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A review of the genus *Pseudotiphia* ASHMEAD 1903 (Hymenoptera, Tiphiidae)

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A b s t r a c t : A generic key between *Tiphia* FABRICIUS 1775 and *Pseudotiphia* ASHMEAD 1903 is furnished. The synonymies of the generic taxon names I*cronatha* NAGY 1967 and *Ludita* NAGY 1967 with *Pseudotiphia* and of *Tiphia major* MOCSARY 1883, *Tiphia Olcesei* TOURNIER 1889, *Tiphia rudepunctata* TOURNIER 1901 with *Tiphia villosa* are proposed. Lectotypes of *Tiphia major* MOCSARY 1883, *Tiphia Olcesei*, *Tiphia Beckeri* TOURNIER 1889, *Tiphia Lethierryi* TOURNIER 1889, *Tiphia Putoni* TOURNIER 1889, *Tiphia longicornis* TOURNIER 1901, *Tiphia antigae* TOURNIER 1901 and *Tiphia rudepunctata* TOURNIER 1901 are designed. New combinations of *Tiphia villosa*, *Tiphia fulvipennis* SMITH 1879, *Tiphia caucasica* MOCSARY 1883, *Tiphia beckeri*, *Tiphia Lethierryi*, *Tiphia Putoni*, *Tiphia longicornis*, *Tiphia antigae* under *Pseudotiphia* are established. New taxa *Pseudotiphia thoracica*, *Pseudotiphia caspica*, *Pseudotiphia lampra*, *Pseudotiphia punica and Pseudotiphia gonodactyla* are described.

K e y w o r d s : Tiphiinae, *Icronatha*, *Ludita*, *Pseudotiphia*, *Tiphia*.

Introduction

Notwhithstanding the relative abundancy and high frequency in nature and in the collections of Palaearctic taxa of Tiphiidae, which ranges almost throughout the Palearctic region up to polar circle, the taxonomic state of the art is really far to be considered stable and satisfying. After FABRICIUS who established (1775) the name *Tiphia*, the first treatment about European fauna was made by TOURNIER (1889) who named many new species. Successively DALLA TORRE (1891) replaced the Tournier's name *T. rugosa*, preoccupied, with *T. tourneri*, BERLAND (1925) reduced it together with *T. distincta* TOURNIER 1889 to the the rank of simple varieties of *Tiphia femorata* FABRICIUS 1775. ASHMEAD (1903) based his new generic name *Pseudotiphia* upon *Tiphia brevipennis* LUCAS 1846 and DUSMET (1930) treated Iberian fauna. HEDICKE (1936) in the first version of The Hymenopterorum Catalogus on Tiphiidae confined himself to a simple compilation of the until then recorded taxa. GUIGLIA (1956) gave an account about her examination of TOURNIER's material from Geneva without any formal designation of typical specimens; she reduced many taxa to junior synonyms mainly of *T. femorata* and *Tiphia morio* FABRICIUS 1787. The taxonomic situation distinctly moved with the NAGY's work (1967), since he named one new subgeneric, *Sierocolpa* having *Tiphia minuta* LINDEN 1827 like type species, and two generic taxa, *Icronatha* and

Ludita based respectively on *Tiphia olcesei* TOURNIER 1889 and *T. morio*, but he did not quote any typical specimen. VAN ACHTERBERG (1983) discovered a misidentification about the type species of *Ludita*, as the original typical specimen of *T. morio*, a female, belongs to *Andrena* and made the proposal to change it with the original specimen, a female too, of *Tiphia villosa* FABRICIUS 1793; proposal accepted in 1988. The new Hymenopterorum Catalogus about Tiphiinae by G.J. ARBOUW (1985) recorded the state of the art without any criticism. ARGAMAN (1992) did not change anything about taxa here we are dealing with and raised again the group to the rank of subfamily establishing two subfamily Silifkinae (including *Epomidiopteron* ROMAND 1836, *Paratiphia* SICHEL 1864 and *Silifka* ARGAMAN 1992) and Tiphiinae. This is only a nominal problem and just to avoid increasing taxonomical muddle it is preferable to follow the use of most of the modern authors and students and maintain the name Tiphiinae (consequently Silifkini and Tiphiini).

The study of a lot of material from Western Palaearctic region and types preserved at the European Museums enabled to operate a revision about the species of the *Pseudotiphia villosa* group, with a relative identification key, and deep changes about the names *Icronata* NAGY 1967, *Ludita* NAGY 1967. Basic instruments to this goal are both the study of genitalia and the comparation with a lot of Oriental and Afrotropical materials. The latters permitted to better estimate the taxonomical meaning of the character states through its presence either absence in a more vast pool of species.

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 "A" indicated by the line on the figure 16; the dorsal and lateral aspects, perpendicular to each other, are performed along the virtual plane along the occipital carina represented by the line B.

In the vast majority of the species is present a strong gradulus on $\mathbf{es_2}$ which has been simply named anterior keel or prepectal carina in the past; here its analogy and identical position with omaulus of Sphecidae (BOHART & MENKE 1976) is recognised and therefore so named.

For the morphological terms the well established English words have been used, otherwise the latin form has been preferred. Some other specifications have to be stressed to avoid misunderstandings about the terminology; following GOULET & HUBER (1993) the term metasternum refers only to the sclerite of mesosoma, while the ventral sclerites of metasoma have to be simply named "sternum (-a)" and the relative dorsal sclerites "tergum (-a)". "Metamerus (-i)" refers to every entire single segment of metasoma. Postscutellum or postscutellar area here means the central area of metanotum between the large lateral pits ($\mathbf{fN_3}$). The term "colpus" introduced by ARGAMAN (1994) means a gradulus with a socket just under it along its length.

Henceforth the outermost pair of appendages of male genitalia will be termed "gonosquama", with a basal portion very distinct from apical one (shaped like a spoon and named "palette"), and gonocardo the basal ring surrounding it proximally. Volsella show both a great uniformity in shape and a remarkable difficulty to be split from the gonosquama without severe damaging. Palette is only outlined overlooking its bristles in the whole of drawings but two. Only the postero-ventral lateral outline of the aedeagus is figured.

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. Most of the hair has been drawn off by the specimens used for the SEM analysis too.

A = height (Altitudo)

a = anterior

Ca = head (Caput)

CC = costal cell (Cella Costalis)

CD = discoidal cell (Cella Discoidalis)

cHy = hypostomal keel (carina Hypostomae)

CM = marginal cell (Cella Marginalis)

cOc = carina Occipitis (-alis).

CSM = sub marginal cell (Cella Sub Marginalis)

dP = propodeal tooth (dens Propodei)

Em = Epimeron

Es = Episternum

F = female (Foemina).

FoO = oral cavity (Fossa Oris)

FoP = propodeal cavity (Fossa Propodei)

FoX = coxal cavity (Fossa coXae)

Hy = Hypostoma

I = distance (Intervallum)

iS = interspace (infra Spatium)

L = length (Longitudo)

l = lateralis (lateral)

LA = width (LAtitudo)

Lab = Labium

Lah = humeral plate (lamella humeralis)

$LaSt_2$ = mesosternal lobes (Lamellae mesoSterni)

m = median (medianus)

mR = microreticulation (micro Reticulum)

Ms = Mesosoma

Mt = Metasoma

M = Male (Mas)

N_1 = proNotum

N_3 = metaNotum

p = puncture (-s), 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)

St_3 = metaSternum

sts = sulcus trans scutalis

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

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

In the descriptions of labels, *italic* characters mean handwriting.

SEM pictures have been performed by Maurizio Ulivi at the "Centro di Microscopia elettronica e di microanalisi" of the University of Florence.

Some morphological observation

From Brothers (1975) Tiphinae have been considered a subfamily of the Tiphiidae together with Anthoboscinae, Diamminae, Thynninae, Brachycistidinae and Myzininae. Just recently PILGRIM et al. (2008) through a molecular phylogenetics on Vespoidea found paraphyly about previously estimate Tiphiidae and proposed a change grouping Tiphiidae (including Brachycistidinae and Tiphiinae) and Sierolomorphidae within Tiphioidea, whereas all the other above said subfamilies under the new family Thynnidae considered the sister family of Chyphotidae within the new superfamily Thynnoidea. In their conclusion the authors" highlight the need for a critical re-examination of morphology". Here it is not the task to argue about their conclusion, but to add some morphological data about Tiphiidae.

Both sexes of Tiphiinae and Brachycistidinae have:

- subcircular toruli placed on the plane of the frons, their border strenghtened by a ridge well distinct on the surrounding surface;
- closed mandibular socket;
- longitudinal axis of the radicle coaxial with longitudinal axis of the scape;
- complete **cOc** (but *Epomidiopteron* and *Paratiphia*);
- **dP** strictly touching to eachother, so bisecting the **FoP** in posteroventral aspect (Fig. 1), (in Brachycistidinae $\mathbf{FoX_3}$ is separated from **FoP** by a complete propodeal bridge, whereas in Tiphiinae the process of propodeal bridge do not touch eachother and so the $\mathbf{FoX_3}$ is not separated from **FoP**),
- one mid tibial spur (nevertheless the clade Silifkini possess two mid tibial spur);
- first tergum with strong lateral prominence near its base, forming a deep notch with the basal enlargement (best visible in ventral aspect too) (Fig. 2).

All the males Tiphiinae I examined share with the the males Brachycistidinae the 6th sternum much longer than 5th and with apex reaching the tip of 7th tergum (pygidium), the 6th sternum concealing 7th sternum and most of the anal hook (8th sternum).

The following character states are present in all the members of Tiphiinae and seem good autapomorphies for both sexes:

- the strong colpus (i.e. gradulus with a socket lying below it) at the base of 2nd tergum (*Paratiphia*, *Epomidipteron* and *Silifka* possess it just laterally) followed by a large hollow with more or less densely packed strong buttressing ridges (Fig. 3), the latters only rarely lacking.
- semitransparent lamina along the lateral ventral border of clypeus (Fig. 4), frequently more developed in the females
- labrum very small, always wide less than half fore width of the labium, and simple with ventrally oriented bristles, lacking any velum orthogonal to its main surface.
- labrum hatchet-like shaped but in *Paratiphia* and *Silifka*.

- large tegulae covering **Lah**
- **spP** placed at the middle of the **P** at a distance from $\mathbf{N_3}$ many times greater than its size
- subovate sensitive areas on sides of 1st tergum (Fig. 5).

The basal process, a sort of hook, at the base of gonocardo (Fig. 6) in the males and the sensitive area on the inner pre apical surface of the hind tibia in both sexes are unique within the entire family and forms a good autapomorphy for the clade Tiphiini. Males of *Paratiphia* and *Silifka* show volsella and aedeagus very different from Tiphiini and similar to males Anthoboscinae.

Discussion

NAGY (1967) established the new taxa *Icronatha* and *Ludita* segregating them from *Tiphia* by means of the absence of omaulus in females and the radial cell (***CM***) distincly less extended laterally than second cubital cell (***SMC***) in males. Their further mutual distinction was based on the absence of omaulus on the males too in *Ludita*, the longer tegulae overcoming the **sts** in *Icronatha* (only reaching it in *Ludita*), the absence of any transversal keel on the basal portion of metameri in *Icronatha* ("Im basalen Drittel des Abdominaltergits befindet sich kein Querleiste"), while present in *Ludita* ("Im basalen Drittel befindet sich eine dicke Querleiste"). Unfortunately the examination of types leads up to call most of these assertions in question. The author contradicts himself about the last proposition in the further generic diagnosis for *Icronatha*, where he refers about the presence of a transversal keel in the basal metameri of both sexes. In the diagnosis among other descriptions of lesser weight, he stressed the assertions about the presence of the groove on the basal hindtarsomerus of both sexes and three apical teeth on the gonosquama (volsella in the original paper). In his next paper (1975), while disputing against the GUIGLIA's opinion (1956) about "the belonging of the lectotype of *Tiphia olcesei* to the Fabrician *Tiphia morio* as subspecies of it", he underlined the features of *Icronatha*: namely "the propodeal side undivided, the first tergite more or less carinulated, tegula elongated, shortened male radial cell and the hind basitarsus of both sexes grooved". The last character especially was underlined like uniquely occurring within the family in the males of *Tiphia olcesei*, the species typus of *Icronatha*, and the other species of this genus. In the diagnosis of *Ludita* (1967), having *T. morio* like genotype, no noteworthy assertions besides those provided in the key were made. Unfortunately he did not examine the real specimens of its genotype; in the issue about "*Ludita morio*" he relates the description of the male alone, the female being unrecognised to him. Consequently his elaborations are weakly and wrongly grounded, producing a muddled and entangled taxonomic situation. ACHTERBERG (1983) discovered the misidentification about the type species of *Ludita* since the original typical specimen of *T. morio* belongs to *Andrena* and consequently made the proposal to designated *T. villosa* FABRICIUS 1793 as its new type species (proposal accepted in 1988). He recognised in *T. villosa* the species for which the name *morio* has been largely used by most authors during about two centuries. The missed examination of typical specimens of *Tiphia olcesei* too caused wrong assertions about the features of the new genus *Icronatha* with jumble of many species. Its male typical specimens do not show any groove on the basal hind tarsomerus, whereas this character state is present only

about males of *T. caucasica* and *T. fulvipennis*; the female type specimens have propodeal sides clearly divided from **es$_3$** in two distinct surfaces (*T. caucasica* and *T. fulvipennis* show this uniformity), both sexes do not have elongated tegulae compared to *Tiphia femorata* (only both sexes of *T. fulvipennis* show elongated tegulae).

Nevertheless the most important datum from the examination of the types is the identity between *Tiphia villosa* and *Tiphia olcesei*, as already verified in litteris by GORBATOVSKY. GUIGLIA, even though misidentifying *T. morio* herself, was right in disclaiming the conspecificity between *T. morio* (auct. not FABRICIUS) and *T. olcesei*. The examination of the types of *Tiphia fulvipennis* SMITH 1855 and *T. caucasica* MOCSARY 1883 permitted to establish their belonging to the same group of *T. villosa* even on the ground of additional and before now overlooked character states.

The presence of pits and rugulae on the hypostomal extension (the "submandibular triangle") of females and teeth and/or protuberances on the posterior (upper on the tables) edge of the base of gonosquama [distinctive characters of *Icronatha* according to NAGY (1969)/ARGAMAN (1992], are present in many taxa of *Tiphia* from other Regions and consequently do not possess any discriminatory worth at any rank above specific one.

As a result of the present investigation well settled distinctive character states of members of *T. villosa* group from *T. femorata* are detected. Typical specimens (all females) of *Tiphia brevipennis* LUCAS 1846, *T. lethierryi* TOURNIER 1889 and *T. putoni* TOURNIER 1889 and also the supposed and here described for the first time males of *T. brevipennis* and *T. putoni*, share distinctive character states with *T. villosa* group, therefore it has been established to group all them together under the name *Pseudotiphia* ASHMEAD 1903 which is the oldest disposable name for this group of taxa. According to the very old use, the most parsimonious and correct action appears to maintain its generic rank.

Generic key

a Omaulus on **es$_2$** always present and well expressed in both sexes

b Well produced longitudinal ridge along the ventral inner edge of the fore coxa (**X$_1$**) (females and males)

c Mid tibia without sensorial area just near the spur attachment (females and males)

d Middle of the fore edge of **Sc$_1$** (Fig. 7) with transversal sharp gradulus subtending a socket with a tuft of short bristles (females)

e The ***CM*** on the fore wings of the males more extended apically (or as extended as) than 2nd ***CSM*** (males)

f Well differentiated strong and long bristles (1 up to 4, as long as the height of palette) along the outer posterior edge of the "palettes" of the gonosquamae (Fig. 8) (males) ..... *Tiphia* FABRICIUS 1775

aa Omaulus absent either vestigial on **es$_2$** of the females (well expressed in only one taxon); present in males but few taxa

bb No longitudinal ridge along the ventral inner edge of the fore coxa (**X$_1$**) (females and males)

cc Mid tibia with sensorial area just near the spur attachment (Fig. 74) (females and males)

dd Colpus absent on the middle of the fore edge of $\mathbf{Sc_1}$; gradulus where present is never subtending a socket with a tuft of short bristles (Figs 14, 39) (females)

ee The ***CM*** on the fore wings of the males is much less extended apically than 2nd ***CSM*** (valid for palaearctic forms only) (males)

ff No differentiated strong and long bristles along the outer posterior (upper on the tables) edge of the "palettes" of the gonosquamae (Fig. 48) (males)
..... *Pseudotiphia* ASHMEAD 1903

Pseudotiphia ASHMEAD 1903

Species typus: *Tiphia brevipennis* LUCAS 1846
Pseudotiphia ASHMEAD 1903: 6
Pseudotiphia: NAGY 1969: 141-142
Pseudotiphia: ARGAMAN 1992: 9
Icronatha NAGY 1967: 193 **syn.nov.**
Ludita NAGY 1967: 197 **syn.nov.**

ASHMEAD (1903) grounded the monotypic genus *Pseudotiphia* on *Tiphia brevipennis* LUCAS 1846 and oddly placed it within family Myzinidae. The genus presents a large distribution area, ranging from Northern Europe to Caucasus, N Africa and SW Asia (up to India?) with a presence in Socotra Island. Deeper investigations probably could enlarge its distribution area to eastern Africa and Sahel. The widest diversification appears to occur in North Western Africa. Taxa of the *Ps. brevipennis* group have been hitherto captured just from Mediterranean coast of Morocco and Algeria, between Melilla and Hannaba.

The ***CM*** on the fore wings of the males is much less extended apically than 2nd ***CSM*** in all the taxa of this group, but it occurs also in many *Tiphia* males from Oriental Region.

ARGAMAN (1992) refers about generic issues of *Pseudotiphia*: "submandibular ridge vanished and subsituted by a thin fold, which is connected to middle of hypostoma" vs its presence in the other genera. Really in all the specimens of *Ps. lethierry* and *Ps. putoni* and in three typical specimens of *Ps. brevipennis* the outer border of the hypostomal carina becomes detached from its base, so that the subtriangular enlargement of hypostomal carina is as well developed as in all taxa of *Tiphia*; just in one specimen it becomes detached from about the middle of hypostoma and the subtriangular enlargement is less extended. Probably we are dealing with individual variability without any taxonomical meaning. The advanced brachyptery with size modifications of mesosomal sclerites and the relative shortness of palps do not justify by themselves their severance from *Ps. villosa* group; the considerations about the old genus *Pseudomeria* within Myzininae can well rule here too (GORBATOVSKY 1981).

The morphology and genitalia do not offer significant supplementary peculiarities compared with *Tiphia*.

The cluster of the taxa here dealt with is hardly severed into two groups; although females of the *Ps. brevipennis* section are easily distinct from females of the *Ps. villosa* section, the relative males are not, also because of uncertainty due to their arbitrary ascription to the relative females.

The normally winged females are not very easy to distinguish from one another; sometimes intraspecific differences (areola for example) appear greater than interspecific

ones, so the examination of the relative males is necessary to recognize the taxa with a high degree of reliability.

Most of the females have: the whole or part of flagellum ferruginous red; rounded foreborder of $\mathbf{N_1}$ with laminated keel just along its vertical side and with wrinkled posterolateral corner; darkened wings; rough and often incomplete weak gradulus along the border line between subhorizontal and declivitous areas of 1st tergum.

About the males the genitalia are sometimes the only reliable and good autapomorphies, especially the shape of the gonosquamae. There is a remarkable uniformity of genitalia in *Ps. villosa* males specimens coming from extreme corners of its distribution area, which is the widest within the genus; a fact that empowers reasonably to use their diversity like useful tool to well discriminate taxa from eachother. This situation occurs about *Tiphia* males too. As a result of present study the following assertion can be made: while similarity in tuberculum on 5th sternum by itself does not mean that we are dealing with the same species, its diversity means different species.

There is some fluctuation about veins of females of the *Ps. brevipennis* group and *Ps. antigae* both within the same taxon and the single specimen, probably because of a still active evolutionary process about brachyptery.

All the males are fully winged, the wings reaching 6th tergum. Most of the species have a very protruding tuberculum on 5th sternum, far greater than in *Tiphia*.

The size is medially quite greater than the species belonging to *Tiphia*. One massive female specimen of *Ps. putoni* gets the length of 26 mm. Both of sexes have simple mandible without any subapical tooth and whitish hair on most of the body unless differently stated. Apart the females of *Ps. brevipennis*, *putoni* and *lethyerryi*, all the specimens of the group, both males and females, show the same general habitus and coloration of *Ps. villosa*. The relative descriptions mainly refer to the differences from it.

The complete inventory of references about taxa hitherto recorded has been listed by ARBOUW (1984).

Lectotypes of *Tiphia brevipennis*, *Tiphia beckeri*, *Tiphia Olcesei* and *Tiphia major* have been established here since GUIGLIA, NAGY and GORBATOVSKY never published anything about them.

Types of *Icronatha nuristanica* NAGY 1975, *Ludita andromeda* NAGY 1967, *Ludita consobrina* NAGY 1967, *Ludita ramispinosa* NAGY 1967 have been out of my reach and their position can not be established in this study. The type of *Tiphia algira* MOCSARY 1883 does not exist anymore at Budapest Museum and not traceable to me. From the drawings of genitalia we can also suppose the identities *L. consobrina* & *L. ramispinosa* with *Ps. villosa*.

E c o l o g y . JANVIER (1957 &1966) gave a very detailed and worthy description of the ethology of *Tiphia morio* (=*Ps. villosa*), referring about coming out time, coupling, anhestesia of the prey (predominantly *Amphimallon majalis*), description of the larva etc. Few other disposable data arise from the labels and refer just to the period of seizure of the specimens of the *Ps. villosa* group, which appear early from spring to the start of summer. Unfortunately there are no date in the labels of female specimens of *Ps. brevipennis*, *Ps. putoni* and *Ps. lethierry* and all the examined specimens belong to collections of 19th century.

N o t e . At MHNP a female specimen 15 mm long from Egypt exists, belonging to this

group with a well produced gradulus on Sc_1, large sensorial area on mid tibia, ferruginous flagellum, brown legs and trace of very weak gradulus medially on 2nd tergum; it looks like *Ps. crassinervis* but it has **es_3** wrinkled, even though it is slightly differentiated from lateral **P**. In the OLML a small specimen (10mm) from Turkey exists with characters states of the group, without gradulus on **Sc_1** and well expressed graduli on 1st and 2nd terga. Since we lack any knowledge about males their position cannot be well settled. A female specimen from Southern India at ZMUC (? = *T. coimbatorea* Allen 1975) share the above said character states of *Pseudotiphia*, but it lacks the groove on the hind basitarsus, present in all the other components of the group. *Tiphia scabrosa* GERSTAECKER 1858 have a vestigial sensorial area on the mid tibia, but shows all the other character states of *Tiphia*.

Key of species

Females 1
Males 14

1

α Palps shortened, **Pam** 1.6 times longer than labium at the best

β Basal 2nd and 3rd **Pam** as wide as apical three ones

χ **Sc_1**: its width just a bit less than three times its height in dorsal aspect

δ **Sc_2**: its fore width about 2.8 times its mid height

ε Wings strongly reduced with tapering tips and very narrow with ratio **L/ LA** more than 6 (Figs 34,62, 63, 66, 67). Fore wing not overcoming the ridge on 1st tergum, its length about as the same as mesosomal length (from fore edge of the pronotal disk to posterior carina of the horizontal propodeum)

ϕ Ratio **L_{Mt} / L_{Ms}** up to or more than 1.6
.....(Group *Ps. brevipennis*) 2

αα Palps elongated; **Pam** as long as or longer than 2 times labium; only in *Ps. fulvipennis*, *Ps. caucasica* and *Ps. beckeri* the ratio is abut 1.8

ββ Basal 2nd and 3rd **Pam** 1.3 times distinctly thicker than apical three ones

χχ **Sc_1**: its width twice its height in dorsal aspect

δδ **Sc_2**: its fore width about 1.8 times its mid height at most

εε Wings developed as well as in the remainder of the subfamily with enlarged and rounded apex (Fig. 91) with ratio **L/LA** less than 4. Fore wing getting the back edge of 2nd tergum at least, its length 1.5 times length of mesosoma at least

ϕϕ Ratio **L_{Mt} / L_{Ms}** less than 1.4
..... (Group *Ps. villosa*) 4

2

α Flagellum and legs mostly ferruginous

β Forewing: ***CDII*** apically opened, ***2r-m*** vein not expressed (Fig. 34)

χ 1st tergum without transversal ridge

δ 2nd tergum without sub basal gradulus, with deep **p**

..... *Ps. brevipennis* (LUCAS 1846)

αα Flagellum and legs brown black

ββ Forewing: ***CDII*** apically closed, ***2r-m*** vein completely expressed

χχ 1st tergum with transversal ridge between subvertical and horizontal surfaces

δδ 2nd tergum with sub basal gradulus and more finely impressed **p**

.....3

3

α **Pam** (Fig. 60) less elongated: ratio $\mathbf{L_{Pam}/L_{Lab}}$ a bit less than 1.3

β Ratio $\mathbf{L_{Pam}/L_{Pal}}$ about 2.2

χ **Pal** short, its length 0.6 times labium length

δ Three ***CSM*** (Fig. 62)

ε Sensorial area on mid tibia small, as wide as the width of the spur

ϕ 2nd tergum with small **p** deeply impressed and more densely packed

..... *Ps. lethierryi* (TOURNIER 1889)

αα **Pam** (Fig. 64) more elongated: ratio $\mathbf{L_{Pam}/L_{Lab}}$ about 1.6

ββ Ratio $\mathbf{L_{Pam}/L_{Pal}}$ about 1.8

χχ **Pal** length 0.9 times labium length

δδ Two ***CSM*** (Fig. 66)

εε Sensorial area on mid tibia large, more than twice the width of the spur

ϕϕ 2nd tergum with very fine and rare small **p**

.....*Ps. putoni* (TOURNIER 1889)

4

α No gradulus on basal 2nd tergum

.....5

αα Gradulus on 2nd tergum always present

.....8

5

α Omaulus expressed

.....6

αα Omaulus absent

.....7

6

α Omaulus well expressed along its entire length

β **es_3** as wrinkled as lateral **P**, almost undistinguishable from eachother

χ whole of horizontal surface of **P**, including areola, with many small regularly spaced wrinkles subperpendicular to the longitudinal axis of the body (Fig.96)

δ well produced gradulus on 1st tergum

ε Buttressing ridges present along entire width of the hollow on 2nd tergum

..... *Ps. caspica* nov.sp.

αα Omaulus well expressed only on its upper fourth, ill defined downwards

ββ **es_3** with a shagreened **mR**, well distinct from lateral P

χχ Horizontal surface of **P** almost smooth with very sparse **p** and/or shagreened surface. Nowhere regularly wrinkled

δδ No gradulus on 1st tergum

εε Buttressing ridges present only at the extremities of the hollow of 2nd tergum

..... *Ps. crassinervis* (KIRBY 1908)

7

α Yellowish hair on the head and dorsal mesososma

β Tegulae large, getting mid **Sc_2** well over the **sts** (transcutal suture) and far longer than height of **Sc_2** (Ratio **L_{Te}/A_{Sc2}** between 1.2 and 1.3) (Fig. 39)

χ Well distinct gradulus on 1st tergum

..... *Ps. fulvipennis* (SMITH 1879)

αα Brown hair on head and dorsal mesosoma

ββ Tegulae normal, getting only the base of **Sc_2,** scarcely over **sts** and as long as height of **Sc_2** (Ratio **L_{Te}/A_{Sc2}** about 1)

χχ No gradulus on 1st tergum

..... *Ps. caucasica* (MOCSARY 1883)

8

α The hollow on 2nd tergum very thin, its height about 1/3 –1/2 the outer length of pedicel in dorsal aspect.

.....9

αα The hollow on 2nd tergum more widely developed, its height as long as or longer than the outer length of pedicel in dorsal aspect.

.....10

9

α Ratio between width and thickness of the head in dorsal aspect (**LA_C/L_C**) about 2 (Fig. 78)

β No gradulus neither impunctate area along mid fore border of **Sc_1**, which is coarsely and densely **p**, without **iS** among them

χ Traces of omaulus on **es_2**

δ Wings shortened, getting only the apex of 2nd tergum

ε Legs pitch black

..... *Ps. antigae* (TOURNIER 1901)

αα Ratio between width and thickness of the head in dorsal aspect ($\mathbf{LA_C/L_C}$) about 1.8

ββ No gradulus neither traces of it but impunctate area well present along mid fore border of $\mathbf{Sc_1}$, where there are always wide interspaces among **p**

χχ Omaulus completely absent

δδ Wings normal, getting 5th tergum

εε Legs brown

..... *Ps. lampra* nov.sp.

10

α Apical **Pal** as long as or a bit shorter than 2nd one

β Pterostigma apically truncated (Fig. 91)

χ Outer (back) surface of mid femur completely densely bipunctate by secondary small **p** among sparser larger ones

δ Ventral side of $\mathbf{X_3}$ bipunctate by secondary small **p**

..... *Ps. longicornis* (TOURNIER 1901)

αα Apical **Pal** always clearly longer than 2nd one

ββ Pterostigma not apically truncated (Fig. 15)

χχ Outer (back) surface of mid femur without secondary small **p** (just a small area in *Ps. villosa*)

δδ Ventral side of $\mathbf{X_3}$ with only very sparse medially impressed **p** without secondary small **p**

.....11

11

α Ratio between length and apical thickness ($\mathbf{L/LA_a}$) of 1st flagellomerus more than 1.25, of 2nd flagellomerus more than 1.2 (like *Ps. longicornis*, fig. 89)

β Horizontal foreborder of $\mathbf{N_1}$ with a well distinct very low ridge except in the narrow middle

χ Prominent area of $\mathbf{es_1}$ bipunctate by dense small **p** among larger ones

δ Ventral area of $\mathbf{es_2}$ completely bipunctate by many small **p** among larger ones

ε Buttressing ridges along colpus of 2nd tergum densely packed in number of about 25 in 0.5 mm

..... *Ps. punica* nov.sp.

αα Ratio between length and apical thickness ($\mathbf{L/LA_a}$) of 1st flagellomerus no more than 1, of 2nd flagellomerus no more than 1.1

ββ Horizontal foreborder of $\mathbf{N_1}$ without any ridge, only roundly angled

χχ Prominent area of $\mathbf{es_1}$ with only sparse large **p** without dense dense small **p** among them

δδ Ventral area of **es$_2$** completely without small **p** among larger ones; small **p** along their interconnection in some taxa and/or on very small areas laterally

εε Buttressing ridges along gradulus of 2nd tergum more scattered, in number of about 10 in 0.5 mm

.....12

12

α Vertex of head slightly depressed in frontal aspect (Fig. 50)

β Apical **Pam** distinctly shorter than 4th (ratio about 3/4) and basal one (Fig. 51)

χ **N$_1$** disk markedly tightening foreward, ratio posterior/anterior width (**LA$_p$ / LA$_a$**) in dorsal aspect more than 1.25 (Fig. 52)

δ Most of the body with sparse weakely impressed **p,** with interspaces (**iS**) always many times larger than their diameter on the head, **N$_1$**, **es$_2$**, legs and metasoma. No traces of microsculpture neither shagreened surfaces, but on lateral **N$_1$**, **es$_3$**, **P** and apex of 6th tergum

..... *Ps. beckeri* (TOURNIER 1889)

αα Vertex of head not depressed in frontal aspect (Fig. 10)

ββ Apical **Pam** as long as or distinctly longer than 4th and always than basal one (Fig. 13)

χχ **N$_1$** disk only slightly tightening foreward Ratio posterior/anterior width (**LA$_p$ / LA$_a$**) of **N$_1$** in dorsal aspect no more than 1.15 (Fig. 14)

δδ The whole of the body with denser and more impressed **p;** large areas of head, **N$_1$**, **es$_2$**, legs and metasoma with **iS** not larger than their diameter. More often than not traces of microsculpture also on head, dorsal mesosoma, legs and metameri

.....13

13

α Flagellum bicolor with light brown underside and darker brown upperside

β No gradulus neither traces of it along mid fore border of **Sc$_1$**

χ Sensorial areas of mid and hind tibia no larger than spurs

δ Weakly prominent ridges of areola; the mid one by far incomplete

ε Gradulus on 2nd sternum well expressed laterally, worn out medially

.....*Ps. gonodactyla* nov.sp.

αα 2/3 basal flagellomeri brown (sometimes lighter), the remainder more or less ferruginous

ββ Always present gradulus or traces of it along mid fore border of **Sc$_1$**

χχ Sensorial areas of mid and hind tibia larger than spurs

δδ Well prominent ridges of areola; the mid one almost complete

εε Gradulus on 2nd sternum absent

..... *Ps. villosa* (FABRICIUS 1793)

14

α Paramandibular process severing mandibular socket from **FoO** as large as pedicel length (Fig. 69)

β **Pal** distinctly shorter than labium length

χ **Pam** only 1.7 times longer than labium at the most and far shorter (0.7 times) than gonosquamae (Figs 35 & 71)

δ 2nd and 3rd elements of **Pam** evenly thickened, without swollen apical half (Fig. 35 & 71)

ε $\mathbf{N_1}$ disk without large impunctate apical stripe, **p** almost getting the rear border

ϕ Big sensorial areas on mid and hind tibiae; greatest width (in lateral aspect) of the tibiae no more than 3.6 times their apical width (Fig. 74 & 75)

γ Apical half volsella straight and without swelling tip (Fig. 38 & 77)

.....15

αα Paramandibular process severing mandibular socket from **FoO** very narrow, less then half pedicel length (Fig. 22)

ββ **Pal** more often than not longer than labium length; only in *Ps. thoracica* just a bit shorter than it

χχ **Pam** always more than twice longer than labium and as long as or longer than gonosquamae (Fig. 24)

δδ 2nd and 3rd elements of **Pam** with swollen apical half (only in *Ps. longicornis* 3rd is evenly thickened) (Fig. 24)

εε $\mathbf{N_1}$ disk with large impunctate area, often as high as half its height in dorsal aspect (*Ps. thoracica* shows state **13ε**)

ϕϕ Sensorial areas on mid and hind tibiae much smaller; greatest width of the tibiae always more than 5.5 times their apical width (4 times in *Ps. thoracica*)

γγ Apical half volsella slightly and distinctly arched with a swelling tip (only *Ps. thoracica* approaches state **13ε**) (Fig. 29)

.....16

15

α 2nd to 5th flagellomeri with ratio **L**/**LA** in between 1.35 and 1.45 (like *Ps. lampra*, fig. 112)

β Straight ventral border of clypeal lamella

χ Surface of palette of the gonosquama half wide area of the base (Fig. 38)

.....*Ps. brevipennis* (LUCAS 1846)

αα 2nd to 5th flagellomeri with ratio **L**/**LA** about 1 (like *Ps. villosa*, fig. 23)

ββ Feebly but distincly notched ventral border of clypeal lamella

χχ Small palette, its surface 1/3 area of the base (

.....*Ps. putoni* (TOURNIER 1901)

16

α No tyloid on 1st flagellomerus

β **es$_3$** with more or less impressed subhorizontal wrinkles

17

αα Short but well prominent and shining tyloid on 1st fllagellomerus

ββ **es$_3$** without any wrinkle, its surface only with shagreened **mR** and/or micro **p**

.....19

17

α Basal flagellomerus with a ratio **L**/**LA** more than 1.3; 2nd to 5th flagellomeri in between 1.25 and 1,35 (Fig. 99)

β Basal hind tarsomerus without any groove

χ None prominent tuberculum on sides of 5th sternum

δ The whole of horizontal surface of **P**, including areola, with many small regularly spaced wrinkles subperpendicular to the longitudinal axis of the body (Fig. 101)

..... *Ps. caspica* nov.sp.

αα Basal flagellomerus with a ratio **L**/**LA** no more than 1.15; 2nd to 5th flagellomeri in between 1.1 and 1,25

ββ Deep longitudinal groove on basal hind tarsomerus

χχ Well prominent tuberculum on sides of 5th sternum

δδ The whole of horizontal surface of **P**, including areola, never regularly wrinkled

.....18

18

α All tyloids well prominent and shining

β **Pam** more elongated: ratio final three/basal three more than 1.4

χ Yellowish hair on upper head and scape

δ Tegula elongated, its height exceeding **Sc$_2$** height (ratio about 1.2 times) (Fig. 40)

ε Omaulus well produced and complete till signum

ϕ 1st tergum with well detectable gradulus along border line between horizontal and declivitous surfaces

γ Tuberculum sub-straight and longer, without hollowed shining inner surface (Fig. 42)

η Genitalia like fig. 43 & 44

.....*Ps. fulvipennis* (SMITH 1879)

αα Tyloids well prominent and shining on the last 4-5 flagellomeri; reduced to a low swelling covered by sensilla on 2nd to 6th-7th elements.

ββ **Pam** less elongated: ratio final three/basal three a bit more than 1.1

χχ Brown hair on upper head and scape

δδ Tegula normal, its height as high as or lesser than **Sc_2** heigth (ratio about 1)

εε Omaulus on **es_2** absent or else traced only on its upper tenth

φφ 1st tergum without well detectable gradulus along border line between horizontal and declivitous surfaces

γγ Tuberculum on 5th sternum short and bent with hollowed shining inner surface (Fig. 47)

ηη Genitalia like fig. 48 & 49

..... *Ps. caucasica* (MOCSARY 1883)

19

a Mesosoma stout, its width 1.27 times width of the head (Fig. 104)

..... *Ps. thoracica* nov.sp.

αα Mesosoma less stout, its width no more than 1.15 times width of the head (Fig. 26)

.....20

20

α No median vertical ridge on the frons

β Lateral profiles of **N_1** disk well convex in dorsal aspect; the disk strongly tightened anteriorly (ratio **LA_p**/**LA_a** about 1.5) (Fig. 114)

χ Brown to dark brown legs beyond coxae

δ Sensorial area of hind tibia bright reddish (flushed with surrounding areas)

.....21

αα Frons with a well distinct median vertical ridge

ββ Sides of **N_1** disk substraight in dorsal aspect; the disk less tightened anteriorly (ratio **LA_p**/**LA_a** at the most just a bit more than 1.3) (Fig. 26)

χχ Blackish to black legs

δδ Sensorial area of the hind tibia always black or dark brown, well impressed more often than not

.....22

21

α ventral lamella with a subrectilinear border (Fig. 83)

β 1st to 10th Flagellomeri with a ratio **L**/**A** less than 1.1

χ Forewing gets only apex of 6th tergum.

δ Surface of pterostigma at the most 2/3 ***CM*** surface (Fig. 85)

..... *Ps. antigae* (TOURNIER 1901)

αα Ventral lamella of clypeus deeply notched (Fig. 111)

ββ Flagellomeri more elongated: 1st and 2nd with a ratio **L**/**A** about 1.25, all the remainder till 10th with a ratio in betweent 1.35 and 1.45 (Fig. 112)

χχ Forewing well overcoming tip of metasoma

δδ Pterostigma large, its surface just a bit less wide than ***CM*** (Fig. 115)
.....*Ps. lampra* nov.sp.

22

α Apical **Pal** only 1.1 times penultimate (Fig. 92)

β 2nd **Pal** evenly thickened, not enlarged apically; ratio **L**/$\mathbf{A_a}$ (Length/ apical thickness) more than 2

χ No well defined and distinct gradulus on 2nd sternum

δ Gonosquama like fig. 95, with very prominent process at the apex of its base.
.....*Ps. longicornis* (TOURNIER 1901)

αα Apical **Pal** 1.4 times penultimate at least (Fig. 24)

ββ 2nd **Pal** enlarged apically; ratio **L**/$\mathbf{A_a}$ (Length/ apical thickness) no more more than 1.5

χχ Well distinct gradulus on 2nd sternum

δδ Gonosquama different, without very prominent process at the apex of its base.
.....23

23

α Omaulus absent, fore border of swollen $\mathbf{es_2}$ rounded

β $\mathbf{es_3}$ with subhorizontal shagreened strong **mR**

χ Posterior area of **P** with strong subvertical irregular wrinkles on its upper half

δ Tuberculum on 5th sternum with a basal crest bending inwardly (in dorsal aspect) (Fig. 123)
..... *Ps. punica* nov.sp.

αα Omaulus present or at least fore border of swollen **es2** acutely angled

ββ $\mathbf{es_3}$ with only weak **mR** or feebly shagreened

χχ Posterior area of **P** with only sparse large **p** on its upper half

δδ Tuberculum on 5th sternum slightly arched or subrectilinear without basal bent crest (Fig. 28)
.....24

24

α Ratio width/height (**LA/A**) of the head in frontal aspect about 1.28 (Fig. 54)

β Omaulus reduced to an acute rough ridge along to fore border of swelling $\mathbf{es_2}$

χ Ratio width/height (**LA/A**) of the subhorizontal area of **P** more than 2.8 (Fig. 55)

δ Sensorial area of hindtibia flushed with surrounding surface

ε Gradulus on 1st tergum subrectilinear in dorsal aspect
..... *Ps. beckeri* (TOURNIER 1889)

αα Ratio width/height (**LA/A**) of the head in frontal aspect about 1.13 (Fig. 21)

ββ Omaulus well expressed

χχ Ratio width/height (**LA/A**) of the subhorizontal area of **P** about 2.5 (Fig. 26)

δδ Sensorial area of hindtibia strongly impressed

εε Gradulus on 1st tergum with a backward central tip

.....25

25

α Ratio **LA**/**A** of the head in dorsal aspect about 1.8 (Fig. 127)

β Gradulus on 1st tergum high and well delineated

χ Surface inside tuberculum on 5th sternum without any microsculpture

δ Genitalia like in figs 132 & 133. Gonosquama with a finger like process on apex of its base

.....*Ps. gonodactyla* nov.sp.

αα Ratio **LA**/**A** of the head in dorsal aspect more than 2 (Fig. 20)

ββ Gradulus on 1st tergum low and irregular, ill defined

χχ Half apical surface inside tuberculum on 5th sternum with evident **mR** (Fig. 28)

δδ Genitalia like in figs 29-32

.....*Ps. villosa* (FABRICIUS 1793)

***Pseudotiphia villosa* (FABRICIUS 1793) comb.nov.**

Tiphia villosa FABRICIUS 1793: 227 – Holotypus ♀: Hungary = /*villosa*/ (autographic) /17/ /Holotype ♀ *Tiphia villosa F. 1793 C. v. Achterberg 1982*/ /Tiphia villosa F. Gorbatovsky det *1987*/, ZMUC!

Tiphia major MOCSARY 1883:20 – Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Spain = /*Gibraltar*/ /*major Mocs typ* det Mocsàry/ /Lectotypus *Tiphia mayor Mocs*. ♀ *det. C. Nagy 1969*/ (red bordered) /Lectotypus *Tiphia major Mocsàry* design *Gorbatovsky 1987*/ /*Tiphia villosa F.* ♀ det. V. Gorbatovsky 1987/, MTMB. **syn.nov.**

Tiphia Olcesei TOURNIER 1889: 6-7 – Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Maroc = /*Tanger Olcese*/ /*Tiphia olcesei* ♀ *T.*/ (autographic) /*morio olcesei Tourn.* ♀ Det Dott. D. Guiglia/ /Lectotypus *Tiphia olcesei Tourn.* design. *Gorbatovsky 1987*/ (red) /Tiphia villosa F. Gorbatovsky det/, MHNG. Paralectotypus ♀: Maroc = (1) /*Tanger Olcese*/ /Paralectotypus *Tiphia olcesei Tourn.* design. *Gorbatovsky 1987*/ (red) /Tiphia villosa F. Gorbatovsky det/, MHNG. Paralectotypes ♂: Maroc = (1) /*Tanger Olcese*/ /*Tiphia olcesei* ♀ *T.*/ (autographic) / /Musèe de Genève/ /*morio olcesei Tourn.* ♂ Det Dott. D. Guiglia/ /Paralectotypus *Tiphia olcesei Tourn.* design. *Gorbatovsky 1987*/ (red) /Tiphia villosa F. Gorbatovsky det/, MHNG; (1) /*Tanger Olcese*/ /C. ne Tournier/, /Paralectotypus *Tiphia olcesei Tourn.* design. *Gorbatovsky 1987*/ (red) /Tiphia villosa F. Gorbatovsky det/, MHNG. **syn.nov.**

Tiphia morio: TOURNIER (1889: 8-9, ♀)

Tiphia rudepunctata TOURNIER 1901: 253-254 - Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Maroc = /*Tanger Vaucher*/ /*Tiphia rudepunctata T.* ♀/ (autographic) /C[n] Tournier/ /Musée de Genève/ /*morio olcesi Tour* det. Dott. D. Guiglia/, MHNG. Paralectotypus ♂: Maroc = / /, MHNG. Paralectotypus ♂: Maroc = /*Tanger Vaucher*/ /*Tiphia rudepunctata T.* ♂/ (autographic) /C[n] Tournier/ /Musée de Genève/ /*morio olcesi Tour* det. Dott. D. Guiglia/, MHNG. **syn.nov.**

Tiphia morio: DUSMET (1930: 51-54, ♀ ♂)

Tiphia morio olcesei: GUIGLIA (1956: 95, ♀ ♂)

Ludita morio: NAGY (1967: 198-199-202, ♂)

Ludita villosa: ARBOUW (1984: 9-13)

M a t e r i a l e x a m i n e d : ♀: Bulgaria = (1) /Bulgaria Charmandil *env* 16.05.1978 leg Kocourek/, OLML; (1) /Bulgaria Charmandil *env* 18.05.1978 leg Kocourek/, OLML; (7) /Bulgaria Charmandil *env* 20.05.1978 leg Kocourek/, OLML; Italia = (2) /*Savona VI.1937 O. Bona*/, CB; (1) /Cassano Spinola Piemonte *22.VI.1943* GB Moro/, CB; (1) /Cassano Spinola Merlassolo *IV.1945*/ /*Tiphia morio* det W. Borsato 1985/, CB; (1) /Cassano Spinola Piemonte *VII-1940* GB Moro/, CB; (1) /*M. Buro…..? Roviasco 8-VII- '63*/, MZUF; (1) /leg Pagliano Vasia 10.VI.1984 Liguria/, CP; (1) /*Montello 24.III.31*/ /*Lombardia Italia*/ /*Tiphia morio F* ♀ A. Giordani Soika/ /Det Pagliano *Tiphia fulvipennis Sm* ♀/, CB; (1) /Lombardia Calolzio Luglio 1932 D. Prestifilippo/ /Det Pagliano *Tiphia fulvipennis Sm* ♀/, CP; (3) /Treviso Pelajo Burlini *V.46*/, CB; (1) /Verona *Sanpangrazio V 37* C. Recchia/, CB; (1) /*Berici Alonte 25.IV.1975 Osella*/, CB; Greece = (2) /Neo Moditos (Neo Apolonia) su Euphorbia 16.V.61 AG Soika/, CB; (1) /Gr Attika, 17-18,5.90 Parmis Geb. 800-1100m 38°10'N 23°40'E leg H. Rausch/, OLML; (1) /GR – Peleponnes 3km wl Alt Korinth 27.4.87 leg. Tiefenthaler/, OLML; (1) /GR-Attika Parnis-Geb.38à10N 23°\; Morocco = (5) /Tanger M.escalera/ /n°34408-411 & 34494/, MNCN; (2) /Bab Ruadi Beni Siyyel Vi.1932 C. Bolivar/ /n° 34405-6/, MNCN; Spain = (3) /Madrid J. Schramm/ /Museum Paris Coll. J. de Gaulle 1919/, MHNP (1) /Spanien, Malaga iii-iv 1959 A.M. Hemmingsen/, MZUF; (1) /*San Maures Madrid 10.VI.1986*/ /n°34344/, MNCN; *(1) /*COTO IBARRA* (*Huelva*) *14:V.51 Zarco*/ /n°34461/, MNCN; *(1) /*Punta Umbria* (*Huelva*) *10.IV.1990*/ /n°34396/, MNCN; *(2) /*Spain mer Lebrjia 12.V.91*/, OLML; *(14) /*Espana m. Lebrija 12.V.1991 leg. leg Smiczek*/, OLML; Turkey = (1) /TR-Erzurum Askale 1900 m 15.VII.1996 leg. E. Yildirim/, MZUF; (1) /Turchia – vil. Antalya tra Korkuteli e Kemer dint Souguk presso Seki m1400 ca. 30.IV.1982 *c. Monicastri*/, MRSN; (1) /Asia Minor Eskisehir 28.V.1964 leg. J. Gusenleitner/, OLML; (1) /Asia Minor Kirikkale 29.V.1964 leg. J. Gusenleitner/, OLML; (1) /Asia Minor Tapakli 30.V.1964 leg. J. Gusenleitner/, OLML; (1) /Turkei Sille Konya 17.VI.1968 leg. J. Gusenleitner/, OLML; (2) /Turkei Gurun 4.6.1970 leg. J. Gusenleitner/, OLML; (1) /Turkei prov. Burdur N. Bucek 37°29N30°26E 800 24.5.1985 leg H. u R. Rausch/, OLML; (1) /Turkei prov Bitlis 10km SW Bitlis 38°19N 42°03E 1200-1400m leg Aspock u. Rausch/, OLML; (1) /Turkei prov Mus, E Boglan Gec. 38°55N 41°09E 1450-1500m leg Aspock u. Rausch/, OLML; (1) /Turkey 545m 20km SSW Samsun41°07'N 36°09'E kadelc leg VI.2006/ / Icronatha caucasica (Mocsary 1883) ♀ E. Yildirim det 2009/, OLML; (1) /Turkey Muradiye env 2000m 120 km ne Van 5.6.2001 lgt K.Deneš sen./ /*Ludita villosa* (Fabricius 1793) ♀ E. Yildirim det 2009/, OLML;

♂: Italy = (1) /*Dint Genova V 1940 Franciscolo*/, CP; (1) /*PratoCasarile IV 1940 Franciscolo*/, CP; (1) /Treviso Pelajo Burlini *V.46*/, CB; (1) /Cassano Spinola Piemonte *V-1945* GB Moro/ /*Tiphia morio* det W. Borsato 1985/, CB; (1) /leg Pagliano S. benedetto Belbo *20.V.1989* Langhe Piemonte/, CP; Morocco = (1) /*Tanger*/ /Museum Paris Coll. J. Pérez 1915/ (blue), MHNP; Spain = (1) /*La Granja* Espagne/, MHNP; (2) /Espagne L'Escorial Juin 1894 M. Maindron/, MHNP; (1) /Reinosa Jun 1902 G. Schramm/, MHNP; (1) /Cartagena 12.03.09(?)/, MHNP; (1) /*Ferrol*/ /Museum Paris Coll. J. Pérez 1915/, MHNP; (9) /Spain Sra Nevada Puerto d.l. Ragua 2000m 4.7.1975 leg. W. Schacht/, OLML; (5) /E. Algeciras Punta Palomas 5.V.1987 Scaramozzino/, MRSN; (1) / lg. Scaramozzino Algeciras Sierra de Luna 4.V.1987/, MRSN; *(3) /Spain Pr. Huelva Las Marismas El Rosio 3m 21.4.1979 leg. W. Schacht/, MRSN; *(10) /Coto Doñana (Huelva) - *9.V.84 E. Mingo*/ /n° 34382-391/, MNCN; *(3) /Coto Doñana (Huelva) - 7.*V.84 E. Mingo*/ /n° 34380-2, 34392/, MNCN; *(3) /*El Pinar Doñana Huelva 7.V.84-Izquiendo leg*/ /n°34355-7/, MNCN; *(4) /*Punta Umbria* (*Huelva*) *10.IV.1990 - Izquiendo leg* / /n°34358, 34397-99/, MNCN; *(3) / *Punta Umbria Huelva 25.IV.1990 - Izquiendo leg*/ /n°34350-2/, MNCN; (29 / Doñana (Huelva) *Camino del Martinazo 3.V.69*/ /n°34394-5/, MNCN; *(2) /*Punta Umbria* (*Huelva9 10.IV.1990 - I. Izquiendo leg*/ /n°34353-4/, MNCN.

Female. Holotype: figs 9-15. Figs 16-19 from Lectotype of *T. Olcesei*. Fig. 4 from specimen labelled /.Vasia 10.VI.1984 Liguria/. Holotype lacks flagella but basal two flagellomeri, fore and hind right tarsomeri, apical left hind tarsomerus, the right eye and surrounding integument have been gnawed (eaten up) by *Dermestes*. Size: a bit more than 14 mm.

Black, brown and semitransparent light brown, ferruginous. Wings darkened.

Ferruginous: most of flagellum, with darker upperside.

Brown: mandible, radicle and basal flagellomerus, tegulae, coastal vein, pterostigma; shadings at the base of radicle, **$LaSt_2$**, apex of femurs and tibiae, tarsi. Palpi, veins and apical half of 6th tergum are lighter brown. Apical border of **N_1** disk, apical borders of all terga and 2nd to 5th sterna are semitransparent brown. Legs are dark brown with lighter tarsi.

Ratio between length and apical thickness (**L/LA_a**) of 1st and 2nd flagellomeri always about 1. **PoG** lenght is just a bit shorter than length of 1st flagellomerus; its sutuuture espressed and prominent. Ratio between length of apical three and length of basal three **Pam** more about 1.35. Apical **Pam**-merus as long as 4th one. N_1 disk without anterior ridge; ratio **LA_a/A_m** about 3.9. Omaulus completely absent. Tegulae as long as height of **Sc_2** in dorsal aspect. Areola tightening backward with a ratio **A/LA** about 2. Ridges delimiting areola ill defined, narrow and low; the median ridge larger and worn out at ¾ of the length of areola, not getting the posterior ridge; prominent and lamella like ridges along posterior border and along the angles between lateral and posterior surfaces, which shows a strong median vertical ridge. Lateral **P** with a total of about 35/40 both complete and incomplete wrinkles, mostly forming a 10/15° angle with the main axis of the body. Wings darkened. Sensorial area of mid tibia subtriangular and well impressed; sensorial area of hind tibia gutta-like and almost flushed with surrounding surface, only moderately sunken. Gradulus on 1st tergum well defined and retilinear. Basal hollow of 2nd tergum with buttressing ridges as long as half the ehight of pregradular surface. The prominence dividing ventral petiolar surface from 1st sternum is undivided.

Median ventral lamella of clypeal disk pitless, with a stripe of transversal larger **p** just above it, the remainder with small, densely packed **p**, present also on the lower frons. The remainder of frons, vertex, temple and genae with medium **p** with varying **iS** from one two three times their diametre. More densely packed **p** just along **cOc**. Pitless areas only around ocelli. **N_1** disk anteriorly with a transversal pitless stripe, which gets medially higher than half the height of the disk in dorsal aspect; **p** on the remainder of surface like on the frons; lateral areas with shagreened MR throughout, with small **p** arranged in rows on their lower third but without evident prominent wrinkles. **Sc_1** with anterior gradulus complete, connected to parapsidal lines; its outline looks a rough broad arrow-point backward directed; **p** liek on the frons laterally, more densely packed medially; small **p** along posterior border. **Sc_2** with medium **p** posteriorly. Postscutellar area with very few medium **p** centrally and smaller ones laterally. **es_1** like frons. **em_2** clearly distinct like in the other Tiphiinae by a strong episternal-scrobal sulcus. **es_2**: - prominent lateral surface with variously impressed **p** and **iS** (present throughout) and posterior surface covered by small **p,** their border area bipunctate; - anterior surface densely covered by small **p** with only sparse larger ones, - anterior half of ventral surface covered by shagreened MR among densely packed small **p** whereas the posterior half shows large well spaced **p** with very small **p** along the suture and also spread along border with **$LaSt_2$**. **em3** with densely packed micro **p** upperly, its lower surface with shagreened **mR**. **es_3** with shagreened **mR** and sparse small **p**. **$LaSt_2$** mostly smooth and shining. Lobes of metasternum (**St_3**) flattened ventrally, with 2-3 large **p** and micro **p** laterally and basally along the suture. Horizontal **P** with surface out of areola with shallow sculpture and **mR** (at x50) and ill defined weak buttressing ridges along the posterior border; surface of areola without **mR**; posterior surface with irregular scuplture and sparse ill defined **p** among smaller ones. Ventral surface of **X_1** bipunctate by small **p** among larger ones; of **X_2** almost pitless with dense small **p** at its base and backward; of

X_3 bipunctate with very sparse both medium and small **p**. Vertical surface of 1st tergum covered by many small **p**, with scatterd larger ones and a very shallow median vertical hollow; horizontal surface with sparse medium **p**. 2nd tergum like 1st one with sparse micro **p** on its median surface. Anterior half surface of 3rd, 4th and 5th terga with small **p** and evident **mR** trhoughout, the remainder with sparse medium **p.** All of them with a row of **p** near the apical border**.** Apical half of 6th tergum with very obscure and shallow longitudinal wrinkles, basal half with dense roughly impressed **p**; both of them with well impressed **mR**. 2nd to 6th sterna like median terga and completely covered by evident **mR**. 1st sternal surface roughly sculptured by densely packed **p** with no **iS**. Because of bad conditions of the lower head (digged by dermestids) it has not been possible to examine labrum which shows some variability about its ventral border among african and european specimens.

Lectotypus of *T. Olcesei* and all the other females here recorded have: - **PoG** less than half length of 1st flagellomerus, - apical **Pam**-merus distincly longer than 4th one (ratio about 1,25), - ratio **LA_a/A_m** of the **N_1** disk about 3.0, - small **p** on apical ventral **es_2** along the suture and only at the outer corner of **$LaSt_2$**,- moreor less stressed apical enlargement of **P**, - number of wrinkles on lateral **P** not overcoming 30 and forming a 25-40° angle on the longitudinal axis of the body, - clearly sunken sensorial area of hind tibia. Only the specimens from Greece have micro**p** on 2nd tergum. The remainder of morphology (ratios between wings and mesosoma, width and height of the head, width of the head and pronotal disk; **p** of the body, last tergum,) do not show appreciable differences compared with holotype of *T. villosa*. There would be sufficient ground to nourish some doubt about their conspecificity, nevertheless in default of other specimens from typical locus and different males than those here described which could be directly and safely referred to the holotype, we are compelled to maintain their conspecificity and establish the above said synonymies.

The lectotypus of *T. Olcesei* (size about 17 mm) has bilobed prominence between ventral petiolar surface and 1st sternum while the female paralectotype has it undivided. The typical specimens of *T. Olcesei*, both males and females, together with all other specimens from NW Africa, have much more darkened wings, whereas the wings of specimens from Andalusia look like in specimens from other European areas. DUSMET refers on variability of length of wings. The tip of the forewing of all the specimens here recorded get and overcome rear border of 4th tergum.

Male. Figs 20-30. The present description is based on the paralectotype of *T. Olcesei*. (size about 13.5 mm). It lacks most of right flagellum. Figs 31 & 32 have been drawn from specimen from Italy (Treviso), fig. 6 from specimen labelled /*Dint Genova V 1940.../*.

Black, brown and semitransparent light brown.

Brown: tip of mandibles, apical border of **N_1** disk, tegulae, **$LaSt_2$**, pterostigma, apex of femurs and tibiae, tarsi, veins, spines and spurs, membranous apex of metameri, apex of 6th sternum and 7th tergum.

Clypeal disk with a moderately notched ventral lamella. Basal 5 flagellomeri with ratio **L**/**LA** in between 1 and 1.1. Ratio between length of **Pam** and length of gonosquama just a bit more than 1.0. Prominent and shining tyloids on all the flagellomeri (very short on 1st one). Fore border of **N_1** disk bluntly angled. Omaulus roughly but well expressed. Number of wrinkles on lateral **P** less than 20, mostly incomplete. Ridges delimiting

areola, horizontal and lateral from posterior area prominent and lamellar-like. Sparse buttressing ridge along posterior ridge of **P** well expressed. Sub oval, impressed sensorial area on mid tibia; narrow and elongated on hind tibia. Graduli on 1st and 2nd terga well expressed. Gradulus on 1st tergum with a backwards central tip. Well stepped gradulus delimiting declivitous surface on 2nd sternum.

Extremely dense variously sized **p**, either without either with very narrow **iS** on the head, **N_1** disk, Sc1, **es1**, swollen lateral and ventral areas of **es_2**. Impunctate areas on the tipo clypeal lamella, around mid and lateral ocelli. Scape and postscutellar area bipunctate. **Sc_2** with larger **iS,** up to half diametre of **p**. Anteroventral half of lateral **N_1** wrinkled. **es_3** shagreened. **em_3** like in the female. Horizontal area of **P**, areola included, roughly and irregularly sculptured. Posterior area like in the female. Ventral area of **coxae** bipunctate. Large and impressed **p** on 1st tergum and basal postgradular surface of 2nd tergum; smaller and less impressed **p** on the remainder of metameri; 1st tergal surface like uiin the female; narrow stripe of more densely packed **p** along distal border of all metameri.

Well detectable (at x50) **mR** on all the pitless and not sculpturated areas of the head, on the whole of lateral **N_1**, lower **em_3**, **$LaSt_2$**, back (inner) surface of mid femur, most of all terga and sterna but the narrow apical stripe of **p**.

Shape of posterior tip of gonosquama and the microreticulation (**MR**) on inside the tuberculum on 5th sternum uniquely occur in this taxon and are good autapomorphies for the males (whereas searching for well evident autapomorphies of females has been unsuccessful).

Males from Veneto and Liguria show few differences: the **p** of lower genae are clearly bipunctate instesad of irregularly scupltured; the wrinkles on lateral **P** are about 15 and more produced; **mR** on metameri is weaker. Male specimens from Algeciras have also bipunctate genae and weaker **mR** on the metasoma, but no **mR** on the free areas of the head and 2nd tergum.

Distribution. This taxon has the most wide distribution range within the genus, from NW Africa to Anatolia, through most of Europe.

Variability. Strong variability occurs only in size, fluctuating from 10 to 17 mm in females and 9 to 15 in males.

Apart size, the greater variabilty in both sexes occurs about shape and length of areola and their ridges, a fact which frequently occurs within the subfamily where we can examine a sufficient lot of specimen.

NOTE. The lectotypus of *T. major* and female specimens marked by asterisk have steeper gradulus on **Sc_1**, the surface of **es_3** shining without any microsculpture among the sparse small **p**. (this occurs too in some specimens from Northern Italy and in the specimen from Gargano which gets the size of 17 mm), darker flagelli, ligther wings and no distinct gradulus on 1st tergum even though many specimens show trace of it. Their size varies from 13 to 18 mm. All the specimens examined come from the Guadalquivir table land, apart the lectotypus whose label reports "Gibraltar", where apparently its distribution areas interlace with specimens of *Ps. villosa*. The males examined from that area show uniquely a slenderer first metamerus whereas all the remainder of characters and genitalia are identical with other males of *Ps. villosa*, coming from Algeciras and

other Spanish localities too; they have no **mR** on the head and as few wrinkles on lateral **P** as in the males from Italy. Apparently we are dealing with distinct population deserving of subspecifical rank, nevertheless since definitive and clear proofs about their geographical segregation are hitherto missing it is more consistent to group them under the name *Pseudotiphia villosa*.

The female specimens from Greece and Turkey are also placed here since they do not show any pronounced difference from females of other areas; unfortunately no males from these areas have been examined.

Pseudotiphia brevipennis (LUCAS 1846)

Tiphia brevipennis LUCAS 1846: 285 – Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Algeria = /*Oran*/ /*Oran*/ (Rounded) /*Tiphia subaptera Lu*/ /Museum Paris Algerie Coll. H. Lucas 78-49/ /Lectotypus Tiphia brevipennis Design Gorbatovsky 1988/ /Tiphia brevipennis lucas Gorbatovsky det 1988/, MHNP !

Paralectotypes ♀: Algeria = (1) /*Oran*/ /*Oran*/ (Rounded) /*Tiphia subaptera Luc*/ /Museum Paris Algerie Coll. H. Lucas 78-49/ /Lectotypus Tiphia brevipennis Design Gorbatovsky 1988/ /*Tiphia brevipennis Lucas* Gorbatovsky det 1988/, MHNP !;

Pseudotiphia brevipennis: Ashmead (1903: 6)

Tiphia brevipennis: HEDICKE (1936: 6)

Tiphia brevipennis: GUIGLIA (1956: 94-95, ♀)

Pseudotiphia brevipennis: NAGY (1969: 141-142, ♀)

Material examined: ♀: Algeria = (1) /*Oran*/ /*Tiphia subaptera Luc*/ /Museum Paris ALGERIE Coll. H. Lucas 78-49/ /Lectotypus *Tiphia brevipennis Lucas* Design Gorbatovsky 1988/ /Tiphia brevipennis Lucas Gorbatovsky det 1988/, MHNP !; /*Oran*/ /*Tiphia subaptera Luc*/ /Museum Paris ALGERIE Coll. H. Lucas 78-49/ /Lectotypus *Tiphia brevipennis Lucas* Design Gorbatovsky 1988/ /Tiphia brevipennis lucas Gorbatovsky det 1988/, MHNP!; (2) /*Oran*/ /Museum Paris ALGER Coll. H. Lucas 78-49/ /Paralectoyypus *Tiphia brevipennis Lucas* design Gorbatovsky 1988/, MHNP!;

♂: Morocco (Spanish) = (2) /Melilla *XII* - 1909 Arias/ /MNCN Ent N° Cat 34403 & 34485/, MNCN.

Female. Figs 33-34. Size varies between 11 and 18 mm

Male. Figs 35-38 (from larger specimen, 11.5 mm). Described for the first time. Mostly black and brown black like *Ps. villosa* but brown tegulae. Head and mesosoma mostly covered by rough sculpture and **p**. and dense yellowish hair. 2nd to 5th flagellomerus with a ratio **L/LA** about 1.4. $\mathbf{N_1}$ narrow and strongly tapered ahead, ratio $\mathbf{LA_a/A_m}$ about 3, $\mathbf{LA_p/A_m}$ about 4.3. (respectively about 2.7 and 3.4 in *Ps. villosa*) $\mathbf{N_1}$ disk without keel along its fore border and also large impunctate apical stripe, p reaching the apical border. Horizontal **P** without distinct areola, with rough and irregular longitudinal ridges surrounded by rough sculpture. No keels delimiting horizontal **P** from lateral and posterior area. Short omaulus on $\mathbf{es_2}$ not reaching ventral area. No graduli on 1st an 2nd terga, nor on 2nd sternum. Very small sensorial area on lateral 1st tergum. Large tuberculum on 5th sternum.

The specimen catalogued with n. 34403 is very small (about 7mm) with integument extensively brown and dark brown.

Note. The present males have been ascribed to Lucas's taxon on the ground of the proximity of the localities and just because of the lack of graduli on basal terga.

***Pseudotiphia fulvipennis* (SMITH 1879) comb.nov.**

Tiphia fulvipennis SMITH 1879: 184 - Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Albania = */Alb[ania] 15. ♀ S.S.S/ /50 69/* (rounded) */Tiphia fulvipennis* (*Type*) *Sm/* (autographic) /Type/ (rounded with red outer ring), BMNH.

Tiphia fulvipennis: TOURNIER (1889: 184, ♀ ♂)

Tiphia fulvipennis: HEDICKE (1936: 12)

Ludita fulvipennis: NAGY (1967: 199, ♀)

Ludita fulvipennis: ARBOUW (1984: 9)

M a t e r i a l e x a m i n e d . ♀: Bulgaria = (1) /Bulgaria ost. Slancev Srjag 18-30.5.1989 leg. J. Halada/, OLML; Greece = (1) /legit Pagliano M. ti Akarnanika Vatos 700 msm 2.VI.1992/, CP; Slovenja-Istria = (1) /*Pola VI-38*/, OLML; Turkey = (1) /Turnali Senkaya Erzurum 12.VI.1992 E. Ylidirim/, MZUF; (1) /Tr Erzurum Tortum 1650m 15.VII.1993 l E. Yildirim/, EMET; (1) /Tr Erzurum Oltu 1000m 23.VII.1992 l E. Yildirim/, EMET;

♂: Bulgaria = (1) /Bulgaria ost. Slancev Srjag 18-30.5.1989 leg. J. Halada/, OLML; Greece = (7) /legit Pagliano M.ti Akarnanika Vatos 700 msm 2.VI.1992/, MRSN; (2) /L. Pagliano M.ti Lakmos (Ioannina) 20.VI.1992 Grecia/, MRSN; (2) /Grecia Akaia Aroania Ori m.1850 2.VI.1995 PL. Scaramozzino leg/, MRSN; (6) /Grecia Akaia Kalentzi Erimanthos 31.V.1995 1995 PL. Scaramozzino leg/, MRSN; (1) /GR-Peloponnes 5 km wl. Alt-Korinth, 27.4.87 leg Tiefenthaler/, OLML; (1) /GR-Peloponnes. Arkadien Vanvakou Parnon-Geb. 1500-1600m 37°14'N22°36'E 29.5.90 leg. H. Rausch/, OLML; (2) /Griechenland Peloponnes Achaia Argania-Geb, Chelmos-Gebiet38°00'N/22°13'E 1700-1900 9.6.90 leg. H. &. R. Rausch/, OLML; (1) /Griechenland Atolien/Akarn NE Perivòlia, N. Paleopirgos 38°32N/21°51E 1200m 29.05.1993/, OLML; (2) /Griechenland Atolien/Akarn, Umg. Perivòlia, N. Paleopirgos 38°31N/21°51E 800m 29-30.05.1993/, OLML; (1) /Griechenland Mgr, Phtiotis Vardoussia-Geb., 4km S. Dafni 38à45'N/22°08E 1400m 20.06.1993/, OLML; Italy = (2) /Conconello Triest 1-7.Jun. 1959 leg K. Kusdas/, OLML; Romania = (1) /Romania *Cheile Turgil 500m 3\0.V.1995* l\eg. \A. Ruicanescu/, OLML; Turkey = (2) /Turnali Senkaya Erzurum 12.VI.1992 E. Yildirim/, (1) EMET-(1) MZUF; (2) /Turnali Senkaya Erzurum 1750m 25.V.1994 E. Yildirim/, EMET.

Female. Holotype. Fig. 39

Male. Specimen from Arta. Figs 40-44. Described for the first time.

General aspect and coloration like in *Ps. villosa*. Ventral lamella of clypeus without appreciable notch. Well distinct vertical ridge on the frons and along the foreborder of $\mathbf{N_1}$ disk. 1st flagellomerus without tyloid. 1st to 4th flagellum like in *Ps. villosa*, 5th to 9th with a ratio **L**/**LA** about 1.3. Omaulus on **es2** complete, expressed till ventral area. Tegulae elongated, longer than height of $\mathbf{Sc_2}$ in dorsal aspect (ratio about 1.3). **P**: areola on the horizontal surface with well prominent lateral and median ridges, the latter never getting posterior edge which is outlined by rough stout low ridge; lamellar ridges occur between posterior and lateral surface and between the latter and horizontal surface even though interrupted medially near **spP**; posterior surface with a median broad and rough vertical ridge not getting the posterior ridge. Lateral **P** like in villosae, $\mathbf{es_3}$ covered by large rough subhorizontal wrinkles. Sensorial areas of mid and hind tibia deeply impressed. Well expressed deep groove on hind basitarsus, like in the females. Gradulus on 1st tergum irregulasr, sometimes hardly detectable. No gradulus on 2nd tergum, well present on 2nd sternum. Tuberculum on 5th sternum as long as half the height of metamerus, with a hollowed inner surface.

Very densely packed medium **p**, without any **iS**, on frons and clypeus covering also almost the whole of ventral almella. Small pitless areas near ocelli. Vertex behind ocelli temples and genae bipunctate by very dense small **p** on **iS** among sparser larger ones. disk laterally bipunctate. Narrow preapical smooth stripe. Lateral $\mathbf{N_1}$ like in *Ps. villosa*. $\mathbf{Sc_1}$, $\mathbf{Sc_2}$ and postscutellar area mostly bipunctate. $\mathbf{es_1}$, most of $\mathbf{es_2}$ and coxae bipunctate,

with large **p** and variable **iS** completely covered by small **p**. **p** of metameri mostly like *Ps. villosa*; surface of 1st sternum deeply and roughly sculptured. **mR** well evident on periocellar areas, mid 6th and 7th tergum, 3rd to 6th sterna.

Note. It differs from (*Ps. caucasica*) by different shape of the head in frontal and dorsal aspect, different tyloids, yellowish hair on upper head and scape, different labrum, longer apical elements of **Pam**: ratio $\mathbf{L_{4,5,6}/L_{1,2,3}}$ more than 1.4 (a bit more than 1.1), longer tegulae, presence of omaulus on **es2**, complete lamellar ridge between posterior and lateral areas of **P** (worn out upwards), presence on gradulus on 1st tergum (absent), longer tuberculum on 5th sternum, different gonosquama and aedeagus.

D i s t r i b u t i o n a r e a . Balcanic peninsula from Istria to Greece (but Crete) and Anatolia. The presence in Italy is confirmed even though hitherto limited to the extreme northeastern areas.

V a r i a b i l t y . Only the most usual variations occurring within the subfamily, about size (12 to 17 mm for the females, 9 to 13mm in the males) and shape of areola about both sexes.

Pseudotiphia caucasica (MOCSARY 1883) comb.nov.

Tiphia caucasica MOCSARY 1883: 21, ♂

Lectoypus ♂: /Kaukas Leder/ /*caucasica typ. Mocs det Mocsàry*/ (autographic) /Lectotypus Tiphia caucasica Mocs det C. Nagy 1969/ (red bordered) /Tiphia caucasica Mocs V. Gorbatovsky det 1987/, MTMB

Tiphia caucasica: TOURNIER (1889: 17, ♂)

Tiphia caucasica: HEDICKE (1936: 7)

Icronatha caucasica: NAGY (1975: 12, ♂♀)

Icronatha caucasica: ARBOUW (1984: 3-4)

M a t e r i a l e x a m i n e d : ♀: Armenia = (1) /*Armenia lgt Beivart*/, OLML; Bulgaria = (2) /Bulg. VI.1966 Stančev Brjag lgt Pospišil/, OLML; (10) /Bulg. 26-31.5.1967 Sandansky lgt. Koçourek/, OLML; 81) /*Bulgaria 4.VI.67 Sandansky Macedonie J. Kocourek lg*/, OLML; (1) /Bulg. 1-8.6.1967 Sandansky lgt. Koçourek/, OLML; (1) /Bulg. VI.1968 Stančev Brjag lgt Pospišil/, OLML; (9) /Bulg. VI.1969 Sandansky lgt. Koçourek/, OLML; (1) /Bulgaria m.-w Melnik 06.07.1978 leg. Koçourek/, OLML; (2) /Bulgaria m. occ Gara Pirin 22.5.1983 leg J. Halada/, OLML; (1) /Bulgaria m. occ Stara Kresna 27.5.1983 leg J. Halada/, OLML; (1) /Bulg. 30.6.1982 Nessebr lgt Kcourek/, OLML; (1) /Bulgaria mer.-occ. Rozen 29.06.1990 lgt B & O. Tkalců/, OLML; (2) /Sandansky Bulg, m. *VI.92* K. Polacek/, OLML; Greece = (2) /Neo Moditos (Neo Apolonia) su Euphorbia 16.V.61 AG Soika/, CB; (13) /l. Pagliano Klidi ruins (Serres) 15.VI.1992 Grecia/, CP; (42) /Grecia nom. Seres Promahonas 50m 15.VI.1992 Boffa-Giachino-Scaramozzino-Vailati leg./, CP; (1) /Kreta 1996 Lakki mt 650 14.VI.1996 leg. F. Strumia/, CP; (5) /Kreta Chersonissa 5-6.V.71 W. Groß leg/, OLML; (2) /Kreta Elas 8-11.V.71 W. Groß leg/, OLML; (1) /Kreta Makri 8.V.71 W. Groß leg/, OLML; (1) /Kreta Iraklion Gouvai 7.5.1971 leg W. Gross/, OLML; (1) /Griechenland Kreta lercipetra 15.4-15.5.1971 leg Malicky/, OLML; (3) /Graecia Anojia 22.5-1.6,1990 ing Kudrna lgt/, OLML; (1) /Griechenland Serifos, Koutalas 24à 28' 37°09', 400m 13.5.1990 leg. H. Malicky/, OLML; (3) /Rhodos 1998 Vali-Genadi 24-26.V.1998 le. F. Strumia/, MSNP; (1) /Rhodos –1998 m. Ataviros m500-800 27.V.1998 le. F. Strumia, MSNP; (1) /Ellas Rhodos Mt. Attaviros 27.V.1998 M. Generani PL Scaramozzino lgt/, OLML; (3) /Crete GR 1999 Sikia mt400 12.V 26°03'E-35°07'N leg. F. Strumia/, MSNP; (3) /Crete GR 1999 Souri m250 14.V 24°13'E-35°24'N leg. F. Strumia/, MSNP; (56) /Greece kreta east Prina env. 7 km S. Istro 4-12 June 2002 lgt K. Deneš sen/, OLML; (2) /Greece Kreta esat mt Dikti Lassithi 850mt 4-12 June 2002 lgt K. Deneš jun/, OLML; (6) /Sitia Kreta 17.5.1963 leg. K. Kusdas/, OLML; (1) /Greece N Athos Ouranagolis *23.4.90* leg. J. Wimmer/; OLML; (1) /GR Crete-S Panagia 390m35°05'N, 24°54'E 5-7.V.03 Sauša lg/, OLML; Syria = (9) /Syria Cr. Des chevaliers 30.5.1995 k. Deneš jun lgt/, OLML; Turkey = (1) /Turkey Kayseri (Ali Dagh) 15/22.6.1962 leg Seidenstucker/ /*Tiphia*

femorata F. J. Heinrich det. *1976*/, OLML; (1) /*Turkey 24.6.91Kestelocle lgt Kudrna*/, OLML; (1) /Turkey Prov. Izmir N. Bozdag, NE Odemis 38.22N27.58E 1000m 15.6.1985/, OLML; *(1) /Madenkuprubas Ispir-Erzurum 18.VI. 1994 1100 E. Yildirim/, MZUF; (1) /Sütkans Erzurum 1500 23.VI.1996/, EMET; (1) /Tortum Erz. 1600m 9.VI.1996 E. Yildirim/, EMET; (1) /Tr Erzurum Askale 1900m 15.VII.1998 leg Yildirim/, EMET; (1) /Sütkans Oltu Erzurum 1500 25.VI.1996/, EMET; (2) /Şelale Uzundere Erzurum 1000m 9.VI.1996 E. Yildirim/, EMET;

♂: Bulgaria = (4) /Bulgaria m.-w. Sandansky 05.1967 leg. Koçourek/, OLML; (1) /Bulg. 30.V.1967 Melnik lgt Koçourek/, OLML; (14) /Bulg. 26-31.5.1967 Sandansky lgt. Koçourek/, OLML; (7) /Bulg. 1-8.6.1967 Sandansky lgt. Koçourek/, OLML; (6) /Bulgaria VII 1967 Sandanski leg Koçourek/, OLML; (3) /Bulg. Sandanski VI.1969 lgt Kocourek/, OLML; (2) /Bulgaria m.-w. Sandansky 28.05.1978 leg. Koçourek/, OLML; (1) /Bulgaria m. occ Melnik 23-26.5.1983 leg J. Halada/, OLML; (1) /Bulgaria m. occ Gara Pirin 22.5.1983 leg J. Halada/, OLML; Greece = (1) /Neo Moditos (Neo Apolonia) su Euphorbia 16.V.61 AG Soika/, CB; (2) /Grecia nom. Seres Promahonas 50m 15.VI.1992 Boffa-Giachino-Scaramozzino-Vailati leg./, CP; (2) /Kreta Elas 8-11.V.71 W. Groß leg/, OLML; (7) /Kreta Makri 4-9.V.71 W. Groß leg/, OLML; (1) /Griechenland Kreta Peramax 17.4.1990 leg. E. Heiss/, OLML; (2) /*Kreta Paleochora 27.4.90 Heiss*/, OLML; (2) /Kreta Iraklion Gouvai 7.5.1971 leg W. Gross/, OLML; (1) /Graecia Serifos, 5km W Chora 8-13.V.1984 leg. H. Malicky/, OLML; (1) /Crete GR 1999 Sikia mt400 12.V 26°03'E-35°07'N leg. F. Strumia/, MSNP; (84) /GR Crete-S Panagia 390m35°05'N, 24°54'E 5-7.V.03 Sauša lg/, OLML; (1) /Heraklion Kreta 14.5.1963 leg. K. Kusdas/, OLML; (5) GR Crete Lasithi 15km NW Males 850m m 35°05'N 25°33'E 14.V.2003 Sauša leg/, OLML; (19) /GR Crete SW Omalos env 1100 m 35°19'N 23°53'E 18.V.2003 Sauša leg/, OLML; Jordania = (1) /NW Jordan Irbid reg. Saham vill. 25.IV.2003 i. Pljuschtch lg/, OLML; Lebanon = (1) /Libano caza zghorta Ehden m 1450 4-VI-72|P. Brignoli leg/, CB; Turkey = (1) /Turkei Gurun 6.6.1970 leg. J. Gusenleitner/ /*Icronatha caucasica Mocs* ♂ Det. R. Hensen 1986/, OLML; (1) /Turchia occidentale Aband maggio 1990/, CB; (1) /Tr Erzurum Oltu 1300m 15.VII.2004 leg. e. Yildirim/, EMET; (1) /Tr Bingöl 1400 5.VI.2003 leg E. Yildirim/, EMET;

Female. * specimen from Ispir-Erzurum. Described for the first time. Size = 13.5 mm.

General habitus and coloration like *Ps. villosa* but following characters: - flagellum brownish upperside, reddish downside; - fore border of $\mathbf{N_1}$ disk with an irregular ridge along it; lateral surface almost completely wrinkled; - $\mathbf{es_3}$ with few spaced subhorizontal wrinkles; - no graduli on 1st, 2nd terga and 2nd sternum.

From (*Ps. fulvipennis*) it is well known by: - brownish (yellowish) bristles on the underside of the scape; - $\mathbf{Sc_1}$ with a strong gradulus continuous with parapsidal lines and with a median acute backward tip along its fore border (very weak and irregular); - $\mathbf{es_3}$ fairly distinct from lateral **P** with less numerous and prominent wrinkles ($\mathbf{es_3}$ and lateral **P** are hardly ditinguishable since the same wrinkles occupy both of their surface); - no gradulus along 1st tergum (present); - subapical stripe of densely packed **p** on 1st tergum (lacking); - roughly (finely) sculptured apical 6th tergum.

Male. Lectotypus. Figs 45-49

- 1st to 5th flagellomeri with a ratio **L**/**LA** in between 1.15 and 1.25. Tuberculum on 5th sternum is short and bent with hollowed shining inner surface.

Variabilty. Only the most usual variations occurring within the subfamily, about size (10 to 17 mm for the females, 8 to 13mm in the males) and shape of areola about both sexes.

Distribution area. Balcanic peninsula (Bulgaria, Romania, Greece), Crete, Rhodos, Anatolia, Middle East.

***Pseudotiphia beckeri* (TOURNIER 1889) comb.nov.**

Tiphia Beckeri TOURNIER 1889: 9-10, ♀ ♂

Tiphia morio var. *beckeri*: DUSMET Y ALONSO (1930: 65)
Ludita villosa beckeri: ARBOUW (1984: 12-13)
Lectotypus ♂ here designated in order to ensure the name' proper and consistent use: Russia = /Beck Sarep./ /154/ /Tiphia beckeri T/ (autographic) /Musée de Genève/ /morio var. ?? det Dott. D. Guiglia/ /Lectotypus Tiphia beckeri Tourn. design. V. Gorbatovsky 1987/ (red) /Ludita beckeri Tour ♂/ /Tiphia villosa F. Gorbatovsky det./, MHNG.
Paralectotypus ♀: Russia = /Beck Sarep./ /Ludita beckeri Tour ♀/ /Paralectotypus Tiphia beckeri Tourn. design. V. Gorbatovsky 1987/ (red) /Tiphia villosa F. Gorbatovsky det./, MHNG
Tiphia morio subsp *fuscipennis*: HEDICKE (1936: 18)
Tiphia morio beckeri: GUIGLIA (1956: 97-98)
Ludita villosa beckeri: ARBOUW (1984: 12-13)

Female. Paralectotype. Figs 50-53. Size 11mm

Coloration like *Ps. villosa*, but the brown legs. Vertex depressed in frontal aspect. Ratio between length of apical three and length of basal three**Pam** only a bit more than 1.1. $\mathbf{N_1}$ disk more tightened anteriorly. **P** not enlarged posteriorly like in holotypus of *Ps. villosa*. **p** less impressed and much more sparse throughout the body, the **iS** are mostly many times their diametre. Sensorial areas of mid and hind tibiae weakly evident, flushed with surrounding surface.

Male. Lectotype. Figs 54-59. Size 12.5 mm

It differs from villosa (apart genitalia) in - brown colour of flagellum and lighrt brown mandibles, tegulae and legs - vertex, temple and genae bipunctate - $\mathbf{N_1}$ disk with an ill defined ridge along its foreborder and very smaller **p** with always expressed **iS** as large or larger than their diametre - omaulus ill expressed on only its upper tyhird - **p** on $\mathbf{Sc_1}$ and $\mathbf{Sc_2}$ smaller and less impressed, with **iS** up to many times their diametre - postscutellar area flattened - horizontal **P** irregularly and completely sculptured, without expressed areola - ridge on its posterior border high, very lamella-like along its entire length - $\mathbf{es_2}$ bipunctate almost throughout - $\mathbf{Last_2}$ regularly **p** throughout - $\mathbf{es_3}$ roughly shagreened with vertical wrinkles on its back fourth - gradulus on 1st tergum subrectilinear, while gradulus on 2nd tergum has a backward rounded tip on the middle - horizontal surface of 1st sternum roughly **p** with lateral ridges delimiting it - ill defined gradulus on 2nd sternum - no **mR** on mid femur nor on most of metameri, well evident only at the base of 2nd to 6th sterna

N o t e . Tournier first described the female. Gorbatovsky (probably) and me choose the male as Lectotype since the male only bears the original autographic label. TOURNIER referred about 6♀ and 2♂ with size ranging between 12 and 15 mm. At Geneve Museum only 1♀ and 1♂ exist.

***Pseudotiphia lethierryi* (TOURNIER 1889 comb.nov.**

Tiphia Lethierryi TOURNIER 1889: 29-31 - Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Algeria = /Bône Algerie Lethierry/ /Tiphia brevipennis Bone/ /Tiphia lethierryi T./ (autographic) /Tiphia lethierryi Tou det Dott. D. Guiglia/ /Lectotypus Tiphia lethierryi Tourn. design Gorbatovsky 1987/ /Tiphia lethierryi Tourn V. Gorbatosky det. 1987/, MHNG
Tiphia lethierryi: GUIGLIA (1956: 93-94)
Tiphia lethierryi: ARBOUW (1984: 96)

M a t e r i a l e x a m i n e d : ♀: Algeria = (1) (*Alg*/ /*Tiphia mauritanica Gir.*/ /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000572/, MHNP; (2) /Bone Janv SG (???)/ (rounded) /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000573/, MHNP; (1) /*Bone mars ??*/ /Museum Paris Coll. Leon fairmaire 1906/ / /Museum Paris EY0000000568/, MHNP; (1) /*Bone 63*/ /*2 ♀ minor*/ /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000569/, MHNP; (1) /*Edo???? ????*/ /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000570/, MHNP; (1) /*Alg*/ /*151*/ /Museum Paris Algerie Coll. Giraud 1877/ /Museum Paris EY0000000567/, MHNP. Without locality: (1) /m.cp./ /Museum Paris EY0000000571/, MHNP;

Female. Fig 60-63, from lectotype.

L/**LA** of 2nd to 9th flagellomerus between 1.35 and 1.45.

Male. Unknown.

Variability. Size varying from 14 to 19 mm.

Pseudotiphia putoni (TOURNIER 1889) comb.nov.

Tiphia Putoni TOURNIER 1889: 31-32 –Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Algeria = /Bone 63/ /♀ ?/ /Tiphia putoni Tourn/ (autographic) /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000557/, MHNP

Tiphia putoni: GUIGLIA (1956: 94)

Tiphia putoni: ARBOUW (1984: 119)

M a t e r i a l e x a m i n e d : ♀: Algeria = (3) /Bone 63/ /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000558-60/, MHNP; (3) /Bone/ /Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000561-63/, MHNP; (1) /Medéa/ / Museum Paris Algerie Coll. H. Lucas 78-49/ / Museum Paris EY0000000554/, MHNP; (1) /Alger/ / Museum Paris Algerie Coll. J. Pérez 1915/ (blue)/ /Tiphia brevipennis Lucas ♀/ /Tiphia putoni Tourn. det. Dott. D. Guiglia/ /Tiphia putoni Tourn./ /Museum Paris EY0000000555/, MHNP; (1) /Bone Janv SG (???)/ (rounded) /brevipennis Luc 5♀ mag. (??)/ //Museum Paris Algerie Coll. O. Sichel 1867/ /Museum Paris EY0000000556/, MHNP;

♂: Algeria = (1) /*Algerie*/ /Museum Paris Coll. J. De Gaulle1919/ /Museum Paris EY0000000565/, MHNP; (1) /*G Constantine*/ /*Algerie*/ /*Berland videt 1923*/, MHNP.

Female (Lectotype). Figs 64-67

Male. Figs 68-77. Described for the first time. Size: body length = 15 mm.

Coloration like *Ps. villosa*. Stouter habitus with ratio $\mathbf{LA_{MS}/LA_C}$ about 1.27. **L**/**LA** of 2nd to 9th flagellomerus about 1. $\mathbf{N_1}$ disk more tightened anteriorly with a bigger ratio **LA/A** and without a large impunctate apical stripe. Omaulus absent, only a small trace on upper corner. $\mathbf{es_2}$ strongly shagreened. Areola with weak lateral ridges and broad wearing out posteriorly median ridge. Posterior edge of horizontal **P** bordered by a strong lamellar ridge on the sides and absent medially so that areola is open apically. No median vertical ridge on posterior area of **P**. Sensorial areas of mid and hind tibiae very large. Gradulus on 1st tergum complete. Gradulus on 2nd tergum broken at the middle; both of them very low. Gradulus on 2nd sternum undetectable, with traces only laterally. Large tuberculum on 5th sternum, with densely **p** inner surface without any **mR**.

p of head and most of mesosoma with the same arrangement as in *Ps. villosa*, but they are smaller and less impressed. The **p** on metameri are smaller, less impressed and very sparser too, but on apical 1st tergum where they are densely packed in a transversal belt. Horizontal **P** is evenly sculptured almost throughout without strong ridges like in *Ps. villosa* The other specimen does not show significant differences and is a little bigger (16 mm).

Note. The males here described have been ascribed to *Ps. putoni* instead of *Ps lethierryi* on the base of identity of the labels with female specimens and on the similar weak and sparse **p** on metameri. Ratio **L**/**LA** of 1st to 5th flagellomerus is about 1.

***Pseudotiphia antigae* (TOURNIER 1901) comb.nov.**

Tiphia antigae TOURNIER 1901: 252-253 - Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Spain = /*Barcelone antiga* ♀/ /*Pedralba 12.XI.95*/ /Muséè de Genève/ /*lectotypus*/ /*Tiphia antigae* det Dott. D. Guiglia/, MHNG

Tiphia antigae: BERLAND (1922: 191)

Tiphia antigae: ARBOUW (1984: 43)

M a t e r i a l e x a m i n e d : ♀: Morocco = (1) /*Tanger*/ /Museum Paris Coll. J. Pérez 1915/ (blue), MHNP; (1) /Melilla *J. Caudel*/, MNCN; Spain = (1) /Teruel A. Sanz/ /*Tiphia antigae Tourn* ♀/ /n°34460/, MNCN; (1) /Navalperal G. Mercet/ /*Tiphia antigae Tourn* ♀/ /n°34462/, MNCN; (1) /Sierra de Guadarrama Dusmet/ /Coleccion Dusmet/ /*Tiphia antigae Tourn* ♀/ /n°34459/, MNCN; (1) /Sierra de Guadarrama J. Lauffer/ /Coleccion Dusmet/ /*Tiphia antigae Tourn* ♀/ /n°34458/, MNCN;

♂: Spain = (1) /*Barcelone*/ /Museum Paris Coll. J. Pérez 1915/, MHNP; (1) /Huéscar Granada Escalera 1900/, MNCN.

Female. Lectotype. Figs 78-81

Apart the differences supplied with the key, these females can be known from *Ps. villosa* by the different labrum, black, opaque apical border of $\mathbf{N_1}$ disk instead of semitransparent brown; $\mathbf{Sc_1}$ without either gradulus either smooth areas along its fore border, its entire surface completely and densely **p** with **iS** always less than their diametre; presence of a rough but well expressed omaulus on $\mathbf{es_2}$, wearing out only ventrally; lateral $\mathbf{es_2}$ with strongly impressed and coalesced **p** mostly without **iS** among them and with small **p** inside them; ventral $\mathbf{es_2}$ without any micro**p** along their interconnection; signum very deeply impressed; black tegulae; **mR** well detectable at x50 on most of the body, except where are present micro**p** and **iS** are absent, on antennae, mandibles, tegulae, **P**, coxae, tibiae, tarsi, and visible 2nd to 5th terga.

Male. Figs 82-87. Described for the first time. Size: body length = 12 mm

Habitus and coloration like *Ps.villosa*. Differs from it in having different shape of head in dorsal aspect; no vertical ridge on mid frons; rectilinear ventral border of clypeal lamella; different labrum; less elongated **Pam** (ratio between its length and length of labium about 1.8; in *Ps. villosa* the same ratio is about 2.3); anteriorly more tightened $\mathbf{N_1}$ disk in dorsal aspect with a well expressed rough ridge along its fore border; very short median ridge of areola; strong very distinct semicircular ridge as high as areola ridges around **spP;** quite high gradulus on 1st tergum, where a sort of longitudinal very low, broad and ill defined median ridge from gradulus to apical border exists; genitalia; less impressed and dense **p** on most of head, $\mathbf{N_1}$ disk, $\mathbf{Sc_1}$, $\mathbf{Sc_2}$; large smooth area without any **mR** around ocelli; back (inner) surface of mid femur without any **mR;** terga without **mR;** inner area to tuberculum on 5th sternum without any **mR**.

D i s t r i b u t i o n a r e a . NW Africa to Mediterranean Spain and France.

V a r i a b l i t y . The wings of females can change a bit in length and also veins show some fluctuation (see the figures of lectotype).

***Pseudotiphia longicornis* (TOURNIER 1901) comb.nov.**

Tiphia longicornis TOURNIER 1901: 254-255 - Lectotypus ♀ here designated in order to ensure the name' proper and consistent use: Morocco = /*Tanger Olcese*/ /*Tiphia longicornis T.* (*Type 3*)/ (autographic?) /*morio F.* det. Dott. D. Guiglia/ /Muséè de Genève/, MHNG

Tiphia longicornis: ARBOUW (1984: 12, under *villosa fuscipennis*)

M a t e r i a l e x a m i n e d : ♀: Morocco = (1) /Tanger/ /Museum Paris Collection Ernest André 1914/, MHNP; (4) /l. Scaramozzino Meknes dint. Azrou Marocco 30 Aprile 1990/, CB; (1) /L. Scaramozzino la Rache 2 Maggio 1990/, CB;

♂: Morocco = (1) /*Tèniel*/ /Museum Paris Coll. J. Pérez 1915/, MHNP; (1) /Tanger/ /Museum Paris Collection Ernest André 1914/, MHNP; (2) /l. Scaramozzino Meknes dint. Azrou Marocco 30 Aprile 1990/, CB.

Female. Lectotype. Figs 88-91. Size 11.5 mm.

Coloration like *Ps. villosa*. Differences: - head more transversal, ratio **LA**/**A** in frontal aspect just a bit less than 2 (about 1.8 in *Ps. villosa*) - ratio **L**/**A** of first flagellomerus more than 1.25 and of 2nd about 1.2 - gradulus on $\mathbf{Sc_1}$ weaker and less defined - no wrinkles on lower lateral $\mathbf{N_1}$ - pterostigma apically tryncated - 1st sternal surface like in lectotype of *T. Olcesei* - well defined gradulus on 1st tergum and ill defined on 2nd (the opposite in *Ps. villosa*) - $\mathbf{es_1}$ bipunctate by small **p** among larger ones - $\mathbf{es_2}$ with: ventral surface completely bipunctate - densely settled small **p** throughout $\mathbf{em_3}$ - back surface of; hindfemur regularly **p** throughout (irregularly in *Ps. villosa*) - sensorial areas on mid and hind tibia weakly defined and flushed with surrounding surface.

Male. Figs 92-95. Specimen fron Ain etc. Described for the first time. Size 10 mm.

General aspect and coloration like *Ps. villosa*, it differs in the more pronounced vertical ridge on the frons, weaker notch on the ventral clypeal lamella, shape of labrum, five basal **Pam** and three basal **Pal** with weak apical swelling; fourth **Pam**-merus distinctly longer (till 1.3 times) than final one (in all other taxa, but *Ps. putoni*, it is as long or shorter than 6th). Moreover it has weakly expressed omaulus, $\mathbf{es_1}$ with strong transversal shagreened **mR** on its anterior 2/3, lateral and ventral surface of $\mathbf{es_2}$ entirely bipunctate, lateral $\mathbf{N_1}$ and **P** with weaker wrinkles, well defined gradulus on 1st tergum, ill defined one on 2nd tergum (the opposite in *Ps. villosa*), no defined gradulus on 2nd sternum, weaker **mR** on tergal surfaces, area inside tuberculum on 5th sternum mostly shining without any **mR**. Genitalia (gonosquama and aedeagus) like fig..

Note. Good autapomorphies are the truncated pterostigma in female forewing and genitalia of the males. Size is medially smaller than in *Ps. villosa*.

D i s t r i b u t i o n a r e a . Morocco.

V a r i a b i l i t y . just size can slightly change both in males and females.

***Pseudotiphia crassinervis* (KIRBY 1900) comb.nov.**

Tiphia crassinervis KIRBY 1900: 307-308 – Lectotypus ♀: Sokotra = /*Adro Domellus 3500 ft* Sokotra 4.2.99/ (rounded) /*Tiphia crassinervis*/ (pale blue) /Lectotype/ (rounded with outer blue ring) /Lectotype Tiphia crassinervis Kirby HW Allen/ (red) /BM Type Hym 15.1444/, BMNH!

***Pseudotiphia caspica* nov.sp.**

H o l o t y p e ♀: Azerbaijan = /Transkauk Helenendorf 1886/, NHMW

P a r a t y p e ♂: Azerbaiijan = /Aserbeidzhan Sabirabad 5.V.1969/, OLML

Female. Holotype. Figs- 96-97. Measurements: body length = 11.5 mm; forewing length = 6.5mm

Habitus and coloration like in *Ps. villosa*, but semitransparent light brown tegulae veins and pterostigma; wings yellow.

p are less impressed everywhere and sparser on ventral $\mathbf{es_2}$, basal 6th tergum and mainly on $\mathbf{Sc_1}$ where no gradulus exixts along its fore border. **PoG** strongly depressed compared with genal surface. Labrum rounded in frontal aspect. Lateral $\mathbf{N_1}$ with a distinct major groove on its middle among wrinkles. Omaulus well produced and complete getting half the signum which is well impressed and distinct. $\mathbf{es_3}$ wrinkled, hardly distinct from wrinkled lateral **P**. Well produced areola with almost complete median ridge. The whole surface of of horizontal **P** with well distinct transversal and regularly spaced wrinkles. Reddish and large sensorial area on mid tibia. Strongly impressed sensorial area on hind tibia. Straight gradulus on 1st tergum and weak tracks on 2nd sternum. 2nd tergum without any sub-basal gradulus.

Male. Figs 98-103. Measurements: body length = 10 mm.

Habitus and coloration like *Ps. villosa* but slightly brigther tegulae veins and pterostigma.

Head differently shaped and less transversal in dorsal aspect, ratio **LA**/**A** about 1.9 (2.2 in *Ps. villosa*). **PoG** strongly depressed compared with genal surface. Larger smooth areas around ocelli. Flagellomeri with tyloids like *Ps. fulvipennis* (no tyloid on basal flagellomerus) but more slender, their ratio **L**/**LA** of 2nd to 9th flagellomerus between 1.25 and 1.35 (1.1 to 1.3 in *Ps. fulvipennis*). Complete and well developed carina along foreborder of $\mathbf{N_1}$. Omaulus completely and well produced, getting half signum which is well impressed and defined. $\mathbf{es_3}$ with irregular (and less weak than in lateral **P**) wrinkles. Posterior **P** concave without any trace of vertical ridge. Weak tracks of graduli on sides of 1st tergum and 2nd sternum. No tuberculum on the sides of 5th sternum. Weaker and sparse **p** on $\mathbf{N_1}$ disk and ventral $\mathbf{es_2}$ where **iS** are as large or larger than their diametre (no **iS** in *Ps. villosa*). Very sparse **p** without any secondary small **p** among them on ventral coxae (bipunctate coxae with densely $\mathbf{p\ X_3}$ in *Ps. villosa*). Sensorial areas well impressed like in female.

Note. Male and female differ from the other members of the clade in the regular sculpture of horizontal **P**. The male differs also in the well developed carina along the foreborder of N1 and simple apex of the basal gonosquama.

***Pseudotiphia thoracica* nov.sp.**

Holotypus ♂: Morocco = /*Mogador*/ /Museum Paris coll. J. Pérez 1915/, MHNP

Male (holotype). Figs 104-109. Measurements: body length = 13.5 mm.

Habitus and coloration like *Ps. villosa*, only wings are lighter.

Apical **Pal** particularly developed, twice longer than penultimate (ratio about 1.3 to 1.5 in other taxa). $\mathbf{N_1}$ disk strongly tightened anteriorly in dorsal aspect, without any ridge along its fore border and without pitless smooth apical stripe. Ratio between width of mesosoma (outlines of $\mathbf{es_2}$) and head in dorsal aspect is about 1.27. Omaulus roughly but well detectable. Horizontal **P** with areola well delimited laterally by strong ridges and open apically since there is no well defined ridge along its posterior border, replaced by

an irregular sequence of crests. Sensorial area on mid tibia large and subtrapezoidal. Gradulus on 1st tergum very ill defined and almost undetectable. Gradulus on 2nd sternum worn out medially. Tuberculum on 5th sternum without **mR** on its inner surface. Volsella tightens evenly toward apex without any swelling. Surface of head and most of mesosoma appears coarse because of strongly impressed and very densely packed **p** with very narrow either absent **iS** among them. Pitless areas only around ocelli, where strong **mR** exists.

***Pseudotiphia lampra* nov.sp.**

H o l o t y p e ♂ - Spain = /Fiñana Almeria/, MNCN;
P a r a t y p e ♂- Spain = (1) /Fiñana Almeria/, MNCN. Paratype ♀- Spain = (2) /Fiñana Almeria/, MNCN

Female. Figs 110. measurements: body length = 10 mm

Legs dark brown. Flagellomeri with a ratio **L**/**A** about 1.2-1.3. No evident gradulus on fore border of $\mathbf{Sc_1}$. Horizontal, lateral, posterior areas and areola like in *Ps. villosa*. Gradulus on 1st tergum with a median backward acute tip. Punctuation more sparse than in *Ps. villosa* everywhere. Ventral surface of $\mathbf{es_2}$ without any small **p** along interconnection too. About 20 wrinkles on lateral **P**. 6th tergum with apical 2/3 evenly covered by impressed **mR** without any trace of low ribs (1/2 in *Ps. villosa* and with clear traces of low ribs). No **mR** elsewhere.

Male. Holotype. Figs 111-117. Measurements: body length = 8 mm.

Coloration like *Ps. villosa* but the brown legs (but coxae) and lighter wings.

Ventral lamella of clypeus deeply notched (more than in all other taxa). 2nd to 9th flagellomeri elongated, with a ratio **L**/**A** ranging between 1.25 and 1.45. No vertical ridge on the mid of the frons. $\mathbf{N_1}$ disk strongly tightened anteriorly, with a well expressed low ridge along its anterior border. Omaulus well expressed. Surface of horizontal **P** sculptured by high irregular crests (parallel on its anterior corners) with well expressed areola by high lateral, median and posterior ridge; the latter irradiates in secondary minor ridges before getting the side corner; low ridge between lateral and posterior areas of **P**; the latter with complete vertical median ridge and many irregular wrinkles irradiating all around its upper third. Large pterostigma, its surface just a bit less wide than area of ***CM***. High graduli on 1st, 2nd terga and 2nd tergum. Gradulus on 1st tergum with long buttressing ridges along the whole of its length. Tuberculum on 5th sternum like in cillosa but without inner **mR** area.

Medium impressed and very sparse **p** throughout (also in part very coarse in the other taxa like clypeus, posterior vertex, temple, genae, lower frons, $\mathbf{N_1}$ disk, $\mathbf{es_2}$, where **iS** are always expressed and mostly more than twice diameter of **p**) impunctate shining areas on the head and mesosoma. Metameri too shining with very sparse weakly impressed **p**. Bipunctate area by sparse small **p** only on side genae and $\mathbf{es_1}$. Nowhere well detectable at x50 **mR** surfaces, except mid 7th tergum.

Variability. The second male specimen is only a bit smaller.

***Pseudotiphia punica* nov.sp.**

Holotypus ♂ - Tunisia = /Tunisia: 4km E Ain Sebaa 23 km E Tabarka, 09.IV.1994 loc 12 leg. R. Danielsson/, MZLU. Paralectotypes: ♂- Tunisia = (2) /Tunisia: 4km E Ain Sebaa 23 km E Tabarka, 09.IV.1994 loc 12 leg. R. Danielsson/, (1) MZLU- (1) MZUF; ♀- Tunisia = (2) /Tunisia: 4km E Ain Sebaa 23 km E Tabarka, 09.IV.1994 loc 12 leg. R. Danielsson/, (1) MZLU- (1) MZUF

Female. Figs 118-119 Habitus and coloration like (*Ps. villosa*) apart the dark brown legs. The size is much smaller, from 9 to 10 mm. **Pam** less elongated, the ratio between the aggregate length of apical three palpomeri and the legth of the three basal ones is about 1.2 (more than 1.3). No evident wrinkles on lateral $\mathbf{N_1}$ which is completely shagreened. Weak irregualr gradulus on $\mathbf{Sc_1}$ delimiting a vaste pregradular subtriangular area whose tip gets over than half height of the element. Areola well delimited laterally by strong ridges, with only a short stump of the median one. Posterior area of **P** with strong subhorizontal shagreened **mR**. Wrinkles on lateral **P** have the same inclination as in the holotype of *Ps. villosa*. **es3** shagreened without any small **p** (present). Buttressing ridges along gradulus of 2nd tergum very densely packed up to the number of more than 25 within 0.5 mm. Sparse and weak **p** on th head, mainly on the frons and vertex where many large smooth areas exist. 1st sternal surface with few large **p** only laterally and completely with regularly settled small **p**. No **mR** on terga and ventral coxae.

Variability. The female paratypes have similar size and lack the median stump within areola.

Male (Holotype). Figs 120-125. Measurements: body length = 8 mm

Habitus and coloration like *Ps. villosa*, except lighter wings.

Shape of the head very close to *Ps. villosa*. The ventral lamella of clypeus is not distinct by the main surface of clypeal disk being almost completely covered by **p** (entirely smooth). Very short vertical ridge on the frons. Foreborder of $\mathbf{N_1}$ disk is angled with a rough low ridge along it. Lateral $\mathbf{N_1}$ completely crossed by well impressed irregular wrinkles. Omaulus absent. Horizontal **P** evenly sculptured without expressed areola, with only a median strong ridge and laterally to it traces of very irregular hardly detectable short ridges; its posterior edge shows only two lateral stumps of lamellar ridges, medially interrupted, from whose subvertical ridges start till ¾ of posterior surface of **P**. Complete lamellar ridges delimite the border between posterior and lateral areas of **P**. Sensorial areas of tibias medially impressed; sensorial area of mid tibia subrounded. Graduli on terga like in villosa, grafdulu on 2nd sternum present only on the sides, worn out medially. Tuberculum on 5th sternum apically straight with an inwards basal extension angled at about 90° to it in ventral aspect. **p** and hair do not show significant differences with villosa, apart the $\mathbf{es_1}$ and $\mathbf{es_2}$ where **iS** are larger than diametre of the sparse large **p** and completely bipunctate by small **p** and the absence of **mR** on back surface of mid femur.

Variability. One paralectotype 7.5 long has only a small stump of the median ridge on horizontal **P**. The smaller one (6 mm) show instead a complete areola with strong lateral and median ridges and rough sculpturation throughout. All of them show the same genitalia, tuberculum on 5th sternum and posterior surface of **P**.

***Pseudotiphia gonodactyla* nov.sp.**

H o l o t y p e ♂: Morocco = /leg Scaramozzino Tagounit Ain Leun 30.IV.1987 Marocco/, MRSN.

P a r a t y p e s ♀: Morocco = (3) /Museum Paris Maroc Dar Kaid M'Tougui P. Pallary 1914/ (1: /Avril/ & 2: /Mai/), MHNP; *(1) /leg Scaramozzino Tagounit Ain Leun 30.IV.1987 Marocco/, CP; (1) /leg Scaramozzino Tagounit m1700 30.IV.1987 Marocco/, CP; (1) /Morocco 5kmSE Azrou 31.5.1995 Ma Halada lgt/, OLML; (6) /Morocco Ifrane 1-2.6.1995 Ma. Halada lgt/, OLML; (1) /Morocco 28.V-3.VI.1999 Tazzeka NP Bab-Bou Idif env. 34°4'N 4°7'W P. Prudek leg/, OLML. Paratype ♂: Algeria = (1) /Museum Paris Alger Brongniart 1857-91/, MHNP. Italy = (1) /Italia Sardegna Orosei litorale 5-20.VIII.1987 BoniBartalucci l/, MZUF. Morocco = (3) /Museum Paris Maroc Amismiz P. Pallary 1914/ /Mai/, MHNP; (1) /Museum Paris Maroc Dar Kaid M'Tougui P. Pallary 1914/ /Avril/, MHNP; (1) /*Teniel*/(?) /Museum Paris Coll. J. Pérez 1915/, MHNP; (1) /*leg Scaramozzino Tagounit m 1700 Ain Leun 28.IV.1987 Marocco*/, CP; (1) /*leg Scaramozzino Tagounit m1700 30.IV.1987 Marocco*/, CP; (1) /Marocco prov. Beni-Mellal Tilougguite dint m1800 ca. 18.V.1979 *M. Bologna l*/, CP; (1) /Morocco centr. Bzou 12.5.1995 Mi Halada lgt/, OLML; (3) /Morocco 10km N Rich 23.5.1995 Mi Halada lgt/, OLML; (14) /Morocco Ifrane 1-2.6.1995 Ma. Halada lgt/, OLML; (6) /Morocco 12 km E Ifrane 9-10.5,1997 leg J. Halada/, OLML; (3) /Morocco 12 km O of Ifrane 9-10.5,1997 leg J. Halada/, OLML; (1) /Morocco 24-27.V Oued Sebou river, near El Menzel 33°51'N 4°39'W P. Prudek leg/, OLML.

Female. Paratype*. Figs 126. Measurements: body length = 12 mm.

Flagellum reddish underside, brown upperside.

Very similar to smaller specimen of *Ps. villosa*, from which is known by different labrum, no gradulus along fore border of $\mathbf{Sc_1}$, $\mathbf{es_3}$ shagreened without any micro**p**, posterior **P** with strongly shagreened **mR** and sparse medium **p**, well detectable gradulus worn out in the middle on 2nd sternum. Areola delimited by weak lateral ridges; the median one does not get posterior border.

Variability. Only about size, from 11 to 12.5 and shape of areola.

Male. Holotype. Figs 127-133. Measurements: body length = 9.5 mm.

Habitus and coloration like *Ps. villosa*. Vertical frontal ridge and omaulus well expressed.

Head in dorsal aspect: ratio **LA/L** about 1,8 (vs 2.1). Different shape of labrum. $\mathbf{N_1}$ disk with angled fore border, without ridge. Horizontal **P** without any ridge and expressed areola and completely irregualrly sculptured; only two stumps of lamellar ridge along its posterior border with buttressing ridges from them on posterior surface; the latter severed from lateral surface by complete lamellar ridge. Posterior surface with a stout vertical ridge and roughly shagreened surface. High graduli on 1st, 2nd terga and 2nd sternum. Arched tuberculi on 5th sternum with impunctate inner area. Genitalia like fig. Genae bipunctate. Swollen surface of $\mathbf{es_2}$ with **iS** up to twice diametre of **p**, sparsely bipunctate.

Variability. Males range in size from 7.0 to 11 mm; some specimen show one/two more or less extended rough stump of longitudinal ridge, without delimiting a defined areola; few specimens show both complete lateral ridges of areola.

Note. Horizontal **P** is very similar to *Ps. beckeri* from which is very known because of shape of head, **Pam**, $\mathbf{Sc_2}$, outline of graduli of terga in dorsal aspect, profile of tuberculum on 5th sternum in lateral aspect, genitalia. Its good autapomorphies are the shape of the head in dorsal aspect and genitalia.

Ecology. Unknown

Distribution. Morocco, Algeria (probably the whole Palaearctic Northern Africa) and Sardinia. The last record needs to be confirmed by more specimens.

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Zusammenfassung

Ein Schlüssel zur Trennung der Gattungen *Tiphia* FABRICIUS 1775 and *Pseudotiphia* ASHMEAD 1903 (Hymenoptera: Tiphiidae) wird vorgestellt. Die Synonymie der Gattungen *Icronatha* NAGY 1967 and *Ludita* NAGY 1967 mit *Pseudotiphia* ASHMEAD 1903 sowie der Arten *Tiphia major* MOCSARY 1883, *Tiphia Olcesei* TOURNIER 1889, *Tiphia rudepunctata* TOURNIER 1901 mit *Tiphia villosa* FABRICIUS 1793 wird vorgeschlagen. Lectotypen von *Tiphia major* MOCSARY 1883, *Tiphia Olcesei*, *Tiphia Beckeri* TOURNIER 1889, *Tiphia Lethierryi* TOURNIER 1889, *Tiphia Putoni* TOURNIER 1889, *Tiphia longicornis* TOURNIER 1901, *Tiphia antigae* TOURNIER 1901 und *Tiphia rudepunctata* TOURNIER 1901 werden festgelegt. An Neukombinationen ergeben sich: *Tiphia villosa* FABRICIUS 1793, *Tiphia fulvipennis* SMITH 1879, *Tiphia caucasica* MOCSARY 1883, *Tiphia beckeri*, *Tiphia Lethierryi*, *Tiphia Putoni*, *Tiphia longicornis*, *Tiphia antigae* unter *Pseudotiphia*. Als neue Taxa beschrieben werden *Pseudotiphia thoracica*, *Pseudotiphia caspica*, *Pseudotiphia lampra*, *Pseudotiphia punica* und *Pseudotiphia gonodactyla*.

Acronyms

CB = Collezione Borsato; CP = Collezione Pagliano; BMNH = Natural History Museum, London; EMET = Entomolgy Museum Erzurum, Turkey; MNCN = Museo Nacional de Ciencias Naturales; MHNG = Museum d'Histoire Naturelle, Genéve; MHNP = Museum d'Histore naturelle, Paris; MSNP = Museo Scienze Naturali, Pisa; MTMB = Magyar Természettudomànyi Mùzeum Budapest; MZLU = Museum Zoology Lund University, Lund; MZUF = Museo Zoologico de "La Specola", Firenze; OLML = Oberösterreichisches Landesmuseum/Biologiezentrum, Linz; ZMUC = Zoologic Museum University, Copenhagen.

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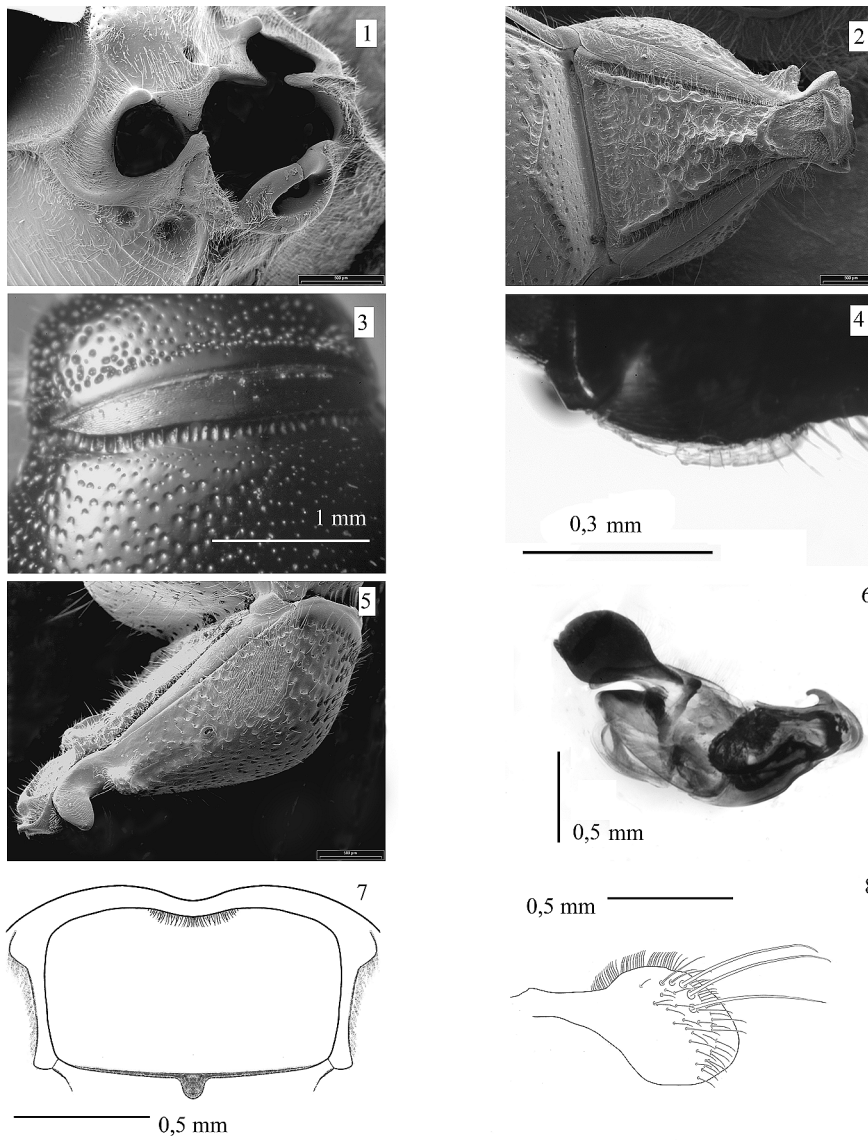
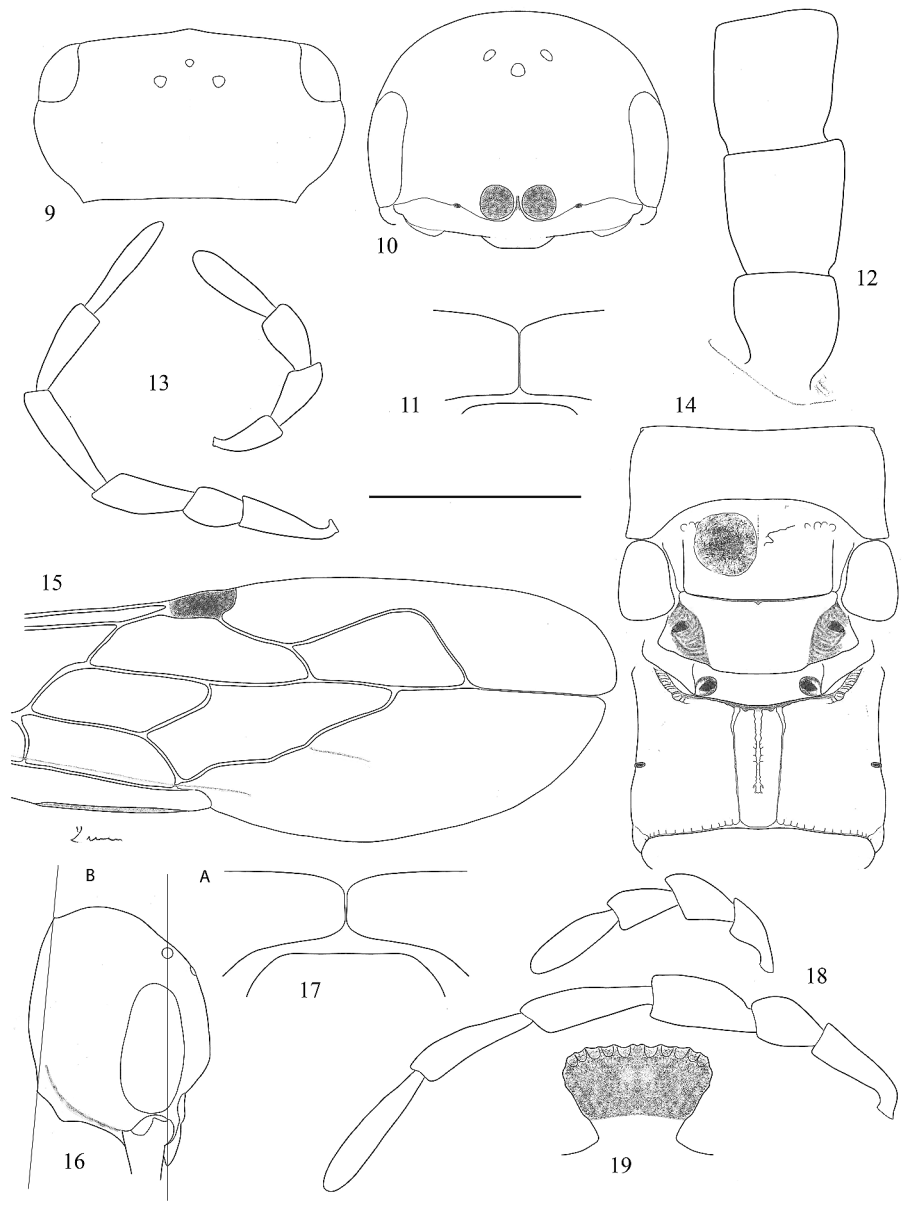
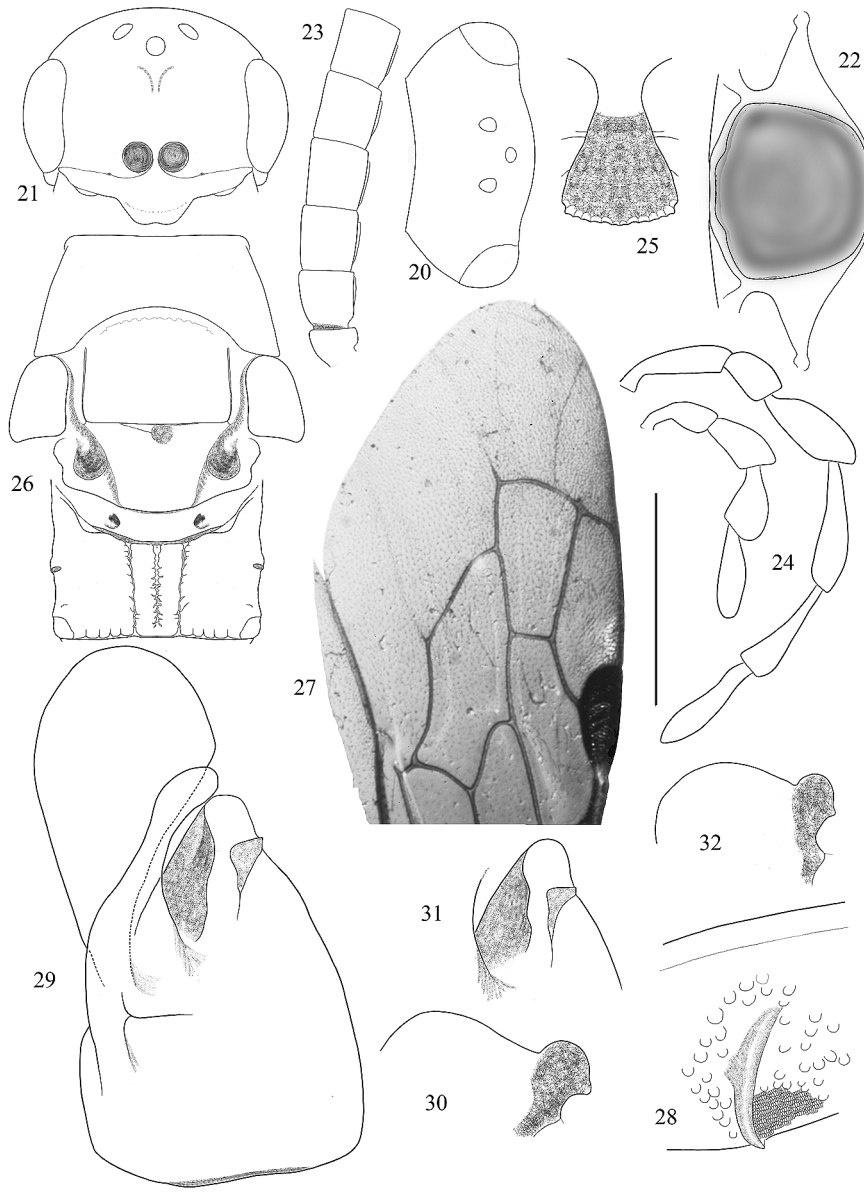


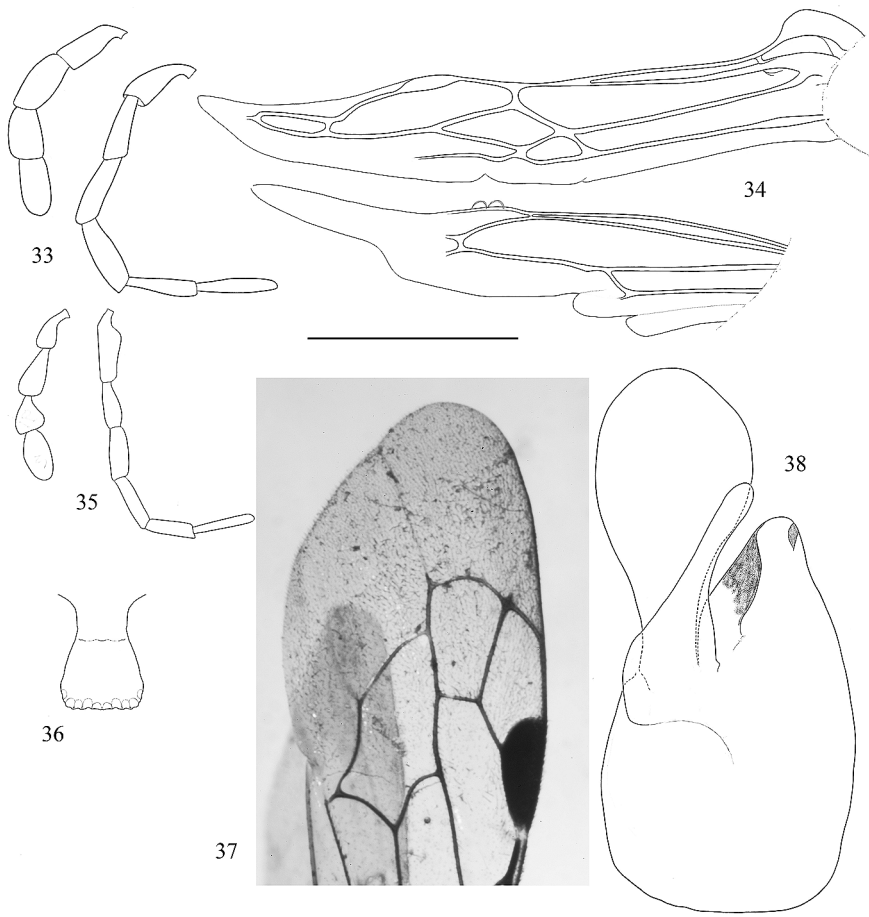
Figs 1-8. *Pseudotiphia* – (**1**): posteroventral aspect of propodeum; (**2**): 1st metamerus, ventral aspect; (**5**): 1st metamerus, lateral aspect; (**6**): genitalia, lateral aspect. *Tiphia* (female) – (**3**): laterodorsal aspect of basal metameri; (**4**): frontal aspect of lateral clypeal disk; (**7**): $\mathbf{Sc_1}$ dorsal aspect. *Tiphia* (male) – (**8**): palette of gonosquama.



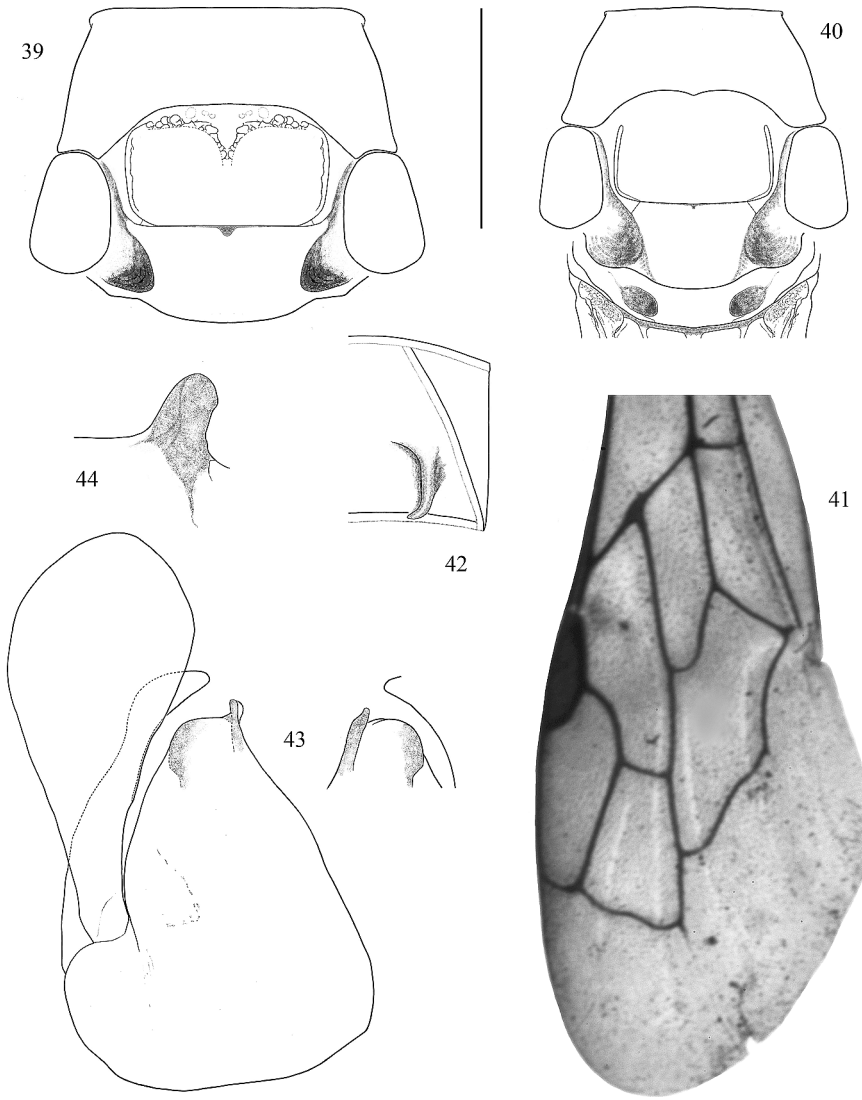
Figs 9-19. *Pseudotiphia villosa*. ♀ (Holotypus) – (**9**) head, dorsal aspect; (**10**) head, frontal aspect; (**11**) genal bridge, ventral aspect; (**12**) basal flagellomeri; (**13**) palpi; (**14**) mesosoma, dorsal aspect; (**15**) apical fore wing. *Pseudotiphia villosa* ♀ (Lectotypus of *Tiphia Olcesei*) – (**16**) head, lateral aspect; (**17**) genal bridge, ventral aspect; (**18**) palpi; (**19**): labrum, frontal aspect.
(12, 13, 18, 19: scale bar = 0.5mm) (11,17: scale bar = 1 mm) (9, 10, 14, 15, 16: scale bar = 2 mm)



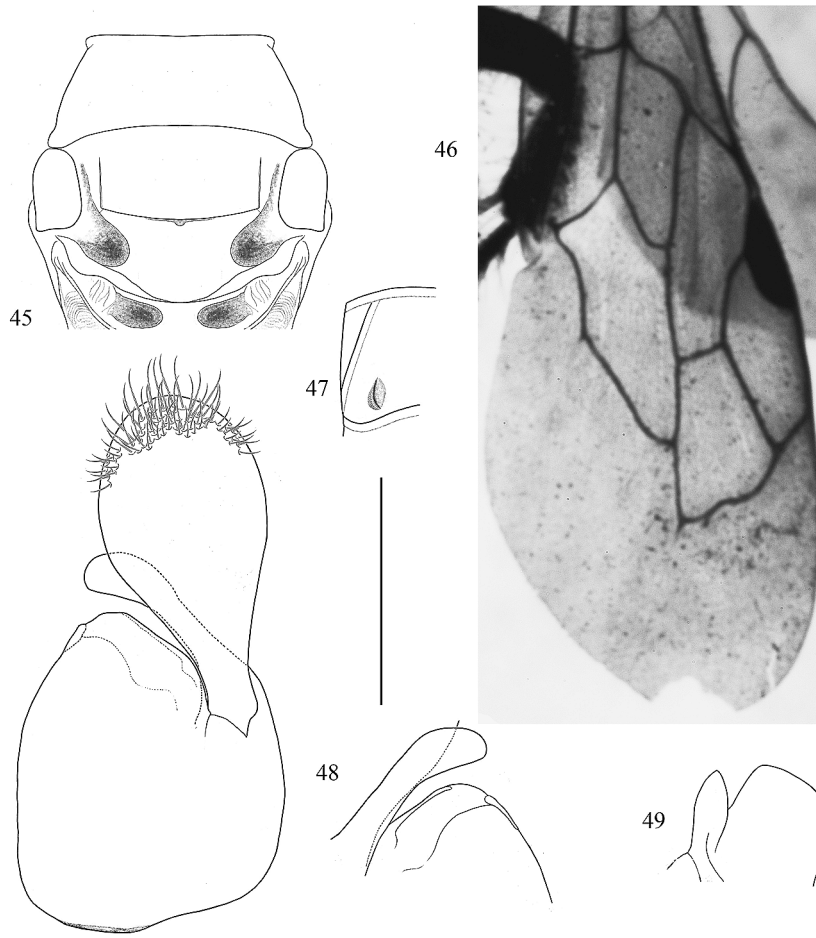
Figs 20-32. *Pseudotiphia villosa* ♂ (Paralectotypus of *Tiphia Olcesei)* – (**20**) head, dorsal aspect; (**21**) head, frontal sapect; (**22**) genal bridge, ventral aspect; (**23**) basal flagellomeri; (**24**) palpi; (**25**) labrum, frontal aspect; (**26**) mesosoma, dorsal aspect; (**27**) apical fore wing. (**28**) lateral 5th sternum, ventral aspect; (**29**) gonosquama, lateral inner aspect; (**30**) aedeagus, lateral aspect. (**31**) gonosquama, lateral inner aspect (particular); (**32**) aedeagus, lateral aspect.
(24, 25, 28, 29, 30, 31, 32: scale bar = 0.5mm) (22, 23, 27: scale bar = 1 mm) (20, 21, 26: scale bar = 2 mm)



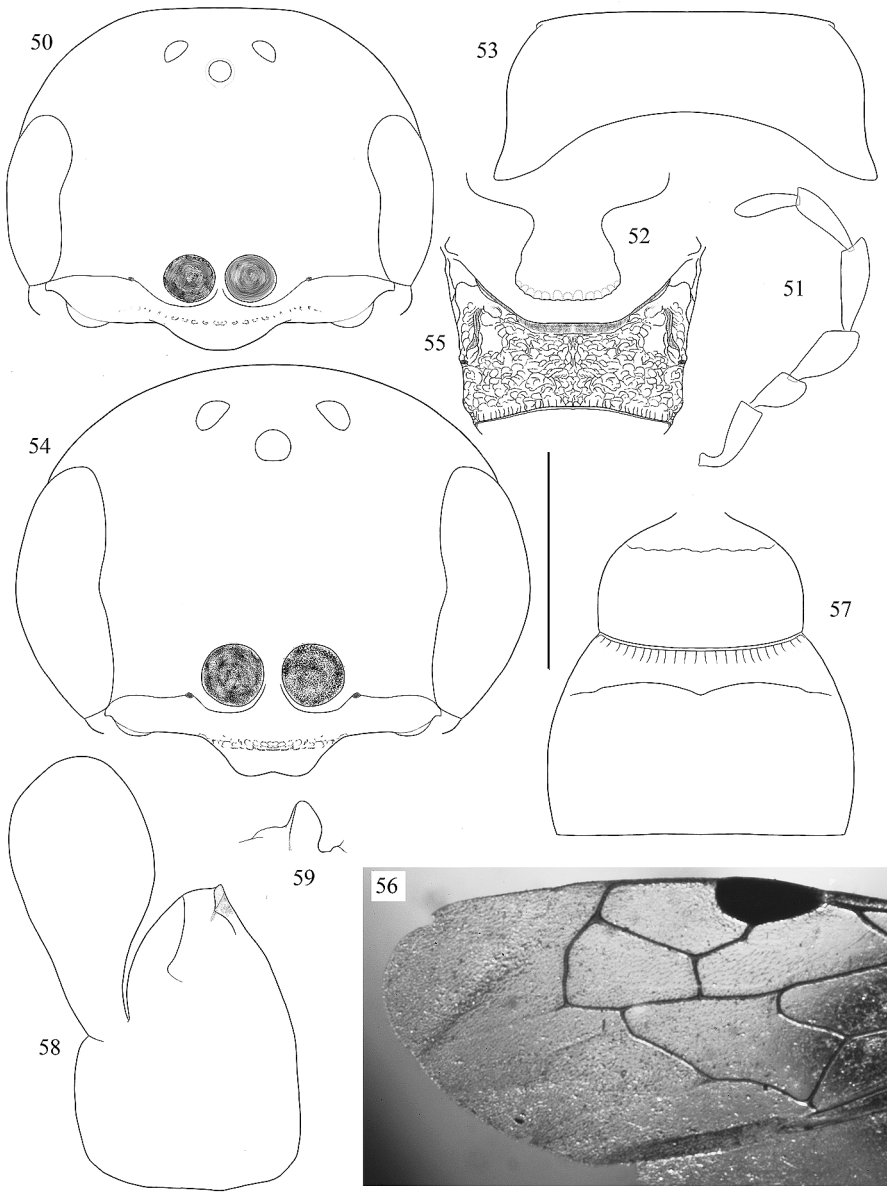
Figs 33-38. *Pseudotiphia brevipenniss* ♀ (Paratypus) – (**33**) palpi; (**34**) wings. *Pseudotiphia brevipennis* ♂ – (**35**) palpi; (**36**) labrum, frontal aspect; (**37**) apical fore wing; (**38**) gonosquama, inner lateral aspect.
(33, 35, 36, 38: scale bar = 0.5 mm) (34: scale bar = 1 mm) (37: scale bar = 2 mm



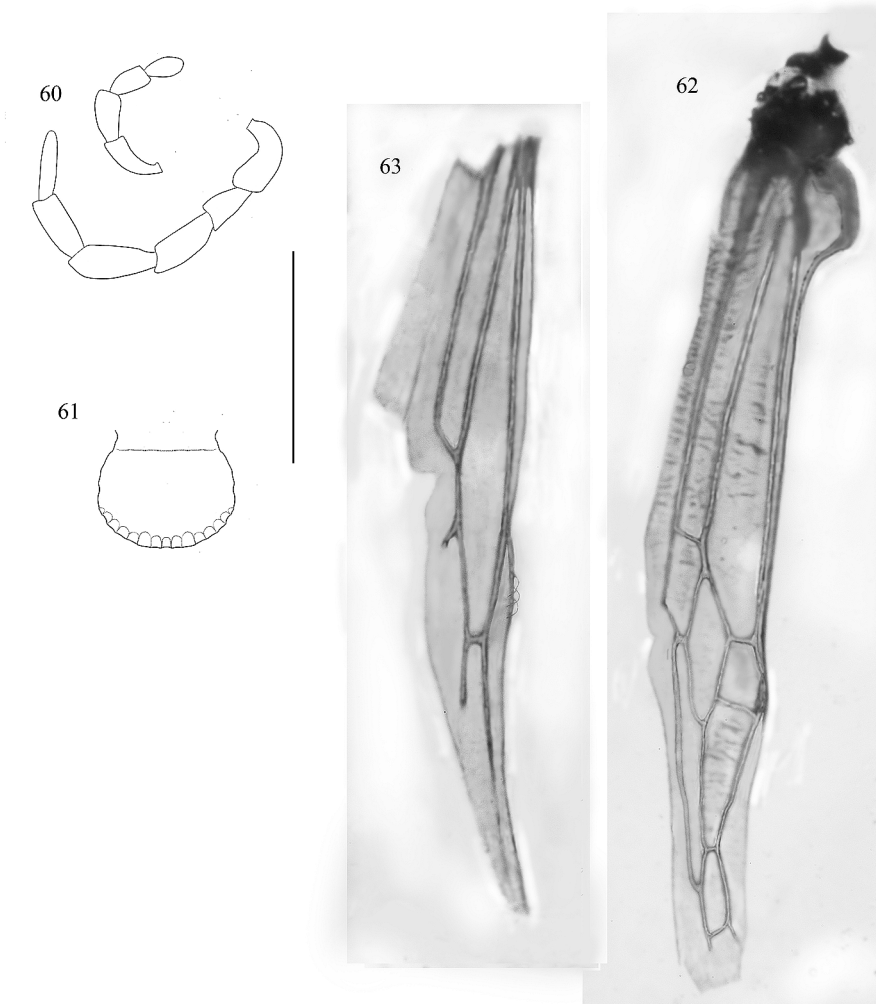
Figs 39-44. – *Pseudotiphia fulvipennis* ♀ (Holotypus) – (**39**): fore half of mesosoma, dorsal aspect *Pseudotiphia fulvipennis* ♂ – (**40**) fore half of mesosoma, dorsal aspect; (**41**) fore wing; (**42**) lateral 5th sternum, ventral aspect; (**43**) gonosquama, lateral outer aspect and particular in inner aspect; (**44**) aedeagus, lateral aspect.
(43, 44: scale bar = 0.5 mm) (42: scale bar = 1 mm) (39, 40, 41: scale bar = 2 mm



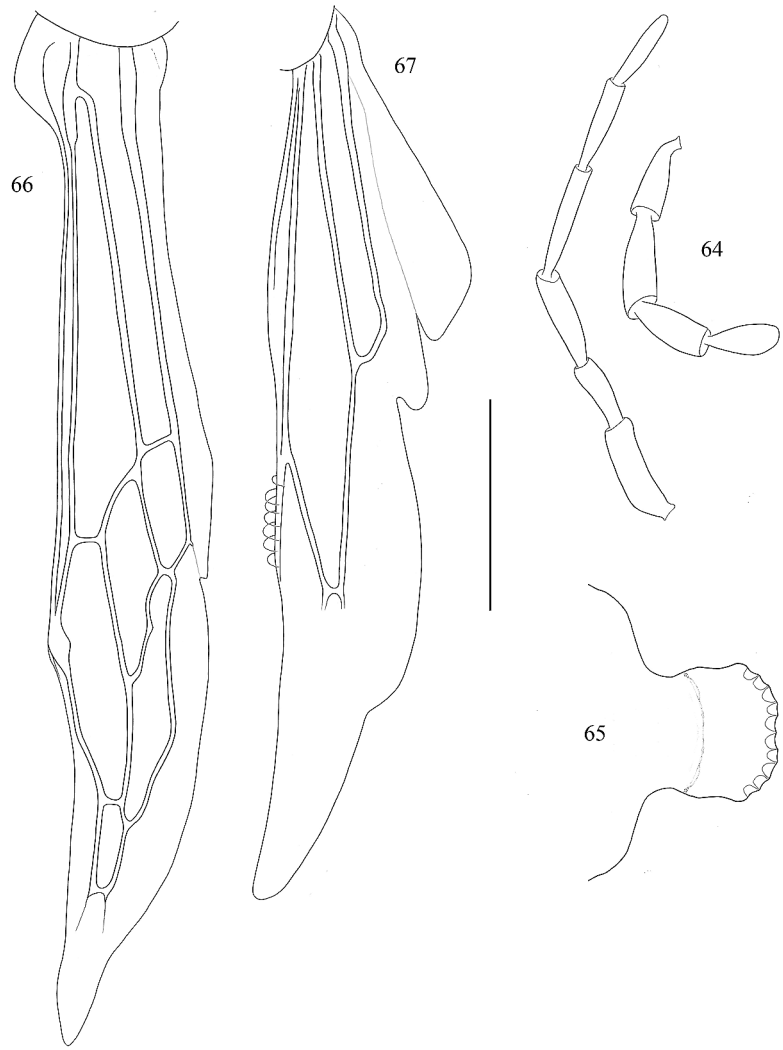
Figs 45-49. *Pseudotiphia caucasica* ♂ (Lectotypus): (**45**) fore half of mesosoma, dorsal aspect; (**46**) fore wing; (**47**) 5th sternum, ventral aspect; (**48**) gonosquama, outer lateral aspect and particular of inner aspect; (**49**) tip of aedeagus, lateral aspect.
(45, 46: scale bar = 2 mm) (47: scale bar = 1 mm) (48, 49: scale bar = 0.5 mm)



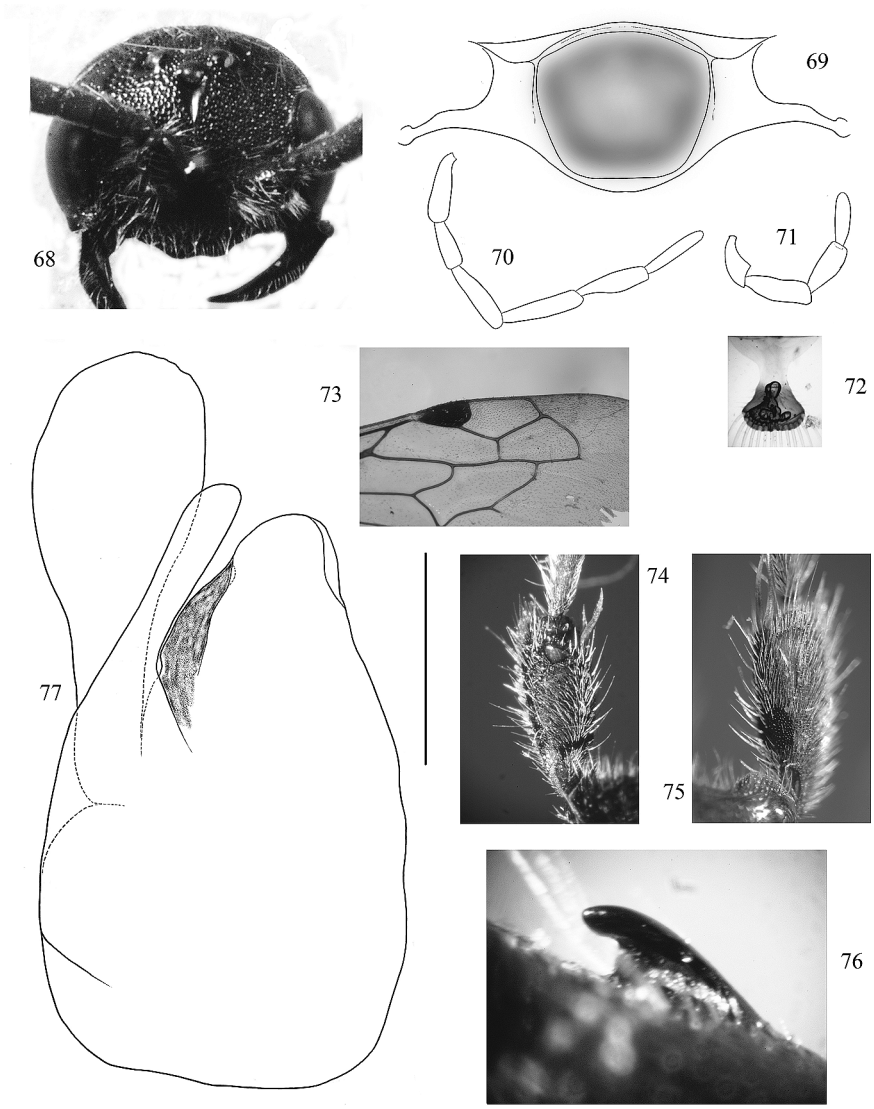
Figs 50-59. *Pseudotiphia beckeri* ♀ (Paralectotypus) – (**50**) head, frontal aspect; (**51**) **Pam**; (**52**) labrum, frontal aspect; (**53**) pronotum, dorsal aspect. *Pseudotiphia beckeri* ♂ (Lectotypus) (**54**) head, frontal aspect; (**55**) propodeum, dorsal aspect; (**56**) fore wing; (**57**) basal two metameri, dorsal aspect; (**58**) gonosquama, lateral aspect; (**59**) tip of aedeagus, lateral aspect.
(55, 56, 57: scale bar = 2 mm) (50, 53, 54: scale bar = 1 mm) (51, 52, 59: scale bar = 0.5mm)



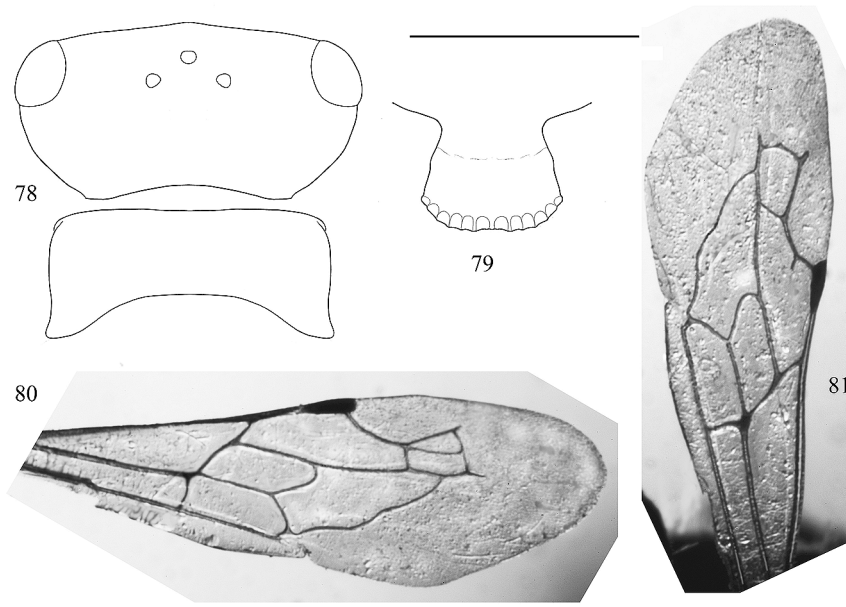
Figs 60-63. *Pseudotiphia lethierryi* ♀ (Lectotypus) – (**60**) palpi; (**61**) labrum, frontal aspect; (**62**) fore wing; (**63**) hind wing.
(62, 63: scale bar = 1 mm) (60, 61: scale bar = 0.5 mm)



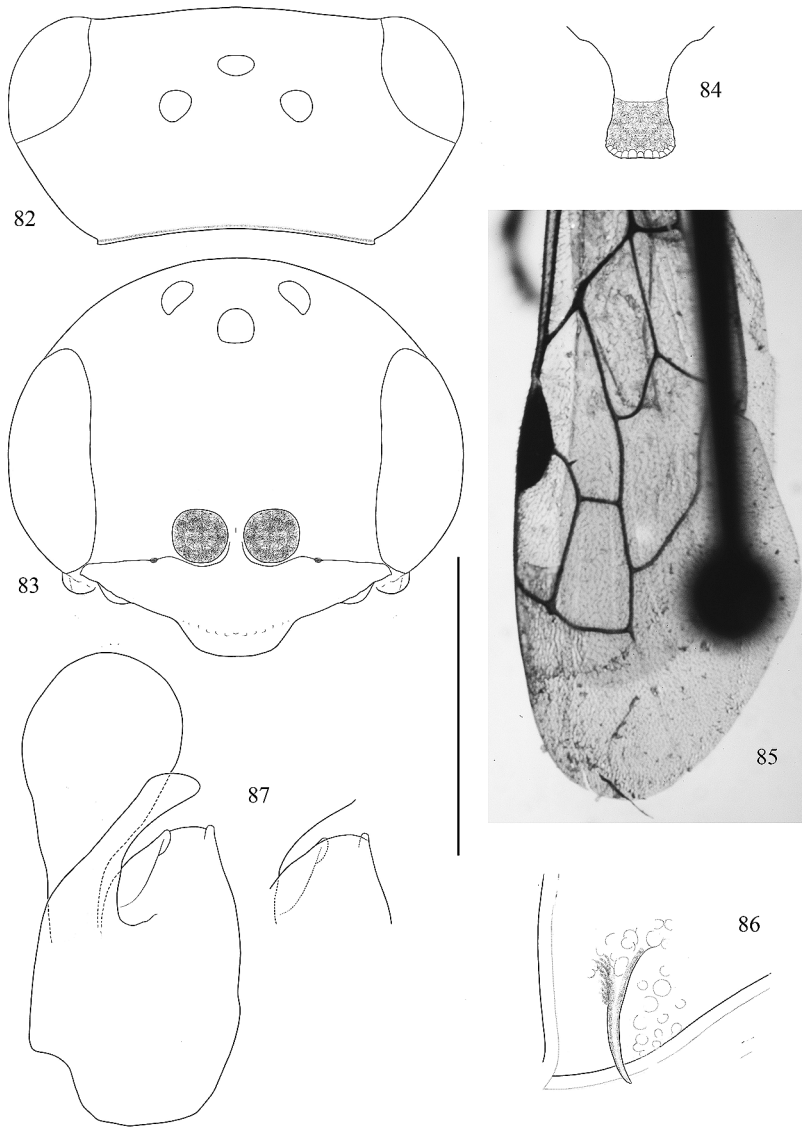
Figs 64-67. *Pseudotiphia putoni* ♀ (Lectotypus) – (**64**) palpi; (**65**) labrum, frontal aspect; (**66**) fore wing; (**67**) hind wing.
(64, 65: scale bar = 0,5 mm) (66,67: scale bar 1 mm)



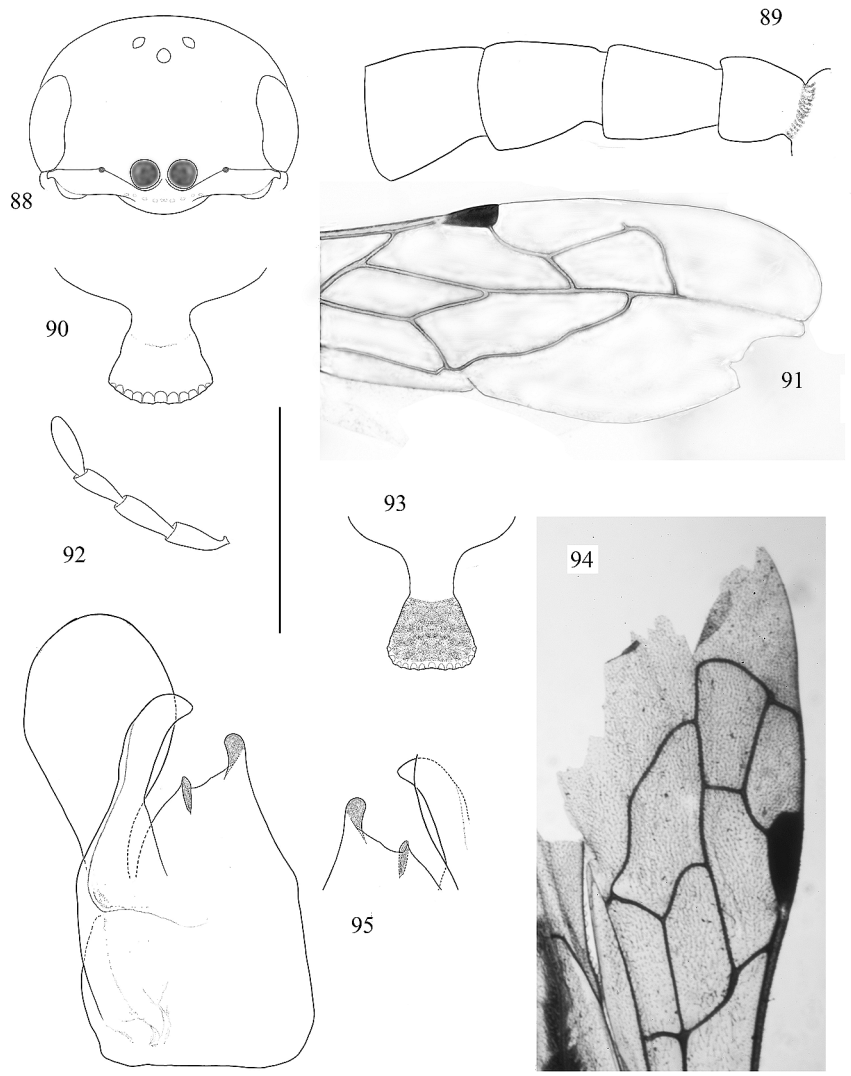
Figs 68-77. *Pseudotiphia putoni* ♂ – (**68**) head, frontal aspect; head, frontal aspect; (**69**) **FoO**, ventral aspect; (**70**) **Pam**; (**71**) Pal; (**72**) labrum, frontal aspect; (**73**) fore wing; (**74**) mid tibia, inner (posterior) aspect; (**75**) hind tibia, inner (posterior) aspect; (**76**) tuberculum on 5th sternum, lateral aspect; (**77**) gonosquama, inner lateral aspect.
(68, 73, 74, 75: scale bar = 2 mm) (69: scale bar = 1 mm) (70, 71, 72, 76, 77: scale bar = 0.5 mm)



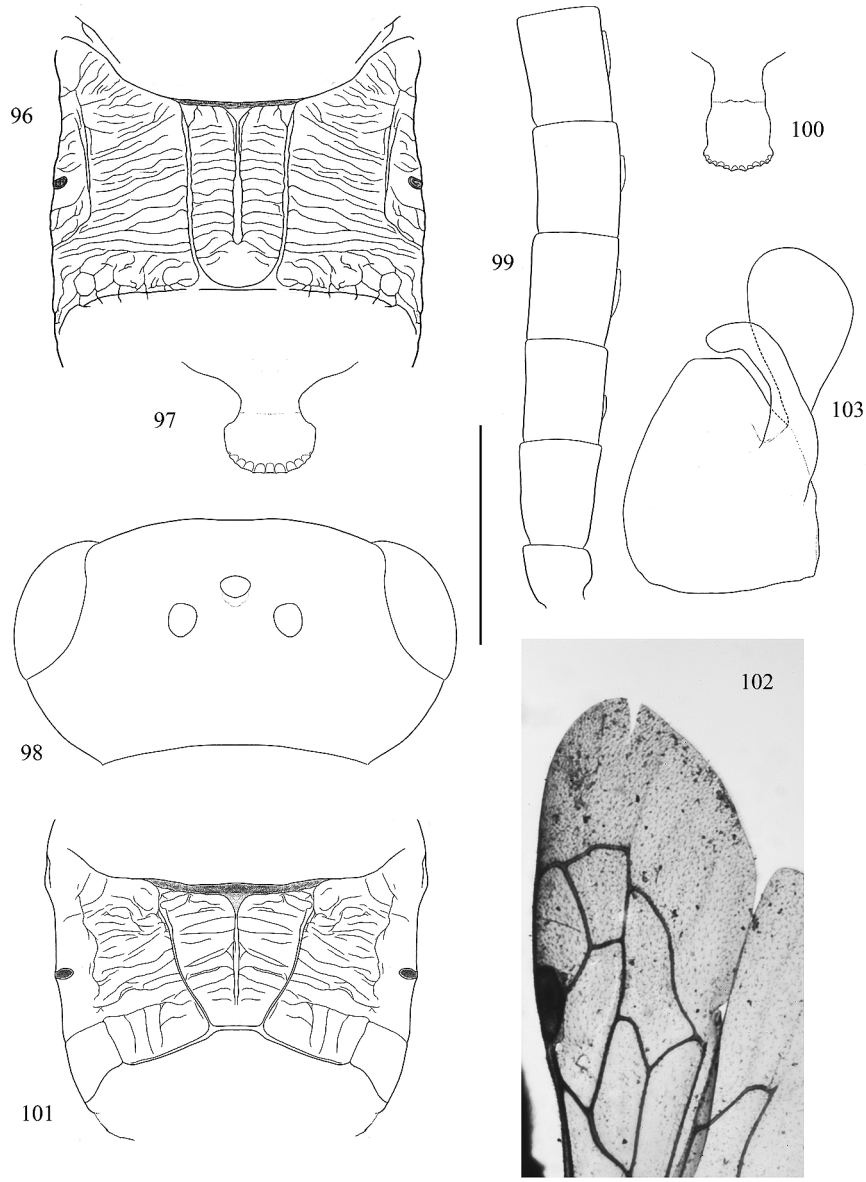
Figs 78-81. *Pseudotiphia antigae* ♀ (Lectotypus) – (**78**) head and pronotum, dorsal aspect; (**79**) labrum, frontal aspect; (**80**) right fore wing; (**81**) left fore wing.
(78, 80, 81: scale bar = 2 mm) (79: scale bar = 0.5 mm)



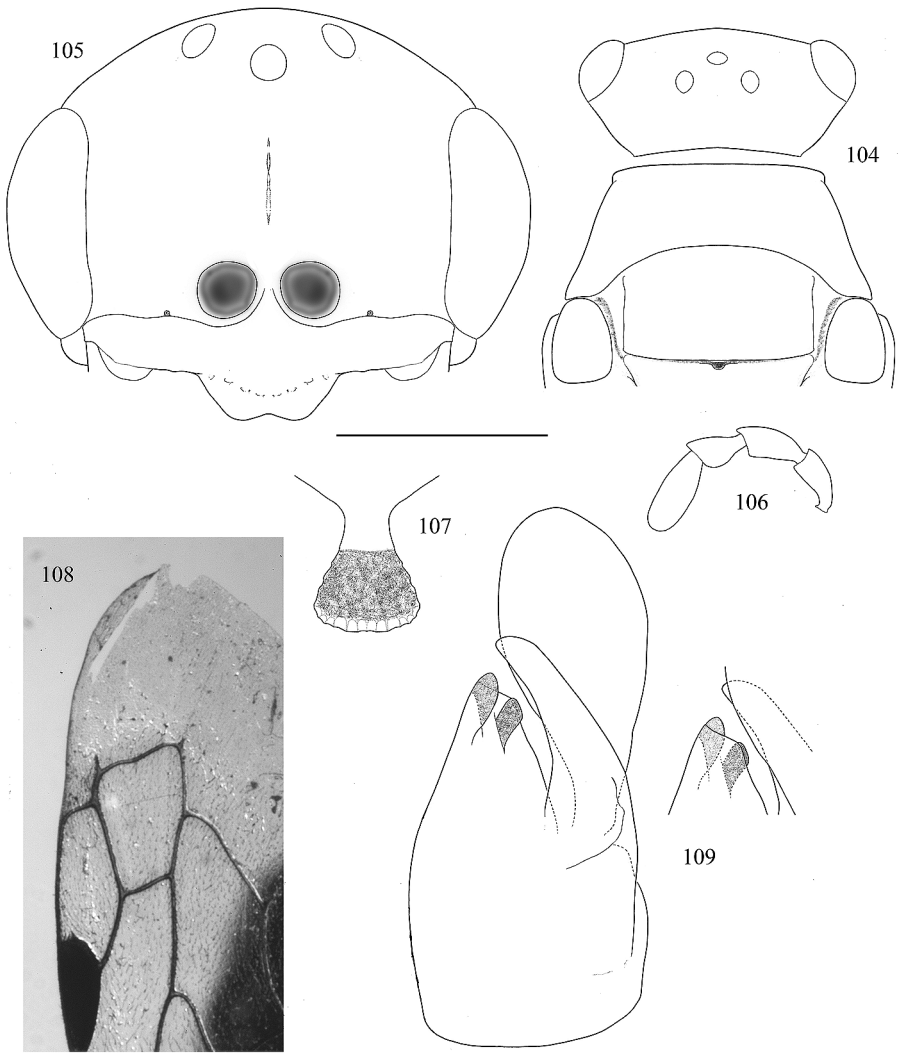
Figs 82-87. *Pseudotiphia antigae* ♂ – (**82**) head, dorsal aspect; (**83**) head, frontal aspect; (**84**) labrum, frontal aspect; (**85**) fore wing; (**86**) lateral 5th sternum, ventral aspect; (**87**) gonosquama, inner lateral aspect with particular of outer aspect.
(85: scale bar = 2 mm) (82, 83: scale bar = 1 mm) (86, 87: scale bar = 0.5 mm)



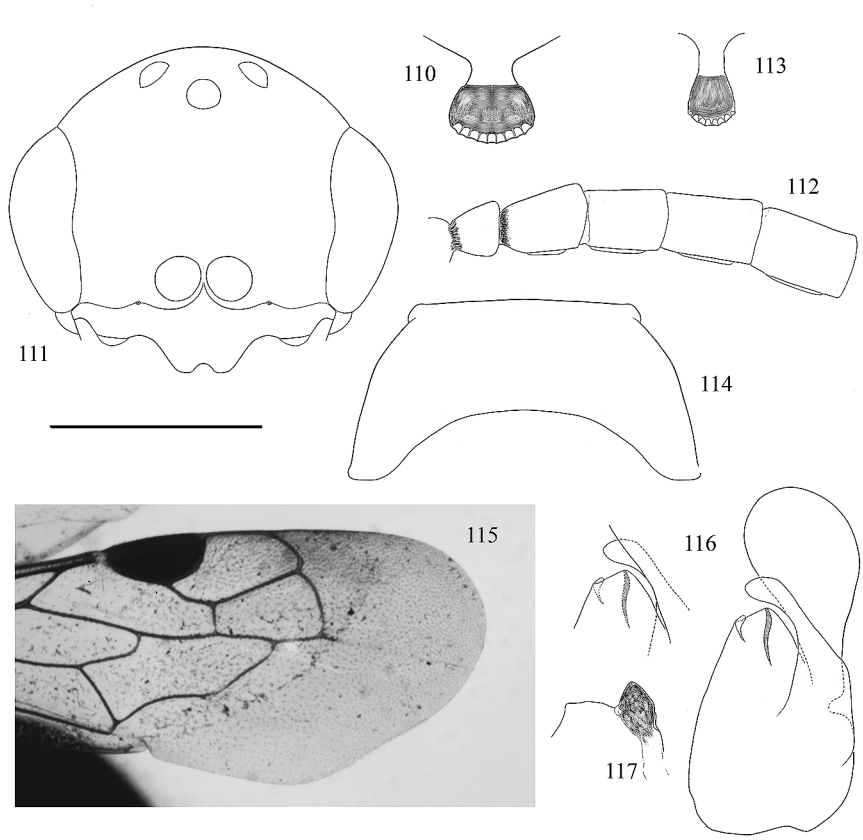
Figs 88-95. *Pseudotiphia longicornis* ♀ (Lectotypus) – (**88**) head, frontal aspect; (**89**) basal flagellomeri; (**90**) labrum, frontal aspect; (**91**) fore wing. *Pseudotiphia longicornis* ♂ – (**92**) **Pal**; (**93**) labrum, frontala spect; (**94**) fore wing; (**95**) gonosquama, inner lateral aspect with particular of outer aspect.
(88, 91, 94: scale bar = 2 mm) (89, 90, 92, 93, 95: scale bar = 0.5 mm)



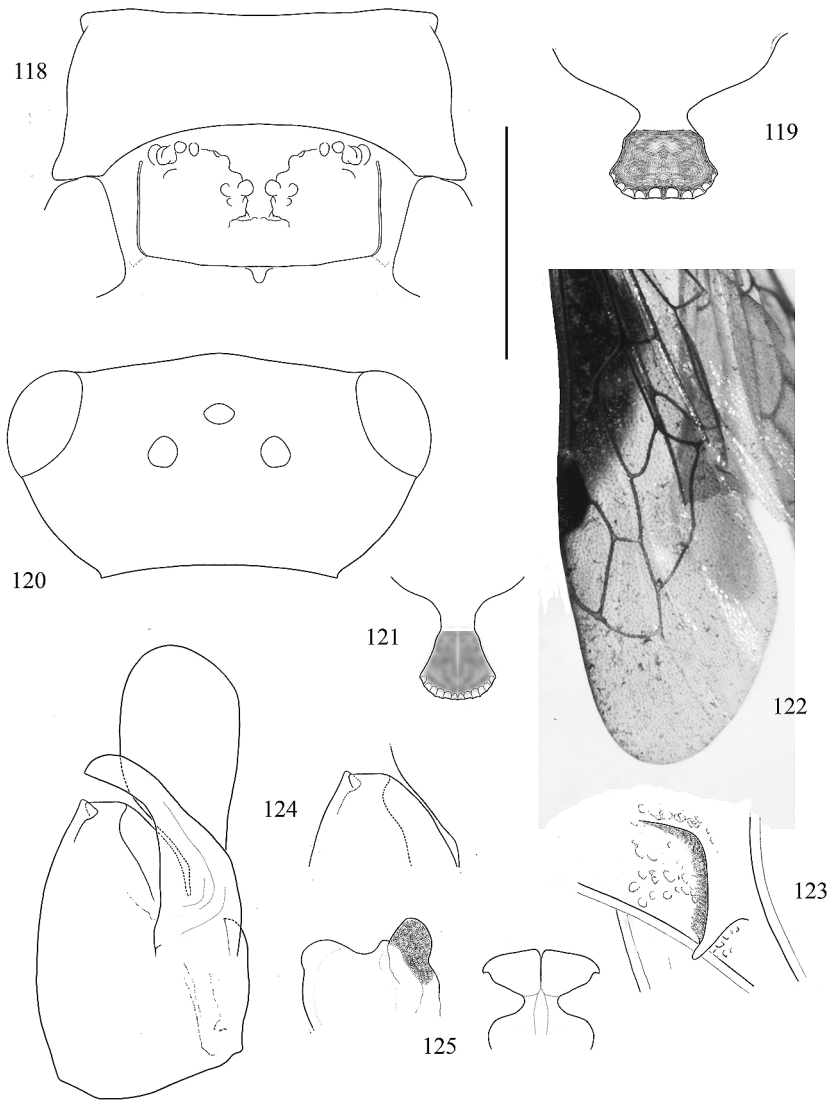
Figs 96-103. *Pseudotiphia caspica* ♀ (Holotypus) – (**96**) propodeum, dorsal aspect; (**97**) labrum, frontal aspect. *Pseudotiphia caspica* ♂ (Paratypus) – (**98**) head, dorsal aspect; (**99**) basal flagellomeri; (**100**) labrum, frontal aspect; (**101**) propodeum, dorsal aspect; (**102**) fore wing; (**103**) gonosquama, inner lateral aspect.
(96, 98, 101, 102: scale bar = 1 mm) (97, 99, 100, 103: scale bar = 0.5 mm)



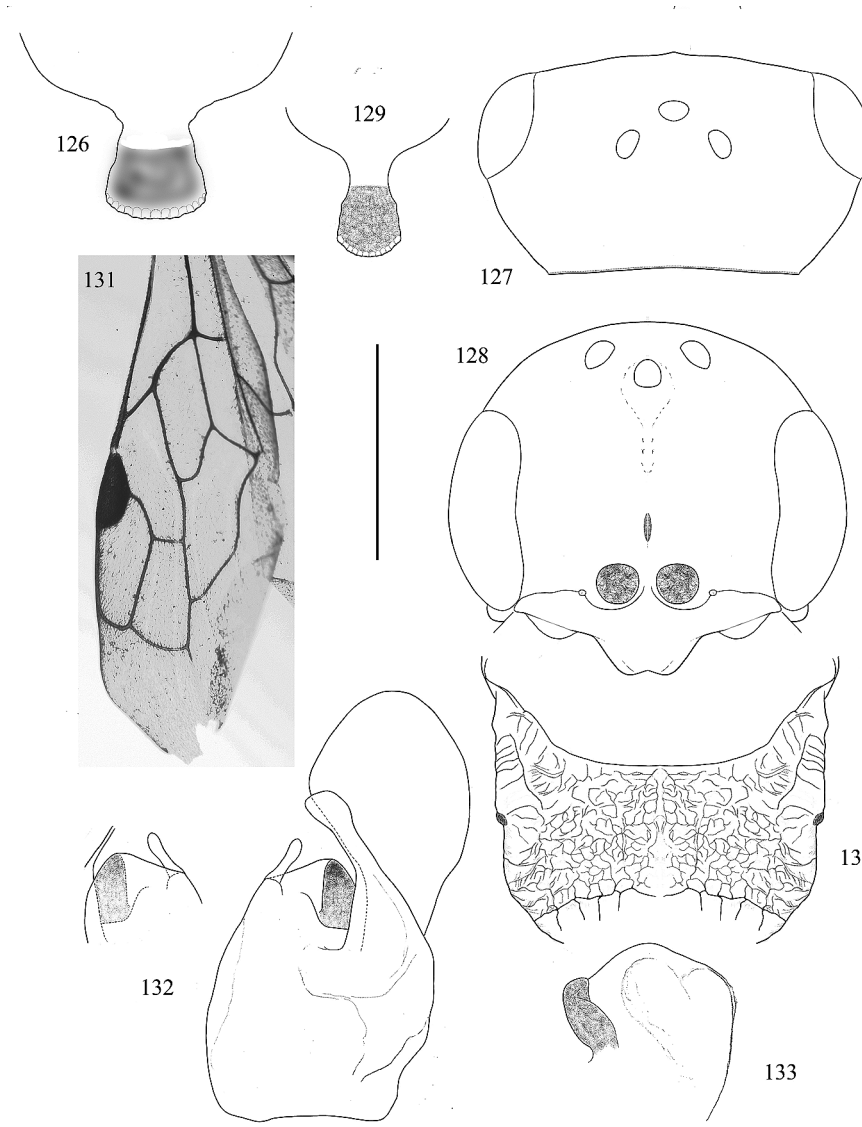
Figs 104-109. *Pseudotiphia thoracica* ♂ (Holotypus) – (**104**) head and fore half of mesosoma, dorsal aspect; (**105**) head, frontal aspect; (**106**) **Pal**; (**107**) labrum, frontal aspect; (**108**) fore wing; (**109**) gonosquama, inner lateral aspect with particular of outer aspect.
104, 108: scale bar = 2 mm) (105: scale bar = 1 mm) (106, 107, 109: scale bar = 0.5 mm)



Figs 110-117. *Pseudotiphia lampra* ♀ (Paratypus) – (**110**) labrum, frontal aspect. *Pseudotiphia lampra* ♂ (Holotypus) – (**111**) head, frontal aspect; (**112**) basal flagellomeri; (**113**) labrum, frontal aspect; (**114**) pronotum, dorsal aspect; (**115**) for wing; (**116**) gonosquama, inner lateral aspect with particular of outer aspect.; (**117**) aedeagus tip, lateral aspect.
(115: scale bar = 2 mm) (111, 114: scale bar = 1 mm) (110, 112, 113, 116, 117: scale bar = 0.5 mm)



Figs 118-125. *Pseudotiphia punica* ♀ (Paratypus) – (**118**) fore half of mesosoma, dorsal aspect; (**119**) labrum, frontal aspect. *Pseudotiphia punica* ♂ (Holotypus) – (**120**) head, dorsal aspect; (**121**) labrum, frontal aspect; (**122**) fore wing; (**123**) 5th sternum, ventral aspect; (**124**) gonosquama, inner lateral aspect with particular of outer aspect.; (**125**) aedeagus tip, lateral and dorsal aspect.
(122: scale bar = 2 mm) (118, 120: scale bar = 1 mm) (119, 121, 123, 124, 125: scale bar = 0.5 mm)



Figs 126-133. *Pseudotiphia gonodactyla* ♀ (Paratypus) – (**126**) labrum, frontal aspect. *Pseudotiphia gonodactyla* ♂ (Holotypus) – (**127**) head, dorsal aspect; (**128**) head, frontal aspect; (**129**) labrum, frontal aspect; (**130**) propodeum, dorsal aspect; (**131**) fore wing; (**132**) gonosquama, inner lateral aspect with particular of outer aspect.; (**133**) aedeagus tip, lateral aspect.
(131: scale bar = 2 mm) (127, 128, 130: scale bar = 1 mm) (126, 129, 132, 133: scale bar = 0.5 mm)