

Supplementary material. Characters and states coded for taxa included in this study.

IMAGINES	1 slightly extended, triangular
1. Rostrum	2 prolonged, rounded
0 present	
1 reduced	
13. Maxillary palpomere 3	
0 shorter than 1+2	
1 longer than 1+2	
2. Frons concavity	
0 none	
1 in male	
2 in female	
14. Maxillary lateral setae	
0 simple	
1 plumose	
3. Epistomal lobe	
0 absent	
1 present	
15. Lacinial setae	
0 spine-like	
1 fine and soft	
4. Frontal horns	
0 absent	
1 present	
16. Cardo extended on its inner margin parallel to the palpus	
0 no	
1 yes	
5. Eye margin	
0 entire	
1 emarginate	
2 deeply incised	
3 divided or nearly so	
17. Mentum	
0 broad	
1 narrow	
6. Scapus, female	
0 longer than funiculus	
1 shorter than funiculus	
18. Ligula	
0 tiny or absent	
1 small "pillow"	
2 elevated knob	
7. Scapus, setae	
0 scattered	
1 dense tuft	
19. Setae on ligula	
0 fine	
1 coarse, erect	
8. Funiculus segments	
0 seven	
1 six	
2 five	
3 four or three	
4 two or one	
20. Labial palpomere 1	
0 cylinder shaped	
1 squared	
2 rhomboid	
3 barrel-shaped	
4 twisted	
5 laterally compressed	
6 dorsally compressed	
9. Club	
0 conical	
1 moderately flattened	
2 obliquely truncate	
3 flat and thin	
4 lamellate	
21. Labial palpomere 1, setae	
0 scattered	
1 oblique row	
10. Club attachment symmetry	
0 symmetric	
1 oblique attachment	
22. Labial palpomere 2, setae	
0 nude or very fine	
1 one ventral spur-like seta	
11. Club sutures on anterior face	
0 transverse	
1 oblique	
2 procurved	
3 absent	
23. Labial palpomere 3	
0 longer than palpomere 1	
1 shorter than palpomere 1	
12. Occiput	
0 truncate	
24. Procoxae	
0 broadly separated	
1 contiguous	

25. Prosternal ridges from coxa to anterior margin
 0 absent
 1 present
26. Protibiae with latero-distal spine
 0 curved inwards
 1 curved laterally
 2 not present
27. Latero-distal spine on protibiae
 0 simple
 1 bifid
28. Lateral spines on protibiae
 0 unsocketed
 1 socketed
 2 not present
29. Denticles at protibial apex
 0 following the lateral edge
 1 making a transverse/oblique mesal row
30. Distant one-third of protibiae
 0 straight or nearly so
 1 broadly expanded, bowl shaped
31. Inner spine (mucro)
 0 short and tiny or near absent
 1 prolonged and curved posteriorly
 2 enforced, large, curved laterally
32. Anterior face of protibiae with longitudinal groove for reception of tarsus
 0 absent
 1 present
33. Tarsomere 3
 0 broadly bilobed
 1 weakly bilobed
 2 cylindrical
34. Metaventral process
 0 absent
 1 narrow
 2 broad and expanded
35. Corbel of metatibiae
 0 absent
 1 present
36. Pronotum lateral margin
 0 rounded
 1 carinate
37. Basal margin of pronotum
 0 rounded
 1 carinate
38. Lateral shape of pronotum
 0 normal
- 1 short and laterally expanded
39. Anterior area of pronotum
 0 smooth
 1 rough with asperities
 2 asperities in lateral areas only
 3 asperities in contiguous rows
40. Mycangium on pronotum
 0 absent
 1 central pore
 2 a transverse slit
41. Scutellum level and shape
 0 flush
 1 button
 2 sunken triangular
 3 not visible dorsally
 4 elevated
42. Elytral base
 0 transverse
 1 procurved
43. Dorsal margin of elytral base
 0 rounded
 1 raised line
 2 crenulated
44. Declivity
 0 gently rounded
 1 vertically flattened
 2 excavated with lateral margins
45. Surface of elytra (disc)
 0 smooth
 1 rough
46. Interstria 10
 0 short
 1 long
47. Sclerolepidia
 0 absent
 1 present
48. Metanepisternal setae
 0 simple
 1 bifid or trifid
 2 plumose
 3 absent
49. Metaventrite impressed with vertical carina
 0 absent
 1 present
50. Metanepisternal spine for locking of elytra
 0 present
 1 modified spine as keel
 2 replaced by oblique groove

- 3 absent
- 0 free
1 fused
51. Ventrites
0 flat
1 gradually raised
2 II-V steeply raised
52. Sutural locking mechanism
0 simple groove
1 row of nodules
2 single large nodule
53. Tergite VIII in females
0 hidden
1 exposed
54. Pleural suture
0 zig-zag shaped
1 straight
55. Scutoscutellar suture
0 parallel
1 parabolic
56. Metanotum separated from postnotum
0 by membrane
1 fused
57. Postnotum shape
0 subtransverse
1 pointed caudally
58. Costa+ subcosta+R
0 normal
1 very broad
59. Setae on precosta
0 absent
1 two or three setae in patch
2 dispersed
3 single seta
60. Setae on costa
0 1-2
1 3-7
2 8-15
3 irregularly spaced
4 absent
61. Setae on stigmal patch
0 absent
1 one
2 two
3 three or four
62. Anal lobe
0 absent
1 present
63. Apophyses
64. Apophyses length
0 as long as penis
1 much shorter
2 much longer
65. Apophyses attachment
0 broad
1 narrow
66. Tegmen shape
0 closed ring
1 open dorsally
67. Tegmen thickness
0 as thick as apophyses
1 much thicker/longer
2 very thin
68. Manubrium
0 absent
1 very short
2 very long
3 bi-spined
69. Internal spicules of penis
0 absent
1 tiny spines
2 complex
3 spiral shaped
4 long rod with recurved loop
70. Spiculum gastrale, fork
0 a simple rod
1 with apical fork
2 with fork at mid-length
71. Spiculum gastrale, thickness
0 as apophyses
1 enlarged
72. Proventriulus with median suture of apical plate
0 not present
1 narrow
2 wide open
73. Median suture
0 with tubercles
1 without tubercles
74. Apical plate with transverse lines as
0 sharp ridges
1 rows of tubercles
2 irregular sharp teeth
3 irregular tubercles
4 absent
75. Marginal bristles

- 0 absent
 - 1 present
76. Crop spines
- 0 absent
 - 1 tiny and dispersed
 - 2 bundle of long spines

77. Apical teeth
- 0 transverse rows
 - 1 A-shaped crenulation
 - 2 U-shaped rim
 - 3 absent

78. Femoral teeth
- 0 absent
 - 1 present

79. Lateral teeth
- 0 absent
 - 1 long line
 - 2 long and curled

PUPAE

80. Caudal horns
- 0 present
 - 1 vestigial

LARVAE

81. Pedal setae
- 0 four
 - 1 three
 - 2 two

82. Head capsule index
- 0 > 1
 - 1 < 1

83. Submental setae
- 0 in triangle
 - 1 straight line

84. Frontal shield tubercle
- 0 absent
 - 1 present
 - 2 transparent area

85. Mandibular setae
- 0 transverse pair
 - 1 longitudinal pair
 - 2 single point

86. Epipharyngeal pairs of setae
- 0 maximum 3
 - 1 > 4

87. Tormae
- 0 subparallel
 - 1 V-shaped

88. Prementum
- 0 independent axis
 - 1 triangular
 - 2 broad

