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CONTENTS

J. W. WHITEHOUSE & B. G. LEWIS, The effect of diet and density on development, size and egg production in <i>Cyclops abyssorum</i> Sars, 1863 (Copepoda, Cyclopoida)	225
JOHN W. NEALE & HENRY V. HOWE, New cold water Recent and Pleistocene species of the ostracod genus <i>Cytheropteron</i>	237
J. J. GONOR & S. L. GONOR, Variations in appendage setal counts in zoea larvae of four porcellanid crabs (Decapoda Anomura) from Oregon	245
WELDON S. BOSWORTH, Jr., Three new species of <i>Eohaustorius</i> (Amphipoda, Haustoriidae) from the Oregon coast	253
GEORGE F. CRANDELL & B. HORACEK, Stratification in Big Lagoon, California and its effect on copepod populations	261
GEORGE A. SCHULTZ, <i>Ancinus</i> H. Milne Edwards in the New World (Isopoda, Flabellifera)	267
D. H. STEELE, The biology of <i>Parhyalella pietschmanni</i> Schellenberg, 1938 (Amphipoda, Hyaletellidae) at Nosy Bé, Madagascar	276
FRIEDRICH KIEFER, Zur Kenntnis der <i>roubaui</i> -Gruppe der Gattung <i>Hemidiaptomus</i> G. O. Sars (Copepoda)	281
R. S. K. BARNES, A redescription of <i>Macrophthalmus latipes</i> Borradaile, 1903: an ocypodid crab with portunid-like paddles (Decapoda, Brachyura)	292
N. S. JONES, Some new Cumacea from deep water in the Atlantic	297
Notes and News	320
NANCY BARR, Extension of the known range of the crab, <i>Cryptolithodes typicus</i> Brandt, to Amchitka Island, Alaska (Decapoda, Anomura, Lithodidae)	320



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ANCINUS H. MILNE EDWARDS IN THE NEW WORLD
(ISOPODA, FLABELLIFERA)

BY

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Four species of *Ancinus* are present in the New World. Say (1818) described *Naesa depressa* from Egg Harbor, New Jersey, and it was later put in *Ancinus* by H. Milne Edwards. Richardson (1909), who discussed the early taxonomic considerations of the species, redescribed a female specimen from Woods Hole, Massachusetts. Richardson placed the genus in the family Ancinidae. Hansen (1905) placed the species in the platybranchiate part of the subfamily Sphaerominae (section Ancinini) of the Sphaeromatidae. Loyola e Silva (1963) follows Hansen in placing the genus in the Sphaeromatidae.

Holmes & Gay (1909) described *Ancinus granulatus* from 5.5 m deep near the Coronado Islands, Mexico, close to the southern border of California. Menzies & Barnard (1959) described *Ancinus daltonae* from 17.5 m deep on the shelf just north of San Miguel Island, about 150 miles north of the type-locality of *A. granulatus*. Trask (1970) described a third species from southern California waters which he called *Ancinus seticomvus*. It is one of the objects of this study to show that *A. seticomvus* Trask is a junior synonym of *A. granulatus* Holmes & Gay.

Menzies & Barnard (1959) state that the "only other known member of the genus" *Ancinus* is *A. depressus* (Say) from the east coast of the United States. Menzies & Frankenberg (1966), who recorded and redescribed *A. depressus* from Georgia, stated that *A. depressus* and *A. daltonae* are the only known members of *Ancinus* from the United States. Menzies & Barnard, Menzies & Frankenberg, and Trask obviously overlooked the work of Holmes & Gay (1909).

The type-specimens of *Ancinus granulatus* Holmes & Gay were examined at the National Museum of Natural History (USNM 39046—male 8 mm, female 6 mm long) and were found to be morphologically the same as paratype specimens of *A. seticomvus* Trask from Coal Oil Beach, Santa Barbara, California, also examined by the author. The holotype male of *A. granulatus* has six or seven setae on the process on the inside proximal part of the propodus of pereopod II, a character which is diagnostic for *A. seticomvus* according to Trask (1970: 148). The setal number on the process of the propodus of pereopod II is not a good character to use for specific distinction; it will be discussed briefly later. The holotype male of Holmes & Gay and the paratypes of Trask are very similar in all

characters which could be viewed without dissection, so the specimens must be considered to be the same species.

Specimens labeled *Ancinus daltonae* in the collection of the Allan Hancock Foundation (University of Southern California) from 22 stations off southern California were examined, but only at two stations did the specimens prove to be *A. daltonae* Menzies & Barnard. All other specimens were of *A. granulatus* Holmes & Gay (see table I). In order not to confuse the species again a short diagnosis of both species from California is included. The species *A. depressus* (Say) from the east coast is also briefly redescribed and the distribution plotted on map 1.

TABLE I

"Velero IV" Stations where *Ancinus granulatus* Holmes & Gay, 1909, was caught

Stat. No.	Number, sex, length (mm)	Depth (m)	Stat. No.	Number, sex, length (mm)	Depth (m)
6367	1 ♀ 4.0	6.1	6410	1 ♀ 5.8	6.7
6384	1 ♂ 9.5	5.5	6412	1 ♀ 5.4 (gravid)	9.1
6388	4 ♀ ♀ (1) 3.0, (3) 4.0	5.5	6414	1 imm. 1.4	6.1
6389	1 imm. 1.4; 2 ♀ ♀ 3.2, 6.5	6.7	6421	1 ♀ 4.6	5.5
6390	1 ♀ 3.0	7.3	6422	1 ♀ 6.0	7.3
6392	5—2 imm. 1.4, 1.8; 2 ♀ ♀ 2.6, 4.4; 1 ♂ 6.2	5.2	6733	4—3 ♀ ♀ 4.8, 7.2, 8.0; 1 ♂ 9.5	25.6
6395	1 ♀ 4.0	7.3	6748	2 ♀ ♀ 2.2, 3.0	3.0
6396	1 imm. 1.1	5.5	6754	3 ♀ ♀ 2.8, 6.0, 7.2	4.3
6405	1 ♀ 2.3	6.7	6756	2 ♀ ♀ 6.2, 7.2 (both gravid)	3.7
6409	1 ♀ 2.8	4.3	6760	6 ♀ ♀ (2) 2.0, (2) 2.2, 2.8, 4.0	3.0

The fourth species of *Ancinus* from the New World is *A. brasiliensis* Lemos de Castro (1959a) from a sand beach in Mangaratiba Bay, west of Rio de Janeiro, Brazil. The species was cited again by Lemos de Castro (1959b). It was later redescribed in detail by Loyola e Silva (1963) from specimens collected near São Paulo, Brazil. In general appearance it resembles *A. depressus* and *A. granulatus*, but not *A. daltonae*. According to Lemos de Castro (1959a: 217-218), however, "*A. brasiliensis* sp. n. is distinguished from *A. depressus* (Say) principally in the form of the body, which is enlarged anteriorly and in the greater length of the telson whose apex is not truncate. It is distinguished from *A. granulatus* Holmes & Gay in possessing a relatively narrower body and in the smoother surface. *A. brasiliensis* differs still more from the species cited in that it possesses antennulae visibly longer than their antennae and it has a greater number of flagellar articles." Loyola e Silva (1963) illustrated the species in detail and his dorsal and lateral views are reproduced here (fig. 1E). A short discussion of the three species from North America follows:

Ancinus granulatus Holmes & Gay, 1909

Synonym: *Ancinus seticomvus* Trask, 1970.

The species has been found in southern California from Santa Barbara to the

Mexican border, including the Coronado Islands just south of the border in Mexico. It was taken from the wet sandy beach to 29.6 m deep off the coast. All specimens were collected on the continental shelf never more than a few miles beyond the shore. The 24 locations where the species was collected, including those of Holmes & Gay (type-locality) and Trask, are plotted on map 2. Specimens taken at "Velero IV" stations by the Allan Hancock Foundation between August 31 and December 7, 1959, are listed in table I. They range from 1.1 to 9.5 mm long. The longest specimens are two males both 9.5 mm long. A brief redescription of *A. granulatus* follows:

Cephalon narrower than all peraeonal segments. Frontal margin of body (cephalon and peraeonal segment I) broadly rounded. Short medial fusion of cephalon and peraeonal segment I. Lateral margins of peraeon slightly convex (dorsal view). Pleotelson highly arched; triangular in dorsal view; usually less than three-fourths as long as wide; lateral margins slightly convex than concave as they taper to slightly indented, short posterior margin. Uniramous uropods thin, cylindrical, tapering to point. They reach to about tip of pleotelson in type-specimens. Male peraeopod II with 6 to 8 setae on process on inner proximal margin of propodus. See figure 1F for the structure of male pleopod 2. Trask (1970) included much detail in his description of the species.

Ancinus depressus (Say, 1818)

This species from the east and gulf coasts of the United States has been recorded and described by Richardson (1900, 1901, 1905, 1909) from the northeastern coast of the United States, by Pearse (1952) from Texas and by Menzies & Frankenberg (1966) from Georgia. Menzies & Frankenberg (1966: 43, fig. 19) describe the species in detail. It differs from *A. granulatus* in that it is less broad and not as flat. Actually the differences are very slight, and the greatest separating factor is their geographic location.

Specimens of *A. depressus* including the specimen redescribed by Richardson (1909) from Woods Hole, Massachusetts, were examined at the National Museum. Several specimens in the systematic collection of the Duke Marine Laboratory, Beaufort, North Carolina, were also examined. The locations of the species represented in these collections range from Woods Hole, Massachusetts, to near Brownsville, Texas. Specimens were taken from sandy beaches out to moderately deep water on the inner shelf (map 1). Only one specimen was taken from far off shore (near Cape Lookout, North Carolina) and it was collected from a depth of only 10 m. The deepest recorded location is 12.8 m for a specimen from Delaware Bay; however, for many specimens the collection depth was not recorded so that deeper records might turn up. The longest specimen on record is the 13.0 mm long male from Delaware Bay.

Fifty-six specimens were observed and all meet the general criteria of the definition of *A. depressus* (Say) which follows: Cephalon and peraeonal segment I fused medially for short portion of length. Pleotelson usually about three-fourths

as long as wide. Uropods both slightly shorter and slightly longer than posterior extension of pleotelson in specimens examined. Swellings apparent on lateral margins of dorsum of peraeonal segments V, VI and VII. Male peraeopods II with 6 to 8 setae on process on inner proximal margin of propodus.

***Ancinus daltonae* Menzies & Barnard, 1959**

In addition to the type-locality (AHF St. 4819, holotype female 4.0 mm; paratypes and immature specimens: 1 immature 2.0, 1♀ 3.4 and 1♂ 6.0 mm) the species was collected east of Pt. Pinos in Monterey Bay at 19.2 m. Six specimens were collected—1 immature and 5♀ 4.1 (12 eggs), 3.0, 2.4, and (2) 2.0 mm. The type-locality is given by Menzies & Barnard as "off Pt. Conception." Since the coordinates of the station where the type-species was collected are 34°26'30"N 120°28'10"W and the station is on the shelf off San Miguel Island, it is best to consider the type-locality as being on the shelf off San Miguel Island not "off Pt. Conception." A deep water channel separates that island from mainland Pt. Conception. The two locations from which the species was taken suggest that it has a range further north than *A. granulatus*.

The species is quite different from other species of the genus in being more flattened and in having a very narrow cephalon when compared to the peraeon. The peraeonal segments (II to VII) have epimeres which are distinctly cut off from the peraeonal segment itself and which are almost completely visible in the dorsal view. In lateral view only the narrow edges of the epimeres are visible. The pleotelson has concave lateral margins which abruptly taper to a very narrow posterior margin. The uropods are longer than the pleotelson; they are flattened dorsally and are triangular in cross section. The inner sharp edge is fringed with setae. A short redescription of the species follows: Cephalon and peraeonal segments I and II forming broadly rounded anterior margin of body. Lateral margins of peraeon convex giving oval appearance to body. Peraeonal segment VI widest of peraeonal segments. Pleotelson triangular, lateral margins concave with anterior margin very short and rounded. Uropods longer than posterior extension of pleotelson, flattened with outer margin straight, inner margin convex and fringed with setae. Apex acutely pointed. Uropod triangular in cross section. Male with short, small spine about one-fourth distance from tip to base, visible in dorsal view. The holotype female is 4.8 mm long (Menzies & Barnard recorded it as 4 mm), the allotype male is 5.6 mm long. A paratype 6.0 mm long is illustrated in figure 1G. The largest specimen from near Pt. Pinos is a female 4.1 mm long with 12 eggs in the unbroken marsupium.

All specimens of *Ancinus* have the medial portion of the cephalon fused to peraeonal segment I. This was missed by Holmes & Gay, Trask and Menzies & Frankenberg in their respective descriptions. It was mentioned and illustrated by Richardson (1909) for *A. depressus* and by Loyola e Silva (1963) for *A. brasi-*

liensis. In *A. daltonae* there is a suture along the entire length of the division which is noticeably more shallow in the medial portion. The epimeres along the lateral margins of pereaeonal segments II to VII are well defined in all species.

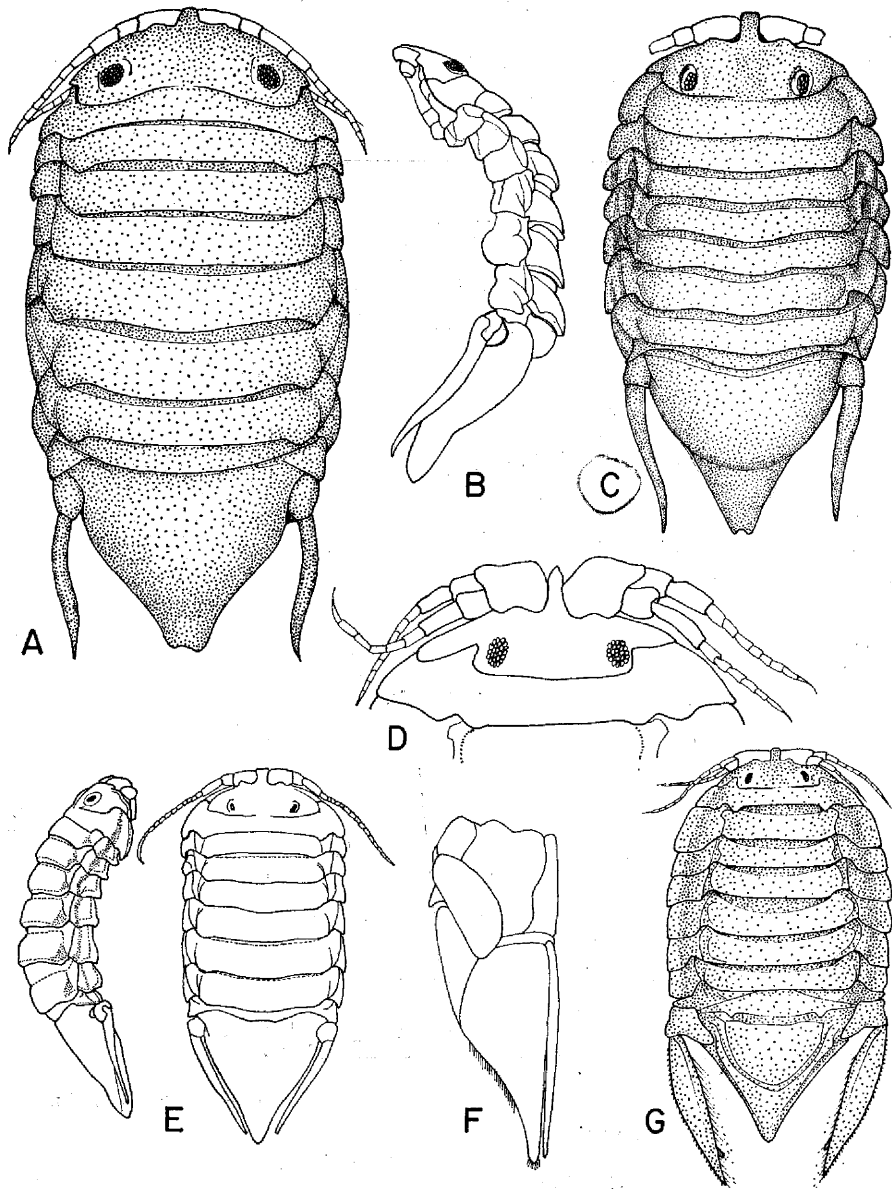
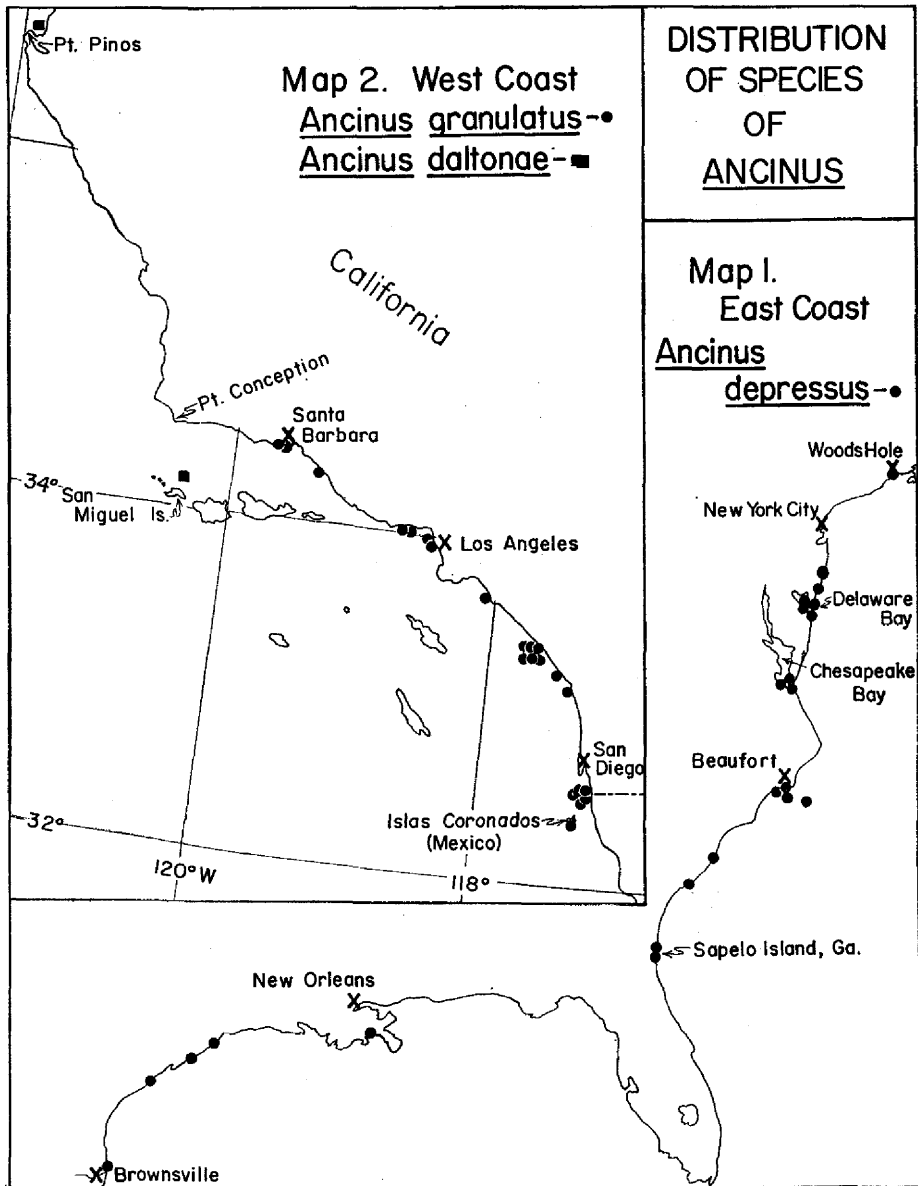


Fig. 1. A, *Ancinus depressus* (Say, 1818) (female 5.3 mm long); B, *Ancinus granulatus* Holmes & Gay, 1909 (lateral view); C, *A. granulatus* (dorsal view of holotype male, 8 mm long); D, anterior and dorsal views male 4 mm long, after Loyola e Silva, 1963); E, *Ancinus brasiliensis* Lemos de Castro, 1959 (lateral and dorsal views male 4 mm long, after Loyola e Silva, 1963); F, pleopod 2 male, *A. granulatus* (after Holmes & Gay, 1909); G, *Ancinus daltonae* (paratype male, 6 mm long).

They are best seen in lateral view (fig. 1B, E) in all species except *A. daltonae*.

Richardson's illustration of *A. depressus* (Say) (modified) and an original illustration of the holotype specimen of *A. granulatus* Holmes & Gay are included here (fig. 1A, C). A male paratype of *A. daltonae* is also illustrated (fig. 1G). It should be noted that the entire area of each epimere is clearly visible in the dorsal view in specimens of *A. daltonae*. The illustration of *A. brasiliensis* (fig. 1E) is taken from the work of Loyola e Silva (1963). Schultz (1969: 115, fig.



157) wrongly called *A. daltonae* by the name *A. granulatus*. *A. granulatus* is more like *A. depressus* (see Schultz, 1969: 114, fig. 156).

The setal number on the process on the proximal inner margin of the propodus of male peraeopod II was cited by Trask (1970: 146, fig. 1G) as the key character which could be used to separate *A. granulatus* from *A. depressus*. Personal examination of that character on all male specimens (tables I and II) of both species was undertaken by the author and from 6 to 8 setae were present although it was difficult to count the exact number on some of the male propodi. Trask illustrated the setae in a misleading manner. They run transversely or on a slight angle to the long axis of the appendage and they look like a small comb running across the process on the propodus. They are not arranged longitudinally on the appendage as implied in the illustration of Trask. He states that there is only a single seta on the process of the propodus of *A. depressus* (Say), but 6 to 8

TABLE II

Stations at which *Ancinus depressus* (Say, 1818) was caught. The list includes specimens in the National Museum, the Duke Marine Laboratory Systematic Collection, those collected by Menzies & Frankenberg (1966) from Georgia and by Pearse (1952) in Texas.

USNM No. DML No. (*)	Location	Number, sex, length (mm)	USNM No. DML No. (*)	Location	Number, sex, length (mm)
10900	Woods Hole, Mass. (2-3 fms)	1 ♀ 6.0	114043	Beaufort, N.C. (sea buoy)	1 ♂ 11.5
64456	New Jersey	1 ♂ 8.0	86499	Beaufort, N.C.	1 ♀ 7.5
No No.	Egg Harbor, N.J. (type-locality)	12.7 type-specimen	111740	St. Helena Sound, S.C. (Pelican Bank)	1 ♂ 12.5
63266	Cape May, N.J.	1 ♂ 11.0	86498	Georgetown, S.C. (jetty)	1 ♂ 12.5
65903	Shoals off Rehoboth, Del.	4 ♂ ♂ 11.0 11.5, (2) 12.0	M & F St. 126	St. Catherine's Sound, Ga. (off Walberg Creek)	2 ♂ ♂
65904	Delaware Bay (42 ft)	1 ♀ 10.0	No No.	Beach, Wolf Island, Ga.	1 ♀
64447	Off Broadkell River, Del.	1 ♂ 11.5	65781	Grand Island, La. (shore)	1 ♂ 9.5
114040	"Fish Hawk" St. 2289	2 ♀ ♀ both 7.5	86497	Galveston, Tex. (shore)	2 ♂ ♂ 8.5, 8.0
114041	Chesapeake Bay (near Cape Henry Light)	1 ♀ 7.0	86500	Gulf Coast, Tex.	2—1 ♂ 5.0, 1 ♀ 5.0
114042	Chesapeake Bay (near Horseshoe lightship)	3—1 ♂ 13.0, 1 ♀ 8.5, 1 frag.	No No.	Near Port Aransas, Tex. (near shore)	1
*2117	40 miles off Cape Lookout, N.C. (34°36'N, 76°28'W—10 m)	4 ♀ ♀ 9.5, (2)7.0, 3.5	99250	Boca Chica, Tex.	25-10 ♂ ♂, 15 ♀ ♀ (3 to 6 mm long)
*2210	Shackelford Bank, near Beaufort, N.C. (sand at north end)	1 ♂ 11.0			

were observed on all male specimens examined by the author. In a lateral view of the appendage the transverse row of setae can be mistaken for a single seta.

In the drawing of Holmes & Gay (1909: 376, fig. 2a) the setae are not indicated on the propodus because the appendage illustrated is not situated so that they could be shown. In order to view, count and draw them the appendage must be held so that the inner margin is visible. Since the setal number is of no taxonomic value it is not illustrated here. At the present time clear cut distinctions cannot be made to separate *A. granulatus*, *A. depressus* and *A. brasiliensis*.

There are differences in male pleopod 2, but they probably are differences in the style of drawing as well as actual minor differences. When more males of each species are available they can be dissected so that more rigid distinctions can be made.

The author wishes to thank Dr. Janet Haig of the Allan Hancock Foundation (University of Southern California), Dr. Thomas E. Bowman of the National Museum of Natural History (Smithsonian Institution), Dr. I. E. Gray and Dr. William Kirby-Smith of the Duke Marine Laboratory Systematic Collection (Duke University) for their aid in obtaining specimens for this study.

ZUSAMMENFASSUNG

Die vier Arten von *Ancinus* H. Milne Edwards aus küstennahen benthischen Habitaten in der Neuen Welt werden erörtert. Eine Abbildung von jeder Art und Karten ihrer geographischen Verbreitung werden vorgelegt. Die Arten *Ancinus depressus* (Say, 1818) (Typus-Art), *A. granulatus* Holmes & Gay, 1909 und *A. brasiliensis* Lemos de Castro, 1959 haben eine sehr ähnliche Morphologie. Am wenigsten ähnlich ist *A. daltonae* Menzies & Barnard, 1959.

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ADDENDUM

During the time that this paper was in press a paper on New World species of *Ancinus* was published by Dr. Jayme de Loyola e Silva—1971 *Sobre os gêneros Ancinus* Milne Edwards, 1840 e *Bathycopea* Tattersall, 1909, da coleção U. S. Nat. Mus. (Isopoda-Crustacea). Arq. Mus. Nac. Rio de Janeiro, **54**: 209-223. I agree with his placement of *Ancinus daltonae* Menzies & Barnard in *Bathycopea* Tattersall. However, I do not agree with his placement of the remaining three species in the single species *A. depressus* (Say). The distinctions now made between species are slight, but after more specimens, especially males, are examined there is in my opinion a very good chance that better criteria for distinguishing the species will be discovered.