Supplementary Material Table S1: Morphological and anatomical terms used in species descriptions and their matching URIs on Hymenoptera Anatomy Ontology (HAO).

Term	HAO Term	Concept	URI	Reference (sensu)
anellus	anellus	One or more, usually transverse or ring-like, basal flagellar segments that lack longitudinal sensilla.	http://purl.obolibrary.org/obo/HAO_0000287	Gibson et al. 1998.
antenna		Paired segmental sensory appendage on the head, composed of the scape, pedicel and flagellum.	http://purl.obolibrary.org/obo/HAO_0000101	Gibson et al. 1998.
antennomere		A subdivision of the antenna, including true segments (scape, pedicel) and annuli of the flagellum (flagellomere).	http://purl.obolibrary.org/obo/HAO_0000107	Deans, A. R. 2009 in HAO Portal.
basitarsus		The tarsomere that is the basal-most subdivision of the tarsus, connected proximally with the tibia and distally with the second tarsomere.	http://purl.obolibrary.org/obo/HAO_0000178	Miko, I. 2009 -2014 in HAO Portal.
cercus		Paired sensory structures located apicolaterally on the last or second last metasomal tergite. Usually have a button-like or finger-like appearance and bear long setae.	http://purl.obolibrary.org/obo/HAO_0000191	Gibson et al. 1998.
club	clava	The anatomical cluster composed of the apical flagellomeres that are differentiated by size from the basal flagellomeres.	http://purl.obolibrary.org/obo/HAO_0001185	Bertone, M. A. 2009 in HAO Portal.
clypeus		The anteromedial area of the cranium, which is the site of origin of the clypeo-epipharyngeal muscle of the head capsule, lying below the (lower) face, and to which the labrum is articulated. Dorsally usually separated from the (lower) face by an epistomal sulcus and laterally by the clypeo-pleurostomal lines.	http://purl.obolibrary.org/obo/HAO_0000212	Karlsson & Ronquist 2012.
costa	costal margin	The margin that delimits the wing anteriorly.	http://purl.obolibrary.org/obo/HAO_0001977	Miko, I. 2009 -2014 in HAO Portal.
denticle	digital tooth/ digital spine	A short, strong cuticular projection located on the volsellar digitus of the male genitalia.	http://purl.obolibrary.org/obo/HAO_0001574	
digitus		The sclerite that is located on the distoventral part of the gonostyle/volsella complex, and is articulated with the more proximal sclerites of the gononstyle/volsella complex. Apically differentiated region of the volsella, which usually bears digital spines.	http://purl.obolibrary.org/obo/HAO_0000385	Miko, I. 2009 -2014 in HAO Portal; Gibson et al. 1998
disc		The apical region of the forewing beyond the basal cell.		Gibson et al. 1998.
discal seta		A strong seta present in the discal area of the wing (see figures 129, 130, 141, 142).		Woolley 1988.
dorsal setae (wing)		The setae present on the dorsal surface of the wing vein.		
epiproct		The sclerite that is located dorsally of the anal opening.	http://purl.obolibrary.org/obo/HAO_0000980	Miko, I. 2009 -2014 in HAO Portal.
face	lower face	The area that is limited dorsally by the ventral margin of the antennal foramen laterally by the malar sulcus and ventrally by the oral foramen.	http://purl.obolibrary.org/obo/HAO_0000502	Miko, I. 2009 -2014 in HAO Portal; Gibson et al. 1998
femur		Third segment of a leg that articulates basally with the trochanter and apically with the tibia.	http://purl.obolibrary.org/obo/HAO_0000327	Gibson et al. 1998.
flange		The projection that is lamella-like and is located on a rim, carina, apodeme or edge.	http://purl.obolibrary.org/obo/HAO_0000344	Miko, I. 2009 -2014 in HAO Portal.
fore wing		The wing that is located on the mesothorax.	http://purl.obolibrary.org/obo/HAO_0000351	Deans, A. R. 2009 in HAO Portal.
frons	upper face	The area that is located dorsally of the ventral margin of the antennal rim and ventrally of the anterior ocellus medial to the inner margins of the eye and malar line.	http://purl.obolibrary.org/obo/HAO_0001044	Miko, I. 2009 -2014 in HAO Portal.
frontovertex		The anatomical cluster that is composed of the vertex and the dorsal area of the upper face dorsal to the frontofacial ridge.	http://purl.obolibrary.org/obo/HAO_0001823	Miko, I. 2009 -2014 in HAO Portal.
gena		The area that is delimited by the intersection of the interorbital plane, the margin of the compound eye, the margin of the oral foramen, the occipital carina and the malar sulcus.	http://purl.obolibrary.org/obo/HAO_0000371	Yoder, M. J. 2009 in HAO Portal.
genitalia		The anatomical system that is involved in copulation, fertilization and/or oviposition.	http://purl.obolibrary.org/obo/HAO_0000374	Nichols 1989.
head		The first or anteriormost of the three main body regions of an insect, which bears the mouthparts and major sense organs.	http://purl.obolibrary.org/obo/HAO_0000397	Gibson et al. 1998.
hind wing		The wing that is located on the metathorax.	http://purl.obolibrary.org/obo/HAO_0000400	Deans, A. R. 2009 in HAO Portal.
leg		A thoracic appendage. The anatomical cluster that is composed of the coxa and all distal leg segments and is connected to the pectus.	http://purl.obolibrary.org/obo/HAO_0000494	Bertone, M. A. 2009 in HAO Portal.
mandible		The paired, heavily sclerotized biting and chewing lateral appendage of the mouthparts between the labrum and maxilla.	http://purl.obolibrary.org/obo/HAO_0000506	Goulet & Huber 1993.
mandibular ducts		Tubular structures that open in each mandibular teeth that end internally in a sac-like or globular-like gland.		Woolley 1988.
mandibular tooth		The projection that is located distally on the mandible.	http://purl.obolibrary.org/obo/HAO_0001019	Miko, I. 2009 -2014 in HAO Portal.
marginal vein	marginalis	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)	http://purl.obolibrary.org/obo/HAO_0000512	Gibson et al. 1998.
medial propodeal sclerite		A triangular medial sclerite set off by sulci from the rest of the propodeum, usually with differentiated surface sculpture and sometimes, color.		Woolley 1988.
mesofemur		The femur that is located on the mid leg.	http://purl.obolibrary.org/obo/HAO_0001131	Bertone, M. A. 2009 in HAO Portal.
mesoscutum	anteromesoscutum	Region of the mesonotum anterior to the transscutal articulation and scutellar-axillar complex.	http://purl.obolibrary.org/obo/HAO_0001490	Gibson et al. 1998.
mesotibia		The tibia that is located on the mid leg.	http://purl.obolibrary.org/obo/HAO_0001351	Bertone, M. A. 2009 in HAO Portal.
mesotibial spur		The tibial spur that is located on the mesotibia.	http://purl.obolibrary.org/obo/HAO_0001120	Miko, I. 2009 -2014 in HAO Portal.
metafemur		The femur that is located on the hind leg.	http://purl.obolibrary.org/obo/HAO_0001140	Bertone, M. A. 2009 in HAO Portal.
metanotum	metanotum	The alinotum that is located in the metathorax, is connected with the mesoscutellum and the mesopostnotum anteriorly and the acrotergite of the first abdominal tergum posteromedially.	http://purl.obolibrary.org/obo/HAO_0000603	Miko, I. 2009 -2014 in HAO Portal.
metasoma	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).	http://purl.obolibrary.org/obo/HAO_0000626	Gibson et al. 1998.
metatibia		The tibia that is located on the hind leg.	http://purl.obolibrary.org/obo/HAO_0000631	Miko, I. 2009 -2014 in HAO Portal.
Ms3		The sternite of the third metasomal segment (fourth abdominal segment).	http://purl.obolibrary.org/obo/HAO_0001831	
Ms6		The sternite of the sixth metasomal segment (seventh abdominal segment).	http://purl.obolibrary.org/obo/HAO_0001834	
Mt1 (metasomal tergite 1)		The tergum that is located on abdominal segment 2.	http://purl.obolibrary.org/obo/HAO_0000053	Miko, I. 2009 -2014 in HAO Portal.
Mt2		The tergum that is located on the abdominal segment 3.	http://purl.obolibrary.org/obo/HAO_0000056	Miko, I. 2009 -2014 in HAO Portal.
occipital margin		The edge that separates the vertex and the occiput. Abruptly angled or carinate posterodorsal margin of the head that differentiates a dorsal surface from an abruptly declined posterior surface.	http://purl.obolibrary.org/obo/HAO_0001963	Hopper et al. 2012; Gibson et al. 1998.
occiput		The area that is located posteriorly on the head and is delimited externally by the vertex and the posterior margin of the gena, and medially by the postocciput.	http://purl.obolibrary.org/obo/HAO_0000658	Gibson et al. 1998.
ocellus		A simple eye, consisting of a single, usually round or oval facet.	http://purl.obolibrary.org/obo/HAO_0000661	Goulet & Huber 1993.
ovipositor		The anatomical cluster that is composed of the first valvulae, second valvulae, third valvulae, first valvifers, second valvifers and female T9.	http://purl.obolibrary.org/obo/HAO_0000679	Deans, A. R. 2009 in HAO Portal.
ovipositor sheaths	third valvula	Paired outer protective sclerites surrounding the ovipositor stylets, which are formed from the third valvulae or gonostyli.	http://purl.obolibrary.org/obo/HAO_0001012	Gibson et al. 1998.
pedicel		Second segment of the antenna, which articulates basally with the scape and apically with the flagellum.	http://purl.obolibrary.org/obo/HAO_0000706	Gibson et al. 1998.
process		Here, this term is applied to an extension of the medial portion of the propodeum that projects into the metasoma in *Signiphora*.		Woolley 1988.
profemur		The femur that is located on the fore leg.	http://purl.obolibrary.org/obo/HAO_0001124	Bertone, M. A. 2009 in HAO Portal.
projection	sternal apodemes	Here, this term is applied to anterior projections of metasomal sclerites 3-6 in signiphorid females.	http://purl.obolibrary.org/obo/HAO_0002007	Woolley 1988.
pronotum		Dorsal sclerite of the prothorax, which overlaps the sides of the thorax so as to be upside-down U-like.	http://purl.obolibrary.org/obo/HAO_0000853	Gibson et al. 1998.
propodeum	abdominal tergum 1	The tergum that is located on abdominal segment 1.	http://purl.obolibrary.org/obo/HAO_0000051	Snodgrass 1935.
protibia		The tibia that is located on the fore leg.	http://purl.obolibrary.org/obo/HAO_0000350	Deans, A. R. 2009 in HAO Portal.

Term	HAO Term	Concept	URI	Reference (sensu)
scape		The first or basal-most segment of the antenna, which articulates with the head by the radicle.	http://purl.obolibrary.org/obo/HAO_0000908	Gibson et al. 1998.
sclerite		Any plate of the body wall bounded by membrane or sutures.	http://purl.obolibrary.org/obo/HAO_0000909	Gibson et al. 1998.
scrobe	antennal scrobe	The scrobe that is located dorsally of the antennal foramen and is for the reception of the antenna.	http://purl.obolibrary.org/obo/HAO_0001432	Miko, I. 2009 -2014 in HAO Portal.
sculpture		Markings or a pattern of impressions or elevations on the surface of a structure.	http://purl.obolibrary.org/obo/HAO_0000913	Goulet & Huber 1993.
scutellar sensillum		The campaniform sensilla that is paired and is located submedially on the mesoscutellum.	http://purl.obolibrary.org/obo/HAO_0001965	Hopper et al. 2012; Gibson et al. 1998.
scutellum	mesoscutellar-axillar complex	Region of the mesonotum posterior the transscutal articulation; often simply referred to as the scutellum, but composed of the scutellum and axillae.	http://purl.obolibrary.org/obo/HAO_0000572	Gibson et al. 1998.
seta	sensillum trichodeum	Hair-like sensory structure that is articulated basally; sometimes called a trichoid sensillum.	http://purl.obolibrary.org/obo/HAO_0002299	Gibson et al. 1998.
seta M1		Seta projecting from the dorsal surface of the anterior margin of the wing vein (figure 6); if present, is basal to seta M5. Usually shorter than the other setae in signiphorid wings. Often opposite to or basal to the parastigmal sensilla.		Woolley 1988.
seta M2		Basal-most seta beyond seta M5, which projects from the dorsal surface of the anterior margin of the marginal vein (figure 6).		Woolley 1988.
seta M2b		When there are 5 setae projecting from the dorsal surface of the anterior margin of the marginal vein, a seta between setae M2 and M3. In these cases, M2 and M2b are between M5 and M6, and M3 is distal to M6.		Woolley 1988.
seta M3		Seta projecting from the dorsal surface of the anterior margin of the marginal vein in signiphorids, which is beyond seta M2 and basal to seta M4.		Woolley 1988.
seta M4		Apical-most seta projecting from the dorsal surface of the anterior margin of the marginal vein (figure 6).		Woolley 1988.
seta M5		Basal-most seta projecting from the dorsal surface of the posterior margin of the marginal vein (figure 6), next to parastigmal sensilla.		Woolley 1988.
seta M6		Apical-most seta projecting from the dorsal surface of the posterior margin of the marginal vein (figure 6).		Woolley 1988.
seta S		A strong seta projecting from the dorsal surface of the stigmal vein (figure 6).		Woolley 1988.
spine		The process that lacks non-sclerotised rings at the base.	http://purl.obolibrary.org/obo/HAO_0000949	Richards & Richards 1979; Miko, I. 2009 -2014 in HAO Portal.
spur		The process that is surrounded by conjunctiva and evaginated and that is basally sclerotized.	http://purl.obolibrary.org/obo/HAO_0000951	Richards & Richards 1979; Miko, I. 2009 -2014 in HAO Portal.
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.		Gibson et al. 1998.
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.	http://purl.obolibrary.org/obo/HAO_0000972	Gibson et al. 1998.
tarsomere		One segment of the tarsus.	http://purl.obolibrary.org/obo/HAO_0000991	Gibson et al. 1998.
ventral setae (wing)		The setae located on the ventral surface of a wing vein.		
vertex		The area that is delimited by the intersection of the margin of the compound eyes, the interorbital plane, and the anatomical line that is tangential to the point on the margin of the anterior ocellus which defines the minimum distance between the anterior ocellus and the oral foramen.	http://purl.obolibrary.org/obo/HAO_0001077	Yoder, M. J. 2009 in HAO Portal.
wing		The appendage with its base inserted between the notum and the pleuron and usually membranous, modified for flight.	http://purl.obolibrary.org/obo/HAO_0001089	
wing base		The proximal part of the wing.		

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