KEY TO GENERA OF SCELIONIDAE OF THE HOLARCTIC REGION, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES (HYMENOPTERA: PROCTOTRUPOIDEA)

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Abstract

A key to the genera of Scelionidae of the Holarctic region is given. Sixty-seven genera are recognized in three subfamilies, *viz.* Telenominae, Teleasinae, and Scelioninae. Seven new genera and six new species are described from America north of Mexico, *viz. Aradoctonus armatus* n. gen. and n. sp. (Telenominae, Telenomini), *Embioctonus setiger* n. gen. and n. sp. (Scelioninae, Embidobiini), *Epigryon audax* n. gen. and n. sp. (Scelioninae, Gryonini), *Exon californicum* n. gen. and n. sp. (Scelioninae, Gryonini), *Harringtonia* n. gen. for *Baryconus cinctus* Harrington (Scelioninae, Psilanteridini), *Mecix texana* n. gen. and n. sp. (Scelioninae, Psilanteridini), and *Spiniteleia campbelli* n. gen. and n. sp. (Scelioninae, Psilanteridini). The Nearctic and Palearctic faunas of Scelionidae are compared, analyzed, and tabulated on generic level. Twenty-eight plates with 207 scanning electron micrographs and line drawings are included.

Introduction

The aim of this publication is to provide illustrated keys to genera of scelionid wasps based on the latest concepts in taxonomy, nomenclature, and synonymy. It has been necessitated by two events, *viz.* the recent increase of interest in taxonomy of proctotrupoid wasps on one side and the lack of modern keys on the other. It has therefore been my intention for some time to provide students of Proctotrupoidea with such keys, and a key to genera of the family Scelionidae comes as the first part of this series. The scelionid fauna of the Nearctic and Palearctic regions form a unit that is reasonably cohesive in both structure and evolution. It is also within these two regions that most of the work in scelionid taxonomy has been done and where most of the current interest is being generated. Thus the format and extent of this publication deals with the Holarctic fauna. It is hoped that this paper will further stimulate research into this fascinating group of parasitic Hymenoptera.

There have been few keys available to deal with scelionid wasps on the generic level. In North America the only key is now 87 years old (Ashmead 1893). In Europe the few keys span 1926 to 1978. Kieffer's (1926) posthumous world key in German is still used by experts and beginners alike. Maneval's (Maneval in Berland 1940) French keys refer to the French fauna only. Similarly, Masner's (1957) Czech key covers only the European genera, Hellén's (1971) German key deals with the fauna of Finland only, and Kozlov's (1971, 1978) Russian keys cover only the territory of the USSR. Masner's (1976) world key to genera in English suffers in that it is not illustrated. To remedy the above shortcomings the present paper stresses illustrations and compares for the first time the faunal complexes of the Nearctic and Palearctic Scelionidae at the generic level.

The theoretical ground work of the present paper includes the following publications. The catalog of Hymenoptera of North America north of Mexico (Muesebeck *et al.* 1951) and its two supplements (Krombein *et al.* 1958; Krombein and Burks 1967) were the basis for the Nearctic fauna. Regrettably, the better studied Palearctic

fauna has not been cataloged to match the above publications. However, I have tried to consult all relevant works available. The type-species of the genera are based on Muesebeck and Walkley (1956), and the higher classification, generic taxonomy, and synonymy on Masner (1976). A few generic names of Palearctic Scelionidae were omitted as they are being synonymized in papers now in press. Two major publications on the types of Scelionidae (Masner 1965; Masner and Muesebeck 1968) as well as a number of shorter papers on this subject were consulted to determine the extent of genera treated in this key. The morphological terms used in this key are those used by Masner (1976) and include several terms in pleural morphology proposed recently (Masner 1979).

Distribution and Relationships

The geographic extent of this key covers the entire Holarctic region, i.e., America north of Mexico (including the Rocky Mountains down to the isthmus of Tehuantepec), Europe, Africa north of the Sahara, and the Asian part of the Palearctic region including Japan north of the division between deciduous and subtropical forests. All genera having at least one species in the area outlined above were included in the key (published and unpublished data). Included also were several genera the occurrence of which in the Holarctic region is presumed as highly probable; these are marked by a question mark ("?") at the end of the respective couplet.

The Palearctic and Nearctic regions show a considerable degree of interrelationship. Out of a total 67 genera, 32 are shared by both regions. Of these 32 shared genera, 22 are "larger genera", the latter interpreted as taxa with at least 12 species described or known to me in the world fauna. This means that the two regions differ primarily in the smaller or monotypic genera. Similarly, the number of genera endemic to either the Nearctic or Palearctic region is low, 7 and 5 respectively, all of which are small or monotypic. The representation of predominantly tropical genera is markedly higher in the Nearctic region than in the Palearctic region. All six larger genera with species in North America, but absent in Europe, have numerous species in the tropics, the Neotropical region in particular (Table 1). The differences in natural barriers between the tropics and adjacent parts of the northern hemisphere in America and Eurasia are regarded as having a key role in evolution.

Structure of Keys (Guide)

The present key is based largely on the world key by Masner (1976). However, to facilitate identification by beginners the genera are sometimes keyed using simple characters in which the respective taxa may overlap in the tropics. Therefore, the use of this key for extra-holarctic scelionid fauna is not recommended.

Abbreviations and numbers at the end of each terminal generic couplet provide additional information. Symbols H, Na, or P indicate the distribution of the genus as Holarctic, Nearctic, or Palearctic respectively; separated from these by a colon are numbers in bold face referring to available keys to species as listed in the References. In parentheses are references to illustrations of the genus in the present paper; those italicized are full dorsal or lateral views showing the general habitus of the genus. Morphological terms used throughout the key and the plates are discussed in the Glossary and List of Abbreviations respectively.

Table 1. Cumulative chart of 67 genera of Scelionidae of the Holarctic Region

For definition of the term "larger genus" (marked with *) see "Distribution and Relationships"

ABBREVIATIONS in parentheses after generic names indicate remaining world distribution: A = Australian, E = Ethiopian, End = Endemic, Nt = Neotropical, O = Oriental, rH = restricted Holarctic, Ww = Worldwide

In Nearctic:	Shared by Nearctic and Palearctic:	In Palearctic:
	Subfamily Telenominae: 9 genera (*2)	
1 (*O, 1 End)	5 (*2, 1 rH)	3 (*O, 1 End)
Aradoctonus (End)	Dissolcus (rH)	Archiphanurus (A, E, O)
	Eumicrosoma (Ww)	Phlebiaporus (End)
	Psix (E, O)	Platytelenomus (A, E)
	*Telenomus (Ww)	
	*Trissolcus (Ww)	
	Subfamily Teleasinae: 6 genera (*2)	
1 (*O, 1 End)	2 (*2, O rH)	3 (*O, 2 End)
Trisacantha (End)	*Teleas (E, Nt, O)	Ceratoteleas (End)
	*Trimorus (Ww)	Proteleas (End)
		Xenomerus (A, E, O)
	Subfamily Scelioninae: 52 genera (*25)	
16 (*6, 5 End)	25 (*18, 3 rH)	11 (*1, 2 End)
*Cremastobaeus (A, E, Nt, O)	*Anteris (Nt)	Amblyscelio (E)
Embioctonus (Nt)	*Anteromorpha (Ww)	*Apegus (A, O)
Epigryon (End)	Aradophagus (E, O)	Breviscelio (E)
Harringtonia (End)	*Baeus (Ww)	Encyrtoscelio (A, E, O)
*Leptoteleia (E, Nt, O)	*Baryconus (Ww)	Eremioscelio (E)
Mecix (End)	*Ceratobaeus (Ww)	Hungarogryon (End)
*Oethecoctonus (A, E, Nt, O)	*Calliscelio (Ww)	Ladora (E)
*Opisthacantha (A, E, Nt, O)	*Calotelea (Ww)	Mantibaria (A, E, O)
Palaeogryon (Nt)	Doddiella (Ww)	Microthoron (A, E, O)
*Paridris (A, E, Nt, O)	Duta (Ww)	Palpoteleia (A, E, O)
Pseudanteris (End)	*Embidobia (Ww)	Plesiobaeus (End)
*Sceliomorpha (Nt)	Exon (rH)	
Spiniteleia (End)	*Gryon (Ww)	
Synoditella (Nt)	Holoteleia (rH)	
Thoronella (Nt)	*Idris (Ww)	
Thoronidea (Nt)	*Macroteleia (Ww)	
	*Mirotelenomus (A, E, Nt)	
	*Odontacolus (Ww)	
	*Probaryconus (Ww)	
	*Psilanteris (Ww)	
	*Scelio (Ww)	
	*Sparasion (E, O)	
	Thoron (rH)	
	Tiphodytes (A, E, O)	
	*Triteleia (Ww)	

List of Abbreviations

A1, A2, . . . — antennal segments
A1 — scape
A2 — pedicel
A3 — first flagellomere
ao — anterior ocellus
bv — basal vein
ch — cheek
ck — central keel
cl — clypeus
cv — clava
cx1 — fore coxa
cx2 — middle coxa
cx3 — hind coxa
fd — frontal depression
fg — frenal gutter
fh — frenal hooks
ge — gena
io — inner orbit
is — interocellar space
la — labrum
lo — lower orbit
LOL — Lateral Ocellar Line
lt1, lt2, . . . — laterotergites
mc — mesopleural carina
md — mandible
mg — marginal vein
mk — marginal keels
mn — metanotum
mp1 — mesopleuron
mp2 — metapleuron
mr — malar region
ms — mesoscutum
no — notauli
nt — netrion
oc — occipital carina
OOL — Ocular Ocellar Line
op — occiput
pm — postmarginal vein
pn — pronotum
po — posterior ocelli
POL — Posterior Ocellar Line
pr — propodeum
ra — radicle
S1, S2, . . . — sternites
sc — scutellum
sg — submarginal groove
sk — skaphion
sm — submarginal vein
sn — sternaulus
sp1 — spiracle 1
sp2 — spiracle 2
ss — subocular suture
st — stigmal vein
T1, T2, . . . — tergites
te — temple
tg — tegula
tr — toruli
vx — vertex

Glossary

Antennal formula. Total number of segments in female (first number) and male (second number) antenna, e.g. 11-12 is the most usual antennal formula in the subfamily Telenominae

Antennal segments (Fig. 7, A1, A2, . . .). All segments of antenna exclusive of radicle (ra), numbered from scape (A1) to apical segment

Anterior ocellus (Figs. 1, 2, ao). Middle ocellus in ocellar triangle. Syn.: median ocellus

Basal vein (Figs. 197-199, bv). Short, usually weakly sclerotized vein almost perpendicular to submarginal vein (sm) in fore wing. Syn.: basalis, media, M

Central keel (Fig. 2, ck). Vertical keel on frons extending partly between toruli (tr) and anterior ocellus (ao)

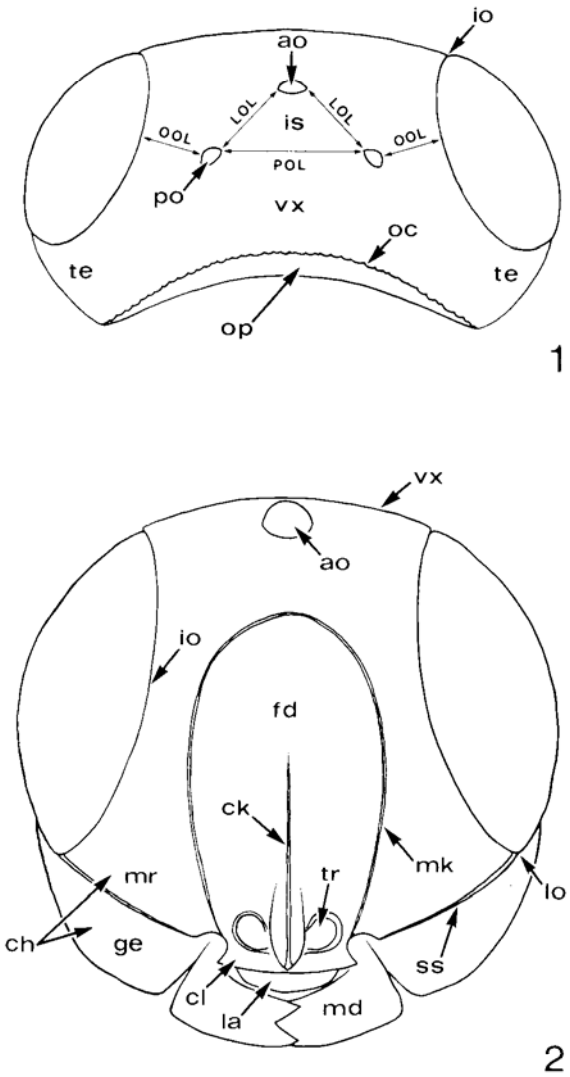
Cheek (Fig. 2, ch). Arbitrary region on head comprising malar region (mr) and gena (ge) between lower orbit of eye (lo) and base of mandible (md), usually divided by subocular suture (ss)

Clava (Fig. 7, cv). Several incrassate distal flagellomeres in female antenna, usually A7-A12, i.e. clava 6-segmented; clava abrupt if first segment much larger than preceding flagellomeres (Fig. 180), clava compact if no sutures visible between segments (Fig. 181), clava subcompact if traces of sutures present between segments (Fig. 184)

Clypeus (Fig. 2, cl). Region between toruli (tr) and labrum (la), usually with prominent anterolateral corners

Flagellomers (Fig. 7). Antennal segments A3 et seq. in either sex

Frenal gutter (Figs. 196-201, fg). Flexed glabrous part of posterior margin of fore wing for coupling with frenal hooks (fh) of hind wing



FIGS. 1-2. Head of generalized scelionid. 1, dorsal view; 2, frontal view.

Frenal hooks (Figs. 188-190, fh). Hooks on anterior margin of hind wing, at apex of submarginal vein if latter complete, used for coupling with frenal gutter (fg) of fore wing. Syn.: hamuli

Frons. Region of head between inner orbits of eyes (io), toruli (tr), and anterior ocellus (ao)

Frontal depression (Fig. 2, fd). Declivity on frons between toruli (tr) and anterior ocellus (ao)

Frontal ledge (Figs. 88-91, fl). Transverse shelf-like projection of frons between inner orbits of eyes (io)

Gena (Fig. 2, ge). Part of cheek (ch) ventral to subocular suture (ss), between lower orbit of eye (lo) and base of mandible (md)

Inner orbit (Figs. 1, 2, io). Inner median part of eye margin, approximately between level of posterior ocellus (po) and lower orbit (lo)

Interocellar space (Fig. 1, is). Region within ocellar triangle, i.e. encompassed by POL and LOL lines

Labrum (Fig. 2, la). Transverse sclerite immediatly ventrad of clypeus (cl)

Lateral Ocellar Line (Fig. 1, LOL). Shortest distance between inner margins of anterior (ao) and posterior (po) ocelli

Laterotergite (Fig. 87, lt). Flexed lateral part of tergite (lt1, lt2, lt3, . . .)

Lower orbit (Fig. 2, lo). Lowermost arc of eye orbit

Malar region (Fig. 2, mr). Part of cheek (ch) dorsal to subocular suture (ss), between lower orbit of eye (lo) and base of mandible (md)

Marginal cilia. Fringe of hairs around periphery of fore and hind wings

Marginal keels (Fig. 2, mk). Paramedial keels on frons, partly or completely enclosing frontal depression (fd)

Marginal vein (Fig. 6, mg). Vein along anterior margin of fore wing; measured from junction with wing margin (Fig. 6, a) to innermost point of angle formed by stigmal (st) and postmarginal (pm) veins (Fig. 6, b). Syn.: marginalis

Mesopleural carina (Fig. 4, mc). Diagonal carina on mesopleuron dorsad of middle coxa (cx2) and directed towards pronotal spiracle (sp1)

Mesopleuron (Fig. 4, mp1). Lateral region of mesothorax

Mesoscutum (Figs. 3, 4, ms). Anterior region of mesonotum between pronotum (pn) and scutellum (sc)

Mesosoma (Fig. 3). Thorax and propodeum combined

Metanotum (Figs. 3, 4, mn). Dorsal sclerite of metathorax, often armed or modified medially

Metapleuron (Fig. 4, mp2). Lateral region of metathorax

Metasoma (Fig. 5). Abdomen posterior to propodeum

Netrion (Fig. 4, nt). Region on side of pronotum between pronotal spiracle (sp1) and fore coxa (cx1) adjacent to suture connecting tegula (tg) and fore coxa (cx1)

Notauli (Figs. 3, 4, no). Paramedial longitudinal furrows on mesoscutum (ms), often incorrectly termed parapsidal furrows by authors; notauli percurrent if complete between pronotum (pn) and scutellum (sc) (Fig. 3), notauli abbreviate if not complete (Fig. 25). Syn.: notaulices

Occipital carina (Fig. 1, oc). Transverse carina on head dividing vertex (vx) from occiput (op)

Occiput (Fig. 1, op). Region of head posterior to occipital carina (oc); occiput not well delimited if carina absent

Ocular Ocellar Line (Fig. 1, OOL). Shortest distance between outer margin of posterior ocellus (po) and inner orbit of eye (io)

Palpal formula. Total number of maxillary (first number) and labial (second number) palpal segments of either sex

Pedicel (Fig. 7, A2). Second antennal segment

Posterior ocelli (Fig. 1, po). Paired outer ocelli of the ocellar triangle. Syn.: lateral ocelli

Posterior Ocellar Line (Fig. 1, POL). Shortest distance between inner margins of posterior ocelli (po)

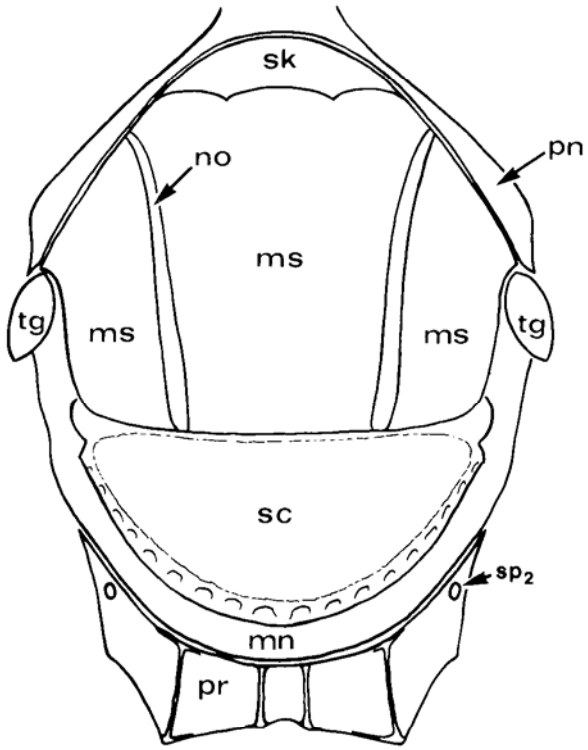
Postmarginal vein (Fig. 6, pm). Apical vein along anterior margin of fore wing; measured from apex (Fig. 6, c) to innermost point of angle formed with stigmal vein (st) (Fig. 6, b). Syn.: postmarginalis

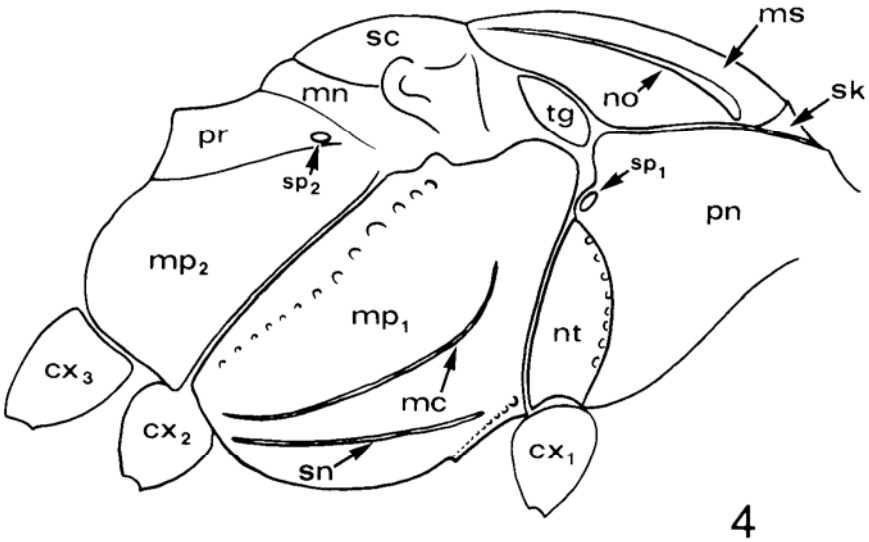
Pronotum (Figs. 3, 4, pn). Dorsal sclerite of prothorax including sides reaching to fore coxa (cx1)

Propodeum (Figs. 3, 4, pr). Segment of mesosoma posterior to metanotum (mn); originally first abdominal tergite which has fused with thorax. Syn.: "Mediansegment" of Kieffer 1926; metanotum of Ashmead 1893

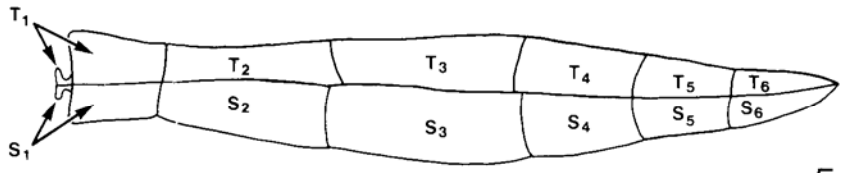
Radicle (Fig. 7, ra). Connective joint between antenna and head; radicle not included in antennal formula. Syn.: radicula

Scape (Fig. 7, A1). First antennal segment





FIGS. 3-4. Mesosoma of generalized scelionid. 3, dorsal view; 4. lateral view.



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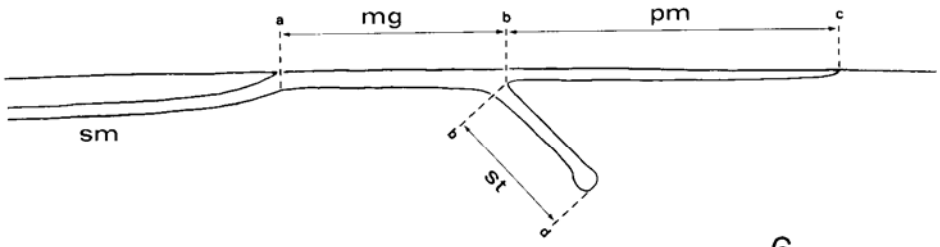

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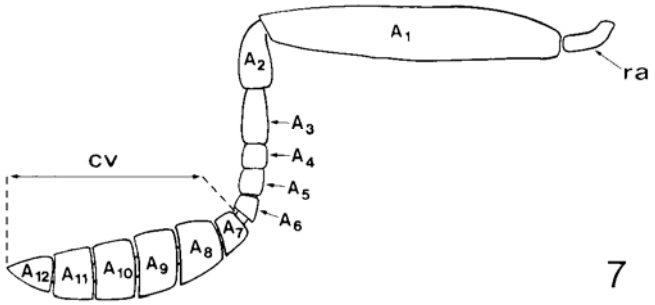

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FIGS. 5-7. 5, metasoma of generalized scelionid, lateral view; 6, venation of fore wing of generalized scelionid; 7, female antenna of generalized scelionid.

Scutellum (Figs. 3, 4, sc). Posterior region of mesonotum between mesoscutum (ms) and metanotum (mn)

Skaphion (Figs. 3, 4, sk). Anteromedian region of mesoscutum (ms) margined by transverse keel posteriorly, usually smooth, cup-like

Spiracle (Figs. 3, 4, sp1 & sp2). Pronotal (sp1) and propodeal (sp2) spiracular openings

Sternaulus (Fig. 4, sn). Horizontal keel on lower mesopleuron, approximately between fore (cx1) and middle (cx2) coxae

Sternites (Fig. 5, S1, S2, . . .). Ventral sclerites of metasoma

Stigmal vein (Fig. 6, st). Oblique vein between marginal (mg) and postmarginal (pm) veins of fore wing; measured from innermost angle formed with postmarginal vein (pm) (Fig. 6, b) to its apex (Fig. 6, d). Syn.: stigmalis

Submarginal groove (Fig. 86, sg). Furrow on lateral ventral side of metasoma formed by suture between sternites and laterosternites and corresponding inner edge of laterotergites (lt)

Submarginal vein (Fig. 6, sm). Vein of fore wing preceding marginal vein (mg); measured from tegula (tg) to junction with anterior margin of wing (Fig. 6, a). Syn.: "Subcostalis" of Kieffer 1926

Subocular suture (Fig. 2, ss). Furrow on cheek (ch) between lower orbit of eye (lo) and mandibular base (md). Syn.: malar sulcus

Tarsal formula. Total number of tarsal segment of either sex; fore leg (first number), middle leg (second number), hind leg (third number); e.g. 5-5-5

Tarsomere. Any one of the five segments of the tarsus

Tegula (Figs. 3, 4, tg). Basal sclerite of the fore wing

Temple (Fig. 1, te). Region of head posterior to eye, between dorsal and ventral limits of eye in lateral view

Tergites (Fig. 5, T1, T2 . . .). Dorsal sclerites of metasoma

Tibial spur formula. Total number of spurs on fore (first number), middle (second number), and hind (third number) tibiae of either sex, e.g. 1, 1, 1 or 1, 2, 2

Toruli (Fig. 2, tr). Paired circular openings above clypeus (cl) housing proximal end of radicles (ra). Syn.: antennal sockets

Vertex (Figs. 1, 2, vx). Dorsal region of head between posterior ocelli (po) and occipital carina (oc), or, if latter not developed then only extreme dorsal part of head

Key to Subfamilies of Scelionidae

(1) T2 distinctly longest tergite, at least as long as following tergites combined, several times longer than T3 (Figs. 8-14), *and,* laterotergites wide, loosely touching sternites, with submarginal groove absent (Figs. 30, 31); antennal formula 11-12, very rarely 10-12 ..... *Telenominae,* p. 9

- T2 usually not distinctly longest tergite (Figs. 49-62) or, if longer than T3 (Figs. 41-44) then laterotergites very narrow, tightly appressed to sternites, and submarginal groove present (cf. Fig. 86); antennal formula different from above, usually 12-12, in Embidobiini 11-12 (but then T2 not as in Telenominae), in Baeini 7-11 (12), etc. 2

(2) LOL at most equal to OOL, usually much shorter (Figs. 32, 33), *and,* T3 always longest tergite; fore wings with marginal vein several times longer than stigmal vein, with postmarginal vein absent or rudimentary ..... *Teleasinae,* p. 11

- LOL usually longer than OOL (Figs. 88, 90, 95, 99, 100, 102) or, if equal to or shorter (Figs. 96-98, 101), then either T3 not the longest tergite or fore wing with marginal vein shorter than stigmal vein, and postmarginal vein long, or wings rarely veinless ..... *Scelioninae,* p. 11

Key to Genera of Subfamily Telenominae

1 Metanotum medially bispinose, spines pointed and upcurved (Figs. 168, 169); posterolateral corners of propodeum prominent, blade-like, pointed apically (Fig. 168); fore wing with extremely long marginal cilia (Fig. 172); male antennae with A6-A9 strongly transverse (Fig. 170); Na (Figs. *168*-172 .... *Aradoctonus* n. gen.

- Metanotum medially unarmed (Fig. 25), at most with slight bulge (Fig. 26); propodeum unarmed, with posterolateral corners not prominent, obtuse; fore wing rarely with long marginal cilia; male antennae with all segments elongate or at least peniciliate 2

2(1) Marginal vein distinctly longer (2-4X) than stigmal vein (Fig. 201); postmarginal vein absent; metasoma usually xanthic 3

- Marginal vein usually short, if elongate then distinctly shorter than stigmal vein; postmarginal vein present, usually longer than stigmal vein; metasoma melanic, rarely with T1 lighter or metasoma reddish (1 species) 4

3(2) Body distinctly flattened dorsoventrally, at least twice as wide as high (Figs. 11, 12); fore wings narrow and strip-like, with longest marginal cilia as long as or longer than maximal width of wing (Fig. 201); marginal vein 3-4 times longer than stigmal vein, this short and strongly slanted; H: **31** (Figs. *11, 12,* 201) ..... *Eumicrosoma* Gahan

\- Body perfectly cylindrical, as high as wide (cf. Fig. 9); fore wings not attenuate, with longest marginal cilia not longer than 1/3 maximal width of wing; marginal vein only twice as long as stigmal vein, this almost perpendicular; P: **11** ..... *Phlebiaporus* Kozlov

4(2) Cheeks with longitudinal striae, keels or ridges (Figs. 18, 19); S2 entirely sculptured, striate, and punctured (Figs. 30, 31) 5

\- Cheeks never striate, with no keels or ridges (Figs. 20, 21); S2 with short striae basally or with no sculpture 6

5(4) Front and middle coxae almost contiguous, with gap between them as narrow as that between middle and hind coxae (Fig. 8); notauli absent; mandibles short, wide and flat, not distinctly tapering towards apices (Fig. 16); clypeus small and not protruding (Fig. 19); head strongly transverse, wider than mesosoma; metasoma with segment 1 melanic, always concolorous with following segments; H: **15** (Figs. *8, 13,* 16, 19, 31) ..... *Psix* Kozlov & Lê

\- Front and middle coxae not contiguous, distinctly separated by wide mesosternum, with gap between them much wider than that between middle and hind coxae (cf. Fig. 9); notauli present, usually abbreviate anteriorly (Fig. 15); mandibles longer, narrow, strongly tapering towards apices (Fig. 17); clypeus protruding (Figs. 17, 18); head only as wide as mesosoma; metasoma with segment 1 usually reddish brown or golden-yellow, always lighter than following segments; P: **14, 44** (Figs. 15, 17, 18, 30) ..... *Archiphanurus* Szabo

6(4) Frons between toruli and anterior ocellus predominantly or entirely sculptured (coriaceous, reticulate, transversely rugulose, or punctate) (Fig. 20); eyes under low magnification (up to 60X) usually appearing glabrous (Fig. 22); metasoma short and stout, T2 usually transverse, not distinctly attenuate anteriorly; notauli often present though abbreviate anteriorly, sometimes with short median carina in between (Fig. 24); mesopleural carina usually present (Fig. 27); body robust; H: **14** (Figs. 20, 22, 24, 27) ..... *Trissolcus* Ashmead

\- Frons between toruli and anterior ocellus predominantly or entirely smooth and shining (Fig. 21), rarely with narrow bands of microsculpture along inner orbits, in a few species with frons coriaceous and mat but with eyes apparently hairy under low magnification (60X) (cf. Fig. 23); metasoma more or less elongate, with T2 longer than wide and at least moderately attenuate anteriorly; notauli absent except in *Dissolcus;* mesopleural carina absent (Figs. 28, 29); body usually more gracile and slender 7

7(6) Notauli present though abbreviate anteriorly (Fig. 25); mesoscutum distinctly flattened; body elongate (Fig. 14); H: **10** (Figs. *10, 14,* 23, 25, 29) ..... *Dissolcus* Ashmead

\- Notauli absent 8

8(7) Body strongly flattened dorsoventrally, at least twice as wide as high, in lateral view with scutellum on same level as metanotum and propodeum (cf. Fig. 11); P: **13** ... *Platytelenomus* Dodd

\- Body more or less cylindrical, about as wide as high or only slightly wider, in lateral view with scutellum markedly higher than sloping metanotum and propodeum (Fig. 9); H: **10, 14** (Figs. *9,* 21, 26, 28) ..... *Telenomus* Haliday

Key to Genera of Subfamily Teleasinae

1 Middle tibia dorsally with dense spines (Fig. 38), these sometimes partly obscured by longer hairs, but visible at least near tibial apex (e.g. in *Trisacantha)* 2
- Middle tibia dorsally not spinose, with hairs only, or almost glabrous 5

2(1) Mesosoma with at least middle lobe of mesoscutum and most of scutellum smooth and highly lustrous, with few scattered punctures (Fig. 37); metanotum medially trispinose, with spines long, slender, and with median spine longest (Fig. 34); middle tibia dorsally with few spines obscured by longer hairs and with spines better visible near tibial apex; hind femur and basitarsus not incrassate; mandible with upper and lower teeth almost equal (Fig. 32); Na (Figs. 32, 34, 37) ..... *Trisacantha* Ashmead
- Mesosoma with at least middle lobe of mesoscutum and most of scutellum rugose or coriaceous; metanotum with armament various, or if trispinose then median spine shortest; middle tibia dorsally with distinct spines, not obscured by hairs (Fig. 38); hind femur and basitarsus often incrassate (Fig. 39); mandible with upper tooth considerably shorter than lower tooth (Fig. 33) 3

3(2) Metanotum medially bispinose, with armament horseshoe-shaped; T1 in female with horn; P: **9** ..... *Ceratoteleas* Kozlov
- Metanotum with armament various but never as above; T1 in female without horn 4

4(3) Metanotum trispinose, with median spine shortest; P: **7** ..... *Proteleas* Kozlov
- Metanotum not trispinose, usually with one spine (Fig. 36) or rounded plate (Fig. 36); H: **9, 39** (Figs. 33, 36, 38, 39) ..... *Teleas* Latreille

5(1) Mandibles short, almost as long as wide, tridentate, with all three teeth equal; mesoscutum posteriorly (between notauli) and scutellum smooth and lustrous; notauli always present, abbreviate anteriorly; male flagellomeres distinctly knotty, with long erect bristles; metasoma almost circular; P: **4** ..... *Xenomerus* Walker
- Mandibles usually longer than wide, slender, bidentate, or if tridentate then middle tooth the smallest (Fig. 35); mesoscutum usually entirely sculptured, or if partly smooth then notauli either percurrent or absent; male flagellomeres cylindrical, at most with scattered hairs; metasoma usually attenuate anteriorly, pedunculate or ovate; H: **2, 14, 43** (Fig. 35) ..... *Trimorus* Foerster

Key to Genera of Subfamily Scelioninae

1 T2 distinctly longest of all metasomatic tergites, always clearly longer than T3 (Figs. 40-44, 158); body generally short and plump (Figs. 40-44, 64, 65, 67), rarely subelongate, considerably depressed in *Aradophagus* (Fig. 83) 2
- T2 not distinctly longest tergite, at most as long as T3 (Figs. 47, 49, 51-53); body variously shaped, elongate or plump, rarely depressed 14

2(1) Frons distinctly projecting forward between eyes (Figs. 40, 88), in lateral view angular (Figs. 64, 89); mandibles long, projecting beak-like (Figs. 64, 89) 3
- Frons not projecting between eyes (Figs. 41-43), in lateral view gradually sloping down (Figs. 65, 67); mandibles short, clasped and not projecting beak-like 4

3(2) Frontal ledge deeply notched or sinuate medially (Figs. 88, 89); marginal cilia of posterior apical margin of fore wing short, about ¼ maximal width of wing, not upcurved; shortwinged forms not known P: **38** (Figs. 88, 89) ..... *Breviscelio* Sundholm
- Frontal ledge evenly arched medially, convex (Fig. 40); marginal cilia of posterior apical margin of fore wing as long as maximal width of wing, upcurved (Fig. 191), forming a dark narrow marginal band if appressed to posterior wing margin; shortwinged forms predominating; P: **8** (Figs. *40, 64,* 191) ..... *Encyrtoscelio* Dodd

4(2) Body smooth, lustrous, with scattered long bristles (Figs. 44, 72); winged forms with postmarginal vein long, almost reaching apex of wing; marginal cilia of fore wing at least as long as maximal width of wing; female antennae 11-segmented, with abrupt 4-segmented clava (Fig. 180); male antennae 12-segmented; shortwinged and winged forms known; Na (Figs. *44, 72,* 180) ..... *Embioctonus* n. gen.

- Body predominantly or completely sculptured, at least finely coriaceous (Figs. 42, 43, 135), with only short bristles (Figs. 42, 43); in winged forms postmarginal vein not as above; marginal cilia of fore wing usually considerably shorter than maximal width of wing (fig. 193); antennal formula different; shortwinged forms rare 5

5(4) OOL at least as long as LOL (Figs. 96, 101) 6

- OOL distinctly shorter than LOL (Fig. 100), posterior ocelli sometimes contiguous with inner orbits (cf. Figs. 94, 95) 7

6(5) Scutellum narrow strip-like, about 5 times as wide as long, only slightly longer than metanotum (Fig. 150); metanotum unarmed medially; fore wings with dark transverse bands, shortwinged forms unknown; T1 subquadratic, only slightly wider than long (Fig. 158); female antennae remarkably slender (Fig. 185); H: **29** (Figs. *83,* 101, 150, 158, 185) ..... *Aradophagus* Ashmead

- Scutellum broadly semi-ellipsoidal, about twice as wide as long, distinctly longer than metanotum (Fig. 135); metanotum armed medially with small tooth (Fig. 135); fore wings without bands, sometimes generally infuscate, rarely reduced to stumps; T1 broadly transverse, usually 4 times as wide as long (Fig. 42); female antennae short and stout; H (Figs. *42,* 96, 135) ..... *Mirotelenomus* Dodd

7(5) Wings reduced with venation difficult to observe or rarely wings stump-like with no venation; metasoma often partly xanthic; H: **42** ..... *Gryon* Haliday (part)

- Wings normally developed with distinct venation, only rarely with venation indistinct or almost veinless; metasoma rarely xanthic 8

8(7) Fore wing with distinct trace of basal vein (Fig. 198), wings twice as long as metasoma, attenuate in some species; laterotergites wide, not appressed to sternites; (♀ see couplet 18); H (Fig. 198) ..... *Baeus* Haliday ♂

- Fore wing with no trace of basal vein, with wing shorter, at most 1.5 times as long as metasoma, not attenuate as above (Figs. 192, 193); laterotergites narrow, tightly appressed to sternites (cf. Fig. 86) 9

9(8) Fore wing with submarginal vein short, not exceeding basal ¼ wing length, knobbed apically (i.e. marginal vein), stigmal and postmarginal vein absent (Fig. 192); marginal cilia of posterior apical margin of fore wing long, upcurved (Fig. 192); length under 1 mm; H: **8, 14** (Fig. 192) ..... *Exon* n. gen.

- Fore wing with submarginal vein reaching approximately to basal half of wing, with distinct marginal, stigmal, and usually also postmarginal vein (Figs. 193, 202), **or** almost veinless, with veins indicated at most by traces; marginal cilia of fore wing usually shorter and not upcurved (Fig. 193); length often more than 1 mm 10

10(9) Fore wing with marginal vein fully 3 times as long as the short and almost perpendicular stigmal vein, with postmarginal vein rudimentary (Fig. 203); female antennae with abrupt 5-segmented clava; tarsi unusually long and slender, with apical tarsomeres enlarged; Na (Fig. 203) ..... *Epigryon* n. gen.

- Fore wing with marginal vein usually shorter than the slanted stigmal vein (Fig. 193), or if about equal then postmarginal vein distinctly longer than stigmal vein (Fig. 202), **or** wing veinless 11

11(10) Mesoscutum and scutellum with fine undulating coriaceous transverse wrinkles (Figs. 41, 154); hind tarsomeres with minute spines; fore wing with no distinct venation, hind wing with only short sclerotized stem below frenal hooks; head almost 4 times as wide as long; female antennal clava remarkably slender; P: **37** (Figs. *41, 65,* 154) ..... *Eremioscelio* Priesner

- Mesoscutum and scutellum with sculpture other than transverse undulating; hind tarsomeres not spinose; wing venation not as above, usually distinct; head usually less than 4 times as wide as long; female antennal clava usually incrassate 12

12(11) Fore wing lanceolate; marginal cilia extremely long, between marginal vein and apex of wing at least as long as maximal width of wing; eyes small, with posterior ocelli distant from inner orbits by 3-4 diameters; length around 0.5 mm; P: **42** ..... *Hungarogryon* Szabo

\- Fore wing non-lanceolate, with apex rounded; marginal cilia shorter, between marginal vein and apex of wing considerably shorter than maximal width of wing; eyes usually larger, with posterior ocelli usually close to inner orbits, at most distant by 1 diameter; length usually more than 1 mm 13

13(12) Fore wing with postmarginal vein usually longer than stigmal vein (Fig. 202), or if shorter (Fig. 193) then cheeks not striate and female antennal clava 6-segmented; wing venation indistinct or almost absent in several species; H: **42** (Figs. *43, 67,* 100, 179, 202) ..... *Gryon* Haliday (part)

\- Fore wing with postmarginal vein rudimentary, distinctly shorter than stigmal vein; cheeks finely striated; female antennal clava 4-5 segmented; wing venation always distinct; P: **42** ..... *Plesiobaeus* Kieffer ♀

14(1) Temples with dense whitish tufts of flattened setae (Figs. 124, 125); sternaulus strong, percurrent, parallel with mesopleural carina (Fig. 124); metasoma with suture between T2 and T3 arched, with T3 lustrous, smooth, with no microsculpture (Fig. 156); wings veinless; body mostly xanthic or ochreous; H: **37** (Figs. *46, 71,* 124, 125, 156) ..... *Doddiella* Kieffer

\- Temples without tufts as above; sternaulus absent, with mesopleural carina directed diagonally, if present (Figs. 122, 123, 127); metasoma with suture between T2 and T3 almost straight (cf. Fig. 157), T3 usually with various types of microsculpture (Figs. 48-52); wings usually with distinct venation; body usually not xanthic or ochreous 15

15(14) Tarsomere 5 of all legs incrassate, at least as long as combined length of tarsomeres 1-4, the latter short and transverse (Fig. 159); ventral edge of all femora blade-like and sharp; wings perfectly veinless, often cut off after basal 1/3; OOL almost as long as LOL (Fig. 97); T1-T5 almost equal in length (Fig. 47); P (Figs. *47,* 97, 159) ..... *Mantibaria* Kirby

\- Tarsomere 5 of all legs not incrassate, much shorter than combined length of tarsomeres 1-4, the latter all elongate, cylindrical; ventral edge of all femora rounded; wings with distinct venation, rarely venation indistinct or wings reduced; OOL almost invariably much shorter than LOL; T1-T5 usually unequal in length 16

16(15) Female antennae 7-segmented, with A7 forming large unsegmented clava (Fig. 181), rarely with 3 faint sutures; male antennae 11-segmented (Fig. 182), with apical segment sometimes having faint suture (fusion of A11 + A12); body short, plump (Figs. 45, 63, 66, 69) 17

\- Female antennae never 7-segmented, usually with 12 or rarely with 11, 9, 8, or 6 segments, with clava distinctly multisegmented (except in *Microthoron*); male antennae usually with 12 or rarely with 10 or 8 distinct segments; body variously shaped 21

17(16) Skaphion well developed (cf. Fig. 131); laterotergites wide; body smooth and shining, almost without microsculpture (cf. Figs. 53, 73); mesopleural carina well developed; Na: **30** ..... *Thoronidea* Masner & Huggert

\- Skaphion not developed (e.g. Fig. 102); laterotergites usually narrow (Fig. 86), wider in *Baeus* (Fig. 66); body at least with fine microsculpture (Figs. 45, 63, 151); mesopleural carina at most incomplete above middle coxa (Fig. 128) 18

18(17) T3 distinctly longest and largest of all tergites several times longer than T1 (Figs. 62, 63); laterotergites narrow, tightly appressed to sternites (Fig. 86); scutellum usually semi-ellipsoidal (Fig. 63) 19

\- T3 very short, several times shorter than T1, the latter occupying most of metasoma (Fig. 45); laterotergites wide, not tightly appressed to sternites (Fig. 66); scutellum narrow, transverse, strip-like (Fig. 151); (♂ see couplet 8); H (Figs. *45, 66,* 151, 181) ..... *Baeus* Haliday ♀

19(18) T1 in females with big horn considerably compressed from sides, not cylindrical but narrow ellipsoidal in cross section (i.e. in dorsal view); antennae in male 8- or 9-segmented, subclavate; metasoma in female subpedunculate; H ..... *Odontacolus* Kieffer

\- T1 in females with horn cylindrical, or with horn reduced to slight hump or with no protuberance; antennae in male 11- rarely 12-segmented, non-subclavate (cf. Fig. 182); metasoma in female of different shape 20

20(19) T1 in females with horn leaning on mesosoma (Figs. 62, 136) or at least with a hump (cf. Fig. 137); H: **5** (Figs. *62, 68,* 103, 128, 136) ..... *Ceratobaeus* Ashmead ♀

\- T1 in females with no protuberance (Figs. 63, 121); H: **5** (Figs. *63, 69,* 86, 102, 121, 182) ..... *Idris* Foerster

21(16) Head and most of mesosoma highly lustrous, mostly sculptureless (Figs. 53, 73), if finely coriaceous then female antennae not distinctly 12-segmented (with subcompact clava as in Fig. 184) or clava only 4-segmented; skaphion well developed (Fig. 131); head and mesosoma with scattered strong semierect bristles (Fig. 120) 22

\- Head and most of mesosoma sculptured, if partly smooth then female antennae distinctly 12-segmented, with clava other than above; skaphion present or absent; head and mesosoma without distinct bristles 26

22(21) Laterotergites wide, not tightly appressed to sternites, i.e. submarginal groove absent (Fig. 87) 23

\- Laterotergites narrow, tightly appressed to sternites, i.e. submarginal groove present (cf. Fig. 86) 24

23(22) Body short and plump (Fig. 175); metasoma broadly sessile with T1 transverse, 3 times as wide as long; notauli absent; female antennae 6-segmented, clava unsegmented (Fig. 175); male antennae 8-segmented, with 4 apical segments fused (Fig. 177); clypeus spinose (Fig. 173); H?: **24, 30** (Figs. *175,* 173, 177, 199) ..... *Microthoron* Masner

\- Body slender and elongate (Fig. 73); metasoma pedunculate with T1 almost as long as wide (Fig. 53); notauli present, abbreviate anteriorly; female antennae seemingly 9-segmented, with clava subcompact, 4-segmented (Fig. 183); male antennae 12-segmented, with apical segments not fused; clypeus rounded; H: **24** (Figs. *53, 73,* 87, 120, 131, 183) ..... *Tiphodytes* Bradley

24(22) Mesoscutum, scutellum and vertex finely coriaceous; T3 partly longitudinally striate; female antennae distinctly 12-segmented, with clava not compact, clearly 4-segmented; Na: **24** ..... (cf. couplet 46) *Thoronella* Masner

\- Mesoscutum, scutellum, and vertex smooth; T3 lustrous smooth female antennae seemingly 8- or 9-segmented (e.g. Fig. 184), clava subcompact, 4-5 segmented .. 25

25(24) Stigmal and marginal veins fused to form thick spot (Fig. 205); notauli absent; female antennae seemingly 9-segmented, with clava 4-segmented; radicle short, as long as wide; fore wing with hind margin distinctly angular at frenal gutter; cheeks not striate; length 1 mm; Na: **24, 25** (Fig. 205) ..... *Pseudanteris* Fouts

\- Stigmal vein distinctly elongate, not fused with marginal vein in a spot (Figs. 200, 204); notauli present, abbreviate anteriorly; female antennae seemingly 8-segmented, with clava 5-segmented (Fig. 184); radicle distinctly elongate, 5 times as long as wide; fore wing with hind margin not angular at frenal gutter (Fig. 200); cheeks distinctly fan-like striate (Fig. 108); length around 2.5 mm; H: **30** (Figs. 108, 184, 200, 204) ..... *Thoron* Haliday

26(21) A2-A4 in both sexes serrate dorsally (Figs. 166, 167), with A3 and A4 confluent, separated only by oblique suture (Fig. 166); female antennae seemingly 9-segmented, with clava abrupt, compact, 4-segmented; metasoma slightly knotty in lateral view (Figs. 70, 163); frons above depression with 1 or 2 transverse carinae; length around 1.5 mm; Na (Figs. *52, 70,* 163, 166, 167) ..... *Cremastobaeus* Ashmead

\- A2-A4 in both sexes not serrate dorsally, A3 and A4 not confluent, separated by distinct constriction; female antennae of different formula; other characters various 27

27(26) Frons above toruli with more or less deep depression, this with transverse or semicircular striae or ridges (Fig. 105) or partly to completely enclosed by sharp marginal keels (Figs. 104, 174) 28

- Frons above toruli almost flat or even convex, never with transverse sculpture or marginal keels (Figs. 106, 107, 114, 119) 32

28(27) Marginal vein elongate, distinctly longer than stigmal vein; eyes densely pubescent; frontal depression shallow, unmargined, with transverse striae or ridges (Fig. 105); forms unusually elongate; T1 in female with hump; Na: **26** (Fig. 105) ..... *Leptoteleia* Kieffer

- Marginal vein short, distinctly shorter than stigmal vein; other characters various 29

29(28) Female antennae 9-segmented, with abrupt 3-segmented clava (Fig. 174); male antennae 12-segmented, with flagellomeres moniliform and having whorls of bristles; body short and plump, about 1 mm long, usually xanthic; Na: **23** (Fig. 174) ..... *Palaeogryon* Masner

- Female antennae 12-segmented, with clava 5-6 segmented, usually not abrupt; male antennae 12-segmented, with flagellomeres cylindrical and without bristles; body robust, melanic, 2.5 mm or more in length 30

30(29) Interocellar space with strong transverse striation; OOL as long as LOL; clypeus wide, strongly prominent, with acute corners; marginal vein enlarged into dark spot; P: **25** ..... *Amblyscelio* Kieffer ♂

- Interocellar space not transversely striate, usually rugose or coriaceous; OOL distinctly shorter than LOL; clypeus narrow, not particularly prominent, with corners minute, clypeus rarely pointed medially; marginal vein not enlarged as above 31

31(30) Frontal depression enclosed on all sides by sharp marginal keels, usually more shiny than rest of frons (Fig. 104); mesoscutum medially with longitudinal furrow or rugulose keel between notauli (Fig. 155); apex of metasoma usually with two spikes or tubercles (Fig. 162); occiput often sharply precipitous (Fig. 155); H (Figs. *48, 80,* 104, 155, 162) ..... *Baryconus* Foerster

- Frontal depression not margined by keels, i.e. open, usually with semicircular striation or rugae, not distinctly shinier than rest of frons; mesoscutum medially with no furrow or keel between notauli; apex of metasoma unarmed; occiput rounded, not precipitous; P ..... *Apegus* Foerster

32(27) Hind wings with submarginal vein incomplete, short, usually stump-like, rarely completely absent, never reaching frenal hooks (Fig. 190); mandibles distinctly bidentate (Figs. 110, 111); shortwinged forms absent 33

- Hind wings with submarginal vein complete, reaching frenal hooks and here often slightly incrassate (Figs. 188, 189); mandibles usually tridentate (Fig. 119) or subtridentate (Fig. 115), rarely bidentate (Figs. 117, 118); shortwinged forms present 36

33(32) Middle and hind tibiae with two strong spurs, inner spur only slightly longer than outer one; palpal formula 5-3; antennal formula 12-12 34

- Middle and hind tibiae with only one spur, this often surrounded by comb of stiff setae; palpal formula 3-2 or 2-1; antennal formula 12-10 35

34(33) Frons between eyes with one, rarely more, transverse ledges (Figs. 90, 91); eyes glabrous; H (Figs. *49, 81,* 90, 91, 190) ..... *Sparasion* Latreille

- Frons between eyes without transverse ledge, sloping down gradually; eyes with few long scattered bristles; Na ..... *Sceliomorpha* Ashmead

35(33) Head in lateral aspect protruding snout-like (Fig. 92); mandibles entirely concealed under prominent clypeus (Fig. 92), with outer denticle (Fig. 110); scape with inner edge completely and sharply carinate (Fig. 164); palpal formula 2-1; Na: **33** (Figs. 92, 110, 164) ..... *Synoditella* Muesebeck

- Head in lateral aspect not protruding snout-like (Fig. 93); mandibles only partly concealed under clypeus (Fig. 93), without outer denticle (Fig. 111); scape with inner edge at most carinate apically (Fig. 165); palpal formula 3-2; H: **33** (Figs. *82,* 93, 111, 165) ..... *Scelio* Latreille

36(32) Scutellum posteromedially with spine (Fig. 129); clypeus rather narrow and prominent; gena with short fan of striae; mesopleural carina strong (Fig. 129); skaphion absent (Fig. 134); Na (Figs. 129, 134) ..... *Spiniteleia* n. gen.

\- Scutellum unarmed; other characters various 37

37(36) Cheeks with ovoid blister-like whitish structure (Fig. 118); antennal clava in female 5-segmented; mandibles bidentate (Fig. 118); eyes distinctly hairy; P (Fig. 118) ... . *Palpoteleia* Kieffer

\- Cheeks without such blister-like structure; other characters various 38

38(37) Cheeks **never** with fan of striae, usually coriaceous (Fig. 109), rugulose or partly smooth (Fig. 114); radicle short, at most 1/5 of scape length 39

\- Cheeks with fan of striae (Figs. 106, 107), with striae sometimes short and/or partly obscured by coarser ground sculpture (Fig. 116), with fan delicate in some *Calotelea* (Fig. 113) but then radicle distinctly elongate, at least as long as 1/3 of scape length (Fig. 178) 43

39(38) Skaphion well developed, usually glabrous and almost lustrous, margined by rim posteriorly (Fig. 130); eyes hairy; fore wing with long erect bristles on submarginal vein; H: **40** (Fig. 130) ..... *Duta* Nixon

\- Skaphion not developed (anterior margin of mesoscutum at most with smoother spot), not margined by rim posteriorly (cf. Fig. 134); other characters various 40

40(39) Fore wing with marginal vein at least as long as stigmal vein (Fig. 207); elongate forms at least 3 mm long (Figs. 51, 76); shortwinged forms absent 41

\- Fore wing with marginal vein distinctly shorter than stigmal vein; forms usually less than 3 mm (Figs. 54, 56, 78, 79); shortwinged forms occur 42

41(40) Metasoma in females with apical segment compressed wedge-like from sides (Fig. 161); metasoma in males with apical tergite bluntly bilobate (Fig. 160) or pointed medially; H: **34** (Figs. *51, 76,* 160, 161, 207) ..... *Macroteleia* Westwood

\- Metasoma in females with apical segment subtriangular, rather depressed or almost tubulose; metasoma in males with apical tergite bispinose, with posterolateral corners pointed; H: **19** ..... *Triteleia* Keiffer

42(40) Metanotum medially produced into horizontal plate, in females partly covering top of horn of T1 (Figs. 139, 144); T6 in females elongate, gradually tapering towards apex (Fig. 56); mesopleural carina not developed (Fig. 138); H (Figs. *56, 79,* 114, 115, 138, 139, 144) ..... *Calliscelio* Ashmead

\- Metanotum medially not produced as above, in females not touching top of hump of T1 (Figs. 137, 145); T6 in females broadly triangular (Fig. 54); mesopleural carina present (Fig. 127); H (Figs. *54, 78,* 109, 127, 137, 145) ..... *Holoteleia* Kieffer

43(38) Skaphion present, margined posteriorly by rim or suture (Figs. 132, 133), the latter sometimes fine 44

\- Skaphion absent 47

44(43) Metanotum medially spinose (Figs. 123, 141); T1 in females with no hump; body plump (Figs. 60, 74, 75) 45

\- Metanotum medially unarmed or with bilobate almost upright transparent lamella (Fig. 140); T1 in females with horn or hump (Fig. 140); body slender 46

45(44) Fore wing with postmarginal vein well developed, longer than stigmal vein; marginal vein not thickened; submarginal vein with long erect bristles, distinctly "broken" at junction with rudimentary basal vein (Fig. 197); eyes densely hairy (Fig. 107); Na (Figs. *74,* 107, 123, 132, 197) ..... *Opisthacantha* Ashmead

\- Fore wing without postmarginal vein; marginal vein often thickened; submarginal vein with only short decumbent hairs, not "broken", with basal vein not indicated (Fig. 195); eyes appearing glabrous, at most with minute scattered hairs (Fig. 95); H (Figs. *60, 75,* 95, 133, 141, 195) ..... *Psilanteris* Kieffer

46(44) Notauli percurrent or almost so; vertex with scattered, semierect, long bristles; T3 with distinct longitudinal striae on almost smooth surface, without reticulation; A4-A8 in female antennae almost moniliform, densely hairy, with clava almost subcompact, 4-segmented; Na: **24** ..... *Thoronella* Masner

- Notauli absent; vertex with only minute appressed hairs; T3 entirely reticulate (Fig. 157); A4-A8 in female not moniliform or conspicuously hairy, clava 5-6 segmented (Fig. 178); H (Figs. 112, 113, 140, 157, 178) ..... *Calotelea* Westwood

47(43) Notauli wide apart, situated in extreme corners of mesoscutum, parallel, abbreviate anteriorly (Fig. 176); body, particularly metasoma, flattened dorsoventrally; female antennae slender, with no distinct clava (Fig. 186); P: **29** (Figs. 176, 186) ..... *Ladora* Masner & Huggert ♀

- Notauli, if present, situated in middle third of mesoscutum, more or less converging posteriorly (Figs. 59, 61), rarely abbreviate anteriorly; body usually as high as wide or nearly so; female antennae distinctly clavate 48

48(47) Metanotum produced medially into triangular plate (Fig. 148) or semicircular lamina (Fig. 149), at least as long as 2/3 of scutellum; stigmal and postmarginal veins forming angle smaller than 30° (Fig. 196); mandibles long and strong, perfectly bidentate (Fig. 117); H (Figs. *50*, 116, 117, 148, 149, 196) ..... *Anteromorpha* Dodd

- Metanotum of different shape than above or if subtriangular (Fig. 146) then at most half as long as scutellum; stigmal and marginal veins forming angle greater than 30° (Fig. 194); mandibles usually shorter and usually tridentate 49

49(48) Posterior ocelli remote from inner orbits of eyes by at least one diameter (Figs. 98, 99); eyes with long scattered hairs 50

- Posterior ocelli almost contiguous with inner orbits of eyes or remote by less than one diameter (Figs. 57, 58, 94); eyes with hairs or glabrous 52

50(49) Postmarginal vein longer than stigmal vein; notauli absent; T3 equal to or only slightly longer than T2; female antennae 11-segmented, with clava abrupt, 3-4 segmented; H: **28, 36** ..... *Embidobia* Ashmead

- Postmarginal vein absent or rudimentary, considerably shorter than stigmal vein (Fig. 206); notauli present (Figs. 59, 61); T3 distinctly longer than T2, sometimes as long as T1 and T2 combined (Fig. 61); female antennae 12-segmented, with clava 6-segmented 51

51(50) Eyes remarkably small, only as long as temples (Fig. 98); OOL equal to LOL; scutellum almost trapezoidal (Fig. 152); Na (Figs. *59*, 98, 152) ..... *Paridris* Kieffer

- Eyes large, considerably longer than temples (Fig. 99); OOL shorter than LOL; scutellum almost semi-ellipsoidal (Fig. 146); H: **41** (Figs. *61*, *85*, 99, 106, 146, 194, 206) ..... *Anteris* Foerster

52(49) Metanotum with two long spikes; propodeum unarmed; female antennal clava 4-segmented, subcompact, with segments strongly slanted (Fig. 187); Na (Fig. 187) ..... *Mecix* n. gen. ♀

- Metanotum unarmed (Figs. 142, 143, 153) or at most slightly bulged medially (Fig. 147); propodeum spinose (Figs. 142, 143) or lamellate (Fig. 147); female antennal clava 6-segmented, with segments perpendicular, distinctly separate 53

53(52) Mesopleuron with anteroventral corner finely coriaceous, with distinct row of foveolae extending diagonally (Fig. 122); netrion closed above fore coxa (Fig. 122); T1 distinctly transverse (Fig. 147); body shorter, plump (Figs. 55, 77); Na (Figs. *55*, *77*, 94, 119, 122, 147) ..... *Harringtonia* n. gen.

- Mesopleuron with anteroventral corner roughly punctate, with no row of foveolae as above (Fig. 126); netrion distinctly open above fore coxa (Fig. 126); T1 distinctly longer than wide; body elongate, slender (Figs. 57, 58) 54

54(53) Head in dorsal view almost cubical, as long as wide or even slightly longer (Fig. 57); T1 in females not protruded into hump (Fig. 153); propodeum in female not excavated posteromedially (Figs. 143, 153); Na (Figs. *57*, 143, 153) ..... *Oethecoctonus* Ashmead

- Head in dorsal view not cubical, usually 1.5 times as wide as long or even semiglobose (Fig. 58), frons sometimes with two minute humps near middle of inner orbits; T1 in females with horn or hump fitting into excavated posteromedian part of propodeum (Fig. 142); H (Figs. *58*, *84*, 126, 142) ..... *Probaryconus* Kieffer

Descriptive Part (New Taxa)

Aradoctonus n. gen. (Telenominae)

Figs. 168-172

♀ ♂ Body short, stocky; head strongly transverse; frons with shallow unmargined declivity in lower half, with delicate coriaceous sculpture; cheeks not striate; subocular suture deep and unusually wide; clypeus small, not prominent; mandibles bidentate; eyes relatively small, glabrous (160X); posterior ocelli distant from inner orbits of eyes by less than one diameter; outer orbit of eye (along temple) distinctly protruding and angular; vertex behind ocelli with weak carina; occipital carina complete, with minute crenulae; female antennae short, 11-segmented, with A4 distinctly larger that A3, and with clava semiabrupt, 4-segmented; male antennae longer, 12-segmented, with A6-A9 strongly transverse, several times wider than long, with flagellum widest between A6-A9, tapering gradually towards apex. A5 modified.

Mesosoma short, stocky, wider than high; netrion closed, ecarinate; skaphion absent; mesoscutum distinctly wider than long; notauli absent; scutellum broadly semi-ellipsoidal, unarmed; metanotum medially with two sharp upcurved spikes; propodeum strongly developed, expanded posterolaterally into blade-like semitransparent flanges; mesopleuron with shallow depression, with mesopleural carina not well defined; fore wing relatively short, not surpassing tip of metasoma, with extremely long marginal cilia around distal margin, with only few short scattered hairs on wing plain; submarginal vein with a few upright bristles; marginal vein shorter than the relatively short stigmal vein; postmarginal vein fairly long, several times longer than stigmal vein; hind wings with complete submarginal vein; legs short, tibial spur formula 1-1-1; tarsal formula 5-5-5.

Metasoma short, broadly sessile, only slightly longer than wide, flattened, laterotergites wide, submarginal groove absent, with 7 tergites in female, 8 in male; T2 largest, not striate basally.

Type-species: *Aradoctonus armatus* n. sp. (described below).

Aradoctonus is perhaps the most unusual genus of the subfamily Telenominae. The mesosomatic armament, the unique structure of the male antennae, and the unusual wing characters will distinguish this new genus at once from all known telenomine genera. However, the antennal formula (11-12) and the structure of the metasoma in *Aradoctonus* warrant its classification in the Telenominae. The genus may be endemic to the Nearctic Region with only one species known so far.

Aradoctonus is the second known scelionid parasite of flat bugs (Aradidae). *Telenomus aradi* Kozlov attacks eggs of *Aradus cinnamomeus* Panzer in Europe. *Aradophagus fasciatus* Ashmead, originally supposed to parasitize flat bugs (Ashmead 1893) is, in all probability, a parasite of an entirely different host (Masner and Huggert 1979*a*). On the contrary, *Aradoctonus armatus* seems to be a highly specialized aradid parasite. Judging from the overall pale colour of the body, the relatively short antennae and wings, and the unique mesosomatic armament as well as the apparent scarcity of specimens, *A. armatus* is assumed to spend most, if not all, of its adult life under bark.

The name *Aradoctonus* is derived from *Arado* a stemword of its host, and *ktonos* (Greek) meaning a kill, murder. The gender is masculine.

Aradoctonus armatus n. sp.

Figs. 168-172

Female. Holotype in USNM, Washington, D.C.; Yaphank, Long Island, N.Y., September 25, 1912; from eggs of an aradid bug (det. R.H. Cobben 1975).

Length 0.8 mm. Uniformly ochreous yellow, with legs, antennae and metasoma slightly lighter than head and mesosoma; eyes black; wings clear.

Head almost twice as wide as long; frons, vertex, and occiput shining but with delicate coriaceous sculpture; expanded rims of outer orbits appearing finely serrate under high magnification (>160X); antennae as in Fig. 171.

Mesoscutum with distinct but fine coriaceous sculpture; notauli absent but corresponding darker lines (apodemes?) visible through the pale mesoscutal plate; scutellum coriaceous at meson, with minute serrulae along margins; metanotal spikes strongly upcurved and almost transparent; expanded margins of propodeal flange almost transparent; wings as in Fig. 172.

Metasoma about 1.2 times as long as wide; T1 strongly transverse, with delicate longitudinal costae; T2 smooth and highly shining, with extremely short and delicate striae near its base (under magnification higher than 160X); ovipositor not exserted.

Male. Differs from female in following characters.

Generally slightly darker; head almost entirely smooth, with the coriaceous microsculpture inconspicuous; posterior ocelli distant from inner orbits of eyes by full diameter; eyes smaller, with outer orbits not projecting as sharply as in female; antennae as in Fig. 170.

HOST. Eggs of an unidentified species of Aradidae.

TYPE MATERIAL. ♂ allotype and 6 ♀ paratypes in USNM and CNC respectively; all data as in the holotype; the series is generally in poor condition (?bleached), with the specimens badly mounted and partly broken.

The specific name *armatus* refers to mesosomatic armature quite unusual among members of the subfamily Telenominae.

Embioctonus n. gen. (Scelioninae)

Figs. 44, 72, 180

♀♂ Body short, plump, predominantly light coloured (usually xanthic), smooth, with little or no microsculpture, covered with scattered long, semi-erect bristles; head transverse; frons with shallow unmargined depression, with no marginal keels; cheeks not striate; clypeus not particularly projecting, with anterolateral corners blunt; mandibles short, tridentate, with teeth equal; eyes relatively small, hairy, with ommatidia often raspberry-like; ocelli usually present, posterior ocelli distant from inner orbits of eyes at least by one diameter, often with OOL only slightly shorter than LOL; occipital carina usually complete, sharp, rarely partly obsolete medially; antennae 11-segmented in female, with A3-A7 short, usually transverse and with clava strong, abrupt, 4-segmented (A8-A11); antennae 12-segmented in male, with A3-A12 moderately elongate with hairs; A5 with keel.

Mesosoma about as wide as high (males) or slightly wider (females); netrion not developed; skaphion absent; notauli absent or rarely indicated as short rudiments in front of scutellum (usually in males); scutellum unarmed, broadly semi-ellipsoidal, in winged forms narrow and in apterous forms (females) almost strip-like; metanotum unarmed; posterior margin of propodeum sharp, not interrupted medially, usually protruded into semitransparent blade, rarely raised into tooth at meson; mesopleuron with almost no depression, without mesopleural carina; mesepimeron not distinguished from mesepisternum; fore wings in winged forms (♀♂) rather narrow, with extremely long marginal cilia, the latter at least as long as maximal width of fore wing; submarginal vein in fore wing not "broken", with long erect bristles; marginal vein several times longer than short, strongly slanted stigmal vein; postmarginal vein unusually long, almost reaching tip of fore wing; basal vein absent; submarginal vein in hind wings complete; apterous forms common (♂♀); legs short, with tibial spur formula 1-1-1 and with tarsal formula 5-5-5.

Metasoma short, ovoid, broadly sessile, with sharp submarginal groove and with laterotergites short; all segments strongly transverse, with T2 distinctly largest, 2-5 times as long as T3; female with 7 visible tergites, male with 8; T7 in female not extruded with ovipositor; T1 with no projection dorsally.

Type-species: *Embioctonus setiger* n. sp. (described below).

Embioctonus belongs to Embidobiini of the subfamily Scelioninae, the tribe that is characterized mainly by sexual dimorphism in the number of antennal segments (11 in female, 12 in male). *Embioctonus* is unique among all genera of Embidobiini by having almost the

entire body smooth, lustrous, and covered with scattered stiff semierect bristles. The winged forms of *Embioctonus* are furthermore unique among all Embidobiini because of unusually long marginal cilia and long marginal and postmarginal veins. *Embioctonus* comprises both apterous (♀♀) and fully winged forms (♀♀ ♂♂).

The genus seems to be confined to the New World and is apparently centered in tropical America, with only two species known to me from Florida. There are numerous undescribed species known to me from Mexico to Brazil. E.S. Ross (California Academy of Sciences, San Francisco) reared various Embidobiini (including *Embioctonus*) from eggs of miscellaneous species of Embioptera.

The name *Embioctonus* (Embio + ktonos in Greek, a kill) indicates the association of the members of this genus with Embioptera. It is to be regarded as masculine.

Embioctonus setiger **n. sp.**

Female. Holotype in Field Museum, Chicago; Marathon, Key Vaca, Monroe Co., Florida, U.S.A., August 7, 1971; sifting of plant hardwood litter (S. Peck).

Length 0.65 mm. Uniformly ochreous yellow except for darker eyes with silvery tint.

Head appearing smooth but under higher magnification (160X) with upper frons and vertex having delicate transverse polygons of coriaceous microsculpture; cheeks, temples, and occiput smooth; occipital carina entire, blade-like sharp; occiput abruptly precipitous; ocelli absent; eyes small, as large as subocular space, with raspberry-like ommatidia; longest bristles on head located near occiptal carina; scape short, when flexed, its top well below level of vertex; antennal segments in relative proportions (length:width) 12:3.5, 5:2.5, 2:2, 1:2, 1:2, 1:2.5, 1:2.5, 3:4, 3:4.5, 3:4.5, 3:3.5.

Mesosoma smooth, lustrous, with numerous bristles, the longest ones arising from lateral corners of scutellum; mesosoma about twice as wide as high; mesoscutum almost flat, without notauli; scutellum flat, strongly transverse, almost strip-like narrow, about 6 times shorter than mesoscutum; metanotum reduced to almost a line behind scutellum; tegulae reduced to minute spots; wings absent; propodeum narrow, with posterior margin forming uninterrupted semitransparent membrane.

Metasoma broadly sessile, only slightly longer than wide, smooth, lustrous, and covered with bristles, the longest arising from T1; tergites in relative proportions (length:width) 8:23, 10:25, 5:24, 3:22, 2:18, 2:12, 3:7; anterior margin of T1 shortly crenulate, with margin sharp; ovipositor shortly protruding.

Male. Unknown.

HOST. Unknown.

TYPE MATERIAL. 3 ♀ paratypes (FMCH & CNC), with same data as in the holotype.

E. setiger n. sp. is unique among all undescribed species known to me in the complete absence of ocelli. The specific name *setiger* is intended to emphasize the strong bristles on the body.

Epigryon **n. gen.** (Scelioninae)

Fig. 203

1976, "Undescribed phoretic genus from Florida", Masner, Mem. ent. Soc. Can. 97: 57.

Females. Body short and plump. Head slightly transverse; frontal depression shallow and narrow but partly margined by keels at sides; vertex rounded; occipital carina almost obsolete medially, well developed at sides; posterior ocelli distant from inner orbits by one diameter; eyes glabrous; clypeus strongly receding, not protruding, with anterolateral corners almost obsolete; labrum exposed; mandible short, tapered towards apex, with 2 minute teeth; palpal formula 2-1, palpi short; antennae 12-segmented, short, with A5-A7 remarkably diminished, strongly transverse and with club abrupt and rather compact, 5-segmented.

Mesosoma convex dorsally, without skaphion, netrion, or notauli; metanotal bulge moderately prominent over mid-propodeum; fore wings surpassing tip of metasoma, with marginal cilia as long as stigmal vein; submarginal vein devoid of bristles, not "broken" before

marginal vein; marginal vein fully 3 times as long as stigmal vein which is short and almost upright; postmarginal vein short and depigmented; marginal, stigmal, and postmarginal veins in ratios 10:3:4; hind wings with complete submarginal vein; legs slender and long; tarsal formula 5-5-5, tarsomeres elongate, with segment 5 of tarsi distinctly enlarged and compressed from sides and with claws and arolia remarkably strong.

Metasoma short, ovate, sessile, with distinct submarginal groove at sides; T2 distinctly the largest; 7 tergites visible, with T7 not extruded with ovipositor and with 2 pairs of short bristles.

Type-species: *Epigryon audax* n. sp. (described below).

Epigryon is a specialized offshoot of the Gryonini. It is closely related to *Gryon* Hal., particulary to that section of the latter genus in which the clypeus is reduced and the labrum exposed. However, it differs from *Gryon* principally in wing venation; the marginal vein is unusually long, the stigmal vein is short and almost perpendicular to marginal vein, and the postmarginal vein is pale and indistinct. The abrupt 5-segmented clava together with the minute antennal segments 5-7 in *Epigryon* is another distinguishing character from *Gryon*. The structure of the tarsi in general, and that of the claws and the arolia in particular, indicates phoretic behaviour in *Epigryon*. However, this specialization is probably of relatively shorter history than in other phoretic scelionids with modified tarsi, such as in *Mantibaria* Kirby (Scelioninae) or *Protelenomus* Kieffer (Telenominae). The tarsi in *Epigryon* are much less specialized than in the latter two. Adults of *Epigryon* and *Protelenomus* both run free on the bodies of their heteropterous hosts, whereas *Mantibaria* for the most of its adult life is anchored by tarsi to one spot on the body of its mantid host.

The genus seems to be confined to the New World; an undescribed species is known to me from Brazil (CNC).

The name *Epigryon* is derived from επι (= upon, on, in Greek) and *gryon,* to emphasize the phoretic habits of this genus of Gryonini. The gender is neuter.

Epigryon audax n. sp.

Female. Holotype in USNM, Washington D.C.; Everglades National Park, Monroe Co., Florida, January 22, 1970, R.M. Baranowski.

Length 0.85 mm. Body black; antennae brown, legs mostly light brown, with trochanters, tips of tibiae and some tarsomeres yellowish brown; palpi, labrum, and mandibles orange-yellow; wings clear.

Head slightly less than twice as wide as long (38:22); frontal depression narrow, with carinate margins in lower half, unmargined in upper part, with distinct keel running up from antennal insertion to about midway between anterior ocellus and the insertion of antennae, with transverse ridges on smooth and shining background; frons, cheeks, and temples with fine reticulate sculpture; sloping part of vertex and occiput with distinct transverse rugulosity; few fan-like striae around base of mandibles; malar groove deep, margined by prominent keel; radicle rather elongate, as long as 1/4 of scape; funicle distinctly shorter than scape, with A3 strongly constricted basally and smaller than A4.

Mesoscutum finely scaly-reticulate, with a few short longitudinal elements in front of scuto-scutellar suture; scutellum relatively short, rather flat, finely reticulate, with a row of deep pits along posterior rim.

Metasoma only slightly longer than wide (40:32); T1 strongly transverse, longitudinally costate; T2 nearly 3 times as long as T3, evenly net-like reticulate, with extremely short costae along anterior margin; T3 and following tergites with gradually finer net-like reticulation.

Male. Unknown.

VARIABILITY. No variability observed in the type-series.

BIOLOGY. Dr. R.M. Baranowski (University of Florida; personal communication) observed the wasp riding on *Phymata guerini* L. & S. (Heteroptera, Phymatidae). The females were observed mostly on the ventral side of the host's metasoma; however, they remained unnoticed by the observer until the host bug was placed in a dish in the laboratory. Dr. Baranowski

suggested that in the laboratory *E. audax* displayed typical phoretic habits. Thus *E. audax* is the first known phoretic gryonine. It seems logical to conclude that the wasp oviposits in phymatid eggs.

DISTRIBUTION. Florida.

TYPE MATERIAL. 3 ♀♀ (paratypes, USNM and CNC), same data as for holotype.

The name *audax,* in Latin meaning a valiant one, refers to the admirable courage of this little wasp to mount *Phymata* bugs notoriously known for their predatory habits.

Exon n. gen. (Scelioninae)

Fig. 192

1963, *Mirotelenomus sensu* Kozlov, Rev. ent. URSS 42: 660, 663-666.
1965, *Mirotelenomus* (part.) *sensu* Masner and Kozlov, Acta ent. bohemosl. 62: 293.
1966*a, Mirotelenomus sensu* Szabo, Acta Zool. Acad. Sci. Hung. 12: 422, 440-441.
1970, *Mirotelenomus sensu* Kozlov, Rev. ent. URSS 49: 213.
1976, "Undescribed genus", Masner, Mem. ent. Soc. Can. 97: 60.
1978, *Mirotelenomus sensu* Kozlov, Keys to the fauna of the European part of USSR, Hymenoptera, II, 3: 610, 621.

♀♂ Body short, plump; head moderately transverse; frontal depression more or less developed but not margined by keels; posterior ocelli distant from inner orbits by one diameter and from anterior ocellus by multiple diameters; eyes usually glabrous; clypeus with prominent corners; labrum not visible from above; mandibles narrow, bidentate, with teeth almost equal; subocular suture obsolete; antennae 12-segmented in both sexes, with moderate non-abrupt clava in female, thread-like in male.

Venation of fore wing reduced, with submarginal vein short, reaching to 1/5 or 1/4 of wing length, knobbed apically (i.e. marginal vein), with stigmal and postmarginal veins not developed; hind wing with complete submarginal vein; fore wing with marginal cilia moderately to very long; metanotum partly concealed under posterior rim of scutellum, unarmed medially. Tarsal formula 5-5-5.

Metasoma short, flattened, subsessile, obtuse apically, with 7 tergites in female, with T7 not extruded with ovipositor; T2 the largest tergite; T7 in female with 2 pairs of long bristles.

Type-species: *Exon californicum* n. sp. (described below).

This genus was not properly recognized until Masner (1976) obtained more information on the type of *Mirotelenomus abnormis* Dodd (type-species of *Mirotelenomus* Dodd). *Exon* differs from *Mirotelenomus* mainly by position of posterior ocelli, by having metanotum unarmed, but also by general habitus, etc. The two genera are, in fact, only distantly related and were confused because of the convergent reduction of veins in the fore wings. However, the real place of *Exon* is believed close to *Gryon,* the *misellus*-group in particular. The geographic distribution of *Exon* is restricted to the Holarctic Region, with one species in California and three in the Palearctic (Kozlov 1963), viz., *Mirotelenomus artus* Kozl., *Mirotelenomus latus* Kozl. and *Mirotelenomus* sp., all here transferred to *Exon* (new combinations). Members of *Exon* are known to me also from northern Iran (CNC).

The name *Exon* is an euphonic anagram; the gender is neuter.

Exon californicum n. sp.

Fig. 192

Female. Holotype in UCD, Davis, Cal.; Victor (ville), Cal., Jan. 29, 1957, bark in berlese sample, L.M. Smith & R.O. Schuster.

Length 0.75 mm. Body chestnut brown; legs, antennae, and mandibles yellowish brown; wings clear but slightly yellowish fuliginose.

Head slightly transverse, 1.6 times as wide as long, slightly wider than mesosoma across tegulae; frontal depression (dorsal aspect) remarkably deep but not margined by keels, finely

coriaceous; frons finely net-like reticulate; vertex almost rounded; occipital carina not developed dorsally; posterior ocelli distant from inner orbits by one diameter, far from anterior ocellus which almost edges the frontal depression; eyes appearing glabrous; mandibles small, narrow, with teeth not deeply split; malar groove virtually wanting, with no carina running from lower corner of eye to base of mandibles; antennae with A2 longer than A3, with club not abrupt and 5- or 6-segmented, and with A12 distinctly pointed-tapered toward apex.

Mesoscutum and scutellum evenly and finely net-like reticulate; scuto-scutellar suture fine and shallow; hind margin of scutellum with only minute pits along rim; metanotum almost concealed under posterior rim of scutellum, with no bulge at meson; submarginal vein only 1/5 of wing length, distinctly shorter than the longest marginal cilia of the lower arc of wing; marginal cilia long and strong, upcurved or if attached to wing margin then appearing as a dark band (as in *Encyrtoscelio* Dodd); hind wings with extremely long cilia, 1.5 times as long as width of hind wing.

Metasoma slightly elongate (38:28); T1 transverse, entirely longitudinally striate; T2 transverse, 1.6 times as wide as long, with even reticulation, the polygons of which are much larger than those on frons or mesoscutum; T3 almost 3 times shorter than T2, with similar sculpture as T2; following tergites narrow, with finer reticulation than on T3; T7 obtuse apically. **Male**. Unknown.

VARIABILITY. Little variation was observed among the four specimens from four different localities in California. Some individuals are slightly darker than the holotype, being dark brown to almost black (head and mesosoma).

BIOLOGY. Unknown.

DISTRIBUTION. California.

TYPE MATERIAL. 1 ♀ (paratype, USNM) Rancho Santa Fe, San Diego Co., March 3, 1959, collected by vacuum cleaner in alfalfa field, E.I. Schlinger. 1 ♀ (paratype, USNM), 6 km E Oroville, Butte Co., July 8, 1953, K.S. Hagen & J. Drea. 1 ♀ (paratype, MCZ), Tilden Park, Contra Costa Co., February 21, 1963, ex *Polyporus versicolor* Fr. (bracket fungus), J.F. Lawrence.

REMARKS. E. *californicum* differs distinctly from the two Palearctic species named by Kozlov (1963) in having the head less transverse, T2 longer, and above all by having marginal cilia on the fore wings longer than the submarginal vein. The name *californicum* refers to the type locality.

Harringtonia **n. gen.** (Scelioninae)

Figs. 55, 77, 94, 119, 122, 147

♀ ♂ Body moderately elongate; head semiglobose, transverse; frons moderately convex, with no depression and no marginal keels, with longitudinal central keel arising from antennal insertion towards anterior ocellus; cheeks distinctly striate above and below subocular suture; clypeus rather narrow but prominent, truncate, with anterolateral corners acute; mandibles short, strong, tridentate, with teeth equal; eyes large, with short hairs; posterior ocelli almost contiguous with inner orbits of eyes; vertex rounded; occipital carina strong at sides, interrupted medially; antennae 12-segmented, in female with strong 6-segmented clava, in male with flagellomeres only moderately elongate; A5 with carina.

Mesosoma short, as high as wide; with netrion well developed, closed, ecarinate, deeply foveolate anteriorly; skaphion absent; mesoscutum wider than long; notauli absent except for rudiments in anterolateral pits on mesoscutum; scutellum almost semicircular, unarmed; metanotum unarmed, sometimes slightly bulged at meson; propodeum unarmed, with posterior margin interrupted or entire; mesopleuron with shallow depression, with mesopleural carina very fine; row of progressively enlarged foveolae arising from acetabular carina behind fore coxae and running diagonally up; mesepimeron relatively large, well indicated by row of foveolae; submarginal vein in fore wing with moderately long bristles, not "broken", with basal vein absent; marginal vein as long as stigmal vein, with postmarginal vein longer than stigmal vein; marginal cilia rather short; submarginal vein in hind wing complete; legs slender, with tibial spur formula 1-1-1; tarsal formula 5-5-5.

Metasoma moderately elongate, spatulate, rather depressed dorsoventrally, with submarginal groove, and with 7 tergites in female, 8 in male; T7 in female extruded with ovipositor; all segments transverse, with T3 largest and with T1 in female sometimes moderately humped anteriorly; T1 and T2 longitudinally costate; T3 reticulate.

Type species: *Baryconus cinctus* Harrington (type series in CNC).

Harringtonia belongs to Psilanteridini as demonstrated by its striate cheeks, clypeal and mandibular shape, metasomal structure, by the shape of the netrion, and by the mesopleural sculpture. *Harringtonia* is closest to *Spiniteleia* from which it may be distinguished by its unarmed scutellum and reduced notauli and sculpture of T3. From *Opisthacantha* the new genus is easily separable by its unarmed metanotum, by the absence of a skaphion, and by the non-broken submarginal vein in the fore wing. *Harringtonia* resembles *Holoteleia* and it is in the latter genus that the type-species, *Harringtonia cincta,* has lately been classified (Masner 1976). However, the striate cheeks and shape of the clypeus and mandibles distinguish *Harringtonia* from *Holoteleia.* From *Duta* the new genus may be distinguished by the absence of a skaphion, by the incomplete occipital carina, by the striate cheeks, prominent clypeus and reticulate T3. The diagonal row of progressively enlarged foveolae arising from acetabular carina on the mesopleuron seems to be peculiar to *Harringtonia.*

Harringtonia appears to be endemic to the Nearctic Region. The type-species, *H. cincta,* seems to be confined to the eastern part of the northern Nearctic. Specimens were examined from the maritime provinces in Canada to Manitoba and along the adjacent parts of the U.S.A. Two undescribed species are known to me from Canada and one from Florida. The hosts are not known but presumed to be ground crickets of the subfamily Nemobiinae (Grylloidea). Members of *Harringtonia* are frequently caught in pan traps on the ground in late summer or early autumn.

It is my pleasure to dedicate this endemic Nearctic genus of scelionid wasps to the memory of Mr. W.H. Harrington, the distinguished Canadian amateur entomologist-hymenopterist, who discovered and described the first species upon which the new genus is now based. The gender of this new genus is feminine.

Mecix **n. gen.** (Scelioninae)

Fig. 187

Female. Body slender, elongate. Head only slightly transverse; frons without distinct depression, with no marginal keels; cheeks strongly striate, with striae partly obscuring subocular suture; clypeus narrow, trunctate apically, moderately protruding; mandibles short, tridentate, with teeth equal; eyes almost glabrous, with only few scattered minute hairs (160X); posterior ocelli contiguous with inner orbits of eyes; vertex rounded, almost glabrous, with no bristles; occipital carina strong, crenulate, complete; radicle elongate, one-fourth as long as scape; antennae 12-segmented, distincty clavate, with clava subcompact, 4-segmented; A9-A12 noticeably slanted, not square.

Mesosoma about as wide as high; netrion well developed, carinate, and broadly open above fore coxa; skaphion absent; notauli deep, divergent anteriorly, almost parallel posteriorly, nearly percurrent, abbreviate on extreme anterior tips; scutellum transverse, unarmed; metanotum posterolaterally with 2 long blade-like spikes (at 45° angle) almost flanking top of horn on T1; propodeum unarmed, strongly excavate medially; mesopleuron smooth, with shallow depression; mesopleural carina not developed; mesepimeron well marked anteriorly by row of foveolae; metapleuron smooth; fore wing with submarginal vein not "broken", basal vein absent; marginal vein as long as stigmal vein, postmarginal vein longer than marginal vein, marginal cilia relatively long; hind wing with complete submarginal vein; legs slender, with tibial spur formula 1-1-1; tarsal formula 5-5-5.

Metasoma strongly elongate, spindle-like, with distinct submarginal groove, with 7 visible tergites; T7 extruded with ovipositor; T1 with long horn reaching metanotum; T2 shorter than T3, with only short costae basally and longitudinal rugulosity in remaining part; T3 and following tergites net-like reticulate-rugulose.

Male. Unknown.

Type-species: *Mecix texana* n. sp. (described below).

Mecix may be compared with slender members of the tribe Psilanteridini such as *Calotelea* and *Thoronella*. It appears to be close to *Calotelea* in having T3 distinctly net-like reticulate-regulose rather than longitudinally striate, and in having blade-like projections on the metanotum. However, it may be distinguished from *Calotelea* at once by the absence of a skaphion and by the 4-segmented subcompact clava having segments A9-A12 strongly slanted. *Mecix* may be also distinguished from all Holarctic species of *Calotelea* by the presence of deep notauli. From *Thoronella* the new genus differs mainly by the absence of a skaphion, by the armed metanotum, and by the absence of a basal vein in the fore wing and unbroken submarginal vein. *Mecix* differs from *Thoronella* also in the sculpture of T3 (reticulate, as usually in *Calotelea),* which is distinctly longitudinal in *Thoronella*.

The name *Mecix* is an euphonic arbitrary combination of letters; the gender is feminine.

Mecix texana n. sp.

Fig. 187

Female. Holotype (CNC No. 15859), Hensel Park in Bryan, Brazos Co., Texas, U.S.A.; October 16, 1978, by sweeping ruderal vegetation (L. Masner). Type in excellent condition.

Length 1.9 mm. Body black; antennae and legs light brown; radicle, scape, and tips of tibiae and tarsi yellowish; fore wing with cloud under marginal vein darker than one in area of basal vein.

Head predominantly smooth and highly shining; small areas around ocelli along inner orbits, and on temples, finely coriaceous; striae on cheeks extending to lower temples; antennae as in Fig. 187.

Mesosoma mostly smooth and highly shining; sides of pronotum mostly coriaceous, with anterolateral margin not crenulate; anterior half of median lobe of mesoscutum evenly coriaceous, with posterior half smooth; lateral lobes of mesoscutum smooth and highly shining; notauli deeply incised; scutellum smooth and shining; mesopleuron smooth, with row of deep foveolae originating at acetabular carina and continuing diagonally upwards; marginal, stigmal, and postmarginal veins in ratios 8:8:15.

Metasoma 4 times as long as wide; horn on T1 with delicate coriaceous sculpture, with rest of T1 longitudinally costate; T2 transverse (23:30), with short costae basally and fine longitudinal rugulosity to posterior margin; T3 almost square (28:30), evenly finely reticulate-rugulose; T4 transverse (20:30); T5 transverse (13:21); T6 almost triangular (11:10); T7 minute, elongate (5:3); T4-T6 finely reticulate-rugulose.

The name *texana* refers to the type locality.

Spiniteleia n. gen. (Scelioninae)

Figs. 129, 134

♀♂ Body moderately elongate; head semiglobose, transverse; frons moderately convex, with no depression and no marginal keels, with central keel arising from antennal insertion towards anterior ocellus; cheeks striate only below subocular suture near mandibular condyli; clypeus rather narrow but prominent, truncate, with anterolateral corners acute; mandibles short, strong, tridentate, with teeth equal; eyes large, distinctly hairy; posterior ocelli almost contiguous with inner orbits of eyes; vertex rounded; occipital carina entire, not interrupted medially; antennae 12-segmented, with strong 6-segmented clava in female; male flagellomeres distinctly elongate-cylindrical; A5 with carina.

Mesosoma short, as high as wide; netrion well developed, closed, ecarinate, deeply foveolate anteriorly; skaphion not developed but the area is mostly smooth and glabrous; mesoscutum wider than long; notauli fine but percurrent; scutellum almost semicircular, with strong acute spine posteromedially; metanotum unarmed, narrow; propodeum unarmed, divided dorsomedially; mesopleuron with shallow depression and complete carina; row of deep foveolae that arises diagonally from acetabular carina indistinct, not interrupting mesopleural carina; mesepimeron relatively wide, well indicated by row of foveolae; submarginal, and postmarginal veins in fore wing with long semierect bristles, submarginal vein not

"broken"; basal vein faintly indicated; marginal vein slightly shorter than stigmal vein; postmarginal vein longer than stigmal vein; marginal cilia relatively long and dense; submarginal vein in hind wing complete; legs slender, tibial spur formula 1-1-1; tarsal formula 5-5-5.

Metasoma pedunculate, with submarginal groove present, with 7 tergites in female and 8 in male; T7 in female external, usually extended with ovipositor; all tergites transverse, with T3 largest; T1 in female only slightly transverse, sometimes with moderate hump anteriorly; T1 and T2 longitudinally costate; T3 smooth.

Type-species: *Spiniteleia campbelli* n. sp. (described below).

Spiniteleia (tribe Psilanteridini) is closely related to both *Duta* and *Harringtonia*. From the former it differs distinctly by the lack of a skaphion and by having striate cheeks; from the latter it differs by having complete notauli and T3 smooth. The spined scutellum in *Spiniteleia* is unique among all Holarctic genera of Scelionidae.

This new genus seems to be restricted to the Nearctic Region. Three more undescribed species (including males) are known to me from Maryland, Florida, and California respectively. The hosts are unknown but ground crickets (Nemobiinae) are potential hosts. Individuals of *S. campbelli* n. sp. were obtained by sifting or in pitfall traps.

The generic name proposed accentuates the unusual scutellar armature. The gender is feminine.

Spiniteleia campbelli n. sp.

Female. Holotype (CNC No. 15858), 5 mi W Hopkinsville, KY, Sept. 22, 1967; Berlese sample of deciduous duff; J.M. Campbell.

Length 1.6 mm. Body bright golden-yellow; head (except for yellow mandibles) black; antennal process, radicle, and A1 yellow; A2 light brown; A3-A12 black; T7 dark brown; T4-T6 light brown; coxae, trochanters, and femora whitish; wings clear.

Head twice as wide as long; frons in lower 2/3 smooth and shining; upper 1/3 of frons, narrow bands along inner orbits, vertex and occiput to occipital carina finely coriaceous; occiput, temples, and cheeks above deep subocular suture smooth; eyes large, densely hairy, with height about 1.5 times larger than interorbital space; delicate keel arising from antennal insertion fading from midway to anterior ocellus; antennal segments in relative proportions (length:width) 28:5, 6:4, 10:5, 9:5, 8:5, 4:4.5, 5:7, 5:8, 5:9, 5:9, 5:8, 5:6.

Sides of pronotum mostly smooth and shining; mesoscutum (between tegulae) wider than long (38:26), coriaceous, with notauli deeply incised, not crenulate at bottom; scutellum mostly smooth, with scattered punctures; scutellar spine forming angle of about 40° with axis of body, scutellar point not surpassing posterior margin of metanotum (lateral view); mesopleuron mostly smooth and shining, with mesopleural carina sharp, complete, with no foveolae below it; metapleuron smooth; propodeum widely interrupted medially, with posterolateral corners acute; fore wing surpassing tip of metasoma; marginal, stigmal and postmarginal veins in fore wing in ratios 6:8:25; longest marginal cilia of fore wing as long as 1/15 of maximal width of wing.

Metasoma 2:2 times as long as wide; tergites in relative proportions (length:width) 15:19, 23:36, 32:41, 10:33, 7:23; 4:13; 5:5; T1 with moderate smooth hump anteriorly, otherwise longitudinally costate; T2 with percurrent longitudinal costae; T3 smooth, glabrous except for sides; T4-T7 smooth, with few sparse punctures, with denser pilosity than in T3.

Male. Unknown.

TYPE MATERIAL. 1 ♀ paratype (CNC), with same data as in holotype; 4 ♀ paratypes (CNC and University of Georgia, Athens), GA, Clarke Co., 5 mi W Athens, Aug. 17 - Sept. 28, 1977, C.L. Smith, pitfall traps; 1 ♀ paratype (USNM) MD, Patuxent Wildlife Research Centre, nr. Laurel, Sept. 7-19, 1979, pan trap.

DISTRIBUTION. Kentucky, Georgia, Maryland.

VARIABILITY. The females from Georgia and Maryland are slightly darker than the two females from Kentucky, having the scutellar spine and T4-T7 brownish. The paler colour of the Kentucky females might be due to their extended storage in alcohol. Similarly, the Kentucky females seem to have the propodeum more excised medially and T1 with a more definite smooth hump than the females from Georgia.

The new species is named in honour of its collector, Dr. J.M. Campbell (Biosystematics Research Institute, Agriculture Canada), in recognition of his keen interest in my research.

Acknowledgments

Mr. G.A.P. Gibson (Biosystematics Research Institute, Agriculture Canada) took the SEM photographs and prepared the plates. He also took considerable interest in this project and contributed significantly by helpful criticism and comments. Mrs. S. Rigby (Biosystematics Research Institute, Agriculture Canada) prepared some of the line drawings. Drs. C.D. Dondale and G.P. Holland (Biosystematics Research Institute, Agriculture Canada) kindly reviewed the text. Personnel of the Electron Microscope Centre (Agriculture Canada) provided facilities for the SEM work.

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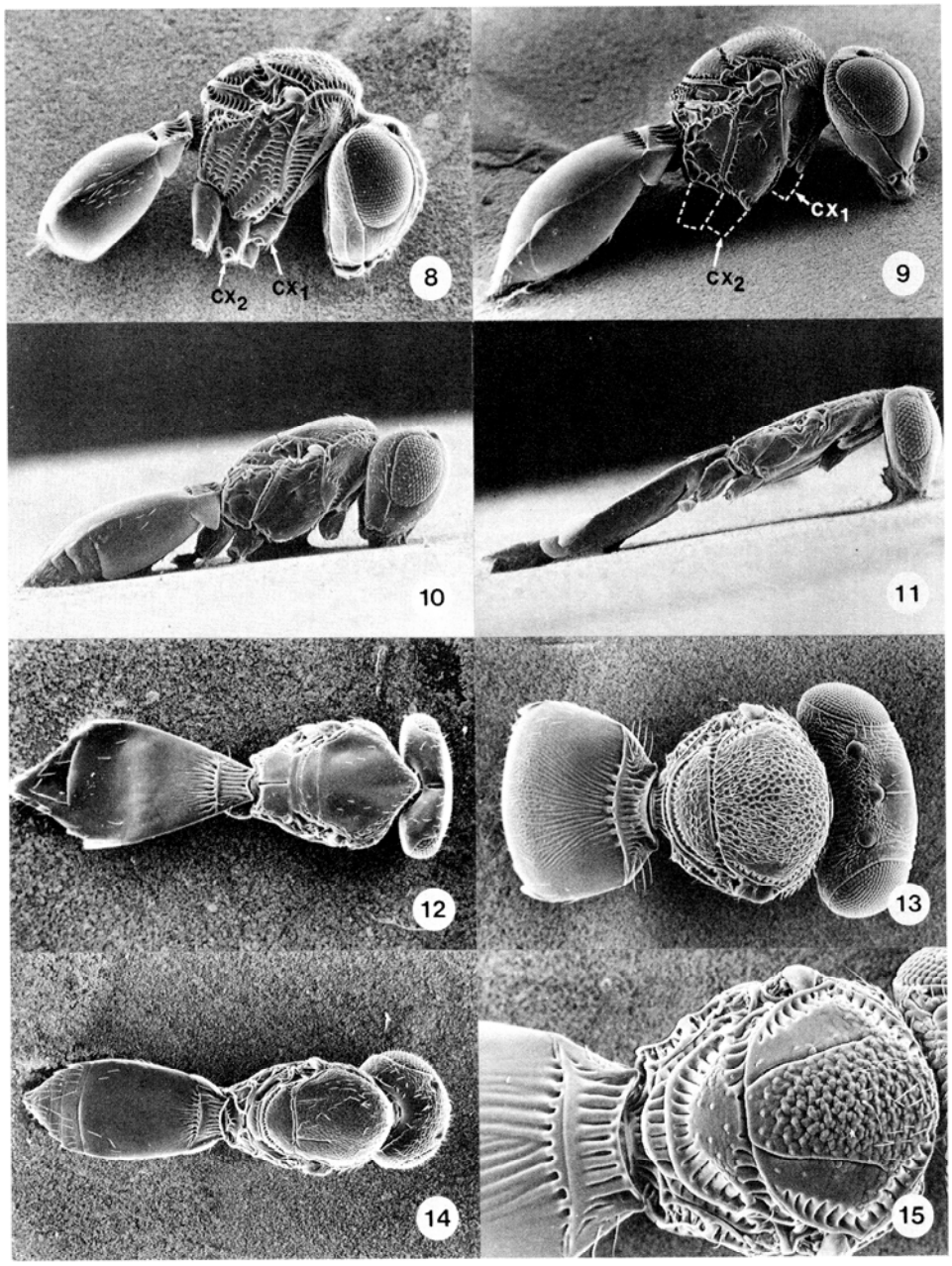
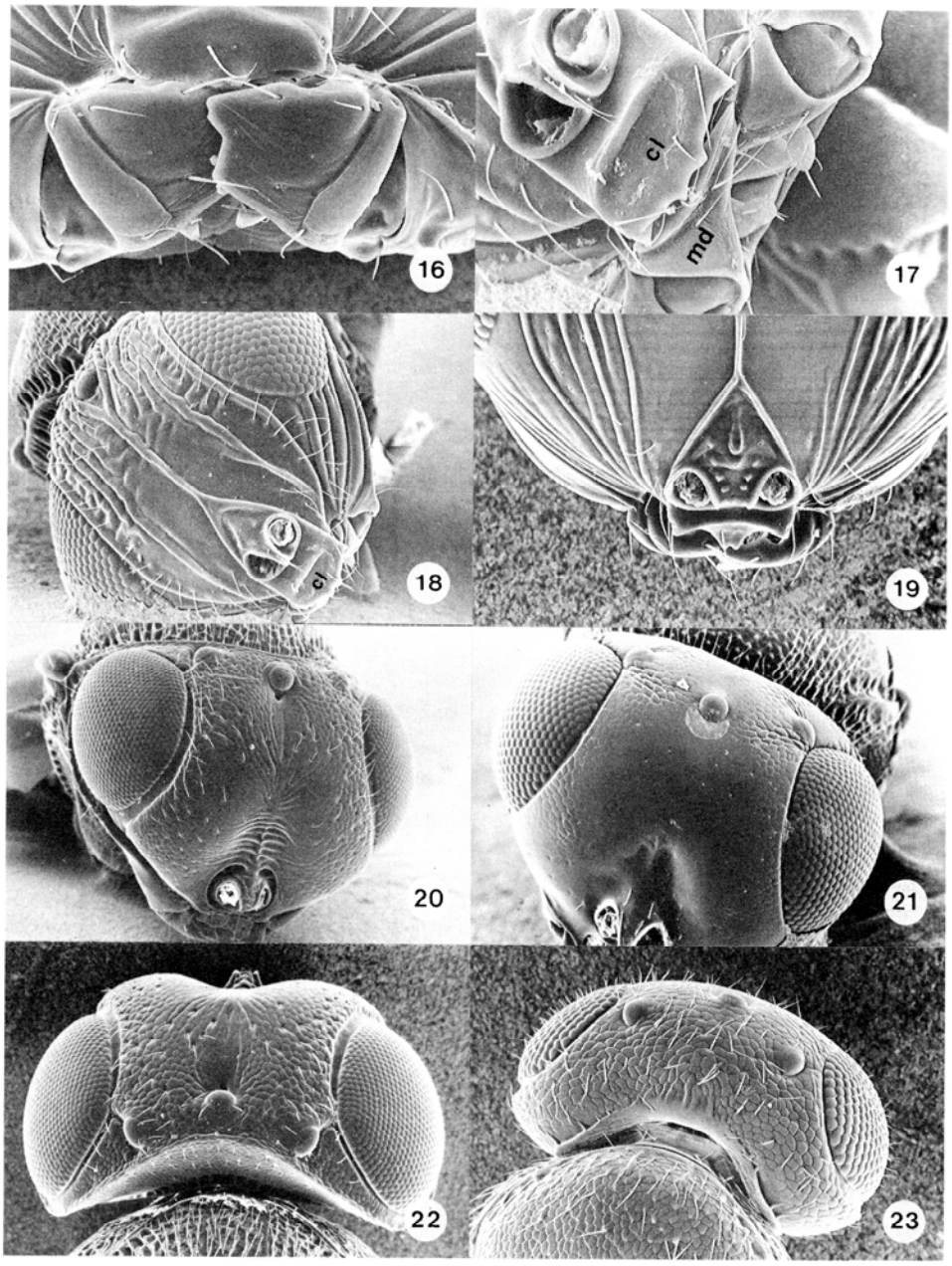
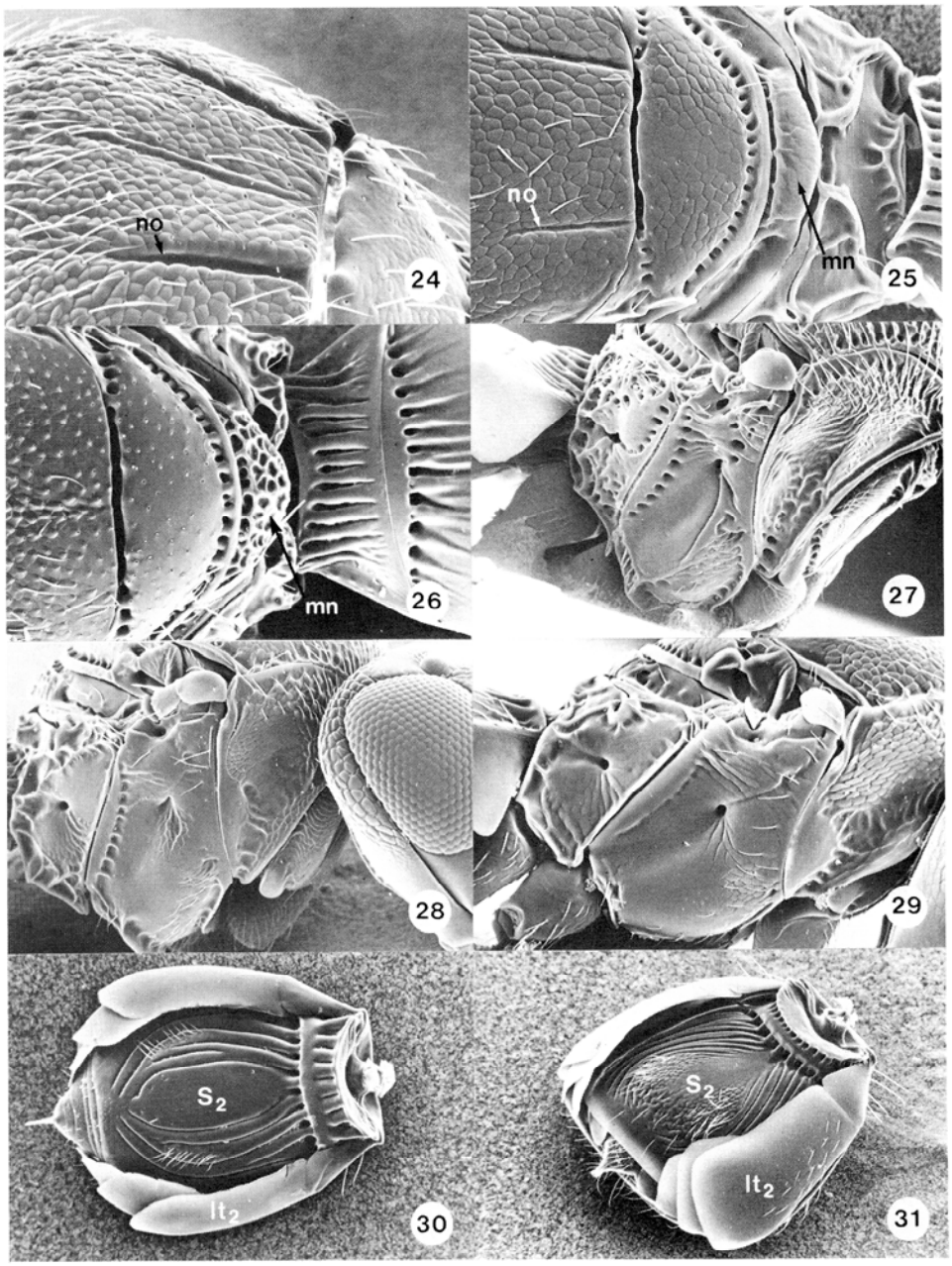
Figures 8-207



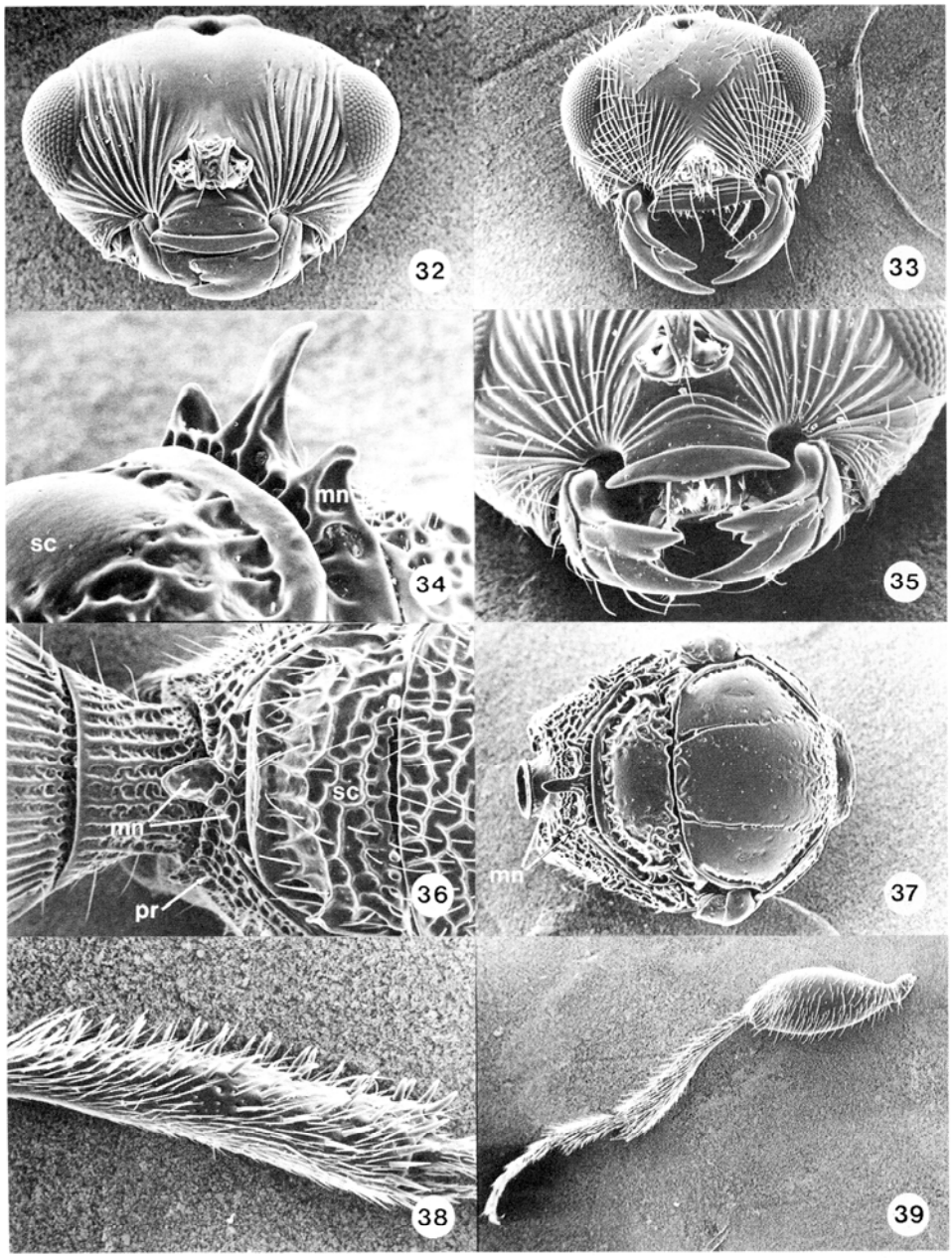
FIGS. 8-15. 8-11, lateral view of body: 8, *Psix* (100X); 9, *Telenomus* (100X); 10, *Dissolcus* (116X); 11, *Eumicrosoma* (148X). 12-15, dorsal view of body: 12, *Eumicrosoma* (136X); 13, *Psix* (120X); 14, *Dissolcus* (160X); 15, *Archiphanurus* (208X).



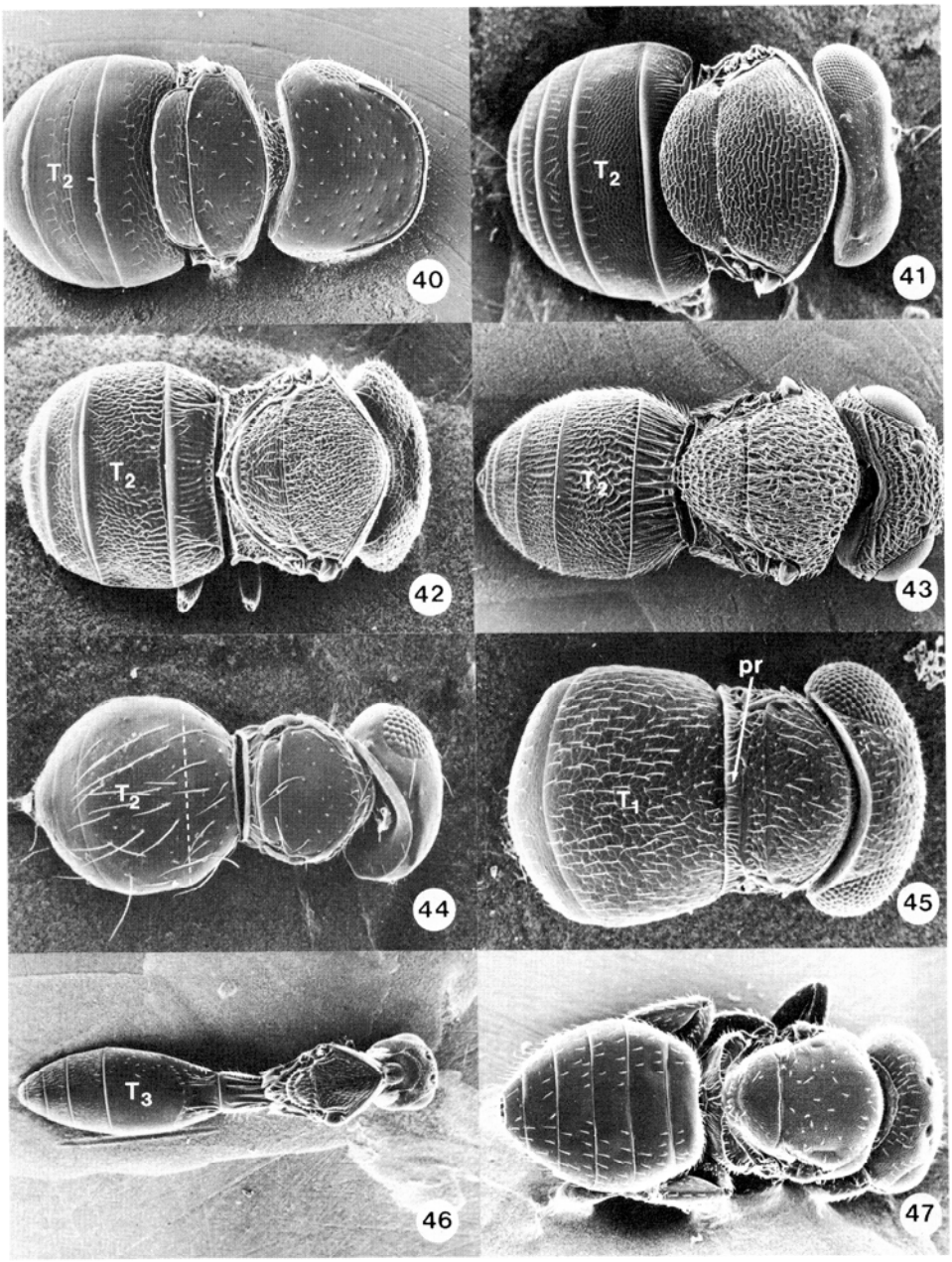
FIGS. 16-23. 16-17, mandibles: 16, *Psix* (544X); 17, *Archiphanurus* (564X). 18-23, head: 18, *Archiphanurus* (232X); 19, *Psix* (344X); 20, *Trissolcus* (122X); 21, *Telenomus* (236X); 22, *Trissolcus* (132X); 23, *Dissolcus* (328X).



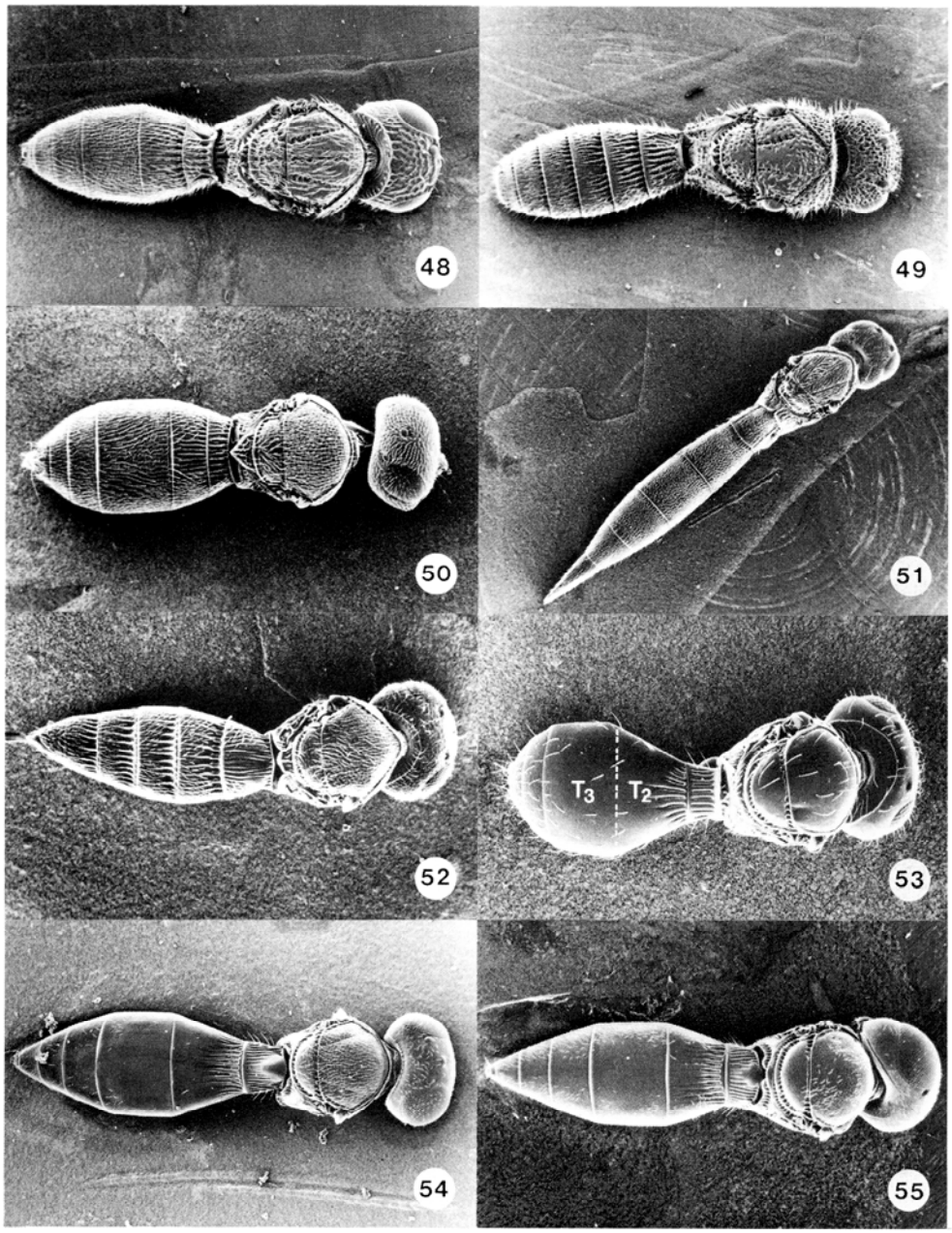
FIGS. 24-31. 24, *Trissolcus,* mesonotum (299X). 25, *Dissolcus,* mesoscutum-propodeum (436X). 26, *Telenomus,* scutellum-T1 (300X). 27-29, lateral view of mesosoma: 27, *Trissolcus* (164X); 28, *Telenomus* (228X); 29, *Dissolcus* (380X). 30-31, ventral view of metasoma: 30, *Archiphanurus* (220X); 31, *Psix* (180X).



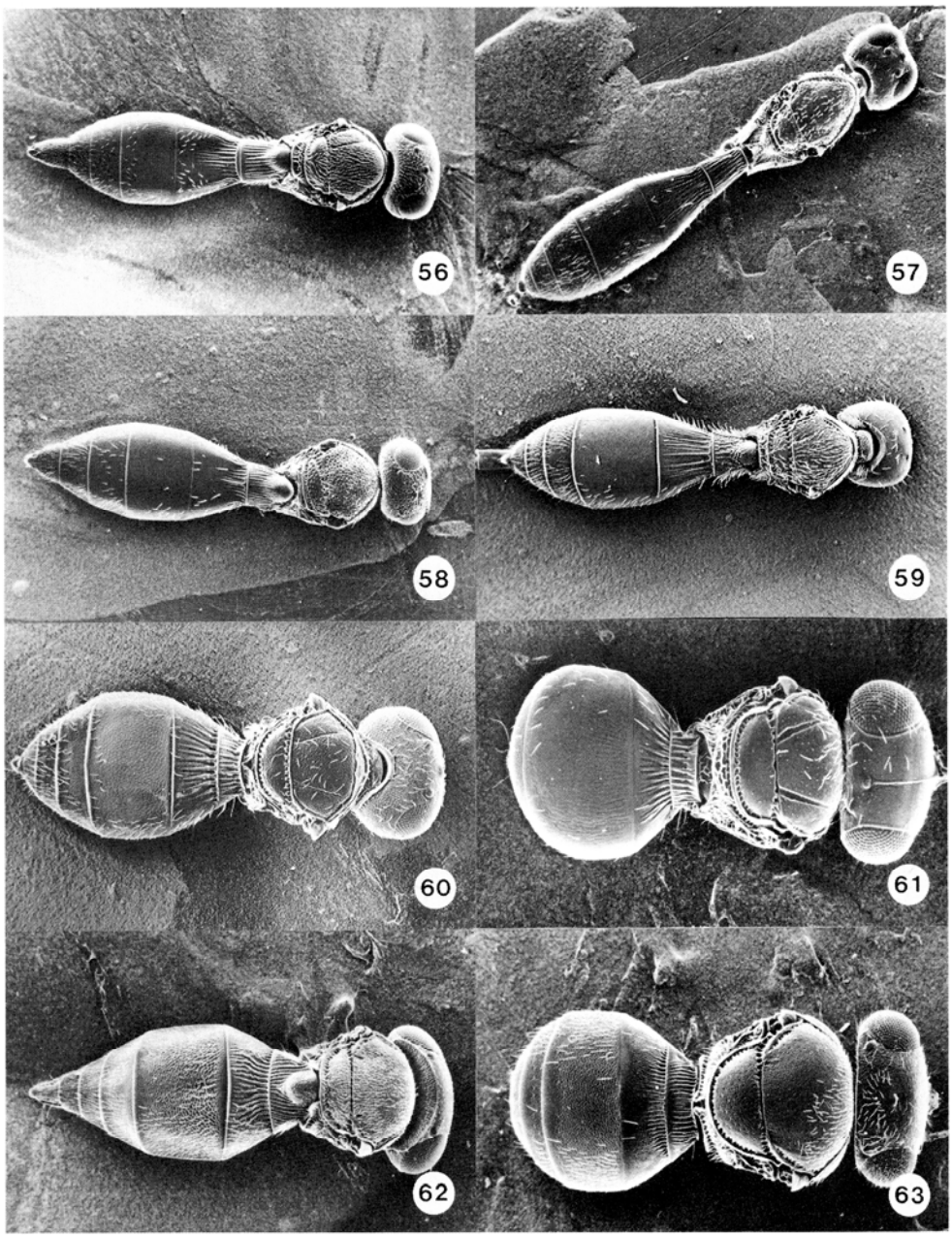
FIGS. 32-39. 32-33, head: 32, *Trisacantha* (132X); 33, *Teleas* (76X). 34, *Trisacantha,* metanotum (304X). 35, *Trimorus,* head (212X). 36, *Teleas,* scutellum-T1 (132X). 37, *Trisacantha,* mesosoma (100X). 38-39, *Teleas:* 38, middle tibia (220X); 39, hind leg (54X).



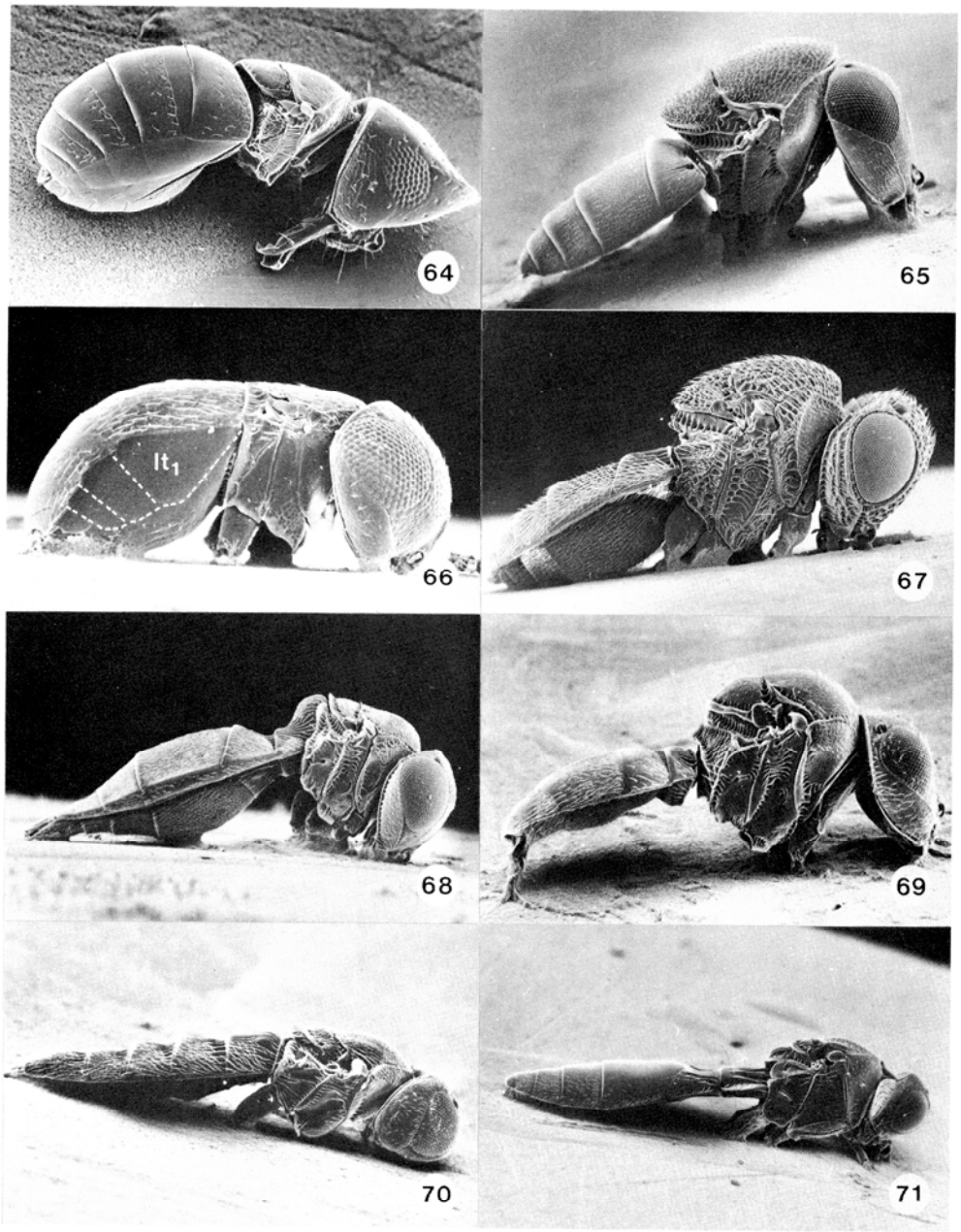
FIGS. 40-47. Dorsal view of body. 40, *Encyrtoscelio* (128X); 41, *Eremioscelio* (84X); 42, *Mirotelenomus* (116X); 43, *Gryon* (56X); 44, *Embioctonus* (136X); 45, *Baeus* (147X); 46, *Doddiella* (34X); 47, *Mantibaria* (52X).



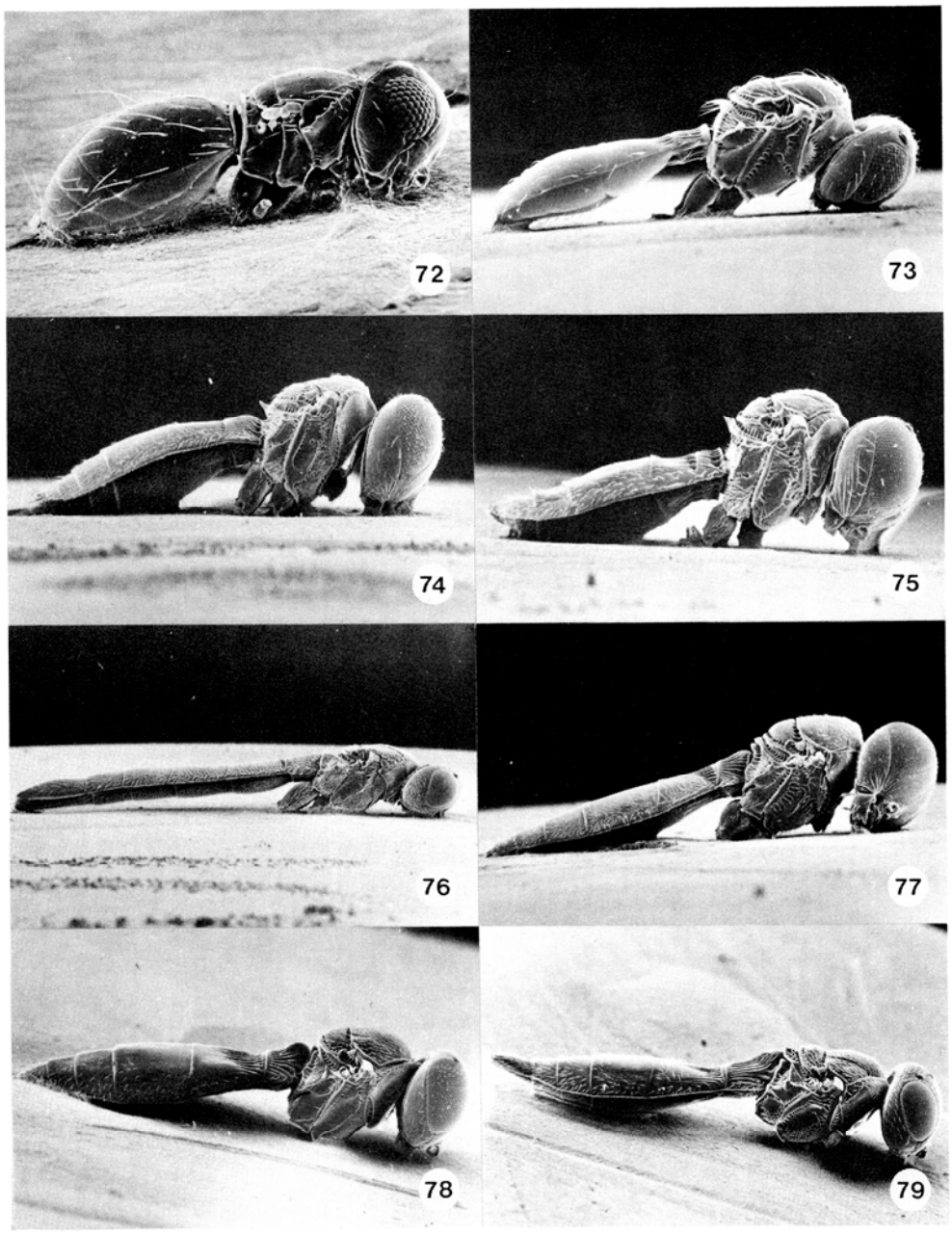
FIGS. 48-55. Dorsal view of body. 48, *Baryconus* (34X); 49, *Sparasion* (24X); 50, *Anteromorpha* (56X); 51, *Macroteleia* (32X); 52, *Cremastobaeus* (67X); 53, *Tiphodytes* (104X); 54, *Holoteleia* (60X); 55, *Harringtonia* (60X).



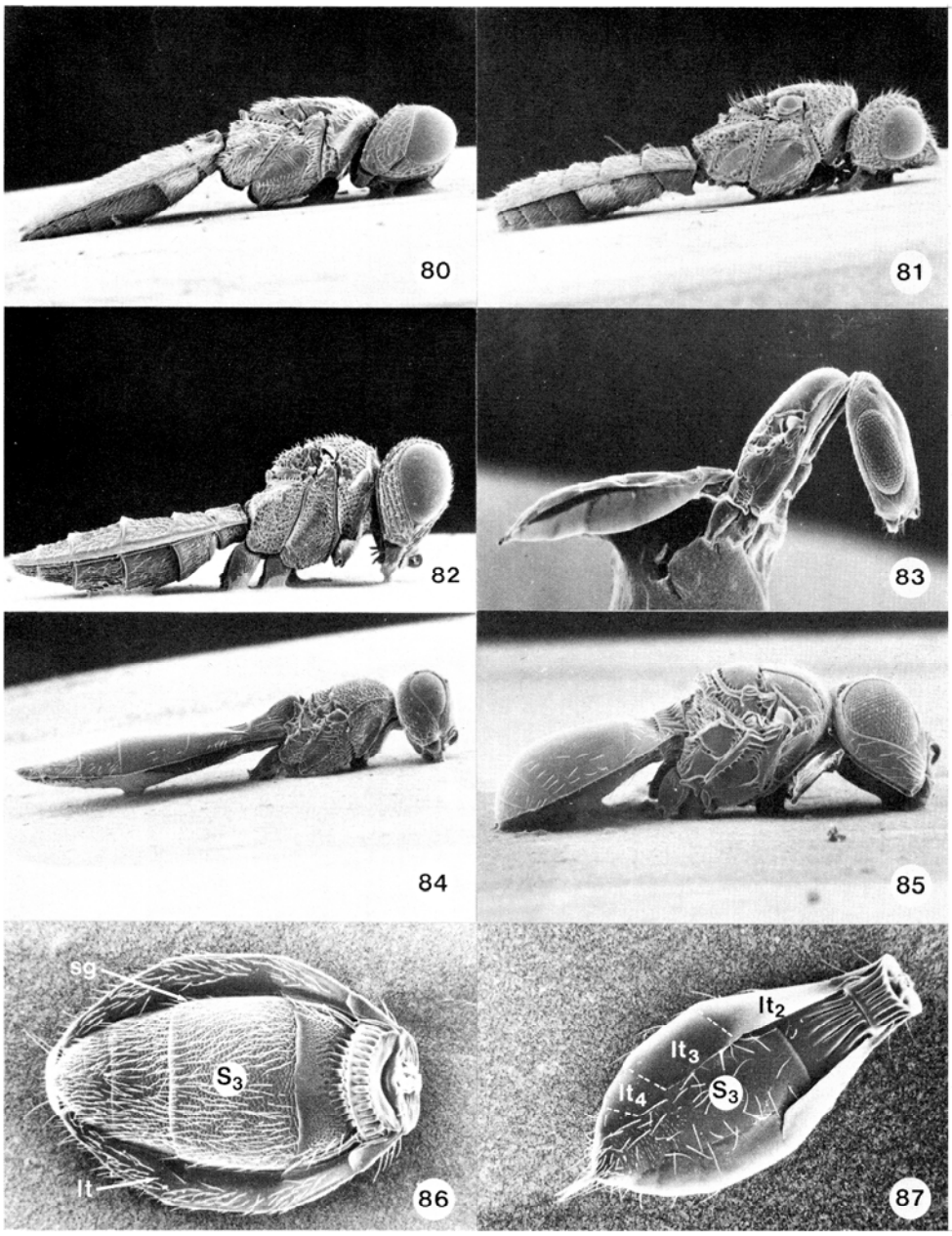
FIGS. 56-63. Dorsal view of body. 56, *Calliscelio* (42X); 57, *Oethecoctonus* (46X); 58, *Probaryconus* (43X); 59, *Paridris* (67X); 60, *Psilanteris* (76X); 61, *Anteris* (92X); 62, *Ceratobaeus* (60X); 63, *Idris* (72X).



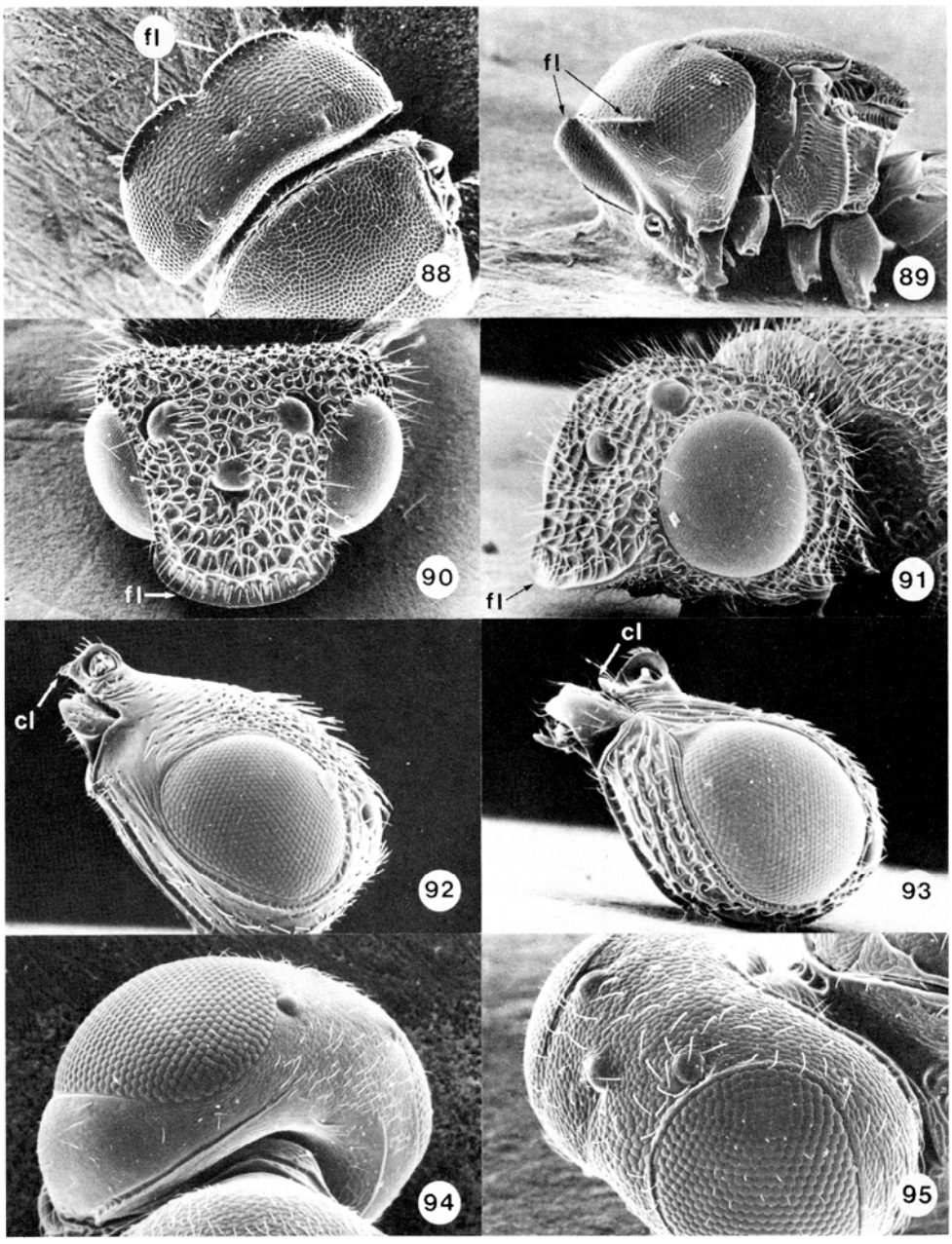
FIGS. 64-71. Lateral view of body. 64. *Encyrtoscelio* (134X); 65, *Eremioscelio* (84X); 66, *Baeus* (154X); 67, *Gryon* (58X); 68, *Ceratobaeus* (64X); 69, *Idris* (72X); 70, *Cremastobaeus* (72X); 71, *Doddiella* (36X).



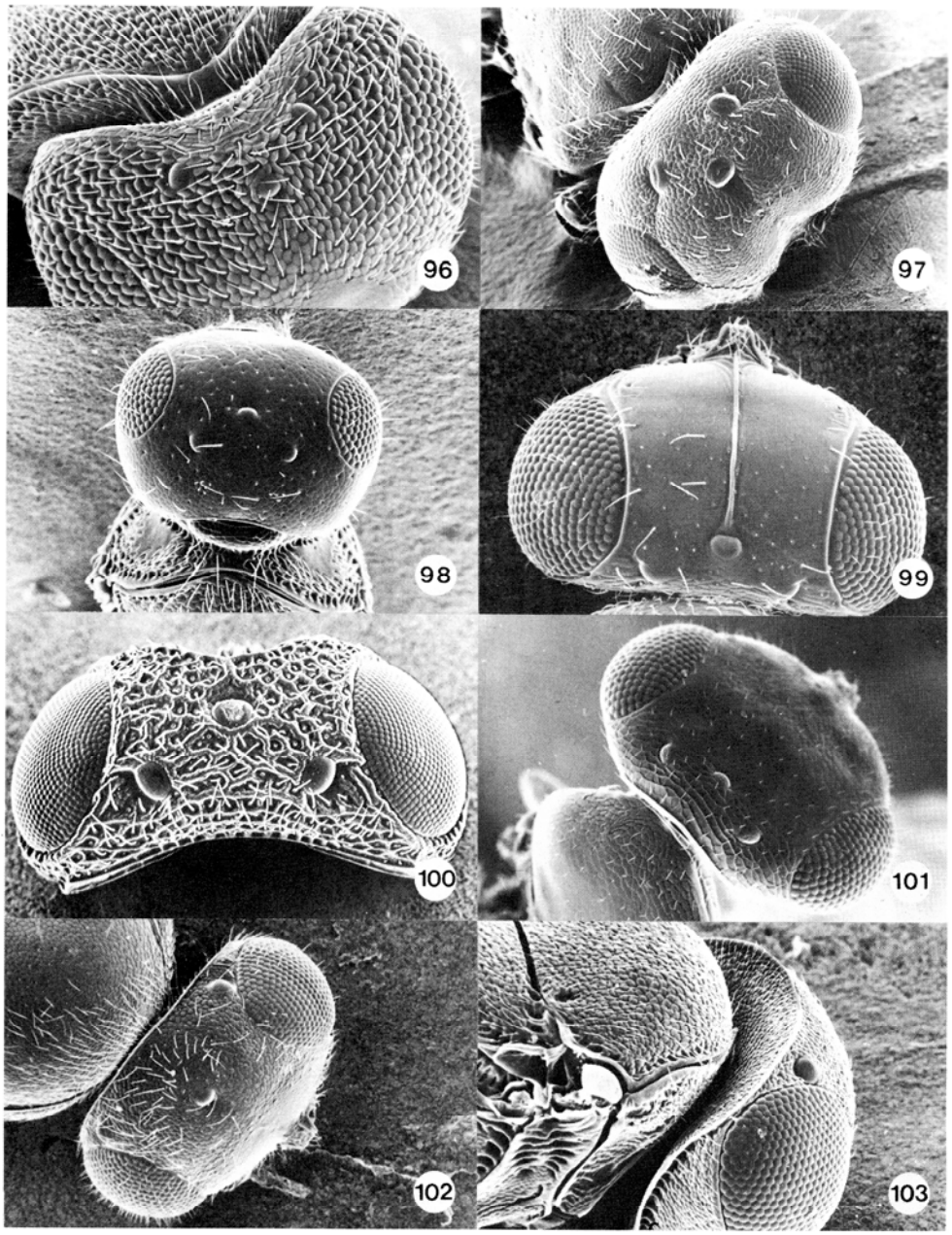
FIGS. 72-79. Lateral view of body. 72, *Embioctonus* (144X); 73, *Tiphodytes* (104X); 74, *Opisthacantha* (68X); 75, *Psilanteris* (68X); 76, *Macroteleia* (30X); 77, *Harringtonia* (60X); 78, *Holoteleia* (54X); 79, *Calliscelio* (44X).



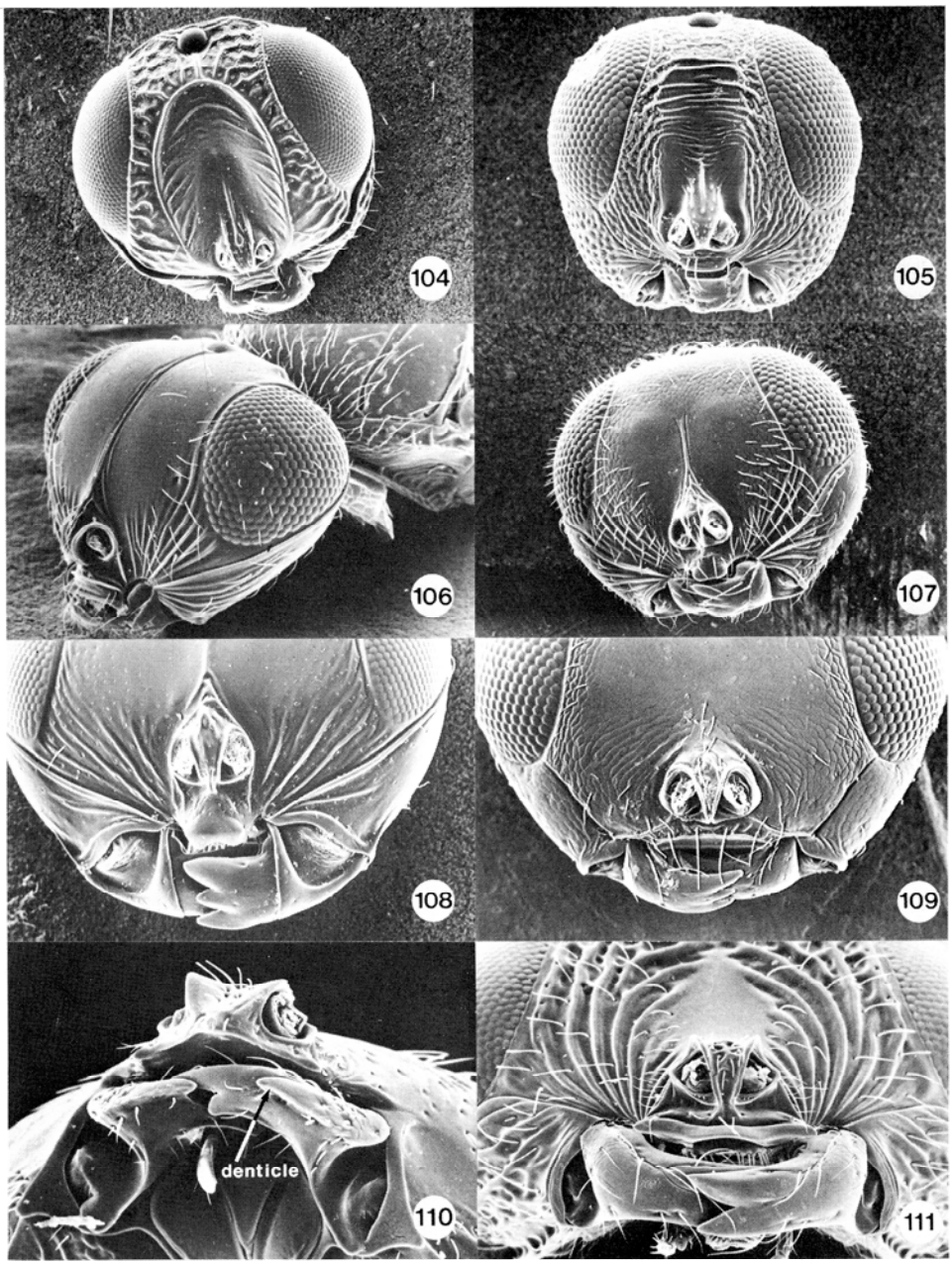
FIGS. 80-87. 80-85, lateral view of body: 80, *Baryconus* (34X); 81, *Sparasion* (25X); 82, *Scelio* (29X); 83, *Aradophagus* (84X); 84, *Probaryconus* (44X); 85, *Anteris* (96X). 86-87, ventral view of metasoma: 86, *Idris* (117X); 87, *Tiphodytes* (160X).



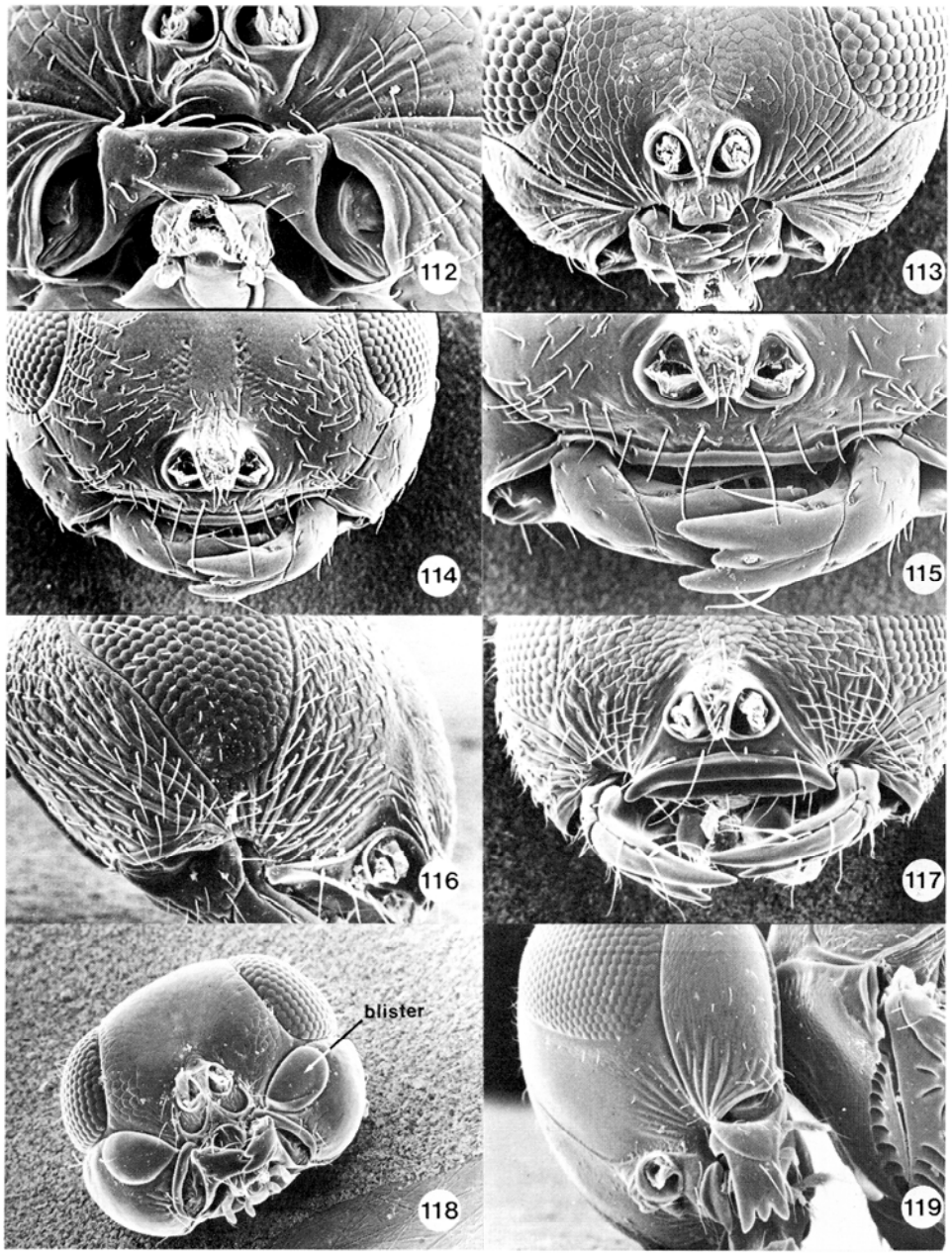
FIGS. 88-95. Head. 88, *Breviscelio* (160X); 89, *Breviscelio* (156X); 90, *Sparasion* (68X); 91, *Sparasion* (76X); 92, *Synoditella* (104X); 93, *Scelio* (93X); 94, *Harringtonia* (220X); 95, *Psilanteris* (238X).



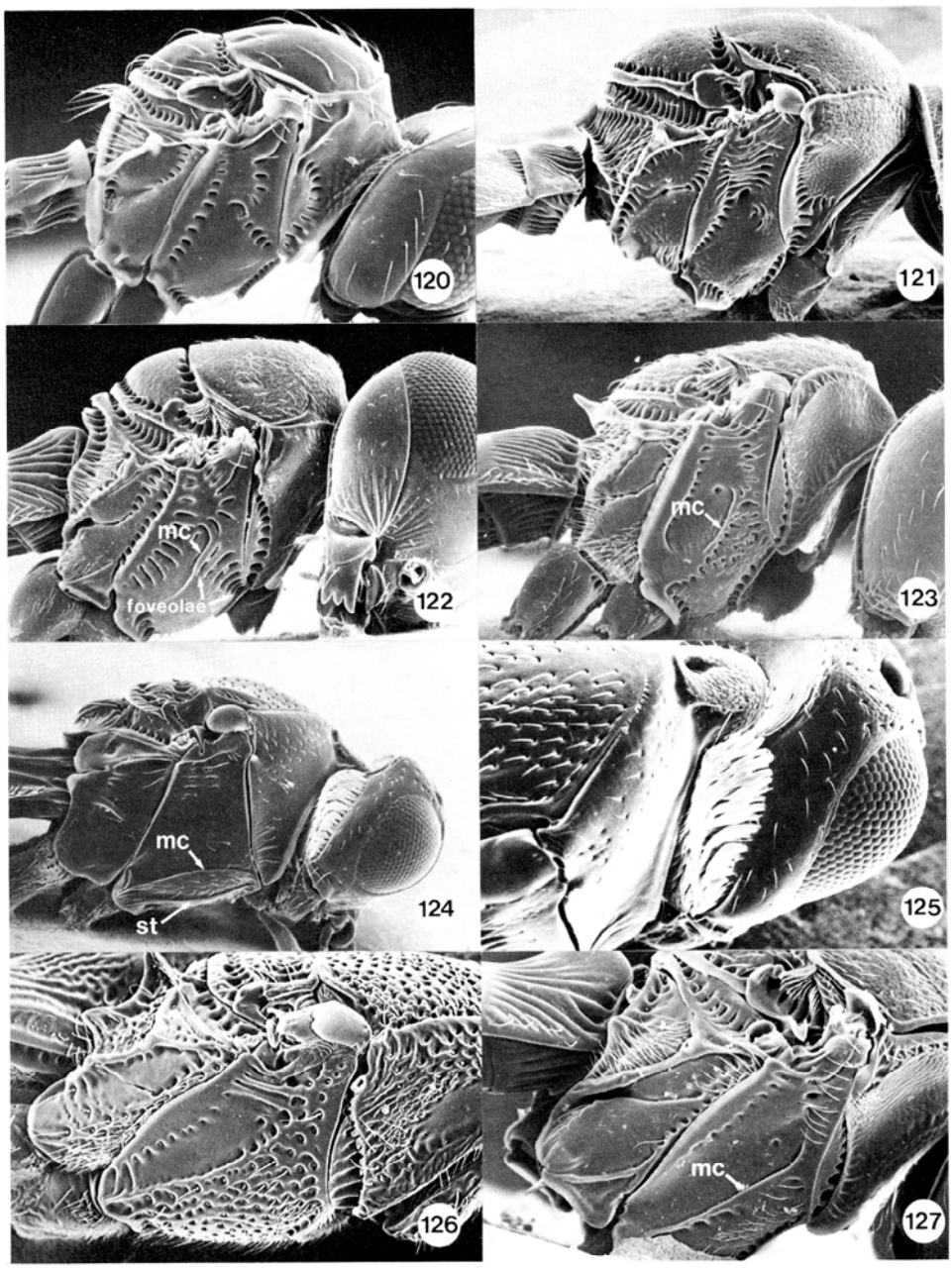
FIGS. 96-103. Head. 96, *Mirotelenomus* (320X); 97, *Mantibaria* (132X); 98, *Paridris* (192X); 99, *Anteris* (244X); 100, *Gryon* (152X); 101, *Aradophagus* (200X); 102, *Idris* (160X); 103, *Ceratobaeus* (204X).



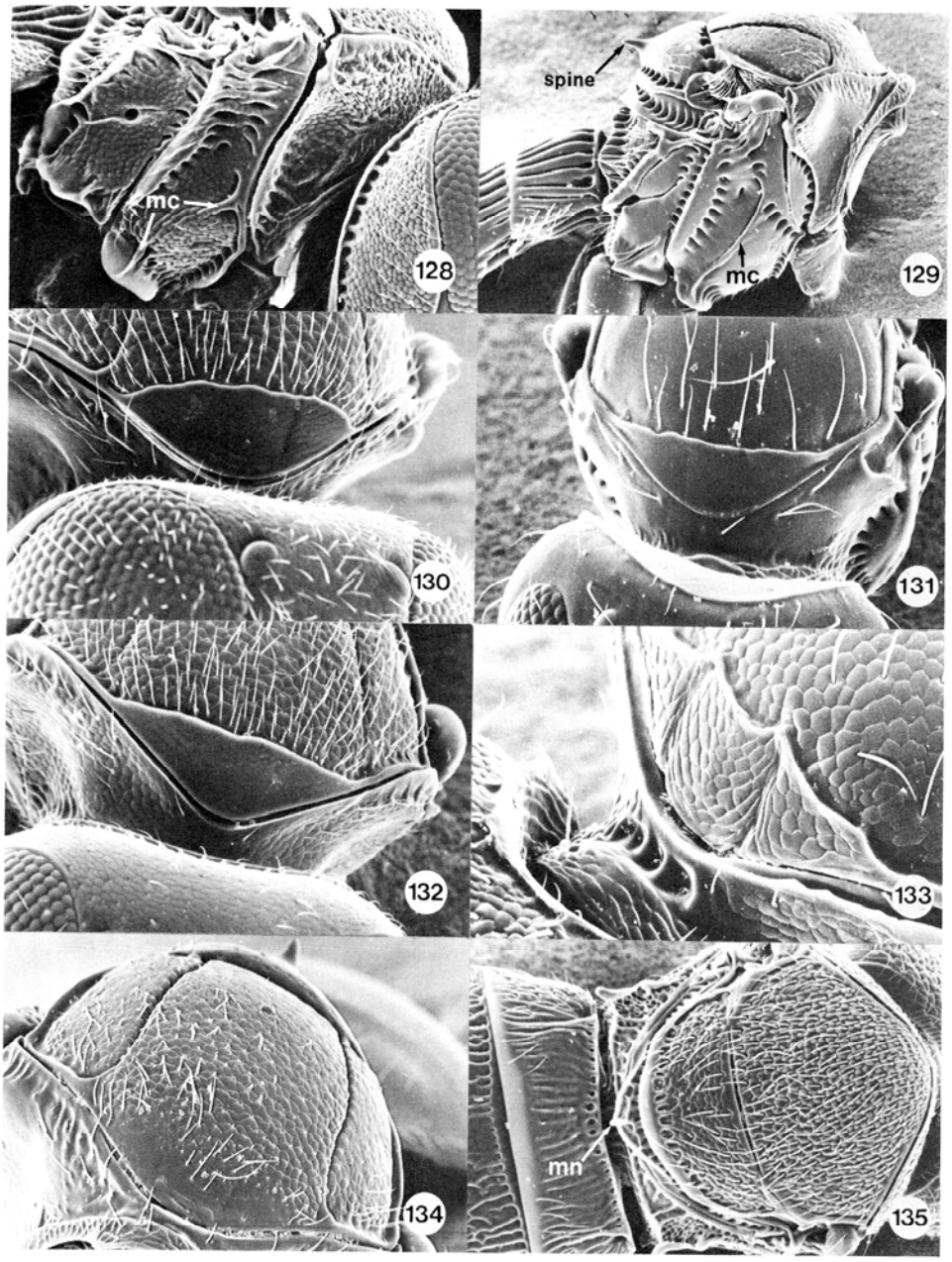
FIGS. 104-112. 104-109, head: 104, *Baryconus* (92X); 105, *Leptoteleia* (180X); 106, *Anteris* (224X); 107, *Opisthacantha* (180X); 108, *Thoron* (176X); 109, *Holoteleia* (284X). 110-112, mandible: 110, *Synoditella* (208X); 111, *Scelio* (152X); 112, *Calotelea* (608X).



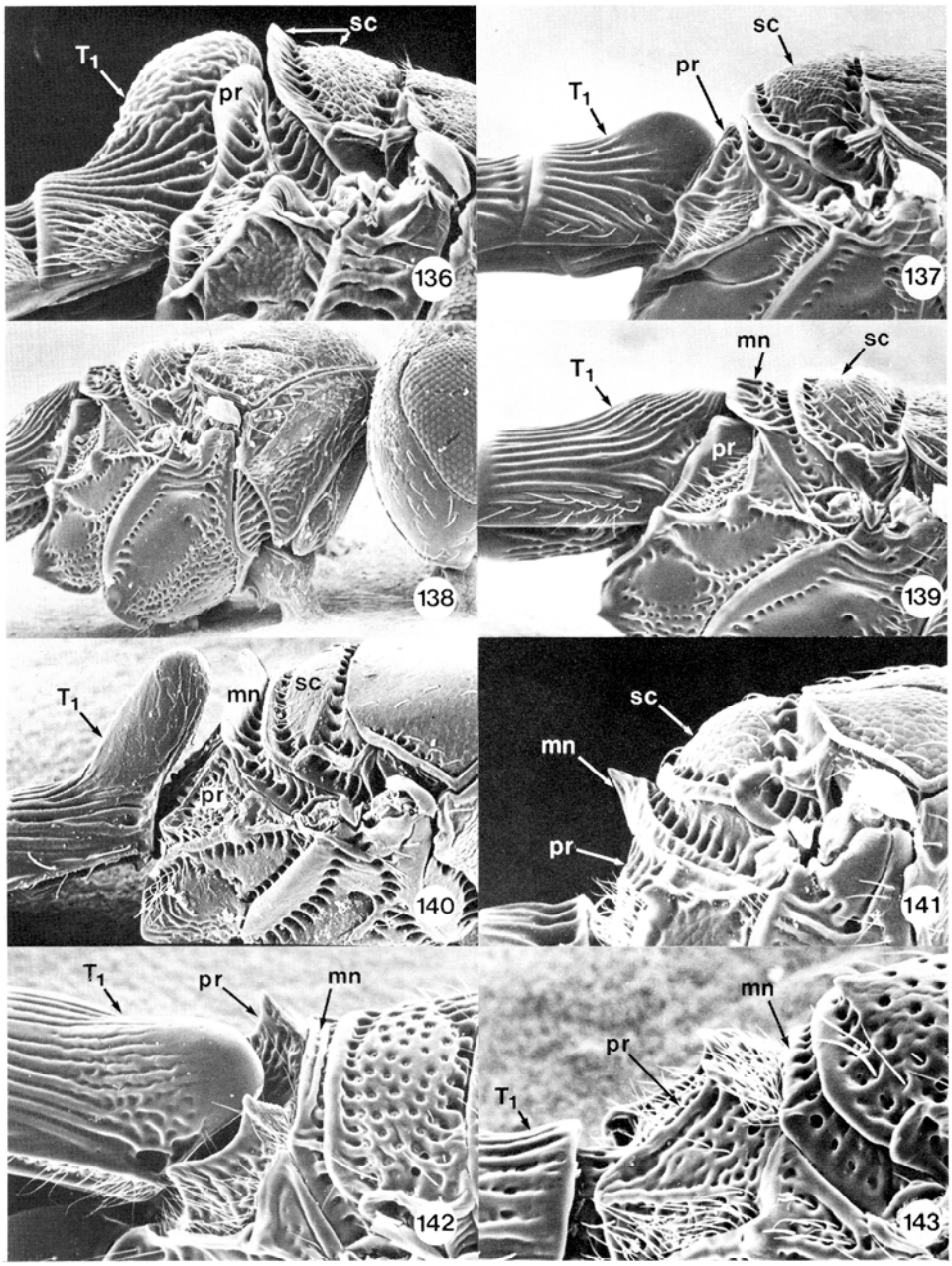
FIGS. 113-119. 113-114, head: 113, *Calotelea* (388X); 114, *Calliscelio* (260X). 115, *Calliscelio,* mandible (364X). 116-119, head: 116, *Anteromorpha* (311X); 117, *Anteromorpha* (260X); 118, *Palpoteleia* (220X); 119, *Harringtonia* (220X).



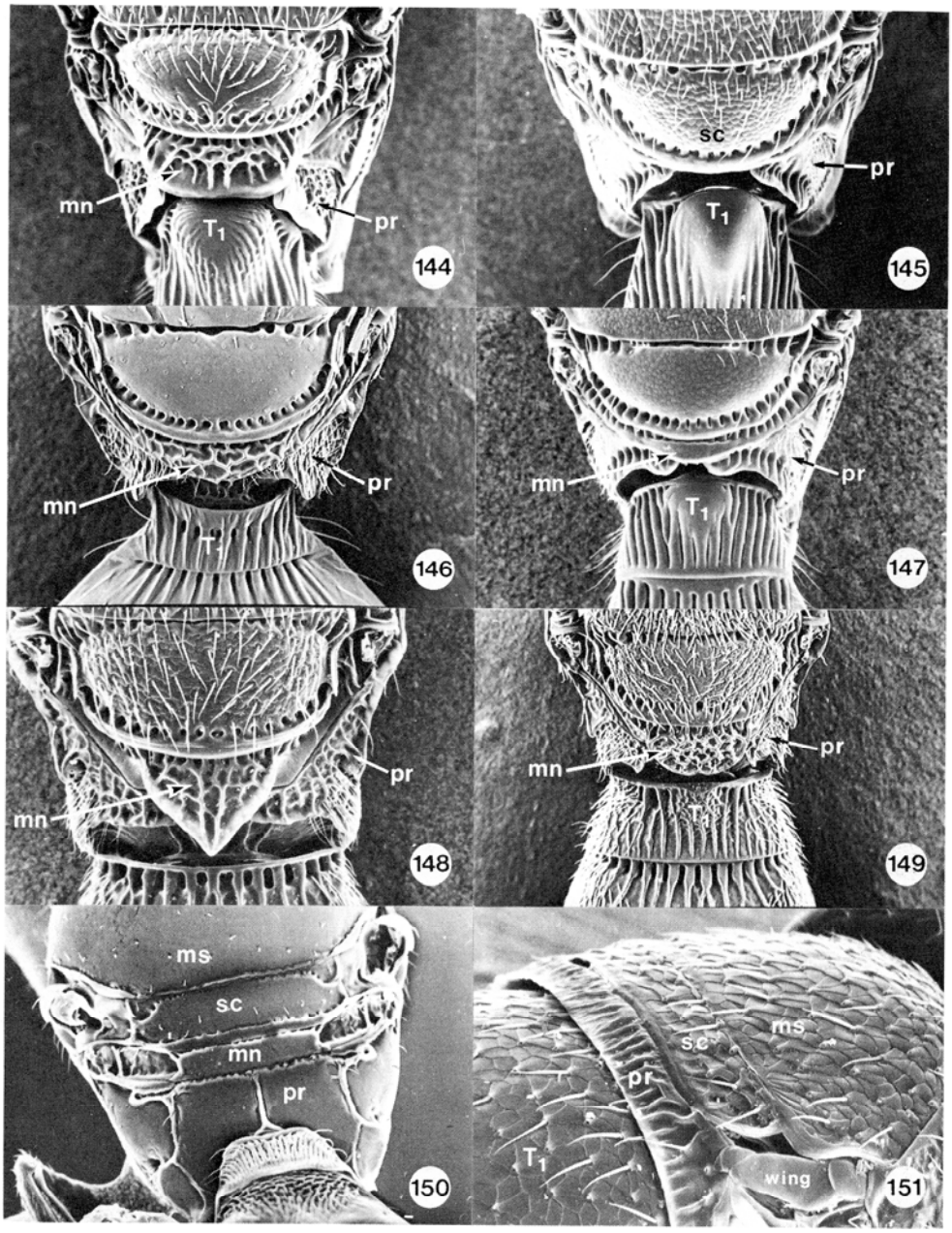
FIGS. 120-129. 120-124, lateral view of mesosoma: 120, *Tiphodytes* (224X); 121, *Idris* (144X); 122, *Harringtonia* (156X); 123, *Opisthacantha* (180X); 124, *Doddiella* (84X). 125, *Doddiella,* temple (172X). 126-129, lateral view of mesosoma: 126, *Probaryconus* (224X); 127, *Holoteleia* (216X); 128, *Ceratobaeus* (228X); 129, *Spiniteleia* (160X).



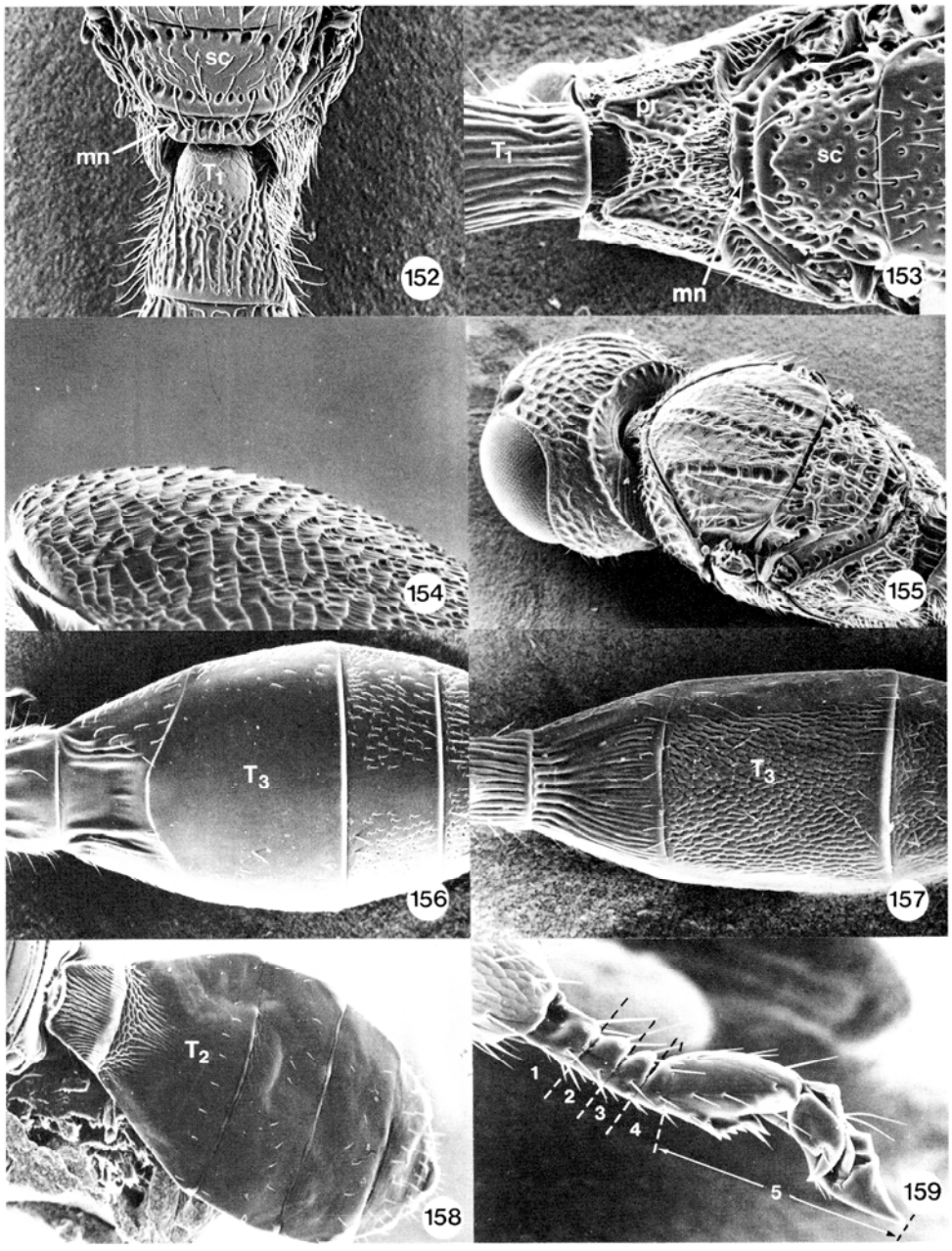
FIGS. 130-135. 130-133, skaphion: 130, *Duta* (304X); 131, *Tiphodytes* (304X); 132, *Opisthacantha* (276X); 133, *Psilanteris* (473X). 134, *Spiniteleia,* mesoscutum (308X). 135, *Mirotelenomus,* mesosoma (224X).



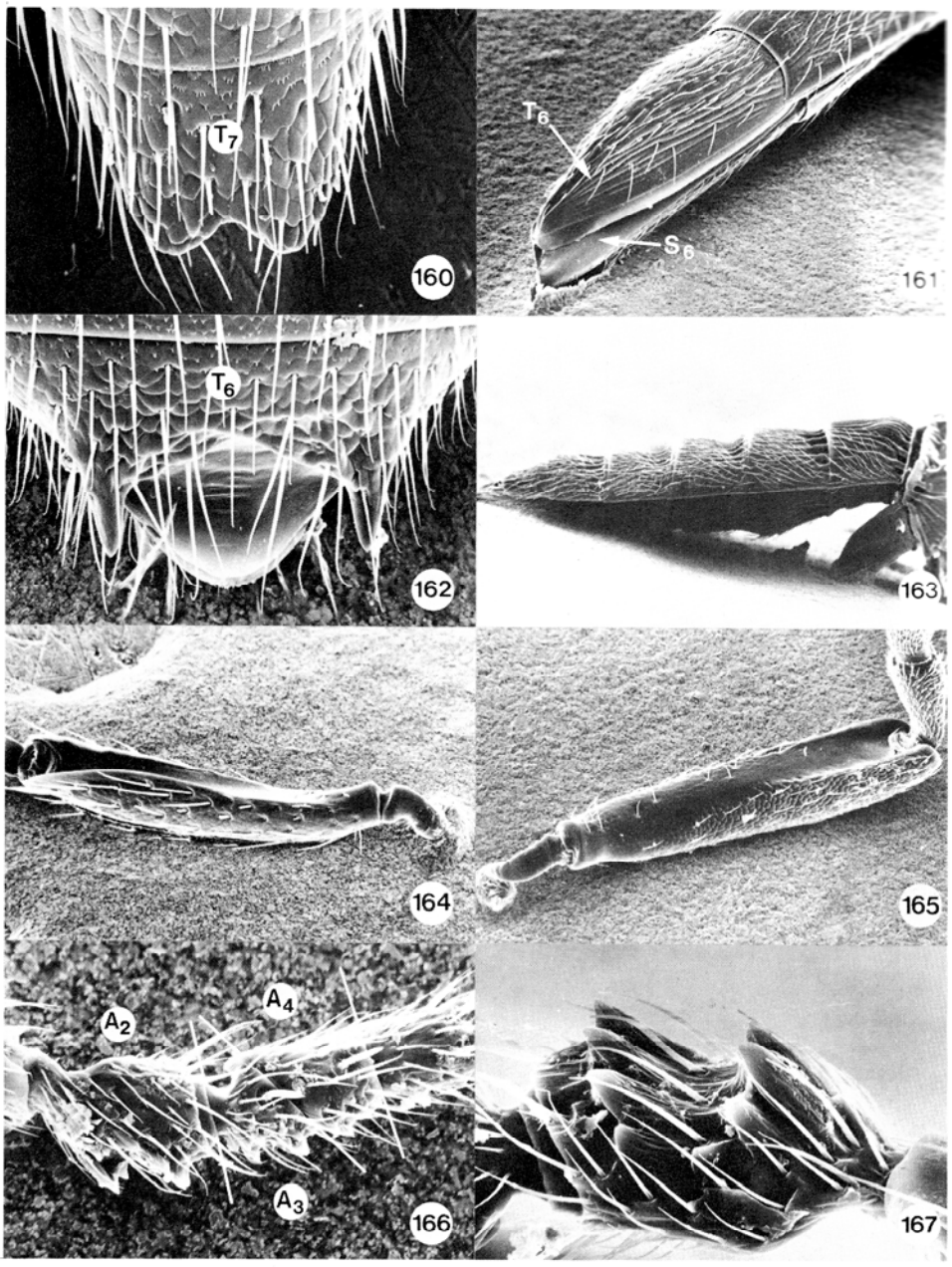
FIGS. 136-143. 136-137, lateral view of scutellum-T1: 136, *Ceratobaeus* (250X); 137, *Holoteleia* (200X); 138, *Calliscelio,* lateral view of mesosoma (140X). 139-143, lateral view of scutellum-T1: 139, *Calliscelio* (180X); 140, *Calotelea* (348X); 141, *Psilanteris* (272X); 142, *Probaryconus* (264X); 143, *Oethecoctonus* (312X).



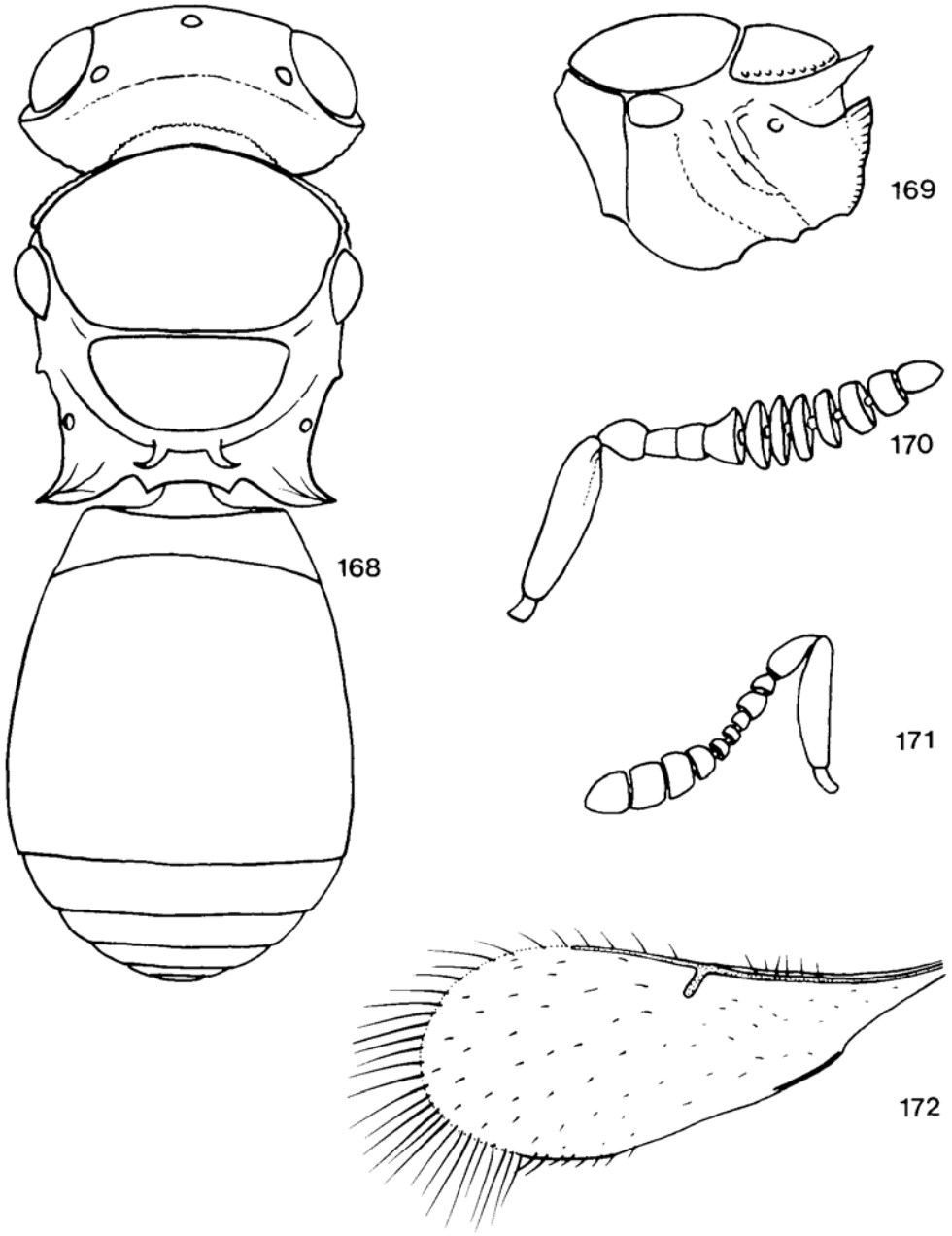
FIGS. 144-153. Dorsal view of scutellum-T1: 144, *Calliscelio* (181X); 145, *Holoteleia* (200X); 146, *Anteris* (296X); 147, *Harringtonia* (180X); 148, *Anteromorpha* (248X); 149, *Anteromorpha* (208X); 150, *Aradophagus* (212X); 151, *Baeus* (476X); 152, *Paridris* (227X); 153, *Oethecoctonus* (224X).



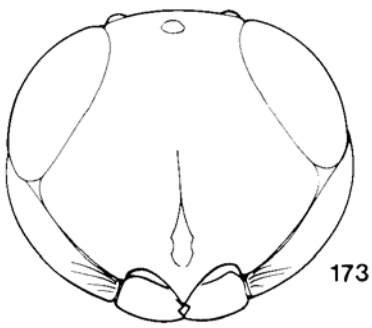
FIGS. 154-159. 154, *Eremioscelio,* mesoscutum (328X). 155, *Baryconus,* head-mesosoma (72X). 156-158, metasoma: 156, *Doddiella* (92X); 157, *Calotelea* (187X); 158, *Aradophagus* (140X). 159, *Mantibaria,* hind tarsus (316X).

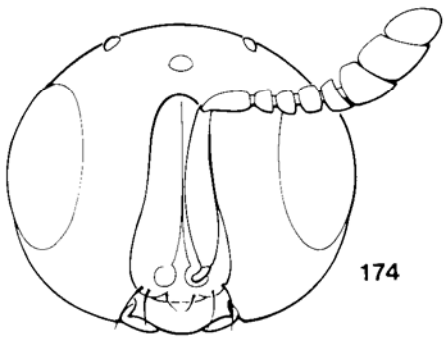


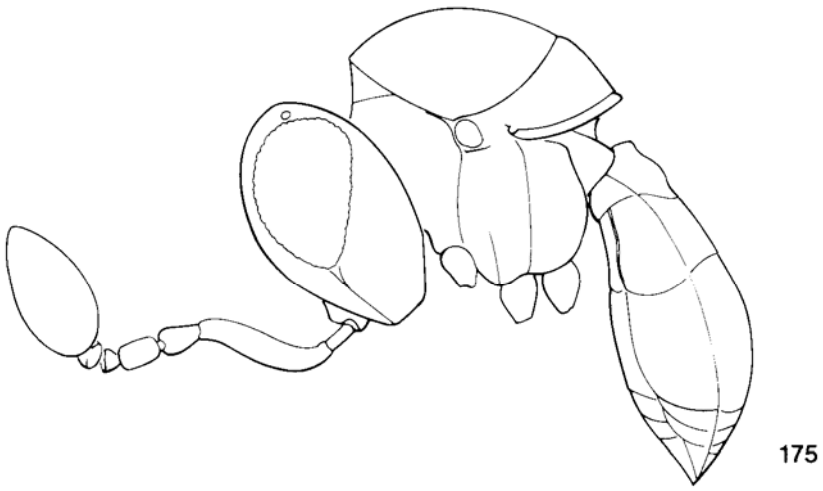
FIGS. 160-167. 160, *Macroteleia,* T7 ♂ (504X). 161, *Macroteleia,* T6 ♀ (140X). 162, *Baryconus,* T6 ♀ (440X). 163, *Cremastobaeus,* metasoma (112X). 164-165, scape: 164, *Synoditella* (204X); 165, *Scelio* (176X). 166, *Cremastobaeus,* A2-A4 (600X). 167, *Cremastobaeus,* A2 (1680X).

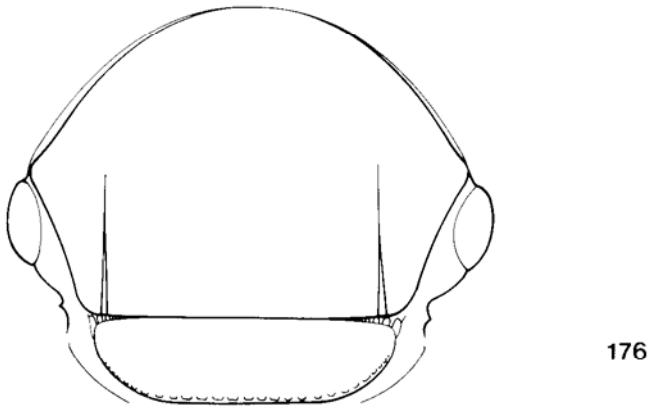


FIGS. 168-172. *Aradoctonus armatus* n. gen. and n. sp. 168, dorsal view ♀; 169, lateral view of mesosoma ♀; 170, antenna ♂; 171, antenna ♀; 172, fore wing ♀.

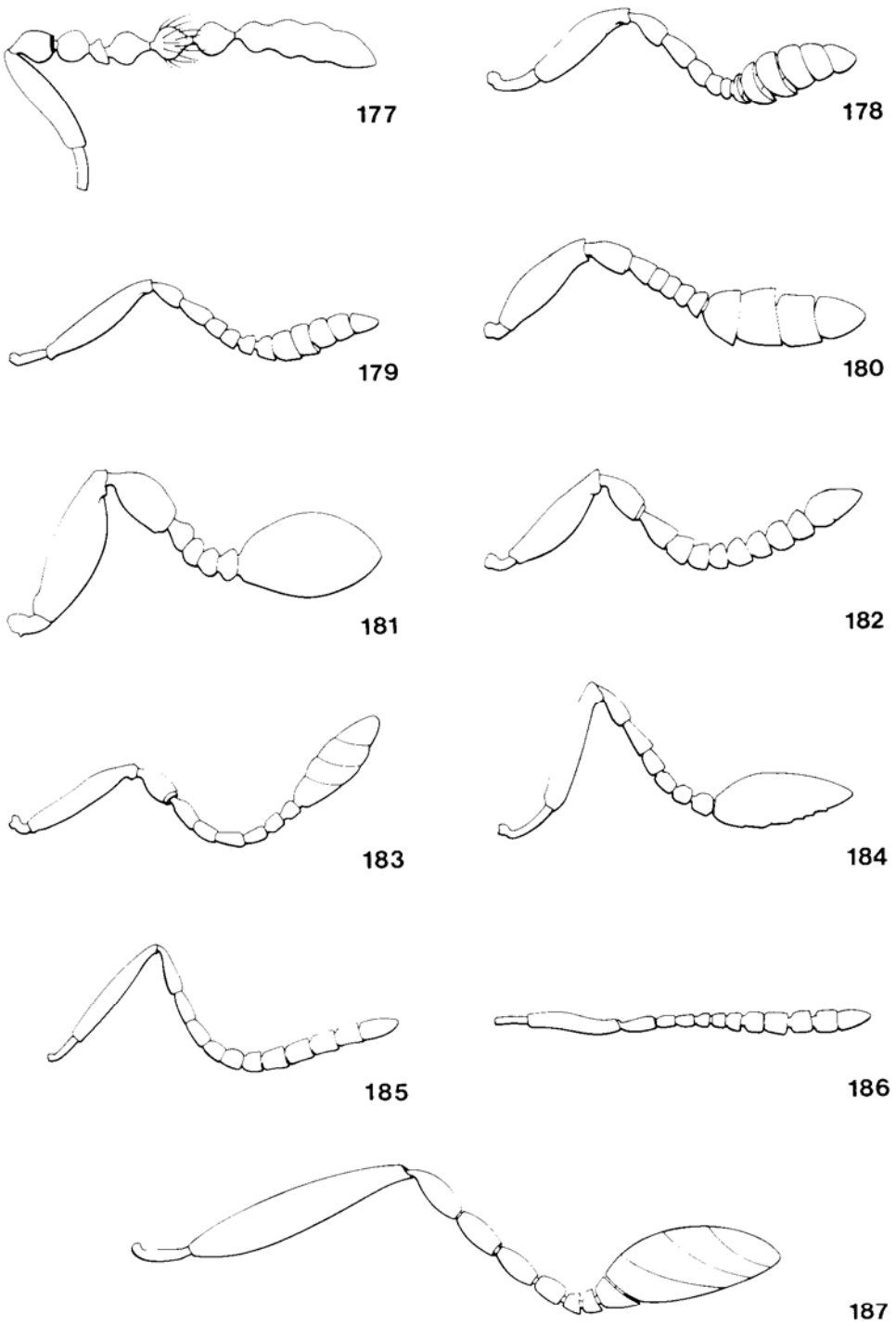




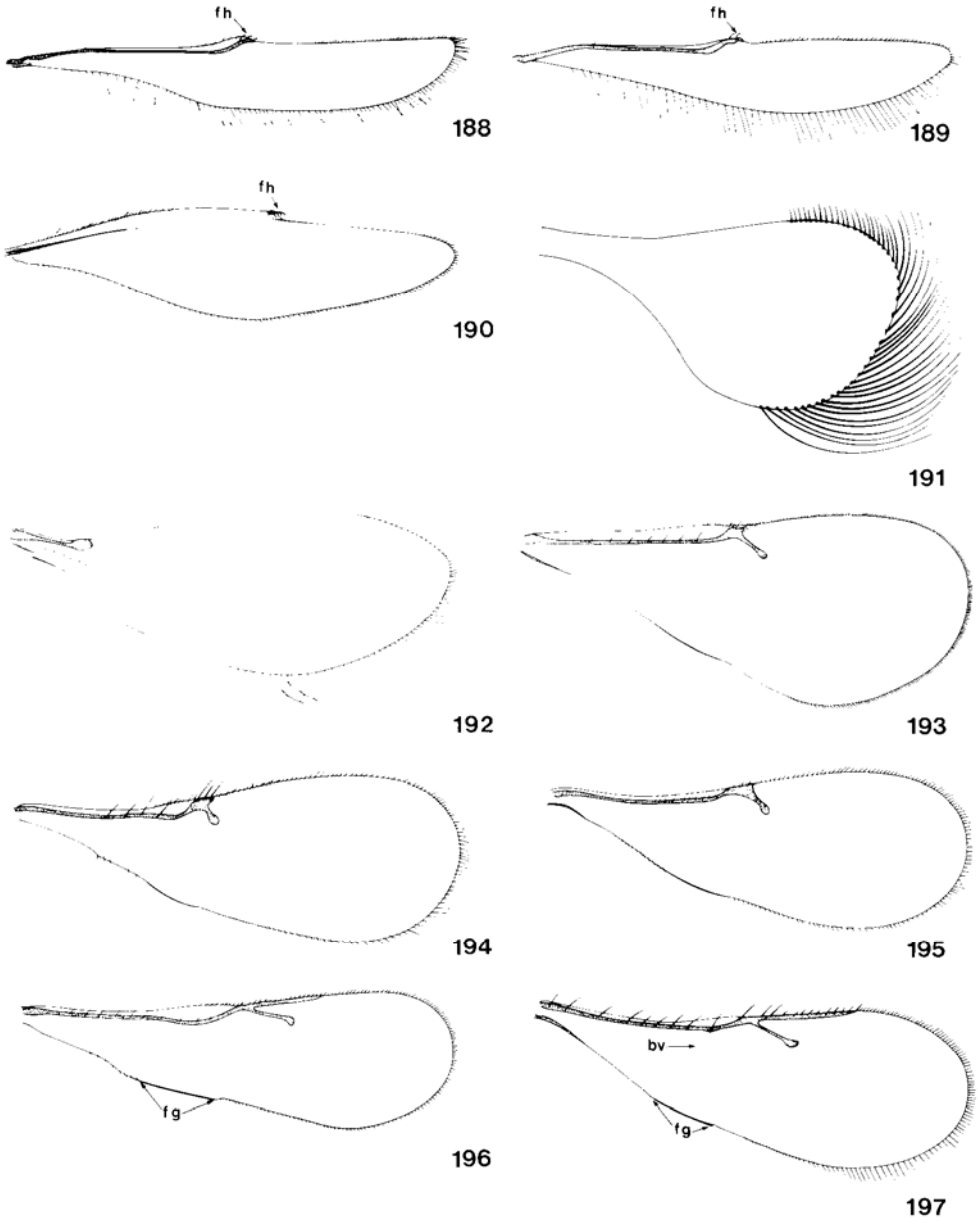




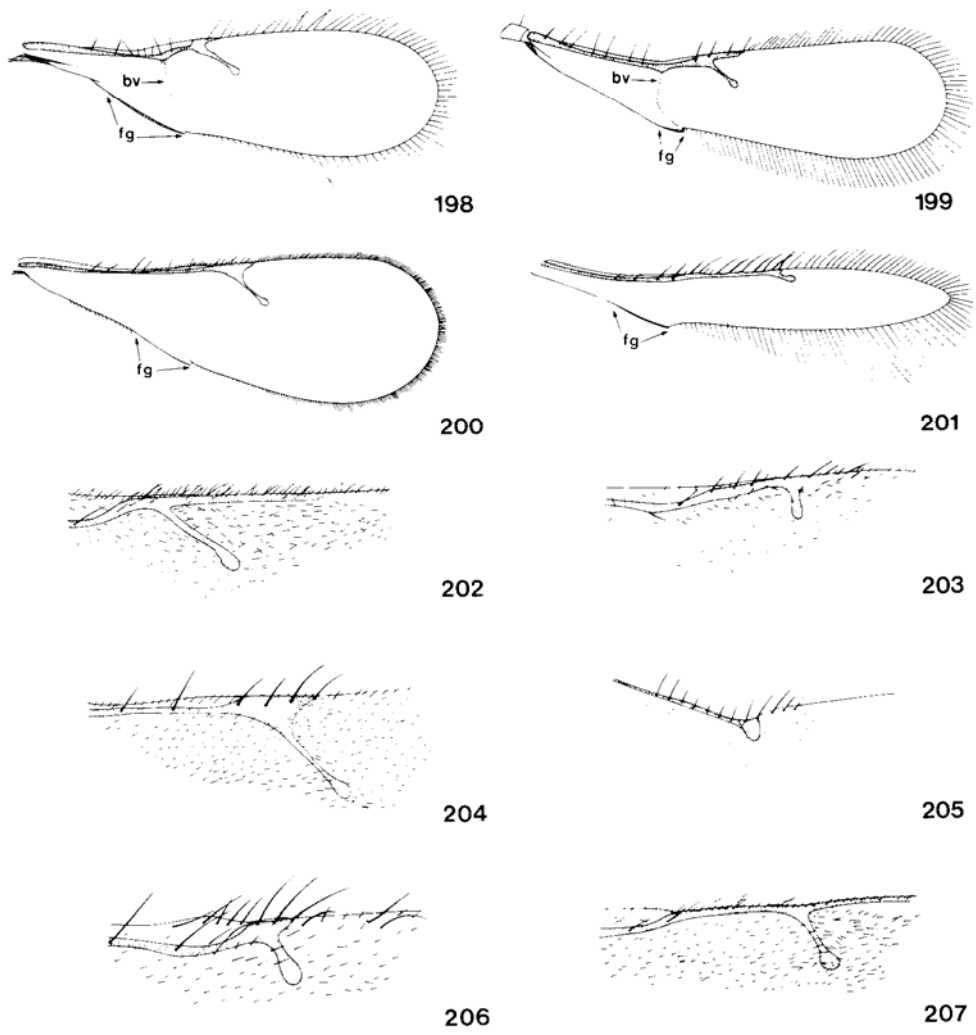
FIGS. 173-176. 173, *Microthoron baeoides* Msn., head ♀. 174, *Palaeogryon muesebecki* Msn., head and antenna ♀. 175, *Microthoron baeoides* Msn., lateral view ♀. 176, *Ladora brunnea* Msn. and Hugg., mesonotum ♀.



FIGS. 177-187. Antennae. 177, *Microthoron* sp. ♂; 178, *Calotelea* sp. ♀; 179, *Gryon floridanus* (Ashm.) ♀; 180, *Embioctonus* sp. ♀; 181, *Baeus* sp. ♀; 182, *Idris* sp. ♂; 183, *Tiphodytes gerriphagus* (March.) ♀; 184, *Thoron metallicus* Hal. ♀; 185, *Aradophagus fasciatus* Ashm. ♀; 186, *Ladora brunnea* Msn. and Hugg. ♀; 187, *Mecix texana* n. gen. and n. sp.



FIGS. 188-197. 188-189, hind wings: 188 *Macroteleia* sp.; 189, *Opisthacantha* sp.; 190, *Sparasion* sp. 191-197, fore wings: 191, *Encyrtoscelio* sp.; 192, *Exon californicum* n. gen. and n. sp., ♀; 193, *Gryon insularis* (Ashm.); 194, *Anteris* sp.; 195, *Psilanteris* sp.; 196, *Anteromorpha* sp.; 197, *Opisthacantha* sp.



FIGS. 198-207. 198-201, fore wings: 198, *Baeus* sp. ♂; 199, *Microthoron baeoides* Msn. ♀; 200, *Thoron metallicus* Hal. ♀; 201, *Eumicrosoma* sp. ♀; 202-207, fore wings, venation (detail): 202, *Gryon floridanus* Ashm.; 203, *Epigryon audax* n. gen. and n. sp. ♀; 204, *Thoron metallicus* Hal.; 205, *Pseudanteris insignis* Fouts; 206, *Anteris* sp.; 207, *Macroteleia* sp.