

INTERGENERIC RELATIONSHIPS OF SELECTED TRIBES OF THE SUBFAMILY PSYCHODINAE (DIPTERA, PSYCHODIDAE)

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Our knowledge of the phylogenetic relationships of the family Psychodidae is extremely limited and the situation will probably improve only slowly. A phylogenetic system for the whole recent fauna of this family will perhaps never be quite completed. A general settlement of the absolute rank of the higher categories according to the degree of phylogenetic relationships is hardly attainable.

Quate (1959) included in the tribus Psychodini Enderlein, 1936 genera *Lepidopsychoda* Edwards, 1928, *Trichopsychoda* Tonnoir, 1922, *Philosepedon* Eaton, 1904, *Threticus* Eaton, 1904, *Eurygarka* Quate, 1959 and *Psychoda* Latreille, 1796. He published a tree of their phylogenetic relationships. Genera *Threticus* Eaton, 1904 and *Philosepedon* Eaton 1904, which are characterized as being closely related to the genus *Psychoda* Latreille, 1796, constitute in Vaillant's (1971) work a part of a sister group to the tribus Psychodini Enderlein, 1936. Vaillant published a tree of the phylogenetic relationships of 26 genera of Palaearctic Psychodinae, however without a synopsis his arguments. A fundamental paper dealing with the evolutionary taxonomy of the family Psychodidae was published by Hennig (1972). On the basis of recent forms are analysed phylogenetic relationships of the higher taxa at the level of subfamilies and the main monophyletic groups are defined and discussed. Hennig analysed both Quate's and Vaillant's trees of phylogenetic relationships and discussed many critical points.

The present paper gives a synopsis of the arguments for the establishment of sister groups in conformity with Hennig (1957). Plesiomorphic (primitive) level of each character is demonstrated „o“, apomorphic level „•“. Pointed horizontal stripes connect monophyletic homologous apomorphies (synapomorphies), horizontal arrowheads show the direction of the development of particular characters. Some from the mentioned groups are indifferent to certain characters in the sense of Brundin (1966). Characters are indicated by numbers 1—46.

1. Anterior additional sclerite of the pteropleurite developed (o) or not (•).

2. Upper side of the pteropleurite wholly restricted by a suture and lower side of the pteropleurite without a break (o) or upper side is partially restricted by the suture and lower side with the break (•).

3. R₄ connected with R₂₊₃ which is conspicuously prolonged basally

{o} or R₂₊₃ connected with R₄ which is at least inconspicuously prolonged basally {•}.

4. The reduction of the necks of antennal segments expanded distally {o} or not {•}.

5. Basal apodeme of the male genitalia flattened dorso-ventrally {o} or laterally {•}.

6. Sclerotized remainders of the 10th segment inside of epandrium developed {o} or missing {•}.

7. Pedicellus with a projection (in the shape of a stump) {o} or projection lacking {•}.

8. The last segment of maxillary palpus annulate {o} or without annulation {•}.

9. Apical antennal segments flask-shaped {o} or simpler {•}.

10. Anterior additional sclerite of the pteropleurite large {o} or small {•}.

11. Patagia and tegulae developed {o} or missing {•}.

12. Basal field of the wing developed {o} or not {•}.

13. Corniculi or cluster of spines on the first flagellar segments developed {o} or not {•}.

14. The antennal sensory filaments arranged in rings {o} or single {•}.

15. Paired additional sabre stumps developed {o} or not {•}.

16. Furca developed {o} or not {•}.

17. Antennal segment 15 with fully developed neck {o} or with reduced neck {•}.

18. Pedicellus not ball-shaped {o} or ball-shaped {•}.

19. The first and second flagellar segments asymmetrical {o} or symmetrical {•}.

20. Pedicellus with a conspicuous keel-like protuberance {o} or inconspicuous one {•}.

21. Retinaculi numerous {o} or number is reduced {•}.

22. The basal apodeme of the male genitalia flattened dorso-ventrad {o} or laterad {•}.

23. The apical antennal segments not ball-shaped {o} or ball-shaped {•}.

24. M₃ and Cu connected on M₄ {o} or not {•}.

25. Two forms of retinaculi {o} or only one form of retinaculi {•}.

26. External paired projections of the male genitalia developed {o} or missing {•}.

27. Frontal suture present {o} or missing {•}.

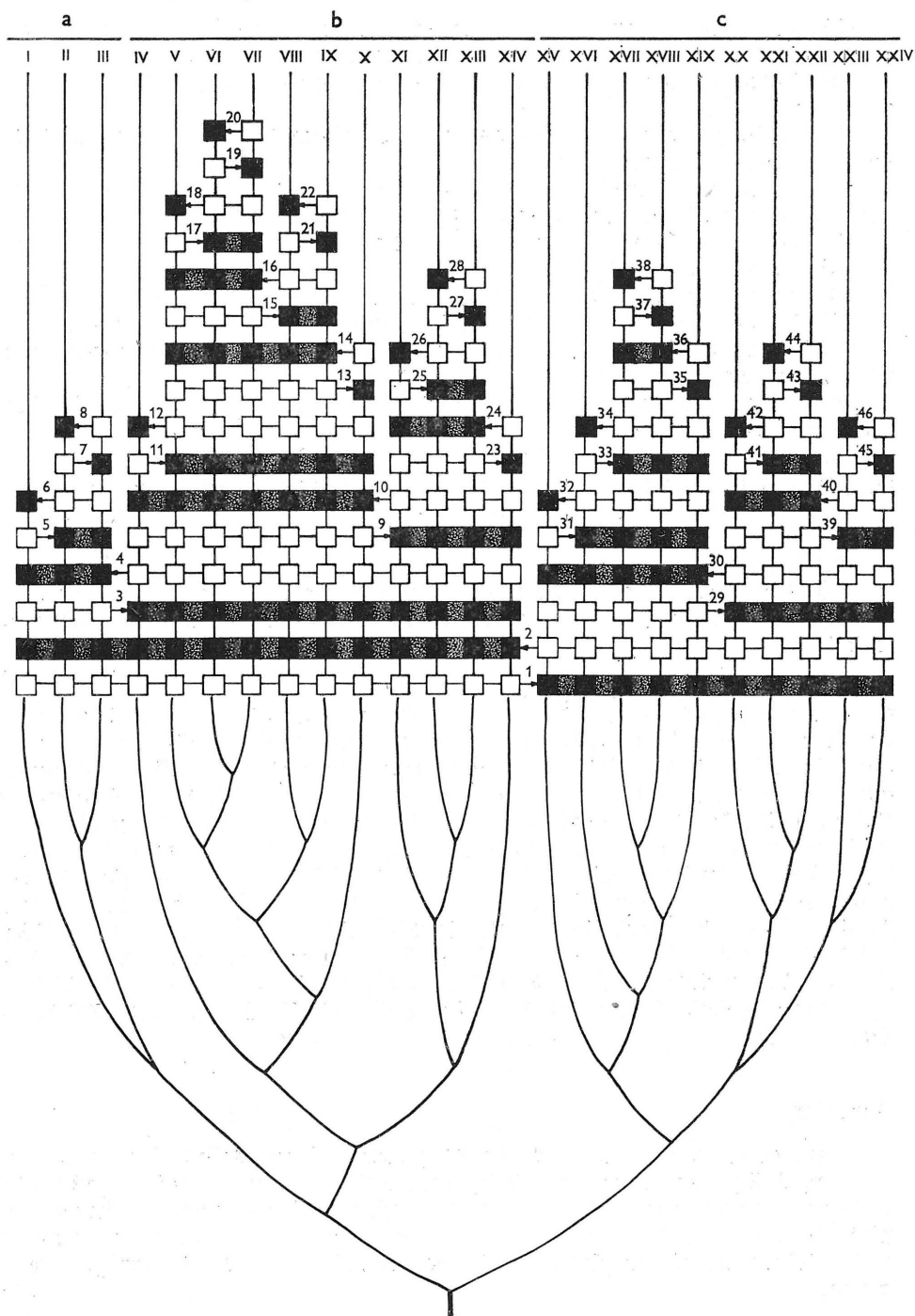
28. Apical antennal segments separated {o} or fused {•}.

29. Number of antennal segments 16 {o} or less {•}.

30. A difference in the size of the last three reduced antennal segments mostly huge {o} or miniature {•}.

31. The last antennal segments separated {o} or fused in differing combinations {•}.

32. Cerci of the male long, posterior third hairy {o} or cerci of the male short, posterior third bare {•}.



33. Antennal segment 15 separated from neighbouring segments (o) or fused at least with one from neighbouring ones (•).
34. Terminal lobe of labium with four finger-shaped projections (o) or with only three (•).
35. Antennal segment 15 fused with segment 14 (o) or with both 14 and 16 antennal segment (•).
36. Additional spathe-shaped formation of the male genitalia composed of two parts (o) or reduced (•).
37. Apical antennal segment drop-shaped (o) or globular (•).
38. M₃ and Cu connected on M₄ (o) or not (•).
39. Antennae 15 segmented (o) or 14 segmented (•).
40. At least the remains of one or more sided spines on the penultimate obviously rather reduced antennal segment (o) or without such remains as well as without fully developed spines (•).
41. Apical two antennal segments of the same size (o) or the last antennal segment conspicuously reduced (•).
42. Cerci of the male S-shaped from ventral-view, rather widened basally (o) or inconspicuously bent and of equal width throughout (•).
43. A rim on the antennal segment 13 developed (o) or missing (•).
44. Terminal lobe of labium with 5 finger-shaped projections (o) or only 3 (•).
45. Antennal segment 12 with a necked part (o) or without (•).
46. Ring-shaped base of ventral phallomere developed (o) or missing (•).

a — Mormiini Enderlein, 1936, b — Paramormiini Enderlein, 1936, c — Psychodini Enderlein, 1936; I — *Promormia* Ježek, 1983a; II — *Jovamormia* Ježek, 1983a; III — *Psychomormia* Ježek, 1983a; IV — *Peripsychoda* Enderlein, 1935; V — *Telmatoscopus* Eaton, 1904; VI — *Panimerus* Eaton, 1913; VII — *Psycmera* Ježek, 1983a; VIII — *Parajungiella* Vaillant, 1972; IX — *Jungiella* Vaillant, 1972; X — *Paramormia* Enderlein, 1935; XI — *Trichopsychoda* Tonnoir, 1922; XII — *Philosepedon* Eaton, 1904; XIII — *Feuerborniella* Vaillant, 1971; XIV — *Threticus* Eaton, 1904; XV — *Psychodocha* Ježek, 1983b; XVI — *Psycha* Ježek, 1983b; XVII — *Psychomora* Ježek, 1983b; XVIII — *Chodopsycha* Ježek, 1983b; XIX — *Psychodula* Ježek, 1983b; XX — *Psychoda* Latreille, 1796; XXI — *Ypsydocha* Ježek, 1983b; XXII — *Tinearia* Schellenberg, 1803; XXIII — *Logima* Eaton, 1904; XXIV — *Copropsychoda* Vaillant, 1971.

Summary

Intergeneric relationships of 24 genera of the tribes Mormiini Enderlein, 1936, Paramormiini Enderlein, 1936 and Psychodini Enderlein, 1936 are demonstrated on the plesiomorphic and apomorphic characters. The directions of the development of particular characters are marked and a trial tree of the phylogenetic relationships of all studies genera is given.

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