TWO NEW PARAPSEUDID SPECIES
AND SOME FIRST RECORDS OF TANAIDACEA
(CRUSTACEA: PERACARIDA) FROM THAILAND

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Abstract. Two new species (Gutuapseudes denticulatus and Saltipedis tetracanthus) of the family Parapseudidae are described and illustrated. Also 13 other tanaidacean crustacean species are recorded for the first time in the fauna of Thailand, of which at least 6 are new to science, thus increasing the number of species known in Thai marine waters from 14 to 29, and of genera, from 12 to 20, in 8 families of the suborders Apseudomorpha and Tanaidomorpha. On this occasion the diagnosis of the genus Gutuapseudes Edgar, 1997 is emended, the males of this genus being described for the first time, and the species Bunakenia (Extensibasella) aspalieus Bamber, Bird and Angsupanich, 2003 was reclassified in the genus Apseudes, in this way the presence of the genus Bunakenia Gütu, 1995 (subgenus Extensibasella Gütu, 1996) in Thai waters being invalidated.

Key words: Gutuapseudes denticulatus n. sp., Saltipedis tetracanthus n. sp., Tanaidacea, Thailand.

The tanaidaceans of Thailand have heretofore been mentioned rarely, only 14 species of 12 genera in 7 apseudomorph and tanaidomorph families being recorded until the present time (Chilton, 1926, Angsupanich, 2001, 2004, Larsen, 2002, Larsen and Rayment, 2002, Bamber et al., 2003, and Gütu and Angsupanich, 2004).

As a result of our recent studies made in the shallow waters of coastal Thailand, we have identified further 15 species, 8 of them being new to science, and of which two new species, belonging to the genera Gutuapseudes Edgar, 1997 and Saltipedis Gütu, 1995 (family Parapseudidae), are described in this paper; the others will be described in forthcoming papers. Thus, now the total number of the known tanaidacean crustacean species in Thai marine waters increases to 29 (Tab. 1), belonging to 20 genera (8 mentioned for the first time) and 8 families of the suborders Apseudomorpha and Tanaidomorpha. On this occasion, the species Bunakenia (Extensibasella) aspalieus Bamber, Bird and Angsupanich, 2003 is transferred to the genus Apseudes Leach, 1814, so invalidating the presence of the mentioned genus and subgenus in the Thai waters.
List of tanaidacean species recorded in the waters of Thailand

Suborder Apsaeidomorpha

Family Apsaeidae

*Apseudes aspalieus* (Bamber, Bird and Angsupanich, 2003), comb. nov.
*Bilobatus ? gallardoi* (Shiino, 1963), Kra Island, Gulf of Thailand (first record)

Family Kalliapseudidae

*Kalliapeudes (K.) tomiokaensis* Shiino, 1966 (recorded by Bamber et al., 2003)
*Kalliapeudes (K.) makrothrix* Stebbing, 1910 (recorded by Bamber et al., 2003)
*Kalliapeudes (K.) sp. 1*, Si Racha Bay, Gulf of Thailand (first record)
*Kalliapeudes (K.) sp. 2*, Phuket Island, Andaman Sea (first record)

Family Metapseudidae

*Calozodion sp.*, Li Dee Island, Andaman Sea (first record)
*Curtipleon heterochelatum* Larsen, 2002
*Msangia sp.*, Tarang Island, Andaman Sea (first record)

Family Pagurapseudidae

*Pagurapseudopsis thailandica* Angsupanich, 2001

Family Parapseudidae

*Biropalostoma spiniJerum* Gutu and Angsupanich, 2004
*Ctenapseudes sapensis* (Chilton, 1926), comb. nov.
*Gutuapseudes denticulatus* n. sp., Si Racha Bay, Gulf of Thailand (first record)
*Longiflagrum koyonense* Angsupanich, 2004
*Saltipedis achondroplasia* Bamber, Bird and Angsupanich, 2003
*Saltipedis tetracanthus* n. sp., Phuket Island, Andaman Sea (first record)
*Saltipedis* sp. 1, Li Dee Island, Andaman Sea (first record)
*Saltipedis* sp. 2, Kra Island, Gulf of Thailand (first record)
*Pakistanapseudes sp.*, indet., (recorded by Bamber et al., 2003)
*Thaicungella lideeiensis* Gutu and Angsupanich, 2004

Suborder Tanaidomorpha

Family Leptocheliidae

*Leptochelia dubia* (Kroyer, 1842), Tarang Island, Andaman Sea and Kham Island, Gulf of Thailand (first record)
*Leptochelia elongata* Larsen and Rayment, 2002
*Leptochelia itoi* Ishimaru, 1985, inner part of Songkhla Lake, Gulf of Thailand (first record)
*Leptochelia longimana* Shiino, 1963, Kham Island; Gulf of Thailand (first record)
*Leptochelia tarda* Larsen and Rayment, 2002
*Pseudoleptochelia* sp., Kham Island, Gulf of Thailand (first record)

Family Nototanaidae

*Nesotanais rugula* Bamber, Bird and Angsupanich, 2003

Family Tanaidae (first record)

*Sinelobus ? stanfordi* (Richardson, 1901), Kham Island and inner part of Songkhla Lake, Gulf of Thailand (first record)
The genus *Gutuapseudes* Edgar, 1997 was described only after the morphological features of the females. In possession of a male of a new species (the first described in this genus), as well as the females of *Gutuapseudes manda* Edgar, 1997 (the type-species of the genus), following recent research, we emend partially Edgar's diagnosis (1997).


**Sexual dimorphism** very evident on cheliped. Females with a slender cheliped (having narrow and long carpus). Males with stout cheliped, having the basis, carpus and propodus very wide.

**Composition:** *Gutuapseudes manda* Edgar, 1997 and *G. denticulatus* n. sp.

**Remarks.** A very important feature of the genus *Gutuapseudes* (besides the presence of the circumplumose setae at the pleon level, pointed out by Edgar, 1977), which distinguishes it from the other genera of the family Parapseudidae, is the length of the pereopods III-VII carpus, much longer than that of the merus or propodus (Figs 1 F and 2 A-C). In addition, the genus *Gutuapseudes* is also characterized by: (1) lobate form of the anterolateral extremities of the third pereonite (Fig. 1 A); (2) the absence of the transversal row of setae at the first pleonite (Fig. 1 A); (3) the relatively cylindrical configuration of the basis of the pereopods V-VII (Fig. 2 A-C); (4) articulation of the propodus of the pereopod II with the carpus at the distosternal corner (Fig. 1 E).

*Gutuapseudes denticulatus* n. sp.  
(Figs 1, 2)

**Material:** 1 male (holotype) collected from Si Racha Bay (13° 12′ N – 100° 55′ E), Gulf of Thailand, on the bottom with medium sand, depth 1 m, salinity 32‰; May 2003, Leg. Jumlong To-on.

**Holotype** deposited in the Collections of the Muzeul Național de Istorie Naturală “Grigore Antipa”, from Bucharest (Romania), No. 250,267.

**Description of the male**

**Body** (Fig. 1 A) dorsoventrally flattened, about 5.2 times longer than wide, decreasing in width from carapace to pleon; standard length, approximately 6 mm.  
**Carapace** as long as wide, inflated at the level of respiratory chambers, with one small seta on each lateral side; rostrum well developed, pointed, wider at base, with some denticles and small setae on the frontal margin (Fig. 1 B); eye lobes present, with visual elements.
Pereon with each pereonite wider than length. First and second pereonites shorter and wider than the others. Third pereonite, visibly shorter than pereonites four to six, with small lobate prolongations on the anterolateral angles. Fourth and fifth pereonites approximately equal, longer than the other pereonites. Sixth pereonite slightly shorter than the fourth or fifth pereonites. Fourth, fifth and sixth pereonites with numerous small denticles laterally (detail Fig. 1 A). Each pereonite with some short setae, laterally.

Pleon (Fig. 1 A), a little shorter than the last three pereonites, with five pleonites and pleotelson. Each pleonite, pointed posterolaterally, provided with some plumose setae; first pleonite without a transversal row of small setae. Pleotelson with some plumose setae dorsally, laterally and terminally.

Antennule lost, excepting first two peduncular articles (Fig. 1 B).

Antenna (Fig. 1 C) with short first peduncular article. Second article largest; squama well developed having eleven subequal simple setae, around the margin of it, those from the top being very long. Third and fourth articles shortest and approximately equal. Fifth peduncular article as long as previous two combined articles. Flagellum slender, nine-articulated, each article having at least two setae, more or less long, as in drawing.

Mouth parts unstudied.

Cheliped (Fig. 1 D) large and strong, with exopodite. Basis with a well developed spiniform process on the anterior margin, and one small spine and three setae, on the posterior side. Merus short and narrow with a few setae. Carpus relatively short and very wide with some simple setae, sternally. Propodus large; fixed finger narrow with a great dentiform process, on the inner side, subterminally; claw very small. Dactylus recurved, slightly narrower than fixed finger, with one well developed denticle on the inner margin, proximally; claw stout, much bigger than the same of fixed finger.

Pereopod II (Fig. 1 E) with exopodite having six plumose setae. Basis, relatively narrow, about three times longer than wide, with six very small spines on the tergal margin, and three others sternally; three long setae and one small spine are situated posterodistally. Ischium with four long setae, distosternally. Merus with about 13 simple setae and one strong spine on the sternal side, and a few setae and one thin spine, distotergally; on the external surface four long setae are present. Carpus, little shorter than merus, with nine long setae and one stout spine, sternally, and 12 setae and one very long spine, tergally and distotergally. Propodus, a little narrower than the other articles, with ten long setae and two spines on the sternal side, and ten long setae and one spine, tergally. Dactylus thin and long, with three small denticles in the first half, and another one, terminally, on the sternal margin; claw relatively small.

Pereopods III (Fig. 1 F) and IV relatively similar. Basis long, more or less cylindrical, with some very small spines on the tergal side, and six–seven subequal setae, distosternally. Merus, much shorter than carpus, with about ten long and fine setae on the sternal side, and one small spine, distotergal. Carpus with around 15 long simple setae on the sternal border, and about 12 long setae, tergally, and one very long spine, distotergally, as in drawing. Propodus, shorter than carpus, but slightly longer than merus, provided with some long simple setae, and two spines, sternally, and about ten long setae and one long spine, tergally. Dactylus thin and long, but a little shorter than the adjacent propodal setae; claw long, pointed.
Fig. 1 – Guwapsudes denticulatus n. sp., male, holotype: A, body, dorsal view; B, carapace, anterior part, with first two peduncular articles of left antennule; C, antenna; D, cheliped; E, pereopod II; F, pereopod III.
Pereopod V and VI (Fig. 2 A, B) with thin and more or less cylindrical basis. Merus, much shorter than carpus (the last one being longer than propodus), with some setae and one-two spines, sternally, and two small spines, distotergally. Carpus with many long simple setae and some long spines on the sternal margin and one spine, distotergally. Propodus of pereopod V, shorter than the same of pereopod VI, with a few setae and long spines in the last half, and dactylus shorter than the last propodal spines (detail Fig. 2 A). Propodus of pereopod VI with many setae and spines, sternally (Fig. 2 B); dactylus much longer than the same of pereopod V.

Pereopod VII (Fig. 2 C) with long and thin basis (about 3.5 times longer than wide) having eight long plumose setae on the sternal side and another 14, tergally. Ischium with four simple setae, distosternally. Merus, about three times shorter than carpus, with five setae and one spine, sternally, and two subequal setae (one simple and another one, plumose) on the tergal margin. Carpus long and slender, with eight spines and seven setae on the sternal side (as in figure), and three long plumose setae and two shorter, simple, on the tergal border. Propodus with four stout spines in the first half, and another four and three long setae, distotergally; between these two groups of spines about 30 small setae are present, as in the detail of figure 2 C. Dactylus narrow, little shorter than the adjacent spines; claw long and thin.

Pleopods (Fig. 2 D) biramous, in five pairs. Protopodite long with five or six long plumose setae on the each lateral margin. Exopodite with about 21 long plumose setae, around. Endopodite, longer and wider than exopodite, provided with 24 plumose setae.

Uropod (Fig. 2 E) biramous, with 11-articulated exopodite and about 43-articulated endopodite.

Etymology. From the Latin denticulatus, "with small tooths" referring to the aspect of the lateral side of fourth to sixth pereonites.

Type-locality. Si Racha Bay, Gulf of Thailand.

Remarks. Although the male of the species Gutuapseudes denticulatus n. sp. very much resembles the female of G. manda Edgar, 1997, we propose that they be considered as two different species, the new one having the following morphological features, which do not occur in the Australian species:

- body length longer (although, usually, the males are smaller than the females);
- rostrum longer, with small denticles and setae on the anterior margin (Fig. 1 B);
- pereonite 3 with the antero-lateral lobes better individualized (Fig. 1 A);
- pereonites 4, 5 and 6 with more numerous and more pointed out denticles on the epimer margins (detail Fig. 1 A);
- antenna squama with several setae;
- pereopod II with less setae on merus and carpus;
- exopodite and the endopodite of the uropods have a lower number of articles (although the studied specimen is larger);
- uropod exopodite shorter (in comparison with the body length).

With this report of this species from Thai waters, the distribution range of the genus Gutuapseudes increases westwardly.
Fig. 2 – Gutuapseudes denticulatus n. sp., male, holotype: A-C, pereopods V-VII, respectively; D, pleopod; E, uropod.
Although only 6 species of the genus Saltipedis have so far been described in the world fauna, almost certainly their true number is much larger, considering the huge areas of unstudied shallow waters which is the habitat of these species, and also considering the large distribution area, which includes different zones of the Atlantic and Indian oceans (Sieg, 1986, Gütt, 1996, 1997, 1998, Hansknecht et al., 2001, Bamber et al., 2003). Merely considering the few species identified by us from the Thai waters (Tab. 1), those mentioned in other papers but as yet undescribed (i.e. Hansknecht et al., 2001) and those of the senior author which will be published in the future, double the number of the known species.

Regarding the morphological features, Bamber et al. (2003) commented on the presence of some differences between the species of the genus Saltipedis (notably the presence or absence of the spines on the exopod of the chelipeds and the shape of the caudal distal seta of the maxilliped endite); however we consider these differences insignificant.

**Saltipedis tetracanthus** n. sp. 
(Figs 3, 4)

**Material:** 2 specimens (1 female with oostegites and 1 male), Phuket Island, Park Crock, March 28, 2004, Leg. Suvanich Boonrawd.

**Holotype** (female) deposited in the Collections of the Muzeul Național de Istorie Naturală “Grigore Antipa” din Bucharest (Romania), No. 250,268.

**Allotype** (male), in the same museum, No. 250,269.

**Description of the adult female**

**Body** (Fig. 3 A) dorsoventrally flattened, approximately 5.3 times longer than the maximum width; standard length, about 5.2 mm.

**Carapace** a little shorter than wide, with an evident pointed rostrum. Eye lobes well defined with visual elements.

**Pereon** decreases in width from the first pereonite to the last one. First two pereonites equal in length, but much shorter than the following one. Third and sixth pereonites a little shorter than the fourth or fifth pereonites. Each pereonite smooth, laterally.

**Pleon** with five, short and wide pleonites and a pleotelson, the last one being equal in length with the first four pleonites; first pleonite with a dorsotransversal row of small setae.

**Antennule** (Fig. 3 B) with peduncle a little shorter than the length of the carapace. First peduncular article about 2.5 times longer than wide, provided with seven or eight simple setae on each lateral margin and one-two broom setae. Second article, about half as long as the first one, four or six simple setae, disposed in each distolateral corner. Third peduncular article very short, having, also, four-five simple setae on each distolateral angle. Outer flagellum with 12 slender articles; articles two, four, six, eight and ten with one aesthetasc. Inner flagellum with eight articles (without common article), each article having, generally, one-three simple setae.

**Antenna** (Fig. 3 C) with first peduncular article short. Second article longer than the following two combined articles; squama present, well developed, with 15 long simple setae, around the margin. Third and fourth articles equal in length, but much shorter than the second or fifth ones. Fifth article slightly shorter than the
Fig. 3 – *Saltipedis tetracanthus* n. sp., female, holotype (A-D) and male, allotype (E): A, body, dorsal view; B, antennule; C, antenna; D and E, chelipeds.
second one, with two small setae on the outer side. Flagellum little longer than the peduncle, with eight slender articles; first, second and fifth articles with five, four and three long setae, respectively, on the inner margin, and two-three setae on the outer one; other articles with two smaller setae.

**Mouth parts,** unstudied.

**Cheliped** (Fig. 3 D) slender. Exopodite present, ends in five long plumose setae; the second article with two spiniform setae. Basis relatively narrow, with four spines, sternally, from which first three, proximally, are thinner than the fourth one; three short setae are present distosternally. Merus with about 12 simple setae, distosternally. Carpus, about four times longer than wide, and little longer than the maximum length of merus, with some simple setae, sternally, disposed as in drawing. Propodus, little wider than carpus, provided with a stout fixed finger which has three long setae proximally and numerous others, very short, on both margins of last half; claw small. Dactylus, narrower than the fixed finger of propodus, with three small setae, subterminally; claw little stronger than the same of fixed finger.

**Pereopod II** (Fig. 4 A) fossorial, with exopodite (ends in three plumose setae). Basis thick, with four very small spines and four plumose setae, anteroproximally; and four small spines, posteroproximally; one stout spine and one seta are present in the posterodistal corner. Ischium very short, with four subequal setae, distosternally. Merus, little longer than carpus, provided with some simple setae, sternally, and one thick spine, distosternally, and two subequal thin spines and three long simple setae, distotergally. Carpus, wide, with three robust spines, alternating with one-two long simple setae, sternally; eight subequal setae and one stout spine are present distotergally. Propodus, little shorter and narrower than carpus, with five stout subequal spines, alternating with one long simple seta, sternally, and five subequal setae and two spines, tergally. Dactylus well developed, with four denticles, sternally; claw short.

**Pereopod III** (Fig. 4 B), smaller than the second one, with a cylindrical basis, about three times longer than wide; five very small spines and five subequal setae (two of them very long) are present sternally and sternodistally, respectively. Ischium with four long simple setae, distosternally. Merus, little shorter than carpus or propodus, with one long spine, distotergally, and one seta are present on the lateral surface. Carpus, with four spines (one being very long) and three setae, distotergally, and four spines alternating with one-two setae, sternally; a transversal row of five setae is present on the lateral surface. Propodus, narrower than carpus, with eleven setae and two spines, tergally, and five spines alternating with one seta, sternally. Dactylus thin; claw well developed, slightly curved.

**Pereopod IV,** relatively similar to pereopod III.

**Pereopod V** (Fig. 4 C) with large and inflated basis with three broom setae, tergally, and three subequal simple setae, distosternally. Ischium short, with six simple setae, distosternally. Merus, much shorter than carpus or propodus, with eleven setae and three spines, sternally, and one spiniform seta, distotergally. Carpus, about two times longer than wide, with six spines and nine setae on the sternal side. Propodus, much shorter and narrower than carpus, with ten subequal spines and seven setae on the sternal and distal sides (as in drawing); one broom seta is present proximotergally. Dactylus, shorter than the spines situated behind them; claw very small.

**Pereopod VI** (Fig. 4 D) a little larger than pereopod V but relatively similar. Carpus with two rows of five spines (the last two much longer than the others) and
some simple setae on the sternal margin, and one long spine, distotergally. Propodus also with two rows of five spines and a few setae, sternally, and six spines (three very long), distally. Dactylus strong, with well developed claw.

Pereopod VII (Fig. 4 E) a little smaller than pereopod VI. Basis with one row of 22 long plumose setae, tergally, and a second row of seven plumose setae, disposed in the last half, sternally; one simple seta is present, distosternally. Ischium short, with two simple setae, distosternally. Merus, much shorter than carpus or propodus, with two spines and five setae on the last part of sternal margin; one long plumose setae and one short spine are present tergally. Carpus with two rows of four spines, and some simple setae, sternally, and four long plumose setae, tergally; one stout spine is present, distotergally. Propodus, longer than the merus, but a little shorter than the carpus (and narrower than previous articles), provided with four spines and about ten short setae, sternally, and five spines and a few setae, distally. Dactylus narrow, with a well developed claw.

Fig. 4 – Saltipedis tetracanthus n. sp, female, holotype: A-E, pereopods II, III, V, VI and VII, respectively; F, pleopod.
Pleopods (Fig. 4 F) biramous, in five pairs. Protopod long, with three and five plumose setae on each margin, laterally. Exopodite narrow, uniarticulated, shorter than endopodite, with 14 long plumose setae, around the margin. Endopodite, also narrow and uniarticulated, with about 20 long plumose setae, around.

Uropod (Fig. 3 A) biramous. Exopodite eleven-articulated. Endopodite lost. Males with the body and appendages very similar to females, excepting the cheliped (Fig. 3 E), which is much stronger. Chelipedal basis large, very wide, with four stout spines, sternally and two small simple setae, distosternally; tergal margin with four small rounded expansions; exopodite present, with two small setiform spines on the second article and four plumose setae on the last one. Merus narrow and long (about three times longer than the maximum width) having nine simple setae, sternodistally. Carpus very wide, with one proximosternal dentiform prolongation (rounded distally), and four setae, sternally. Propodus very large, wider than the basis or carpus, with at least 12 simple setae in the curvature of the fixed finger, and three others, distotergally; fixed finger narrow and long, with a dentiform process on the middle of the inner side; ten short setae are present on both margins, distally; claw robust. Dactylus narrow with one dentiform prolongation on the inner side, proximally, and five small spines, distoinnerly; claw stronger than the same of fixed finger.

Etymology. From the Greek tetrakantlzus, “with four spines”, referring to the number of sternal spines of chelipedal basis.

Type-locality. Phuket Island, Andaman Sea (Thailand).

Remarks. The presence of the four spines on the sternal margin of the cheliped basis, both in males and in females, is the most obvious morphological feature for the identification and differentiation of this species from the other six known species of the genus Saltipedis, and also from all the other apseudomorph tanaidaceans of the Thai waters.

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DOUĂ SPECII NOI DE PARAPSEUSDIDE ȘI CÂTEVA PRIME SEMNALĂRI DE TANAIDACEE (CRUSTACEA: PERACARIDA) DIN THAILANDA

REZUMAT


LITERATURE CITED


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