

## Glossary of Positional and Morphological Terms (Chalcidoidea - Chalcid Wasps)

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**abdomen:** The last or posteriormost of the three main body regions of an insect. In chalcids, like other apocritan Hymenoptera, the first 'true' abdominal segment (see propodeum) is rigidly attached to the thorax and there is a more or less flexible articulation between this fused segment and the 'apparent abdomen', which in chalcids is usually termed the metasoma or gaster.

**acetabular carina:** Term sometimes used for the transverse, ventral portion of the epicnemial carina on the mesothoracic venter under or behind the procoxae.

**acetabulum:** The cavity into which an appendage is articulated.

**acicular / aciculate:** Needle-like.

**acroleural sulcus:** The curved line or groove on the mesopleuron that distinguishes the posterior and ventral limits of the acroleuron or subalar area.

**acroleuron:** Synonym of subalar area, used sometimes for the primitively small dorsal region of the mesopleuron found in most chalcid families and, more commonly, for the derived enlarged region characteristic of Encyrtidae, Tanaostigmatidae, most Eupelmidae and some Aphelinidae.

**acuminate:** Tapering to a long point.

**admarginal cell:** Term sometimes used for a longitudinal bare region on the forewing disc immediately behind the marginal vein bounded posteriorly by the first abscissa of the Radial Sector (RS1) setal line.

**admarginal setae:** Row of differentiated setae on the ventral surface of the forewing behind the marginal vein.

**adnotaular setae:** One or more rows of differentiated setae on the mesoscutal midlobe adjacent to each notaulus.

**adoral depression:** See malar depression.

**adpetiolar strip:** Variously differentiated posteromedian region of the propodeum anterior to the propodeal foramen; sometimes called the adpetiolar triangle.

**adpetiolar triangle:** See adpetiolar strip.

**adpressed:** Lying against or along a structure (compare with decumbent and erect).

**adstigmatal setae:** A row of long setae aligned in front of the stigmatal vein in some chalcids.

**advanced axilla:** An axilla that projects distinctly anterior to the base of the scutellum because the transscutal articulation is deeply sinuate.

**aedeagal apodeme:** Rod-like structure extending anteriorly from each basolateral margin of the aedeagus.

**aedeagus:** Median lobe of the male genital capsule that is surrounded by the phallobase and through which the sperm duct traverses.

**alitrunk:** See mesosoma.

- anal filament:** A membranous extension from behind the anus that covers the ovipositor sheaths dorsally in some females with an exerted ovipositor.
- anal sclerite:** In some female Eupelmidae, a more or less sclerotized, flap-like sclerite that covers the anus.
- anal vein (A) setal line:** In Trichogrammatidae, used for a longitudinal setal line near the posterior margin of the wing behind the second branch of cubital vein (CU2) setal line; analogous or homologous with the subcubital setal line of other chalcids.
- anapleural suture:** Term that has been very rarely used in Agaonidae for the acropleural sulcus and which is not homologous with the true anapleural suture.
- anapleurite:** Term that has been very rarely used in the Agaonidae for the subalar area/acropleuron.
- anelliform:** In the shape of a disk, transverse or ring-like.
- anellus:** (pl. anelli) One or more, usually transverse or ring-like, basal flagellar segments that lack longitudinal sensilla.
- anteclypeus:** Term sometimes used for a slender depressed or rim-like, smooth apical margin of the clypeus.
- antenna:** Paired segmental sensory appendage on the head, composed of the scape, pedicel and flagellum.
- antennal cleaning organ:** Term used for the composite structure of the calcar of the foretibia and the strigil of the foretarsus, through which the antennae are stroked to clean them.
- antennal formula:** The number of units comprising the three segments of the antenna and the three regions of the flagellum, that is, the scape and pedicel as well as the anelli, funicle, and clava of the flagellum; for example, an antenna with a flagellum having 3 anelli, 5 funicular segments, and 3 claval segments would have an antennal formula of 11353.
- anterior:** (adv. anteriorly) Toward or at the head (front) end of the body or structure.
- anterior alar plate:** See preaxilla.
- anterior notal wing process:** A bilobed projection of the preaxilla with which the first axillary sclerite of the forewing articulates.
- anterior ocellus:** Middle, unpaired ocellus that normally is anterior to the paired posterior ocelli when three ocelli are present; sometimes called the median ocellus.
- anterior scutellum:** In Myrmecidae, an anterior portion of the scutellum that is differentiated by a transverse line.
- anterior tentorial pits:** Paired pits sometimes visible on the lower face that are external indications of the anterior tentorial arms and that partially delimit the lateral limit of the clypeus.
- antero-:** Prefix meaning toward the head or front end of a structure, e.g. anterolateral.
- apical / apex:** (adv. apically) The point farthest away from the body, at to toward the end of an appendage; synonymous with distal.
- apico-:** Prefix meaning toward the apex or far end of an appendage, or region or margin of a sclerite farthest away from the transverse midline of the body, e.g. apicolateral.
- arcuate:** Arched.
- arolium:** The median pad-like lobe that lies between the tarsal claws of a pretarsus.
- aulax:** (pl. aulaces) A longitudinal groove along the dorsal length of each first valvula, into which is fitted the rhachis of the second valvulae to form the tongue-and-groove olistheter

interlocking mechanism of the ovipositor stylets.

**axilla:** (pl. axillae) Usually paired, often triangular regions posterior to the mesoscutum that usually appear as anterolateral regions of the scutellum; the term is usually used for the entire structure but each axilla has both a dorsal surface and a lateral panel of the axilla.

**axillar carina:** Lateral, carinate margin of the axilla which differentiates the dorsal surface of the axilla from the lateral panel of the axilla.

**axillary sclerites:** Sclerites at the base of both the fore and hind wings, by which the wings are attached and articulate with the thorax (see also first, second, and third axillary sclerite).

**axillula:** (pl. axillulae) Lateral, usually more or less vertical subdivision of the scutellum differentiated from the rest of the scutellum by the axillular groove/carina or sublateral groove and from the axilla by the scutoscutellar suture.

**axillular groove / carina:** In most chalcids except Eulophidae, term used for a longitudinal groove (very rarely a carina) very close to the side of the scutellum that differentiate a lateral, usually more or less vertical scutellar region, the axillula, between the groove/carina and the usually posteriorly sloping axilla (see also sublateral grooves).

**basal / base:** (adv. basally) The point closest to the body, at to toward the base of an appendage; synonymous with proximal.

**basal cell:** Basal region of the forewing that is enclosed anteriorly by the submarginal vein, posteriorly by the cubital fold or cubital setal line, if present, and depending on the setal pattern either the basal fold or basal setal line or linea calva apically.

**basal fold:** Convex fold in the forewing, sometimes with a line of setae (see basal setal line), that is directed posterobasally from the parastigma and which forms the apex of the basal cell; sometimes called the basal vein if pigmented.

**basal setal line:** Row of setae on the upper surface of the forewing that is directed posterobasally from the parastigma and that forms the apex of the basal cell (see basal fold).

**basal vein:** See basal fold.

**basitarsal comb:** A row of flattened setae on the basitarsus that along with the calcar forms part of an antennal cleaning organ; in most chalcids the basitarsal comb consists of a longitudinal row of obliquely directed setae along the ventral margin of the basitarsus, though in some chalcids the row is very short and obliquely angled.

**basitarsal notch:** A ventral emargination of the basitarsus of the front leg of most chalcids that have a curved foretibial spur, along which is aligned the basitarsal comb, and which together form the strigil.

**basitarsus:** Basal (first) segment of the tarsus.

**baso-:** Prefix meaning toward the base (part closest to the body) of an appendage, or region or margin of a sclerite closest to the transverse midline of the body, e.g. basolateral.

**bifid:** See bifurcate.

**bifurcate:** Partly divided into two parts (cleft, forked).

**branched antenna:** See pectinate antenna.

**broken submarginal vein:** A submarginal vein that appears to be 'broken' because the base of the parastigma narrows and is separated slightly from the rest of the submarginal vein.

**buccal cavity:** See mouth cavity.

**calcar:** Term used for a curved, bifurcate or otherwise modified tibial spur of the front leg, which together with a strigil forms an antennal cleaning organ.

- callar furrow:** In Eupelmidae, a transverse furrow along the anterolateral margin of the propodeum anterior to each spiracle.
- callar region:** In female Eupelmidae, paired regions of the propodeum lateral to the plical furrows or the region lateral to each spiracle if there are no plical furrows and the callar regions and plical region are not differentiated.
- callus:** The area of the propodeum lateral to each spiracle or postspiracular sulcus, which is often convex and at least partly setose.
- campanulate:** Bell-shaped.
- capitate:** Knob-like or button-like.
- capitate peg sensillum:** Mushroom-shaped sensory structure on the flagellum, particularly the clava; sometimes called the sensilla ampullacea.
- cardo:** (pl. cardines) Basal section of the maxilla, by which the maxilla is attached to the head capsule.
- carina:** A ridge or small keel on a sclerite.
- caudad:** Toward the posterior or rear end.
- cephalad:** Toward the anterior or front (head) end.
- cercal bristles:** Term sometimes used for the long setae on the cercus.
- cercal plate:** Term sometimes used for the type of cercus that looks like a flat disc from which several long setae project.
- cercus:** (pl. cerci)(adv. cercal) Paired sensory structures on the last or second last metasomal tergite; the cercus is sometimes a setose finger-like projection that articulates with the tergum, but more often it looks like a low tubercle or plate-like structure that bears several long setae (see cercal plate); sometimes called the pygostylus.
- cheek:** Side of the head between the base of the mandible and lower margin of the eye, consisting partly of the lower face and partly of the gena.
- chelate structure:** See digitus.
- chitinized ridge:** See ventral ridge.
- clava:** Apically differentiated region of the flagellum usually composed of 1-3 segments, rarely 4 segments, and exceptionally (Rotoitidae) 6 segments; the claval segments usually are larger in size and/or partly to completely fused; often called the club.
- claval segments:** One to six apical segments of the antennal flagellum that form a differentiated region, the clava.
- clavate antenna:** An antenna that looks more or less club-like because the segments of the flagellum are widened distinctly toward the apex.
- closed linea calva:** A linea calva that is entirely or substantially enclosed posteriorly by a line or lines of setae on the dorsal surface of the wing (see also open linea calva and interrupted linea calva).
- club:** See clava.
- clypeal margin:** Ventral or lower margin of the clypeus that forms all or part of the median portion of the mouth margin on the front of the head.
- clypeogenal sulcus:** Term sometimes used for the lateral, more or less vertical portion of the epistomal sulcus below each anterior tentorial pit.
- clypeus:** Median region of the head above the mouth that is often distinguished from the rest of the lower face by a difference in sculpture, but whose exact boundaries sometimes are

indicated by the epistomal sulcus.

**collar:** Subhorizontal surface of the pronotum that is posterior to the neck.

**collum:** See neck.

**complete notaulus:** Notaulus that extends posteriorly to the transscutal articulation.

**compound eye:** See eye.

**cordate / cordiform:** Triangular with the corners of the base rounded.

**coronal suture:** In Mymaridae, median groove or a pair of grooves on the back of the head extending from the vertexal sulcus and converging toward the occipital foramen.

**costal cell:** The membranous region of the forewing anterior to the submarginal vein, measured from the basal constriction that delimits the apex of the humeral plate of the wing to the point at which the submarginal vein touches the leading edge of the wing.

**costula:** (pl. costulae) Transverse ridge on the propodeum near its middle.

**coxa:** (pl. coxae) The basal segment of a leg, which articulates with the thorax basally and the trochanter apically.

**coxal foramen:** Openings in the body wall of the thorax to which the coxae are articulated.

**cranium:** The head capsule.

**CU1:** See first branch of cubital vein (CU1) setal line.

**CU2:** See second branch of cubital vein (CU2) setal line.

**cubital fold:** Longitudinal, convex fold near the posterior margin of the forewing that is directed from near the base of the submarginal vein to or partly to the apical margin of the wing, and which often has a line of setae (see cubital setal line) that forms the posterior margin of the basal cell and sometimes closes the speculum or linea calva posteriorly; sometimes called the cubital vein if pigmented.

**cubital setal line:** Row of setae on the dorsal surface of the forewing near its posterior margin, which is directed longitudinally from near the base of the submarginal vein to or partly to the apical margin of the wing (see also cubital fold and subcubital setal line); in Trichogrammatidae termed CU2 or second branch of cubital vein.

**cubital vein:** See cubital fold.

**decumbent:** Often used as a synonym of adpressed, but simply meaning to project out at an angle from a structure and then bent back toward the structure (compare with erect).

**deltoid:** Elongate triangular.

**digital spines:** One or more curved spines at the apex of the volsella (see also digitus).

**digitate labrum:** Labrum that is deeply emarginate so as to appear finger-like.

**digitus:** Apically differentiated region of the volsella, which usually bears digital spines.

**disc:** (adv. discal) Membranous region of the forewing beyond the basal cell.

**discrimen:** Median, longitudinal sulcus on the ventral surface of the mesothorax, which is terminated posteriorly by the mesofurcal pit and is external indication of an invaginated phragma.

**distal / distad:** See apical / apex.

**dorsal / dorsad:** (adv. dorsally) At or toward the top or upper surface of the body or structure (above).

**dorsal aperture of the phallobase:** Opening on the anterodorsal surface of the phallobase through which the aedeagus is inserted through the male genital capsule.

**dorsal expansion of gonobase:** See dorsal lamina.

**dorsal lamina:** Posterodorsal surface of the phallobase posterior to the dorsal aperture of the phallobase.

**dorsellum:** The central, usually convex median portion of the metanotum that is differentiated from the more concave lateral panel of the metanotum.

**dorso-:** Prefix meaning toward the top or upper surface of a structure, e.g. dorsolateral.

**effaced:** See obsolete.

**elongate:** Much longer than broad (compare with oblong).

**emarginate:** A margin with a notch or inwardly curved or angled 'cut out' portion (compare with truncate).

**empodium:** See arolium.

**entire:** See percurrent.

**entire linea calva:** A linea calva in which the bare band is continuous to the posterior margin of the wing, without any setae on the dorsal surface at some point within the band or across the posterior end of the band; by definition an entire linea calva is also an open linea calva, but not a closed linea calva or an interrupted linea calva.

**epicnemial carina:** A ridge or carina that is sometimes present anteriorly on the mesepisternum behind the procoxa, and which may continue under the coxae (see acetabular carina) to the discrimen, which delimits an epicnemium between itself and the procoxa and a mesosternal shelf between itself and the mesocoxae.

**epicnemium:** Term often used for an anteroventrally differentiated portion of the mesepisternum that lies under the procoxa and behind and below the prepectus, though rarely used for the ventral portion of the prepectus between the ventral surfaces of the prothorax and mesothorax. In either sense the epicnemium is not homologous with the epicnemium of sawflies (Symphyta) and is an analogous region to similar looking regions in other Apocrita.

**epimeral sclerite:** See mesotrochantinal plate.

**epipygium:** Last tergite of the metasoma; used either as a synonym of syntergum or, in Torymidae, for a more or less separated and sclerotized, partly setose, often flap-like sclerite posterior to the eighth metasomal tergum in most females.

**epistomal margin:** See clypeal margin.

**epistomal sulcus:** When visible, sulcus that differentiates the clypeus from the rest of the lower face; sometimes used only for the mostly horizontal portion of the sulcus between the anterior tentorial pits (see also clypeogenal sulcus).

**erect:** Upright, or projecting straight out from a structure (compare with adpressed and decumbent).

**exodont mandible:** Mandible in which the teeth are curved outward and the mandibles do not overlap when closed.

**exserted ovipositor:** An ovipositor that projects distinctly beyond the apex of the last metasomal tergum.

**eye:** The paired organs of sight on the head that is composed of a large number of facets, sometimes referred to as the compound eye in contrast to the simple eye or ocellus.

**eye margin:** One of four margins of a compound eye, the upper or dorsal margin, lower or ventral margin, inner or anterior margin, and outer or posterior margin; sometimes called the orbit.

**face:** In most chalcids the entire frontal surface of the head below the anterior ocellus and

between and below the eyes to the mouth margin; in Mymaridae a similar region but below the transverse suture and between the preorbital sutures.

**facet:** One of the lens-like divisions on the surface of the compound eye, each of which forms the surface of an ommatidium.

**femoral depression:** Oblique depression on the mesopleuron that extends from near the mesocoxa toward the base of the forewing, which receives the mesofemur when this is appressed to the thorax.

**femur:** (pl. femora) Third segment of a leg that articulates basally with the trochanter and apically with the tibia.

**filiform antenna:** Antenna that looks whip-like because the segments of the flagellum are subequally wide or narrow slightly toward the apex.

**filum spinosum:** A row of differentiated, thickened or peg-like setae along the apical margin of the linea calva.

**first abscissa of Radial Sector (RS1) setal line:** In Trichogrammatidae, a setal line that extends posterobasally from the stigma; in literature on Chalcididae this setal line is designated as the Radial Sector (RS) vein or setal line, and RS1 is used for what is designated as RS2 in Trichogrammatidae.

**first axillary sclerite:** One of three axillary sclerites of the forewing; typically an elongate rod-like sclerite with several protrusions and margins that articulate (distally) with the humeral plate of the forewing, (anteriorly and anteromesally) with the anterior notal wing process, (laterally) with the second axillary sclerite, and (posteriorly) with the posterior notal wing process.

**first branch of cubital vein (CU1) setal line:** In Trichogrammatidae, used for a longitudinal setal line between the second branch of cubital vein (cu2) setal line and the median setal line.

**first gonapophysis:** See first valvula.

**first valvifer:** A more or less triangular to spindle shaped sclerite of the ovipositor, which is articulated to the semicircular sheet dorsally, the inner plate of the ovipositor ventrally, and the outer plate of the ovipositor apically (see also gonocoxa).

**first valvula:** Gonapophysis of the eighth abdominal segment, which forms the ventral portion of the ovipositor stylets; the first valvulae are a pair of lance-like structures that are interlocked along their dorsal length with the ventrolateral margins of the fused second valvulae by the olistheter so as to move anteriorly and posteriorly in a saw-like cutting motion.

**flagellar segment:** One segment-like subsection of the flagellum; sometimes called a flagellomere.

**flagellomere:** See flagellar segment.

**flagellum:** The antenna beyond the pedicel, which in chalcids consists of 1-12 flagellar segments or flagellomeres and often is differentiated into three regions, the anellus, funicle and clava.

**foramen:** (pl. foramina) Any opening in a body wall through which organs pass from one region to another.

**foramen magnum:** See occipital foramen.

**forewing venation:** See venation.

**forewings:** Pair of wings borne on the mesothorax.

**fossa:** A deep pit.

**fovea:** A depression or pit.

**frenal area:** See frenum.

**frenal line / sulcus / carina:** Transverse row of differentiated sculpture, groove or ridge that differentiates a posterior region of the scutellum, the frenum.

**frenum:** Posteriorly differentiated region of the scutellum anterior to any marginal rim that is delineated by a transverse carina, groove, row of foveae, or other change of sculpture; sometimes called the frenal area.

**frons:** See upper face.

**frontal carina:** See preorbital carina.

**frontal fork:** Term sometimes used for a V-shaped frontal sulcus and a synonym of frontofacial sulcus.

**frontal sulcus:** Transverse groove on the face below the anterior ocellus that is above and not connected to the scrobal sulcus or interantennal area; the term is sometimes used synonymously with frontofacial sulcus, which is connected to the scrobal sulcus or interantennal area (see also frontal fork).

**frontal trabecula:** See preorbital trabecula.

**frontofacial ridge:** Term sometimes used for a transverse ridge across the face above the scrobal depression, resulting from an abrupt change in angle and differentiating the anterior margin of the frontoververtex.

**frontofacial sulcus:** Transverse to more or less V-shaped grooves on the upper face that medially join or intersect the scrobal sulcus and/or interantennal area (see also frontal sulcus).

**frontogenal suture:** See malar sulcus.

**frontoververtex:** Term used for the composite vertex and that part of the upper face that is more or less dorsal compared with a more vertical part when the upper face is abruptly angled at some level above the torulus (see also frontofacial ridge).

**funicle:** The region of the antennal flagellum between the anellus/anelli and clava; sometimes called the funiculus.

**funicular segment:** One segment-like subsection of the funicle of the antenna.

**furcal pit:** A small 'hole' along the midline of the pleurosternum of each of the three thoracic regions; the furcal pit is external indication of an invagination that forms the furcal phragma of each thoracic region.

**furcal plate:** See first valvifer.

**galea:** (pl. galeae) Outer, apical lobe of the maxilla.

**gaster:** The posteriormost of the three main body regions of a chalcid, which looks like the insect abdomen but excludes both the first 'true' abdominal segment, the propodeum, and the second 'true' abdominal segment, the petiole (see also metasoma).

**gastral tail:** In some Agaonidae, term used for the composite tail-like structure formed by the ovipositor and elongated one or two last metasomal terga.

**gena:** Side of the head below the temple, that is, the lateral surface of the head behind the eye and below the eye posterior to the malar sulcus, if present.

**genal bridge:** See postgenal bridge.

**genal carina:** Ridge on the gena that extends from the ventrolateral corner of the mouth cavity toward or partly behind the eye; unlike the occipital carina a genal carina is not continuous

dorsally.

**genal hollow:** See malar depression.

**genal margin:** Margin of the mouth cavity on the lateral surface of the head above the mandible.

**genal sulcus:** See malar sulcus.

**geniculate:** Elbowed, or being abruptly angled.

**genital capsule:** Combined structures of the male genitalia, which usually consists of a more or less tubular phallobase surrounding an aedeagus; sometimes also called the phallus.

**glossa:** (pl. glossae) Inner pair of lobes at the apex of the prementum of the labium, which combined with the paraglossae form the 'fleshy' ligula.

**gonangulum:** (pl. gonangula) Synonymous with first valvifer and hypothesized to represent a detached portion of the gonocoxa of the ninth abdominal segment.

**gonapophysis:** (pl. gonapophyses) Mesal appendage (process) of the gonocoxa; the gonapophyses of the eighth abdominal segment form the first valvulae and the gonapophyses of the ninth abdominal segment form the second valvulae.

**gonobase:** See phallobase.

**gonocoxa:** (pl. gonocoxae) The presumptive coxae of the genital segments, abdominal segments eight and nine; in Hymenoptera the second valvifer is considered to be the gonocoxa of the ninth abdominal segment, whereas the gonocoxa of the eighth segment is hypothesized to be lost and the first valvifer is thought to be derived from a detached portion of the gonocoxa of the ninth segment, the gonangulum.

**gonoforcep:** See paramere.

**gonoplacs:** See ovipositor sheaths.

**gonostylus:** (pl. gonostyli) Stylus of a genital segment, the eighth and ninth abdominal segments.

**gula:** Posteromedian region of the head ventral to the posterior tentorial pits, between the occipital foramen and hypostomae, which is delineated laterally by the gular sulcus (see also postgenal bridge and hypostomal bridge).

**gular sulcus:** Paired, subparallel sulci on the posterior of the head between the occipital foramen and hypostomae that distinguish the outer margins of the gula.

**hair line:** See setal line.

**hairless streak:** Rarely used general term to designate either a linea calva or speculum on the forewing.

**hamuli:** Curved or hook-like setae on the leading edge of the hind wing that are used to grasp the retinaculum of the forewing to couple the forewing and hind wing together during flight.

**head:** The first or anteriormost of the three main body regions of an insect, which bears the mouthparts and major sense organs.

**hind wings:** Pair of wings borne on the metathorax.

**humeral plate:** Basally thickened part of the forewing just beyond the tegula, which is differentiated from the rest of the wing by a constriction and which likely was derived from fusion of the bases of some ancestral veins.

**hyaline break:** Term sometimes used for a small clear region or 'break' in the submarginal vein near the parastigma.

**hypochaeta:** In Mymaridae, a long seta that projects backward from the anterior margin of the ventral surface of the forewing from within a slender membranous region in front of the marginal vein; see also macrochaeta and microchaeta.

**hypognathous:** Position of the head if the long axis is oriented somewhat obliquely in line with the procoxae and the mouthparts are directed somewhat posteriorly; often used as a synonym of orthognathous.

**hypopygium:** The last or posteriormost metasomal sternum.

**hypostoma:** (pl. hypostomae) Posterior, more or less inflected portion of the head capsule on either side of and often dorsal to the labiomaxillary complex, which is delimited laterally by the hypostomal carina.

**hypostomal bridge:** Term used for a posteromedian region of the head between the occipital foramen and mouth cavity if delimited laterally by hypostomal carinae (see also gula and postgenal bridge).

**hypostomal carina:** Carinate margin of the mouth cavity on the posterior surface of the head that surrounds the labiomaxillary complex.

**incomplete notaulus:** Notaulus that is visible anteriorly on the mesoscutum but which does not extend posteriorly to the transscutal articulation.

**inner orbit:** Synonymous with 'inner margin of the eye' for most chalcids, but in Mymaridae the narrow region of the head between the inner margin of the eye and the preorbital suture.

**inner plate of ovipositor:** The elongate portion of the second valvifer beyond the semicircular sheet, which surrounds the ovipositor stylets and is terminated by the apically projecting ovipositor sheaths.

**interantennal area:** Region of the upper face between the scrobes, sometimes called the interantennal prominence, projection or crest because it is convex, ridged, or even lobed.

**interantennal crest:** See interantennal area.

**interantennal prominence:** See interantennal area.

**intermalar distance:** Maximum distance between the mouth corners, that is, the breadth of the mouth cavity.

**interorbital distance:** Distance between the inner margins of the eyes; usually the minimum distance but sometimes otherwise defined.

**interrupted linea calva:** A linea calva that has one or more setae on the dorsal surface of the wing at some intermediate point within the bare band (see also closed linea calva and open linea calva).

**intervolsellar bridge:** Ventral surface of the phallobase between the base of the volsellae, including the intervolsellar process.

**intervolsellar process:** Ventromedian projection of the phallobase that extends posteriorly between the volsellae of the male genital capsule, and which is continuous anteriorly with the ventral ridge.

**knee:** Term sometimes used for the region of a leg around the articulation between the tibia and femur, that is, a region composed of the apex of the femur and the base of the tibia.

**labial palpus:** Paired finger-like appendages on the labium composed of up to three segments.

**labiomaxillary complex:** Term for the composite ventromedian labium and ventrolateral pair of maxillae.

**labium:** Unpaired, ventral sclerite of the mouthparts that forms the median portion of the labiomaxillary complex.

**labrum:** Unpaired, dorsomedian sclerite of the mouthparts that is concealed under or partly to entirely exposed below the clypeus; the labrum is usually flap-like but sometimes is deeply

emarginate so as to be digitate, that is, with finger-like projections.

**lacinia:** (pl. lacinae) Inner, apical lobe of the maxilla.

**lamina / lamella:** A thin plate-like or leaf-like cuticular protrusion.

**laminated bridge:** Transversely striated band of notal membrane that connects the basally unfused portions of the second valvulae or stylet sheath.

**lanceolate:** Spear shaped, i.e. longer than wide and tapered apically (see also oval/ovate/ovoid and spatulate).

**lateral / laterad:** (adv. laterally) At or toward the side of the body or outer edge of a structure.

**lateral lobe of mesoscutum:** See mesoscutal lateral lobe.

**lateral ocellar line:** Minimum distance between the anterior and a posterior ocellus, abbreviated as LOL or LOD.

**lateral ocellus:** See posterior ocellus.

**lateral panel of axilla:** Lateral, vertical surface of each axilla.

**lateral panel of metanotum:** More or less concave region of the metanotum on either side of the dorsellum; sometimes called the 'lateral wings' of the metanotum.

**lateral panel of pronotum:** The more or less vertical, lateral surface of the pronotum below the mesothoracic spiracle.

**lateral tubercles:** See ventral process.

**lateral wing of metanotum:** See lateral panel of metanotum.

**ligula:** The apical 'fleshy' and microsetose lobe of the labium, formed from the combined glossae and paraglossae.

**linea calva:** Narrow, oblique bare band on the forewing disc that is directed from the posterobasal margin of the wing toward the base of the stigmal vein (see also speculum).

**linear sensilla:** See longitudinal sensillum.

**LOD:** See lateral ocellar line.

**LOL:** See lateral ocellar line.

**longitudinal sensillum:** (pl. longitudinal sensilla) Ridge-like, longitudinal sensory structure on some or all of the funicular and claval segments of the flagellum; sometimes called multiporous plate sensilla, linear sensilla, placoid sensilla, sensory ridges, or rhinaria. Characteristic of a longitudinal sensillum is that the apex projects free for varied lengths above the surface and/or beyond the apex of the respective flagellar segment so that it can look like a seta if the projection is very long, but unlike a seta it is not articulated and its surface is continuous with the segment.

**lower face:** Region of the face below the toruli.

**lower mesepimeron:** Ventral region of the mesepimeron that is sometimes differentiated from an upper mesepimeron by a transepimeral sulcus.

**lower mesepisternum:** Mostly ventral region of the mesepisternum below the transepisternal line/sulcus, if present, which comprises most of the mesothoracic venter; often termed the mesosternum.

**M1 seta:** In Signiphoridae, seta projecting from the upper surface of the anterior margin of what is called the marginal vein in signiphorids, which, if present, is basal to seta M5.

**M2 seta:** In Signiphoridae, basal-most seta beyond seta M5, which projects from the upper surface of the anterior margin of what is called the marginal vein in signiphorids.

**M2b seta:** In Signiphoridae, seta projecting from the upper surface of the anterior margin of

what is called the marginal vein in signiphorids, which, if present, is beyond seta M2 and basal to seta M6.

**M3 seta:** In Signiphoridae, seta projecting from the upper surface of the anterior margin of what is called the marginal vein in signiphorids, which is beyond seta M6 and basal to seta M4.

**M4 seta:** In Signiphoridae, apical-most seta projecting from the upper surface of the anterior margin of what is called the marginal vein in signiphorids.

**M5 seta:** In Signiphoridae, basal-most seta projecting from the upper surface of the posterior margin of what is called the marginal vein in signiphorids.

**M6 seta:** In Signiphoridae, if present, apical-most seta projecting from the upper surface of the posterior margin of what is called the marginal vein.

**macrochaeta:** (pl. macrochaetae) In Mymaridae, long, stout setae that have sockets and project forward from the dorsal surface of the marginal vein; see also hypochaeta and microchaeta.

**malar carina / keel / ridge:** A strong carina extending between the lower margin of the eye and the base of the mandible in a similar position as the malar sulcus.

**malar depression:** A depression immediately above the base of each mandible on the side of the head; sometimes called the adoral depression or hollow.

**malar distance:** See malar space.

**malar space:** Minimum distance between the lower margin of the eye and the margin of the mouth at the base of the mandible; sometimes called the malar distance.

**malar sulcus:** Groove or line extending between the lower margin of the eye and the margin of the mouth at the base of the mandible, which differentiates the gena from the lower face; sometimes called the genal sulcus.

**mandible:** Pair of strongly sclerotized, lateral mouthparts lying between the labrum and labiomaxillary complex, which are used for chewing; normally a mandible is differentiated apically into one or more teeth.

**mandibular appendage:** Toothed or serrate structure attached to the ventral surface of the mandible of some members of Agaonidae.

**mandibular formula:** Number of mandibular teeth on the left and right mandible respectively, written in the form of a ratio, for example, 3:2 or 3/2.

**mandibular teeth:** Angular or denticle-like projections along the apical margin of a mandible.

**marginal fringe:** See marginal setae.

**marginal rim of scutellum:** Extreme posterior margin of the scutellum if differentiated by a groove, line, or row of differentiated sculpture (see also frenum).

**marginal setae:** Fringe of setae that project from around the wing margin in the same plane as the wing membrane.

**marginal vein:** Portion of the forewing vein complex that is along the leading edge of the wing basal to the stigmal vein; usually measured from the point at which the submarginal vein touches the leading edge of the wing to the point at which the stigmal vein and postmarginal vein unite (sometimes there is a narrow membranous region anterior to the marginal vein and in some families, e.g. Signiphoridae, defined to include what is likely the parastigma of most other chalcids).

**maxilla:** (pl. maxillae) Paired, ventral sclerite of the mouthparts that forms the lateral portion of the labiomaxillary complex.

**maxillary palpus:** Finger-like appendage on each maxilla composed of up to five segments.

- medial / median:** (adv. medially) At or toward the center or midline (middle) of the body or structure.
- median (M) setal line:** A longitudinal setal line near the middle of the wing (see also median fold).
- median carina:** Longitudinal, medial ridge on the propodeum.
- median fold:** A concave longitudinal fold that normally is in the posterior half of the forewing but which is anterior to the cubital fold; sometimes called the mediolongitudinal flexion line (see also median setal line).
- median mesoscutal sulcus:** A longitudinal groove along the midline of the mesoscutum.
- median ocellus:** See anterior ocellus.
- median vein track:** See median (m) setal line.
- median ventral lamina / projection:** See intervolsellar process.
- median ventral projection:** See intervolsellar process.
- medio-:** Prefix meaning toward the midline of the body or structure, e.g. mediolongitudinal.
- mediolongitudinal flexion line:** See median fold.
- mesal / mesad:** At or toward the longitudinal midline of the body.
- mesepimeron:** Posterodorsal portion of the mesopleuron, which is differentiated from the mesepisternum by the mesopleural suture.
- mesepisternum:** Anteroventral portion of the mesopleuron, which is differentiated from the mesepimeron by the mesopleural suture.
- meso-:** Prefix that designates structures (except for the wings) of the second segment of the thorax, the mesothorax.
- mesolcus:** See discripen.
- mesonotum:** Dorsal sclerite of the mesothorax, which is almost always divided into an anterior mesoscutum and posterior scutellar-axillar complex by the transscutal articulation.
- mesopectus:** Term sometimes used for the entire lateral and ventral portion of the mesothorax (see also pleurosternum).
- mesopleural suture:** Oblique line on the mesopleuron that extends from near the mesocoxa toward the base of the forewing, which divides the mesopleuron into an anteroventral mesepisternum and posterodorsal mesepimeron.
- mesopleuron:** Pleuron of the mesothorax, which is normally subdivided into an acropleuron or subalar area, a mesepisternum, and a mesepimeron.
- mesopleurum:** See mesopleuron.
- mesopraescutum:** See mesoscutal midlobe.
- mesoscutal lateral lobe:** Paired lateral regions of the mesoscutum that are differentiated from a median midlobe when notauli are visible; sometimes called the scapula.
- mesoscutal midlobe:** Median or middle region of the mesoscutum that is differentiated from paired lateral lobes when notauli are visible.
- mesoscutum:** Region of the mesonotum anterior to the transscutal articulation and scutellar-axillar complex.
- mesosoma:** Middle of the three main body regions of apocritan Hymenoptera, which looks like the insect thorax but is composed of the thorax plus the propodeum; sometimes called the alitrunk.
- mesosternal shelf:** Ventral surface of the mesothorax between the mesocoxae and an epicnemial

carina, if there is one (see also epicnemium).

**mesosternum:** Synonymous with mesothoracic venter, that is, used for the ventral portion of the mesopleurosternum below the transepisternal line/sulcus, if such a line is visible. The ancestral mesosternum is hypothesized to be invaginated into the thorax and not externally visible in Hymenoptera, though a mesosternum has erroneously been ascribed to some Encyrtidae and Eupelmidae by some authors.

**mesotarsal pegs:** Peg-like structures on the ventral surface of one or more of the mesotarsal segments.

**mesothoracic spiracle:** Paired spiracles on the thorax that are adjacent to each anterolateral margin of the mesoscutum, typically at or near the juncture formed between the mesoscutal margin, the pronotum, and the anterodorsal angle of the prepectus; rarely the mesothoracic spiracle is surrounded by pronotal cuticle when the prepectus is fused with the pronotum; sometimes called the prothoracic spiracle.

**mesothoracic venter:** Ventral surface of the mesothorax, which is often called the mesosternum.

**mesothorax:** The middle, normally largest segment of the thorax, which bears the second pair of legs and the first pair of wings of those chalcids with wings.

**mesotibial apical pegs:** Peg-like structures near the anterior (outer) apical margin of the mesotibia in some chalcids, which are in a similar location and analogous to the protibial comb of the front leg of most chalcids.

**mesotrochantinal lobe:** Paramedial denticles or lobes that project from the posterior margin of the mesothoracic venter on which the base of the mesocoxa articulates; concealed beneath the coxal base in most chalcids but in most Eupelmidae externally visible as two distinct lobes or as a median plate that is cleft apically (see also trochantinal lobe).

**mesotrochantinal plate:** Posterior part of the mesothoracic venter that is reflexed dorsally under the bases of the mesocoxae and which normally is hidden.

**meta-:** Prefix that designates structures (except for the wings) of the last segment of the thorax, the metathorax.

**metanotal flange:** The thin, blade-like extensions of the dorsellum or postscutellum of the metanotum in Elasmidae.

**metanotum:** Dorsal sclerite of the metathorax, which is often differentiated into a median dorsellum and lateral, lateral panel of the metanotum.

**metapleuron:** Pleuron of the metathorax, which usually is triangular or rectangular and unlike the mesopleuron is not normally subdivided.

**metascutellum:** See dorsellum.

**metasoma:** The posteriormost of the three main body regions of apocritan Hymenoptera, which looks like the insect abdomen but excludes the first 'true' abdominal segment, the propodeum, which is fused to the thorax; the metasoma includes the second 'true' abdominal segment, the petiole (see also gaster).

**metasomal spiracle:** The single pair of functional spiracles on the metasoma, which are present on the seventh metasomal or sixth gastral tergum (normally the second last tergum).

**metasternal shelf:** In Torymidae, a widened anterior region of the metasternum that is visible externally as a more or less horizontal, ventral margin of the metapleuron above the base of the mesocoxa.

**metasternum:** Sternum of the metathorax, which is mostly concealed under the bases of the

metacoxae and metasoma.

**metatentoria:** See posterior tentorial pits.

**metathoracic spiracle:** Paired spiracles of the metathorax, usually not visible in chalcids but when present lying between each mesopleuron and metapleuron, usually near the dorsal margin of the metapleuron.

**metathorax:** The last segment of the 'true' thorax, which bears the third pair of legs and usually the second pair of wings, and is fused posteriorly to the propodeum (see also mesosoma).

**microchaeta:** (pl. microchaetae) In Mymaridae, setae on the margin or surfaces of the marginal vein that do not have sockets; see also microtrichia, hypochaeta, and macrochaeta.

**micropilose area:** Apical or ventral microsetose sensory region of the antennal clava.

**microtrichia:** (pl. microtrichiae) Short, setae-like spicules on the wing membrane that lack sockets; see also microchaeta.

**midlobe of mesoscutum:** See mesoscutal midlobe.

**mouth cavity:** Opening in the head capsule in which the mouthparts are positioned, sometimes called the oral fossa.

**mouth margin:** Margins of the mouth cavity, which consist of the clypeal margin and paraclypeal margin on the front of the head and the genal margin on the side of the head.

**mouthparts:** Collective term for the gustatory organs of the head, including the labrum, paired mandibles, paired maxillae, and labium.

**muco:** Spine-like process formed by a posteromedial extension of the hypopygium.

**multiporous plate sensilla:** See longitudinal sensillum.

**neck:** Anteriorly convergent sloping surface of the pronotum anterior to the collar; sometimes called the collum.

**notal membrane:** The membranous cuticle that connects the overlapped, dorsolateral portions of the second valvulae or stylet sheath of the ovipositor stylets.

**notaular line:** See notaulus.

**notaulix:** See notaulus.

**notaulus:** (pl. notauli) Paired lines or grooves on the mesoscutum that subdivide the sclerite into a median midlobe and lateral lobes; the notauli, if present, usually originate anteriorly near each mesothoracic spiracle and converge posteriorly, often ending near the inner angles of the axillae if they extend to the transscutal articulation. The notauli are external indications of internal phragmata that separate the dorsolongitudinal and dorsoventral flight muscles (see also parapsidal line).

**notum:** (pl. nota) The tergum of a thoracic segment.

**nucha:** Posteromedian region of the propodeum, if the region extends more or less neck-like posteriorly between the metacoxae.

**oblique:** Slanting in any direction between vertical and horizontal.

**oblong:** Somewhat longer than broad (compare with elongate).

**obsolescent:** Very faintly indicated, almost gone.

**obsolete:** Absent.

**occipital carina:** An upside-down U-shaped ridge on the back or posterior surface of the head; the occipital carina differentiates the posterior occiput and postgenae from the dorsal vertex and temples and lateral genae (see also genal carina).

**occipital foramen:** Opening on the posterior surface of the head through which organs of the

head and body are connected; sometimes called the foramen magnum.

**occipital margin:** Abruptly angled or carinate posterodorsal margin of the head that differentiates a dorsal surface from an abruptly declined posterior surface (see also occipital carina).

**occipital suture:** In Mymaridae, term used for a groove on the sides and back of the head in a position similar to the occipital carina of many other chalcids, but which extends from the malar sulcus and likely is synonymous with the postgenal sulcus.

**occiput:** Posterior surface of the head above the occipital foramen.

**ocellar area:** See stemmaticum.

**ocellar triangle:** Region of the head delimited by the three ocelli.

**ocellar-ocular groove:** Term used for a transverse groove between the posterior ocellus and upper margin of the eye in some Eucharitidae (see also vertexal sulcus).

**ocellocular line:** Minimum distance between a posterior ocellus and eye margin, abbreviated as OOL or OOD.

**ocellus:** (pl. ocelli) One of typically three bead-like lenses usually arranged in a triangle near the dorsal surface of the head; sometimes referred to as a simple eye in contrast to the compound eye.

**olistheter:** Term used for the composite tongue-and-groove interlocking mechanism of the first valvulae and second valvulae of the ovipositor stylets, and consisting of the aulax and rhachis, respectively.

**ommatidium:** (pl. ommatidia) Single sensory cell of a compound eye (see also facet).

**OOD:** See ocellocular line.

**OOL:** See ocellocular line.

**open linea calva:** A linea calva in which the bare band is continuous to the posterior margin of the wing, not being entirely or substantially closed posteriorly by setae; by definition an open linea calva can be an entire linea calva or an interrupted linea calva, but not a closed linea calva.

**oral cavity / fossa:** See mouth cavity.

**orbit:** See eye margin.

**orthognathous:** Position of the head if the long axis is oriented more or less vertically and the mouthparts are directed ventrally; sometimes used as synonym of hypognathous.

**outer panel of axilla:** See lateral panel of axilla.

**outer plate of ovipositor:** Anterior, lateral part of the U-shaped last metasomal tergum, which articulates anteriorly with the first valvifer of the ovipositor (see also inner plate of ovipositor and ovipositor sheaths).

**oval / ovate / ovoid:** Sometimes used for a symmetrical elliptical shape, but more correctly designating an egg shape, i.e. with one narrower and one broader, rounded end (see also lanceolate and spatulate).

**ovipositor:** Composite term for the egg-laying apparatus of females, which consists of the outer ovipositor sheaths and inner drilling ovipositor stylets, but sometimes used only for the stylets.

**ovipositor sheaths:** Paired outer protective sclerites surrounding the ovipositor stylets, which are formed from the third valvulae or gonostyli; the term is sometimes used to include the inner plate of the ovipositor but more correctly is the slender apical portion that often is

differentiated from the inner plate by a slight constriction (see also outer plate of the ovipositor).

**ovipositor stylets:** Inner, drilling structures of the ovipositor; the term is sometimes used only for the actual cutting valves, the second valvulae, and sometimes for the combined second valvulae and interlocked stylet sheath or first valvulae.

**para-:** Prefix meaning near to, e.g. paramedian.

**para-axillary suture:** See scutoscutellar suture.

**para-mesoscutellar suture:** See axillular groove/carina.

**paraclypeal margin:** Part of the mouth margin on the front of the head lateral to the clypeal margin.

**paraglossa:** (pl. paraglossae) Outer pair of lobes at the apex of the prementum of the labium, which combined with the glossae form the 'fleshy' ligula.

**paramedial / paramedian:** (adv. paramedially) Close to the longitudinal midline of the body or structure; synonymous with submedial/submedian.

**parameral seta:** Long seta that often originates from the apex of the paramere of the male genitalia.

**paramere:** Posterolaterally differentiated lobe of the phallobase external to the volsellae.

**parapsidal line:** Differentiated line or band of sculpture anteriorly on each mesoscutal lateral lobe; the parapsidal lines are external indications of the lines of attachment of the dorsoventral flight muscles in the pharate pupa; in much of the early chalcid literature the term parapsidal furrow referred to what is now accepted as the notaulus.

**parapside:** See mesoscutal lateral lobe.

**parascrobal area:** Region of the upper face between each scrobe and inner margin of the eye.

**parascutal carina / flange:** The lateral, carinate to flange-like margin of the mesoscutal lateral lobe (sometimes used only for the posterolateral portion of the margin that is recurved toward the transscutal articulation adjacent to the tegula).

**parascutellar suture:** See axillular groove/carina.

**parascutellum:** Term used by some authors for the axilla and by other authors for the axillula.

**paraspiracular carina:** Term used in the Eulophidae for a carinate inner margin of the paraspiracular sulcus (see also postspiracular sulcus and prespiracular carina).

**paraspiracular sulcus:** In Eulophidae, a longitudinal, diagonal or curved depression or furrow on the propodeum behind the spiracle, sometimes also called the spiracular sulcus (see also postspiracular sulcus).

**parastigma:** Apical region of the submarginal vein that usually is differentiated because it is abruptly curved, thickened, or separated slightly from the marginal vein, and sometimes projects posteriorly into the disc of the forewing; called the premarginal vein in the Trichogrammatidae.

**paratergite:** In many Encyrtidae, a narrow sclerite in the membranous area posterior to the cercus between the outer plate of the ovipositor and the syntergum.

**pectinate antenna:** An antenna that is 'branched' because one or more segments of the funicle have a long projection or ramus; sometimes called a branched or ramose flagellum.

**pectus:** Term sometimes used for the combined lateral and ventral portions of the mesothorax and metathorax, that is the ancestral pleuron and sternum.

**pedicel:** Second segment of the antenna, which articulates basally with the scape and apically

with the flagellum; sometimes called the pedicellus.

**percurrent:** Complete, or continuous throughout the entire structure.

**petiolar flange:** Flange-like extension of first gastral sternum, which supports the petiole ventrally.

**petiolate:** Being stalked, i.e. having a narrow, stem-like base or attachment.

**petiolate metasoma:** A metasoma that is differentiated from the mesosoma by a distinct constriction because of a variously long, tube-like petiole (see also sessile metasoma).

**petiole:** The second 'true' abdominal segment of a chalcid, which connects the mesosoma and the gaster; the petiole is the first segment of the metasoma and is more or less tube-like when there is a distinct constriction between the mesosoma and metasoma, and band-like when the mesosoma and metasoma are broadly joined.

**phallobase:** Tube-like structure that surrounds the aedeagus and that posteriorly is usually differentiated into a pair of medial volsellae and lateral parameres.

**phallotrema:** (pl. phallotremata) The distal opening of the aedeagus through which sperm is released.

**phallus:** See genital capsule.

**phragma:** (pl. phragmata) An internal ridge or projection of the body wall to which muscles are attached.

**placoid sensilla:** See longitudinal sensillum.

**plaque:** See ventral plaque.

**pleuron:** (pl. pleura) Sclerite that forms the lateral surface of each of the prothorax, mesothorax and metathorax.

**pleurosternum:** (adv. pleurosternal) Term sometimes used for the combined lateral and ventral regions of a thoracic segment, particularly the mesothorax though the sternum of the mesothorax is hypothesized to be invaginated and the sternopleural region to be composed entirely of pleural elements (see also mesopectus).

**pleurostomal area:** A smooth area on the side of the head above the base of the mandible.

**plica:** (pl. plicae) Sublateral ridge on the propodeum mesal to the spiracle (see also submedian carina of propodeum).

**plical carina:** See plica.

**plical depression:** In female Eupelmidae, median or anteromedial depression of the propodeum that may or may not be overlain by a posteriorly protuberant scutellum.

**plical furrow:** In Eupelmidae, furrow on the propodeum that extends from the posterolateral margin of the propodeal foramen toward the anterior margin of the propodeum and which differentiates the median plical regions from the lateral callar regions; presence of a postspiracular sulcus as well as a plical furrow in some females indicates that the two are not homologous.

**plical region:** In female Eupelmidae, median portion of the propodeum between the plical furrows or the entire region between the spiracles if there are no plical furrows and the plical region and callar regions are not differentiated.

**POD:** See posterior ocellar line.

**POL:** See posterior ocellar line.

**post-:** Prefix meaning behind or following, e.g. postscutellum.

**postalar plate:** See lateral panel of axilla.

- postcercale:** Maximum distance between the metasomal cercus and posterior margin of the syntergum.
- posterior:** (adv. posteriorly) Toward or at the hind (rear, back) end of the body or structure.
- posterior alar plate:** See lateral panel of axilla.
- posterior notal wing process:** Projection from the ventral margin of the lateral panel of the axilla, which along with the anterior notal wing process adjusts position of the axillary sclerites for proper movement of the forewing during flight.
- posterior ocellar line:** Minimum distance between the two posterior ocelli, abbreviated as POL or POD.
- posterior ocellus:** One of two paired ocelli that are lateral to and posterior to the unpaired anterior ocellus when three ocelli are present; sometimes called the lateral ocellus.
- posterior scutellum:** In Mymaridae, a posterior portion of the scutellum that is differentiated by a transverse line.
- posterior tentorial pits:** Paired pits sometimes visible on the back of the head near the occipital foramen that are external indications of the posterior tentorial arms.
- postero-:** Prefix meaning toward the rear end of a structure, e.g. posterolateral.
- postfrontal suture:** See vertexal sulcus.
- postgena:** (pl. postgenae) Posterolateral region of the posterior surface of the head below the occipital foramen.
- postgenal bridge:** Term used for a posteromedian region of the head between the occipital foramen and mouth cavity if undifferentiated except for a median line between the foramen and mouth cavity; in some chalcids a postgenal bridge results from inflection of the postgenae over the gula, but in others it likely results from fusion of the gula with the postgenae (see also hypostomal bridge).
- postgenal sulcus:** Sulcus on the head that extends posteriorly from the malar sulcus below the eye to the occipital foramen (see also occipital suture).
- postmarginal vein:** Portion of the forewing vein complex that is along the leading edge of the wing beyond the stigmal vein; measured from the point at which the stigmal vein and postmarginal vein unite, apically to where the vein appears to end.
- postoccipital carina:** If present, the carina on the back of the head that partially or completely surrounds the occipital foramen.
- postocciput:** Narrow region on the back of the head between the occipital foramen and postoccipital carina, if there is one.
- postorbital carina:** A ridge on the gena that extends posteriorly from the malar sulcus below the eye (see also postgenal sulcus).
- postpectal carina / flange:** A ventral, rim-like posterior margin of the mesothoracic venter anterior to the mesocoxae.
- postscutal flange:** See axillar carina.
- postscutellum:** Synonym of dorsellum, but in Elasmidae sometimes used for the central region of the dorsellum that bears the thin, posterolaterally projecting metanotal flanges.
- postscutum:** See axilla.
- postspiracular sclerite:** See prepectus.
- postspiracular sulcus:** In some chalcids, a longitudinal, diagonal, or curved depression or furrow on the propodeum behind the spiracle (see also paraspiracular sulcus).

**praescutellum:** See axilla.

**pre-:** Prefix meaning before or preceding, e.g. preapical.

**preapical carina of scutellum:** See frenal line/sulcus/carina.

**preaxilla:** The posterior, vertical portion of the mesoscutum below the parascutal carina/flange adjacent to the tegula; the preaxilla is extended posteroventrally into the anterior notal wing process.

**precoxal carina / sulcus / suture:** These terms have been used by different authors for either the transepisternal line/sulcus or the transepisternal sulcus.

**premarginal vein:** In Trichogrammatidae, term used for the parastigma.

**prementum:** Basal portion of the labium, which is connected on either side to the stipes of the maxilla, and which bears the ligula apicomediaally and the paired labial palpi apicolaterally.

**preorbital carina:** Ridge on the face that parallels the inner margin of the eye.

**preorbital suture:** In Mymaridae, vertical suture that is subparallel with the inner margin of the eye and that forms the inner margin of the preorbital trabecula and lateral margin of the face.

**preorbital trabecula:** In Mymaridae, the more or less vertical, thickened, often darker band of cuticle adjacent to and subparallel with the inner margin of each eye, which dorsally terminates at the juncture of the transverse trabecula and supraorbital trabecula (see also preorbital suture).

**prepectal carina:** Carina, when present, that differentiates the ventral margin of each vertical, lateral portion of the prepectus from the lateral margin of the horizontal, ventral prepectal shelf.

**prepectal shelf:** The ventral, horizontal portion of the prepectus that unites the two lateral, vertical portions of the prepectus, which lies between the posterior margin of the prosternum and the anterior margin of the mesothoracic venter.

**prepectus:** Sclerite on the side of the thorax between the lateral panel of the pronotum and the mesopleuron; in most chalcids the prepectus looks like separate, more or less triangular sclerites on either side of the thorax, but usually it is at least narrowly continuous ventrally under the procoxae (see prepectal shelf); in some chalcids the prepectus is reduced and difficult to see and in a few it is fused to the pronotum; sometimes called the postspiracular sclerite.

**prescutum:** See mesoscutal midlobe.

**prespiracular carina:** Term used in the Torymidae for a carinate inner margin of the postspiracular sulcus of the propodeum (see also paraspiracular carina).

**pretarsus:** Composite structure consisting of the tarsal claws and arolium, which is attached to the apex of the last or apical tarsal segment; the pretarsus is not counted as a tarsal segment although can be mistaken for one when large.

**pro-:** Prefix that designates structures of the first segment of the thorax, the prothorax.

**prognathous:** Position of the head when the long axis is oriented horizontally and the mouthparts are directed anteriorly.

**pronotal carina:** When present, a transverse ridge on the pronotum that differentiates a neck from the collar.

**pronotal sulcus:** In Eucharitidae, term used for a median longitudinal groove on the side of the pronotum.

**pronotum:** Dorsal sclerite of the prothorax, which overlaps the sides of the thorax so as to be

upside-down U-like; the pronotum usually is more or less loosely articulated with the mesothorax (see also lateral panel of the pronotum).

**propleuron:** Pleuron of the prothorax, usually mostly concealed under the pronotum.

**propodeal disc:** Term sometimes used for the central region of the propodeum between the spiracles or plicae if present.

**propodeal foramen:** Posterior opening of the propodeum through which organs of the mesosoma and metasoma are connected.

**propodeal spiracle:** Paired, typically oval or kidney-shaped, openings on the propodeum, usually near the anterior margin laterally.

**propodeum:** The first 'true' abdominal segment, which in apocritan Hymenoptera is fused to the thorax as the posteriormost section of the mesosoma.

**prosternum:** Sternum of the prothorax, which is usually more or less diamond-shaped and mostly concealed under the propleurae and procoxae.

**prothoracic spiracle:** See mesothoracic spiracle.

**prothorax:** The anteriormost segment of the thorax, which bears the first pair of legs but no wings.

**protibial apical pegs:** Peg-like structures near the dorsoapical margin of the protibia (see also).

**protibial comb:** A row of setae along the anterior (outer), apical margin of the protibia in the area between the calcar and basitarsus (see also mesotibial apical pegs).

**protibial spur:** Tibial spur of the front leg; in most chalcids the protibial spur is short and straight (inconspicuous and needle-like) when there are 3 or 4 tarsal segments, but relatively robust, curved, and apically cleft (bifid, bifurcate) when there are 5 tarsal segments; sometimes called the calcar.

**proximal / proximad:** See basal/base.

**pygostylus:** See cercus.

**quadrangular:** Having four angles; sometimes used as a synonym of quadrate or specifically for a rectangular shape that is wider than long (compare with quadrate and rectangular).

**quadrate:** Approximately square in shape (compare with quadrangular and rectangular).

**r-m crossvein track:** See radio-medial (r-m) setal line.

**radial cell:** Anteroapical region of the forewing delimited between the postmarginal vein, stigmal vein, and second abscissa of the Radial Sector (RS2) setal line.

**radial process:** In Trichogrammatidae, basal stub-like portion of the premarginal vein (parastigma) that extends beyond the submarginal vein into the wing membrane.

**radial vein:** See postmarginal vein.

**radicle:** Basal, neck-like or tubular constriction of the scape that articulates with the torulus, which can look like a separate antennal segment if long; sometimes called the radicula or radiculus.

**radio-medial (r-m) setal line:** A setal line that extends longitudinally or posteroapically from the stigma.

**Radius (R) setal line:** In Trichogrammatidae, a setal line that extends diagonally toward the anteroapical margin of the wing from the stigmal vein anterior to the second abscissa of Radial Sector (RS2) setal line.

**ramose antenna:** See pectinate antenna.

**ramus:** Finger-like projection or lobe of a funicular segment.

- rectangular:** Having four sides, more or less at right angles, and with one dimension obviously longer than the other; sometimes used specifically for a rectangular shape that is longer than broad (compare with quadrate and quadrangular).
- retinaculum:** The ventrally curved portion of the posterior margin of the forewing, onto which hook the hamuli of the hind wing to couple the forewing and hind wing together during flight.
- rhachis:** (pl. rhachies) A pair of longitudinal ridges ventrally along the length of the fused second valvulae, which fit into the aulax of each first valvula to form the tongue-and-groove olistheter interlocking mechanism of the ovipositor stylets.
- rhinaria:** See longitudinal sensillum.
- rhomboidal:** Diamond shaped.
- ring segment:** See anellus.
- RS1:** See first abscissa of Radial Sector (RS1) setal line.
- RS2:** See second abscissa of radial sector (rs2) setal line.
- scape:** The first or basal-most segment of the antenna, which articulates with the head by the radicle.
- scapula:** See mesoscutal lateral lobe.
- scapular flange:** Region (often slender) of the mesoscutal lateral lobe that is differentiated between the axillae and lateral lobe when the axillae are advanced.
- sclerite:** Any plate of the body wall bounded by membrane or sutures.
- scrobal cavity:** See scrobal depression.
- scrobal channel:** See scrobal depression.
- scrobal depression:** Depression on the upper face composed of the two scrobes, sometimes called the scrobal cavity or scrobal channel.
- scrobal sulcus:** Inverted V- or Y-shaped grooves on the upper face of many eulophids in the same position as the scrobes, which unite dorsally and, if inverted Y-shaped, continue dorsally as a median sulcus toward the anterior ocellus (see also frontofacial sulcus).
- scrobe:** Depression on the upper face immediately above each torulus for reception of the antennal scape, the pair of depressions are often united dorsomedially into a single scrobal depression.
- scrobis:** See scrobe.
- scutal suture:** See transscutal articulation.
- scutellar suture:** See scutoscutellar suture.
- scutellar-axillar complex:** Region of the mesonotum posterior the transscutal articulation; often simply referred to as the scutellum, but composed of the scutellum and axillae.
- scutellum:** Posteromedian, usually more or less teardrop or shield-like region of the mesonotum posterior to the transscutal articulation between the axillae.
- scutoscutellar suture:** Groove or line that separates the axillae from the scutellum (see also transscutal articulation).
- second abscissa of Radial Sector (RS2) setal line:** In Trichogrammatidae, a setal line that extends diagonally from the uncus toward the anteroapical margin of the wing; in literature on Chalcididae this setal line is designated as the RS1.
- second axillary sclerite:** One of three axillary sclerites of the forewing; typically a more or less triangular sclerite that articulates ventrally with the dorsal margin of the mesopleuron,

mesally with the first axillary sclerite, and dorsoapically with the base of the submarginal vein.

**second branch of cubital vein (CU2) setal line:** In Trichogrammatidae, used for a longitudinal setal line near the posterior margin of the wing that is termed the cubital setal line or cubital vein in other chalcids.

**second gonapophysis:** See second valvula.

**second gonocoxa:** See second valvifer.

**second valvifer:** Valvifer or gonocoxa of the ninth abdominal segment, which consists of a basal semicircular sheet and apically prolonged inner plate of the ovipositor, which is terminated by the ovipositor sheaths.

**second valvula:** Gonapophysis of the ninth abdominal segment, sometimes called the stylet sheath, which forms the dorsal part of the ovipositor stylets; in Chalcidoidea the second valvulae are separate basally for a short distance, where they are connected by the laminated bridge, but distally are fused; the fused portions consist of two asymmetric dorsolateral portions that overlap to a greater or lesser extent and that are connected by notal membrane; the second valvulae interlock ventrally with the cutting first valvulae through the olistheter and articulate basally with the inner surface of each semicircular sheet of the second valvifer.

**secondary comb:** See protibial comb.

**semicircular sheet:** Basal, more or less subtriangular or semicircularly expanded portion of the second valvula, which is continued apically as the inner plate of the ovipositor and to which muscles are attached for movement of the ovipositor stylets.

**sensilla ampullacea:** See capitate peg sensillum.

**sensilla placodea:** See longitudinal sensillum.

**sensory ridge:** See longitudinal sensillum.

**serrate:** Having a saw-tooth like margin.

**sessile metasoma:** A metasoma that is broadly attached to the mesosoma, that is, without a distinct constriction between the two regions (see also petiolate metasoma).

**seta:** Hair-like sensory structure that is articulated basally; sometimes called a trichoid sensillum (see also longitudinal sensillum).

**setal line:** General term for setae that are aligned into a distinct row on the forewing disc.

**setal track:** See setal line.

**side lobe of mesoscutum:** See mesoscutal lateral lobe.

**simple eye:** See ocellus.

**spatulate:** Spoon shaped (see also lanceolate and oval/ovate/ovoid).

**speculum:** A bare region of the forewing immediately beyond the basal setal line behind the parastigma (see also linea calva).

**spicula:** See terminal spine.

**spiracle:** External opening in the body wall for a tracheal air tube, which forms part of the respiratory system of an insect; in most chalcids at least three sets of spiracles are visible, the mesothoracic spiracle, propodeal spiracle, and metasomal spiracle, as well as sometimes a metathoracic spiracle.

**spiracular sulcus of propodeum:** See paraspiracular sulcus.

**stemmaticum:** If encompassed by grooves, a median region on top of the head that bears the ocelli; sometimes called the ocellar area.

**sternaular area:** Term sometimes used for an anteroventral region of the mesepisternum behind the procoxa, anterior to and below the femoral depression, if delineated by an oblique groove that likely is homologous with the transepisternal line/sulcus (see also epicnemium).

**sternaulus:** See transepisternal line/sulcus.

**sternopleural suture:** Term sometimes used for a line or sulcus on the mesothorax that seems to differentiate a pleuron and sternum, thus the term has been used for both the transepisternal line/sulcus and for the ventral part of the acropleural sulcus in chalcids with a greatly enlarged subalar area (acropleuron).

**sternum:** Sclerite that forms part of the ventral surface of the thorax and abdomen, except for the mesothorax where the mesopleura are thought to meet at the midline or discrimen.

**stigma:** More or less knob-like enlargement at the apex of the stigmal vein.

**stigmal vein:** Portion of the forewing vein complex that projects into the wing membrane from the apex of the marginal vein; measured from the point at which the stigmal vein and postmarginal vein unite, apically to where the vein appears to end.

**stipes:** (pl. stipites) Normally the largest section of the maxilla, which bears the maxillary palpus, galea and lacinia, and which is greatly enlarged in some chalcids.

**strigil:** Modified first tarsal segment of the front leg, consisting of a ventrobasal emargination, the basitarsal notch, in which there is a row of modified setae, the basitarsal comb, which together with the calcar forms an antennal cleaning organ.

**stylet sheath:** Term sometimes used for the composite structure of the fused second valvulae.

**stylets:** See ovipositor stylets.

**sub-:** Prefix meaning under, near to, or about equal to, e.g. sublateral.

**subalar area:** A small, often slightly convex dorsal region of the mesopleuron below the base of the forewing; sometimes called the acropleuron, particularly in families where it is enlarged to form most or all of the mesopleuron.

**subalar pit:** A small 'hole' in the mesopleuron below the base of the forewing, which normally lies between and delimits the posterior margin of the subalar area from the anterodorsal margin of the mesepimeron; the subalar pit is external indication of a phragma.

**subantennal grooves / sulci:** Paired grooves or lines on the lower face between each torulus and mouth margin.

**subcostal scale:** See humeral plate.

**subcubital fold:** A slightly concave fold in the forewing that is adjacent to the posterior margin of the wing behind the cubital fold, which often is indicated only by a line of setae (see subcubital setal line); sometimes called the subcubital vein if pigmented.

**subcubital setal line:** A longitudinal line of setae on the ventral surface of the wing adjacent to its posterior margin behind the dorsal cubital setal line (see also anal vein (A) setal line as well as subcubital fold).

**subcubital vein:** See subcubital fold.

**subeffaced:** See obsolescent.

**subgenital plate:** See hypopygium.

**sublateral:** (adv. sublaterally) Close to the lateral margin of the body or structure.

**sublateral groove:** In Eulophidae, paired longitudinal grooves very close to the sides of the scutellum that differentiate a lateral, usually more or less vertical scutellar region, the axillula, between the groove and the usually posteriorly sloping axilla (see also axillular

groove/carina).

**submarginal vein:** Basal-most portion of the forewing vein complex that occurs behind the costal cell; measured from the constriction that delimits the humeral plate to the point at which the vein touches the leading edge of the wing apically.

**submedial / submedian:** (adv. submedially) Close to the longitudinal midline of the body or structure; synonymous with paramedial or paramedian.

**submedian area:** Anteromedian region of the propodeum bounded laterally by the plicae and often posteriorly by the costula, and sometimes divided into paired regions by the median carina.

**submedian carina of propodeum:** Longitudinal ridge on both sides of the propodeum near its midline (see also plicae).

**submedian groove:** Paired longitudinal lines or grooves on the scutellum that are closer to the midline than to the sides (see also sublateral groove); sometimes called the submedian line.

**subocellar sulcus:** In male Eupelmidae, a vertical line of weakness or more distinct furrow between the anterior ocellus and apex of the interantennal area.

**subocular area:** In Mymaridae, region of the lower face between the malar sulcus and preorbital suture.

**subocular sulcus:** See malar sulcus.

**subpleural area:** See mesosternal shelf.

**sulcus:** A linear groove on a sclerite that was derived secondarily for a functional reason; often used synonymously with suture because of uncertain homology.

**supraclypeal area:** Median part of the lower face between the dorsal limit of the clypeus and the toruli.

**supracoxal flange:** Posteriorly reflexed margin of the callus that projects over the base of the metacoxa.

**supraorbital suture:** In Mymaridae, suture on the top of the head that parallels the upper margin of each eye and that forms the outer margins of the supraorbital trabecula and vertex.

**supraorbital trabecula:** In Mymaridae, the thickened, often darker band of cuticle on the top of the head that is adjacent to and parallel with the upper margin of each eye, which anteriorly terminates at the juncture of the transverse trabecula and preorbital trabecula (see also supraorbital suture).

**suture:** A linear groove on a sclerite that is external indication of the line of fusion of two formerly separate sclerites, but more often is used imprecisely as a synonym of sulcus.

**syntergum:** Term often used for the last metasomal tergum if this is a composite structure resulting from the fusion of the seventh and eighth metasomal terga; see also epipygium.

**tarsal claws:** Paired hooked (claw-like) structures projecting from the apex of the last tarsal segment on either side of the arolium of the pretarsus.

**tarsal comb:** See basitarsal comb.

**tarsal segment:** One segment of the tarsus.

**tarsomere:** See tarsal segment.

**tarsus:** Fifth segment of a leg that basally articulates to the tibia and normally consists of three to five subsegments.

**tegula:** Small, typically oval sclerite that covers the region of the mesothorax where the forewing and thorax articulate through the axillary sclerites.

- temple:** Region on the top of the head behind each eye (see also vertex and gena).
- tentorial arms:** Paired cuticular invaginations within the head that form part of the tentorium, which often are externally visible on the front of the head below the toruli as the anterior tentorial pits and on the back of the head near the occipital foramen as the posterior tentorial pits.
- tentorium:** Internal, usually more or less H-like endoskeleton of the head that serves as a site for muscle attachment and that braces the head.
- tergite:** A dorsal sclerite of any segment of the thorax or abdomen when it consists of a single sclerite, often used synonymously with tergum (see also notum).
- tergum:** (pl. terga) The upper or dorsal surface of any segment of the thorax or abdomen, whether consisting of one or more sclerites (see also tergite and notum).
- terminal process of stigmal vein:** Term sometimes used for that portion of the stigmal vein that extends beyond the uncus.
- terminal spine:** Needle-like projection from the apex of the clava; sometimes called the spicula.
- third axillary sclerite:** One of three axillary sclerites of the forewing; typically an elongate twisted sclerite that articulates distally with the remnants of the anal vein and ventrally with the dorsal margin of the second axillary sclerite.
- third valvulae:** See ovipositor sheaths.
- thorax:** (pl. thoraces) The middle of the three main body regions of an insect composed of the prothorax, mesothorax and metathorax; which bear the legs and normally two pairs of wings, sometimes used as synonym of mesosoma.
- tibia:** Fourth segment of a leg that articulates basally with the femur and apically with the tarsus.
- tibial comb:** See protibial comb.
- tibial spur:** One or two longer and sometimes otherwise modified, articulated spines at or near the ventroapical margin of a tibia; the protibia and mesotibia each have a single spur and the metatibia has one or two spurs (see also calcar).
- torulus:** (pl. toruli) Socket on the head in which the antenna articulates.
- trabecula:** (pl. trabeculae) In Mymaridae, term used for an H-like pattern of lines on the face and vertex, which consists of a transverse line on the upper face that connects with lines along the upper and inner margins of each eye; the lines are usually darker than the surrounding cuticle because they are thickened regions resulting from inrolled cuticle.
- transcutellar sulcus / suture:** See frenal line/sulcus/carina.
- transepimeral sulcus:** Typically a partly transverse groove or line on the mesepimeron that differentiates an upper mesepimeron and lower mesepimeron; when present it is often arched posterodorsally from near the mesocoxa, in which case it can also delimit a trochantal lobe anterior to the mesocoxa, or it extends diagonally or transversely from the mesopleural suture, but it is quite varied and sometimes is reduced to a single pit.
- transepisternal line / sulcus:** A line of lighter color, change of sculpture, or more distinct groove on the mesepisternum that extends from the anterolateral corner of the mesocoxa toward the procoxa and, when present, divides the mesepisternum into an upper mesepisternum and lower mesepisternum (see also sternopleural suture).
- transoccipital suture:** In Mymaridae, a transverse groove extending entirely across the head between the eyes behind the vertexal sulcus.
- transscutal articulation:** Usually a more or less transverse line of weakness across the

mesonotum at the level of the forewings that differentiates an anterior mesoscutum and posterior scutellar-axillar complex, and that permits flexion of the mesonotum for flight; often called the transscutal sulcus or suture.

**transverse:** Broader than long, or at a right angle to the longitudinal axis.

**transverse suture:** In Mymaridae, a horizontal suture between the eyes above the toruli that forms the ventral margin of the transverse trabecula and dorsal margin of the face.

**transverse trabecula:** In Mymaridae, the horizontal band of thickened, often darker cuticle on the head that extends between each eye below the anterior ocellus and above the toruli, which laterally terminates at the juncture of the supraorbital trabecula and preorbital trabecula (see also transverse suture).

**trapezoidal:** A four sided shape in which two of the sides are parallel and two are not.

**trichoid sensillum:** See seta.

**trochantellus:** Basally delineated region of the femur that often looks like a separate segment similar to the trochanter.

**trochanter:** Second segment of a leg that articulates basally with the coxa and apically with the femur.

**trochantinal lobe:** Term sometimes used (especially Eulophidae) for a slender region along the extreme posterior margin of the mesepisternum anterior to each mesocoxa, and not homologous with mesotrochantinal lobe as used in Eupelmidae.

**truncate:** Cut off squarely, i.e. with the apical, transverse margin straight (compare with emarginate).

**uncus:** Stub-like vein projecting from the stigma that is directed obliquely toward the leading edge of the wing.

**unguis:** See tarsal claws.

**upper face:** Region of the face above the toruli; sometimes called the frons.

**upper mesepimeron:** Dorsal region of the mesepimeron that is sometimes differentiated from a lower mesepimeron by a transepimeral sulcus.

**upper mesepisternum:** Mostly lateral region of the mesepisternum differentiated between the mesopleural suture and transepisternal line/sulcus, if present.

**valvifer:** (pl. valvifers) The basal plates of the ovipositor (see also gonocoxa, first valvifer, and second valvifer).

**venation:** The complete system of veins of a wing, which in the chalcidoid forewing usually consists of a submarginal vein, marginal vein, postmarginal vein, and stigmal vein.

**ventral / ventrad:** (adv. ventrolaterally) At or toward the bottom or lower surface of the body or structure (below).

**ventral frame of phallobase:** The thickened, longitudinal, ventromedial cuticular margins of the phallobase if the phallobase is not continuous ventrally but has a median longitudinal opening.

**ventral plaque:** Carina or flange along the ventral edge of the scape, which often has a region of pores or other sensory patch.

**ventral process:** Paired papillae or tubercle-like structures on the ventral surface of the phallobase lateral to the ventral ridge at or near the base of the intervolsellar process.

**ventral ridge:** Median cuticular thickening of the ventral surface of the phallobase that may be continued posteriorly as the intervolsellar process between the volsellae.

**ventro-**: Prefix meaning toward the bottom or lower surface of a structure, e.g. ventrolateral.

**vertex**: Region on top of the head that is behind the anterior ocellus and between the eyes (see also temple).

**vertexal sulcus**: Transverse groove on the top of the head that extends from the eye just anterior or posterior of the posterior ocellus; sometimes called the occipital sulcus (see also ocellar-ocular groove).

**volsella**: (pl. volsellae) Posteromedially differentiated lobe of the phallobase that usually has one or more curved spines apically (see also digitus).

**volsellar seta**: Seta that originates from near the apex of the volsella basal to the digitus of the genitalia of some chalcid males.