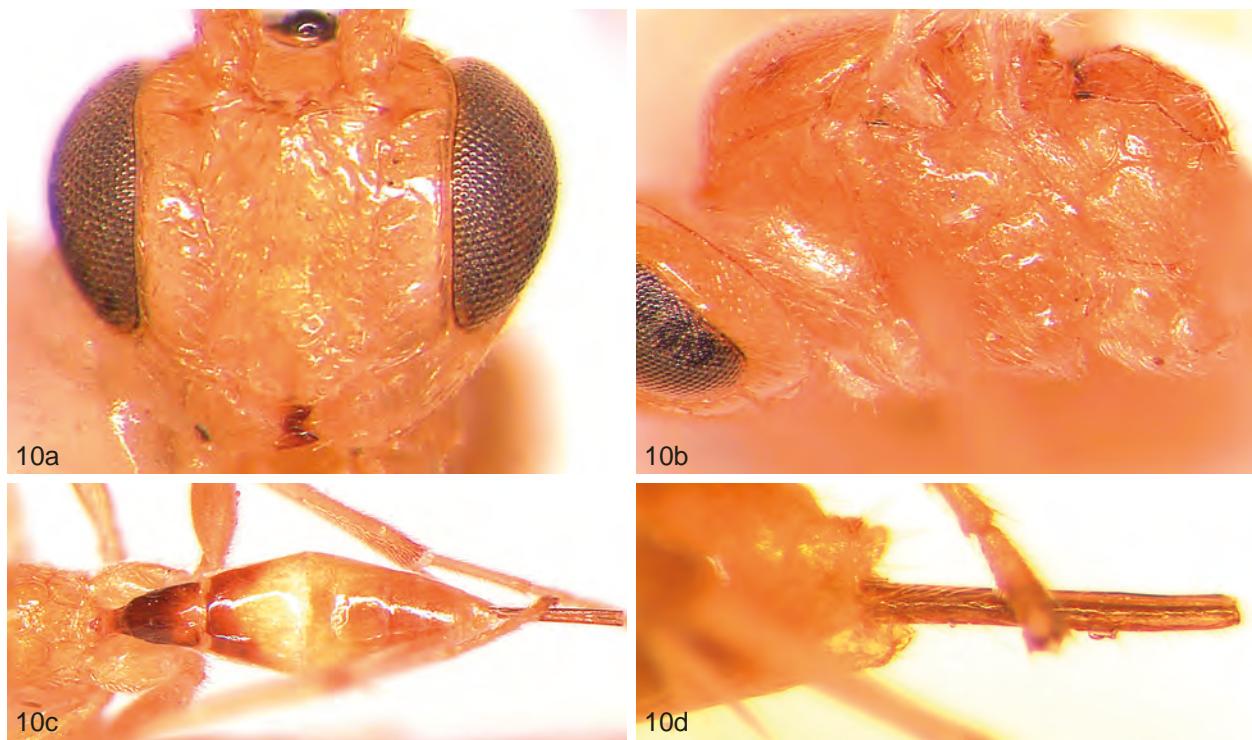


Fig. 10a-d: Paratype of *Mesochorus gilvus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

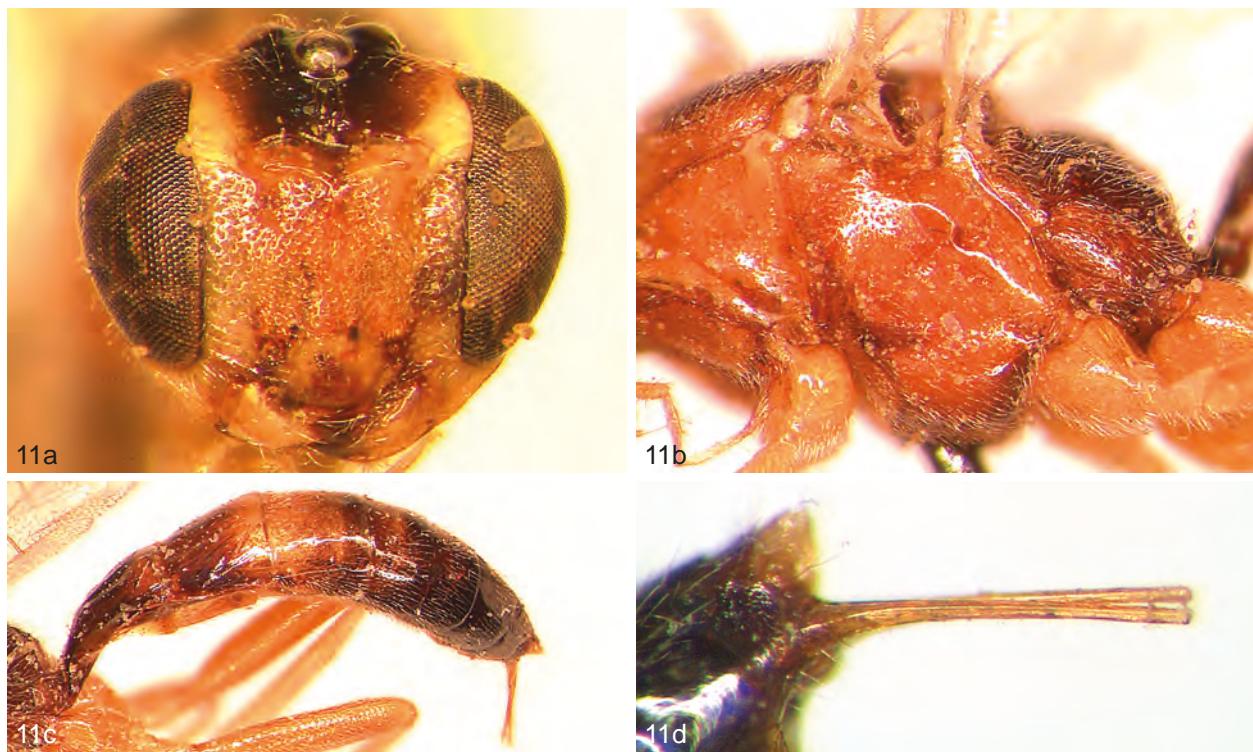


Fig. 11a-d: Holotype of *Mesochorus gravis* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. stylet.

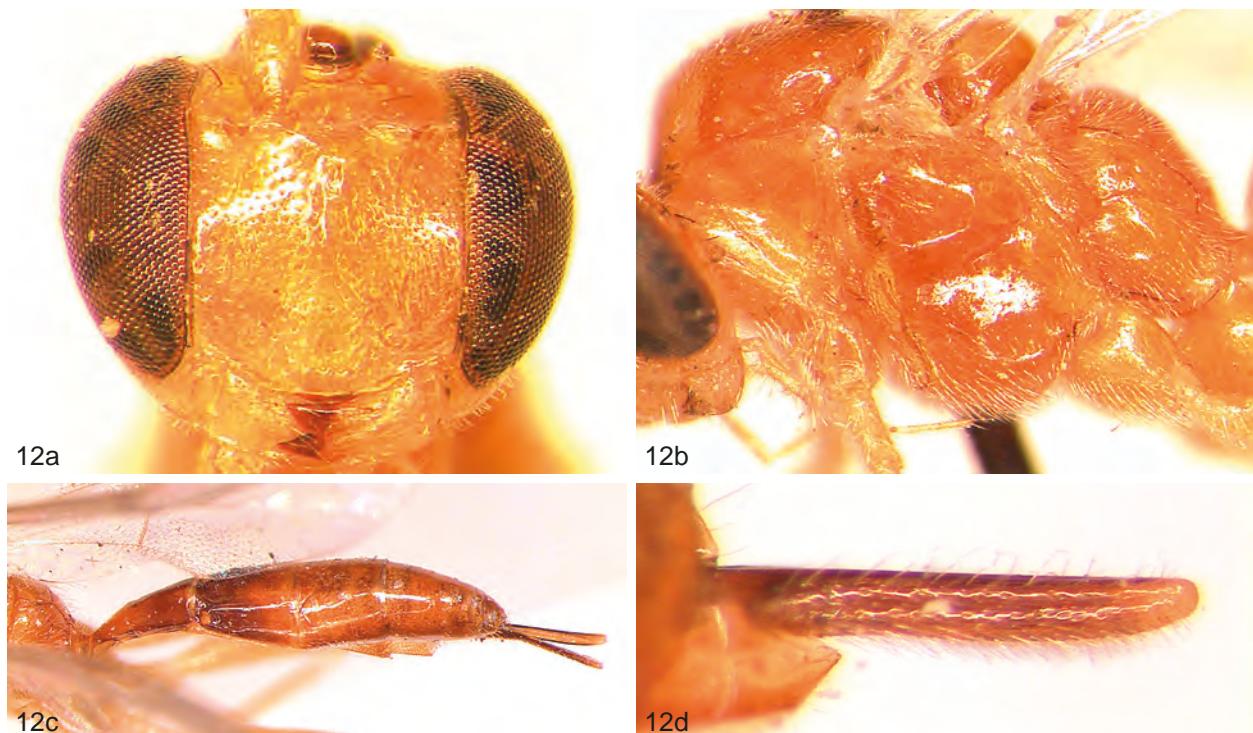


Fig. 12a-d: Holotype of *Mesochorus hyalinus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.



Fig. 13a-c: Holotype of *Mesochorus illustris* SCHWENKE: a. mesosoma; b. stylet; c. metasoma.

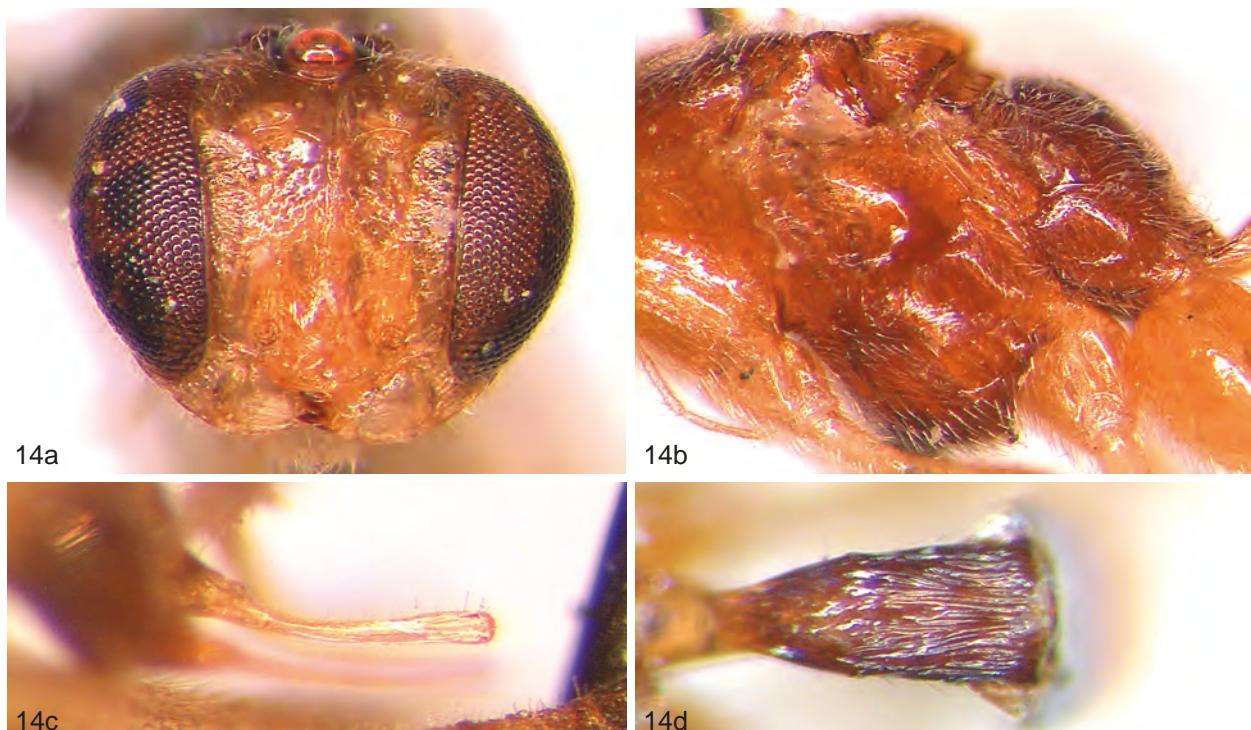


Fig. 14a-d: Holotype of *Mesochorus luminis* SCHWENKE: a. face; b. mesosoma; c. stylet, d. postpetiolus.

RIEDEL, M.: The types of *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the SDEI



Fig. 15a-d: Holotype of *Mesochorus martinus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.



Fig. 16a-d: Holotype of *Mesochorus obscurus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.



Fig. 17a-d: Holotype of *Mesochorus opacus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

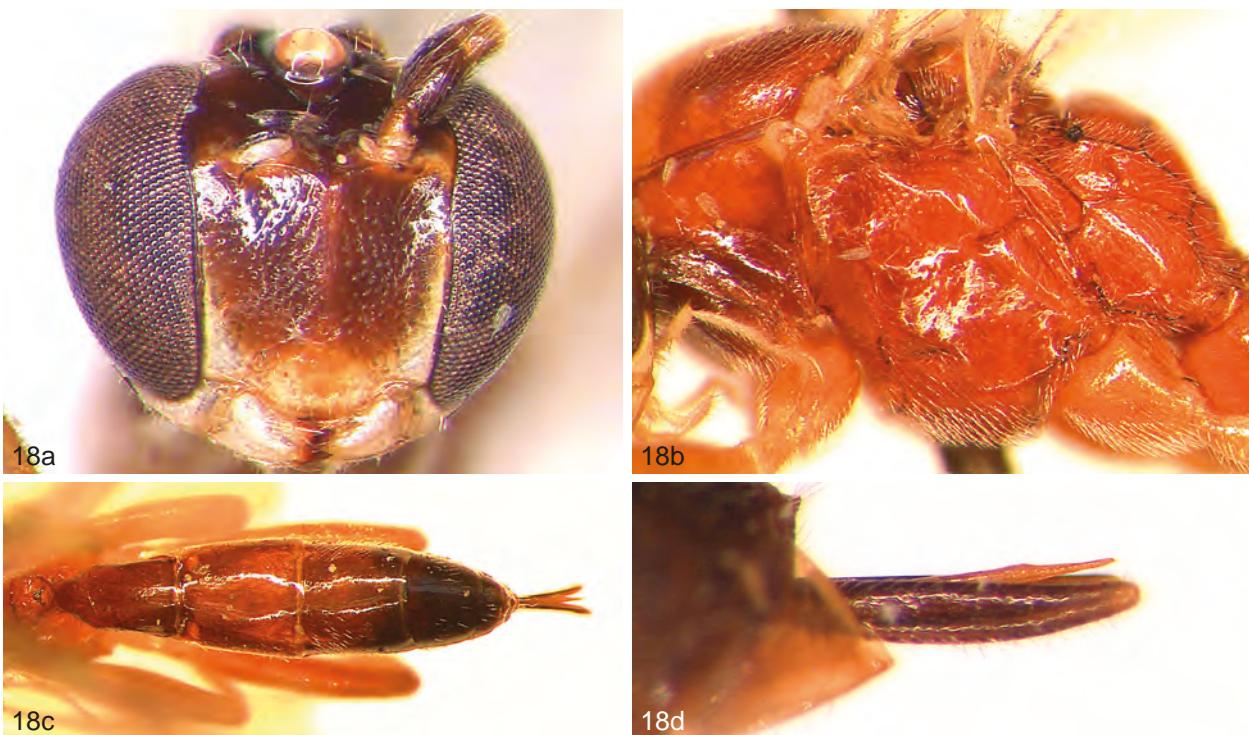


Fig. 18a-d: Holotype of *Mesochorus oppacheus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

RIEDEL, M.: The types of *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the SDEI

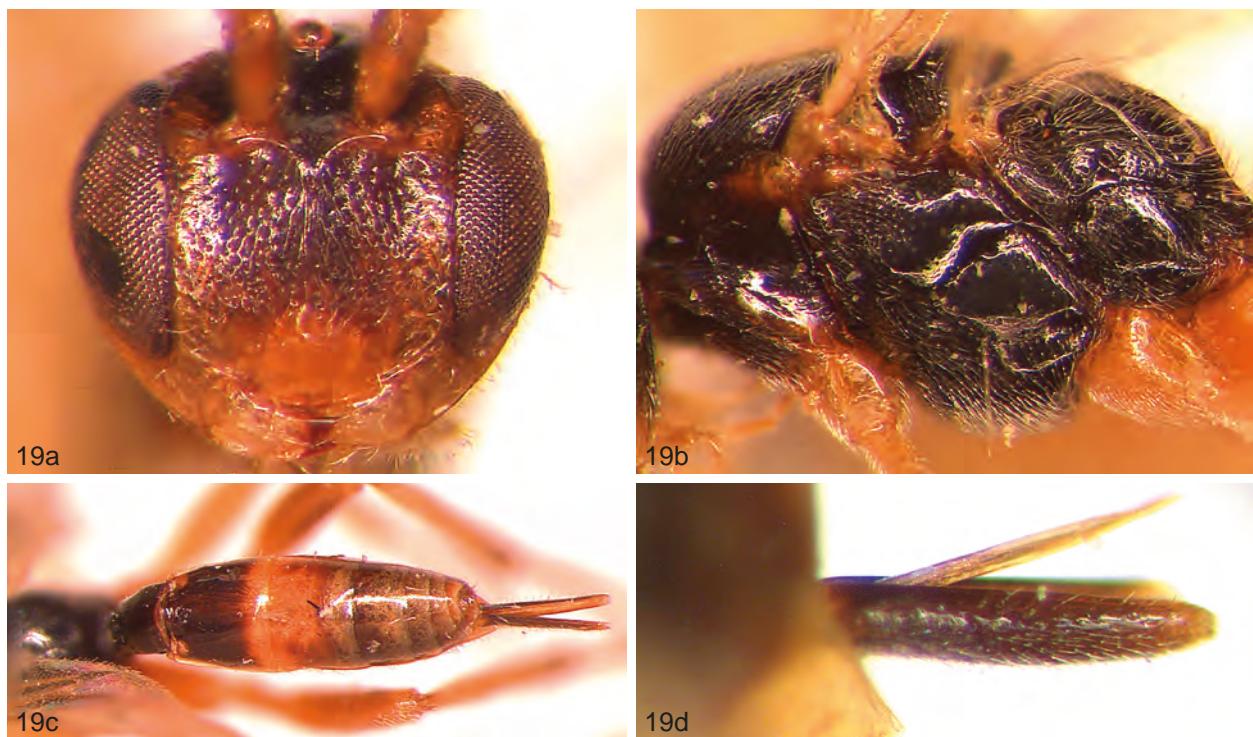


Fig. 19a-d: Holotype of *Mesochorus ovimaculatus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

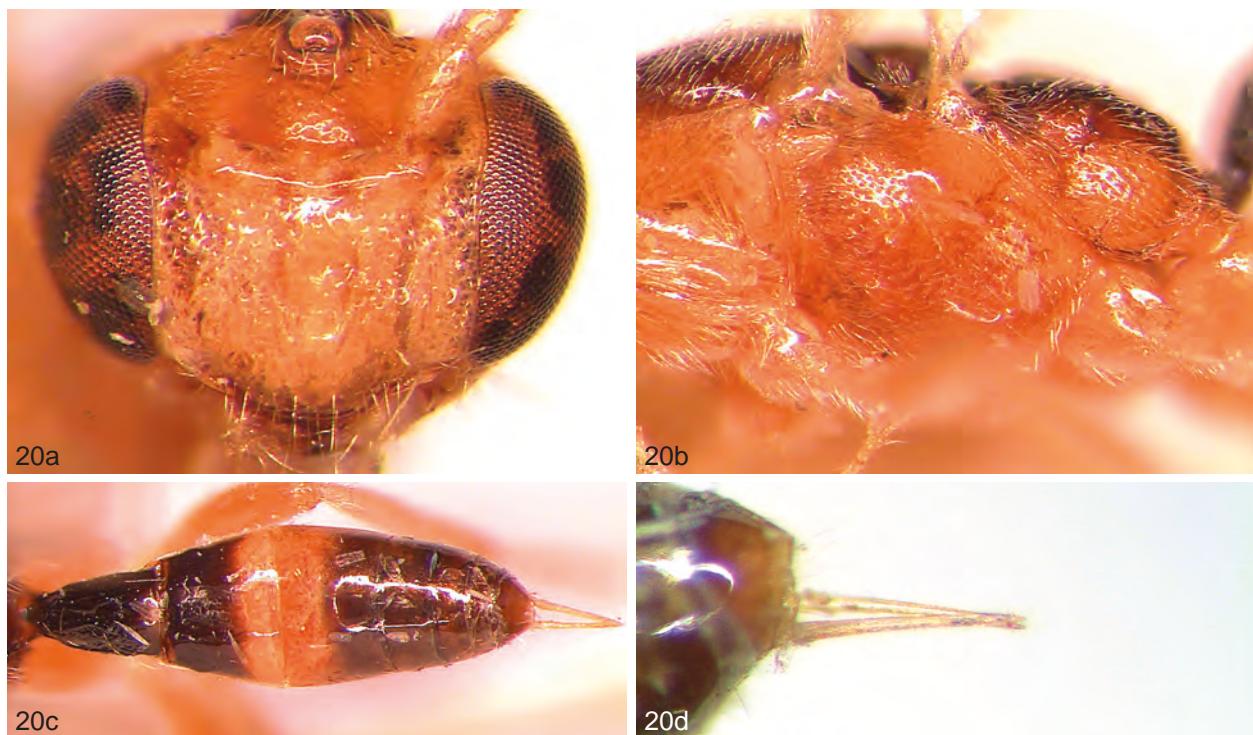


Fig. 20a-d: Holotype of *Mesochorus pungens* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. stylet.



Fig. 21a-d: Holotype of *Mesochorus riparius* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.



Fig. 22a-d: Holotype of *Mesochorus sedis* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. stylet.

RIEDEL, M.: The types of *Mesochorus* GRAVENHORST described by W. SCHWENKE and deposited in the SDEI



Fig. 23a-d: Holotype of *Mesochorus solus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

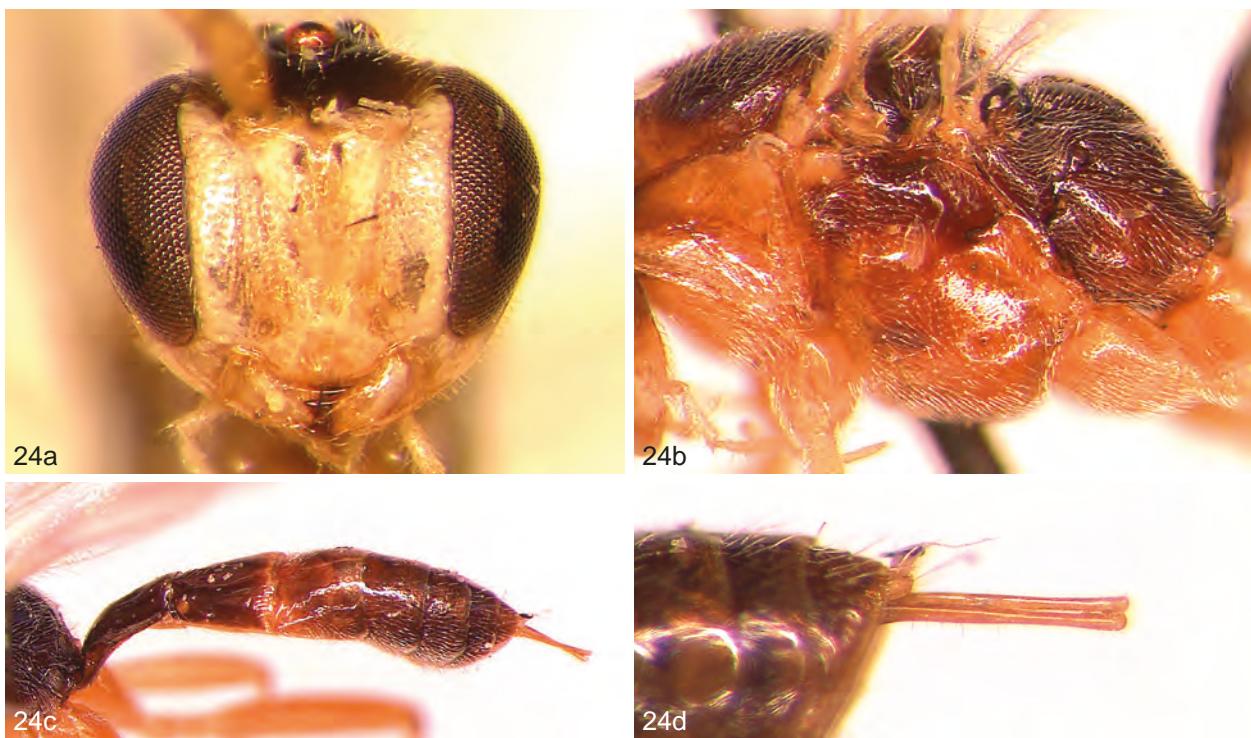


Fig. 24a-d: Holotype of *Mesochorus sordidus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. stylet.

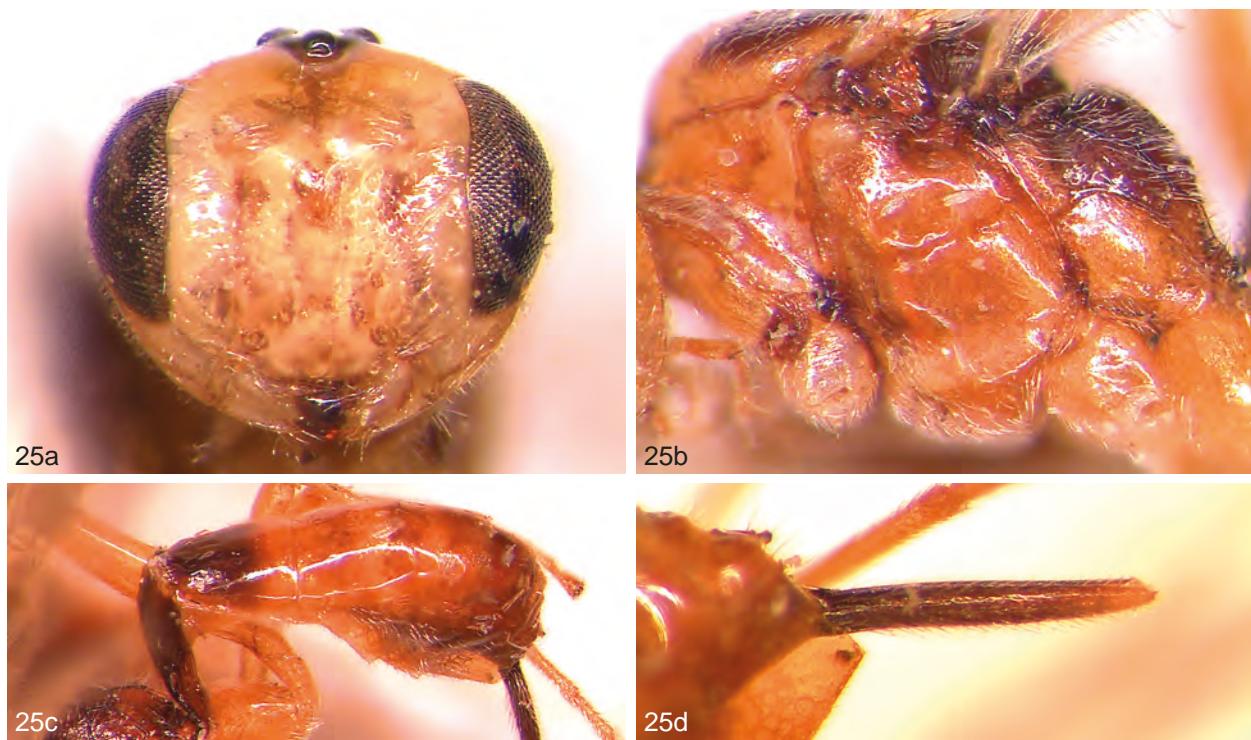


Fig. 25a-d: Holotype of *Mesochorus virgatus* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.



Fig. 26a-d: Holotype of *Mesochorus zoernerri* SCHWENKE: a. face; b. mesosoma; c. metasoma; d. ovipositor sheath.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Beiträge zur Entomologie = Contributions to Entomology](#)

Jahr/Year: 2018

Band/Volume: [68](#)

Autor(en)/Author(s): Riedel Matthias

Artikel/Article: [The types of Mesochorus Gravenhorst \(Hymenoptera, Ichneumonidae, Mesochorinae\) described by W. Schwenke and deposited in the Senckenberg Deutsches Entomologisches Institut 1-29](#)