

THE WAYS OF DEVELOPING CLASSIFICATION AND RECONSTRUCTING PHYLOGENY IN THE FAMILY CIXIIDAE

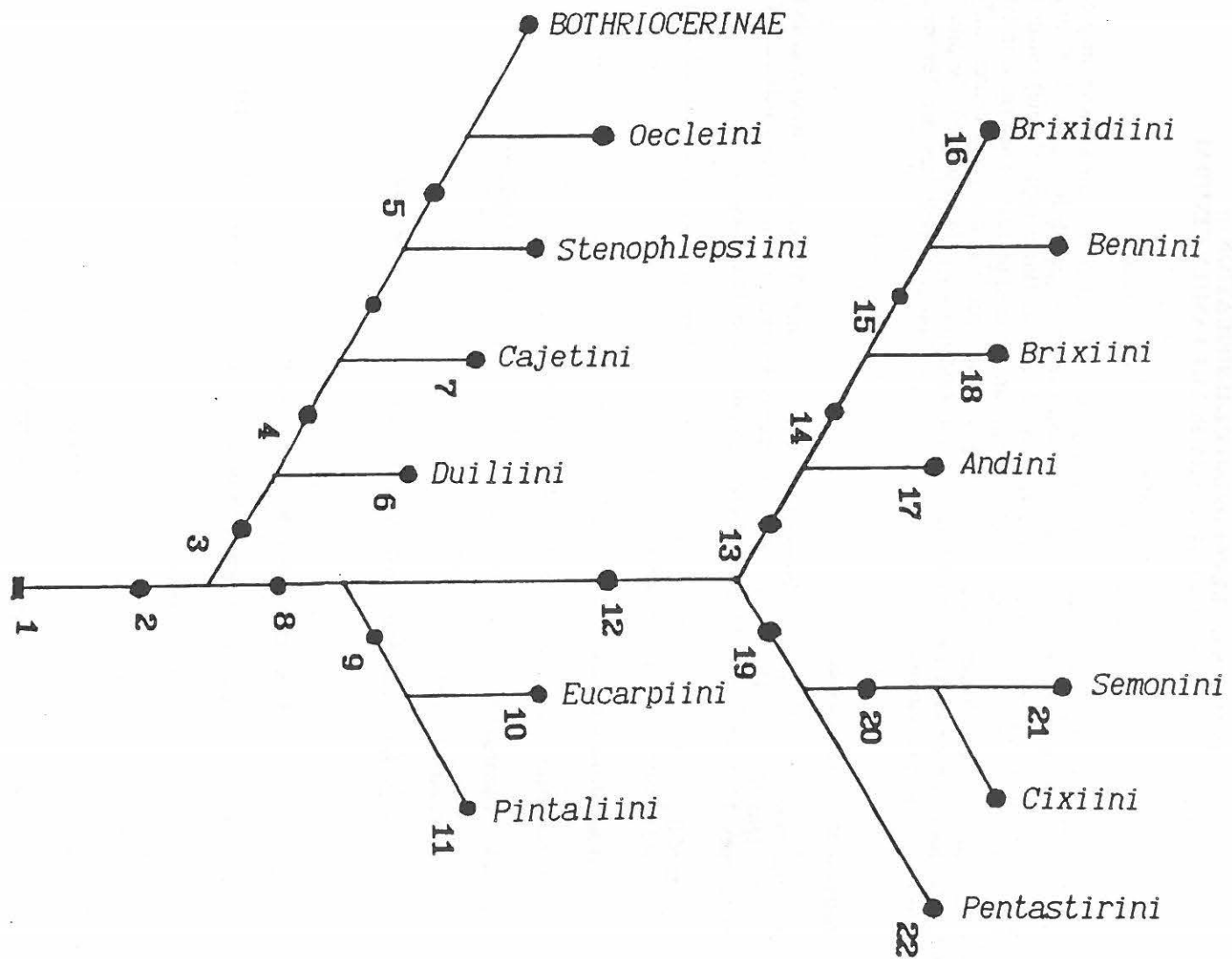
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The Cixiidae is one of the most primitive families among Fulgoroidea. Fossil Cixiidae are known from preanthophytan Mesozoic. They are distributed worldwide with a high diversity, especially in tropics. The Cixiidae, except some specialized groups, are classified with difficulties. Many tribes (for example Cixiini) remain unnatural. It is not clear which of the representatives of the family are the most primitive. Such situation exists because the majority of simple characters are subjected to great homologous variability and, consequently, a reversibility. In this report on such a precarious base I am making an attempt to distinguish the principal groups of the tribal rank. In addition to the characters formerly used I use some new ones, but they are also varying.

The explanation of the cladogram (see fig.).

1. Some plesiomorphies of the family. 1.1. Sclerotization of male VII and VIII abdominal sternites is divided medially (as in Delphacidae). 1.2. Hind end of intercubital transverse veinlet on fore wings touches claval suture near claval apex. 1.3. Sensory pits of abdominal wax plates lie on their fore margins.
2. Apomorphies of the family. 2.1. Nymphal abdominal wax plate with five crosspieces. 2.2. Lateral spines of hind femora formed to socle crowned with short thick seta.
3. or 4. Thick and dentate fossorial fore legs in nymphs.
5. Diastema between lateral and medial groups of spines in hind tibiae.
- 6.1. Clypeolateral keels disappeared. 6.2. Hind wings margin incised in $MP+CuA_1$ (Duiliini).
7. Thickened fore femora (Cajetini).
8. Displacement of intercubital transverse vein distal of clavus apex (joining wing margin).
9. Fore wings tectiform.
10. Only one transverse keel between clypeus and occiput (Eucarpiini).
11. Hind margin of the fore wing convexity situated between the clavus apex and *icu* (Pintaliini).
12. Sclerotization of VIII sternite consolidated.
13. Forewing in repose steeply tectiform.
14. Middle spine on the apex of hind leg longer than the adjoining spines.
15. Intercubital transverse vein of forewing elongated and directed obliquely longitudinally.
16. *M* and *CuA* of hind wing with basal anastomosis (Brixidiini).
17. *RA* and *RP* on fore wing forking near basal cell (Andini).
18. Common stem *ScRM* prolonged distad of basal cell (Brixini).
19. Sensory pits of abdominal wax plates distant from fore margin of the plate.
20. Disappearance of 4 of the 5 crosspieces on abdominal wax plate.
21. Postclypeus swollen, its clypeometopal margin convex (Semonini: *Kuvera*, *Betacixius*, *Semo*).
22. Appearance of the middle sternal sclerite on VII abdominal segment (Pentastirini).

Tentative cladogram of the Cixiidae (explanation in text)





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