A revision of the Chilean Brachyglutini. Part 1. Some taxonomic changes in Brachyglutini and preliminary diagnosis of Achilia Reitter, 1890 (Coleoptera: Staphylinidae: Pselaphinae)

Authors: Kurbatov, Sergey A., and Sabella, Giorgio

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A revision of the Chilean Brachyglutini. Part 1. Some taxonomic changes in Brachyglutini and preliminary diagnosis of *Achilia* Reitter, 1890 (Coleoptera: Staphylinidae: Pselaphinae)

Sergey A. Kurbatov[1] & Giorgio Sabella[2]

[1] *Davydkovskaya 4-2-104, Moscow 121352, Russia. E-mail: pselaphidae@yandex.ru*
[2] *Dipartimento di Scienze Biologiche, Geologiche ed Ambientali dell'Università – sezione Biologia Animale, via Androne 81, I-95124 Catania. E.mail: sabellag@unict.it*

Abstract: This first part of the review of the Chilean Brachyglutini is devoted to analyzing the taxonomic situation within the tribe and some taxonomic changes are proposed: 1. The subtribe Baradina nominally remains a part of Brachyglutini; 2. Based on the presence of median gular longitudinal elevation laterally delimited by a pair of sutures in Brachyglutina (apomorphy which characterizes the subtribe) the following genera are transferred to Brachyglutina: a) *Mangalobythus* Tanokuchi from Bythinini; b) *Sogaella* Jeannel from Iniocyphini; c) *Arachis* Raffray, *Diroptrus* Motschulsky, and *Obricala* Raffray from Brachyglutini *incertae sedis* (Newton & Chandler, 1989); and also *Berlaraxis* Jeannel and *Araneabaxis* Chandler are transferred from Brachyglutini to Iniocyphini subtribe Iniocyphina; 3. Based on the presence of two long, longitudinal lateral carinae on the metathorax the subtribe Pselaptina is reestablished (**stat. resurr**.). A preliminary diagnosis of *Achilia* Reitter is also given.

Keywords: Brachyglutini - Brachyglutina - Pselaptina - Chile - *Achilia* - taxonomy.

INTRODUCTION

This article opens a cycle of contributions devoted to a revision of Brachyglutini from Chile and Southern Argentina. First the species-rich genus *Achilia* Reitter, 1890 will be studied, then the rest of the small genera will be examined, and finally the relationship of these genera with each other and other genera of Brachyglutini will be discussed. This sequence of study is due to our desire to explore the limits of variability within the largest genus to understand taxonomic significance of the characters used by Raffray (1904), Jeannel (1962, 1963), and Franz (1996) for their respective new genera. The revision of *Achilia* will follow the boundaries of the species groups in which Jeannel (1962, 1963) divided this genus. However it is not excluded that at the end of our research the number, composition, and characteristics of the species groups will be modified, as we feel doubtful about the reliability of the characters used by these authors.

In this article the general situation within the tribe Brachyglutini and the subtribe Brachyglutina is examined, some taxonomic changes are produced, and a preliminary diagnosis of the genus *Achilia* is given.

MATERIAL AND METHODS

The present study is based on the material from the following different collections:

MHNG	Muséum d'Histoire Naturelle, Genève, Switzerland (G. Cuccodoro)
MNHN	Muséum National d'Histoire Naturelle, Paris, France (A. Taghavian)
ZMUM	Zoological Museum, Moscow State University, Moscow, Russia (A. Gusakov)
PCSK	Private collection S. Kurbatov, Moscow, Russia

Morphological terminology follows that of Chandler (2001). The abdominal tergites and sternites are numbered in Arabic for the visible segments, and in Roman for their morphological position. The visible abdominal segments begin with tergite 1 (IV) and sternite 1 (III).

More than half of all genera of Brachyglutini and several genera of Iniocyphini, Proterini and Bythinini have been studied in the course of our study. For a better understanding of the exoskeletal characters representatives of the following genera were dismembered and placed in Canada balsam:

Brachyglutini: *Acamaldes vagepunctatus*, *Achilia* spp., *Asanis* sp., *Anabaxis* sp., *Batraxis* spp., *Anchylarthron* sp., *Atenisodus* sp., *Baxyris* sp., *Brachygluta* spp.,

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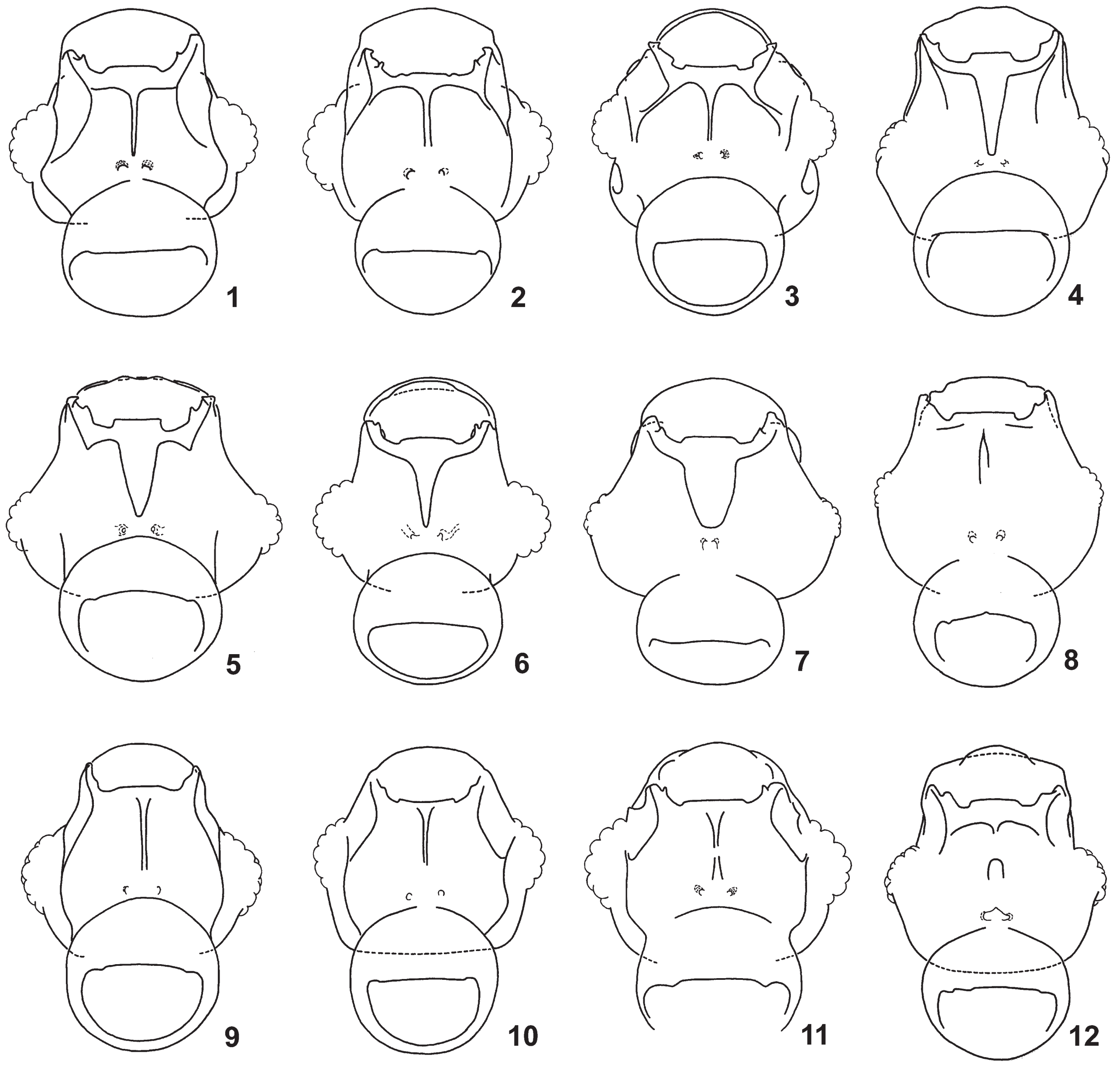
Briara sp., *Briaraxis depressa*, *Bundjulung mercurius*, *Bunoderus lucrosus*, *Bythinogaster* sp., *Caligocara* sp., *Comatopselaphus* spp., *Decarthron consanguinea*, *Drasinus cisinsularis*, *Ephymata* sp., *Euphalepsus* spp., *Eupsenius glaber*, *Eutrichites zonatus*, *Fagniezia impressa*, *Globa ?longipes*, *Mallanganee greeni*, *Nisaxis tomentosa*, *Nondulia convexa*, *Panabachia bythinioides*, *Pedisinops regulus*, *Physoplectus pardii*, *Pselaptus belfragei*, *Reichenbachia* spp., *Rybaxis diabolica*, *Tremissus inexpectatus*, *Tribatus creticus*, *Triomicrus ludificator*, *Trissemus olivieri*, *Wollomombi ligniphilus*.
Bythinini: *Mangalobythus* sp.
Iniocyphini: *Dalmoburis petrunkevitchii*, *Nipponobythus korbeli*, *Sogaella* sp.
Proterini: *Goniomellus besucheti*, *Harmomima* sp., *Proterus elenae*.

TAXONOMIC PART

The current system of Pselaphinae is still far from adequate. According to Chandler (2001: 16) 3 of the 6 higher taxa of these beetles “are difficult to define, with the Euplectitae or Goniaceritae being either



Figs 1-12. Ventral side of the head of Brachyglutini. (1) *Ephymata* sp. (2) *Bunoderus lucrosus*. (3) *Achilia crassicornis*. (4) *Acamaldes vagepunctatus*. (5) *Bundjulung mercurius*. (6) *Brachygluta trigonoprocta*. (7) *Sogaella* sp. (8) *Batraxis hampei*. (9) *Pselaptus belfragei*. (10) *Eutrichites zonatus*. (11) *Caligocara* sp. (12) *Comatopselaphus* sp.

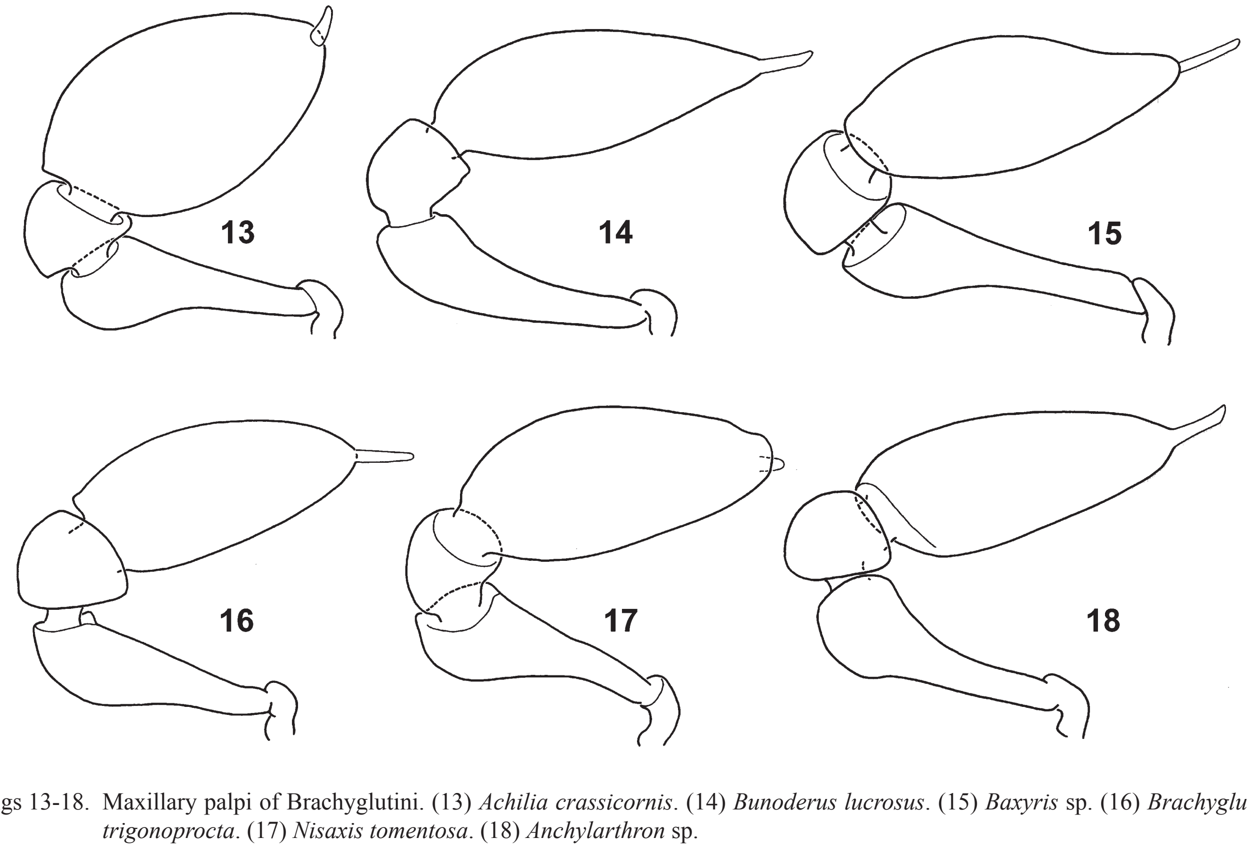
paraphyletic or polyphyletic". We fully share this opinion on the last two taxa. The tribe Brachyglutini is part of the Goniaceritae, and, in turn, cannot be clearly characterized. In connection with this situation, for a better understanding of the position of Chilean genera within the tribe we have studied a considerable number of the world Brachyglutini as indicated in the Material and Methods.

In accordance with recent taxonomic changes the Brachyglutini includes the subtribes Baradina, Brachyglutina, Decarthrina and Eupseniina (Chandler, 2001: 290). During our research we came to the following conclusions.

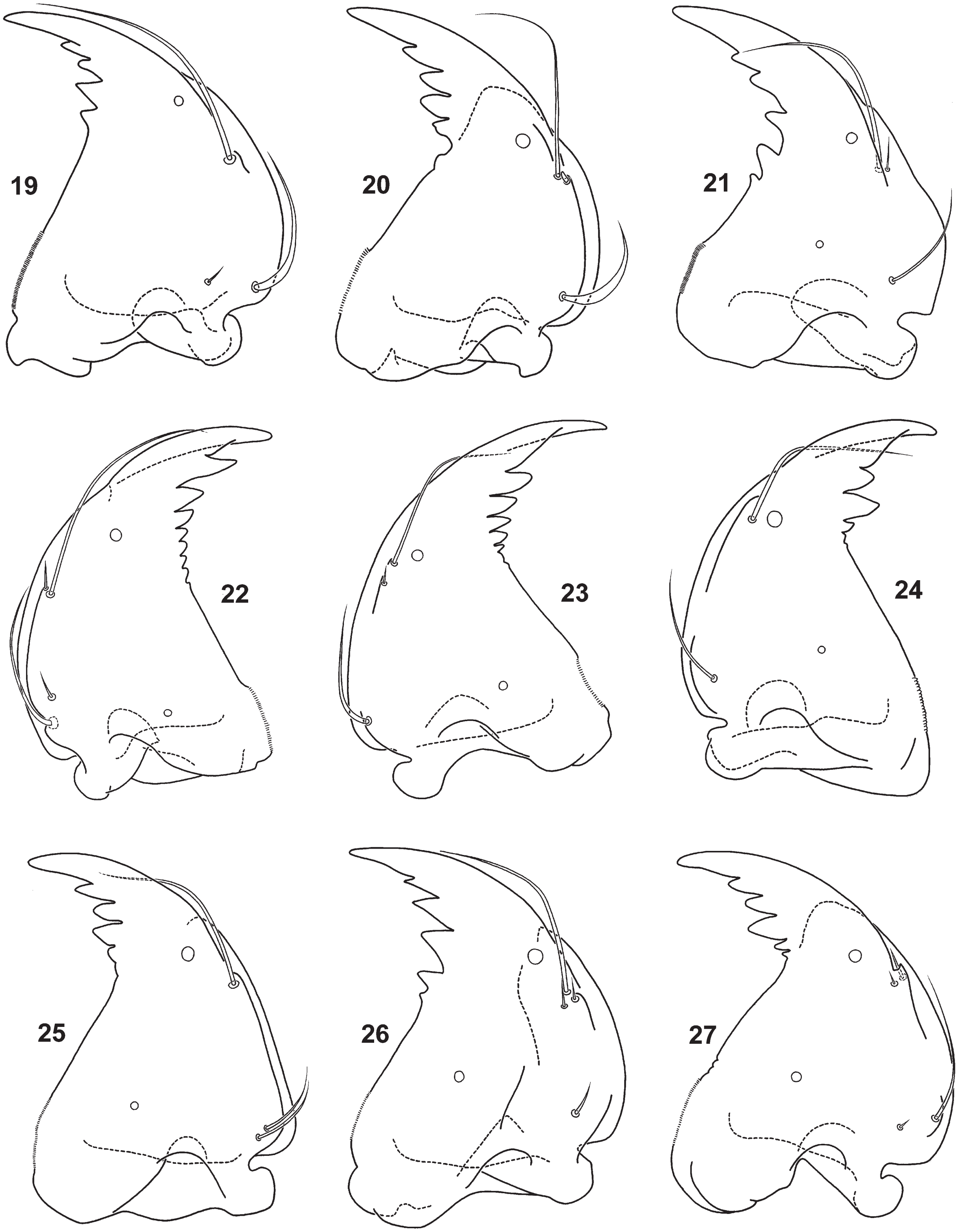
1. Baradina with the two included genera *Euphalepsus* Reitter, 1883a (= *Barada* Raffray, 1891; = *Tetrasemus* Jeannel, 1962; for synonymy see Chandler, 1999: 171) and *Phalespoides* Raffray, 1890 are related to a group of genera that do not belong within the Brachyglutini but for the moment are not yet placed into a single taxon. Another of our articles will be devoted to the description of this new taxon, and for now *Baradina* remains a part of the Brachyglutini. Additionally, the only species of this group reported from the Chilean fauna, *E. delamarei* (Jeannel, 1962; Franz, 1996) inhabits North-Western Argentina, i.e. an area which is not included in the region of our interest. So in this paper we will not examine the genus *Euphalepsus*.

2. The subtribe Brachyglutina is characterized by the following apomorphy: a median gular longitudinal elevation (= median gular carina *sensu* Chandler, 2001: 290) laterally delimited by a pair of sutures (Figs 1-8; see also Chandler, 2001, figs 203-204). In rare cases this elevation may be low and even not very distinct on a dried specimens, however its lateral sutures are always clearly visible on a slide preparation. The only known exception is seen in the genus *Batraxis* Reitter, 1881, which may have a partially reduced elevation and accompanying sutures in some species (Fig. 8), but it should be borne in mind that this is a very polymorphic genus with a tendency to the reduction of many morphological structures (basal elytral foveae, lateral carinae of abdominal tergites, etc.).

The ventral side of the head in Brachyglutina is also often provided with infraocular carinae that extend from the gular constriction to the anterior margin of the head capsule; but these carinae may be strongly reduced up to their complete disappearance in many genera, and are not of taxonomic value in our opinion. The mandibles have two very long macrosetae (basal and medial) at the outer margin (Figs 19-24), except for the studied species of *Reichenbachia* Leach, 1826 [*R. juncorum* (Leach, 1817)] that have a shortened medial macroseta (Fig. 27), and for a few genera that have a shortened or lacking basal macroseta (e.g. *Batraxis*, *Panabachia* Park, 1942, *Pedisinops* Newton & Chandler, 1989) (Fig. 26). On the



Figs 13-18. Maxillary palpi of Brachyglutini. (13) *Achilia crassicornis*. (14) *Bunoderus lucrosus*. (15) *Baxyris* sp. (16) *Brachygluta trigonoprocta*. (17) *Nisaxis tomentosa*. (18) *Anchylarthron* sp.



Figs 19-27. Mandibles of Brachyglutini. (19) *Achilia crassicornis*. (20) *Rybaxis diabolica*. (21) *Mangalobythus* sp. (22) *Drasinus cisinsularis*. (23) *Mallanganee greeni*. (24) *Asanis* sp. (25) *Baxyris* sp. (26) *Panabachia bythinioides*. (27) *Reichenbachia juncorum*.

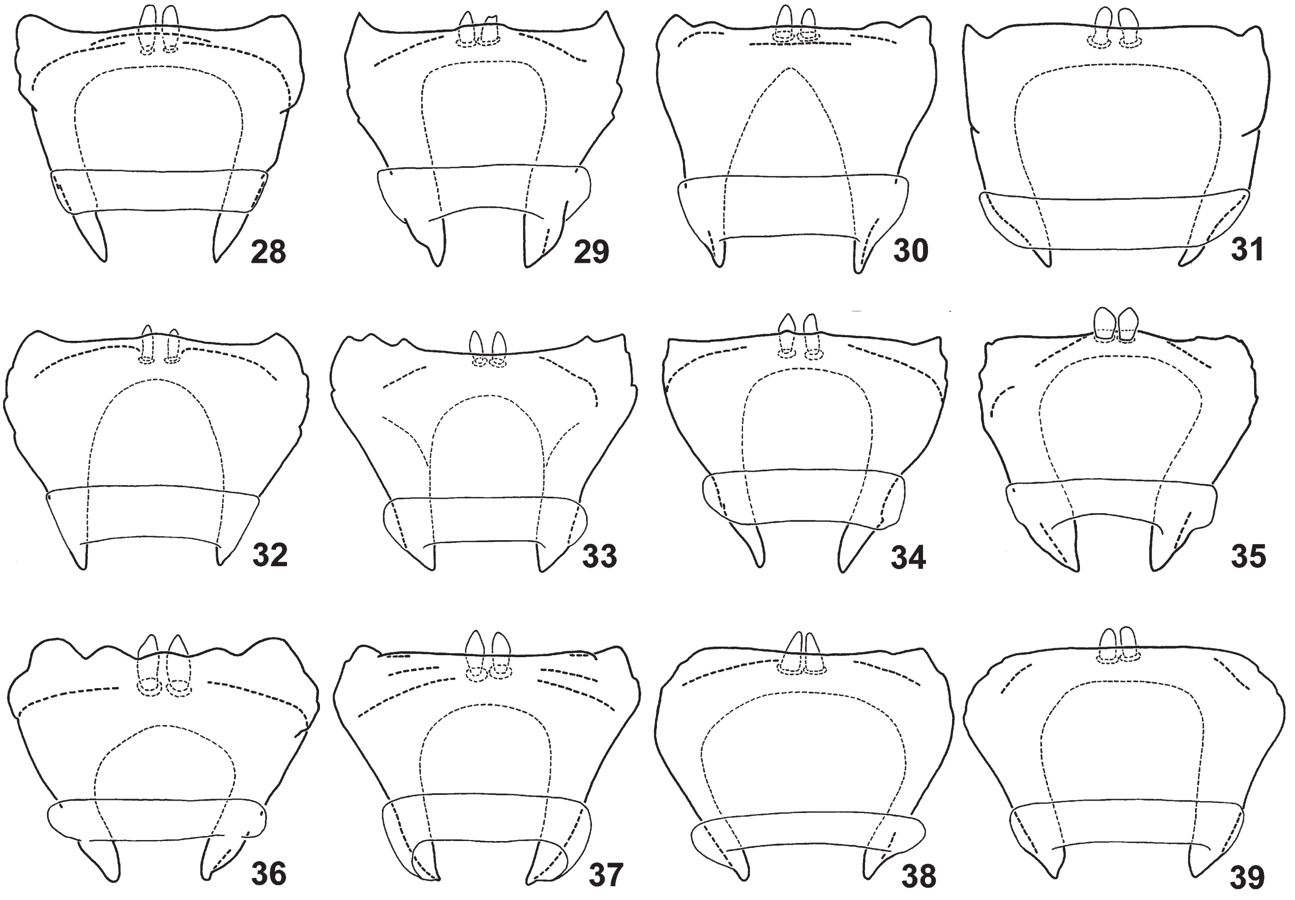
contrary *Baxyris* Jeannel, 1949 and *Fagniezia* Jeannel, 1950 have two very close basal macrosetae (Fig. 25). The anterior angles of the labrum are usually more or less marked, more rarely rounded (Figs 28-39). The antennae usually have 11 antennomeres (*Ectopocerus* Raffray, 1904, and males of some *Eupines* King, 1866 and *Anchylarthron* Brendel, 1887 have 10 antennomeres). Prosternum has a pair of anteroprosternal foveae (Figs 52-55). All studied representatives of the subtribe have a pair of lateral mesosternal, mesocoxal, and metasternal foveae (Figs 56-59). Median mesosternal fovea is single in vast majority of genera; however it is more or less forked in *Anchylarthron* Brendel, *Briara* Reitter, 1882, *Briaraxis* Brendel, 1894, *Bythinogaster* Schaufuss, 1887, *Drasinus* Raffray, 1904, *Mangalobythus* Tanokuchi, 1989, and in some species of *Brachygluta* Thomson, 1859 (for ex. *Brachygluta guillemardi*, *B. haematica*, *B. helferi*, *B. iranica*, *B. trigonoprocta*, *B. turcmenica*), but is lacking in *Baxyris*. With regard to *Batraxis*, this fovea is much more forked in *B. hampei* Reitter, 1881 and is completely divided into two separate foveae in *B. splendida* Nomura, 1986 (Fig. 59). The metasternal coxae are widely separated in all representatives of Brachyglutina. The tergites of first four segments of abdomen have clearly delimited paratergites except for certain species of *Batraxis* that have more or less fused tergites with their corresponding paratergites.

So the composition of Brachyglutina follows that of Chandler (2001) with the several exceptions:

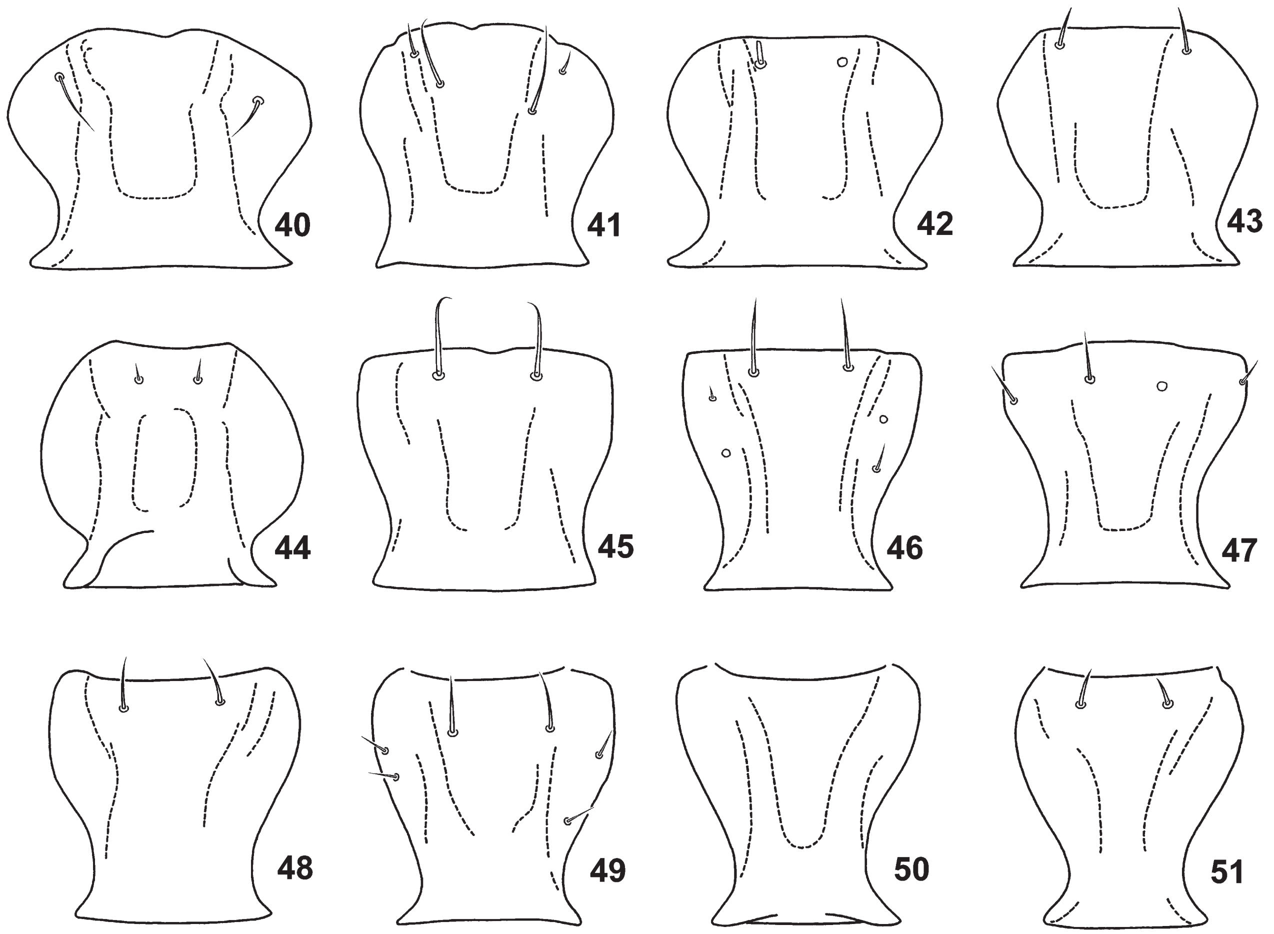
2a. Genus *Mangalobythus* Tanokuchi is transferred here from Bythinini to Brachyglutina. We have studied one undescribed species of this very characteristic genus from the mangrove forests of northern Borneo (MHNG collection), and found that it completely corresponds to the description of Brachyglutina including the prominent median gular longitudinal elevation with accompanying sutures, and the similar foveal pattern of the meso- and metasternum (Fig. 58).

2b. Genus *Sogaella* Jeannel, 1960 is transferred from Iniocyphini to Brachyglutina. Newton & Chandler (1989: 51) put *Sogaella* into the former Tanypleurini (now Iniocyphini Natypleurina).

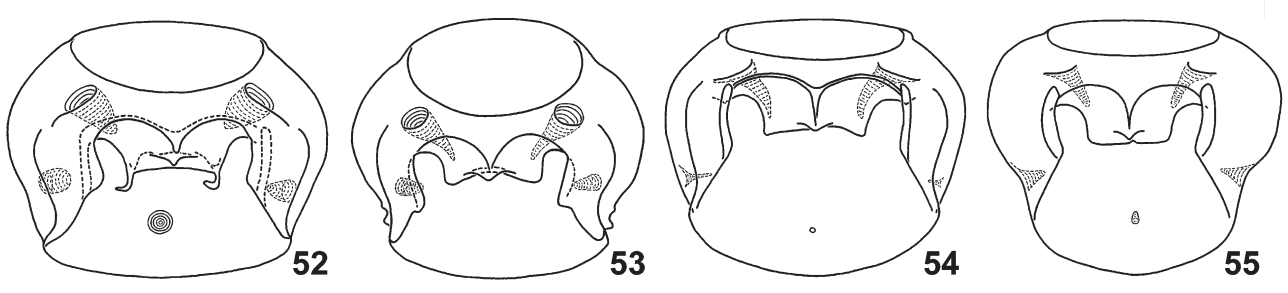
We studied a representative of *Sogaella* and were able to establish that it definitely belongs to Brachyglutina, primarily due to the structure of the ventral side of



Figs 28-39. Labrum of Brachyglutini. (28) *Brachygluta trigonoprocta*. (29) *Wollomombi ligniphilus*. (30) *Physoplectus pardii*. (31) *Tribatus creticus*. (32) *Sogaella* sp. (33) *Pedisinops regulus*. (34) *Achilia crassicornis*. (35) *Bunoderus lucrosus*. (36) *Briaraxis depressa*. (37) *Ephymata* sp. (38) *Asanis* sp. (39) *Acamaldes vagepunctatus*.



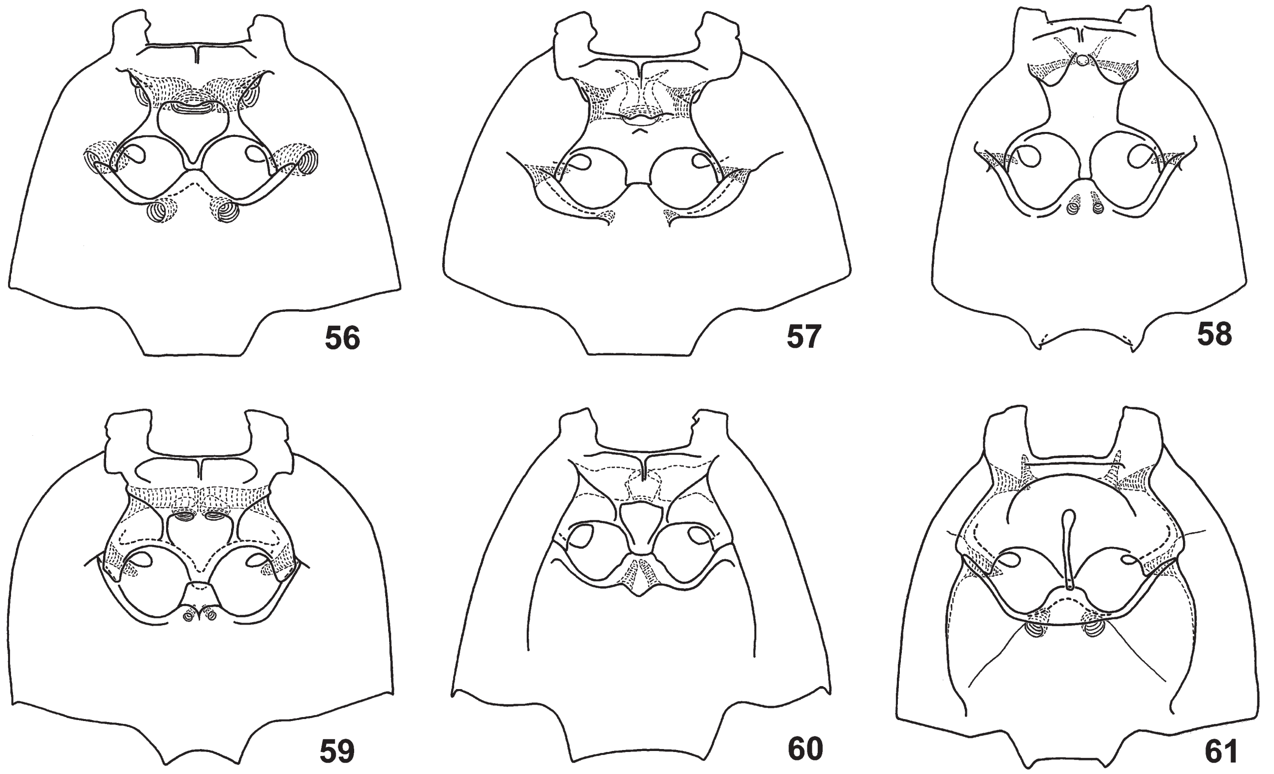
Figs 40-51. Mentum of Brachyglutini. (40) *Achilia crassicornis*. (41) *Bunoderus lucrosus*. (42) *Panabachia bythinioides*. (43) *Briara* sp. (44) *Wollomombi ligniphilus*. (45) *Pedisinops regulus*. (46) *Brachygluta trigonoprocta*. (47) *Sogaella* sp. (48) *Ephymata* sp. (49) *Tribatus creticus*. (50) *Mangalobythus* sp. (51) *Physoplectus pardii*.



Figs 52-55. Prosternum of Brachyglutini. (52) *Achilia crassicornis*. (53) *Briara* sp. (54) *Anchylarthron* sp. (55) *Bundjulung mercurius*.

the head (Fig. 7) and some other features (see also Figs 32, 47).

2c. Genera *Arachis* Raffray, 1890, *Diroptrus* Motschulsky, 1858 and *Obricala* Raffray, 1890 are transferred from Brachyglutini *incertae sedis* (Newton & Chandler, 1989: 46-47) to Brachyglutina. We studied the type species of these three genera: *Arachis crassicornis* (Raffray, 1882), *Diroptrus ceylonicus* Motschulsky, 1858 and *Obricala foveicollis* (Raffray, 1882), and we have been able to establish that they definitely belong to Brachyglutina primarily due to the structure of the ventral side of the head with the median gular longitudinal elevation laterally delimited by a pair of sutures.



Figs 56-61. Meso- and metasternum of Brachyglutini. (56) *Achilia crassicornis*. (57) *Drasinus cisinsularis*. (58) *Mangalobythus* sp. (59) *Batraxis splendida*. (60) *Eutrichites zonatus*. (61) *Comatopselaphus* sp.

2d. We here exclude the genus *Berlaraxis* Jeannel, 1957 from Brachyglutini, that was placed in this tribe among the genera *incertae sedis* (Newton & Chandler, 1989: 46-47). We have studied the holotype of *Berlaraxis coomani* Jeannel, 1957, and we came to the conclusion that this genus (having in particular a completely different underside of the head compared with other representatives of Brachyglutini) is very close to *Sunorfa* Raffray, 1882 and its allied genera due to the shape of palpomere 4, the structure of the base of abdominal tergite 1, the shape of the aedeagus, and some other characters. Thus we transfer *Berlaraxis* to the tribe Iniocyphini subtribe Iniocyphina.

For the same reason, after the study of a paratype of *Araneabaxis oreillyi* Chandler, 2001, we exclude the genus *Araneabaxis* Chandler, 2001 from the tribe Brachyglutini subtribe Brachyglutina and transfer it to Iniocyphina, also placing it next to the genera around *Sunorfa*. Chandler (2001: 304, 385) himself wrote about the possibility of such placement as part of his description of this genus.

However, on one hand "Iniocyphini [is] difficult to characterize as a group distinct from the Proterini" (Chandler, 2001: 376), while on the other hand, the internal relationships of both tribes is currently unclear. For example, the genera close to *Morana* Sharp, 1874 are apparently unrelated to other genera of Iniocyphina (Kurbatov *et al.,* 2007), and *Proterus* Raffray, 1897 with its allied genera are not close to other representatives of Proterini, while this "tribe [itself] is most likely polyphyletic" (Cuccodoro & Kurbatov, 2006: 251; see also Chandler, 2001: 391). That is why we do not formally put *Berlaraxis* and *Araneabaxis* in the Iniocyphina, but indicate their affinity to particular genera.

3. The subtribe Pselaptina (**stat. resurr.**) recently synonymized with Brachyglutina (Chandler, 2001: 291) is reestablished. But this reestablishment is produced on another basis than that indicated by Park (Park *et al.,* 1976: 48). This subtribe in its new concept shares with Brachyglutina the median gular longitudinal elevation delimited by lateral sutures (this elevation may be interrupted in the middle) (Figs 9-12); however, unlike Brachyglutina the subtribe Pselaptina has two long longitudinal lateral carinae on the metathorax (Figs 60-61). As so defined Pselaptina then includes the following genera: *Caligocara* Park, 1945, *Eutrichites* LeConte, 1880, *Pselaptus* LeConte, 1880, *Atenisodus* Raffray, 1904, and *Comatopselaphus* Schaufuss, 1882 with the last two genera previously placed as Brachyglutini *incertae sedis* (Newton & Chandler, 1989: 46).

Achilia Reitter

Achilia Reitter, 1890: 212; type species: *Bryaxis valdiviensis* Reitter, 1883b (= *Achilia blanchardi* Raffray, 1904) (des. Jeannel, 1962: 396).

Clermontodes Jeannel, 1950: 317 (synonymized by Besuchet, 1986: 259).

Preliminary description: Head with pair of vertexal foveae. Underside of head with distinct median gular longitudinal elevation accompanied by lateral sutures, and with partially reduced infraocular sutures (Fig. 3). Anterior margin of labrum more or less straight (Fig. 34). Anterior margin of mentum rounded, with weak median notch (Fig. 40). Outer margin of mandibles with two long macrosetae, basal and medial (Fig. 19). Palpi with 4th palpomere clearly enlarged, which is approximately two times larger than 3rd (Fig. 13).

Pronotum with antebasal and two lateral foveae, lacking any sulci. Elytra with 2-4 basal foveae, sutural and discal striae. Tergite 1 (IV) with pair of discal carinae, with pair of basolateral and sometimes pair of mediobasal foveae. Prosternum with paranotal carinae and pair of anteroprosternal foveae (Fig. 52). With single median mesosternal fovea (Fig. 56). Sternite 2 (IV) with large mediobasal carina, with pair of mediobasal and pair of basolateral foveae.

Secondary sexual characters affect mainly the dorsal side of head and antennae, and sometimes other parts of the body.

Aedeagus with membranous basal bulb and more or less bilaterally symmetrical sclerites of internal sac.

Figures 62-63 represent the general appearance of the genus *Achilia*.

Remarks: The genus *Achilia* shares only with *Bunoderus* Raffray, 1904 the shape of the anterior margin of the mentum (rounded, with weak median notch) (Figs 40-41), and both have the same foveal pattern of the pronotum, possess both sutural and discal elytral striae, and share some other features. However unlike *Achilia* the representatives of the genus *Bunoderus* have the fourth palpomere not enlarged (Figs 13-14), just as in many other genera of Brachyglutini (Figs 15-18), the pronotal disc has a median carina or tumidity anterior to the median antebasal fovea, and sternite 2 is lacking a mediobasal carina and basolateral foveae.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Figs 62-63. Habitus of *Achilia* species. (62) *Achilia grandiceps* Jeannel, 1962. (63) *Achilia puncticeps* Reitter, 1883b.

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