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**ON THE SYSTEMATIC POSITION OF THE GENERA  
TRICHAPSEUDES BARNARD AND HOPLOMACHUS GUȚU, AND  
THE DESCRIPTION OF A NEW METAPSEUDID SUBFAMILY  
(CRUSTACEA: TANAIDACEA: APSEUDOMORPHA)**

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Abstract. Morphological features of two monotypic genera, *Trichapseudes* Barnard, 1920 and *Zaraza* Guțu, 2006, which were classified till now in different families (Parapseudidae Guțu, 1981 and Metapseudidae Lang, 1970, respectively), are analyzed. Also, the similitudes between the mentioned taxa and genera *Calozodion* Gardiner, 1973, *Chondropodus* Guțu, 2006 and *Julmarichardia* Guțu, 1989 (family Metapseudidae), as well as *Hoplomachus* Guțu, 2002 (family Apseudidae Leach, 1814), are commented, at the same time proposing their classification in a new metapseudid subfamily, Chondropodinae. Therefore, genera *Hoplomachus* and *Trichapseudes* were transferred in the new taxon. The systematic list, up to the species level and the identification key of the genera included in the new subfamily, are presented in the final part of the paper.

Résumé. On analyse les traits morphologiques de deux genres monospécifiques, *Trichapseudes* Barnard, 1920 et *Zaraza* Guțu, 2006, classifiés jusqu'à présent dans deux familles différentes (Parapseudidae Guțu, 1981 et, respectivement, Metapseudidae Lang, 1970). On commente aussi les ressemblances entre ces deux taxons et les genres *Calozodion* Gardiner, 1973, *Chondropodus* Guțu, 2006, *Julmarichardia* Guțu, 1981 (famille Metapseudidae), ainsi que *Hoplomachus* Guțu, 2002 (famille Apseudidae Leach, 1814) proposant leur classification dans une nouvelle sous-famille de metapseudides, Chondropodinae. A cette occasion on transfère dans ce nouveau taxon les genres *Hoplomachus* et *Trichapseudes*. Dans la partie finale du travail on présente la liste et la clé d'identification, jusqu'au niveau d'espèce, des genres inclus dans la nouvelle sous-famille.

Key words: Chondropodinae n. subfam., family Metapseudidae.

K. H. Barnard (1920) described the monospecific genus *Trichapseudes* after a rich material (males, females and juveniles) of the species *Trichapseudes tridens* Barnard, 1920, originating in South Africa (from depths between 17 and 85 fathoms). Confused diagnosis (where several appendages are considered "normal") combined with the description of the type-species without a minute illustration, to which some contradictory comments are added (generated by the precarious knowledge of that time) led practically to the impossibility of making a correct classification of the genus. This happened because the type-species has (cf. Barnard, op. cit.) a combination of morphological features out of the common, completely different from all what was known, till recently, at the level of the entire suborder Apseudomorpha, more precisely, till the description of the genus *Zaraza* (Guțu, 2006 b).

As it results from Barnard's diagnosis (op. cit.: 325), genus *Trichapseudes* resembles *Kalliapseudes* Stebbing, 1910 by „...a large mandibular palp and in the development of plumose setae on the palp of the mandible and maxilliped". But, if in the maxilliped case there is somehow a resemblance between what Barnard presents (op. cit.: 326, plate XV, fig. 5) and what is known at present (not only by setulation but also by the great length of the last two articles of the palp, cf. Lang,

1956 a, plate 35, fig. 14; 1956 b, fig. B 9; Guțu, 2006 a, figs 175, 218, etc.), as regards the mandibular palp we know now that it is uniarticulated in *Kalliapseudes* and the genera related to it (Drumm, 2007, figs 1 E, 7 F; Lang, 1956 a, plate 34, fig. 7, 1956 b, fig. B 6; Guțu, 2006 a, figs 172, 214, 256; Sieg, 1982, figs 2 Mdl, Mdr, 6 Mdr) and not three-articulated as it is presented by Barnard (op. cit.: 326 and plate XV, fig. 4). Neither the presence of the maxillule palp or configuration of the cheliped and pereopod II (especially of its exopodite, which has the last article rounded with about 22 plumose setae around it) nor of the other appendages described or illustrated by Barnard (op. cit.) are not in accordance with the morphological features of the genus *Kalliapseudes*. As regards Barnard's observation (op. cit.: 325), where he specifies that *Trichapseudes* „...it is allied to the typical *Apseudes* except in having only 3 pairs of pleopods”, it is also debatable if we take into consideration that no species of the genus *Apseudes* Leach, 1814, known that time had any major similitudes with the type-species, *Trichapseudes tridens*. Just because of these inaccuracies the genus *Trichapseudes* was classified either in the family Apseudidae (Lang, 1970; Guțu, 1972), or the Parapseudidae (Guțu, 1981, 1996 b, 2006 a; Guțu & Sieg, 1999), without convincing arguments, none of these two variants being in accordance with the diagnoses of these families.

Making a comparison between the features described by Barnard (op. cit.) with those of the other apseudomorph genera I established that most of them occur in the monotypical genus *Zaraza*, recently described (Guțu 2006 b) from the waters of the Atlantic Ocean (North-eastern coast of Hispaniola Island). Also, *Trichapseudes* has some common features with *Calozodion* Gardiner, 1973, *Chondropodus* Guțu, 2006 and *Julmarichardia* Guțu, 1989, all classified in the family Metapseudidae Lang, 1970 (subfamily Metapseudinae), but also with the genus *Hoplomachus* Guțu, 2002, classified (after the spiniform coxa of pereopod II, well developed) in the family Apseudidae (Guțu, 2002). As a matter of fact, the resemblances between *Hoplomachus*, *Calozodion* and *Julmarichardia* were commented previously (Guțu, 2002: 44, 61). More than that, Guțu (1996 a: 88, 89) initially classified the type-species of the genus *Hoplomachus* (*Apseudes propinquus* Richardson, 1902) in the genus *Calozodion* and, implicitly, in the family Metapseudidae.

Resemblances between the monotypical genera *Trichapseudes* and *Zaraza* (ignored by Guțu, 2006 b, in the description of the second genus) are: (1) the presence of the spiniform apophyses on the inner margin of the first article of the antennule peduncle, (2) the great length of the antennule flagella and antenna, (3) the configuration of the mandible palp (three-articulated, with numerous setae on its entire inner length), (4) the presence of the maxillule palp, (5) the great length of the last two articles of the maxilliped palp and of its setae (plumose), (6) the configuration of the cheliped (especially by the large size of the propodus and the presence of the sternal denticles, but also of the plumose setae from the basis, merus and carpus level), (7) the presence of the tergal denticles and of the plumose setae on both margins of the pereopod II basis, (8), the configuration of the pereopods III-VII, (9) the presence of three pairs of biramous uni-articulated pleopods (displayed on the first pleonites) and (10) the small length of the uropods, with a three-articulated exopodite.

In spite of these resemblances, the unknown males of the genus *Zaraza* (which may have some dimorphic features in comparison with those of the genus *Trichapseudes*, which are similar to the females, according to Barnard description,

op. cit.), as well as some differences (at least between the females of the two genera), made me not to consider them identical, for the time being. First of all, I take into consideration the special configuration of the pereopod II exopodite in the type-species of the genus *Trichapseudes* – which is „very large” with „2-nd joint ovate” and „its margin closely and deeply indented, with a plumose seta arising from each intervening denticle”, the total number of these plumose setae being around of 22 (cf. Barnard, op. cit.: 326 and plate XV, fig. 8) – in comparison with the normal exopodite of the type-species of the genus *Zaraza* (last article being elongated, with only five plumose setae, cf. Guțu, 2006 b, fig. 3 A).

Other features which do not occur in the genus *Zaraza* (Guțu, 2006 b) are represented by the pleonites setulation („...lateral...with outstanding plumose setae”), the aspect of the pleotelson („...tapering to a bifid apex”), as well as by the setulation of the second article of the maxilliped palp (or „the 4-th” according to Barnard, op. cit.) „with plumose setae on both margins” (Barnard, op. cit.: 325, 326 and plate XV, fig. 5). Hence, I consider *Trichapseudes* and *Zaraza* sisters-genera.

The resemblances between the six above-mentioned genera (*Calozodion*, *Chondropodus*, *Julmarichardia*, *Hoplomachus*, *Trichapseudes* and *Zaraza*) are represented by the presence of the spiniform apophyses on the inner margin of the first article of the antennule peduncle and of the antenna squama, the presence of the exopodite on the cheliped and pereopod II, the aspect of the pereopod II basis (with some spiniform processes which alternate with long plumose setae on the tergal margin), general configuration of the pereopods III-VII and pleopods, and small length of the uropodal exopodite. Other resemblances occur only in some appendages of some certain genera. So it is the case of the maxilliped, somehow similar in genera *Calozodion*, *Chondropodus*, *Hoplomachus*, *Trichapseudes* and *Zaraza* (by the great length of the third article of the palp and the displaying of the setae), but also of some other appendages. A special place is that of the cheliped similarity, joined with the lack of an obvious dimorphism in the genera *Calozodion* and *Trichapseudes* (and, probably, *Zaraza*, whose male are not known, yet) on the one hand, and on the other one, that of the unequal and dimorphic chelipeds of the other three genera, *Chondropodus*, *Julmarichardia* and *Hoplomachus*. Commented resemblances (as well as those unmentioned), which can be verified consulting even a part of the papers which deal with the above-mentioned genera (Barnard, op. cit.; Bamber & Shearer, 2005; Gardiner, 1973; Guțu, 1989, 1996 a, 2002, 2006 a, b; Guțu & Iliffe, 1985; Kirk Ritger & Heard, 2007, etc.), underline the presence of an evolutionary line within the metapseudids, different from that of the other subfamilies.

In conclusion, I propose that genera *Calozodion*, *Chondropodus*, *Julmarichardia*, *Hoplomachus*, *Trichapseudes* and *Zaraza*, which, on my opinion, belong to the same phyletic line, to be classified in a new metapseudid subfamily.

As a matter of fact, I remind on this occasion that Sieg (1984) classified one of the genus of the new subfamily (it is about *Calozodion*), together with *Cyclopoapseudes* Menzies, 1953 in a different family, Cyclopoapseudidae. Unfortunately, unconvincing arguments of this author, combine with an artificial classification of two genera with completely different features within the same family, led to the invalidation of this family (Guțu, 1996 a: 87, 1996 b: 138). By its morphology, the type-genus, *Cyclopoapseudes*, of the family described by Sieg has, on my opinion, more common features with the genus *Apseudomorpha* Miller, 1940, than with *Calozodion* (and the another genera of the new subfamily).

**Chondropodinae**, n. subfam.

*Type-genus*: *Chondropodus* Guțu, 2006.

*Diagnosis*. Body dorsoventrally flattened, with small lateral or anterolaterally acute or rounded processes at the level of pereonites. Pleon with five short pleonites (having or not lateral plumose setae) and a short pleotelson (with a small acute lateral process in the first half). Antennule peduncle with at least one conspicuous denticle on the inner margin of the first article; at least outer flgellum long, multiarticulated. Antenna with second article long, in very rare cases without spiniform denticles on the inner margin; squama present (small). Mandible with three-articulated palp. Maxillule with biarticulated palp. Maxilliped with third article of the palp evidently longer than broad, sometimes shorter than the second one; second article of palp with a great distoexternal spine and exceptionally with numerous plumose setae on the outer side. Cheliped obvious dimorphic or not, with exopodite. Pereopod II, well developed, much larger than the following pereopods, with exopodite; basis thick with long plumose setae which alternate with spiniform denticles on the tergal (anterior) margin; sometimes coxa with a spiniform prolongation (more or less developed). Pereopods III-VII thin, different from pereopod II; pereopods III, IV and VI with long and similar propodus (much longer than the carpus, the last having about the same length with the merus), slightly curved, having at most four sternal spines; dactylus also thin and long, with well developed claw. Pleopods present, biramous, in three or five pairs. Uropod with multiarticulated (but not very long) rami.

*Dimorphism*. Obvious, when it is present, only at the level of the chelipeds.

*Remarks*. The main morphological features by which Chondropodinae n. subfam. can be easily distinguished from the other metapseudid subfamilies consists in the size of the pereopod II (much larger than the subsequent ones) and the aspect of its basis (the anterior margin having some long plumose setae which alternate with well developed denticles), combined with the configuration, almost identical with the pereopods III, IV and VI propodus (thin, slightly curved ventrally and much longer than the carpus).

As it results from the diagnosis, the new subfamily has (by the aspect of the pereopod II, of fossorial type, stronger and, at the same time different from the following two pereopods, to which the spiniform coxa, in some species, can be added) several common morphological features with the apseudid species. Therefore, for removing the confusions between Chondropodinae and Apseudidae, we have to take into consideration also some other features which do not occur in the species of the second high taxon. In this respect, I mention: (1) the presence of several denticles on the inner margin of the first article of the antennule peduncle, (2) the small size of squama, (3) the number (relatively low) and the displaying of the setae (in a single row) on the second article of the maxilliped palp and the size of the third article (long and narrow), (4) the similar configuration of the pereopods III, IV and VI propodus (thin, slightly curved ventrally, devoid of setae and much longer than the carpus), and (6) the length of carpus (very short, at the most equal with the merus).

Under these circumstances I underline that *Trichapseudes* and *Zaraza* (but also some of the other four mentioned genera) have the maxilliped similar not only with that of the Kalliapseudinae (at least by the great length of the last articles of the palp, Drumm, 2007, figs 2 C, 6 C; Guțu, 2006 a, figs 175, 218; Sieg, 1982, figs 4 Mxp, 8 Mxp) but also with those of the species of the family Numbakullidae Guțu &

Heard, 2002. In the last case, the resemblance is consists not only in the great length of the maxillipedal palp articles but also in the displaying way of the inner setae of the palp (in a single row), the difference being that they are simple in Numbakullidae (Guțu, 2006 c, fig. 2 A; Guțu & Heard, 2002, fig. 2 C) while in *Trichapseudes* and *Zaraza* they are plumose (Barnard, op. cit.: 326; Guțu, 2006 b, fig. 2 A). Although between Numbakullidae and Metapseudidae (and, respectively, Chondropodinae, n. subfam.) also there are other resemblances (Guțu & Heard, 2002: 94), the difference between them being unmistakable, at least due to the very long plumose setae from the merus and carpus of the pereopod II in the numbakullid species (Guțu, 2006 c, fig. 3 A; Guțu & Heard, 2002, fig. 3 C).

This mixture of similar features, belonging to some different families and subfamilies (which occur in several uninvolved appendages, or less involved, in the apseudomorph systematics), suggests, on the one hand, the presence of some unexpected phyletic “links”, evaluation will allow another taxonomic approach of the suborder Apseudomorpha (closely according to evolution), and on the other hand, brings the present classification in question, as it was thought initially by Lang (1970), when only 5 families with 20 genera and, at the most, 200 species were known (in comparison with 12 families, about 100 genera and almost 500 species as yet).

The new metapseudid subfamily, Chondropodinae, includes 6 genera (identified using the key presented below) and 21 species, mentioned further.

- *Calozodion* Gardiner, 1973 (9 species): *C. bacescui* Guțu, 1996, *C. codreanui* Guțu, 1996, *C. dollfusi* Guțu, 1989, *C. heardi* Guțu, 2002, *C. multispinosum* Guțu, 1984, *C. singularis* Guțu, 2002, *C. simile* Guțu, 2006, *C. suluk* Bamber and Sheader, 2005 and *C. wadei* Gardiner, 1973;
- *Chondropodus* Guțu, 2006 (2 species): *C. curvispinus* Guțu, 2006, *C. rectispinus* Guțu, 2006;
- *Hoplomachus* Guțu, 2002 (3 species): *H. propinquus* (Richardson, 1902), *H. toyoishious* Larsen and Shimomura, 2006, *H. triangulatus* (Richardson, 1902);
- *Julmarichardia* Guțu, 1989 (5 species): *J. alinati* Guțu, 1989, *J. bajau* Bamber and Sheader, 2005, *J. deltoides* (Barnard, 1914), *J. gutui* Kirk Ritger and Heard, 2007, *J. thomassini* Guțu, 1989;
- *Trichapseudes* Barnard, 1920 (1 species): *T. tridens* Barnard, 1920;
- *Zaraza* Guțu, 2006 (1 species): *Z. linda* Guțu, 2006.

Key to the genera of the subfamily **Chondropodinae** n. subfam.

- 1 - Rostrum very large (acute or rounded in top) with strong denticles around (acute or not) ..... *Julmarichardia* Guțu, 1989
- Rostrum normal (acute or rounded in top) without strong denticles around (margins more or less smooth) ..... 2
- 2 - Pereopod II propodus relatively cylindrical, much longer than its thickness or the length of carpus ..... *Chondropodus* Guțu, 2006
- Pereopod II propodus wide, not much longer than its thickness or the length of carpus ..... 3
- 3 - Antennule inner flagellum two-articulated ..... *Calozodion* Gardiner, 1973
- Antennule inner flagellum multiarticulated ..... 4

- 4 - Pereopod II exopodite with last article round (and large), having more of 20 plumose setae around ..... *Trichapseudes* Barnard, 1920  
 - Pereopod II exopodite with last article normal (elongated), having some plumose setae around ..... **5**
- 5 - Five pairs of pleopods ..... *Hoplomachus* Guțu, 2002  
 - Three pairs of pleopods ..... *Zaraza* Guțu, 2006

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CU PRIVIRE LA POZIȚIA SISTEMATICĂ A GENURILOR  
*TRICHAPSEUDES* BARNARD ȘI *HOPLOMACHUS* GUȚU  
 ȘI DESCRIEREA UNEI NOI SUBFAMILII DE METAPSEUDIDE  
 (CRUSTACEA: TANAIDACEA: APSEUDOMORPHA)

## REZUMAT

În urma unei analize amănunțite a trăsăturilor morfologice aparținând la două genuri monospecifice, *Trichapseudes* Barnard, 1920 și *Zaraza* Guțu, 2006, s-a ajuns la concluzia că sunt foarte asemănătoare, deși au fost clasificate în familii diferite (Parapseudidae Guțu, 1981 și, respectiv, Metapseudidae Lang, 1972). Totodată au fost comentate asemănările dintre cei doi taxoni amintiți și genurile *Calozodion* Gardiner, 1973, *Chondropodus* Guțu, 2006 și *Julmarichardia* Guțu, 1989 (din familia Metapseudidae), precum și genul *Hoplomachus* Guțu, 2002 (clasificat în familia Apseudidae Leach, 1814). Evidențierea unor caracteristici morfologice proprii numai celor șase genuri a condus la ordonarea lor într-o nouă subfamilie, Chondropodinae, aparținând familiei Metapseudidae. Prin această reorganizare genurile *Hoplomachus* și *Trichapseudes* au fost transferate din familiile Apseudidae și, respectiv, Parapseudidae, în familia Metapseudidae, subfamilia Chondropodinae. În partea finală a lucrării este prezentat tabloul sistematic al noii subfamilii (cu cele 6 genuri și 21 de specii) precum și cheia de identificare a genurilor noului taxon.

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