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Hymenoptera Tiphiidae from Arabian peninsula

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A b s t r a c t . Eight new species are described: *Anthobosca aspilosoma*, *Poecilotiphia nitens*, *Tiphia sabaea*, *Tiphia arthroxantha*, *Tiphia elachia*, *Tiphia eremopolites*, *Pseudotiphia inopinata* and *Pseudotiphia* (*Acanthotiphia*) *mira*. A new group *Acanthotiphia* as subgenus of *Pseudotiphia* ASHMEAD 1903 is proposed. Synonymy of *Serpapinta* ARGAMAN 1992 and *Sasmarila* ARGAMAN 1992 with *Tiphia* FABRICIUS 1775 are proposed too.

K e y w o r d s : *Acanthotiphia*, *Anthobosca*, *Poecilotiphia*, *Pseudotiphia*, *Tiphia*.

Introduction

The following taxa belonging to Tiphiidae have been so far recorded from Arabian peninsula:

1) *Anthobosca suakinensis* (MAGRETTI 1883): present also in African lands along Red Sea till northern African areas. 2) *Meria arabica* (GUÉRIN 1837): it inhabits also Middle East and probably Egypt and Sudan. 3) *Meria diplochora* (BONI BARTALUCCI 2008): Arabian peninsula and sub saharian belt. 4) *Poecilotiphia lacteipennis* (E. SAUNDERS 1901): Saudi Arabia, Middle East, Northern Africa, extreme southern Iberian peninsula, Sicily. 5) *Poecilotiphia scorteccii* (GUIGLIA 1968): Yemen. Recorded from Sinai too. 6) *Poecilotiphia collarinata* BONI BARTALUCCI 1997: Saudi Arabia, Jordan, Israel, Persia, Northern Africa. 7) *Poecilotiphia oasicola* BONI BARTALUCCI 2001: Yemen. Its distribution range extends also through the whole of Northern Africa till Erythraea. 8) *Poecilotiphia dhofarensis* BONI BARTALUCCI 2004: Oman. 9) *Iswara arabicus* BONI BARTALUCCI 2004: Saudia Arabia and Oman. 10) *Iswara physostomus* BONI BARTALUCCI 2004: from Rub'al Khali desert. 11) *Komarowia concolor* BONI BARTALUCCI 2004: Oman and UAE. 12) *Komarowia meridiana* BONI BARTALUCCI 2004: from Hadramawt. 13) *Lamprowara leucothorax* BONI BARTALUCCI 2004: Oman. 14) *Lamprowara gorbatovskyi* BONI BARTALUCCI 2004: UAE. Recently VAN ACHTERBERG & VAN HARTEN (2009), under the family name Thynnidae according to PILGRIM (2008), described seven new taxa from UAE (*Komarowia setosa*, *K. convexifrons*, *Iswara axiphylus*, *I. latifrons*, *I. minutus*, *I. stemmaticalis*, *Lamprowara convexus*) and recorded the presence of *I. elongatus* BONI BARTALUCCI 2004 too. The total taxon number rises to 22.

Here the results of examination of material from Museum Naturalis at Leiden and from Museo di Calci (Pisa) are exposed.

The Myzinin fauna of the southern part of Arabian peninsula shows many affinities with Saharian and Northern African lands. Among Tiphiinae *Tiphia eremopolites*, *Tiphia elachia* and *Tiphia sabaea* have the most affinities with Indian taxa. *Pseudotiphia inopinata* too has affinity with an undescribed female from India. *A. aspilosoma* belong to the group of *A. aspericornis* (DU BUYSSON 1898) as described in BONI BARTALUCCI (2005), which is almost exclusively African (apart *A. suakinensis*) with the sole exception of *A. ceylonica* KROMBEIN 1982. *Tiphia* (*Acanthotiphia*) *mira* shows contiguity with *Tiphia saussurei* KROMBEIN 1948 from Madagascar.

Material and methods

The morphological terminology mostly follows GAULD & BOLTON (1988); the body orientation used here in descriptions and drawings follows the GOULET & HUBER (1993) indications, while mesosomal and wing terminologies has been mainly lent by BOHART & MENKE (1976).

The frontal aspect of the head is performed perpendicularly to the virtual plane joinig lateral ocelli and ventral border of clypeal disk; the dorsal and lateral aspects, perpendicular to each other, are performed along the virtual plane along the occipital carina (BONI BARTALUCCI 2004, 2010).

About terms and morphological definitions reference has to be made to BONI BARTALUCCI (2004 and 2010). Genitalia are only outlined. The lateral outline of the aedeagus is figured in most of cases.

Genitalia are settled in a solidified drop of 5,5-dimethyl hidantoin formaldheyd (5,5-DMHF) on a transparent support.

Hair and punctuation have been overlooked in most of the drawings.

Abbreviations

CC = costal cell (Cella Costalis)

CD = discoidal cell (Cella Discoidalis)

cHy = hypostomal keel (carina Hypostomae)

CM = marginal cell (Cella Marginalis)

cOc = carina Occipitis (-alis).

em = epimeron

es = episternum

F = female (Foemina).

Hy = Hypostoma

iS = interspace (infra Spatium)

l = lateralis (lateral)

$LaSt_2$ = mesosternal lobes (Lamellae mesoSterni)

M = Male (Mas)

N_1 = proNotum

N_3 = metaNotum

p = puncture (-s) (punctum), punctured

P = Propodeum

Pal = labial palpus (Palpus labialis)

Pam = maxillary palpus (Palpus maxillaris)

PoG = genal bridge (Pons Genarum).

Sc_1 = Scutum.

Sc_2 = Scutellum.

spP = propodeal spiracle (spiraculum Propodei)

sul = lateral furrow (sulcus lateralis)

sup = parapsidal line (sulcus parpsidalis)

m = median (medianus)

mR = microreticulation (micro Reticulum)or microreticulated

Tsa = Tuberculum supra antennam

X = coXa

Chararacters are listed giving priority to those shared both by females and males and at any case following the scheme: anterior→posterior, dorsal→ventral, basal→apical.

( ) = digits between round brackets in the chorological items mean number of specimens. / / = delimit the single label. ! = Types examined.

Acronyms

CNC = Canadian National Collections, Ottawa;

MNHU = Museum für Naturkunde der Humboldt-Universität, Berlin;

MSNP = Museo di Storia Naturale, Pisa;

MZUF = Museo Zoologico de "La Specola", Firenze;

RMNH = Museum Natural History (Naturalis), Leiden;

USNM = United States National Museum, Washington.

Subfamily A n t h o b o s c i n a e

Genus *Anthobosca* GUÈRIN 1838

Species type: *Anthobosca australasiae* (GUÈRIN 1831): 214.

***Anthobosca aspilosoma* nov.sp.**

Holotype ♀: Oman = /Oman Dhofar 2000 Wadi Ashawq (Al Mughsahyl) 11.IX 190ft 16°53'88N/53°46'31E leg. M.Generani &PL.Scaramozzino/, MSNP.

Paratype ♀: Oman = /Oman Dhofar 2000 Wadi Ashawq 11.IX 190ft 16°53'88N/53°46'31E leg. M.Generani &PL.Scaramozzino/, MSNP ♂: Oman = / /, MSNP.

♂: Oman = /Oman Dhofar 2000 Wadi Ashawq (Al Mughsahyl) 11.IX 190ft 16°53'88N/53°46'31E leg. M.Generani &PL.Scaramozzino/, MSNP.

Female. Holotype. Figs 1-9. Measurements: body length = 6.5 mm; forewing length = 4 mm.

Wings hyaline. Body colour brown to dark brown, pterostigma and veins included, with blackish **P,** coxae and some shadows on mesosoma. Semitransparent brown are clypeal lamella, mandible, apical disk $\mathbf{N_1}$ apical border of metameri, 6th tergum, legs. Semitransparent bright brown tegulae. Most of the body, legs included, covered by mR detectable at x40 (stronger on dorsal **P**). very sparse on head and mesosoma. Lateral **P** smooth and shining. $\mathbf{es_3}$ shagreened without any **p**. 1st and 2nd terga with very sparse small **p**. The remainder of terga and the sterna are sparsely bipunctate. Apical third of 6th tergum free from **p** and bristles.

Gradulus delimiting platform (friction area) at the base of inner hind tibia complete and closed apically.

Male. Figs 10-17. Measurements: body length = 6.3 mm; forewing length = 4.1 mm.

Black with white spots. Pterostigma is brown. Wings hyaline. White: most of clypeus but a narrow semitransparent stripe along its ventral border, a stripe along inner border of the

eye, a small spot on temples and at the base of mandibles, subapical stripe on $\mathbf{N_1}$ disk, a mid narrow stripe on tegula which is brown basally and transparent apically, humeral plate, foretarsi and most of fore tibia, basal hind tibia and hintarsus. Sparse **p** on head, and mesosoma, **P** and metasoma mostly covered by **mR** with sparse small **p**. 7thtergum roughly **p**. Sharp clear narrow groove on the middle of 1st tergum for half its length.

Tyloids well prominent on 4th to 11th flagellomeri.

D i s c u s s i o n . Their conspecificity is highly probable. Small species distinct by the absence of any light spot on the female, which has also a closed friction area on hind tibia. *A. suakinensis* (Magretti 1883) (= *A. arabica* TURNER 1910) gets bigger size, has light spotted body and open friction area on hind tibia; the latter is more stout with bent edges in lateral aspect, while in *A. aspilonota* the upper and ventral border are subrectlinear. Moreover *A. suakinensis* shows **p** and bristles on most of 6th tergum and the ***CM*** is much less elongated. *A. minima* TURNER 1910 shows many light spots, different head, different distance of toruli from eachother and from eyes, $\mathbf{N_1}$ less narrowed anterorly in dorsal aspect, different platform on hind tibia, ***CM*** and 6th tergum. The male differs from *A. suakinensis* described as *A. arabica* by GORBATOVSKY (1987) in different shape of the head in dorsal aspect, different apical cells of forewing and genitalia.

It belong to the group of *A. aspericornis* (BUYSSON 1898) according to BONI BARTALUCCI (2005).

E c o l o g y . Unknown.

D e r i v a t i o n o m i n i s . From the Greek words άσπιλος = spotless and σώμα = body.

Subfamily M y z i n i n a e

Genus *Poecilotiphia* CAMERON 1902

Species type: *Poecilotiphia albomaculata* CAMERON 1902: 274.

Poecilotiphia oasicola BONI BARTALUCCI 2001

Poecilotiphia oasicola: Boni Bartalucci (2001: 40, 42).

Material. ♂. Yemen = (64) /Yemen Lahj Mal. trap A. v. Harten RMNH'01/: [(1) II.2000– (1) VIII-2000 – (7) IX.2000 – (9) X.2000 – (10) XI.2000 – (12) I.2001 – (4) II.2001 – (8) III.2001 – (7) IV.2001 – (5) V.2001], RMNH; (7) /Yemen Lahj 17.V-15.VI 2001 Mal. Trap A. v. Harten & A. Sallum RMNH'01/, RMNH; (1) /Yemen Lahj 1.X-17.XII.2001 Mal. Trap A. v. Harten & A. Sallum RMNH'02/, RMNH; (1) /Yemen (6007) Suq bani Mansour 28.VIII-14.IX.2001 Mal.trap A. v. Harten RMNH RMNH'02/; (2) /Yemen (6014) Ar Rujum 24.VII-17.IX 2001 A.v..Harten RMNH'02/; RMNH; (10) /Yemen (6022) Lahj VII-IX.2001 Mal.trap A. v. Harten & A. Sallum; RMNH'02/, RMNH; (4) /Yemen (6247) Lahj 1.X-17.XII.2001 Mal.trap A. v. Harten & A. Sallum; RMNH'02/, RMNH; (15) /Yemen (6814) Lahj III-V.2002 Mal.trap A. v. Harten & A. Sallum; RMNH'02/, RMNH; (1) /Yemen (7066) Seyup, light trap 12-14.VIII.2002 A. v. Harten RMNH'02/; RMNH.

***Poecilotiphia nitens* nov.sp.**

Holotype ♀: Yemen = /Yemen (8222) 12 km NW Manakhah mal. Trap. 22.X-3.XII.2003 A. v. Harten RMNH03/, RMNH.

Female. Holotype. Figs 18-21. Measurements: body length = 10 mm; forewing length = 5 mm.

General aspect shining. Head (but clypeus), forecoxa and mesosoma (but **LaSt$_2$**) black. Tip of **Tsa**, clypeus, scape and flagellum, mandible, mid and hind legs, tegulae, pterostigma and veins are light brown. Fore leg, most of 1st metamerus but narrow apical stripe on tergum, basal half of 2nd tergum are brown. The remainder of metasoma is bright ferruginous. Yellowish hair on the scape, whitish elsewhere. **Pal** 3– and **Pam** 4–segmented. **N$_1$** disk wider than high (ratio LA/A about 1.4). Dorsal **P** with a distinct long median longitudinal groove, somewhat irregular, shaped initially by three elongated **p** followed by a narrow stripe of very small p groove.

N o t e . Well distinct species by the enamelled aspect, shape of the head, large basal **Pal,** large pterostigma, long propodeal groove. All the *Poecilotiphia* males in so far recorded from Arabian peninsula, *P. lacteipennis* E.SAUNDERS 1901, *P. scorteccii* GUIGLIA 1968, *P. collarinata* BONI BARTALUCCI 1997, *P. oasicola* BONI BARTALUCCI 2001 and *P. dhofarensis* BONI BARTALUCCI 2004 belong to the *P. albomaculata* group (BONI BARTALUCCI 2004a), whose hitherto known females (about 15) show a longer than wide pronotal disk. Excluding *lacteipennis*, whose female is known, and *oasicola* (which otherwise is very common in Yemen) since on records from Saharian oasis its female appears to be different, it is impossible to couple it with no one of these taxa and at the same time to exclude the existence of further undescribed male belonging to the *nigripes* group whose the hitherto known four females show the pronotum larger than high in dorsal aspect like the present specimen. Future data could clear the situation.

Male. Unknown.

E c o l o g y . Unknown.

D e r i v a t i o n n o m i n i s . From Latin nitens = shining.

Genus *Iswara* WESTWOOD 1851

Species type: *Iswara luteus* WESTWOOD 1851: 232.

***Iswara luteus* WESTWOOD 1851**

Iswara luteus: BONI BARTALUCCI (2004: 1250).

M a t e r i a l : ♂. Yemen = (2) /Yemen (5698) Al Kowd IV-V.2001 light trap A. v. Harten & S. Al Haruri/ (1) RMNH, (1) MZUF.

Note. Interesting specimens since it is the first finding for the Peninsula arabica. The difference from holotype are feeble and apparently not significant.

Subfamily T i p h i i n a e

The general pattern about both sexes shows the following characters, besides those described by authors (ALLEN 1930 & 1975, ARGAMAN 1992, BONI BARTALUCCI 2010), with very few partial variations: – no **Tsa**; – well developed progena (lateral extension of **cHy**)

(but in ***Neotiphia*** MALLOCH 1918 and the clade Silifkini); – **PoG** expressed like a ridge over the sunken contiguous genal areas; – **p** on clypeus and lower frons denser than in the remainder of head (both sexes); – $\mathbf{Sc_1}$ with medially denser **p** and an apical narrow area with smaller denser **p**; – $\mathbf{em_2}$ always traceable at least by different sculpture and/or **p** on its surface; – anterior surface of $\mathbf{es_2}$ normally with densely packed minute **p**; – tegula exceeding apical $\mathbf{Sc_1}$ and normally not getting half $\mathbf{Sc_2}$; – $\mathbf{es_3}$ (metepisternum) well detectable and distinct from lateral areas of **P** (but few exceptions); – **P** delimited by posterior carina between horizontal and posterior areas and vertical carina laterally between posterior and lateral areas (rarely lacking only partially) – areola on horizontal surface delimited by more or less prominent, with a median often less defined an incomplete, ribs – lateral areas of **P** sub longitudinally wrinkled (but in two female taxa) – preapical row of p on 1st tergal disk; – 1st sternum with a trasversal apical groove with buttressing ridges; – **p** becoming denser from 2nd toward 6th terga; -.rows of whitish hair longer than in the remainder of surface along apical edge of terga and sterna; – 7th tergum with well impressed dense p without or with iS narrower than their diameter. In the males: – postscutellar area of $\mathbf{N_3}$ and horizontal **P** do not touch with each other since between them lies a quite deep narrow ditch.

The term ribs are used here to indicate the prominent processes delimiting the areola on **P**. The term "progena" means the lateral extension of the hypostomal carina, otherwise termed submandibular triangle or postgena. The last term is rejected because its ambiguity, since postgena is described by authors (GAULD & BOLTON 1988) as the area confluent with the occiput, between hypostomal carina and postoccipital suture. The term "progena" instead of submandibular triangle has been used because of both its conciseness and its position before lower gena, although it is really morphologically distinct from the latter. Like in Myzininae there is a differentiated (more often than not by a well developed carina in the males) vertical area between horizontal disk and collar of $\mathbf{N_1}$, which has been called pronotal plate.

Genus *Tiphia* FABRICIUS 1775

In the descriptions, besides the above said characters states, the following ones too are omitted: – omaulus well expressed on $\mathbf{es_2}$; – 1st tergum normally without gradulus; ***-CM*** normally more or less exceeding tip of ***CSMII***.

Subgenus *Tiphia*

Species type: *Tiphia femorata* FABRICIUS 1775: 353-354.
Serpapinta ARGAMAN 1992: 9; **nov.syn.**
Sasmarila ARGAMAN 1992: 11; **nov.syn.**

ARGAMAN (1992) established the new taxon name *Serpapinta* having *Tiphia scabrosa* GERSTAECKER 1858 as type species. He grounded its action on the character states characterizing its Neotiphiini: "maxillary palps shorter than hypostoma; submandibular ridge connected to the apex of hypostoma, submandibular triangle not developed" (couplet 7), then "first tergum without ridge" (couplet 9) and "Prepectal carina of mesopleuron not developed; mesoscutum of female without anteromedian escarpment, …" (couplet 11). The examination of type [/Inhambane Peters./ (blue) /Scabrosa Gerst*/ /6080/ /Type/ (red) /*Tiphia Scabrosa*/ /Zool Mus Berlin/, MNHU !] shows the following

character states present in all memberes of *Tiphia*: – **Pam** much longer (almost twice) than **FoO** (=hypostoma) – progena well developed since the lateral branch of **cHy** joins outer border of mandibular socket with base of hypostoma – well developed gradulus (anterior escarpment) on mesoscutum medially differentiated in a colpus with tuft of hair, autapomorphy of the genus Tiphia, by BONI BARTALUCCI (2010) – well developed omaulus (prepectal carina) on **es$_2$**. Moreover it has a distinct gradulus along fore border of the sub horizontal disk of 1st tergum. It shows also a long tegula (like in the new species *T. eremopolites*), sculptured for more than half its surface, and no other significant differences with members of *Tiphia* s.str.

Male specimens of *Tiphia sabaea* shows the beak-duck like process at apex of third segment of **Pam** just as it occurs in males *Tiphia cinchonae* ALLEN 1975 [Paratype: /S India Nilgiri hill Devala 3200 ft Oct 1960 P. Susa. Nathan/ /Paratype *Tiphia cinchonae* ♂ HW Allen/, RMNH !. Figs 36-37]. Both of taxa do not show any other difference from *Tiphia femorata* FABRICIUS 1775, moreover since many taxa show various degree of moderate extension on apex of that segment, the Argaman's action to create the new taxon name *Sasmarila* on the ground of that sole quantitative character state does not appear well founded.

The proposal to put them in synonymy with *Tiphia* is promoted.

***Tiphia elachia* nov.sp.**

Holotype ♀: Oman = /Oman 2000 Dhofar Rd. 31N of Queiroon17.17'58N 5405'21E 2500ft 29.VIII lrg. F.Strumia/ /, MSNP.

Female. Holotype. Figs 22-27. Measurements: body length = 4.0 mm; forewing length = 2.6 mm.

Black. Light brown: ventral flagellum, most of mandible, most of fore leg but coax, apical 2/3of 6th tergum, most of mid and hind tarsi, the semitransparent tegulae, **LaSt$_2$**, pterostigma and veins.

Brown: scape, mid clypeus, tip of mandible, some fore tibia, forecoxa, mid and hind legs but tarsi, posterior area of **P**, 1st sternum and shadows on 4th to 6th sterna.

Forewing very slightly coloured. Whitish hair throughout. Lower frons and clypeus but lamella with densely packed small **p**. The remainder of frons and vertex with scattered **p** and **iS** many times greater than their diameter, on the mid vertex along cOc there is a **mR** small area. Progena well shagreened. All the remainder of the body but **P** and last 3 sterna shows the same pattern of **p** of the head.

Pam less elongated than in most of members of the genus; aggregate of last three elements only 1.4 times longer than aggregate of three basal ones. **N$_1$** disk with a weak irregular carina along its fore border. **em3** weakly shagreened. Lateral and median ridges of areola well expressed and complete. Irregular carina between lateral and posterior areas. Well distinct carina along lateral edge of horizontal area between **spP** and rear border of **N$_3$**. Horizontal area with few small **p** and **mR**. Posterior area concave without any ridge, completely covered by small **p**, with scattered few greater **p**. Lateral areas and **es$_3$** indistinct, both completely covered by regular reticulate sculpture like a strong **mR,** made by approached little knobs; very few small wrinkles only at its anterior upper corner. Hind tibia longitudinally keeled on its inner surface with a very narrow sensorial area. Hind basitarsus with a well distinct shallow groove, as long as 2/3 length of the

element. Apical 2/3 of pygidium quite smooth and shining, without both **p** and rugulae.

N o t e . It looks very like *T. stertia* ALLEN 1975 (Holotype ♀: /Shillong Assam, India *3.IX*.28/ /L.B.parker collector/ /Holotype *Tiphia s-tertia* ♀ H.W. Allen/ (red) /Type N° *74030* USNM/!) in having latearal areas of propodeum and metepisternum indistinct and covered by regular reticulate sculpture, unique occurrences within Tiphiini to my knowledge, but is very distinct by the presence of complete carina along fore border of $\mathbf{N_1}$ disk and especially the groove on hind basal tarsomerus, both absent in the latter. We could infer its conspecificity with *T. arthroxantha* from proximity of the provenance areas, but there is no evident proof about that, just as hitherto it is impossible to associate the unique specimen of *T. stertia* with any male (perhaps *T. birganjae*?).

D e r i v a t i o n o m i n i s . From the Greek ελάχεια = small.

***Tiphia sabaea* nov.sp.**

Holotype ♂ Yemen = /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH.

Paratypes ♀: Yemen = (5)/Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, (4) RMNH, (1) MZUF; (1) /Yemen (6007) 12 km NW Manakhah 28.VIIi-14.XI.2001 Mal.tr. A. v. Harten RMNH02/, RMNH; (1) /Yemen (6279) 12 km NW Manakhah 14.IX-28.XII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH; (1) /Yemen (7547) 12 km NW Manakhah 1.I-7.V.2003 Mal.tr. A. v. Harten RMNH03/, RMNH; (4) /Yemen (8100) 12 km NW Manakhah 15.IX-22.X.2003 Mal.tr. A. v. Harten RMNH03/, RMNH.

♂: Yemen = (44) /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, (41) RMNH:, (5) MZUF; (11) /Yemen (7895) 12 km NW Manakhah 24.VI-4.VIII.2003 Mal.tr. A. v. Harten RMNH03/, (10) RMNH, (1) MZUF; (4) /Yemen (5841) 12 km NW Manakhah 9.IV-5.VI.2001 Mal.tr. A. v. Harten RMNH02/, RMNH; (3) /Yemen (6007) 12 km NW Manakhah 28.VIIi-14.XI.2001 Mal.tr. A. v. Harten RMNH02/, RMNH; (2) /Yemen (6279) 12 km NW Manakhah 14.IX– 28.XII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH; (7) /Yemen (7547) 12 km NW Manakhah 1.I-7.V.2003 Mal.tr. A. v. Harten RMNH03/, RMNH; (2) /Yemen (7585) 12 km NW Manakhah 15.V-23.VI.2003 Mal.tr. A. v. Harten RMNH03/, RMNH; (5) /Yemen (8100) 12 km NW Manakhah 15.IX-22.X.2003 Mal.tr. A. v. Harten RMNH03/, (4) RMNH, (1) MZUF; (1) /Yemen (8117) 12 km NW Manakhah 15.IX-22.X.2003 Mal.tr. A. v. Harten RMNH03/, RMNH.

Male. Holotype. Figs 28-35. Measurements: body length = 6.5 mm; forewing length = 4.0 mm.

Black. Brown: eye, upper scape,,upperside of flagellum from 2nd to the final element, pterostigma, the semitransparent veins, hind trochanter and most of hind femur. Veins are sbrown. Light reddish brown: lamella of clypeus, basal mandible, apex of scape, pedicel, basal flagellomerus and ventral side of the remainder ones, fore and mid legs but coxae, apex of hind femur, hind tibia and hind tarsus, the semitransparent tegula.

Clypeus with small **p** and **iS** as large as their diameter. Lower frons densely **p**, almost finely sculptured, the remainder with **p** progressively more scattered toward ocelli, where pitless areas larger than ocelli exist. Vertex, with **iS** larger than **p**; along **cOc** there is a stripe with well detectable **mR**. Genae lack any **mR** with **p** becoming progressively denser (with **iS** very smaller than their diameter) toward **PoG**. On the lower genae there are strong buttressing ridges perpendicular to **cOc**. Progena completely shagreened. Mandible without any denticle along inner edge. 3rd element of **Pam** with apical forward projection.

$\mathbf{N_1}$ disk with a well produced carina along ist foreborder with sparse not well distinct buttressing ridges; lateral surface completely transversally shagreened with a deeper groove

on ist ventral portion; **p** on the disk well spaced with smaller **p** on the **iS. Sc_1** with densely packed **p** on its middle. **$Sc2_1$** irregularly **p**. Small **p** on postscutellar area of **N_3**. **es_1** with regularly spaced small **p** with **iS** shorter than their diameter. **es_2**: well expressed omaulus and regularly spaced **p** on mid and ventral surface (**iS** as large or shorter than their diameter) with weak (detectable only at x50) **mR** on ist ventral surface and **$LaSt_2$**. **em_3** finely shagreened. Fore coxa irregularly **p**, mid coxa with densely and regularly packed, hindcoxa with dense greater **p**. Lateral ribs of areola well prominent, the mid one only expressed on its basal half. Surface of horizontal area without **p** and irregularly shagreened and or sculptured. Posterior area without any vertical ridge. Lateral areas with more than 30 wrinkles, mostly incomplete.

1st tergum almost **p**-ess but subapical stripe. 2nd tergum with scattered **p.** 3rd to 7th terga with more densely packed **p** and **mR** (detectable at x30) covering **iS.** 1st sternum irregularly **p**, while 2nd to 6th sterna are similar to terga. **mR** on last metameri. Tuberculum on 5th sternum with an orifice lying under its uplifted edge.

Female. Measurements: body length = 10.5 mm; forewing length = 6 mm.

Black. Brown: Tip of coxae "fore trochanter and mid and hind femurs; anterior surface of fore femur; pterostigma and tegulae; the semitransparent apical border of **N_1** disk, **$LaSt_2$**, distal half of pygidium. Reddish light brown: mandibles, antennae, clypeal lamella. Forewing slightlydarkened.

Apart clypeus and lower frons (densely p like in all the members of the subfamily) the remainder of the head shows irregular **p** and **iS** mostly larger than their diameter with only a stripe of denser **p** along **cOc**. **p** on disk of **N_1**, **Sc_1**, **Sc_2,** es_1, most of **es_2** and coxae like on the head. Lateral **N_1** finely transversally shagreened with a distinct oblique groove. 1st tergum almost pitless but a subapical densely **p** stripe; 2nd tergum medially pitless, laterally like head; 1st sternum with small scattered **p**; **p** on 2nd to 5th sterna like on head; 6th sternum more densely **p**. **P** with irregular **mR** on surface besides areola; surface inside areola irregularly weakly wrinkled; lateral surface wrinkled: posterior surface concave, finely and densely sculptured throughout, with a trace of ridge on ist basal half.

Frons without any vertical median ridge. Progena shining and pitless. Genal bridge well expreesed with contiguous genal areas sunken compared to the remainder upper ones. 3rd element of **Pam** with apical forward extension. Weak and complete distinct keel along fore border of **N_1** disk. Colpus on **Sc_1** not connected to parapsidal lines. Hind tibia with narrow sensorium and distinct longitudinal keel on ist inner surface with **mR** under it. Hind basal tarsomerus without groove.

N o t e . Variability occurs only in size, from 5 to 6.5 mm. Female run to the item of *Tiphia cinchonae* ALLEN 1975 in his monography on *Tiphia* of the Indian subcontinent; the male shares with male of *T. cinchonae* the shape of 3rd element of **Pam**. Nevertheless the female here described show the same extension on 3rd **Pam** like the male, while the female paratype of *T. cinchonae* (same label of the paratype male here recorded) does not possess it. Moreover this male has a deep orifice beneath tuberculum on 5th sternum, absent in *T. cinchonae*. Other differences from Allen's type are different shape of the basal elements of **Pam**, the shape of the head and clypeus in frontal aspect, of **N_1** in dorsal aspect and genitalia. The female differs also in lighter foreleg and presence of a ridge on the posterior area of propodeum. The here described males show brighter legs and antennae than *T. cinchonae*.

E c o l o g y . Unknown.

D e r i v a t i o n o m i n i s . From sabaeus = inhabitant of ancient kingdom of Saba.

***Tiphia* (*Tiphia*) *arthroxantha* nov.sp.**

Holotype ♂ Yemen = /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH.

Paratype ♂ Yemen = (2) /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH.

Male. Holotype. Figs 38-45. Measurements: body length = 5.3 mm; forewing length = 3,6 mm.

Black. Reddishs-yellow: the whole antennae, mid clypeal disk, mandibles, semitransparent tegulae, semitransparent veins, all the legs but coxae, Tip of 7th tergum and 6th sternum. Tip of mandibles and pterostigma are brown.

Head with very sparse **p** on frons and vertex with large impunctate areas around ocelli and stripe with **mR** and small **p** along **cOc**. No subapical denticle on mandible. Tyloids well expressed and prominent on all the flagellomeri.

p on most of mesosoma like on head. $\mathbf{N_1}$ disk with a distinct laminated carina along the fore border and a semitransparent impunctate apical stripe; lateral $\mathbf{N_1}$ shagreened uppermost with a median transversal strong groove and wrinkled downwards. $\mathbf{N_3}$ with only few small **p**. $\mathbf{es_1}$ with denser smaller **p** and **mR**. Omaulus well distinct till signum.; ventral $\mathbf{es_2}$ with a stripe of small **p** along the median suture. $\mathbf{em_3}$ finely wrinkled uppermost and smooth ventrally. $\mathbf{es_3}$ shagreened. Horizontal **P** shagreened outside areola, roughly transversally wrinkled inside; posterior (vertical) area irregularly corrugated; lateral areas with irregularly spaced strong wrinkles; well prominent lateral ribs of areola (mid one weaker). Inner hind coxa rounded.

1st to 6th terga and 2nd to 5th sterna with sparse **p**; 7th tergum and 6th sternum deeply and more densely **p**; 1st sternum with large deep **p** at the base of the disk, apically with a strong transversal groove and buttressing ridges along it.

N o t e . Paratypes do not show differences apart the smaller size of one of them (less than 5 mm). In ALLEN's key (1975) it runs to the item of *T. birganjae* [Holotype: /Nepal nr Birganj Lothar 450ft Malaise trap n° 30 Can. Nepal Exp./ /Holotype *Tiphia birganjae* ♂ HW Allen/ /Holotype Tiphia birganjae CNC N.15563/, CNC !] to which it looks very like. The latter shows different shape of the head in dorsal (more transversal) and frontal aspect (with a more depressed vertex), shape of clypeal disk (less prominent ventrally in frontal aspect and with a median notch), shape of $\mathbf{N_1}$ disk in dorsal aspect (with stronger carina and buttressing ridges), a strong longitudinal carina on the inner surface of hind coxa, different and less prominent tubercle on 5th sternum, different genitalia.

Female. Unknown.

E c o l o g y . Unknown.

D e r i v a t i o n n o m i n i s . From the Greek words: άρθρον = limb; ξανθός = reddish yellow.

***Tiphia* (*Tiphia*) *eremopolites* nov.sp.**

Holotype ♀: Oman = /Oman 2000 Dhofar Rd. 31N of Queiroon17.17'58N 5405'21E 2500ft 29.VIII lrg. F.Strumia/ /, MSNP.

Female. Holotype. Figs 46-50. Measurements: body length =.9.0 mm; forewing length = 5.5 mm.

Black. Apex of scape, flagellum and mandibles are reddish brown. Brown: pterostigma, tibiae and tarsi, semitransparent apical tegulae and veins. Apical third of 6th tergun is light brown. Forewing darkened.

Progena smooth with few **p** along **FoO**. Vertex with a shagreened stripe along **cOc**. Very scattered **p** on the remainder of head. Same pattern of **p** on $\mathbf{N_1}$ disk, $\mathbf{Sc_1}$, $\mathbf{Sc_2}$, and $\mathbf{es_2}$. Distinct, very low irregular carina along fore border of $\mathbf{N_1}$ disk. Lateral $\mathbf{N_1}$ shagreened throughout with a shallow median transverse groove and few wrinkles on its down third. Gradulus on fore $\mathbf{Sc_1}$ connnected to parapsidal lines. Omaulus well expressed till signum. Em3 shagreened throughout, more impressed uppermost. Tegulae very long almost reaching back border of $\mathbf{Sc_2}$. $\mathbf{es_3}$ shagreened. Inner surface of hind tibia distinctly keeled with a narrow, flushed with surrounding area, sensorium. Short and shallow groove on hind basitarsus. Horizontal surface of **P** slightly sculptured and **p** with large smooth areas; areola with narrow moderately prominent lateral and broader lower median ridges; posterior area concave with small regularly packed **p** throughout; lateral areas with strong complete wrinkles.

Terga and 2nd to 6th sterna with sparse p progressively becoming denser toward apical element. 1st tergum with a subapical stripe of p and a distinct unbroken small groove between it and the edge. Analogous groove present also on 2nd to 5th terga but often interrupted. Apical third of 6th tergum smooth with obscure traces of broad costulae. 1st sternal disk with lateral groove and sparse small **p**. Faible **mR** on 3rd to 5th sterna, stronger on 6th one.

Male. Unknown.

N o t e . In the ALLEN's key (1975) it runs to *T. tegelonga*, which is well known because of different head and clypeal disk in frontal aspect, pronotal disk in dorsal aspect with absence of carina along its fore border, not connected gradulus to parapsidal lines on $\mathbf{Sc_1}$, smaller pterostigma and sub rounded sensorium on hind tibia.

E c o l o g y . Unknown.

D e r i v a t i o n o m i n i s . From the Greek ερημοπολίτης = inhabitant of desert, because of provenance area.

Genus *Pseudotiphia* ASHMEAD 1903

The attribution of *Tiphia saussurei* KROMBEIN 1948 and the unusual male *T. mira* to *Pseudotiphia* is determined by the presence of sensorium on mid tibia (somewhat hardly detectable in the latter) and no differentiated bristles on the palette of gonosquama. Nevertheless both of them show two significant characters states well distinct from other members of the genus: the absence of tyloids from all the flagellomeri and the bilobed aedeagus, as far as I know unique occurrences within the entire group of Tiphiini. The presence of a sort of horn on 2nd and/or 3rd sterna seems meaningful too. Grouping them apart through recognition of a new subgeneric name seems therefore reasonably acceptable, even though uncertainty about female sex (the supposed female *T.mira* does not show any difference with other members of the genus, the female of *T. saussurei* is unknown) and want of ecological data preclude more conclusive action. The following key is effective only for the males.

- **a** Tyloids well expressed and prominent on all the flagellomeri: only *Pseudotiphia fulvipennis* (SMITH 1855) and *P. caucasica* (MOCSARY 1883) lacks tyloids on basal 1st to 4th/5th flagellomeri)
- **b** No subapical tooth on mandible

c Well expressed and differentiated sensorium on mid tibia
d Mid and hind basal tarsomerus covered entirely by short dense hair
e Tubercles present on apical sides of the sole 5th sternum
f Aedeagus pattern like in fig. 45, not deeply bilobed in lateral aspect.

Subgenus *Pseudotiphia*

aa Tyloids completely absent from all flagellomeri
bb Mandible of the male with a subapical small tooth
cc Sensorial area on mid tibia only traced in *T. mira*
dd Mid and hind basal tarsomerus with dorsal surface with only few long bristles
ee Horns and/or tubercles present on 2nd /3rd to 5th sterna
ff Aedeagus pattern like in fig. 74, deeply bilobed in lateral aspect.

nov.Subg. *Acanthotiphia*

Subgenus *Pseudotiphia*

Species type: *Tiphia brevipennis* LUCAS 1846: 6.
Pseudotiphia ASHMEAD 1903 35: 6.
Pseudotiphia: GUIGLIA (1956: 94)
Pseudotiphia: NAGY (1969. 141)
Pseudotiphia BONI BARTALUCCI (2010: 1189).

***Pseudotiphia* (*Pseudotiphia*) *inopinata* nov.sp.**

Holotype ♀: Yemen = /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH.

Paratype ♀: Yemen = (2) /Yemen (7585) 12 km NW Manakhah 15.V-23.VI.2003 Mal.tr. A. v. Harten RMNH02/, (1) RMNH, (1) MZUF; (1) /Yemen (8100) 12 km NW Manakhah 15.IX-22.X.2003 Mal.tr. A. v. Harten RMNH03/, RMNH.

Paratype ♂: Yemen = (27) /Yemen (5960) 12 km NW Manakhah 3.VII-21.VII.2001 Mal.tr. A. v. Harten RMNH02/, RMNH: (25), MZUF: (2); (1) /Yemen Lahj Mal.tr. N.5588/89/90 A. v. Harten & A. SAllam, RMNH'01/, RMNH; (2) /Yemen (7895) 12 km NW Manakhah 24.VI-4.VIII.2003 Mal.tr. A. v. Harten RMNH03/, RMNH.

Female. Holotype. Figs 53-56. Measurements: body length = 10.5 mm; forewing length = 6.5 mm.

Black. Brown are: upper side of flagellum, pterostigma and veins, most of legs but coxae. Reddish brown are lamella of clypeus, scape, pedicel and 1st flagellomerus, shadows on legs, apical half of 6th tergum. Ventral side of flagellum is light brown. Forewing shaded.

Clypeal surface covered by dense small **p** bearing very weak bristles. Largely spaced **p**, with **iS** larger than their diameter, on the remainder of head, with a stripe of small **p** on vertex along **cOc**. The same **p** on $\mathbf{N_1}$ disk with no carina along its foreborder; lateral $\mathbf{N_1}$ with transversal weak wrinkles progressively strengthening toward posteroventral corner; dark apical border. Fore $\mathbf{Sc_1}$ without any gradulus. $\mathbf{Sc_2}$ looks like in *T. villosa*, but presence of omaulus expressed only medially wearing out upperly and ventrally. $\mathbf{es_1}$ bipunctate by small **p** among scattered larger ones. $\mathbf{es_2}$ with **p** like head and with stripe of small **p** along the median suture; omaulus well expressed only on the upper side. $\mathbf{em_3}$ largely smooth and shining. $\mathbf{es_3}$ weakly shagreened with scattered small **p**. Sensorial areas of hind tibia surrounded by shining pitless belt; sensorial area of mid tibia strongly transversal; both of them are flushed with surrounding surface. No groove on hind basal

tarsomerus. Lateral ridges of areola well produced and broadly sinuous, the mid one is irregular and weaker. Posterior surface concave and without any trace of ridge. Lateral P with about 30 transversal wrinkles.

1st tergum with very scattered **p** and strong gradulus along the border between vertical and horizontal surfaces. Weak buttressing ridges along colpus of 2nd tergum. 2nd to 5th terga with irregularly spaced **p**. Apical third of 6th tergum (pygidium) with only very weak traces of longitudinal rugulae. 1st sternal surface with regularly spaced snmall **p** throughout. **p** of 2nd sternum like terga. 3rd to 6th sterna covered by well detectable at x25 **mR**, with scattered small **p** progressively becoming denser toward 6th element.

Male. Figs 51, 57-63.Measurements: body length = 6.5 mm; forewing length = 4.5 mm.

Black. Brown: tip of mandible, lateral clypeus, pterostigma, upper fore femur, most of mid and hind femur, tip of tegulae, upper hind tibia and most of hind tarsus, tip of 6th sternum, apex of trochanters; the semitransparent veins and tip of **LaSt$_2$**. Light brown: most of mandible, ventral surface of scape, upper flagellum, central clypeus and lamella, fore trochanter, outer fore tibia, fore and mid tarsi, ventral femurs. Ventral flagellum is lighter brown-yellow.

Clypeus and lower frons like in *T. villosa*; **p** progressively more scattered from lower frons to vertex, where there are pit less areas around ocelli and **iS** larger than their diameter; stripe of small **p** along **cOc**. Progena irregularly shagreened; no additional denticle on mandible. Near genal bridge areas the **cOc** shows a ventral lamellar projection. Palpi far longer than **FoO**.

Sparse **p** on mid **N$_1$** disk, denser **p** on its fore surface with small **p** among them; lateral **N$_1$** shagreened without any groove; laminated carina along ist fore border. Omaulus well produced. **es$_1$** with few large **p** anteriorly, posterior and inner surface shagreened with few small **p**; Lateral **es$_2$** bipunctate till signum. Ventral forecoxa bipunctate, mid coax covered by small **p**, hindcoxa densely **p** at its base then sparser apically. **P**: well produced lateral ridges of areola; mid ridge of areola less prominent and worn out at its middle; horizontal area irregularly shagreened; posterior surface concave without ridge; about 20 strong complete wrinkles, alternated to about 10 incomplete. **em$_3$** mostly smooth with **p** along the border with **es$_2$**; **es$_3$** weakly and irregularly shagreened with strong buttressing ridges along its border with **em$_3$**. Sensorial area of hind tibia as narrow as in other taxa of the genus, surrounded by shining belt; sensorial area of mid tibia not well distinct, detectable by smooth and shining surface; both of them flushed with surrounding surface. The ***CM*** on the fore wings of the males just a bit more extended apically than 2nd ***CSM***.

Distal border of metameri black (Fig. 51) (not at all semitransparent like in other taxa of the genus) with a narrow distinct groove worn out on their middle portion and becoming progressively delimited to the lateral corner in the last ones. Strong gradulus dividing horizontal from vertical surfaces of 1st tergum, with sparse **p** throughout and a stripe of small **p** on the middle of latter; well prominent buttressing ridges of colpus on 2nd tergum. **p** progressively denser from 2nd to 7th terga. 1st sternum with strong lateral grooves joining to the subapical transversal groove, which has strong buttressing ridges. 2nd sternum with sparse **p**. 3rd to 5th sterna with few small **p** but an aical stripe of greater **p** and covered throughout by well detectable at x20 **mR.** Short and stout medially prominent tuberculum on 5th sternum. Basal 6th sternum with **mR** and densely **p**.

Note. Well known taxon from other taxa of the genus by the lack of groove on hind

basitarsus in females, the ventral extension of **cOc**, apically more extended ***CM*** and particular distal border of metameri in males compared to *villosa* (Fig.52, by a male from Italy: /*Dint Genova V 1940 Franciscolo*/). to whose group they belong. Therefore its position in the key of taxa of the genus (BONI BARTALUCCI 2010) could be at the items 4 and 16 for the females and males respectively.

E c o l o g y . Unknown.

D e r i v a t i o n o m i n i s . Inopinata = unexpected.

Subg.nov. *Acanthotiphia*

Species type: *Tiphia saussurei* KROMBEIN 1948.

D e r i v a t i o n o m i n i s . From the Greek word άκανθα= thorn and *Tiphia.*

***Pseudotiphia* (*Acanthotiphia*) *saussurei* (KROMBEIN 1948) nov.comb.**

Tiphia saussurei KROMBEIN 1948: 54-56 (Holotype ♂: Madagascar = /Fianarantsoa Madag. Centre Jardins et Cultures Sept-Oct 1938 Ch. Lamberton/ /Type ♂ Tiphia saussurei Krombein det KV. Krombein 1848/ /Type N° 14046 USNM/ !).

Male. Holotype. Figs 64-67. measurements: body length = 7 mm.

It shows open ***CM*** (the unique other occurrence is in *Tiphia hispanica* DUSMET 1930), horns on 3rd and 4th sternum and a small palette. The sensorial area on mid tibia is quite thin even though well detectable.

***Pseudotiphia* (*Acanthotiphia*) *mira* nov.sp.**

Holotype ♂: Yemen = /Yemen (7585) 12 km NW Manakhah 15.V-23.VI.2003 Mal.tr. A. v. Harten RMNH03/, RMNH;

Paratype ♂: Yemen = /Yemen (7547) 12 km NW Manakhah 1.I-7.V.2003 Mal.tr. A. v. Harten RMNH03/, RMNH;

Paratype ♀: Oman = /Oman Dhofar 2000 Rd 31 Queiroo Heiritti dint. 2500 ft 27.VIII 17°17'58N /54°05'21E M.Generani &/

Male. Holotype. Figs 68-74. Measurements: body length = 5.4 mm; forewing length = 3,7 mm.

Black. Brown: antennae (with brighter ventral side), mandibles, tegulae, legs but coxae, apex of 6th sternum.

Apart clypeus and lower frons (similar to the general pattern of *Tiphia*) the head shows sparse small **p** with large smooth areas except on vertex along **cOc** and on ventral genae along lateral extension of **cHy**, where denser **p** and fine shagreened sculpture exist. Progena smooth and shining. **PoG** ridged, its area sunken compared to the remainder of genae. Ventral **cOc** slightly prominent and laminated. Mandible with a subapical small tooth.

Mesosoma mostly with sparse **p** too. Distinct but very low carina along foreborder of $\mathbf{N_1}$, with very short almost undetectable buttressing ridges. Lateral $\mathbf{N_1}$ smooth uppermost with rough **p** anteriorly, ventrally with few strong transversal wrinkles; $\mathbf{N_1}$ disk with black opaque apical stripe. Omaulus well expressed till signum. $\mathbf{es_2}$ with irregularly spaced **p**. Finely wrinkled $\mathbf{em_3}$ uppermost, smooth ventrally. Horizontal surface of **P** outside areola shagreened anteriorly with few **p**, wrinkled on its posterolateral corner and

with finely irregular surface inside areola; posterior surface concave, without any ridge and with concentric rough sculpture and **p**. Well prominent ridges on sides of areola with weaker and incomplete median one; lateral P with strong wrinkles (about 15) invading es_3 becoming weaker. Sensorium on hind tibia very narrow and somehow hardly distinct from surrounding large oranged area and flushed with it. On apical mid tibia there is a large smooth subrounded area not easily recognizable as sensorial area. Basal hind tarsomerus without any groove and with sparse whitish bristles on its upper and outer surfaces.

Black border of metameri with very narrow membranaceous edge. Sparse **p** on 2nd to 6th terga, 2nd to 5th sterna except their base where there is a stripe of denser **p**; 1st tergum with very sparse **p**, large sensorial area and a low irregular gradulus between vertical and horizontal surfaces; 7th tergum and 6th tergum more densely **p t**hroughout; 1st sternum with lateral broad ridges flanked by shallow groove on the disk; rough irregular trace of gradulus on 2nd sternum; 6th sternum with a large median stripe prominent on the surrounding surface; long horn, far trespassing apical border of the element, on subapical side of 2nd tergum; very shorter horns, not trespassing apical edges, on 3rd to 5th sterna.

Female. Figs 75-79. Measurements: body length = 5.9 mm.

Black. Brown: clypeal lamella, scape, mandible tip, legs with lighter shadows, apex of 6th sternum. Flagellum (a bit darker upperside), mandible, semitransparent $\mathbf{LaSt_2}$, tegula, veins, pterostigma and apical half of 6th tergum are light brown.

Most of the head with quite deep sparse **p** and large impunctate areas on the frons and vertex. Section of **cOc** near **PoG** moderately dilated ventrally. Progena with weak **mR**. Quite prominent ventral projection of the clypeal lamella in frontal aspect. All the flagellomeri (but last) clearly thicker than long. **p** on $\mathbf{N_1}$ disk, $\mathbf{es_1}$, and $\mathbf{es_2}$ like on the head. Irregular, low, worn out medially carina along its fore border; its lateral area without any gradulus neither groove, with **mR** on its upper half and weakly wrinkled ventrally. $\mathbf{Sc_1}$ without neither colpus neither gradulus along its fore border, just with a sub triangular **p**-less area delimited by large **p** which are present on its middle area and laerally along **sup**. $\mathbf{Sc_2}$ with sparse large **p**, postscutellar area only with sparse very minute **p**. $\mathbf{es_2}$ with ow,well expressed till signum omaulus. $\mathbf{em_3}$ covered by strong **mR**. $\mathbf{es_3}$ finely shagreened uppermost,smooth ventrally. Ventral coxae with very sparse **p**. Mid tibia with very small ovoid sensorium hardly detectable under incident light surrounded by shining area. Inner surface of hind tibia well keeled longitudinally. Basal hind tarsomerus with a strong long groove. Horizontal area of Propodeum finely sculptured and/or **mR** throughout. Areola subtrapezoidal, clearly tapering backward and with regular straight ribs; the mid one stops just a bit before posterior carina; area around **spP** delimited by regular rib subparallel to lateral carina and getting $\mathbf{N_3}$. Posterior area concave, without any median ridge and completely covered by sculpture formed by densely approached shallow p. lateral areas with weak wrinkles, sub longitudinal (with **mR** among them) on its fore half and sub vertical backward. **p** on 1st sternal surface like on the head on the disk, regular and very small trhoughout the vertical portion; irregular by strong **p** subapical row; sensorial area on the sides very large and haired, delimited from disk by an acutely angled edge. 2nd to 5th terga and 2nd to 5th sterna with large semicircular, shallow and sparse **p**. Subapical stripe of smaller p well distinct only on 2nd tergum. Smooth apical half of 6th tergum. 1st sternal disk flattened and mostly smooth with rare small p and long lateral furrow. 6th sternum with regularly packed rounded **p**.

Note. Holotype lacks right mid tarsomerus. Male paratype is in poor condition lacking

the entire head, pronotum, propleurae and fore legs. Female paratype lacks most of left flagellum. Both of them show character states identifying members of the genus *Pseudotiphia* (no colpus along for border of $\mathbf{Sc_1}$ in females, sensorium on mid tibia of both sexes, no differentiated long brisltle on the palette of gonosquama) from members of *Tiphia*.

Their conspecificity is proposed because both of them show a moderate ventral extension of **cOc**, very small and almost indistinct sensorium on mid tibiae and proximity of the provenance areas; the male shows peculiar additive character states whereas the female do not show differences from other females of the genus, apart the quite prominent ventral projection of the clypeal lamella in frontal aspect (in other female *Pseudotiphia* the clypeal lamella is poorly exceeding clypeal sides in frontal aspect). Therefore there is no certainty about and it needs further confirmation.

Zusammenfassung

Im Rahmen der Bearbeitung der Tiphiidae-Fauna der Arabischen Halbinsel wurden folgende acht neuen Arten beschrieben: *Anthobosca aspilosoma*, *Poecilotiphia nitens*, *Tiphia sabaea*, *Tiphia arthroxantha*, *Tiphia elachia*, *Tiphia eremopolites*, *Pseudotiphia inopinata* und *Pseudotiphia* (*Acanthotiphia*) *mira*. Weiters wurde *Acanthotiphia* als neue Untergattung von *Pseudotiphia* ASHMEAD 1903 vorgestellt. *Serpapinta* ARGAMAN 1992 und *Sasmarila* ARGAMAN 1992 wurden als synonym zu *Tiphia* FABRICIUS 1775 erkannt.

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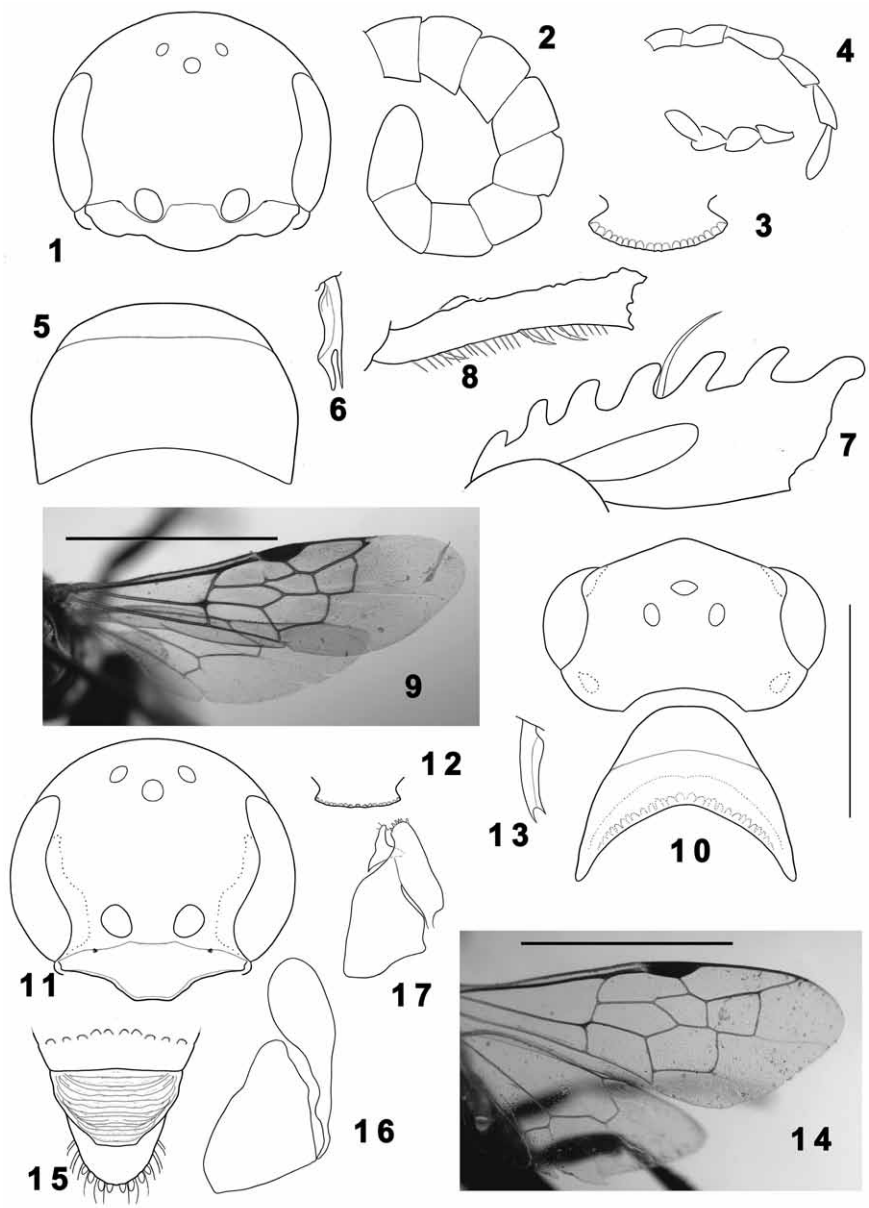
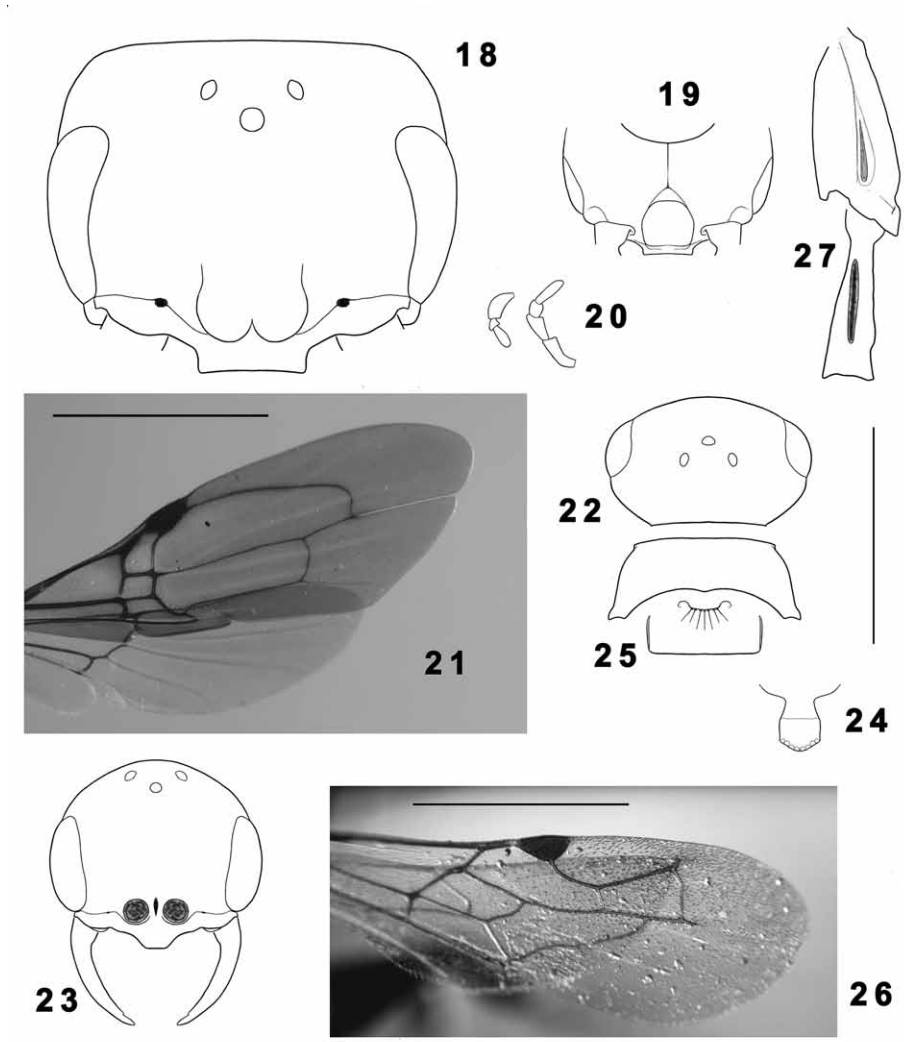


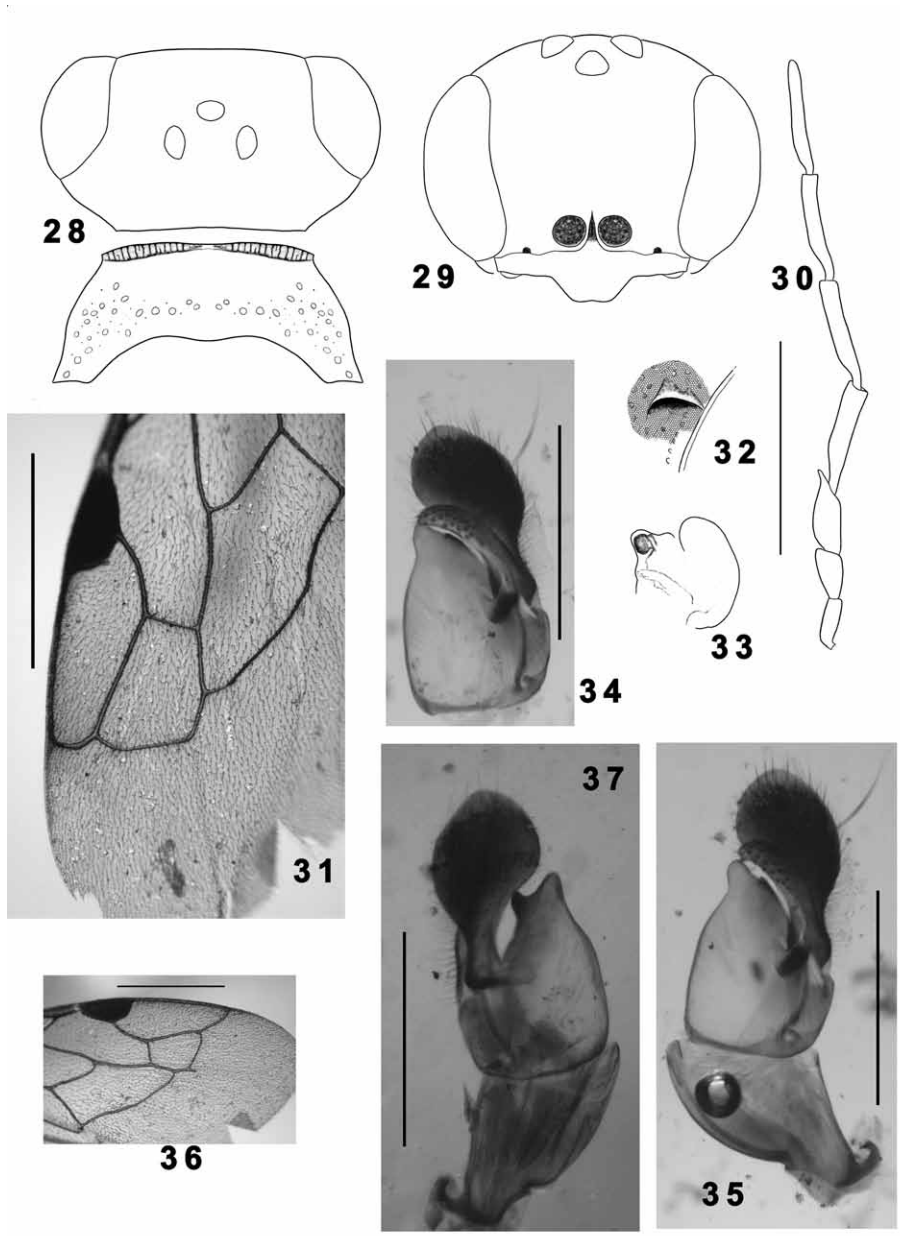
Figs 1-17: *Anthobosca aspilosoma*. ♀ Holotype: (**1**) head, frontal aspect; (**2**) flagellum; (**3**) labrum, frontal aspect; (**4**) palpi; (**5**) pronotum, dorsal aspect; (**6**) foretibila spur. (**7**) hind tibia, inner (back) aspect; (**8**) basal hind tarsomerus; (**9**) wings. ♂ (Paratype): (**10**) head and pronotum, dorsal aspect; (**11**) head, frontal aspect; (**12**) labrum, frontal aspect; (**13**) foretibila spur; (**14**) wings; (**15**) apical terga, dorsal aspect; (**16**) gonosquama; (**17**) volsella.

(9, 14: scale bar = 2 mm) (1, 6, 10, 11, 15: scale bar = 1 mm) (2, 3,6,7,8,12,13,16,17: scale bar = 0.5 mm)



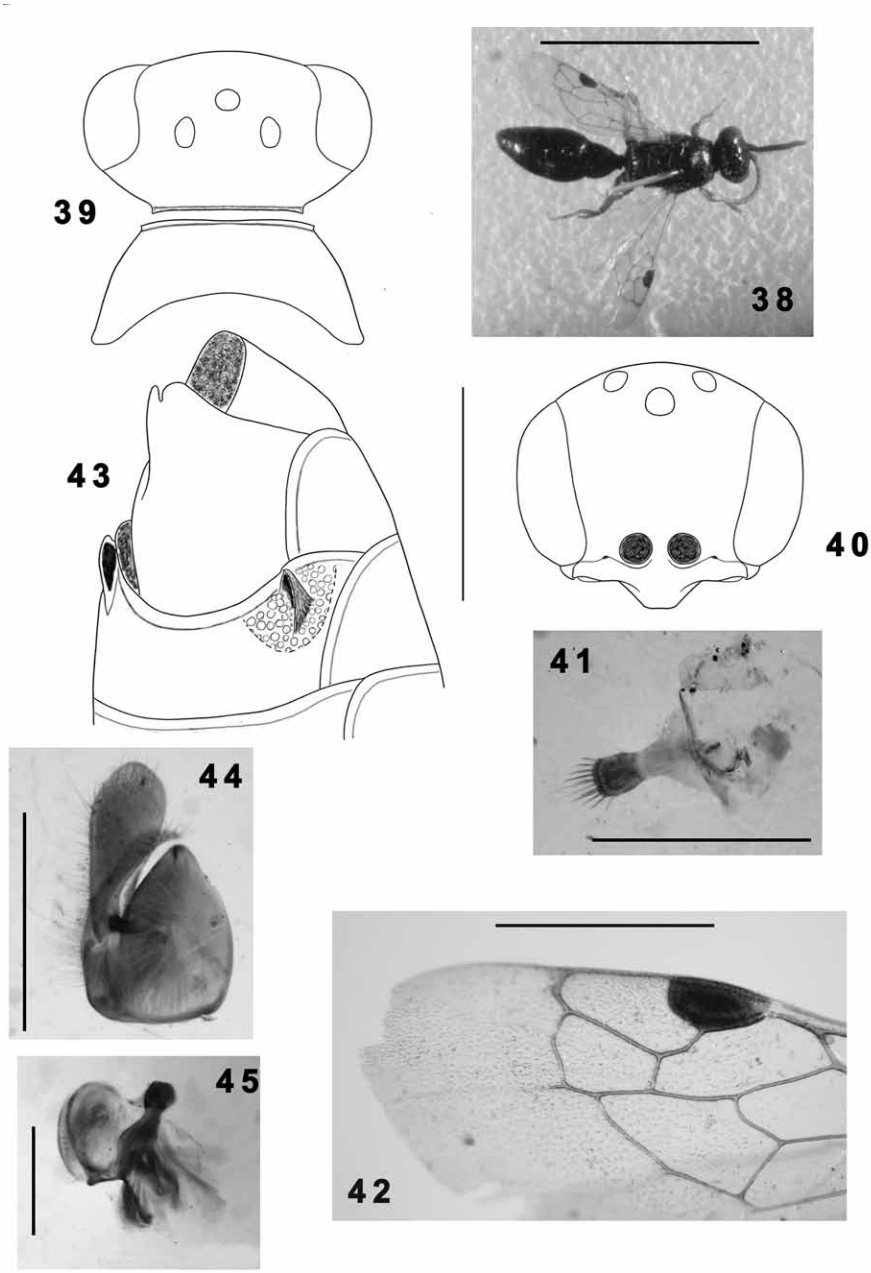
Figs 18-27: *Poecilotiphia nitens*. ♀ (Holotype): (**18**) head, frontal aspect; (**19**) head, ventral aspect; (**20**) palpi; (**21**) wings. *Tiphia elachia* ♀ (Holotype): (**22**) head, dorsal aspect (**23**) head, frontal aspect; (**24**) labrum, frontal aspect; (**25**) pronotum and $\mathbf{Sc_1}$ dorsal aspect; (**26**) forewing; (**27**) hind tibia and basal tarsomerus.

(19, 21: scale bar = 2 mm) (18, 22,23, 26: scale bar = 1 mm) (20,24, 27: scale bar = 0.5mm)

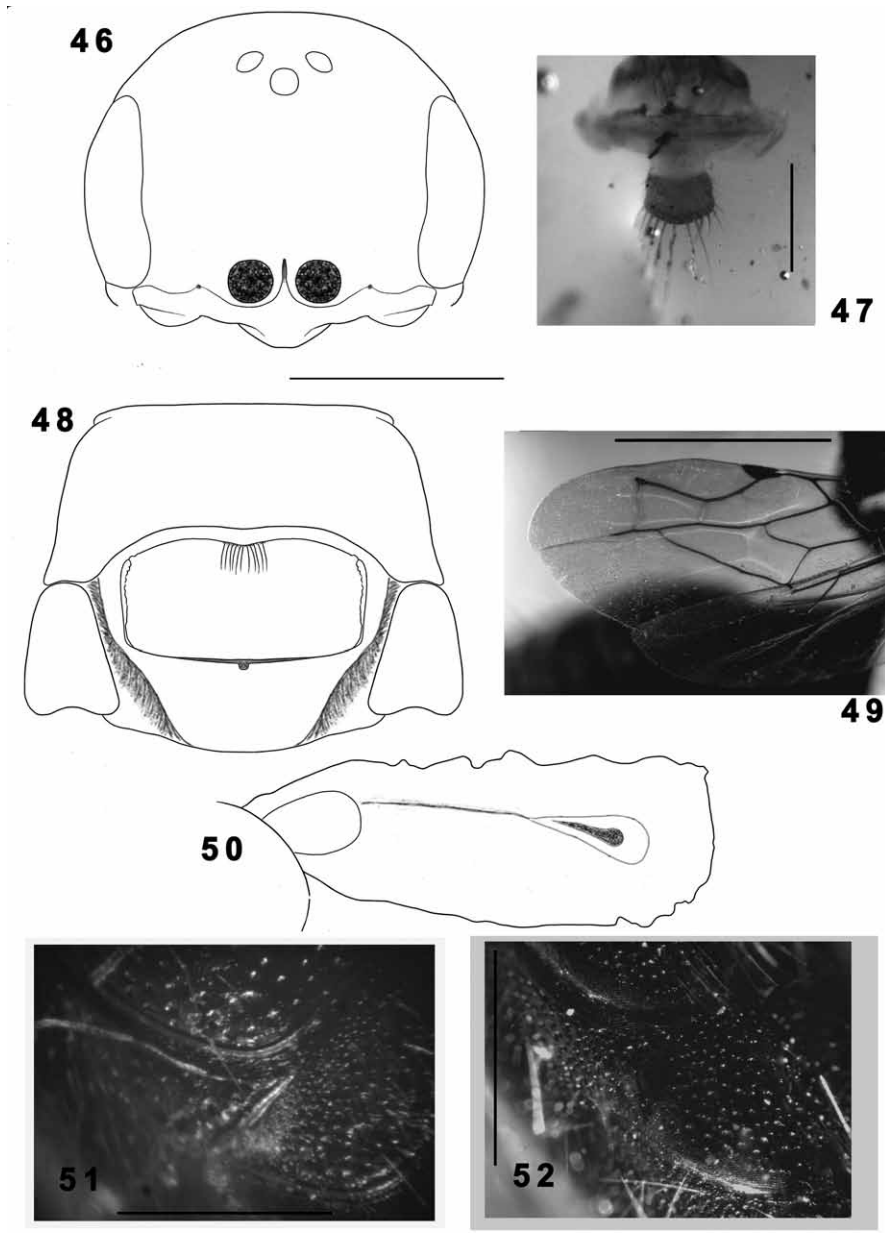


Figs 28-37: *Tiphia sabaea* ♂ Holotype: (**28**) head and pronoum, dorsal aspect; (**29**) head, frontal sapect; (**30**) **Pam**; (**31**) forewing, apical half; (**32**) lateral 5th sternum; (**33**) aedeagus, lateral aspect.; (**34**) gonosquama, inner lateral aspect; (**35**) gonosquama and gonocardo, outer lateral aspect. *Tiphia cinchonae* ♂: (**36**) forewing, apical half; (**37**) gonosquama and gonocardo, outer lateral aspect.

(28, 29: scale bar = 1 mm) (30, 31, 32, 33, 34, 35, 36, 37: scale bar = 0.5mm)

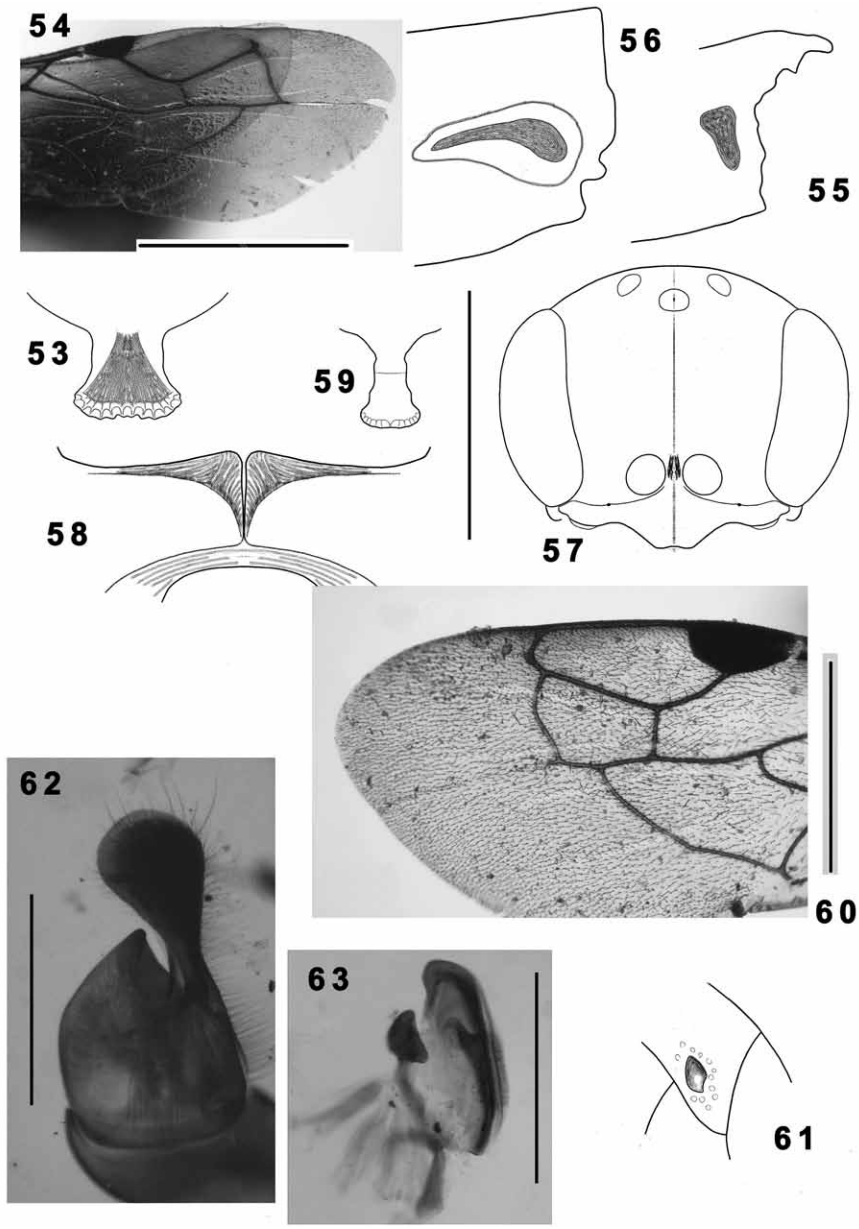


Figs 38-45: *Tiphia arthroxantha* ♂ Holotype: (**38**):general habitus; (**39**) head and pronoum, dorsal aspect; (**40**) head, frontal sapect; (**41**) labrum, frontal aspect; (**42**) fore wing; (**43**) lateral 5th sternum, ventral aspect; (**44**) gonosquama, lateral outer aspect and particular in inner aspect; (**45**) aedeagus, lateral aspect.
(38: scale bar = 5 mm) (39, 40, 42: scale bar = 1 mm) (41, 43, 44, scale bar = 0.5 mm) (45: scale bar = 0.25 mm)



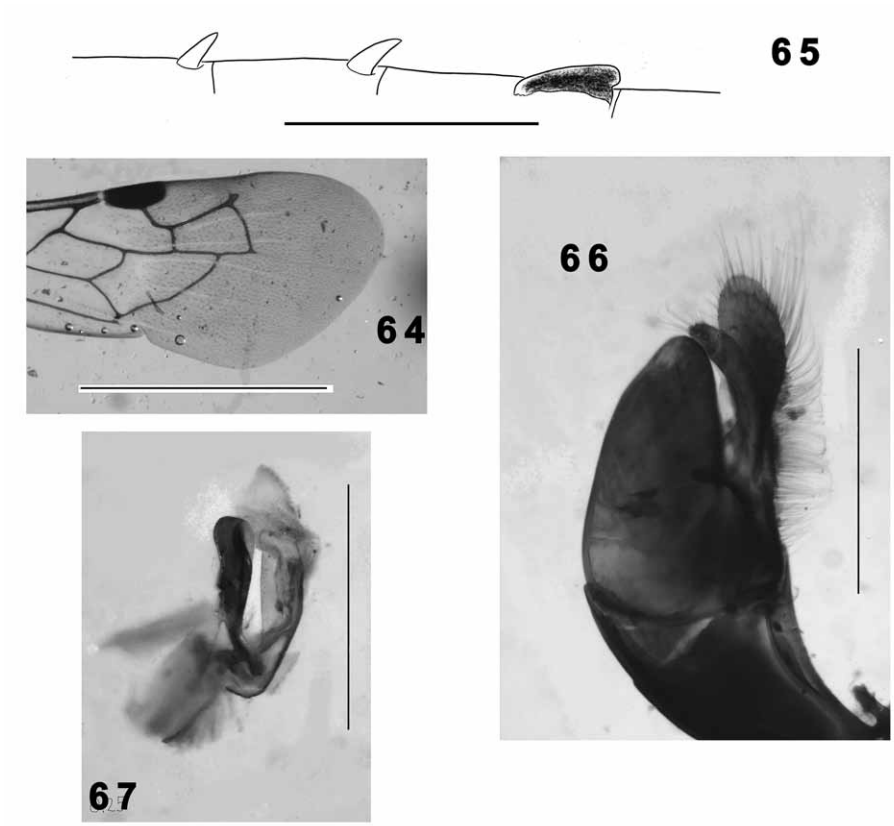
Figs 46-52: *Tiphia eremopolites* ♀ Holotype: (**46**) head, frontal aspect; (**47**) labrum, frontal aspect; (**48**) fore half of mesosoma, dorsal aspect; (**49**) forewing, apical half; (**50**) hind tibia, inner (back) aspect. *Pseudotiphia inopinata* ♂ Holotype: (**51**) lateral terga. *Pseudotiphia villosa* ♂: (**52**) lateral terga.

(49: scale bar = 2 mm) (46, 48, 52: scale bar = 1 mm) (48, 50, 51: scale bar = 0.5 mm)

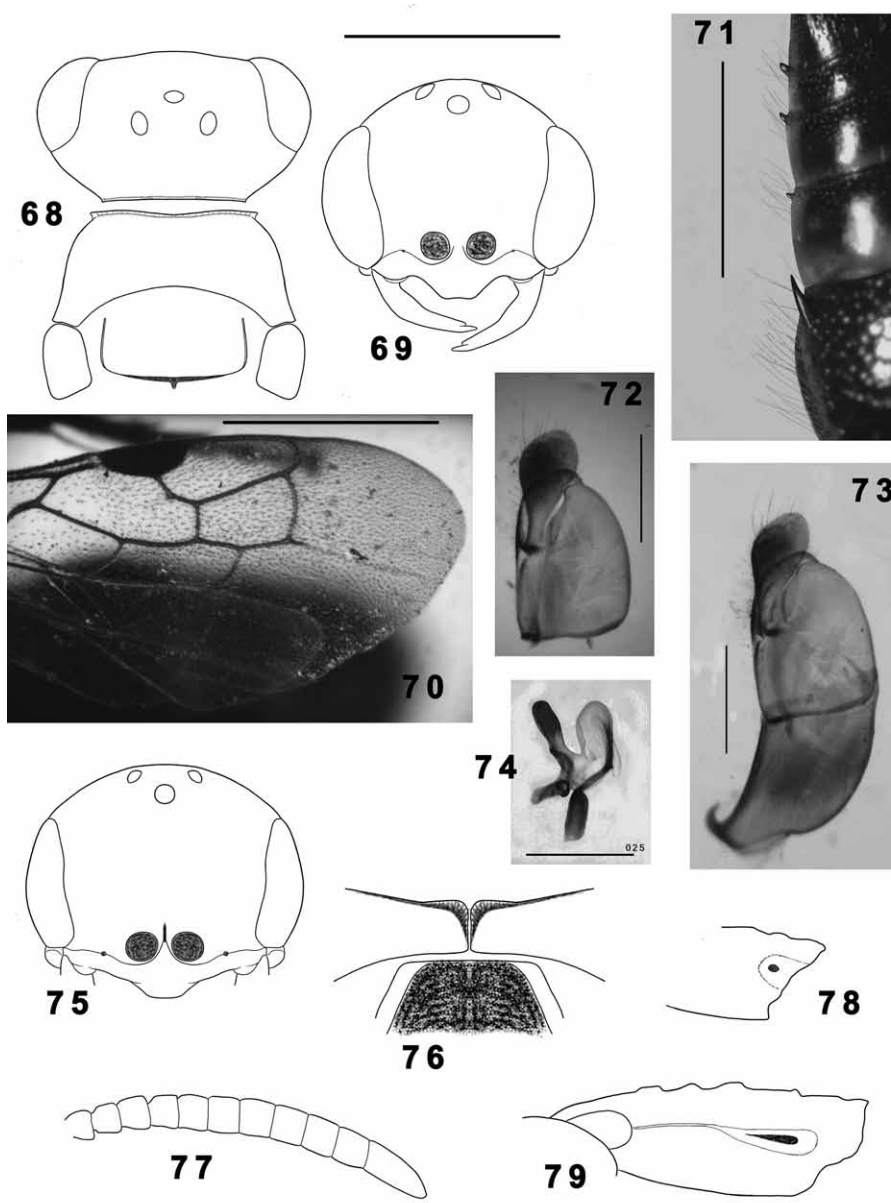


Figs 53-63: *Pseudotiphia inopinata* ♀ Holotype: (**53)** labrum, frontal aspect; (**54**) fore wing, apical half; (**55**) apex of mid tibia, inner aspect; (**56**) apex of hind tibia, inner aspect. Paratype ♂: (**57**) head, frontal aspect; (**58**) head, **PoG** area, antero ventral aspect; (**59**) labrum, frontal aspect; (**60**) fore wing, apical half; (**61**) 5th sternum, lateroventral aspect; (**62**) gonosquama; (**63**) aedeagus, lateral aspect.

(54: scale bar = 2 mm) (57, 60: scale bar = 1 mm) (53, 55, 56, 58, 59, 61, 62, 63: scale bar = 0.5mm)



Figs 64-67: *Pseudotiphia* (*Acantothiphia*) *saussurei* ♂ Holotype: (**64**) fore wing apical half; (**65**) 3rd, 4th and 5th sterna, lateral outline; (**66**) gonosquama; (**67**) aedeagus, lateral aspect.
(64: scale bar = 2 mm) (65, 66, 67: scale bar = 0.5 mm)



Figs 68-79: *Pseudotiphia* (*Acantothiphia*) *mira* ♂ Holotype: (**68**) head and fore half of mesosoma, dorsal aspect; (**69**) head frontal aspect; (**70**) fore wing apical half; (**71**) metasoma, sub ventral lateral aspect; (**72**) gonosquama, inner lateral aspect; (**73**) gonosquama, and gonocardo, outer lateral aspect; (**74**) aedeagus, lateral aspect. ♀ Paratype: (**75)** head frontal aspect; (**76**) head, **PoG** area, antero ventral aspect; (**77**) flagellum; (**78)** apical mid tibia, inner aspect; (**79)** apical hind tibia, inner aspect.

(68, 69, 70, 71, 75, 77: scale bar = 1 mm) (72, 73, 74, 76, 78, 79: scale bar = 0.5 mm)