Online Supplementary Material - 2

Characters used in the cladistic analyses.

Note: Characters marked (*) were previously used by Kavanaugh & Erwin (1991) to study the phylogenetic relationships of Cicindini.

0*. Supraorbital anterior setae: present (0), absent (1).
1*. Supraorbital posterior setae: present (0), absent (1), two or more punctures each with one seta (3).

Supraorbital setae (characters 0 and 1) were considered to be independent. Jeannel (1941) considered two main groups of tribes (families) within Limbata Stylifera based on the presence of supraorbital setae anteriorly and posteriorly to the eye. According to Jeannel, one of these groups has two supraorbital setae, whereas the other has only the posterior seta. Nevertheless, the anterior and posterior setae are independent and sometimes the anterior seta is present while the posterior is absent. For this reason, we regard these setae as two independent characters.

2*. Mandibular scrobal seta: present (0), absent (1).
3*. Number of labral setae: twelve (0), eight (1), six (2), four (3).

4. Shape of labrum: anterior margin not bilobed (0); anterior margin strongly bilobed (1).

5. Clypeus: narrower than distance between antennal sockets (0), longer than distance between antennal sockets (1).

6*. Temporal ridge: absent (0), incomplete, when the central or central-anterior part is obsolete (1), complete, when this structure is distinct on the entire lateroventral surface of the head (2).

The temporal ridge is a more or less distinct suture on both sides of the head that extends backwards below and behind the eyes (Sloane 1890). This is the “suture temporale” for Putzeys (1868), and the “sub-ocular ridge” for LeConte & Horn (1883), or genal flange for Kavanaugh & Erwin (1991).

7. Apical margin of glossal sclerite: bisetose (0), tetrasetose (1), six or more (2), asetose (3), one seta (4).

8. Maxillary palpomere 4: longer than penultimate (0), as long as penultimate (1), shorter than penultimate (2).

9. Shape of last maxillary palpomere: similar to penultimate (0), dissimilarly enlarged (1).

10. Scape: with numerous umbilicate setae (0), one setiferous puncture (1).

11. Pubescence of antennomeres: glabrous antennomeres (0), 1-4 glabrous antennomeres (1), 1-3 glabrous antennomeres (2), 1-2 glabrous (3).

12*. Antenna cleaner on apical spurs of front tibia (Jeannel 1938, 1941, Hlavac 1971): with spurs equal in size, apical (isochaeta) (0), with posterior tibial spur longer than anterior and displaced medially (anisochaeta) (1).

13. Antenna cleaner, setal band (Hlavac 1971): short, almost entirely horizontal, as a simple and transverse setal band across the concave tibial apex between spurs (sulcate) (0); long, with distinct vertical section and confluent zone (1); long, divided into a large distal region and a proximal cleaning arc (2).

14. Antenna cleaner, clamp setae: absent (0); present, straight (1); present, curved (2).

15*. Antenna cleaner, antennal channel: longitudinal (0); oblique (1).

16. Antenna cleaner, medial expansion of front tibia: absent (0); present (1).

17. Adhesive setae of male front tarsi (Stork 1980): spongiose for Sloane (1923) articulo-setae, arranged in a more or less hexagonal pattern, with straight cylindrical shafts bearing regular round or oval plates (0); squamo-setae in one row on long axis of tarsus (1); squamo-setae in two rows on long axis of tarsus (2).

18. Mesotibial brush on the lateral surface: absent (0), present (1).

19*. Posterior procoxal closure (Nichols 1985; Bell 1967): open posteriorly (0); closed by medial extension of propleuron (1); proepimeron fitted into the lateral arm of the prosternal process (2); tip of the lateral arm of the prosternal process shallowly fitted into the proepimeron (3).

20*. Frontal coxal cavities (Nichols 1985; Bell 1967): conjoined, not separated medially (0); separated medially by sclerotized internal septum (1).

21*. Frontal coxal cavities (Nichols 1985, Bell 1967): the dorsal unsclerotized opening is divided by a narrow sclerotized bridge (biperforate or bridged) (0); without sclerotized bridge (unbridged or uniperforate) (1).

22. Pleural contact with mesocoxa (Nichols 1985):
mesepimeron forming part of the mesocoxal cavity [disjunct condition for Sloane (1923), Jeannel (1941) and Bell (1967)] (0); mesepimeron excluded from the mesocoxal cavity [conjunct condition for Sloane (1923), Jeannel (1941) and Bell (1967)] (1).

23*. Pleural contact with metacoxa (Nichols 1985): metacoxa expanded laterally to the elytral epipleuron [incomplete for Bell (1967)] (0); metepimeron absent (conjunct condition for Bell 1967) (1); metepimeron in contact with the metacoxa (disjunct for Bell 1967) (2); metepimeron forms a shelf that overlaps abdominal sternum II (the first visible abdominal sternite) [disjunct lobate characteristic of Lobopleuri (Bell 1967)] (3).

24. Elytral plica: absent (0), present (1), turned forward (2).

25*. Parascutellar striole (Jeannel 1938): one stria complete, between stria 1 and stria 2 (0); short, between striae 1 and 2 (1); short and joined to the medial portion of stria 1 (2); absent (3).

26. Supernumerary striae: absent (0), present (1).

27. Parascutellar seta (basal seta of the second stria): absent (0); present (1).

28. Metathoracic wings, shape of the oblongum cell (OC) (Ward 1979): transversely rectangular (0); narrowed posteriorly (1).

29. Metathoracic wings: 4mcu and 5mcu separated distally (0); 4mcu and 5mcu joined before the Cu vein, forming a stalk (1).

30*. Metathoracic wings, point of insertion of M4: on the anterior distal wall of the OC (0); M4 inserted in the middle (1); M4 inserted posterior to the middle (2).

31*. Metathoracic wings, relative sizes of the third radial (3RC) and posterior sector (SAC) cells: 3RC subequal in size to SAC (0); 3RC larger than SAC (1)

32. Type of abdomen (Deuve 1993): nebridian, the last apparent tergum is the unmodified VIII (0); the IX invaginated (Carabidean) (1); tergum VIII partially invaginated, with anterior margin without apophysis (1); harpalidian, the last apparent tergum is VIII, anterolateral apodemes present (2); last one corresponds to VIII (not apparent), deeply invaginated and telescoped (3).

33. Last visible sternite of male: apical border right (0); apical border distinctly emarginated (1).

34. Attachment of pygidal glands (Deuve 1993): anterolateral margin of abdominal tergum IX (0), near abdominal tergum VIII (1).

35. Base of median lobe (Jeannel 1955, Erwin 1985): base closed dorsally (0); base partially closed (1); base open dorsally (2).

36. Base of median lobe, basal keel: absent (0); present (1).

37*. Left paramere Jeannel (1941, 1955, Erwin 1985): densely setose (0); with few setae (1); glabrous (2).

38*. Shape of left paramere (Jeannel 1941, 1955, Erwin 1985): styliform (similar in shape to the right paramere) (0); conchiferous (1).

39*. Right paramere (Jeannel 1941, 1955, Erwin 1985): setose (0); glabrous (1).

40. Internal sac, sclerite X and Y (Roig-Juñent 1998, 2000): absent (0); present (1).

41. Internal sac, copulatory piece (Jeannel 1941, 1955): absent (0); present (1).

42. Dorsal sclerification joining left and right parameres: absent (0); present (1).

43. Gonopod VIII (Deuve 1993) or ramus gonocoxae (Liebherr & Will 1998): absent (0); present (1).

44. Nematiform setae of subapical setose organ (Deuve 1993): absent (0); present (1).

45. Stylomere 1 or gonopod IX (Deuve 1993): monomerous (0) (Cicindini); dimerous (1).

46. Gonocoxite 2: without any basal dentiform process, simple, formed by only one part (0); formed by two parts with basal dentiform process (1).

47. Ligular apophysis: absent (0), present (1).

48. Helminthoid sclerite (Deuve 1993): present (0), absent (1).

49. Oviduct position: ventral respect to spermathecae (0), dorsal respect to spermathecae (1).