

TANAIDACEANS (CRUSTACEA, PERACARIDA) FROM THE WATERS OF COLOMBIAN PACIFIC WITH THE DESCRIPTION OF TWO NEW SPECIES

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On décrit *Discapseudes colombiensis* n.sp. et *Paratanais denticulatus* n.sp. et on mentionne pour la première fois, dans les eaux marines colombiennes, la présence d'espèce *Sinelobus stanfordi* (Richardson, 1901). En même temps il est relevé la différence morphologique du pléotelson aux espèces Atlantiques de genre *Discapseudes* Băcescu et Guțu, 1975 et l'espèce nouvelle dans le Pacifique de Columbia.

Researching of the last decades, although they were sporadic, have pointed out the insufficiency of our knowledge in the field of tanaidacea fauna, not only at the level of the species of high depths, difficult to collect, but also of the species near the shore, where their capture doesn't require a special equipment.

If we refer only to the area of Central and South America we ascertain that after 1973 more than 30 new species were described, some of them being representatives of some unknown genera, as: *Calozodion* Gardiner, 1973, *Parapagurapseudopsis* Brum, 1973, *Halmyrapseudes* Băcescu and Guțu, 1974, *Discapseudes* Băcescu and Guțu, 1975, *Paraleiopus* Brum, 1978 and *Paradoxapseudes* Guțu, 1991.¹

Under these circumstances it doesn't look strange that in a small number of specimens, collected from the Colombian Pacific Coast and representing only three species, two of them are new to science, which are the subject of this paper, however the first one referring especially to the Colombian tanaidacea.

¹ Genus *Cirratodactylus* Gardiner, 1973, was not mentioned taking into consideration that it synonymises genus *Psammokalliapseudes* Lang, 1956, according to Băcescu and Absalao (1985).

SUBORDER APSEUDOMORPHA Sieg, 1980
Family PARAPSEUDIDAE Guțu, 1981
Genus *Discapseudes* Băcescu & Guțu, 1975

***Discapseudes colombiensis* n.sp.**
(Figs 1-5)

Material: 2 specimens, females (1 with marsupium and 1 with oostegites), Punta Soldado (Bahia de Buenaventura) on intertidal flat, in burrows, near mangrove zone (Fig. 9); September 27, 1983; Leg. Gabriel E. Ramos.

Description of the female paratype (male unknown):

Body: (Fig. 1 A), cylindrical, strongly chitinous; almost 6 times longer than its maximum width, from the level of the first free pereonite; length, 11 mm.

Carapace together with the rostrum is almost as long as wide; it has no spine-like apophysis. Rostrum triangular, strong, wide at its base. Eyelobes present, without spine-like apophysis; visual elements present.

Pereon almost 3.5 times longer than its width from the level of its first free pereonite. Pereonites with rounded margins without spine-like apophysis; laterally, in the rostral half, with 3-4 hairs. The first two free pereonites (about equal in length) are slightly shorter than the following four; also, the last ones, are almost equal in length.

Pleon, formed of five free pleonites and pleotelson. The wide pleonites (taken together being shorter than the carapace length or width) have small hairs on their sides. Dorsally, on all its width, the first pleonite is crossed by a row of hairs. Pleotelson, relatively cylindrical (Fig. 1 C), almost 1.7 times longer than its minimum width, is crossed laterally on all its length by a keel which edge is inserted with small hairs, forming two rows on the latero-dorsal side (Fig. 1 B).

Antennule (Fig. 1 D) distinguishes by fine and long setae on the first article of the peduncle, those on the inner side being longer. The inner flagellum is formed of 10 articles and the outer one of 19, without taking into consideration their common basal article.

Antenna (Fig. 1 E) has its peduncle formed of five articles: the first one with a big inner prolongation and with five plumose setae on the apical inner margin; squama well developed, with 11 setae; the following two articles (the third and fourth) are very short and almost equal, having 6-7 and, respectively, one long plumose seta on the inner side; the fifth article is the longest (being as long as the first two taken together) and has along its inner margin about 24-26 very long plumose setae, divided into two rows, and on the outer margin only four simple setae much shorter than those on the inner edge. Flagellum is formed of six

articles and has long plumose setae on the inner margin, too, 13-14 ones on the first article of the flagellum or only one-two on each of the following five articles. The complex of plumose setae from the inner margin of the antenna forms a real thick tissue; on the outer margin the setae are simpler, short and in a small number.

Labrum, unstudied.

Mandibles (Fig. 1 F, G) have a palpus formed of three strong articles, each of them with very numerous plumose setae, longer or shorter. The first article of the palpus has a group of four spines on the outer apical margin besides numerous plumose setae on the inner margin; also, the following two articles have many plumose setae. Pars molaris common and pars incisiva and setiferous lobe of the right mandible with five denticles and, respectively, five setae of different forms and sizes (Fig. 1 F and detail). Pars incisiva and lacinia mobilis of the left mandible with three, respectively, four strong denticles (Fig. 1 G).

Labium (Fig. 2 A) short, with very small spines on the outer margin. Big, oval lobes with long hair on their sides and, apically, with two short and robust spines (see detail Fig. 2 A).

Maxillule (Fig. 2 B) with biarticulated palpus; 6 setae of different sizes placed apically, on the last article, some of them with a morphological structure of the type of crochets with several hooks (see detail Fig. 2 B). Outer endite (Fig. 2 C) with fine hairs on the outer side; terminally it has eleven strong spines, and two subapical plumose setae. Inner endite with four setae (as those from Fig. 2 D) on the apical side and a tuft of simple hairs in the middle of the both sides.

Maxilla (Fig. 2 E) with numerous setae of different sizes and structures, on each of the four lobes, as in the drawing.

Maxilliped (Fig. 3 A) with a long basis, relatively narrow, with four spine-like short setae placed at the apical-inner end. Palpus with numerous setae, longer or shorter, both on the inner margin and on the outer one. The first article of the palpus with six inner-apical long setae and a spine on the outer margin; the second and the third article with numerous long and short setae on the inner margin and groups of long setae placed apically on the outer margin; the last article of the palpus with many long setae on the apical and inner margins. Endite (Fig. 3 B) with 12 plumose setae on the outer margin and three couplers on the inner one; apically having spine-like morphological structures of different forms. Caudo-distal seta of the maxilliped endite, normal (it is not like a leaf).

Epignath (Fig. 3 C) big, like a scoop, with a strong spine, slightly curved (Fig. 3D).

Cheliped (Fig. 4 A) with a small an oostegite on the coxa. Basis simple, relatively small, twice longer than its maximum width, with a well developed

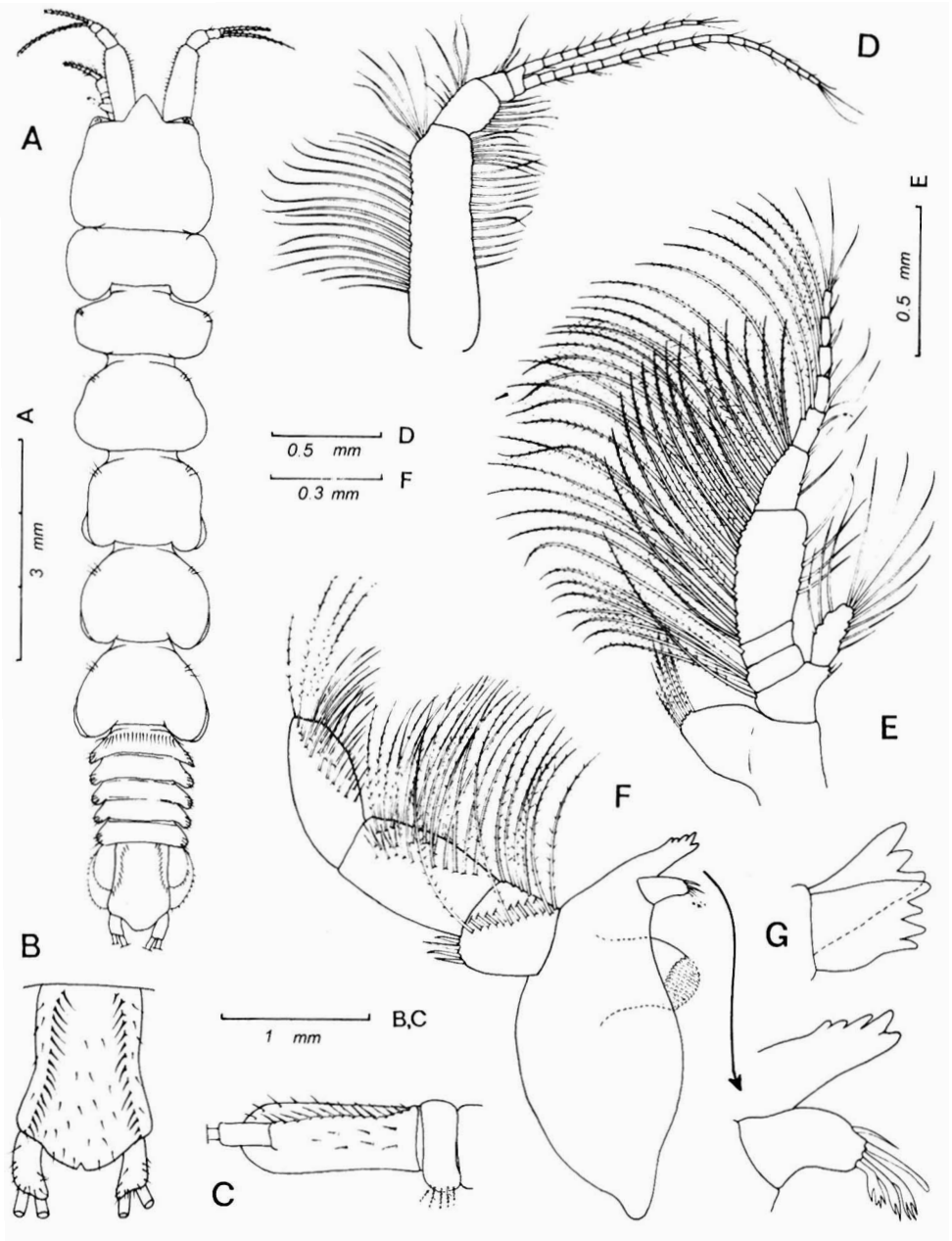


Fig. 1 - *Discapseudes colombiensis* n. sp., female, paratype : A, body (dorsal view); B, pleotelson (dorsal view); C, ditto (lateral view); D, antenna; E, right mandible; F, left mandible; G, pars incisiva and lacinia mobilis of the left mandible.

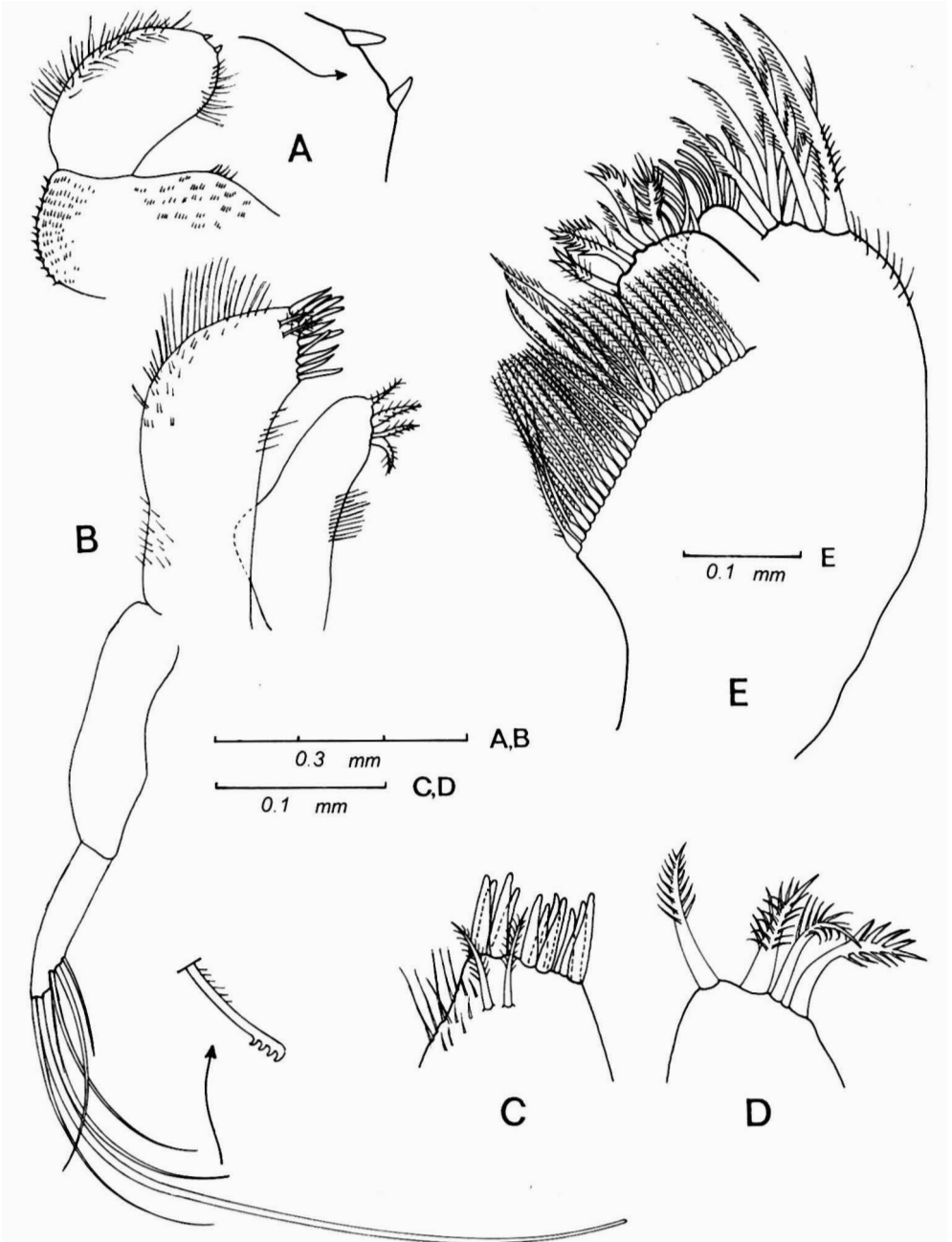


Fig. 2 - *Discapseudes colombiensis* n. sp., female, paratype: A, labium; B, maxillule; C and D, apical end of outer and inner endites of the same.

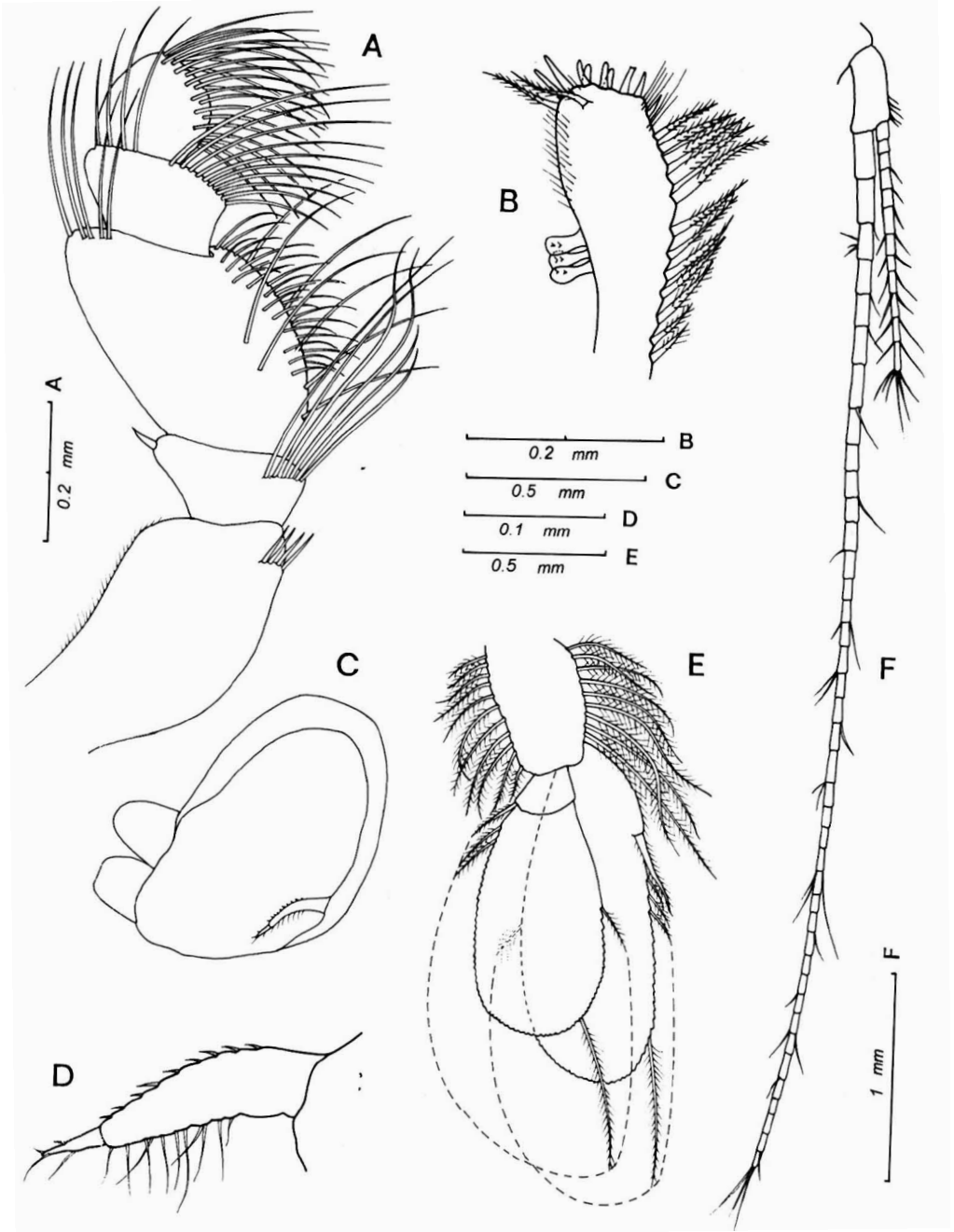


Fig. 3 - *Discapseudes colombiensis* n. sp., female, paratype: A, maxilliped; B, endite of the same; C, epignath; D, spine of the same; E, pleopod; F, uropod.

three-articulated exopodite, the last article having five long plumose setae. Merus almost three times longer than wider, with numerous fine setae on the sternal margin, but also some setae on the both lateral surfaces (inner and outer). Carpus (about 2.7 times longer than wider) is bigger than the basis and has row of simple setae along all its length, and in the apical area of the tergal-rostral margin it has rarely plumose setae. Propodus with a row of 12 simple setae on its outer side, almost near the claw; a group of setae is placed near the joint with the carpus and another one near the joint with the dactylus; finger thin and long with a small claw. Also, dactylus thin, slightly curved, with a small claw.

Pereopod II (Fig. 4 B) with a coxa without a spine-like apophysis. Basis short and thick with a group of five simple long setae at the distal end of the sternal margin. Merus strong, widened at the level of the carpus joint, has a row with over 20 simple long setae on the sternal margin as well a spine at the distal end; another row of simple setae is on the outer surface, placed obliquely, starting from the central area towards tergal corner of its joint with the carpus; some other smaller setae are near the carpus joint. Carpus, lamellar, very short and wide, with numerous very long simple setae on the antero-tergal margin and a strong spine near the propus joint; on the edge of a "ditch" placed behind propus articulation there is a group of six fine long setae, rarely plumose; on the sternal margin also there are long simple setae as well as two spines; another shorter setae are on its outer margin. Propus, also lamellar, with an ample moving capacity at the level of the carpus joint, has numerous simple long setae on the sternal margin, among them being four strong spines; along all antero-tergal margin there are simple long setae as well as two spines near dactylus. Dactylus short and thick, with a very small claw.

Pereopod III (Fig. 4 C) with a uniformly thick basis, almost three times longer than wide, with a few setae in the sterno-distal "corner". Ischium short, with four setae in the sterno-distal end. Merus with a row of simple setae on the sternal margin and another one, oblique, on its outer surface; a fine spine completes the row of setae on the sternal margin. Carpus wide, longer than merus or propus, has two rows of seven-nine fine spines on the sternal side which alternate with simple long setae. Propus much narrower than carpus, has on the sternal margin a single row of six fine long spines, among them being inserted one-two simple long setae; behind dactylus there are some long setae and a fine spine, also long. Dactylus fine, long ended with a thin claw, slightly curved; together with the claw, dactylus is as long as propodus.

Pereopod IV (Fig. 4 D) is of the same size and resembles the previous one.

Pereopod V (Fig. 5 A) longer than the previous two pereopods and almost equal with the following ones. Basis ovoid, slightly thicker and longer than those

of the pereopods III and IV. Merus with a row of simple setae and a subterminal fine spine on the sternal side. Carpus about 2.5 times longer than wide, with two rows of nine fine spines on the sternal side, longer towards distal end inserted with fine long setae. Propus, longer than merus but shorter than carpus, apically has numerous long ciliated setae which surround dactylus. Dactylus short, thick at its base, and the claw also short but pointed and ciliated on the sternal curvature; together with the claw (see detail Fig. 5 A) dactylus is less long than those long ones from the distal end of the propus.

Pereopod VI (Fig. 5 B) resembles pereopod V, excepting the propus and dactylus; propus relatively small, with spines and setae on the sternal margin; dactylus thin and long, with a fine claw, curved.

Pereopod VII (Fig. 5 C) of the same size with pereopod VI but different by: the presence of a row of long plumose setae (about 45) along the whole tergal margin of the basis, and on the sternal one only in its distal half (about 17-18 plumose setae); in addition merus and carpus have long plumose setae on the tergal margin, respectively, three and seven setae. Propus characterised (excepting the presence of the spines and setae on the sternal margin) by an oblique row of short setae, as in the illustration.

Pleopods (Fig. 3 E) in five pairs, biramous, with lamellar big rami. Peduncle with 10-12 long plumose setae on the inner and outer margin. Exopodite biarticulated, shorter than the endopodite. All about both the exopodite and the endopodite have plumose setae shorter or longer whose number is of about 58-60 in the endopodite and 46-48 in exopodite. At the base of each ramus there is a strong spine-like seta.

Uropods (Fig. 3 F) biramous, long, filiform with the exopodite formed of 12 articles and the endopodite of about forty.

Oostegites are in five pairs, those from the chelipeds level being rather smaller than the other ones.

Type locality: Punta Soldado (Bahia de Buenaventura), Pacific Ocean (Colombia).

Etymology: We named this species according to the name of the country where it was collected.

Holotype: female with marsupium (with embrionated eggs) preserved in the collections of "Grigore Antipa" Museum of Natural History, Bucharest (Romania), number 250,108.

Paratype: a female with oostegites, partially dissected, in the same collection, number 250,109.

Remarks: In comparison with the other species of the genus *Discapseudes* (*D.holthuisi* and *D.surinamensis*, both of them described by Băcescu and Guțu,

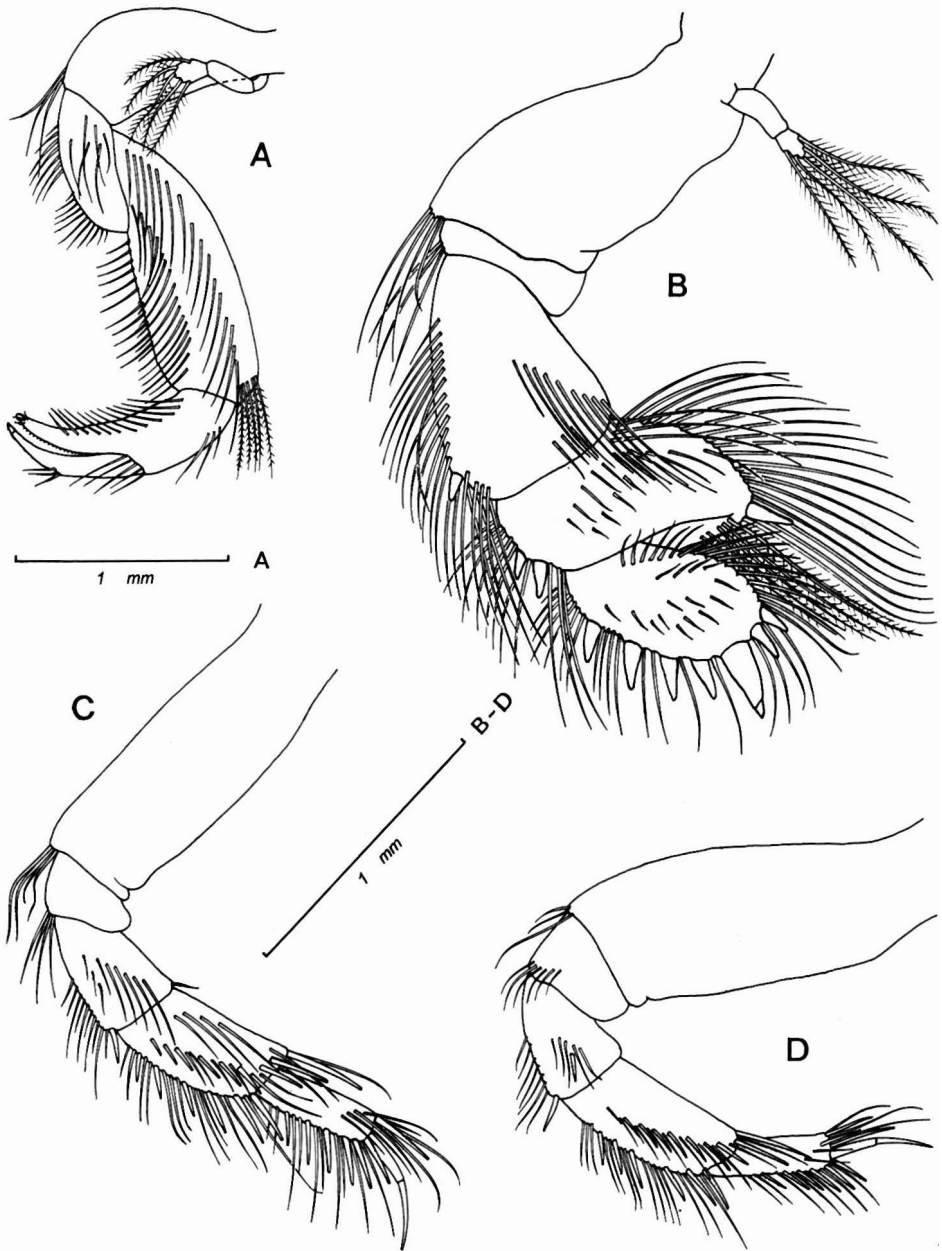


Fig. 4 - *Discapseudes colombiensis* n. sp., female, paratype: A, cheliped; B-D, pereopods II-IV

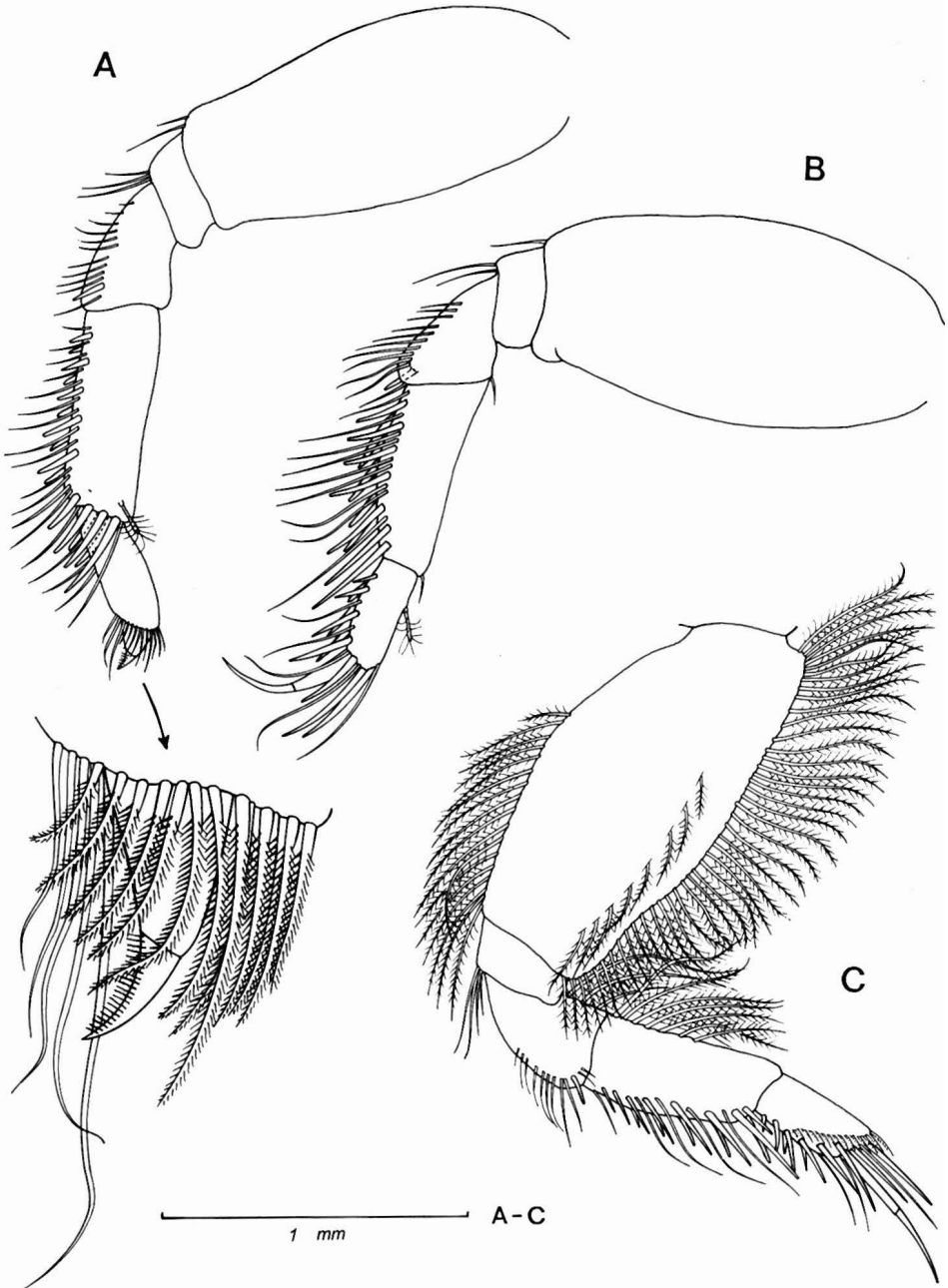


Fig. 5 - *Discapseudes colombiensis* n. sp., female, paratype: A-C, pereopods V-VII.

1975) the new species, *D.colombiensis* distinguishes by the cylindrical form of the pleotelson this thing leading to an easier identification. In addition, *D.colombiensis* n. sp., has a much larger number of articles in the flagelli of the antennule. As regards the other morphological features of the other appendages they resemble in all three species both at the antenna, pereopods II-VII and pleopods level and at the mouth parts level.

Unfortunately, male being unknown in the new species, *D.colombiensis* (whose pleotelson we think that it is as in female) makes us to refrain from other commentaries. As yet for the same reasons the only amendment we can give to the diagnosis of genus *Discapseudes* Băcescu and Guțu, 1975 regards the pleotelson, this one being *like a disk or cylindrical, slightly flattened dorso-ventrally*.

From an ecological point of view, the new species confirms that genus *Discapseudes* consists of species which live in galleries, adapted to the brackish environment from the muddy intertidal marine areas of some bays or lagoons with freshwater near the rivers rich in fine sediments or near mangroves.

Geographically speaking, once again *D.colombiensis* n. sp. confirms the common origin of the fauna of the both coasts (Atlantic and Pacific) of Central America also at the level of some tanaidaceans, as well as of other marine invertebrates. As concern this case, the single difference is given by the disk-like pleotelson in the species of the Atlantic from Surinam (*D.holthuisi* and *D.surinamensis*) and the relatively cylindrical pleotelson in *D.colombiensis* n. sp. from the coast of the Colombian Pacific.

Taking into consideration the large marine surfaces, unstudied yet, which are influenced by the freshwaters from both the north-eastern coast and the western one of the South American continent the discovering of some other species belonging to genus *Discapseudes* has to be taken into consideration. They will be able to confirm if the pleotelson form (cylindrical or like a disk) is steady or not at the two coasts, finally leading to some conclusions of an evolutive nature.

SUBORDER TANAIDOMORPHA Sieg, 1980

Family PARATANAIDAE Lang, 1949

Genus *Paratanais* Dana, 1852

***Paratanais denticulatus* n.sp.**

(Figs 6-8)

Material: 5 specimens (4 females and 1 manca), Isla Gorgonilla (near Isla Gorgonia), in a conglomerate of shells, sponges, sand etc. near of low

intertidal zone, during an unusual very low tide (Fig. 9); 22 January 1992; Leg. R. Franke.

Description of the female paratype (unknown male):

Body (Fig. 6 A) robust, relatively cylindrical, having 4.2 mm; about 6 times longer than its width from the level of the carapace.

Carapace, much narrowed in the rostral side, is as long as its maximum width. Ocular lobes present with visual elements. Dorsally the carapace is crossed by less calcified areas, forming a drawing as in Fig. 6 A.

Pereon (formed of six free pereonites with the lateral margins almost parallel), is about three times longer than wide. The first pereonite, very short, and the second one, slightly longer, have a fine seta on each of their antero-lateral curves. Each of the following four pereonites are about once and a half longer than the first one.

Pleon with five very short pleonites and pleotelson; it has a third from the whole length of the body. The first four pleonites have a short hair each laterally, in the middle. Pleotelson, shorter than wide, is as long as three pleonites of as the last pereonite.

Antennula (Fig. 6 B) sums up four articles. The first article, 1.8 times longer than its maximum width, is the largest; on its outer side it has a simple long seta and some sensorial setae in the distal half. The second article, twice shorter than the first one, has a simple long seta and more sensorial on the outer side, apically. The third article, shorter than the previous one, has a simple seta terminally, on each side. The fourth article, the thinnest one, is as long as the previous 2 taken together; apically it has three long setae and two shorter.

Antenna (Fig. 6 C) formed of six articles, the first one being fused with the carapace. The second article is the widest and, in the same time, longer than the third or the fifth, but shorter than the fourth. The third article has a strong spine terminally, on the inner side. The fourth article is thin and twice longer than the fifth. The sixth article, very short, has two simple long setae and two short.

Labrum (Fig. 6 D) relatively wide, with two rows of small hairs.

Mandibles (Fig. 6 E, F) strong, with pars molaris well developed. Right mandible with a pointed pars incisiva and denticulate in the rostral margin, without lacinia mobilis. Left mandible with a very strong pars incisiva, unidenticate, and lacinia mobilis with five small denticles and a large one, apically.

Labium (Fig. 6 G) with two lobes with small spines on the outer lateral margins and some rows of hairs.

Maxillule (Fig. 6 H) with the endite with seven strong spines; on the outer margin it has long hairs towards the apical end and very short towards the base.

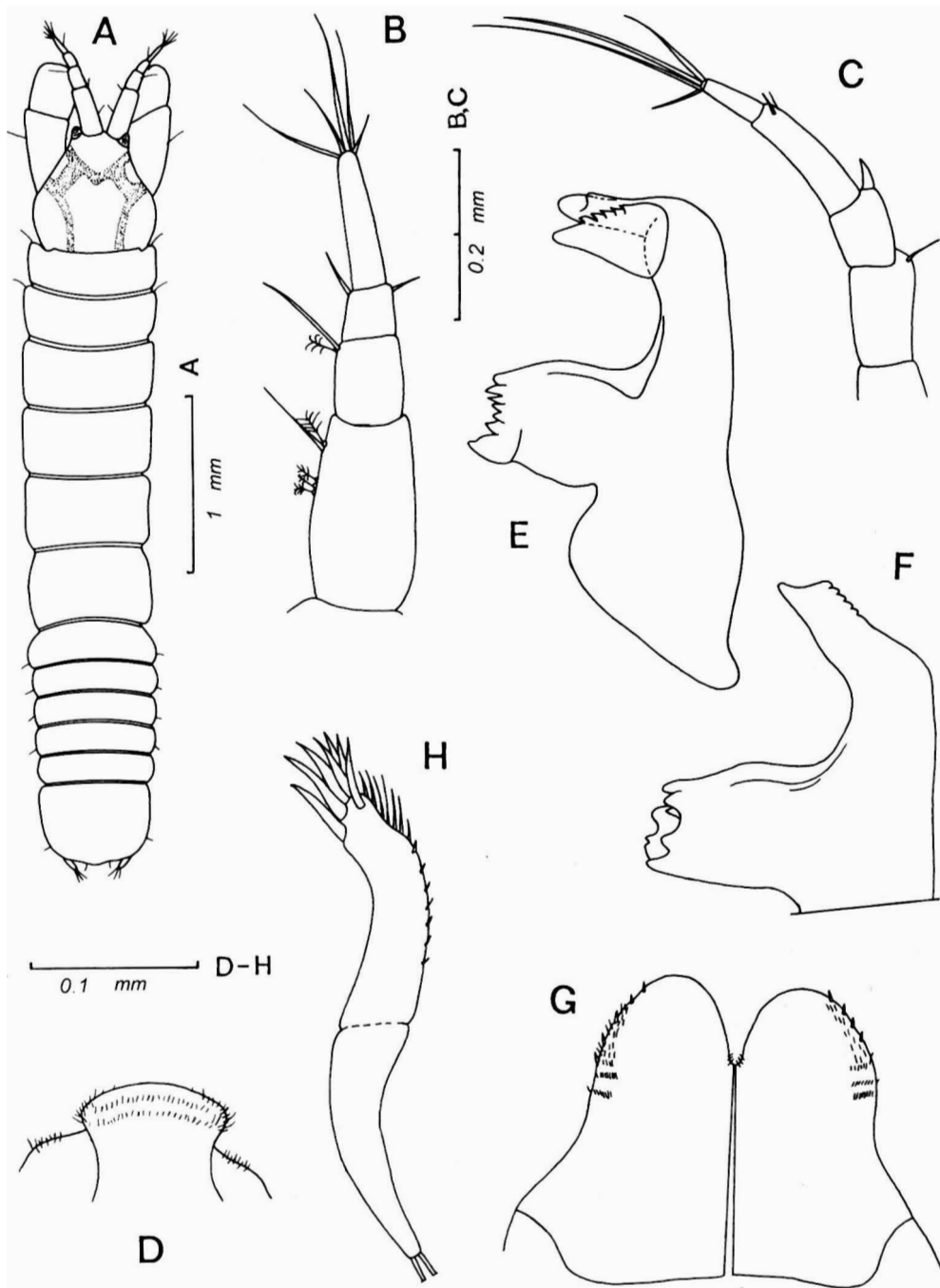


Fig. 6 - *Paratanais denticulatus* n. sp., female, paratype: A, body (dorsal view); B, antenna; C, antenna; D, labrum; E and F, left and right mandibles; G, labium; H, maxillule.

Unarticulated palpus ended with two fine setae.

Maxilla: unstudied.

Maxillipeds (Fig. 7 A) with long and narrow bases fused in the proximal area, and in the distal one a simple seta on the inner side. Palpus decreases in its thickness from the first to the last article. The first article simple; the second has a simple long seta on the inner side, another one smaller, ciliate, as well as a strong spine with two-three denticles relatively big (Fig. 7 A, B, C). The third article with four ciliate setae (three big and one small), on the inner margin. The last article with four long ciliate setae and a small one, placed apically, and a simple seta, subapical, on the outer margin. Inner lobes serrated on the outer-apical margin (Fig. 7 D); on the inner side with a long subapical seta and with two tuber-like formations, apically.

Epignath: unstudied.

Cheliped (Fig. 7 E) strong, with a well developed coxa. Basis relatively short and wide, without setae or spines. Merus narrow, almost as long as the basis, with a seta at the distal end. Carpus thick, widened at the level of the propus joint, with two hairs on the tergal margin and a simple seta within the sternal angle. Propus strong, with two setae on the sternal margin and two on the tergal one, at the base of the finger; claw short and thick. Dactylus curved, does not exceed the propus length; claw strong.

Pereopod II (Fig. 8 A) much longer than the following ones. Coxa small. Basis long and thin, with a seta on the tergal margin, placed proximally. Ischium short, with a sternal seta. Merus longer than carpus but shorter than propus, apical-sternally with two small setae. Carpus about twice longer than wide, with two tergal setae at the distal end and two small ones, apically. Propus relatively thin with two simple setae and two sensorial ones at the level of the dactylus joint. Dactylus short, thin, with a very long curved claw.

Pereopod III (Fig. 8 B) with the basis slightly thicker than that of the pereopod II. Ischium short with a small seta. Merus thick, shorter than carpus with a seta and a small spine, apical-sternally. Carpus shorter than propus with three spines (one big and two small) at the level of the distal joint. Propus long and thin, apical-sternally with a seta. Dactylus short, thin with a long claw, slightly curved.

Pereopod IV (Fig. 8 C) almost like pereopod III.

Pereopod V (Fig. 8 D) with the basis approximately as big as those of pereopods III and IV. Ischium very short. Merus with two strong spines on the apical-sternal margin. Carpus thick, with three spine (one of them big) at the level of the propus joint, a subterminal seta (on tergal side) and a row of spinules on the distal half of the sternal curve. Propus with sensorial seta in the middle of the

tergal edge and three subapical spines, one of them behind dactylus and two in front of it. Dactylus thick and strong with a small claw.

Pereopod VI (Fig. 8 E) resembles pereopod V but its basis is stronger and carpus has four strong spines, apically.

Pereopod VII (Fig. 8 F) resembles pereopod VI having, in addition, three strong ciliate setae and one smaller at the level of propus, apically, behind dactylus.

Pleopods (Fig. 8 G) biramous, in five pairs. Endopodite unarticulated with fine hairs on the inner margin and two setae at the distal end with a different morphology from the other plumose setae from the outer margin. Exopodite with long plumose setae on the outer margin, apically.

Uropods (Fig. 8 H) biramous with a long thin unarticulate exopodite ended in three-four setae and a biarticulated endopodite with five simple setae, placed apically.

Type locality: Island Gorgonilla, Pacific Ocean (Colombia).

Etymology: from the Latin word *denticulatus* "dented", making reference to the spine on the second article of the maxilliped palpus.

Holotype: female, preserved in the collections of "Grigore Antipa" Museum of Natural History, Bucharest (Romania), number 250,110.

Paratype: 4 specimens (3 females, one of them dissected and 1 manca) are preserved as follows: 2 females (1 dissected) and 1 manca in the collections of the same museum, number 250,111 and 1 female in the first author's collection.

Remarks: New species, *Paratanais denticulatus*, differs from the other ones by the presence of two-three big denticles and the last spine of the second article of maxillule palpus. From this point of view, the only closed species is *P.spinanotantus* Sieg, 1981. But, as results from Sieg's remarks (1981, p. 1277) and from the illustration (Fig. 2, op. cit.) species *P.spinanotandus* the spine we are talking about is "serrate" and in the species described by us it is obviously denticulated (see Fig. 7 B, C). Besides this, there are other differences, such as:

- whole length of the pleonites in comparison with that of pereonites (in *P.spinanotandus* they are as long as the two free pereonites, and in the species described by us, *P.denticulatus*, they are as the first three pereonites);

- the length of the second article of the antenna in comparison with the fourth (in *P.spinanotandus* the second article is longer than the fourth, and in *P.denticulatus* n. sp., shorter);

- the presence or the absence of the little spines on the lobes of the labium (they are absent in *P.spinanotandus*);

- the presence or the absence of the dentiform prolongation on the apical-outer sides of the inner lobes of the maxilliped (in *P.spinanotandus* with short setae);

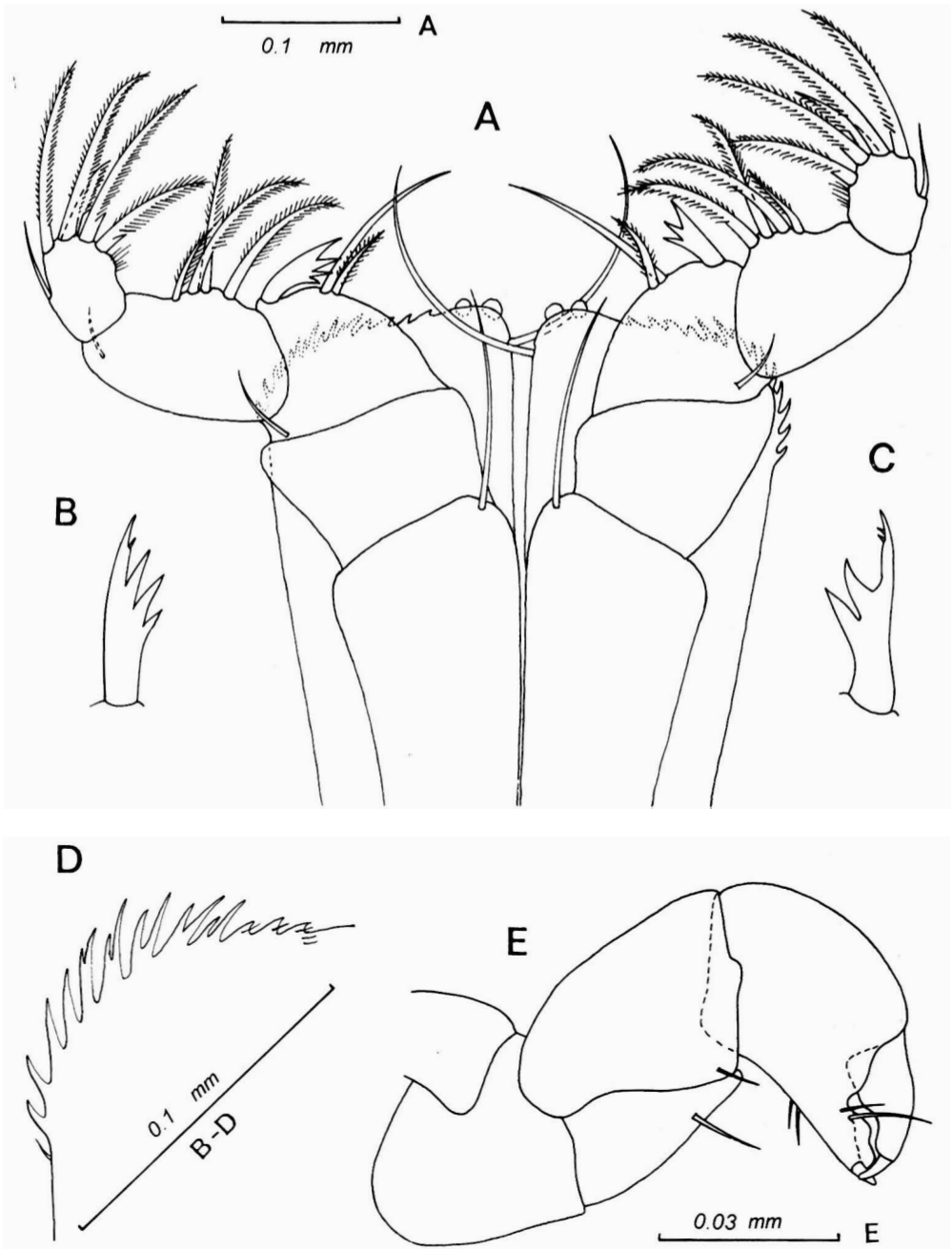


Fig. 7 - *Paratanais denticulatus* n. sp., female, paratype: A. maxillipedes; B and C. denticulated spine of second article of palpus of the same; D. external end of inner lobe of the same; E. cheliped.

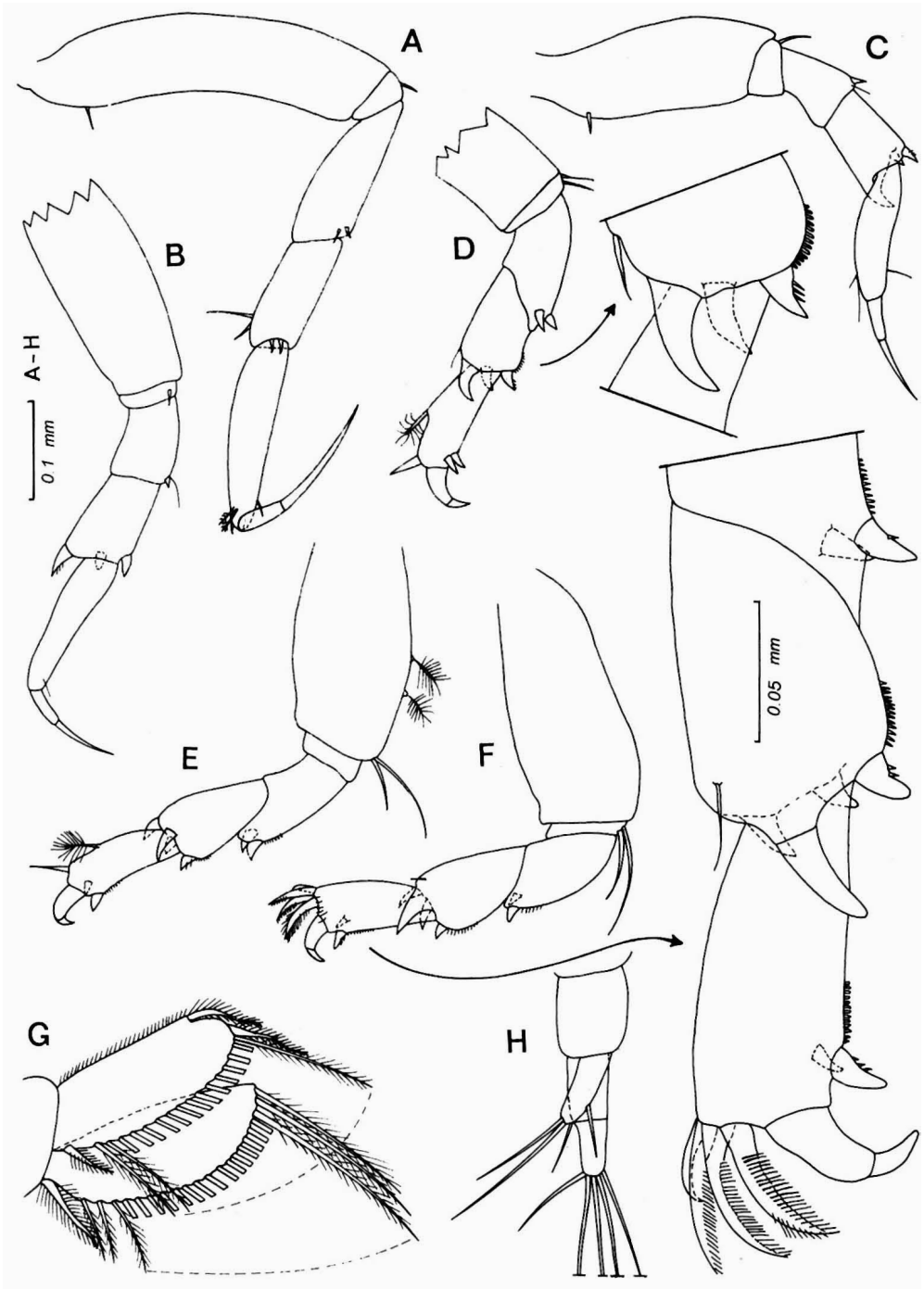


Fig. 8 - *Paratanais denticulatus* n. sp., female, paratype: A-F, pereopods II-VII; G, pleopod; H, uropod.

- the merus length of the pereopod II in comparison with the propus (in *P.denticulatus* merus is shorter)

- the different number of the ciliate setae on the distal end of the propus of pereopods VII (in *P.denticulatus* there are four and in *P.spinanotandus*, only three);

- the form and size of the spines on the carpus of the pereopods III-VII (generally bigger in *P.denticulatus*)

According to the specialised literature it is for the first time when the presence of the genus *Paratanais* is mentioned in the continental waters of Eastern America not only in the Colombian ones.

Family TANAIDAE Dana, 1852

Genus *Sinelobus* Sieg, 1980

Sinelobus stanfordi (Richardson, 1901)

Material: 6 specimens (1 male, 4 females and 1 juvenile): Ensenada de Utria (Department Chocó), between algae, within branches of *Pocillopora robusta* Verrill; deep: 5m (Fig. 9); August 1, 1984; Leg. Gabriel E.Ramos.

The present mention of the species *Sinelobus stanfordi* is the third one in the area of the Eastern Pacific Ocean and, in the same time, the first near the continental coast; the other two mentions are for the Clippertone Island (Richardson, 1901) and Galápagos Islands (Lang, 1958, Gardiner, 1975).

Also, the presence of this species was mentioned before in the Western Atlantic (Florida, Brazil, Uruguay and Argentina), Caribbean Sea (Santa Lucia Island) and South-western (Bismark Archipelago) Pacific Ocean, as Gardiner (op. cit.).

Being a strongly euryhaline species (see Gardiner, op. cit.) its distribution range is, maybe, much larger.

TANAIDACEE (CRUSTACEA, PERACARIDA) DIN APELE PACIFICULUI
COLUMBIAN, CU DESCRIEREA A DOUĂ SPECII NOI

REZUMAT

Deși cercetările din ultimele două decenii privind sistematica tanaidaceelor au mărit considerabil numărul speciilor descrise, se menține, în continuare, insuficienta lor cunoaștere. O dovadă în acest sens o constituie și cele



Fig. 9 - The map with the collecting sites of the species.

două specii noi, *Discapseudes colombiensis* n.sp. și *Paratanais denticulatus* n.sp., (din cele trei constatate pentru moment pe Coasta est-columbiană), descrise în prezenta lucrare, prima, de altfel, cu referire specială la tanaidaceele din Columbia. În plus, studiul lor a permis extinderea ariei de răspândire la nivelul genurilor cărora le aparțin sau la nivel de specie - cazul lui *Sinelobus stanfordi* (Richardson, 1901) - ca și amendarea diagnozei genului *Discapseudes* Băcescu și Guțu, 1975.

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