

Gulf and Caribbean Research

Volume 7 | Issue 2

January 1982

Tanaidacea (Crustacea: Peracardia) of the Gulf of Mexico. I. Introduction and an Annotated Bibliography of Tanaidacea Previously Reported from the Gulf of Mexico

John T. Ogle
Gulf Coast Research Laboratory

Richard W. Heard
Gulf Coast Research Laboratory

Jurgen Sieg
Universitat Osnabruck

Follow this and additional works at: <https://aquila.usm.edu/gcr>



Part of the [Marine Biology Commons](#)

Recommended Citation

Ogle, J. T., R. W. Heard and J. Sieg. 1982. Tanaidacea (Crustacea: Peracardia) of the Gulf of Mexico. I. Introduction and an Annotated Bibliography of Tanaidacea Previously Reported from the Gulf of Mexico. *Gulf Research Reports* 7 (2): 101-104.
Retrieved from <https://aquila.usm.edu/gcr/vol7/iss2/1>
DOI: <https://doi.org/10.18785/grr.0702.01>

This Article is brought to you for free and open access by The Aquila Digital Community. It has been accepted for inclusion in *Gulf and Caribbean Research* by an authorized editor of The Aquila Digital Community. For more information, please contact Joshua.Cromwell@usm.edu.

TANAIDACEA (CRUSTACEA:PERACARIDA) OF THE GULF OF MEXICO. I. INTRODUCTION AND AN ANNOTATED BIBLIOGRAPHY OF TANAIDACEA PREVIOUSLY REPORTED FROM THE GULF OF MEXICO

JOHN T. OGLE¹, RICHARD W. HEARD¹ and JÜRGEN SIEG²

¹Gulf Coast Research Laboratory, Ocean Springs, Mississippi 39564

²Universität Osnabrück, Abt. Vechta, Driverstraße 21, D-2848 Vechta

ABSTRACT A brief summary of the biology and a historical review are presented for the Tanaidacea. An annotated bibliography is provided for published reports and records of Tanaidacea from the Gulf of Mexico.

This is the first in a series of publications on the Tanaidacea to be published in this journal. The purpose of this series of papers will be to provide a definitive summary of the tanaidaceans from the Gulf of Mexico. Each of the papers to follow, beginning with this volume (Sieg et al. 1982) will deal with range extensions, redescrptions, and descriptions of new species from the Gulf of Mexico. Terminology used in species descriptions and redescrptions will follow the preferences of the senior author of each paper in the series, but will generally conform to that of Sieg (1980).

The order tanaidacea is a minor group of the Eumalacostracean crustaceans which are characterized by having the carapace fused to the first two thoracomeres with the first thoracopod being a maxilliped and the second thoracopod a cheliped. Because the females brood their young in a marsupium, or brood pouch, they are generally accepted as members of the superorder Peracarida. Tanaidaceans are a cosmopolitan group of infaunal, epibenthic or epifaunal forms occurring from the intertidal to the abyssal zone. The few species reported from freshwater habitats have been shown to be euryhaline marine species (Gardiner 1975, Sieg 1981). Tanaidaceans are small, ranging in length from 1 to 37 mm with an average size of 2-3 mm. Tanaidaceans are normally deposit feeders with detritus and associated organisms probably their main food, although one group (Kalliapseudidae) are filter feeders. The gonads are double. Oviducts open laterally at the base of the fourth pair of pereopods. The vas deferentia have a common vesicula seminalis which is ventromedian on the last thoracic segment. Hermaphroditism including both protandry and protogyny as well as gonochorism can occur and sexual dimorphism is common. The first antennae can differ in the two sexes as can the shape of the head, the mouth parts, the chelipeds, the first pair of pereopods, and less frequently the pleopods and uropods. Females may produce several broods, each preceded by a molt in which external morphology may undergo alteration. The eggs develop in a marsupium formed by one or four pairs of oostegites. Newly hatched larvae lack the first pair of pereopods and the pleopods. The young undergo two larval (Manca) stages and a neuter stage.

Gammarus heteroclitus Viviani, 1904, was probably the first tanaidacean described, but normally *Cancer gammarus talpa* Montagu, 1808, is accepted as the first described species. Leach (1814) placed the latter species in a new genus, *Aapseudes*, in the Amphipoda. Milne-Edwards (1828) placed his genus *Rhoea*, equivalent to *Aapseudes*, and a new genus *Tanais* in the Isopoda. Dana (1952) created a new group, Anisopoda, to which he assigned the tanaidaceans and certain isopods considering it to be an intermediate group between Isopoda and Amphipoda. Bate (1868) combined the tanaidaceans with certain isopod taxa into a group he called *Isopoda aberrantia*. Sars (1882) placed the tanaidaceans with the Isopoda under the tribe Chelifera. Claus (1888) created an independent order between the Isopoda and Cumacea that he called Anisopoda after the name proposed by Dana (1852). Hansen (1895) agreed with the affinities but suggested the currently used name Tanaidacea for the order. The view of the Tanaidacea as an independent order is generally accepted by most carcinologists; however, Schram (1981) recently suggested that the tanaidaceans are aligned with the spelaeogriphaceans and the cumaceans, and he relegated them to suborders of the order Hemicaridea, which together with the order Thermosbaenacea, comprise the cohort Brachycarida. Sieg (1982) did not follow Schram's scheme. He viewed Schram's grouping of the Isopoda and Amphipoda in the order Acaridea as inconsistent with many recent studies on the comparative morphology and anatomy of the Peracarida. He pointed out that if the Acaridea is part of the Arthropoda, the sister group of the Brachycarida, one would have to accept the parallel evolution of the unique brood pouch, a concept that cannot be followed without refuting the large amount of data supporting the monophyletic origin of the Peracarida.

The first published report of Tanaidacea for the Gulf of Mexico was that of Richardson (1905) for *Aapseudes propinquus* Richardson, 1902, off the west coast of Florida. It was not until 61 years later that a second record for the order, *Aapseudes spinosus* Sars, 1858, was reported by Dawson (1966) from the northern Gulf. Based on personal collections, and published and unpublished reports, Ogle (1977) listed 18 species from the Gulf of Mexico. The species mentioned by Ogle as "*Aapseudes* n. sp. being

described from Florida" is now known to be *Halmyrapseudes bahamensis* Băcescu and Guțu, 1974 (Sieg, Heard and Ogle 1982) and the *Zeuxo* sp. is *Z. maledivensis* Sieg, 1980 (Sieg 1980). Tanaidaceans were the third most abundant group of benthonic, macroinvertebrate crustaceans taken in the Mississippi-Alabama-Florida, Bureau of Land Management study conducted during 1975–1978 (R. W. Heard, unpublished data). Tanaidaceans were also the third most abundant crustacean food item taken from deepwater fish by Bright (1970). Members of the order have been taken more commonly in Gulf waters with the increase in sampling programs during the past decade. The lack of tanaidaceans collected in early sampling programs in the Gulf was probably due to inadequate sampling methods employed.

The taxonomy of some groups of tanaidaceans at present is unclear and confusing. This is due to the many morphological changes that a given species can exhibit dependent on sex, age and molt stage, the ignorance of specific charac-

ters within each taxa, and upon the uncertain position of the group when it was first established. At present there are four suborders of the order Tanaidacea, one of which, the Anthracoraridomorpha, is represented only by fossils (Sieg 1982). The extant species belong to the Neotanaidomorpha, the Tanaidomorpha, and to the super family Apseudoidea, which is part of the suborder Apseudomorpha. These suborders contain 18 families representing approximately 600 described species. No definitive work on the Tanaidacea of the Gulf of Mexico is presently available and records are limited to only a few published works. The purpose of this series of publications is to produce much new information on the zoogeography, taxonomy, systematics and ecology of the Tanaidacea occurring in the Gulf of Mexico.

ACKNOWLEDGMENTS

We thank Lucia O'Toole for typing the manuscript.

ANNOTATED BIBLIOGRAPHY

- BRIGHT, T. J.
1970. *Food of Deep-Sea Bottom Fishes. Contributions on the Biology of the Gulf of Mexico. Vol. I.* Texas A&M University Oceanographic Studies. W. E. Pequegnat and F. A. Chace, Eds. Gulf Publishing Company, Houston, Texas.
Based upon gut contents of fish, Tanaidacea are listed as the third most abundant macrobenthonic crustacean in the Gulf. No species were determined.
- COOLEY, N. R.
1978. An Inventory of the Estuarine Fauna in the Vicinity of Pensacola, Florida. *Fla. Department Nat. Res., Mar. Res. Pub.* 31. 119 pp.
Lists *Leptochelia* sp. from Pensacola Estuary, Florida.
- DAWSON, C. E.
1966. Additions to the known marine fauna of Grand Isle, Louisiana. *Proc. La. Acad. Sci.* Vol. XXIX:175–180.
Lists *Apseudes spinosus* (M. Sars) from 20 fathoms off Grand Isle, Louisiana.
- FARRELL, D. H.
1979. Benthic molluscan and crustacean communities in Louisiana. *Rice University Studies* 65(4&5):401–436.
Leptochelia sp. listed as present offshore Louisiana 1972–1974.
- FLINT, R. W. and J. S. HOLLAND
1980. Benthic infaunal variability on a transect in the Gulf of Mexico. *Estuarine Coastal Mar. Sci.* 10:1–14.
Lists *Apseudes* sp. A from their stations 2, 3, and 6 and *Kaliapseudes* sp. A from station 3. Stations 2 and 3 were between 30 and 50 m depth and station 6 was between 90 and 140 mm deep on a transect running offshore from Corpus Christi, Texas.
- FOTHERINGHAM, N.
1980. *Beachcombers Guide to Gulf Coast Marine Life.* Gulf Publishing Co., Houston, Texas. 124 pp.
Mentions *Leptochelia dubia* Kröyer as a tube dweller in shells.
- FOTHERINGHAM, N. and S. BRUNENNEISTER
1975. *Common Marine Invertebrates of the Northwestern Gulf Coast.* Gulf Publishing Company, Houston, Texas. 197 pp.
Mentions *Leptochelia dubia* Kröyer as a tube dweller in shells.
- GARDINER, L. F.
1975. The Systematics, Postmarsupial Development and Ecology of the Deep-Sea Family Neotanidae (Crustacea: Tanaidacea). *Smithson. Contrib. Zool.* No. 170. 265 pp.
Neotanais armiger Wolff is known from one female from the Alaminos deep-water cruise 66-A-5 station 5 south of Alabama. (USNM143205).
- GEORGE, R. Y. and P. J. THOMAS
1979. Biofouling community dynamics in Louisiana shelf oil platforms in the Gulf of Mexico. *Rice University Studies* Vol. 65(4&5):553–574.
Reports unidentified tanaidacean as part of fouling community on oil platform off Louisiana June 1972–July 1973.
- HEARD, R. W.
1979. Notes on the Genus *Probythinella* Thiele, 1928 (Gastropod Hydrobiidae) in the coastal waters of the northern Gulf of Mexico and the taxonomic status of *Vioscalba louisianae* Morrison 1965. *Gulf Res. Rept.* 6(3):309–312.
Hargeria rapax (Harger) listed as associate to the Hydrobiid snail *Probythinella louisianae* collected from Mississippi: St. Louis Bay, Back Bay, Biloxi; Davis, Simmons and Heron bayous; west Pascagoula River; and Alabama: East Fowl River and Mobile Bay.
1981. *Guide to Common Tidal Marsh Invertebrates of the Northeastern Gulf of Mexico.* MASGP 79–004.
Hargeria rapax (Harger) and *Halmyrapseudes bahamensis* Băcescu and Guțu illustrated, ecology briefly discussed.
- HENWOOD, T., P. JOHNSON and R. HEARD
1978. Feeding habits and food of the longspined porgy, *Stenotomus caprinus* Bean. *Northeast Gulf Sci.* 2(2): 133–137.
Leptochelia sp. and unidentified Tanaidacea reported from stomach contents of fish collected off the coasts of Mississippi, Alabama, and Florida.
- HOESE, H. D. et al.
1972. Seasonal and spatial setting of fouling organisms in Mobile Bay and eastern Mississippi Sound, Alabama. *Ala. Mar. Resour. Bull.* 8:9–17.
"Tanaids were widespread" in Mobile Bay.

14. LANG, K.
1973. Taxonomische und phylogenetische Untersuchungen über die Tanaidaceen (Crustacea) 8. Die Gattungen *Leptochelia* Dana, *Paratanais* Dana, *Heterotanais* G. O. Sars und *Nototanais* Richardson. Dazu einige Bemerkungen über die Monokonophora und ein Nachtrag. *Zool. Scr.* 2:197-229.
Hargeria rapax (Harger) reported from Florida: Apalachicola Bay; Mississippi: Biloxi, Back Bay, d'Iberville, Deer Island; and Mexico: Vera Cruz.
15. LIVINGSTON, R. J., P. S. SHERIDAN, B. G. McLANE, F. G. LEWIS, III and G. G. KOBYLINSKI
1977. The Biota of the Apalachicola Bay System: Functional Relationships. In: Livingston, R. J. and E. A. Joyce, (eds.) Proc. Conf. on Apalachicola Drainage System 23-24 April 1975, Gainesville, Florida. pp. 75-100. *Fla. Dept. Nat. Res., Res. Pub.* No. 26.
Leptochelia rapax Harger taken as infaunal samples in Apalachicola Bay restricted to *Halodule wrightii* beds, inner side St. George Island. Peak abundance Feb.-April, lowest number in Sept. Also reports a "Tanaid No. 2."
16. MAKKAVEEVA, E. B.
1968. Species composition and distribution of Tanaidacea and Isopods in the coastal region of Cuba. In: ISSLED TZENTR. *Amerikansk. Morei*, Vol. 2, Kiev, Nauk. Dumka. pp. 99-104. (in Russian)
From the northwest coast of Cuba from the Bay of Onada to Cape San Antonio the following species were listed: *Apeudes espinosus* Moore, *A. propinquus* Richardson, *Parapseudes latifrons* (Grube), *Heterotanais* sp., *Leptochelia foresti* (Stebbing), *L. tenuicula* n. sp., *L. elongata* (Dana).
17. McBEE, J. T. and W. T. BREHM
1979. Macrobenthos of Simmons Bayou and an adjoining canal. *Gulf Res. Rept.* 6(3):211-216.
Hargeria rapax (Harger) is reported from Simmons Bayou, Mississippi, and an adjoining dead-end canal of Gulf Park Estates, Ocean Springs, Mississippi.
18. MENZEL, R. W.
1971. Checklist of the marine fauna and flora of the Apalachee Bay and the St. Georges Sound Area. Department of Oceanography, Florida State University Memo. 126 pp.
Lists "*Apeudes alicii* King," *Leptochelia dubia* Kröyer and *Leptochelia rapax* Harger.
19. MILLER, M. A.
1968. Isopoda and Tanaidacea from buoys in coastal waters of the continental United States, Hawaii and the Bahamas. *Proc. U.S. Nat. Mus.* 125(3652). 53 pp.
Reports *Leptochelia dubia* Kröyer taken as fouling from the following buoys in the Gulf: Florida Keys, Sta. 43. Middle Ground South End Buoy No. 11, Sta. 46. Anchorage Lighted Buoy BB, sta. Northwest Channel Entrance Lighted Bell Buoy No. 1, Sta. 48. Obstruction Lighted Whistle Buoy No. 6. Texas Sabine Pass Channel Lighted Buoy No. 9, Sta. 58.
20. ODUM, W. E. and E. J. HEALD
1972. Trophic analyses of an estuarine mangrove community. *Bull. Mar. Sci.* 22(3):671-738.
Leptochelia reported from North River Basin southwest coast of Florida as being abundant and frequently preyed upon. Its diet listed as fine plant detritus, inorganic sediment and benthic diatoms.
21. OGLE, J. T.
1977. Tanaidacea from the Gulf of Mexico: A preliminary summary. Abstract. *J. Miss. Acad. Sci.* Vol. XXII:105.
Listed *Apeudes propinquus* Richardson, *A. espinosus* Moore, *Hargeria rapax* (Harger), *Heterotanais* sp., *Leptochelia elongata* (Dana), *L. forresti* (Stebbing), *L. savignyi*, *L. tenuicula* Makka-veeva, *Parapseudes latifrons* and *Neotanais armiger* Wolff as previously reported from the Gulf and *Pagurapseudes* sp., *Apeudes* sp., *Kalliapseudes* sp., *Zeuxo* sp., *Metapseudes* sp., *Paratanais* sp. and *Leptognathia* as new to Gulf.
22. OVERSTREET, R. M. and R. W. HEARD
1978. Food of the Atlantic croaker, *Micropogonias undulatus*, from Mississippi Sound and the Gulf of Mexico. *Gulf Res. Rept.* 6(2):145-152.
Reports *Leptochelia* sp. as food item.
23. POIRRIER, M. A. and M. M. MULINO
1975. The effects of the 1973 opening of the Bonnet Carré Spillway upon epifaunal invertebrates in southern Lake Pontchartrain. *Proc. La. Acad. Sci.* Vol. XXXVIII:36-40.
Leptochelia rapax present in collections from the lake during 1971 and 1972; was absent in collections taken in August of 1973 allegedly due to the spillway opening.
24. RICHARDSON, H.
1905. A monograph on the Isopods of North America. *U.S. Nat. Mus. Bull.* 54:1-727.
Apeudes propinquus listed as from "Gulf of Mexico."
25. SIKORA, U. B. and J. P. SIKORA
1982. *Ecological characterization of the benthic community of Lake Pontchartrain, Louisiana.* Pub. No. LSU CEL 82-05 Coastal Ecology Lab, Center for Wetland Resources, Louisiana State Univ., Baton Rouge, Louisiana.
Lists *Hargeria rapax* (Harger) as present.
26. SUBRAHMANYAM, C. B., W. L. KRUCZYNSKI and S. H. DRAKE
1976. Studies on the animal communities in two north Florida salt marshes. II. Macroinvertebrate communities. *Bull. Mar. Sci.* 26(2):172-195.
Reports *Leptochelia* spp. with note added in proof that they were determined to be *Hargeria rapax* and *Apeudes* sp. probably *Apeudes alicii*. This species is known to be *Halymarapseudes bahamensis* (see Sieg et al. 1982). Density and distribution in high and low marshes of Wakulla and St. Marks marshes in Apalachee Bay discussed.
27. WHITE, D. C. et al.
1979. Effects of surface composition, water column chemistry, and time of exposure on the composition of the detrital microflora and associated macrofauna in Apalachicola Bay, Florida. In: Livingston, R. J. (ed.): *Ecological Processes in Coastal and Marine Systems.* Plenum Press. 83-116.
Leptochelia rapax (Harger) listed as present.

REFERENCES CITED

- Bate, C. S. 1868. Carcinological Gleanings. No. IV. *Ann. Mag. Nat. Hist.* 17(2):112-121.
- Bright, T. J. 1970. Food of Deep-Sea Bottom Fishes. Contributions on the Biology of the Gulf of Mexico. Vol. I. Texas A&M University Oceanographic Studies. W. E. Pequegnat and F. A. Chase, (eds.) Gulf Publishing Company, Houston, Texas.
- Claus, C. 1888. II. Ueber *Apeudes latreillii* M. Edw. und die Tanaiden. *Arb. Zool. Inst. Univ. Wein.* 7:139-220.
- Dana, J. D. 1852. On the Classification of the Crustacea Choristopoda or Tetrapoda. *Am. J. Sci.* 14:197-306.

- Dawson, C. E. 1966. Additions to the known marine fauna of Grand Isle, Louisiana. *Proc. La. Acad. Sci.* Vol. XXIX:175-180.
- Gardiner, L. F. 1975. A fresh- and brackish-water tanaidacean *Tanais stanfordi* Richardson, 1901, from a hypersaline lake in the Galapagos archipelago, with a report on West Indian specimens. *Crustaceana* 29:127-140.
- Hansen, H. J. 1895. Isopoden, Cumaceen und Stomatopoden der Plankton-Expedition. *Ergeb. Plankton-Exped. (Humboldt-Stiftung)* 2,Gc:1-105.
- Leach, W. E. 1814. Crustaceology. In: Brewster, D. (ed.) *The Edinburgh Encyclopedia* Vol. 1-18, Edinburgh 7:383-436.
- Milne-Edwards. 1828. Mémoire sur quelques Crustacés Nouveaux. *Ann. Sci. Nat. (Paris)* 1(13).287-301.
- Ogle, J. T. 1977. Tanaidacea from the Gulf of Mexico: A Preliminary Summary. Abstract. *J. Miss. Acad. Sci.* Vol. XXII:105.
- Richardson, H. 1905. Description of a new genus of Isopoda belonging to the family Tanaidae and of a new species of *Tanais*, both from Monterey Bay, Calif. *Proc. U.S. Nat. Mus.* 28:367-370.
- Sars, G. O. 1882. Revision of Gruppen: Isopoda Chelifera. *Arch. Math. Naturv.* 7:1-54.
- Schram, F. R. 1981. On the classification of eumalacostraca. *Journal of Crustacean Biology* 1(1):1-10.
- Sieg, J. 1980. Taxonomische Monographie der Tanaidae Dana, 1849 (Crustacea: Tanaidacea). *Abh. Senckenberg. Naturforsch. Gesell.* 537:1-267.
- _____. 1981. Tanaidacea. In: Hurlbert, S. H. et al. (eds.), *Aquatic Biota of Tropical South America, Part 1:Arthropoda*, San Diego, 28-31.
- _____. Evolution of Tanaidacea. In: Schram, F. R. (ed.), *Crustacean Phylogeny*, Rotterdam (in press).
- _____, R. W. Heard & J. T. Ogle. 1982. Tanaidacea (Crustacea: Peracarida) of the Gulf of Mexico. II. The occurrence of *Halmyrapseudes bahamensis* Băcescu and Guțu, 1975 (Apseudidae) in the eastern Gulf with redescription and ecological notes. *Gulf Res. Rept.* 7(2).