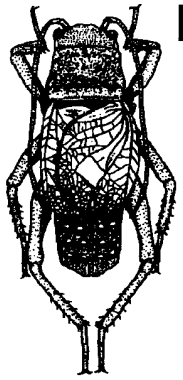

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PHYLOGENETIC RELATIONSHIPS AND CLASSIFICATION OF THE DIGGER WASPS TRIBE GORYTINI (HYMENOPTERA: SPHECIDAE, NYSSONINAE)

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The digger wasps tribe Gorytini is reviewed, with an extensive reevaluation of generic groupings. Phylogenetic analysis of thirty-three genera, with hypothetical ancestor as outgroup, reveal the relationships: (Ancestor + Clitemnestrina) + {*Olgia* + (Argogorytina + [*Exeirus* + (*Handlirschia* + Gorytina)])}. A tree generated from 33 genera yielded a length of 86 steps and CI of 0,45. The tribe Gorytini is divided into six subtribes: Clitemnistrina subtrib. n., Olgiina subtrib. n., Argogorytina subtrib. n., Exeirina Dalla Torre, Handlirschiina subtrib. n. and Gorytina Lep. The key to the subtribes is given.

KEY WORDS: Sphecidae, digger wasps, Gorytini, phylogeny, taxonomy.

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Дается обзор трибы Gorytini, с переоценкой родовых групп. В результате филогенетического анализа 33 родов и гипотетического предка, как внешней группы, выявлены следующие родственные отношение: (Ancestor + Clitemnestrina) + {*Olgia* + (Argogorytina + [*Exeirus* + (*Handlirschia* + Gorytina)])}. Для 33 родов и гипотетического предка

построено филогенетическое древо (длина=86 шагов, CI=0,45). В трибе Gorytini выделено шесть подтриб: Clitemnestrina subtrib. n., Olgiina subtrib. n., Argogorytina subtrib. n., Exeirina Dalla Torre, Handlirschiina subtrib. n. и Gorytina Lep. Дается определительная таблица подтриб.

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INTRODUCTION

The tribe Gorytini includes 32 recent and 1 fossil genera which numbered about 400 species in the World (Bohart & Menke, 1976; Tsuneki, 1976, 1982; Pulawski, 1979; Bohart, 1980; Krombein, 1985; Kazenas, 1987, 1989a, 1989b, 1992; Nemkov, 1989-1996; Nesterov, 1993, 1994; Vardy, 1995). They are distributed more or less equal throughout all zoogeographical regions. The natural history of Gorytini species is similar. All Gorytini are ground-nesting wasps prefering an open area. They construct branched nests with 1-10 terminal cells. The most species of Gorytini prey upon nymphs and adults of Homoptera. The species of Australian *Austrogorytes* prey upon Heteroptera only. The fossil Gorytini are known from the Eocene (Baltic amber), the Lower Oligocene (Florissant, USA) and the Upper Oligocene (Primorskii krai, Russia). Gorytini fauna studied rather well than the phylogenetic relationships of genera.

Cladistic analysis on genera level with using computer programs is useful (productive) when sufficient number of diagnostic characters are used (Andersen, 1995; Kimsey, 1996). We used such method for the constructing of the cladogram showing phylogenetic relationships of Gorytini generic groupings. Based on the cladogram we proposed here the division of tribe into the six subtribe. Phylogenetic relationships of Nyssoninae genera among the other tribes as well as the tribes among the will be studied later.

TAXA EXAMINED

One hundred eleven species from twenty two genera have been studied for the receiving of morphological characters and their distribution among the genera Gorytini. For several genera additional data were taken after Bohart and Menke (1976) or other literature. List of studied genera and species is given herein.

1. ***Clitemnestra*** Spin.: *C. gayi* (Spin.).
2. ***Ochleroptera*** Holmberg: *O. aenea* (Handl.), *O. bipinctata* (Say).
3. ***Olgia*** Rad.: *O. helena* Beaum., *O. maracandica* (Rad.), *O. modesta* Rad., *O. spinulosa* Beaum.
4. ***Argogorytes*** Ashm.: *A. fairmairei* (Handl.), *A. fargeii* (Shuck.), *A. hispanicus* (Mercet), *A. mystaceus* (L.), *A. nipponis* Tsun.
5. ***Neogorytes*** Bohart: The data are taken after: Bohart & Menke (1976).
6. ***Exeirus*** Shuck.: *E. lateritius* Shuck.

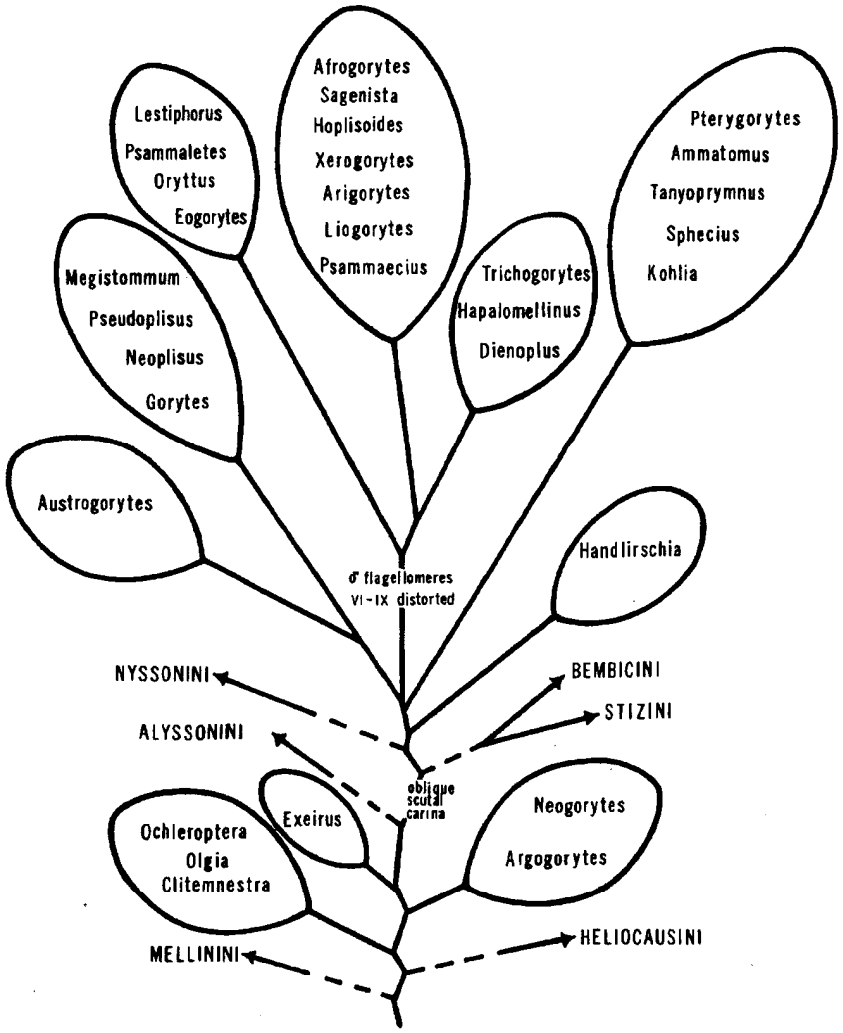

Fig. 1. Dendrogram illustrating suggested relationships of 31 genera Gorytini and points of departure for other tribes of the Nyssoninae, after Bohart and Menke (1976).

7. ***Harpactus*** Shuck. (=*Dienoplus* Fox): *H. affinis* (Spin.), *H. annulatus* (Ev.), *H. betpakdalensis* Kazenas, *H. consanguineus* (Handl.), *H. elegans* (Lep.), *H. exiguus* (Handl.), *H. formosus* (Jur.), *H. hissaricus* (Guss.), *H. kazakhstanicus* Nemkov, *H. kazenasi* Nemkov, *H. kohli* Nemkov, *H. laevis* (Latr.), *H. lunatus* (Dhlb.), *H. montanus* Kazenas, *H. morawitzi* Rad., *H. octonotatus* Kazenas, *H. quinquefasciatus* Kazenas, *H. rugosus* Nem-

kov, *H. tauricus* (Handl.), *H. tjanshanicus* Kazenas, *H. transbaikalicus* Nemkov, *H. transcaspicus* (Kokujev), *H. transcaucasicus* Nemkov, *H. tumidus* (Panz.), *H. walteri* (Handl.).

8. ***Hapalomellinus*** Ashm.: *H. albitomentosus* (Bradley).

9. ***Trichogorytes*** Rohwer: *T. cockerelli* (Ashm.).

10. ***Austrogorytes*** Bohart: *A. bellicosus* (F. Smith), *A. ciliatus* (Handl.). Additional data are taken after: Bohart (1967); Bohart & Menke (1976).

11. ***Gorytes*** Latr.: *G. africanus* Mercet, *G. aino* Tsun., *G. albidulus* (Lep.), *G. ambiguus* Handl., *G. fallax* Handl., *G. foveolatus* Handl., *G. hebraeus* Beaum., *G. laticinctus* (Lep.), *G. maculicornis* (F. Mor.), *G. neglectus* Handl., *G. nigrifacies* Mocs., *G. pieli* Yasum., *G. pleuripunctatus* (A. Costa), *G. procrustes* Handl., *G. quadrifasciatus* (F.), *G. quinquecinctus* (F.), *G. quinquefasciatus* (Panz.), *G. schmiedeknechtii* Handl., *G. schlettereri* Handl., *G. sulcifrons* (A. Costa), *G. tobiasi* Nemkov.

12. ***Pseudoplisus*** Ashm.: *P. aequalis* (Handl.), *P. divisus* (F. Smith), *P. kohlii* (Handl.), *P. phaleratus* (Say).

13. ***Megistommum*** Schulz: *M. mimiters* (Handl.), *M. politum* (F. Smith), *M. splendidum* (Handl.).

14. ***Neoplisus*** Bohart: *N. notabilis* (Handl.), *N. specialis* (F. Smith).

15. ***Eogorytes*** Bohart: *E. fulvohirtus* (Tsun.). Additional data are taken after: Bohart & Menke (1976).

16. ***Lestiphorus*** Lep.: *L. bicinctus* (Rossi), *L. bilunulatus* A. Costa, *L. egregius* (Handl.), *L. oreophilus* (Kuznetzov-Ugamskij), *L. pacificus* (Guss.), *L. pictus* Nemkov.

17. ***Oryttus*** Spin.: *O. concinnus* (Rossi), *O. cribratus* (F. Mor.), *O. dives* Nemkov, *O. infernalis* (Handl), *O. kaszabi* Tsun.

18. ***Psammaletes*** Pate: *P. mexicanus* (Cameron). Additional data are taken after: Bohart & Menke (1976).

19. ***Handlirschia*** Kohl. The data are taken after: Bohart & Menke (1976).

20. ***Sphecius*** Dhlb.: *S. antennatus* (Klug), *S. conicus* (Germar), *S. lutescens* (Rad.), *S. nigricornis* (Duf.), *S. persa* Guss., *S. uljanini* (Rad.).

21. ***Tanyoprimnus*** Cameron: The data are taken after: Bohart & Menke (1976).

22. ***Ammatomus*** A. Costa: *A. asiaticus* (Rad.), *A. coarctatus* (Spin.), *A. mesostenus* (Handl.), *A. rogenhofferi* (Handl.), *A. rufonodis* (Rad.).

23. ***Kohlia*** Handl.: *K. coxalis* Morice, *K. pavlovskii* (Guss.).

24. ***Pterygorytes*** Bohart: The data are taken after: Bohart (1967) and Bohart & Menke (1976).

25. ***Psammaecius*** Lep.: *P. luxuriosus* (Rad.), *P. punctulatus* (Vander Linden). Additional data are taken after: Pulawski & Rasnitsyn (1980).

26. ***Liogorytes*** Bohart: *L. polybia* (Handl.). Additional data are taken after: Bohart (1967) and Bohart & Menke (1976).

27. ***Arigorytes*** Rohwer: *A. insolitus* (W. Fox). Additional data are taken after: Bohart & Menke (1976).

28. ***Xerogorytes*** Bohart. The data are taken after: Bohart & Menke (1976).

29. ***Hoplisoides*** Gribodo: *H. craverii* (A. Costa), *H. ferrugatus* (Spin.), *H. gazagnairei* (Handl.), *H. latifrons* (Spin.), *H. punctuosus* (Ev.), *H. quedenfeldti* (Handl.). Additional data are taken after: Bohart & Menke (1976).

30. ***Sagenista*** Bohart: *S. cayennensis* (Spin.) Additional data are taken after: Bohart (1967) and Bohart & Menke (1976).

Table 1.

Character matrix for 33 genera of Gorytini and for 1 outgroup used in cladistic analysis.

Genera	Characters			
	1	11	21	31
Ancestor	0000000000	0000000000	00000000?0	000000000
Clitemnestra	0000000000	0000000000	0000000?10	000000000
Ochleroptera	0000000000	0000000000	0000000?10	000000000
Olgia	0000000000	0000000000	0000000110	000100010
Argogorytes	0000000101	0100000000	0010000110	000000010
Neogorytes	0000000101	0100000100	0010000110	000000010
Exeirus	0000000000	0000000010	1011100111	000000010
Harpactus	0001101100	0?00010100	1010000110	000000010
Hapalomellinus	0001101100	00000?0100	1010000110	000000010
Trichogorytes	0001101100	00?0000100	1010001110	000000010
Austrogorytes	0000001100	01000?0101	1?1100011?	010?00010
Gorytes	0000001100	0100010100	1110000111	000000010
Pseudoplisus	0000001?00	0100010100	1110000111	000000010
Megistommum	0000001000	0100010100	1110000111	000100010
Neoplisus	0001001100	0100010010	1010000111	000000010
Eogorytes	0001001100	1000010111	1010000111	000100010
Lestiphorus	0001101100	0000010?01	1010000111	000000010
Oryttus	0001?01100	1000010101	1010000111	000000010
Psammaletes	0001?01100	1000010?01	1010000111	000000010
Handlirschia	1000001100	0010000000	1010000111	000100110
Sphecius	1001101110	1000000010	1011000111	000000010
Tanyoprimnus	0011101000	1000000001	1011000111	000000010
Ammatomus	0011101000	1010000001	1011000111	000000011
Kohlia	1101101010	0000000010	1000010111	000000010
Pterygorytes	1001101000	1010000001	1011000111	100000010
Psammaecius	0001101100	1000110100	1010000111	000001010
Liogorytes	0001001100	0000010100	1010000111	000000010
Arigorytes	0001001100	0000010000	1010000111	000010010
Xerogorytes	0001101100	0000010010	1010000111	000001010
Hoplisoides	0001101100	0100010100	1010000111	001001010
Sagenista	0001101100	0100010011	1010000111	000000010
Afrogorytes	0001111100	0101011010	1110000111	000000010
Paraphilanthus	000000010?	01000001??	??10000110	000100010
Biamogorytes	?1??001100	01000101??	??00000101	00???????

31. ***Afrogorytes*** Menke: *A. monstrosus* (Handl.). Additional data are taken after: Menke (1967) and Bohart & Menke (1976).

32. ***Paraphilanthus*** Vardy. The data are taken after: Vardy (1995).

33. ***Biamogorytes*** Nemkov (fossil): *B. handlirschi* Nemkov (The Upper Oligocene).

CHARACTERS

There 39 following characters were used to analyze phylogenetic relationships. Their resulting matrix is given in Table 1. The hypothetical ancestor with primitive state (0) for all characters of recent and fossil Gorytini, is used as outgroup. Polarity is indicated in parentheses, (0) is the primitive state, (1) is derived and (?) is polymorphic or the data unknown. Figures in the square brackets give the number of steps, consistency index (CI), homoplasy index (HI) and retention index (RI) of each character on the most preferred parsimonious tree (Fig. 2). Polarity of most characters follows to Bohart and Menke (1976). Polarity of the characters nos. 8, 10, 18, 22, 29, 39 is proposed here for Gorytini firstly. The primitive state of these characters (except no. 29) is known for genera *Clitemnestria* and *Ochleroptera*, the most primitive among Gorytini. The primitive state of character no. 29 is known for Dolichurini, the most primitive among Sphecidae. Derived state of the latter is known for all recent genera of Gorytini and we propose its reversal for the fossil *Biamogorytes,* which belongs to advanced Gorytini.

1. **Labrum**: Inconspicuous (0), prominent, exposed part nearly half as long as broad (1). [3, 0.33, 0.67, 0.33].

2. **Ocelli**: Not reduced nor flattened externally (0), reduced and flattened externally (1). [2, 0.50, 0.50, 0.0].

3. **Flagellum**: Nearly to filiform, gently enlarged toward apex (0), clublike (1). [1, 1.0, 0.0, 1.0].

4. **Apical male flagellomeres**: Four those not modified in contrast to others (0), one or more those modified (flattened, concaved or curved) (1). [2, 0.50, 0.50, 0.92].

5. **Pronotal collar**: Elevated, not appressed to scutum (0), thin and closely appressed to scutum (1). [6, 0.17, 0.83, 0.62].

6. **Admedian lines on scutum**: Broadly separated (0), joining to form a median carina (1). [1, 1.0, 0.0, 0.0].

7. **Oblique carina on scutum**: Absent (0), present (1). [1, 1.0, 0.0, 1.0].

8. **Prescutellar sulcus**: Efoveate (0), foveate (1). [5, 0.20, 0.80, 0.60].

9. **Scutellum**: Not overlapping metanotum (0), overlapping metanotum (1). [1, 1.0, 0.0., 1.0].

10. **Female scutellum**: Without a depression (0), with medioposterior pubescent depression (1). [1, 1.0, 0.0, 1.0].

11. **Episternal sulcus**: Continued downward almost vertically to omaulus (0), curving backward and joining scrobal sulcus (1). [4, 0.25, 0.75, 0.57].

12. **Acetabular carina**: Absent (0), present (1). [4, 0.25, 0.75, 0.73].

13. **Omaulus**: Present (0), absent (1). [3, 0.33, 0.67, 0.0].

14. **Omaulus**: Not toothed below (0), toothed below (1). [1, 1.0, 0.0, 0.0].

15. **Subomaulus**: Absent or obscure, without any projections (0), distinct, continued below in nearly a straight line to ventral midcarina, just before it somewhat bent and projecting almost tooth shaped (1). [1, 1.0, 0.0, 0.0].

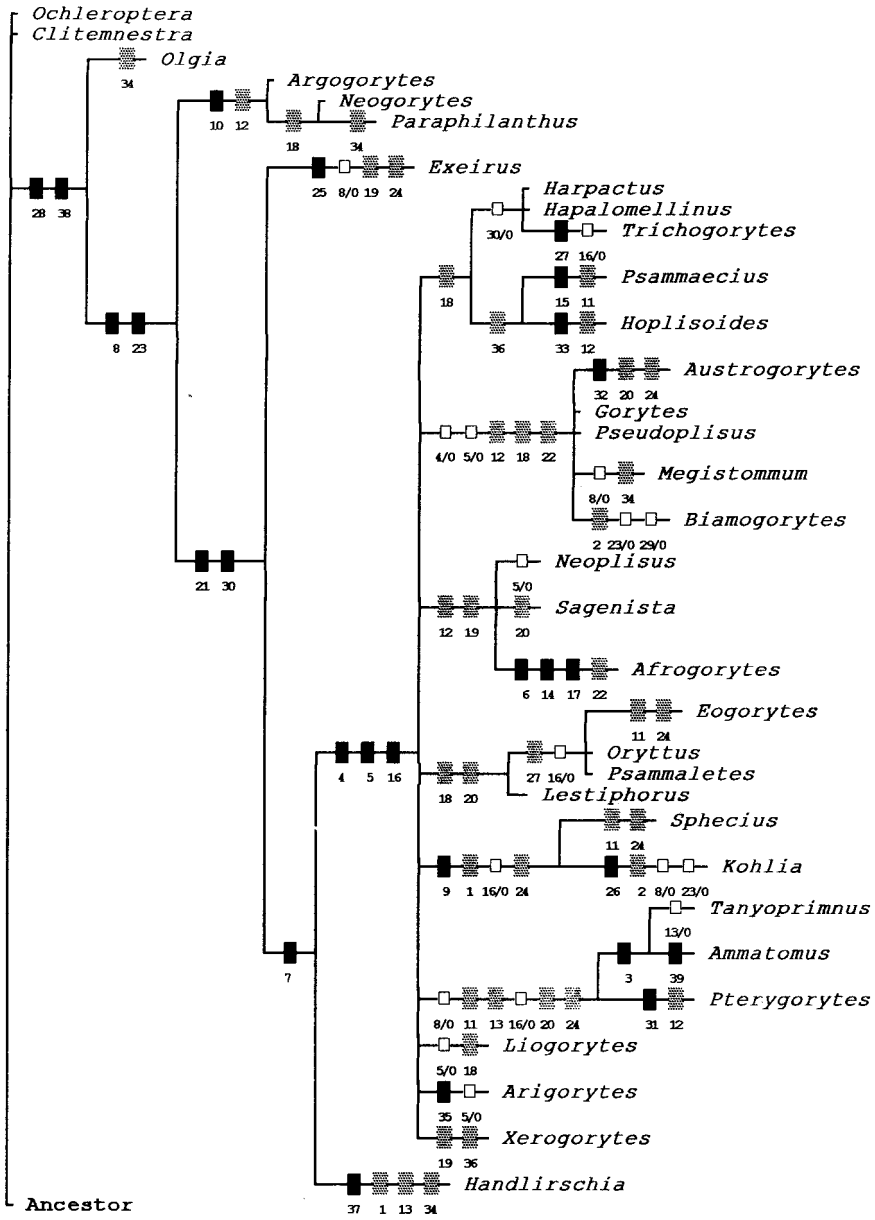

Fig. 2. Cladogram of relationships between the genera of tribe Gorytini. ■ – synapomorphies or autapomorphies, ▒ – homoplasies (convergences, parallelisms), □ – reversals. The meaning of the character numbers and states is explained in the text.

16. **Sternaulus**: Absent (0), present (1). [4, 0.25, 0.75, 0.80].

17. **Metapleuron**: Gradually tapering below or nearly parallelsided (0), broadened below (1). [1, 1.0, 0.0, 0.0].

18. **Spiracular groove**: Absent (0), present (1). [5, 0.20, 0.80, 0.71].

19. **Plantulae**: Present (0), absent (1). [5, 0.20, 0.80, 0.43].

20. **Female arolia**: Nearly equal in size (0), on foreleg mach larger than others (1). [4, 0.25, 0.75, 0.62].

21. **Female foretarsi**: With a weak rake or without it (0), with well developed rake (1). [1, 1.0, 0.0, 1.0].

22. **Female fore basitarsus**: With three and more long setae before apex or without long setae (0), with two long setae before apex (1). [2, 0.5, 0.5, 0.67].

23. **Media of forewing**: Diverging at or slightly beyond *cu-a* (0), diverging before *cu-a* (1). [3, 0.33, 0.67, 0.67].

24. **Stigma of forewing**: Moderate (0), very small (1). [4, 0.25, 0.75, 0.40].

25. **Submarginal cell II of forewing**: Not petiolate (0), petiolate (1). [1, 1.0, 0.0, 0.0].

26. **Marginal cell of forewing**: Not bent away from wing margin (0), bent away from wing margin (1). [1, 1.0, 0.0, 0.0].

27. **Marginal cell of forewing**: Relatively long, with acute apex (0), short, with blunt apex (1). [1, 1.0, 0.0, 0.0].

28. **First recurrent vein of forewing**: Ending at submarginal cell I (0), ending at submarginal cell II (1). [1, 1.0, 0.0, 1.0].

29. **Second recurrent vein of forewing**: Interstitial between submarginal cells II and III (0), ending at submarginal cell II (1). [1, 1.0, 0.0, 0.0].

30. **Media of hindwing**: Diverging well beyond *cu-a* (0), diverging at or before *cu-a* (1). [2, 0.5, 0.5, 0.9].

31. **Jugal lobe of hindwing**: Present (0), absent (1). [1, 1.0, 0.0, 0.0].

32. **Jugal lobe of hindwing**: Larger than outline of tegula (0), smaller than outline of tegula (1). [1, 1.0, 0.0, 0.0].

33. **Gaster of male**: With seven normally visible terga (0), with six normally visible terga (1). [1, 1.0, 0.0, 0.0].

34. **Gastral male sterna**: III to V without apical fimbriae (0), III and IV and sometimes V with dense apical fimbriae (1). [5, 0.20, 0.80, 0.0].

35. **Gastral male sterna**: III to V without velvety hair mats (0), III to V with velvety hair mats (1). [1, 1.0, 0.0, 0.0].

36. **Gastral male sterna V and VI**: Without basal hair brushes (0), with basal hairbrushes (1). [2, 0.50, 0.50, 0.50].

37. **Gastral male tergum VII**: Without spiracular lobes (0), with enlarge ventral spiracular lobes (1). [1, 1.0, 0.0, 0.0].

38. **Gastral male sternum VIII**: Not narrowed distally (0), narrowed distally (1). [1, 1.0, 0.0, 1.0].

39. **Male genitalia**: Volsella differentiated into cuspis and digitus (0), volsella with undifferentiated digitus (1). [1, 1.0, 0.0, 0.0].

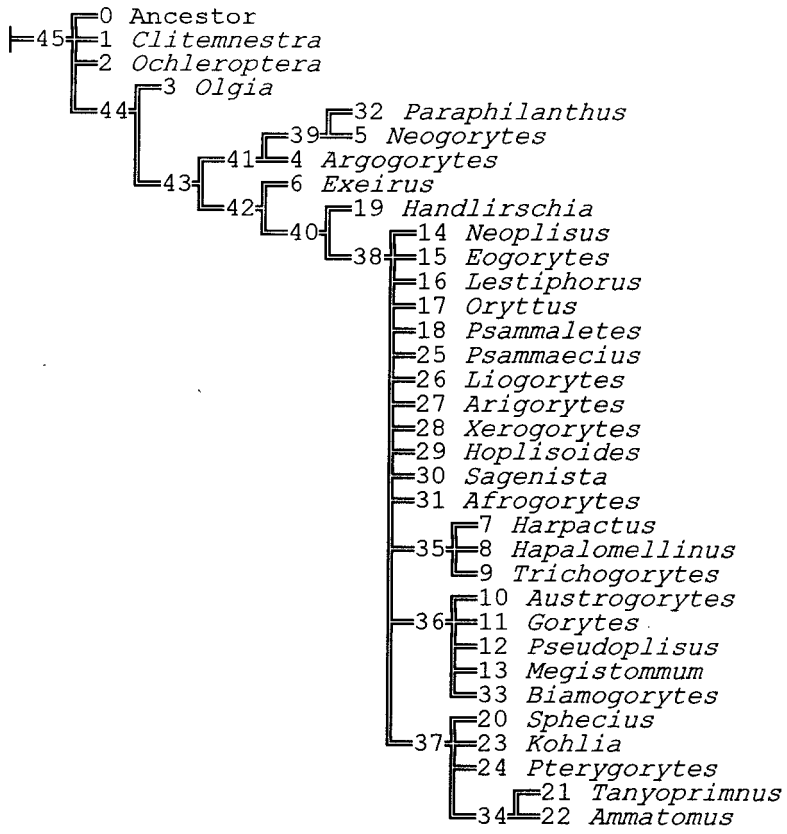

Fig. 3. Nelsen Consensus Tree derived from cladistic analysis by program Hennig86.

CLADISTIC ANALYSIS

The data matrix showing the character state distribution for the 39 characters among 33 genera of Gorytini and 1 outgroup (ancestor) (Table 1) was subjected to parsimony analysis using PAUP, version 3.1 (Swofford, 1993). All characters states were treated as ordered and unweighted. Heuristic search gave Adams consensus tree (Fig. 2) by length 86 steps (CI = 0.45, HI = 0.55, RI = 0.70, RC = 0.32) from 500 most parsimonious trees with length 78 steps (CI = 0.40, HI = 0.61, RI = 0.73, RC = 0.37). The search with Hennig86, version 1.5 (Farris, 1988) gave similar results except the large group united in subtribe Gorytina. Under the commands mh* the analysis yields 5 most parsimonious trees, each with length 78 steps (CI = 0.50, RI = 0.73). Nelsen consensus tree (Fig. 3) have length 101 steps (CI = 0.38, RI = 0.57).

DISCUSSION

In dendrogram illustrating suggested relationships of 31 Gorytini genera Bohart & Menke (1976) ten groups are separated, three of them are lowermost on the tree (Fig. 1). In our cladograms (Figs 2, 3) six generic groupings in general correspond to those proposed by Bohart and Menke, but differ in some details. The interpretation of the results is given below.

1. Bohart & Menke (1976) united genera *Clitemnestria, Ochleroptera* and *Olgia* in one group. The genera *Clitemnestria* and *Ochleroptera* have the derived state of character 29 only (the synapomorphy for all Gorytini) and are the most primitive among Gorytini.

2. Genus *Olgia* has derived state of characters nos. 28 and 38 which unit it with remaining genera Gorytini but differs from them by primitive state of characters nos. 8 and 23. Besides genus *Olgia* has one homoplasy (character no. 34).

3. Genera *Argogorytes, Neogorytes* and *Paraphilanthus* have one synapomorphy (character no. 10) and one homoplasy (character no. 12) but differ from more advanced Gorytini in having primitive state of characters nos. 21 and 30.

4. Genus *Exeirus* has one autapomorphy (character no. 25), one reversal (character no. 8) and two homoplasies (characters nos. 19 and 24) and differs from more advanced Gorytini in having primitive state of character no. 7. The presence of oblique scutal carina (character no. 7), which has great evolutionary significance, divide highest Gorytini from lower Gorytini.

5. Genus *Handlirschia* has autapomorphy (character no. 37), three homoplasies (characters nos. 1, 13, 34), but differs from more advanced Gorytini in having primitive state of characters nos. 4, 5 and 16.

6. Remaining genera of higher Gorytini form a monophyletic group on the basis of three synapomorphies (characters nos. 4, 5 and 16). Bohart & Menke (1976) distinguished six subgroups in this group. Our analysis shows that their differences based mainly on homoplasies and autapomorphies in the terminal taxa and dividing of this homogeneous group is not evidently.

Six generic groupings discussed above distinguished by good synapomorphies and we propose here to raise their status to the subtribal rank. New classification of Gorytini and key to the subtribes are given below.

CLASSIFICATION

The tribe Gorytini has been proposed by Lepeletier (1845) for six genera in his family Crabronidae. Later Handlirsch (1888) united the genera Gorytini in one genus *Gorytes* where the known genera were regarded as species-groups. The current generic composition of Gorytini has been proposed by Bohart & Menke (1976).

Tribe **Gorytini** Lepeletier, 1845

Gotytites Lepeletier, 1845: 54.
Gorytinae: Dalla Torre, 1897: 535; Krombein, 1979: 1691.
Gorytini: Bohart, Menke, 1976: 51, 481.
Type genus: *Gorytes* Latreille, 1804.

Subtribe **Clitemnestrina** Nemkov et Lelej, subtrib. n.

Type genus: *Clitemnestra* Spinola, 1851.

DIAGNOSIS. Oblique carina on scutum absent. Scutellum without depression. Submarginal cell II of forewing not petiolate, first recurrent vein ending at submarginal cell I or cell II. Female foretarsi with a weak rake or without it. Male tergum VII without spiracular lobes, sternum VIII not narrowed distally.

GENERA INCLUDED. The subtribe includes *Clitemnestra* Spinola, 1851 and *Ochleroptera* Holmberg, 1903.

Subtribe **Olgiina** Nemkov et Lelej, subtrib. n.

Type genus: *Olgia* Radoszkowski, 1877.

DIAGNOSIS. Oblique carina on scutum absent. Scutellum without depression. Submarginal cell II of forewing not petiolate, first recurrent vein ending at submarginal cell II. Female foretarsi with a weak rake. Male tergum VII without spiracular lobes, sternum VIII narrowed distally.

GENERA INCLUDED. The subtribe includes Palaearctic *Olgia* Radoszkowski, 1877.

Subtribe **Argogorytina** Nemkov et Lelej, subtrib. n.

Type genus: *Argogorytes* Ashmead, 1899.

DIAGNOSIS. Oblique carina on scutum absent. Scutellum with medioposterior pubescent depression. Submarginal cell II of forewing not petiolate, first recurrent vein ending at submarginal cell II. Female foretarsi without a rake. Male tergum VII without spiracular lobes, sternum VIII narrowed distally.

GENERA INCLUDED. The subtribe includes *Argogorytes* Ashmead, 1899; *Neogorytes* Bohart, 1976 and *Paraphilanthus* Vardy, 1995.

Subtribe **Exeirina** Dalla Torre, 1897, stat. n.

Exeirinae Dalla Torre, 1897: 534.

Type genus: *Exeirus* Shuckard, 1838.

DIAGNOSIS. Oblique carina on scutum absent. Scutellum without depression. Submarginal cell II of forewing petiolate, first recurrent vein ending at submarginal cell II. Female foretarsal rake well developed. Male tergum VII without spiracular lobes, sternum VIII narrowed distally.

GENERA INCLUDED. The subtribe includes Australian *Exeirus* Shuckard, 1838.

Subtribe **Handlirschiina** Nemkov et Lelej, subtrib. n.

Type genus: *Handlirschia* Kohl, 1896.

DIAGNOSIS. Oblique carina on scutum present. Scutellum without depression. Submarginal cell II of forewing not petiolate, first recurrent vein ending at submarginal cell II. Female foretarsal rake well developed. Male tergum VII with enlarge ventral spiracular lobes, sternum VIII narrowed distally.

GENERA INCLUDED. The subtribe includes South African *Handlirschia* Kohl, 1896.

Subtribe **Gorytina** Lepeletier, 1845

DIAGNOSIS. Oblique carina on scutum present. Scutellum without depression. Submarginal cell II of forewing not petiolate, first recurrent vein ending at submarginal cell II. Female foretarsal rake well developed. Male tergum VII without spiracular lobes, sternum VIII narrowed distally.

GENERA INCLUDED. The subtribe includes *Harpactus* Shuckard, 1837 (=*Dienoplus* Fox, 1893); *Hapalomellinus* Ashmead, 1899; *Trichogorytes* Rohwer, 1912; *Austrogorytes* Bohart, 1967; *Gorytes* Latreille, 1804; *Pseudoplisus* Ashmead, 1899; *Megistommum* Schulz, 1906; *Neoplisus* Bohart, 1967; *Eogorytes* Bohart, 1976; *Lestiphorus* Lepeletier, 1832; *Oryttus* Spinola, 1836; *Psammaletes* Pate, 1936; *Sphecius* Dahlbom, 1843; *Tanyoprimnus* Cameron, 1905; *Ammatomus* A. Costa, 1859; *Kohlia* Handlirsch, 1895; *Pterygorytes* Bohart, 1967; *Psammaecius* Lepeletier, 1832; *Liogorytes* Bohart, 1967; *Arigorytes* Rohwer, 1912; *Xerogorytes* Bohart, 1976; *Hoplisoides* Gribodo, 1884; *Sagenista* Bohart, 1967; *Afrogorytes* Menke, 1967 and *Biamogorytes* Nemkov, 1990.

KEY TO THE SUBTRIBES OF GORYTINI

1. Oblique carina on scutum absent 2
– Oblique carina on scutum present 5
2. Submarginal cell II petiolate . . . . . **Exeirina**
– Submarginal cell II not petiolate 3
3. First recurrent vein ending at submarginal cell I or II. Male sternum VIII not narrowed distally . . . . . **Clitemnestrina**
– First recurrent vein always ending at submarginal cell II. Male sternum VIII narrowed distally 4
4. Female scutellum with medioposterior pubescent depression. Male sternum VIII acute at apex . . . . . **Argogorytina**
– Female scutellum without a depression. Male sternum VIII broadly rounded at apex . . . . . **Olgiina**
5. Male tergum VII with enlarge ventral spiracular lobes . . . **Handlirschiina**
– Male tergum VII without spiracular lobes . . . . . **Gorytina**

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