

Table S4. Semantic statements of natural language phenotypes composed in Protégé 5.0 (<http://protege.stanford.edu/>) using the OWL Manchester syntax.

Entity	Value	Semantic
Antennal scrobe count	absent	not (has part some antennal scrobe)
Antennal scrobe count	present	has part some antennal scrobe
Anterior mesoscutal width vs posterior mesoscutal width	AscW/PscW=0.9	has part some (anterior mesoscutal width quality measured as some (has measurement in some posterior mesoscutal width)))) a 0.9f]))))
Anterior mesoscutal width vs posterior mesoscutal width	AscW/PscW=0.8-0.9	has part some (anterior mesoscutal width quality measured as some (has measurement in some posterior mesoscutal width)))) a 0.8f, <= 0.9f]))))
Anteromedian projection of the metanoto-propodeo-metapecto-mesopectal complex count	present	has part some anteromedian projection of mesopectal complex
Anteromedian projection of the metanoto-propodeo-metapecto-mesopectal complex count	absent	not (has part some anteromedian projection of mesopectal complex)
Areolate Sculpture on Body Count	absent	not (has part some (anatomical region an
Areolate Sculpture on Body Count	present	(has part some (mesosoma and (bearer of frons and (bearer of some areolate)))
Axillular carina count	present	has part some axillular carina
Axillular carina count	absent	not (has part some axillular carina)
Axillular carina shape	left and right carina continuous posteromedially forming a U-shape carina on the mesoscutellar axillar complex	has part some (axillular carina and (not (bearer of some left))) and (bearer of some right)))
Axillular carina shape	The left and right carina are separated posteromedially	has part some (axillular carina and (bearer of left)) and (bearer of some right))
Axillular carina shape	absent	not (has part some axillular carina)

Entity	Value	Semantic
Body length universal	2575 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some <u>float</u> [>= 2575.0f])
Body length universal	2200 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some <u>float</u> [>= 2200.0f])
Body length universal	1500-2700 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 1500.0f]))
Body length universal	1.4-1.7 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 1.0f]))
Body length universal	2.0-2.3 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 2.0f]))
Body length universal	1150-2300 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 1150.0f]))
Body length universal	2450-3125 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 2450.0f]))
Body length universal	2.6-2.7 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 2.6f]))
Body length universal	2100-2600 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 2100.0f]))
Body length universal	5.3-6.6 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 5.3f]))
Body length universal	1750-2000 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 1750.0f]))
Body length universal	6.5-6.8 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 6.5f]))

Entity	Value	Semantic
Body length universal	1750-2450 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 1750 and ≤ 2450]))))
Body length universal	1650-1875 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 1650 and ≤ 1875]))))
Body length universal	4.6-8.0 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 4.6 and ≤ 8.0]))))
Body length universal	2000-3450 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 2000 and ≤ 3450]))))
Body length universal	2.4-2.6 mm	<u>has part</u> some (<u>body</u> and (<u>bearer of</u> some (<u>has measurement unit label</u> value some (<u>float</u> [≥ 2.4 f] and <u>float</u> [≤ 2.6 f]))))
Body length universal	2.4-3.0 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 2.4 f] and ≤ 3.0 f))))
Body length universal	2325-2500 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 2325 and ≤ 2500]))))
Body length universal	7.0-7.8 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 7.0 f] and ≤ 7.8 f))))
Body length universal	1.8-1.9 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 1.8 f] and ≤ 1.9 f))))
Body length universal	5.5-9.1 mm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 5.5 f] and ≤ 9.1 f))))
Body length universal	1270-1300 μm	<u>has part</u> some (<u>median anatomical line</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 1270 and ≤ 1300]))))
Cephalic size (csb)	Mean: 4.8-6.0	<u>has part</u> some (<u>absolute cephalic size</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [≥ 4.8 f] and ≤ 6.0 f))))

Entity	Value	Semantic
Cephalic size (csb)	Mean: 2.0-4.5	<u>has part</u> some (<u>absolute cephalic size</u> and <u>measured as</u> some ((<u>has measurement unit</u> and <u>measurement value</u> some (<u>float</u> [>= 2.0f]))))
Color hue pattern	Scape, hind leg except metacoxa ochre; fore and hind legs, distal metacoxa yellow; rest of body brown	((not (<u>scape</u>)) and (<u>part of</u> some (<u>body</u> <u>part</u> some (<u>fore leg</u> and (<u>bearer of</u> some and (<u>bearer of</u> some <u>yellow</u>))) and (<u>has part</u> some (<u>metacoxa</u>)))) and (<u>has part</u> some (<u>metafemur</u>)))
Color hue pattern	Antenna except pedicel and scape, cranium, mesosoma except fore and middle legs and distal region of metacoxa, and metasoma brown; fore and middle legs. tegula, pedicel, scape, maxillary palp, and labial palp yellow	((not (<u>pedicel</u>)) and (<u>part of</u> some (<u>antenna</u> <u>has part</u> some (not (<u>scape</u>)))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>has part</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>has part</u> some (<u>labial palp</u> and (<u>bearer of</u> some <u>mesosoma</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>has part</u> some (<u>maxillary palp</u> and (<u>bearer of</u> some <u>mesosoma</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>has part</u> some (<u>pedicel</u> and (<u>part of</u> some (<u>scape</u> and (<u>bearer of</u> some <u>yellow</u>)))))
Color hue pattern	Legs except proximal region of metacoxa and distal 2/3 of metafemur, mouthparts, scape and F1 orange; rest of body brown	((not (<u>mouthparts</u>)) and (not (<u>scape</u>)) and (<u>body</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>part of</u> some (<u>metacoxa</u> and (<u>bearer of</u> some (<u>distal region</u> and (<u>part of</u> some (<u>metafemur</u> and (<u>has part</u> some (<u>mouthparts</u> and (<u>bearer of</u> some <u>scape</u> and (<u>bearer of</u> some <u>orange</u>)))) and (<u>bearer of</u> some <u>orange</u>))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>orange</u>)) and (<u>bearer of</u> some <u>orange</u>))) and (<u>part of</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>orange</u>)) and (<u>bearer of</u> some <u>orange</u>))) and (<u>has part</u> some (<u>metafemur</u> and (<u>bearer of</u> some <u>orange</u>))) and (<u>bearer of</u> some <u>orange</u>)))
Color hue pattern	Cranium, mesosoma brown; antenna, legs except brown metacoxa, metasoma ochre	((<u>part of</u> some (<u>leg</u> and (<u>bearer of</u> some (<u>metacoxa</u>)))) and (<u>has part</u> some (<u>antenna</u> <u>part</u> some (<u>cranium</u> and (<u>bearer of</u> some (<u>mesosoma</u> and (<u>bearer of</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>has part</u> some (<u>labial palp</u> and (<u>bearer of</u> some (<u>maxillary palp</u> and (<u>bearer of</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>bearer of</u> some <u>yellow</u>))) and (<u>has part</u> some (<u>pedicel</u> and (<u>part of</u> some (<u>scape</u> and (<u>bearer of</u> some <u>yellow</u>)))))
Color hue pattern	Antenna except pedicel, cranium, mesosoma except fore and middle legs and distal region of metacoxa, and metasoma brown; fore and middle legs, tegula, pedicel, proximal region of metacoxa, maxillary palp, and labial palp yellow	((<u>part of</u> some (<u>antenna</u> and (<u>bearer of</u> some (<u>pedicel</u>)))) and (<u>has part</u> some (<u>proxima</u> and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>has part</u> some (<u>yellow</u>))))) and (<u>has part</u> some (<u>labial palp</u> and (<u>bearer of</u> some (<u>maxillary palp</u> and (<u>bearer of</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>brown</u>)) and (<u>bearer of</u> some <u>brown</u>))) and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>has part</u> some (<u>pedicel</u> and (<u>part of</u> some (<u>scape</u> and (<u>bearer of</u> some <u>yellow</u>)))))

Entity	Value	Semantic
Color hue pattern	scape, pedicel, F1-3, head, anterior mesosoma ochre, F4-F9, posterior mesosoma, metasoma brown, legs except darker proximal regions of meso and metacoxae yellow	(<u>has part</u> some (<u>cranium</u> and (<u>bearer of</u> and ((<u>proximal region</u> and (<u>part of</u> some and (<u>part of</u> some <u>mid coxa</u>)))) and (<u>bearer of</u> (<u>mesosoma</u> and (<u>has part</u> some (<u>anterior</u> and (<u>has part</u> some (<u>metacoxa</u> and (<u>has part</u> some (<u>brown</u>))))) and (<u>has part</u> some (<u>region</u> and (<u>bearer of</u> some <u>brown</u>))))) and some <u>ochre</u>)))) and (<u>has part</u> some (<u>scape</u> <u>part</u> some (<u>first flagellomere</u> and (<u>bearer of</u> <u>second flagellomere</u> and (<u>bearer of</u> some <u>flagellomere</u> and (<u>bearer of</u> some <u>brown</u> and (<u>bearer of</u> some <u>ochre</u>)))) and (<u>has part</u> some (<u>part</u> some (<u>brown</u>)))) and (<u>has part</u> some (<u>seventh flagellomere</u> and (<u>bearer of</u> some <u>brown</u> and (<u>bearer of</u> some <u>yellow</u>)))) and (<u>has part</u> some (<u>ninth flagellomere</u> and (<u>bearer of</u> some (<u>yellow</u>)))))
Color hue pattern	Antenna except pedicel and scape, cranium, mesosoma except fore and middle legs and distal region of metacoxa, and metasoma brown; fore and middle legs, tegula, pedicel, scape, proximal part of metacoxa, palpus maxillaris, and palpus labialis yellow	((not (<u>pedicel</u>)) and (<u>part of</u> some (<u>antennae</u> <u>has part</u> some (not (<u>scape</u>)))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>yellow</u> <u>region</u> and (<u>part of</u> some (<u>metacoxa</u> and (<u>part</u> some (<u>cranium</u> and (<u>bearer of</u> some and (<u>bearer of</u> some <u>yellow</u>)))) and (<u>has part</u> some (<u>mandible</u> and (<u>has part</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>metasoma</u> and (<u>bearer of</u> some <u>brown</u>) <u>bearer of</u> some <u>yellow</u>)))) and (<u>has part</u> some (<u>has part</u> some (<u>tegula</u> and (<u>bearer of</u> some <u>flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> <u>flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> and (<u>bearer of</u> some <u>brown</u>)))) and (<u>has part</u> some (<u>part</u> some (<u>yellow</u>)))) and (<u>has part</u> some (<u>brown</u>)))) and (<u>has part</u> some (<u>sixth flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> and (<u>has part</u> some (<u>seventh flagellomere</u> and (<u>bearer of</u> some (<u>eighth flagellomere</u> and (<u>bearer of</u> some (<u>yellow</u>)))))
Color hue pattern	F3-8, cranium, mandible, metasoma, tegula brown; legs, except brown proximal region of metacoxa and distal region of metafemur, scape, pedicel, F1-4 yellow	((not (<u>distal region</u> and (<u>part of</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>yellow</u>)))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>part</u> some (<u>mandible</u> and (<u>has part</u> some (<u>metasoma</u> and (<u>bearer of</u> some <u>brown</u>)) <u>bearer of</u> some <u>yellow</u>)))) and (<u>has part</u> some (<u>part</u> some (<u>tegula</u> and (<u>bearer of</u> some <u>flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> <u>flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> and (<u>bearer of</u> some <u>brown</u>)))) and (<u>has part</u> some (<u>part</u> some (<u>yellow</u>)))) and (<u>has part</u> some (<u>brown</u>)))) and (<u>has part</u> some (<u>sixth flagellomere</u> and (<u>bearer of</u> some <u>yellow</u> and (<u>has part</u> some (<u>seventh flagellomere</u> and (<u>bearer of</u> some (<u>eighth flagellomere</u> and (<u>bearer of</u> some (<u>yellow</u>)))))
Color hue pattern	Dark brown except pedicel, proximal 1/5th of	((not (<u>fore leg</u>)) and (not (<u>mid leg</u>)) and (<u>scape</u>))) and (<u>part of</u> some (<u>body</u> and (

Entity	Value	Semantic
	scape, fore and middle leg, mandible ochre/yellowish	<u>part</u> some (not (<u>pedicel</u>)))) and (<u>has part</u> some (<u>scape</u> and (<u>bearer of</u> some <u>yellow</u> <u>bearer of</u> some <u>ochre</u>))) and (<u>has part</u> some (<u>ochre</u>))) and (<u>has part</u> some (<u>mid leg</u> and some (<u>pedicel</u> and (<u>bearer of</u> some <u>ochre</u>)))
Color hue pattern	Legs except proximal region of metacoxa and distal region of metafemur, mouthparts yellow; rest of body ochre	((not (<u>mouthparts</u>)) and (<u>part_of</u> some (<u>has part</u> some (<u>proximal region</u> and (<u>pan ochre</u>))))) and (<u>has part</u> some (<u>distal region</u> <u>bearer of</u> some <u>ochre</u>))))) and (<u>has part</u> some (<u>yellow</u>))) and (<u>has part</u> some (not (<u>proximal region</u> and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>part_of</u> some (<u>metafemur</u> and (<u>bearer of</u> some (<u>yellow</u>)))))
Color hue pattern	Cranium, mesosoma except legs and metasoma except gonostipes and volsella ochre; antenna, legs, mandible, gonostipes and volsella yellow	(<u>has part</u> some (<u>antenna</u> and (<u>bearer of</u> some (<u>cranium</u> and (<u>bearer of</u> some <u>ochre</u>))) and (<u>has part</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>ochre</u>))) <u>bearer of</u> some (<u>ochre</u>))) and (<u>has part</u> some (<u>yellow</u>)))
Color hue pattern	Scape, F4-8, cranium, mandible, metasoma, tegula brown; legs, except brown proximal region of metacoxa and distal region of metafemur, pedicel, F1-3 yellow	(<u>has part</u> some (<u>proximal region</u> and (<u>pan brown</u>))))) and (<u>has part</u> some (<u>distal region</u> and (<u>bearer of</u> some <u>brown</u>))))) and (<u>has part</u> some (<u>brown</u>))) and (<u>has part</u> some (<u>mandible</u> and (<u>bearer of</u> some (<u>mesosoma</u> and (<u>bearer of</u> some <u>ochre</u>))) <u>bearer of</u> some (<u>ochre</u>))) and (<u>has part</u> some (<u>yellow</u>)))
Color hue pattern	Legs except proximal region of metacoxa and distal 2/3 of metafemur, mouthparts, distal 1/5 of scape, yellow; rest of body brown	((not (<u>mouthparts</u>)) and (<u>part_of</u> some (<u>has part</u> some (<u>proximal region</u> and (<u>pan brown</u>))))) and (<u>has part</u> some (<u>distal region</u> <u>bearer of</u> some <u>yellow</u>))))) and (<u>has part</u> some (<u>metafemur</u> and (<u>bearer of</u> some <u>brown</u>))) <u>bearer of</u> some (<u>yellow</u>))) and (<u>has part</u> some (<u>metacoxa</u> and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>part_of</u> some (<u>scape</u> and (<u>bearer of</u> some (<u>yellow</u>))))) and (<u>part_of</u> some (<u>distal region</u> and (<u>part_of</u> some (<u>body</u> and (<u>bearer of</u> some (<u>brown</u>)))))) and (<u>part_of</u> some (<u>pedicel</u> and (<u>bearer of</u> some (<u>brown</u>)))))) and (<u>part_of</u> some (<u>tegula</u> and (<u>bearer of</u> some (<u>first flagellomere</u> and (<u>bearer of</u> some (<u>second flagellomere</u> and (<u>bearer of</u> some (<u>flagellomere</u> and (<u>bearer of</u> some (<u>brown</u>)))))) and (<u>bearer of</u> some (<u>yellow</u>))))) and (<u>has part</u> some (<u>brown</u>))) and (<u>has part</u> some (<u>seventh flagellomere</u> and (<u>bearer of</u> some (<u>brown</u>))))) and (<u>has part</u> some (<u>eighth flagellomere</u> and (<u>bearer of</u> some (<u>brown</u>))))) and (<u>has part</u> some (not (<u>proximal region</u> and (<u>bearer of</u> some <u>yellow</u>))))) and (<u>has part</u> some (<u>metafemur</u> and (<u>bearer of</u> some (<u>brown</u>))))) and (<u>has part</u> some (<u>yellow</u>)))

Entity	Value	Semantic
Color hue pattern	Cranium, mandible, mesosoma excluding front and proximal middle tibia, metasoma, antenna excluding distal scape and pedicel brown; distal scape, pedicel, protibia and proximal mesotibia ochre	(has_part some (proximal_region and (part_of some <u>ochre</u>)))) and (has_part some (distal_bearer_of some <u>ochre</u>)))) and (has_part some (brown)) and (has_part some (fore_tibia and (part_of some (mandible and (bearer_of some mesosoma and (bearer_of some <u>brown</u>)) and (bearer_of some <u>brown</u>)))) and (has_part some (not(pedicel_region and (part_of some (scape and (body_and_scape some (<u>antenna</u> and (bearer_of some <u>brown</u>)))))))))
Color hue pattern	Cranium black; mesosoma, metasoma, F4-F9 brown; rest of antenna, legs and mandible ochre	(has_part some (cranium and (bearer_of some <u>black</u>)))) and (has_part some (mesosoma and (part_of some (metasoma and (bearer_of some flagellomere and (bearer_of some <u>ochre</u>)) and (has_part some (flagellomere and (bearer_of some <u>ochre</u>)) and (has_part some (brown)) and (has_part some (not(<u>black</u> and (part_of some <u>ochre</u>)))) and (has_part some (<u>brown</u>)) and (has_part some (sixth_flagellomere and (has_part some (seventh_flagellomere and (part_of some (eighth_flagellomere and (bearer_of some ninth_flagellomere and (bearer_of some <u>brown</u>)))))))))
Color hue pattern	Distal part of scape, pedicel, F1-3 ochre; legs except proximal metacoxa yellow; rest of body brown	((not (pedicel)) and (not (first_flagellomere)) and (not(third_flagellomere)) and (part_of some (brown)))) and (has_part some (not(distal_region and (part_of some (distal_region and (has_part some (pedicel and (body_and_scape some (first_flagellomere and (bearer_of some flagellomere and (bearer_of some <u>ochre</u>)) and (has_part some (ochre)) and (has_part some (metacoxa)) and (part_of some (metacoxa)))))))))
Color hue pattern	Antenna, legs, mouthparts ochre; rest of body dark brown	(has_part some (antenna and (bearer_of some <u>ochre</u>)) and (not(antenna)) and (not(leg)) and (not(dark_brown)))) and (has_part some (leg and (body_and_scape some (mouthparts and (bearer_of some <u>dark_brown</u>)))))))))
Color hue pattern	Cranium brown; mesosoma except legs, metasoma ochre; F4-F9 brown; rest of antenna ochre, legs yellow	(has_part some (cranium and (bearer_of some <u>brown</u>)))) and (has_part some (mesosoma and (not(legs)))) and (has_part some (metasoma and (not(legs)))) and (has_part some (first_flagellomere and (second_flagellomere and (has_part some (bearers_of some (brown)) and (has_part some (ochre)))))) and (has_part some (not(brown)) and (has_part some (brown)))) and (has_part some (not(ochre)) and (has_part some (brown)))))))))

Entity	Value	Semantic
Color hue pattern	Distal half of scape, pedicel, fore leg and middle leg yellow; proximal part of scape, flagellum, mesosoma except front and middle leg, metasoma brown	brown))) and (has_part some (seventh fl and (has_part some (eighth flagellomere part some (ninth flagellomere and (bear (has_part some (proximal region and (p brown)))) and (has_part some (distal re bearer of some yellow)))) and (has_part brown)))) and (has_part some (fore leg a part some (mesosoma and (bearer of son metasoma and (bearer of some brown)))) of some yellow))) and (has_part some (l
Color hue pattern	Antenna except pedicel, cranium, mesosoma except fore and middle legs and metasoma brown; fore and middle legs, tegula, pedicel, maxillary palp and labial palp yellow	((part_of some (antenna and (bearer of pedicel)))) and (has_part some (crani part some (fore leg and (bearer of some and (bearer_of some yellow))) and (has some yellow))) and (has_part some (me (has_part some (metasoma and (bearer mid leg and (bearer_of some yellow))) and some yellow))) and (has_part some (sca has_part some (tegula and (bearer of som
Color hue pattern	Legs except proximal region of metacoxa and distal 2/3 of metafemur, mouthparts, distal part of scape, pedicel and F1-F4 yellow; rest of body brown	((not (mouthparts)) and (not (pedicel)) second flagellomere)) and (not (third fla)) and (part_of some (body and (bearer proximal region and (part_of some (met (has_part some (distal region and (part yellow)))) and (has_part some (distal re bearer_of some brown)))) and (has_part yellow)))) and (has_part some (first flage and (has_part some (second flagellomere part some (third flagellomere and (bear fourth flagellomere and (bearer_of some proximal region and (part_of some (met and (has_part some (not (distal region an some yellow))))) and (has_part some (no metafemur and (bearer_of some yellow))
Color hue pattern	F1-8, cranium, mandible, metasoma, tegula brown; legs, scape, pedicel yellow	(has_part some (cranium and (bearer of and (bearer_of some yellow))) and (has brown)))) and (has_part some (metasoma part some (pedicel and (bearer_of some bearer_of some yellow))) and (has_part s brown)))) and (has_part some (first flage and (has_part some (second flagellomere part some (fifth flagellomere and (bear third flagellomere and (bearer_of some fl flagellomere and (bearer_of some brown and (bearer_of some brown))) and (has

Entity	Value	Semantic
Color hue pattern female	Cranium except supraclypeal depression and mesosoma except posteroventral region metallic brown/purple; F9, distal and proximal region of scape, supraclypeal depression, abdomen, dorsal proximal regions of femur and tibia brown; F1-F5, pedicel, scape exce	(has_part some (abdomen and (bearer_of some metasomal_segment and (bearer_of some (bearer_of some white)) and (has_part some (white)) and (has_part some (fifth_white)) and (has_part some (third_flagellomere and some((not(postero-ventral_region)) and (of some (iridescent and (bearer_of some distal_region) and (not(ventral_region) some brown)))) and (has_part some ((not(scape and (bearer_of some white))))) and (depression) and (part_of some (cranium bearer_of some brown))))))
Color hue pattern male	Cranium, mesosoma, F1-9, pedicel, distal region of hind femur, abdomen brown; scape, forelegs and midlegs, tibia of hind leg yellow; Hind coxa and petiole neck white	(has_part some (distal_region and (part_brown)))) and (has_part some (abdomen part some (first_metasomal_segment and some(cranium and (bearer_of some brown bearer_of some yellow)) and (has_part some (brown)) and (has_part some (metacoxa part some (mid_leg and (bearer_of some and (bearer_of some brown)) and (has_part some (brown)) and (has_part some (fifth_flagellomere and (has_part some (third_flagellomere and (part some (fourth_flagellomere and (bear sixth_flagellomere and (bearer_of some b flagellomere and (bearer_of some brown flagellomere and (bearer_of some brown flagellomere and (bearer_of some brown)) and (part_of some (hind_leg and (bear
Color intensity pattern	Legs lighter than scape and mandible	has_part some (leg and (bearer_of some (increased_in_magnitude_relative_to some inheres_in some scape))))))
Color intensity pattern	flagellum, tibiae and tarsi lighter than scape, pedicel, mandible, tegula, coxae and femora	has_part some (flagellum and tarsomere a brightness and (increased_in_magnitude coxa and femur and mandible and pedice scape))))))
Color intensity pattern	flagellomeres and their branches darker than scape and pedicel. Scape and pedicel same as legs	has_part some (flagellomere and (bearer decreased_in_magnitude_relative_to some inheres_in some scape))))))

Entity	Value	Semantic
Color intensity pattern	metasoma and mandible lighter than mesosoma	has part some (mandible and metasoma a (increased_in_magnitude_relative_to some mesosoma))))))
Color intensity pattern	metasoma lighter than mesosoma and cranium	has part some (metasoma and (bearer_of increased_in_magnitude_relative_to some inheres_in some mesosoma))))))
Color intensity pattern	ventral region of cranium is lighter than dorsal region of cranium	has part some (ventral_region and (part_color_brightness and (increased_in_magnitude and (inheres_in some (dorsal_region and
Color intensity pattern	front and middle leg lighter than distal half of scape, pedicel and tegula; cranium, distal region of flagellum, mesosoma except legs and petiole neck darker than proximal region of flagellum, hind leg and metasoma posterior to petiole neck and mesosoma d	(has part some (cranium and mesosoma_flagellum)) and (bearer_of some (color increased_in_magnitude_relative_to some distal_region and (part_of some flagellum and (has part some (fore_leg and mid_leg and (increased_in_magnitude_relative_to some (pedicel and tegula and (distal_region and
Color intensity pattern	distal scape, legs except hind coxa lighter than metasoma	(has part some (distal_region and (part and (has part some (not (metacoxa)))) (increased_in_magnitude_relative_to some metasoma))))))
Cupula length vs. gonostyle-volsella complex length	cupula less than 1/2 the length of gonostyle-volsella complex in lateral view	has part some (cupula and (bearer_of some (has_measurement_unit_label some gonostipes/volsella_complex)))) and (has 0.5f]))))
Cupula length vs. gonostyle-volsella complex length	cupula as long as gonostipes in lateral view	has part some (cupula and (has_part some bearer_of some (length and (similar_in inheres_in some (proximodistal_anatomic_gonostipes/volsella_complex)))))))))
Distal end of dorsomedian conjunctiva of the gonostyle-volsella complex shape	acute	has part some (dorsomedian_conjunctiva has part some (distal_margin and (bearer
Distal end of dorsomedian conjunctiva of the gonostyle-volsella complex shape	blunt	has part some (dorsomedian_conjunctiva has part some (distal_margin and (bearer
Distal margin of harpe in lateral view: shape	blunt	has part some (harpe and (has_part some blunt))))

Entity	Value	Semantic
Distal margin of harpe in lateral view: shape	acute	<u>has part</u> some (<u>harpe</u> and (<u>has part</u> some <u>acute</u>))))
Distal margin of male S9 shape	concave	<u>has part</u> some (<u>abdominal sternum 9</u> and <u>bearer of</u> some <u>concave</u>)))
Distal margin of male S9 shape	convex	<u>has part</u> some (<u>abdominal sternum 9</u> and <u>bearer of</u> some <u>convex</u>)))
Distal margin of male S9 shape	straight	<u>has part</u> some (<u>abdominal sternum 9</u> and <u>bearer of</u> some <u>straight</u>)))
Distal projection of parossciculus presence	absent	not (<u>has part</u> some <u>distal projection of the parossciculus</u>))))
Distal projection of parossciculus presence	present	<u>has part</u> some <u>distal projection of the parossciculus</u>)
Distal projection of the penisvalva count	absent	not (<u>has part</u> some <u>distal projection of the penisvalva</u>))))
Distal projection of the penisvalva count	present	<u>has part</u> some <u>distal projection of the penisvalva</u>)
Distodorsal margin of cupula shape	straight	<u>has part</u> some (<u>cupula</u> and (<u>has part</u> some <u>margin</u> and (<u>bearer of</u> some <u>straight</u>))))
Distodorsal margin of cupula shape	concave	<u>has part</u> some (<u>cupula</u> and (<u>has part</u> some <u>margin</u> and (<u>bearer of</u> some <u>concave</u>))))
Distodorsal setae of sensillar ring of harpe length vs. harpe width in lateral view	>2	<u>has part</u> some (<u>sensillar ring of harpe</u> and <u>part</u> some (<u>distal margin</u> and (<u>has part</u> some (<u>proximodistal anatomical line</u> and <u>measured as</u> some (<u>has measurement unit</u> <u>harpe width</u>)))) and (<u>has measurement unit</u> <u>harpe width</u>))))
Distodorsal setae of sensillar ring of harpe length vs. harpe width in lateral view	setae as long or shorter than harpe width	<u>has part</u> some (<u>sensillar ring of harpe</u> and <u>part</u> some (<u>distal margin</u> and (<u>has part</u> some (<u>proximodistal anatomical line</u> and <u>measured as</u> some (<u>has measurement unit</u> <u>harpe width</u>)))) and (<u>has measurement unit</u> <u>harpe width</u>))))
Distodorsal setae of sensillar ring of harpe length vs. harpe width in lateral view	setae longer than harpe width	<u>has part</u> some (<u>sensillar ring of harpe</u> and <u>part</u> some (<u>distal margin</u> and (<u>has part</u> some (<u>proximodistal anatomical line</u> and <u>measured as</u> some (<u>has measurement unit</u> <u>harpe width</u>)))) and (<u>has measurement unit</u> <u>harpe width</u>))))
Distodorsal setae of sensillar ring of harpe orientation	distomedially	<u>has part</u> some (<u>sensillar ring of harpe</u> and <u>part</u> some (<u>distal margin</u> and (<u>has part</u> some (

Entity	Value	Semantic
Distodorsal setae of sensillar ring of harpe orientation	medially	some (medial orientation and (bearer of has part some (sensillar ring of harpe and part some (distal margin and (has part some medial orientation))))))))
Distodorsal setae of sensillar ring of harpe orientation	dorsally	has part some (sensillar ring of harpe and part some (distal margin and (has part some dorsal orientation))))))))
Distoventral submedian corner of cupula count	absent	not (has part some proximolateral projec
Distoventral submedian corner of cupula count	present	has part some proximolateral projection
Dorsal apodeme of the penisvalva: presence	absent	not (has part some dorsal apodeme of pe
Dorsal apodeme of the penisvalva: presence	present	has part some dorsal apodeme of penisva
Dorsal margin of occipital carina vs. dorsal margin of lateral ocellus in lateral view	occipital carina is ventral to lateral ocellus in lateral view	has part some (occipital carina and (has some dorsal margin) and (ventral_to some lateral side and (part_of some lateral oce
Dorsal margin of occipital carina vs. dorsal margin of lateral ocellus in lateral view	occipital carina is dorsal to lateral ocellus in lateral view	has part some (occipital carina and (has some dorsal margin) and (dorsal_to some lateral side and (part_of some lateral oce
Dorsomedial conjunctiva of the gonostyle/volsella complex count	absent	not (has part some dorsomedian conjunc
Dorsomedial conjunctiva of the gonostyle/volsella complex count	present	has part some dorsomedian conjunctiva
Dorsomedial conjunctiva of the gonostyle/volsella complex lenght relative to length of gonostyle/volsella complex	dorsomedial conjunctiva extending 2/3 of length of gonostyle/volella complex in dorsal view	has part some (dorsomedian conjunctiva bearer of some (length and ((is quality label some (length and (inheres in some measurement value some float [≥ 0.66f]
Dorsomedial conjunctiva of the gonostyle/volsella complex lenght relative to length of gonostyle/volsella complex	dorsomedial conjunctiva not extending 2/3 of length of gonostyle/volella complex in dorsal view	has part some (dorsomedian conjunctiva bearer of some (length and ((is quality label some (length and (inheres in some measurement value some float [< 0.66f])
Epicnemial carina presence	present only medially	has part some (epicnemial carina and (no part some medial region))

Entity	Value	Semantic
Epicnemial carina presence	complete	<u>has part</u> some (<u>epicnemial carina</u> and (<u>has part</u> some <u>medial region</u>))
Epicnemial carina presence	interupted medially	<u>has part</u> some (<u>epicnemial carina</u> and (no <u>has part</u> some <u>lateral region</u>))
Epicnemial carina presence	present only laterally	<u>has part</u> some (<u>epicnemial carina</u> and (no <u>has part</u> some <u>lateral region</u>))
Epicnemial carina presence	absent	not (<u>has part</u> some <u>epicnemial carina</u>)
Epicnemium posterior margin shape	anterior discrimal pit absent; epicnemial carina straight	(not (<u>has part</u> some <u>anterior discrimal carina</u> and (not (<u>bearer of</u> some <u>curved</u>)))
Epicnemium posterior margin shape	anterior discrimal pit present; epicnemial carina curved	(<u>has part</u> some <u>anterior discrimal pit</u>) and (<u>bearer of</u> some <u>curved</u>)))
Epicnemium posterior margin shape	anterior discrimal pit absent, epicnemial carina interrupted medially	(not (<u>has part</u> some <u>anterior discrimal region</u> and (<u>part of</u> some <u>epicnemial carina</u>)))
Epicnemium posterior margin shape	anterior discrimal pit absent, epicnemial carina curved	(not (<u>has part</u> some <u>anterior discrimal carina</u> and (<u>bearer of</u> some <u>curved</u>)))
Facial pit count	facial process present	<u>has part</u> some <u>facial process</u>
Facial pit count	facial pit present	<u>has part</u> some <u>facial pit</u>
Facial pit count	median facial keel present	<u>has part</u> some <u>median facial keel</u>
Facial pit count	no external corresponding structure present	(not (<u>has part</u> some <u>facial pit</u>)) or (not (<u>has part</u> some <u>facial process</u>))
Female F9 length	F8+F7< F7+F8+F6	<u>has part</u> some ((<u>seventh flagellomere</u> and <u>anatomical line</u> and (<u>bearer of</u> some <u>length</u>)) <u>part</u> some (<u>proximodistal anatomical line</u> <u>decreased in magnitude relative to</u> some <u>proximodistal anatomical line</u> and (<u>part length</u> and (<u>inheres in</u> some (<u>proximodistal eighth flagellomere</u>))))))
Female F9 length	F9=F7+F8	<u>has part</u> some (<u>ninth flagellomere</u> and (<u>line</u> and (<u>bearer of</u> some (<u>length</u> and (<u>size</u>)) and (<u>inheres in</u> some (<u>proximodistal seventh flagellomere</u>)))) and (<u>length</u> and (<u>size</u>)))

Entity	Value	Semantic
Female F9 length	F9<F8+F7	<u>anatomical line</u> and (<u>part_of</u> some <u>eighth</u>
Female F9 length	F9=F8	<u>has_part</u> some (<u>ninth flagellomere</u> and (<u>line</u> and (<u>bearer_of</u> some (<u>length</u> and (<u>de</u>
Female F9 length	F9=F6+F7+F8	((<u>length</u> and (<u>inheres_in</u> some (<u>proximo</u>
Female first flagellomere length vs. pedicel	0.9-1.0	<u>seventh flagellomere</u>)))) and (<u>length</u> and (<u>anatomical line</u> and (<u>part_of</u> some <u>eighth</u>
Female first flagellomere length vs. pedicel	0.7	<u>has_part</u> some (<u>ninth flagellomere</u> and (<u>line</u> and (<u>bearer_of</u> some (<u>length</u> and (<u>si</u>
Female first flagellomere length vs. pedicel	0.9	<u>length</u> and (<u>inheres_in</u> some (<u>proximodis</u>
Female first flagellomere length vs. pedicel	0.8-1.16	<u>sixth flagellomere</u>)))) and (<u>length</u> and (<u>line</u> and (<u>part_of</u> some <u>seventh flagellom</u>
Female first flagellomere length vs. pedicel	0.8-0.9	(<u>proximodistal anatomical line</u> and (<u>part</u>
Female first flagellomere length vs. pedicel	F1 as long as pedicel (1.0-1.1)	<u>has_part</u> some (<u>first flagellomere</u> and (<u>ha</u>

Entity	Value	Semantic
Female first flagellomere length vs. pedicel	0.8-1.2	<u>has part</u> some (<u>first flagellomere</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>pedicel</u>)))) and (<u>has measurement value</u> [>= 0.8f]))))
Female first flagellomere length vs. pedicel	1.0	<u>has part</u> some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 1.0f]))))
Female first flagellomere length vs. pedicel	F1 is 1.5 times as long as pedicel	<u>has part</u> some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 1.5f]))))
Female first flagellomere length vs. pedicel	pedicel longer than F1	<u>has part</u> some (<u>pedicel</u> and (<u>has part</u> some <u>increased in magnitude relative to</u> some <u>proximodistal anatomical line</u> and (<u>part</u> of some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 1.0f]))))))))
Female first flagellomere length vs. pedicel	0.85	<u>has part</u> some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 0.85f]))))))))
Female first flagellomere length vs. pedicel	1.4	<u>has part</u> some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 1.4f]))))))))
Female first flagellomere length vs. pedicel	1.09	<u>has part</u> some (<u>first flagellomere</u> and (<u>has anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and some <u>proximodistal anatomical line</u>))))) [>= 1.09f]))))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	0.85:0.85:1.00	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))) and (<u>has measurement unit label</u> some (<u>posterior ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))) and (<u>has measurement unit label</u> some (<u>posterior ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.4:1.6-1.7:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))) and (<u>has measurement unit label</u> some (<u>posterior ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))) and (<u>has measurement unit label</u> some (<u>posterior ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit label</u> some (<u>lateral ocellar line</u>)))))))

Entity	Value	Semantic
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	2.5-3.0:1.9-2.0:1.0	<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 1.7f</u>]))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.7-2.3:1.7-1.8:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 3.0f</u>)))))) and (<u>has part</u> some (<u>posterior ocellar line</u> and (<u>is quality measured as</u> some (<u>has measurement unit 1.9f</u> , <u><= 2.0f</u>)))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.0:1.2:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 2.3f</u>)))))) and (<u>has part</u> some (<u>posterior ocellar line</u> and (<u>is quality measured as</u> some (<u>has measurement unit 1.7f</u> , <u><= 1.8f</u>)))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.5-2.1:1.2-1.4:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 2.1f</u>)))))) and (<u>has part</u> some (<u>posterior ocellar line</u> and (<u>is quality measured as</u> some (<u>has measurement unit 1.2f</u> , <u><= 1.4f</u>)))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.4:1.0-1.2:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 1.2f</u>)))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.0-1.1:1.4:1.0	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit lateral ocellar line</u>)))) and (<u>has measurement unit 1.1f</u>)))))) and (<u>has part</u> some (<u>posterior ocellar line</u> and (<u>is quality measured as</u> some (<u>has measurement unit 1.0f</u> , <u><= 1.1f</u>)))))))

Entity	Value	Semantic
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.2-1.3:1.0:1.0	(has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 1.3f]))))) and (has part some (posterior ocellar line and (is quality measured as some (has measurement unit inheres in some lateral ocellar line)))) and (has measured 1.0f))))))
Female ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	3.4:2.1-2.2:1.0	(has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 3.4f)))) and (has part some (posterior ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 2.2f))))))
Female OOL vs. LOL	OOL 1.0-1.2 x as long as LOL	has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 1.2f))))
Female OOL vs. LOL	OOL 1.9-2.1 x as long as LOL	has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 2.1f))))
Female OOL vs. LOL	2: OOL 1.5-2.5 x as long as LOL	has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 2.5f))))
Female OOL vs. LOL	OOL 0.625-0.75 as long as LOL	has part some (ocular ocellar line and (measured as some (has measurement unit lateral ocellar line)))) and (has measured 0.75f))))
Harpe length	harpe as long as gonostipes in lateral view	has part some (harpe and (has part some (bearer of some (length and (similar in some (inheres in some (proximodistal anatomical feature gonostipes)))))))))
Harpe length	harpe shorter than gonostipes in lateral view	has part some (harpe and (has part some (bearer of some (length and (decreased in some (inheres in some (proximodistal anatomical feature gonostipes)))))))))

Entity	Value	Semantic
Head height (lateral view) vs eye height (anterior view)	HH/EH=1.4-1.8	has part some (head height and (bearer of as some (has measurement unit label some height)))) and (has measurement value some)
Head height (lateral view) vs eye height (anterior view)	HH:EHf=1.0-2.0	has part some (head height and (bearer of as some (has measurement unit label some height)))) and (has measurement value some)
Head height vs. head length	HH:HL=1.5-2.0	has part some (head height and (bearer of as some (has measurement unit label some length)))) and (has measurement value some)
Head height vs. head length	HH/HL=1.4-1.8	has part some (head height and (bearer of as some (has measurement unit label some length)))) and (has measurement value some)
Head height vs. head length	HH:HL=1.0-1.5	has part some (head height and (bearer of as some (has measurement unit label some length)))) and (has measurement value some)
Head width vs. head height	HW/HH=1.0-1.5	has part some (head width and (bearer of as some (has measurement unit label some height)))) and (has measurement value some)
Head width vs. head height	HW/HH=1.2-1.4	has part some (head width and (bearer of as some (has measurement unit label some height)))) and (has measurement value some)
Head width vs. interorbital space	HW/IOS=1.8-2.0	has part some (head width and (bearer of as some (has measurement unit label some interorbital space)))) and (has measurement value some [2.0f]))))
Head width vs. interorbital space	HW/IOS=2.0-2.5	has part some (head width and (bearer of as some (has measurement unit label some interorbital space)))) and (has measurement value some [2.5f]))))
Head width vs. interorbital space (HW/IOS) Female	2.2	has part some (head width and (bearer of as some (has measurement unit label some interorbital space)))) and (has measurement value some)
Head width vs. interorbital space (HW/IOS) Female	2.3	has part some (head width and (bearer of as some (has measurement unit label some interorbital space)))) and (has measurement value some)
Head width vs. interorbital space (HW/IOS) Female	1.7-1.8	has part some (head width and (bearer of as some (has measurement unit label some interorbital space)))) and (has measurement value some)

Entity	Value	Semantic
Head width vs. interorbital space (HW/IOS) Female	2.4	interorbital space)))) and (has measurement value 1.8f])))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.3-2.6	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 2.6f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	1.6-1.7	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 1.7f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.3-2.7	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 2.7f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.3-2.4	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 2.4f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.0-2.2	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 2.2f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.0-2.1	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value 2.1f)))) has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Female	2.65	has part some (head width and (bearer of some (has measurement unit label some (interorbital space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Male	2.1	has part some (head and (bearer of some (has measurement unit label some (space)))) and (has measurement value
Head width vs. interorbital space (HW/IOS) Male	1.8-1.9	has part some (head and (bearer of some (has measurement unit label some (space)))) and (has measurement value

Entity	Value	Semantic
Head width vs. interorbital space (HW/IOS) Male	1.6-1.9	space)))) and (has measurement value s
Head width vs. interorbital space (HW/IOS) Male	1.9-2.0	has part some (head and (bearer of some some (has measurement unit label some space)))) and (has measurement value s
Head width vs. interorbital space (HW/IOS) Male	1.6-1.7	has part some (head and (bearer of some some (has measurement unit label some space)))) and (has measurement value s
Head width vs. interorbital space (HW/IOS) Male	2.0-2.2	has part some (head and (bearer of some some (has measurement unit label some space)))) and (has measurement value s
Head width vs. interorbital space (HW/IOS) Male	2.0-2.5	has part some (head and (bearer of some some (has measurement unit label some space)))) and (has measurement value s
Head width vs. interorbital space (HW/IOS) Male	1.8-2.0	has part some (head and (bearer of some some (has measurement unit label some space)))) and (has measurement value s
Intertorular area count	present	has part some intertorular area
Intertorular area count	absent	not (has part some intertorular area)
Lateral margin of harpe shape	widest point of harpe is at its articulation site with gonostyle-volsella complex	(has part some harpe) and (has part som maximum width and (adjacent to some g
Lateral margin of harpe shape	widest point of harpe is in its proximal 1/3rd	(has part some harpe) and (has part som maximum width and (not (adjacent to so
Lateral propodeal carina count	present	has part some lateral propodeal carina
Lateral propodeal carina count	absent	not (has part some lateral propodeal carin
Lateral propodeal carina shape	inverted "U" (left and right lateral propodeal carina are adjacent to the antecostal sulcus of the first abdominal	has part some (lateral propodeal carina a bearer of some median)))) and (has part some antecostal sulcus)))) and (bearer o lateral propodeal carina and (bearer of so

Entity	Value	Semantic
Lateral propodeal carina shape	tergumsubmedially)	
Lateral propodeal carina shape	inverted "V" (left and right lateral propodeal carinae are adjacent medially at their intersection with antecostal sulcus of the first abdominal tergum)	(not (has part some (carina and (bearer lateral propodeal carina and (bearer of propodeal carina and (bearer of some right sulcus)
Lateral propodeal carina shape	straight ((left and right lateral propodeal carinae compose a carina that is not broken medially)	(not (has part some (carina and (bearer lateral propodeal carina and (bearer of propodeal carina and (bearer of some right
Lateral propodeal carina shape	inverted "Y" (left and right lateral propodeal are adjacent medially posterior to antecostal sulcus of the first abdominal tergum, and connected to the antecostal sulcus by a median carina representing the median branch of the inverted "Y")	(has part some (carina and (has part some lateral propodeal carina and (adjacent to part some (lateral propodeal carina and (some (lateral propodeal carina and (bearer
Lateral setae of harpe orientation	oriented distoventrally	has part some (harpe and (has part some sensillum trichodeum and (bearer of some ventral orientation))))))))
Lateral setae of harpe orientation	oriented distally	has part some (harpe and (has part some sensillum trichodeum and (bearer of some
Lateral setae of harpe presence	present	has part some (harpe and (has part some sensillum trichodeum)))
Lateral setae of harpe presence	absent	not (has part some (harpe and (has part some sensillum trichodeum)))))
Length of setae on male flagellomere vs. male flagellomere width	setae shorter than width of flagellomeres	has part some (sensillum trichodeum and anatomical line and (bearer of some (length decreased_in_magnitude_relative_to some (part_of some flagellomere)))))))))
Length of setae on male flagellomere vs. male flagellomere width	setae as long as width of flagellomeres	has part some (sensillum trichodeum and anatomical line and (bearer of some (length similar_in_magnitude_relative_to some (part_of some flagellomere)))))))))

Entity	Value	Semantic
Length of setae on male flagellomere vs. male flagellomere width	setae longer than width of flagellomeres	<u>has part</u> some (<u>sensillum trichodeum</u> and <u>anatomical line</u> and (<u>bearer of</u> some (<u>length</u> and <u>increased_in_magnitude_relative_to</u> some (<u>part_of</u> some <u>flagellomere</u>))))))))
Male first flagellomere length vs. male second flagellomere length	1.2-1.3	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.2f ,]))))))))
Male first flagellomere length vs. male second flagellomere length	1.0-1.1	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.0f ,]))))))))
Male first flagellomere length vs. male second flagellomere length	flagellomere 1 is 1.4-1.5 times as long as flagellomere 2	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.4f ,]))))))))
Male first flagellomere length vs. male second flagellomere length	1.3-1.4	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.3f ,]))))))))
Male first flagellomere length vs. male second flagellomere length	1.1	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.1f]))))))))
Male first flagellomere length vs. male second flagellomere length	1.4	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.4f]))))))))
Male first flagellomere length vs. male second flagellomere length	1.2-1.5	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.2f ,]))))))))
Male first flagellomere length vs. male second flagellomere length	1.2-1.4	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second</u> <u>measurement value</u> some <u>float</u> [>= 1.2f ,]))))))))

Entity	Value	Semantic
Male first flagellomere length vs. male second flagellomere length	1.1-1.2	<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>second flagellomere</u> <u>measurement value</u> some <u>float</u> [≥ 1.2f , ≤ 1.1f])))))))
Male first flagellomere length vs. pedicel length	3.2-4.0	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>measurement value</u> some <u>float</u> [≥ 1.1f , ≤ 1.0f])))))))))))
Male first flagellomere length vs. pedicel length	3.0-3.2	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>float</u> [≥ 3.0f , ≤ 3.2f])))))))))))
Male first flagellomere length vs. pedicel length	1.2-1.3	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>float</u> [≥ 1.2f , ≤ 1.3f])))))))))))
Male first flagellomere length vs. pedicel length	2.5-3.0	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>float</u> [≥ 2.5f , ≤ 3.0f])))))))))))
Male first flagellomere length vs. pedicel length	2.9-3.3	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>float</u> [≥ 2.9f , ≤ 3.3f])))))))))))
Male first flagellomere length vs. pedicel length	2.1-2.4	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel</u> <u>float</u> [≥ 2.1f , ≤ 2.4f])))))))))))
Male first flagellomere length vs. pedicel length	2.5	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer of</u> some (<u>length</u> and ((<u>measurement unit label</u> some (<u>length</u> and

Entity	Value	Semantic
Male first flagellomere length vs. pedicel length	4-4.2	<u>anatomical line</u> and (<u>part_of</u> some <u>pedicel float</u> [≥ 2.5f]))))))
Male first flagellomere length vs. pedicel length	2.4-2.5	<u>has part</u> some (<u>first flagellomere</u> and (<u>has line</u> and (<u>bearer_of</u> some (<u>length</u> and ((<u>measurement_unit_label</u> some (<u>length</u> and <u>anatomical line</u> and (<u>part_of</u> some <u>pedicel float</u> [≥ 4.0f, ≤ 4.2f]))))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	2.2:1.1-1.4:1	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.8-2:1.7-1.8:1	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has part</u> some (<u>posterior ocellar line</u> and ((<u>is quality measured_as</u> some (<u>has measurement unit</u> <u>inheres_in</u> some <u>lateral ocellar line</u>))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	2.0-2.1:1.7-1.8:1	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has part</u> some (<u>posterior ocellar line</u> and ((<u>is quality measured_as</u> some (<u>has measurement unit</u> <u>inheres_in</u> some <u>lateral ocellar line</u>))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.2-1.3:1:1	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has part</u> some (<u>posterior ocellar line</u> and ((<u>is quality measured_as</u> some (<u>has measurement unit</u> <u>inheres_in</u> some <u>lateral ocellar line</u>))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.4-1.8:1.5-1.8:1	(<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>)))) and (<u>has measured_as</u> some (<u>has measurement unit</u> <u>lateral ocellar line</u>))))

Entity	Value	Semantic
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.1-1.2:1.6-1.8:1	(has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.8f])))))) and (has part some (<u>posterior</u> and ((<u>is quality measured as</u> some (<u>has r</u> <u>inheres in</u> some <u>lateral ocellar line</u>)))) and (1.5f , <= 1.8f)))))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.3-1.5:1:1	(has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.2f)))))) and (has part some (<u>posterior</u> and ((<u>is quality measured as</u> some (<u>has r</u> <u>inheres in</u> some <u>lateral ocellar line</u>)))) and (1.6f , <= 1.8f)))))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	2.9-3.6:2.2-2.1:1	(has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.5f)))))) and (has part some (<u>posterior</u> and ((<u>is quality measured as</u> some (<u>has r</u> <u>inheres in</u> some <u>lateral ocellar line</u>)))) and (1.0f)))))))
Male ocular ocellar line (OOL):posterior ocellar line (POL):lateral ocellar line(LOL)	1.1-1.2:1:1	(has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 3.6f)))))) and (has part some (<u>posterior</u> and ((<u>is quality measured as</u> some (<u>has r</u> <u>inheres in</u> some <u>lateral ocellar line</u>)))) and (2.1f , <= 2.2f)))))))
Male OOL:LOL	OOL/LOL=1.0-2.0	(has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.2f)))))) and (has part some (<u>posterior</u> and ((<u>is quality measured as</u> some (<u>has r</u> <u>inheres in</u> some <u>lateral ocellar line</u>)))) and (1.0f)))))))
Male OOL:LOL	OOL/LOL=0.75-1.0	has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 2.0f)))))))
Male OOL:POL	OOL/POL=0.5-2.0	has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.0f)))))))
		has part some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> lateral ocellar line)))) and (has measured 1.0f)))))))

Entity	Value	Semantic
Male OOL:POL	OOL/POL=0.24-0.43	<u>measured as</u> some (<u>has measurement unit</u> <u>posterior ocellar line</u>))) and (<u>has measurement value</u> some float [>= 0.2f]))))
Mandibular teeth count	2	<u>has part</u> some (<u>ocular ocellar line</u> and (<u>measured as</u> some (<u>has measurement unit</u> <u>posterior ocellar line</u>))) and (<u>has measurement value</u> some float [>= 0.43f]))))
Mandibular teeth count	4	<u>has part</u> some (<u>mandible</u> and (<u>has component</u> some (<u>mandibular teeth</u> and (<u>count</u> 4))))
Mandibular teeth count	3	<u>has part</u> some (<u>mandible</u> and (<u>has component</u> some (<u>mandibular teeth</u> and (<u>count</u> 3))))
Mandibular teeth count	1	<u>has part</u> some (<u>mandible</u> and (<u>has component</u> some (<u>mandibular teeth</u> and (<u>count</u> 1))))
Median flange of occipital carina count	absent	not (<u>has part</u> some <u>median flange of occipital carina</u>))))
Median flange of occipital carina count	present	<u>has part</u> some <u>median flange of occipital carina</u>))))
Median mesoscutal sulcus posterior end	adjacent to transscutal articulation	<u>has part</u> some (<u>median mesoscutal sulcus</u> and (<u>adjacent to</u> some <u>transscutal articulation</u>)))
Median mesoscutal sulcus posterior end	not adjacent to transscutal articulation (ends anterior to the articulation)	<u>has part</u> some (<u>median mesoscutal sulcus</u> and (not (<u>adjacent to</u> some <u>transscutal articulation</u>)))
Median region of intertorular area shape	flat	<u>has part</u> some (<u>intertorular carina</u> and (<u>shape</u> <u>flat</u>)))
Median region of intertorular area shape	convex	<u>has part</u> some (<u>intertorular carina</u> and (<u>shape</u> <u>convex</u>)))
Mesometapleural sulcus count	present dorsally	<u>has part</u> some (<u>mesometapleural sulcus</u> and (<u>has part</u> some <u>ventral region</u>))))
Mesometapleural sulcus count	present	<u>has part</u> some (<u>mesometapleural sulcus</u> and (<u>has part</u> some <u>ventral region</u>))))
Mesometapleural sulcus count	absent	not (<u>has part</u> some <u>mesometapleural sulcus</u>))))
Mesoscutal length vs anterior mesoscutal widthrrnrn	MscL/AscW=0.6-0.9	<u>has part</u> some (<u>anteromesoscutum</u> and (<u>bearer of</u> some (<u>length</u> and (<u>is quality label</u> some (<u>length</u> and (<u>inheres in</u> some <u>measurement value</u> some float [>= 0.6f , <= 0.9f])))

Entity	Value	Semantic
Mesoscutal length vs anterior mesoscutal width nrn	MscL/AscW=1.0-2.0	has part some (anteromesoscutum and (bearer of some (length and (is quality label some (length and (inheres in some measurement value some float [>= 1.0f ,])))))
Metapleural carina count	present	has part some metapleural carina
Metapleural carina count	absent	not (has part some metapleural carina)
Notaulus posterior end location	adjacent to transscutal articulation	has part some (notaulus and (has part some transscutal articulation)))
Notaulus posterior end location	anterior to transverse midline of mesoscutum	has part some (mesoscutum and (has part notaulus))))
Notaulus posterior end location	posterior to transverse midline of mesoscutum	has part some (mesoscutum and (has part notaulus))))
Occipital carina sculpture	crenulate	has part some (occipital carina and (bearer of some (carina and (is quality label some (carina and (inheres in some measurement value some float [>= 1.0f ,]))))))
Occipital carina sculpture	smooth	has part some (occipital carina and (bearer of some (carina and (is quality label some (carina and (inheres in some measurement value some float [>= 1.0f ,]))))))
Parossicul seta: number	two	has part some (apical parossicul seta and (trichodeum))
Parossicul seta: number	more than two	has part some (apical parossicul seta and (trichodeum))
Parossicul seta: number	one	has part some (apical parossicul seta and (trichodeum))
Parossiculus count (parossiculus and gonostipes fusion)	present (not fused with the gonostipes)	has part some parossiculus
Parossiculus count (parossiculus and gonostipes fusion)	absent (fused with the gonostipes)	not (has part some parossiculus)
Posterior margin of nucha in dorsal view shape	straight	has part some (nucha and (has part some straight))))
Posterior margin of nucha in dorsal view shape	concave	has part some (nucha and (has part some concave))))
Scutes on posterior region of mesoscutum and dorsal region of mesoscutellum scute convexity	flat	has part some (mesoscutum and (has part some (scute and (has part some dorsal))))

Entity	Value	Semantic
Scutes on posterior region of mesoscutum and dorsal region of mesoscutellum convexity	convex	<u>has part</u> some (<u>mesoscutum</u> and (<u>has part</u> some (<u>scute</u> and (<u>has part</u> some <u>dorsal</u>))))
Postocellar carina	absent	not (<u>has part</u> some <u>postocellar carina</u>)
Postocellar carina	present	<u>has part</u> some <u>postocellar carina</u>
Preoccipital carina and occipital carina structure	occipital carina is short, not extending ventrally to the oral foramen and the preoccipital carina is absent	(not (<u>has part</u> some <u>preoccipital carina</u>)) (not (<u>has part</u> some (<u>ventral region</u> and (<u>has part</u> some <u>occipital carina</u>))))
Preoccipital carina and occipital carina structure	the preoccipital carina is absent and the occipital carina extends ventrally to the oral foramen	(not (<u>has part</u> some <u>preoccipital carina</u>)) (<u>adjacent to</u> some <u>oral foramen</u>)))
Preoccipital carina and occipital carina structure	occipital carina complete, preoccipital carina fused laterally with orbital carina	(<u>has part</u> some <u>occipital carina</u>) and (<u>has part</u> some <u>preoccipital carina</u> and (<u>adjacent to</u> some))
Preoccipital carina and occipital carina structure	the occipital carina is short, interrupted laterally of the occipital foramen, whereas the preoccipital carina extends ventrally to the oral foramen	(<u>has part</u> some (<u>occipital carina</u> and (not (<u>has part</u> some (<u>preoccipital carina</u> and (<u>adjacent to</u> some))))) and (<u>has part</u> some (<u>preoccipital carina</u> and (not (<u>has part</u> some (<u>occipital carina</u> and (<u>adjacent to</u> some))))))
Preoccipital carina and occipital carina structure	the occipital carina extends ventrally to the oral foramen with the preoccipital carina present on the vertex, but not extenidng ventrally along the gena	(<u>has part</u> some (<u>occipital carina</u> and (<u>adjacent to</u> some <u>oral foramen</u>))))) and (<u>has part</u> some (<u>preoccipital carina</u> and (not (<u>has part</u> some (<u>occipital carina</u> and (<u>adjacent to</u> some))))))
Preoccipital carina and occipital carina structure	the preoccipital carina is absent from the vertex, but a carina, that is continuous with the anterior margin of the preoccipital lunula extends ventrally to the oral foramen	(<u>has part</u> some (<u>preoccipital lunula</u> and (<u>has part</u> some (<u>carina</u> and (<u>adjacent to</u> some <u>vertex</u> and (not (<u>has part</u> some <u>preoccipital carina</u> and (<u>adjacent to</u> some <u>vertex</u>)))))))
Preoccipital carina count	absent	not (<u>has part</u> some <u>preoccipital carina</u>)

Entity	Value	Semantic
Preoccipital carina count	present	<u>has part</u> some <u>preoccipital carina</u>
Preoccipital carina shape	present medially, absent laterally to lateral ocelli	<u>has part</u> some (<u>preoccipital carina</u> and (<u>medial region</u> and (not (<u>has part</u> some (<u>lateral region</u> and (not (<u>has part</u> some (<u>lateral ocelli</u>)))))))
Preoccipital carina shape	complete	<u>has part</u> some (<u>preoccipital carina</u> and (<u>medial region</u> and (<u>has part</u> some (<u>lateral region</u> and (not (<u>has part</u> some (<u>lateral ocelli</u>)))))))
Preoccipital carina shape	interrupted dorsally and represented by irregular, not continuous carinae	<u>has part</u> some (<u>preoccipital carina</u> and (<u>medial region</u> and (<u>has part</u> some (<u>lateral region</u> and (not (<u>has part</u> some (<u>lateral ocelli</u>)))))))
Preoccipital furrow anterior end	Preoccipital furrow ends inside ocellar triangle	<u>has part</u> some (<u>preoccipital furrow</u> and (<u>anterior_to</u> some <u>posterior ocellar line</u>)))
Preoccipital furrow anterior end	Preoccipital furrow ends posterior to ocellar triangle	<u>has part</u> some (<u>preoccipital furrow</u> and (<u>posterior_to</u> some <u>interocellar space</u>)))
Preoccipital furrow count	present	<u>has part</u> some <u>preoccipital furrow</u>
Preoccipital furrow count	absent	not (<u>has part</u> some <u>preoccipital furrow</u>)
Preoccipital lunula count	present	<u>has part</u> some <u>preoccipital lunula</u>
Preoccipital lunula count	absent	not (<u>has part</u> some <u>preoccipital lunula</u>)
Presence of intertorular carina	present	<u>has part</u> some <u>intertorular carina</u>
Presence of intertorular carina	absent or reduced medially	<u>has part</u> some (<u>intertorular carina</u> and (not (<u>has part</u> some (<u>intertorular carina</u> and (<u>reduced</u>))))))
Proximodorsal notch of cupula count	present	<u>has part</u> some <u>proximodorsal notch of cupula</u>
Proximodorsal notch of cupula count	absent	not (<u>has part</u> some <u>proximodorsal notch of cupula</u>)
Proximodorsal notch of cupula shape	notched	<u>has part</u> some (<u>proximodorsal notch of cupula</u> and (<u>notched</u>)))
Proximodorsal notch of cupula shape	arched	<u>has part</u> some (<u>proximodorsal notch of cupula</u> and (<u>arched</u>)))
Proximodorsal notch of cupula width vs length	at least two times as long as wide	<u>has part</u> some (<u>anatomical line</u> and (<u>bearer_of</u> some (<u>measurement unit</u> and (<u>anatomical line</u>)))) and (<u>has measurement unit</u> some (<u>anatomical line</u> and (<u>decreased_in_magnitude_relative_to</u> some (<u>length</u> and (<u>width</u>))))))
Proximodorsal notch of cupula width vs length	wider than long	<u>has part</u> some (<u>proximodorsal notch of cupula</u> and (<u>anatomical line</u> and (<u>bearer_of</u> some (<u>length</u> and (<u>decreased_in_magnitude_relative_to</u> some (<u>width</u>)))))))

Entity	Value	Semantic
Proximodorsal notch of cupula width vs length	as long as wide	and (part_of some proximodorsal notch of cupula and (has_part some (proximodorsal notch of cupula and (anatomical_line and (bearer_of some (length and (similar_in_magnitude_relative_to some (part_of some proximodorsal notch of cupula)))))))
Proximolateral corner of male S9 shape	blunt	has_part some (abdominal_sternum_9 and some (proximal_side and ((bearer_of some (blunt))))))
Proximolateral corner of male S9 shape	acute	has_part some (abdominal_sternum_9 and some (proximal_side and ((bearer_of some (acute))))))
Proximolateral projection of the cupula shape	blunt	has_part some (proximolateral_projection and (has_part some (cupula and (shape and (blunt))))))
Proximolateral projection of the cupula shape	acute	has_part some (proximolateral_projection and (has_part some (cupula and (shape and (acute))))))
Randomly sized areolae around setal pits on frons count	absent	has_part some (frons and (has_part some (pit)))))
Randomly sized areolae around setal pits on frons count	present	has_part some (frons and (has_part some (areole and (setal_pit and (present))))))
Rugose region on frons count	present	has_part some (frons and (has_part some (rugose))))
Rugose region on frons count	absent	not (has_part some (frons and (has_part some (rugose)))))
S1 length vs. shortest width	S1 wider than long	has_part some (anterior_area_of_the_second_tarsus and (median_anatomical_line and (bearer_of some (has_measurement_unit_label some (float and (has_measurement_value some (float and (greater_than some (shortest_width and (S1_length))))))))
S1 length vs. shortest width	S1 longer than wide	has_part some (anterior_area_of_the_second_tarsus and (median_anatomical_line and (bearer_of some (has_measurement_unit_label some (float and (has_measurement_value some (float and (less_than some (wide and (S1_length))))))))
Scutoscutellar sulcus vs transscutal articulation	adjacent	has_part some (scutoscutellar_sulcus and (articulation))
Scutoscutellar sulcus vs transscutal articulation	not adjacent	has_part some (scutoscutellar_sulcus and (articulation)))

Entity	Value	Semantic
Sensillar patch of the male flagellomere pattern	F6-F9	(has_part some (sixth flagellomere and (flagellomere))) and (has_part some (seventh sensillar patch of the male flagellomere)) and (has_part some sensillar patch of the ninth flagellomere and (has_part some seventh sensillar patch of the male flagellomere and (has_part some (fifth flagellomere and (flagellomere))) and (has_part some (fourth sensillar patch of the male flagellomere) and (has_part some sensillar patch of the seventh flagellomere and (has_part some (eighth flagellomere and (male flagellomere))) and (has_part some sensillar patch of the male flagellomere))
Sensillar patch of the male flagellomere pattern	F4-F9	(has_part some (fifth flagellomere and (flagellomere))) and (has_part some (sixth sensillar patch of the male flagellomere)) and (has_part some sensillar patch of the flagellomere and (has_part some sensillar patch of the eighth flagellomere and (flagellomere))) and (has_part some (nineth sensillar patch of the male flagellomere))
Sensillar patch of the male flagellomere pattern	F5-F9	(has_part some (fifth flagellomere and (flagellomere))) and (has_part some (sixth sensillar patch of the male flagellomere)) flagellomere and (has_part some sensillar patch of the eighth flagellomere and (flagellomere))) and (has_part some (ninth sensillar patch of the male flagellomere))
Sensillar ring area of harpe orientation	medially	has_part some (area and (surrounded by of some medial orientation)))
Sensillar ring area of harpe orientation	dorsomedially	has_part some (area and (surrounded by of some dorsal orientation and (bearer))
Setal pit on vertex size	larger than diameter of scutes	has_part some (setal pit and (has_part some (length and (increased_in_magnitude_re some (maximum width and (part_of some (speculum and (posterior_to some (posterior margin and (not (has_part some (speculum and (posterior_to some (posterior margin and (extending_ventrally of pleural pit line))))))))))
Setal pit on vertex size	smaller than diameter of scutes	has_part some (setal pit and (has_part some (length and (decreased_in_magnitude_re some (maximum width and (part_of some (speculum and (posterior_to some (posterior margin and (absent)))))))))
Speculum ventral limit	not extending ventrally of pleural pit line	has_part some (speculum and (posterior_to some (posterior margin and (extending_ventrally of pleural pit line)))))
Speculum ventral limit	extending ventrally of pleural pit line	has_part some (speculum and (posterior_margin and (part_of some (sternaulus)))))
Sternaulus count	absent	not (has_part some sternaulus)
Sternaulus count	present	has_part some sternaulus
Sternaulus length	short, not reaching 1/2 of	has_part some (sternaulus_length and (be)))))

Entity	Value	Semantic
Sternaulus length	mesopleuron length at level of sternaulus	<u>measured as</u> some (<u>has measurement unit</u> <u>mesopleuron length</u>)))) and (<u>has measure</u>
Submedian flanges of occipital carina count	elongate, exceeding 3/4 of mesopleuron length at level of sternaulus	<u>has part</u> some (<u>sternaulus length</u> and (<u>measured as</u> some (<u>has measurement uni</u> <u>mesopleuron length</u>)))) and (<u>has measur</u>
Submedian flanges of occipital carina count	present	<u>has part</u> some <u>submedial flange of occipi</u>
Submedian flanges of occipital carina count	absent	not (<u>has part</u> some <u>submedial flange of occipi</u>)
Subtorular carina count	present	<u>has part</u> some <u>subtorular carina</u>
Subtorular carina count	absent	not (<u>has part</u> some <u>subtorular carina</u>)
Supraclypeal depression count	absent	not (<u>has part</u> some <u>supraclypeal depressi</u>
Supraclypeal depression count	present	<u>has part</u> some <u>supraclypeal depression</u>
Supraclypeal depression structure	absent medially, represented by two grooves laterally of facial pit	<u>has part</u> some (<u>supraclypeal depression</u> a
Supraclypeal depression structure	present medially, inverted U-shaped	<u>has part</u> some (<u>supraclypeal depression</u> a
Torulo-clypeal carina count	present	<u>has part</u> some <u>torulo-clypeal carina</u>
Torulo-clypeal carina count	absent	not (<u>has part</u> some <u>torulo-clypeal carina</u>)
Transverse carina on petiole shape	concave	<u>has part</u> some (<u>transverse carina on petio</u>
Transverse carina on petiole shape	straight	<u>has part</u> some (<u>transverse carina on petio</u>
Transverse frontal carina count	present	<u>has part</u> some <u>transverse frontal carina</u>
Transverse frontal carina count	absent	not (<u>has part</u> some <u>transverse frontal carina</u>)
Transverse line of the metanotum/propodeum fusion with antecosta fused medially of abdominal tergum 1.	fused medially	<u>has part</u> some (<u>transverse line of the met</u> (<u>antecostal sulcus of the first abdominal</u> <u>region</u>)) and (<u>bearer of</u> some <u>medial reg</u>

Entity	Value	Semantic
Transverse line of the metanotum/propodeum fusion with antecosta fused sublaterally of abdominal tergum 1.		has part some (transverse line of the metanotum/propodeum fusion with antecosta fused sublaterally of abdominal tergum 1) and (bearer of some lateral region of abdominal tergum 1))
Transversely reticulate region on frons count	present	has part some (frons and (has part some reticulate and (bearer of some horizontal))))
Transversely reticulate region on frons count	absent	not (has part some (frons and (has part some (reticulate and (bearer of some horizontal)))))
Transversely reticulate region on frons extent	extending entire width of frons	has part some (frons and (has part some reticulate and (bearer of some horizontal))))
Transversely reticulate region on frons extent	restricted to lateral branches of supraclypeal depression	has part some (supraclypeal depression and (has part some (anatomical region and (borders of some horizontal))))))))
Ventral margin of torulus vs dorsal margin of clypeus	adjacent	has part some (torulus and (has part some (dorsal margin and (part of some clypeus)))))
Ventral margin of torulus vs dorsal margin of clypeus	not adjacent	has part some (torulus and (has part some (dorsal margin and (part of some clypeus)))))
Ventrolateral invagination of the pronotum presence	absent	not (has part some ventrolateral invagination of the pronotum))
Ventrolateral invagination of the pronotum presence	present	has part some ventrolateral invagination of the pronotum))
Ventromedian and ventrolateral white, setiferous patches on frons count	present	(has part some (ventromedian setiferous patch and (has part some (ventrolateral setiferous patch and (has part some (Weber length) and (bears measured as some (has measurement unit and (measurement value some (float [>= 400.0]))))))))
Ventromedian and ventrolateral white, setiferous patches on frons count	absent	not ((has part some (ventromedian setiferous patch and (has part some (ventrolateral setiferous patch and (has part some (Weber length) and (bears measured as some (has measurement unit and (measurement value some (float [>= 400.0]))))))))
Weber length	WL=3.0-4.5	(has part some (Weber length) and (bears measured as some (has measurement unit and (measurement value some (float [>= 400.0]))))))))
Whitish, thick setae on frons count	absent	has part some (frons and (not (has part some (white)))))
Whitish, thick setae on frons count	present	has part some (frons and (has part some (white)))))