Studies on the Crustacea of the Turks and Caicos Islands, British West Indies. III. Records of Marine Isopoda from Pine Cay, Fort George Cay, Water Cay, and Adjacent Waters

Marilyn Schotte
National Museum of Natural History, Washington, D.C.

Richard W. Heard
Gulf Coast Research Laboratory

Brian Kensley
National Museum of Natural History, Washington, D.C.

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

Part of the Marine Biology Commons

Recommended Citation
DOI: https://doi.org/10.18785/grr.0803.05

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.
STUDIES ON THE CRUSTACEA OF THE TURKS AND CAICOS ISLANDS, BRITISH WEST INDIES. III. RECORDS OF MARINE ISOPODA FROM PINE CAY, FORT GEORGE CAY, WATER CAY, AND ADJACENT WATERS.

Marilyn Schotte\(^1\), Richard W. Heard\(^2\), and Brian Kensley\(^1\)

\(^1\)Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560

\(^2\)Invertebrate Zoology Section, Gulf Coast Research Laboratory, P.O. Box 7000, Ocean Springs, Mississippi 39564

Abstract Between April 1987 and April 1990, 45 species of marine isopods were collected from intertidal and subtidal habitats in the vicinity of Pine Cay, Turks and Caicos, British West Indies. Five species, Licranthura tuberculata, Mesanthura spongicola, Califanthura minuta, Stenetrium caicoensis, and Armadilloniscus steptus, are known currently only from the northeastern Turks and Caicos Islands. The Turks and Caicos collections represent considerable range extensions for many of the species collected. Four species, Apanthura cracenta, Mesanthura punctillata, Carpias triton, and Munna petronastes, known previously from the east coast of Central America (Belize), are reported for the first time since their description. This report also presents the first published records from outside of their respective type localities for Amakusanthura signifca, Mexicope kensleyi, Carpias brachydactylus, Carpias serricaudus, Uromunna caribea, Stenetrium monocule, and Stenobermuda acutirostrata. The other species reported, mostly flabelliferans, appear to be widely distributed in the tropical western North Atlantic and their occurrence in the Turks and Caicos was not unexpected.

Introduction

Geologically the Turks and Caicos Islands, which are the northernmost islands in the British West Indies and located approximately 175 km north of Hispaniola, are part of the southeastern Bahamas. With the exception of a few scattered reports dealing with anchialine cave taxa (Buden & Felder 1977, Stock & Vermuelen 1982, Bowman et al 1985, and Kornicker & Iliffe 1985, Yager & Schram 1986), the crustacean fauna of Turks and Caicos Islands is poorly known.

This report and those of Kensley & Heard (1991) and Schotte & Heard (1991), which are published together in this journal number, are the first documentations of the marine isopod fauna of the Turks and Caicos Islands. The reports by Kensley and Heard (1991) and Schotte and Heard (1991) deal with the descriptions of four new marine subtidal species (Licranthura tuberculata, Mesanthura spongicola, Califanthura minuta, Stenetrium caicoensis) and a new intertidal oniscidean (Armadilloniscus steptus), respectively. The records for these species are also listed in this report. The marine isopods of the general Caribbean region and Bermuda have been treated by Kensley and Schotte (1989).

Materials and Methods

The material recorded herein was collected primarily by the second author along with other participants in the Turks and Caicos Coral Reef Ecology Program, in the environs of Pine Cay, Fort George Cay, Water Cay, and smaller nearby Cays in the northeastern Turks and Caicos Islands (see Figure 1). Subtidal collecting methods included the use of fine mesh kicknets, suction pumps (yabby pumps), an Ockelmann dredge, plankton nets, and light traps. SCUBA was also employed in the collection of subtidal specimens. Algal-coral-sponge washings and sediments were gently eleutriated and sieved before preservation and sorting. Intertidal specimens were collected by hand. The material listed here has been deposited in the collections of the National Museum of Natural History, Smithsonian Institution. Additional material has been also deposited in the Museum of the Gulf Coast Research Laboratory.

Manuscript received October 1, 1990; accepted November 20, 1990.

251
Figure 1. Map showing the collecting sites in the vicinity of the Pine Cay, Turks and Caicos Islands, British West Indies. Scale = 1 km

RESULTS

We identified 45 distinct species of free-living or semi-parasitic marine isopods from collections made between April 1987 and April 1990 in marine habitats on, or in the vicinity of, Pine Cay, Fort George Cay, and Water Cay (Figure 1). These species represented 18 different families belonging to the suborders Anthuridea, Asellota, Flabellifera, Valvifera and Oniscidea. Parasitic species belonging to the suborders Epicaridea and Gnathiidea, and the flabelliferan family Cymothoidae were also collected, but are not treated in this report. The suborders, families, and species are arranged alphabetically in the following taxonomic listing of records.

SUBORDER ANTHURIDEA
Family Anthuridae

Amakusanthura signifera (Paul and Menzies, 1971)
Material. 11 females, Pine Cay, rubble bottom inside fringing reef, 4-5 m, 9 Apr 1989.
Previous Records. Venezuela.

Apanthurra cruenta Kensley, 1984
Material. 3 females, New Cay, 13 Apr 1988. 3 females, Twin Cay, washings, ca. 1 m, 1 Nov 1988. 1 female, Rock-a-Wash Cay, orange sponge washings, 1 m, 30 Oct 1988. 1 female, Rack Cay, Neogoniolithon washings, 1 m, 31 Oct 1988. 1 male, 8 females, 8 juv., Rock-a-Wash Cay, 0.5-1 m, 30 Oct 1988. 2 females, inner fringing reef off Pine Cay, rubble bottom, 4-5 m, 3 Nov 1988. 1 female, Twin Cay, Ockelmann dredge, 1 Nov 1988. 1 female, off
Pine Cay, sand patch in outer reef, 33 m, 2 Nov 1988. 3 females, from "lamb's wool sponge" washings, Mud Shrimp Cay, 17 April 1988.

Previous Records. Carrie Bow Cay, Belize

Apanthura cf. crucis (Barnard, 1925)

Material. 1 male (premale), Rack Cay, 12 Apr 1988.


Remarks. As the single specimen is a premale, the change from premale to male is incomplete, making specific identification uncertain.

Elsothistos petrensis Kensley, 1984

Material. 1 female, Pine Cay, Neogoniolithon washings, 0.5 m, 16 Apr 1988.


Licranthura tuberculata Kensley & Heard, 1991

Material. 1 male, 1 female, deep fringing reef, from yellow sponge, 37-40 m, 10 Nov 1988.

Distribution. off Pine Cay, Turks and Caicos Islands

Malacanthurus sp.

Material. 1 female, off Pine Cay, deep fringing reef, from "bread sponge", 37 m, 10 Nov 1988.

Remarks. This form may represent an undescribed species, but a larger series of specimens is needed for study before it can be properly described.

Mesanthuria fasciata Kensley, 1982

Material. 1 female, off Pine Cay, inner fringe reef, rubble bottom, 4-5 m, 3 Nov 1988. 1 female, same station, 4 Apr 1989.

Previous Records. Looe Key, Florida; Cozumel, Mexico; Carrie Bow Cay, Belize; Puerto Rico; Jamaica.

Mesanthuria pulchra Barnard, 1925


Previous Records. Florida (Egmont Key, Looe Key, & Dry Tortugas); Puerto Rico; Carrie Bow Cay, Belize; U.S. Virgin Islands (St. Thomas and St. John's); Cozumel, Mexico.

Mesanthuria punctillata Kensley, 1982


Previous Records. Carrie Bow Cay, Belize, 0.2-20 m.

Mesanthuria spongicola Kensley & Heard, 1991

Material. 1 female, off Pine Cay, outer reef, on Vertagia, 21 m, 31 Oct 1988. 18 females, off Pine Cay, on Vertagia, 25-28 m.

Distribution. Off Pine Cay, Turks and Caicos Islands

Family Hyssuridae

Xenanthura brevitelson Barnard, 1925

Material. 1 male, 32 females, Mud Shrimp Cay, ca. 1 m, 14 Apr 1988. 5 males, 12 females, 1 juv., Mud Shrimp Cay, in algae and associated carbonate substratum, 0.5 - 1 m, 8 Apr 1988. 1 male, 4 females, Rock-a-Wash Cay, from Neogoniolithon washings, 16 Apr 1988. 2 males, 6 females, Twin Cay, Ockelmann dredge, ca. 1 m, 1 Nov 1988.

Previous Records. Off Georgia, 20-145 m; off Florida, 8-10 m; Gulf of Mexico; St. Thomas, U.S. Virgin Islands, 50-60 m.

Family Paranthuridae

Califanthura minuta Kensley & Heard, 1991

Material. 3 females, off Pine Cay, inner fringing reef, in coarse sand rubble, 1.5 m, 3 Nov 1988. 1 female, off Pine Cay, inner fringing reef, in coarse sand and rubble, 5 m, 16 Nov 1989.

Distribution. Pine Cay, Turks and Caicos Islands

SUBORDER ASELLOTA

Family Incertae Sedis

Mexicope kensleyi Hooker, 1985

Material. 1 female, 1 juv., Rack Cay, sponge washings, 12 Apr 1988. 2 females (1 ovig.), Rock-a-Wash Cay, Neogoniolithon washings, 0.5 m, 16 Apr 1988. 1 male, 1 female, Rack Cay, 1-1.5 m, 31 Oct 1988. 2 males, 2 females (1 ovig.), Rock-a-Wash Cay, Neogoniolithon washings, 1-1.5 m, 30 Oct 1988. 1 male, off Pine Cay, deep fringing reef, sand-rubble bottom, 9-10 m, 11 Nov 1989.

Previous Records. Florida Middle Grounds, Gulf of Mexico, 30 m.

Family Janiridae

Carpias algicola (Miller, 1941)


Previous Records. Looe Key, Florida, 1-1.5 m; Yucatan, Mexico; Carrie Bow Cay, Belize, 0-2 m; Puerto Rico; Jamaica; Venezuela; Indo-West Pacific.
**Carpia brachydactylus** (Pires, 1982)


**Previous Records.** Puerto Rico, 1.5 m.

**Carpia serricaudus** (Menzies and Glynn, 1968)


**Previous Records.** Puerto Rico.

**Carpia triton** (Pires, 1982)


**Previous Records.** Carrie Bow Cay, Belize, intertidal reef crest.

**Family Joeropsidae**

**Joeropsis rathbunae** Richardson, 1902


**Previous Records.** Bermuda; Puerto Rico; Florida Keys; Gulf of Mexico. Intertidal to 36 m.

**Family Microparunsellidae**

**Microcharon** sp.

**Material.** 3 males, 4 females (3 ovig.), off Pine Cay, inner fringing reef, sand-rubble bottom, 3-4 m, 16 Nov 1989.

**Remarks.** Our specimens do not appear to represent any of the three species of *Microcharon* Karaman, 1934 previously recorded from the Caribbean area (see Kelsey and Schotte 1989). Considerable work and collections are still required to resolve the complexities of this genus.

**Family Munnidae**

**Munna petronastes** Kensley, 1984

**Material.** 2 females (1 ovig.), South Satellite Cay, *Porites*-algal-sponge washings, 1-1.5 m, 11 Nov 1988.

**Previous Records.** Carrie Bow Cay, Belize, intertidal to 2 m.

**Uromunna carbea** (Carvacho, 1977)


**Previous Records.** Canal de la Belle Plaine, Guadeloupe, in water of 25 ppt.

**Family Pleurocopidae**

**Pleurocope floridensis** Hooker, 1985

**Material.** 6 females, Rack Cay, algae-sponge washings, ca. 1 m, 12 Apr 1988. 3 females, Ft. George Cay, *Neogoniolithon* washings, 0.5 m, 18 Apr 1988.

**Distribution.** Florida Middle Grounds, Gulf of Mexico, 55 m; Carrie Bow Cay, Belize, 3-10 m.

**Family Santildae**

**Santia milleri** (Menzies & Glynn, 1968)


**Distribution.** Carrie Bow Cay, Belize, intertidal to 30 m; Puerto Rico, 1.5 m; San Salvador, Bahamas, 6 m; Anguilla; Jamaica; Cozumel, Mexico; Gulf of Mexico; Brazil, 1-6 m.

**Family Stenetrildae**

**Stenetrium calcoens** Kersley and Heard, 1991

**Material.** 5 males, 15 females (6 ovig.), 9 juvs, Fort George Cay, *Neogoniolithon* washings, 0.5 m, 18 Apr 1988. 1 male, Crab Hole Cay, 15 Apr 1988. 2 males, 11 females (4 ovig.), 1 juv., Ft. George Cay, *Neogoniolithon* washings, 1-1.5 m, 8 Nov 1988. 1 male, Pine Cay, inner fringing reef, sand-rubble bottom, 3-4 m, 5 Nov 1988.

**Distribution.** Presently known only from Turks and Caicos Islands.

**Stenetrarium serratum** Hansen, 1904

**Material.** 9 males, 5 females, 19 juvs., Rock-a-Wash Cay, *Neogoniolithon* washings, 16 Apr 1988. 3 females (ovig.), Rock-a-Wash Cay, *Neogoniolithon* washings, 11 Apr 1988. 6 males, 7 females (ovig.), 41 juvs., Rack...
Previous Records. Looe Key, Florida, 0.5-6 m; Jamaica; Puerto Rico, intertidal to 3 m; St. Thomas, U.S. Virgin Islands; Carrie Bow Cay, Belize, intertidal to 15 m.

Stenetrium stebbingi Richardson, 1902

Previous Records. Bermuda, 0.5-4 m; Florida Keys, 18.3 m; Bahamas, 5 m; Cuba; Jamaica; U.S. Virgin Islands, 50 m; Carrie Bow Cay, Belize, 0.5-36 m; Gulf of Mexico.

Stenotetrium minucule Menzies and Glynn, 1968
Material. 2 males, 6 females (1 ovig.), Pine Cay, inner fringing reef, rubble bottom, 4-5 m, 9 Apr 1989.

Previous Records. Puerto Rico.

Stenobermuda acutirostrata Schultz, 1978
Material. 1 male, 1 female, Rack Cay, sponge washings, 12 April 1988. 4 females, Pine Cay, inside fringing reef, rubble-sand substratum, 4-5 m, 9 Apr 1989.

Previous Records. Off Bermuda, 90 m.

SUBORDER FLABELLIPERA
Family Aegidae

Rocinella signata Schioedte and Meinert, 1879
Material. 1 , Pine Cay, rubble bottom, inside inner fringing reef, 3-4 m, 9 Apr 1989. 1 female, same data, 17 Nov 1989.

Previous Records. Florida Keys, Bahamas, widespread throughout Caribbean and Gulf of Mexico, southern California to Panama and Costa Rica.

Family Cirolanidae

Cirolana parva Hansen, 1890
Material. 6 females, 17 juvs., Ft. George Cay, Neogoniolithon washings, 0.5 m, 18 Apr 1988. 1 male, 1 female, 7 juvs., Rack Cay, sponge washings, 12 Apr 1988. 1 female, 1 juv., New Cay, 13 Apr 1984. 4 male, 1 female, 10 juvs., Rock-a-Wash, Neogoniolithon washings, 0.5 m, 16 Apr 1988. 1 male, 2 juvs., Crab Hole Cay, 15 Apr 1988. 27 specimens, Twin Cay, algae-sponge washings, 1-1.5 m, 1 Nov 1988. 5 juvs., South Satellite Cay, Porites-algae-sponge washings, 1-1.5 m, 11 Nov 1988. 20+ specimens, Rack Cay, algae-sponge washings, 1-1.5 m, 31 Oct 1988.

Previous Records. North and South Carolina; St. Thomas and St. Croix, U.S. Virgin Islands; Andros Is., Bahamas; Puerto Rico; Jamaica; Florida Keys; Dry Tortugas; Barbados; Carrie Bow Cay, Belize; Cozumel, Mexico; Panama; intertidal to 55 m.

Eurydice personata Kensley, 1987
Material. 2 males, 3 females, 3 juvs., Pine Cay, plankton tow off north beach at night, 1.5 m, 30 Oct 1988. 1 juv., off Pine Cay, coarse sand, rubble bottom, inner fringing reef, 4 m, 3 Nov 1988.

Previous Records. Bermuda; off Georgia, 18-27 m; off South Carolina, 34 m; off Miami, Florida; Puerto Rico, 13-17 m; Bahamas, 1-2 m and surface plankton tow; Haiti; Cuba; Venezuela.

Exciorolana brasiliensis Richardson, 1912
Material. 5 females, 3 juvs., Pine Cay, plankton tow at night off north beach, 1.5 m, 30 Oct 1988.

Previous Records. Caribbean to Brazil; Gulf of Mexico; Gulf of California to Chile.

Metacirolana halia Kensley, 1984
Material. 2 females, 2 juvs., Ft. George Cay, Neogoniolithon washings, 0.5 m, 18 Apr 1988. 12 females, 5 juvs., Rack Cay, 12 Apr 1988. 1 female Rock-a-Wash Cay, Neogoniolithon washings, 16 Apr 1988. 1 male, 8 females, Twin Cay, 1-1.5 m, algae-sponge washings, 1 Nov 1989.

Previous Records. Carrie Bow Cay, Glover’s Reef, Belize; Bahamas; Jamaica; Cozumel, Mexico; intertidal to 23 m.

Metacirolana sphaeromorphis (Hansen, 1890)

Previous Records. Looe Key, Florida, intertidal reef crest; St. Thomas, U. S. Virgin Islands.
Family Corallanidae

Excorallana quadricornis (Hansen, 1890)

Material. 1 male, Grapsus Cay, algae-sponge washings, 1-1.5 m, 5 Nov 1988.

Distribution. Bermuda; St. Thomas, U.S. Virgin Islands; Jamaica; Martinique; Belize; Venezuela.

Excorallana tricornis tricornis (Hansen, 1890)


Distribution. St. Thomas and St. Croix, U.S. Virgin Islands; Cuba; Puerto Rico; Belize; Gulf of Mexico, intertidal to 55 m.

Excorallana cf. berbicensis Boone, 1918

Material. 1 female, Pine Cay, outer reef, from yellow sponge, 40 m, 5 Nov 1988.

Remarks: Stone and Heard (1989) have discussed some of the taxonomic problems and questionable records from French Guiana and Guadelope for E. berbicensis. Until a large series of adult specimens, especially males, from the Turks and Caicos Islands are available for study, the specific status of the Pine Cay material will remain uncertain.

Previous Records for E. berbicensis: Guyana (type locality); French Guiana; Guadeloupe.

Family Sphaeromatidae

Paracerceis caudata (Say, 1818)


Previous Records. New Jersey to Florida Keys; Gulf of Mexico; Bermuda; Yucatan to Venezuela; Cuba; Puerto Rico; Bahamas; Jamaica; Haiti; St. Maartens; St. Lucia, 20 cm to 127 m.

Paracerceis edithae Boone, 1930

Material. 1 male, 3 females, Rock-a-Wash Cay, from gray sponge, 1-1.5 m, 30 Oct 1988. 1 male, 2 females, Pine Cay, from sponge on fringing reef, 27-30 m, 17 Nov 1989.

Previous Records. Bahamas, 60-66 m, in vase sponge; Haiti; Puerto Rico, 20-25 m.

Family Limnoriidae

Limnoria platycauda Menzies, 1957

Material. 2 females (ovig.), Twin Cay, 1 Nov 1988.

Previous Records. Cuba; Puerto Rico to Curacao; Cozumel, Mexico; Belize; Aldabra Atoll, Indian Ocean.

SUBORDER VALVIFERA

Family Idoteidae

Cleantioides planicauda (Benedict, 1899)

Material. 1 female, Pine Cay, in seagrass, 4 m, 9 Nov 1988.

Distribution. Maryland to Florida; Puerto Rico; Panama; Louisiana, Gulf of Mexico.

Erichsonella filiformis (Say, 1818)


Previous Records. Connecticut to Florida, shallow intertidal to 55 m; Florida, Texas, Gulf of Mexico; Bahamas; Quintana Roo, Yucatan Peninsula, Mexico, 60-109 m.

SUBORDER ONISICJDEA

Family Scyphacidae

Armadilloniscus steptus Schotte and Heard, 1991

Material. 1 juv., Northeastern end of Pine Cay (Boat Dock), upper intertidal under leaves, 9 November 1989. 7 males, 6 females (5 ovig.), 19 juvs., southwestern end of Pine Cay (“Aquarium”), upper intertidal under slabs of soft carbonate rock, 1 May 1990.

Distribution. At present known only from Turks and Caicos Islands (Pine Cay).

Family Ligidae

Ligia baudiniana H. Milne Edwards, 1840

Material. 1 male, 2 females, Grapsus Cay, supratidal and intertidal, on or under slabs of carbonate rock or shore debris, Nov 1988. 1 female (ovig.), Pine Cay, from dock, 2 Nov 1988.

Previous Records. Bermuda; Bahamas; U.S. Virgin Islands; Antigua; Carrie Bow Cay, Belize; Bonaire; Aruba; Trinidad; Tobago; Gulf of Mexico.

Family Philoscilidae

Littorophiloscia culebrae (Moore, 1901)

Material. 3 females, Pine Cay, boat dock, intertidal, under dead leaves, 2 Nov 1988. 7 females (5 ovig.), same location, April 9, 1987. 2 males, 9 females (5-ovig), same location, 9 November 1989.

Previous Records. Florida; U. S. Virgin Islands; Puerto Rico; Belize.

Remarks: This species was listed under the genus Vandeloscia Roman, 1977 by Kensley and Schotte (1989).
DISCUSSION

Of the 45 marine isopods reported here, five species, viz. Licranthura tuberculata, Mesanthura spongicola, Califanthurav minuta, Stenetrium caicoensis, and Armadilloniscus septus, are known currently only from the northeastern Turks and Caicos Islands (see Kensley and Heard 1991 & Schotte and Heard 1991). Our Turks and Caicos collections represent considerable range extensions for many of the species collected. Four species (Apanthura cracenta, Mesanthura punctillata, Carpius triton, and Munna petronastes, known previously from the east coast of Central America (Belize), are reported for the first time since their description. This report also presents the first published records from outside of their respective type localities for Amakusanthurav signiflca (Venezuela), Mexicope kensleyi (eastern Gulf of Mexico), Carpias brachydactylus (Puerto Rico), Carpias serricaudus (Puerto Rico), Uromunna caribea (Guadeloupe), Stenetrium monocule (Puerto Rico), and Stenobermuda acutirostrata (Bermuda). Due to inadequate material or taxonomic problems, the specific status of four taxa, Apanthura cf. crucis, Malacanthura sp., and Microcharon sp. and Excorallana cf. berbicensis, will require further study. The other 26 species listed, mostly flabelliferans, appear to be widely distributed in the tropical western North Atlantic and their occurrence in the Turks and Caicos was not unexpected. With exception of the five species described from the Pine Cay area (see Kensley & Heard 1991, Schotte & Heard 1991), refer to Kensley & Schotte (1989) for illustrations, keys, diagnoses, and taxonomic and zoogeographic references for the other species reported herein.

ACKNOWLEDGEMENTS

Support for the collection of specimens used in this study was sponsored by the Oakleigh L. Thorne Foundation through a grant to Stephen Spotte. We thank Oakleigh B. Thorne, members and employees of the Meridian Club, and the Turks and Caicos government for support and encouragement. We are grateful to Steve Spotte for his help, interest, and overall coordination of the field work for the project. Patricia Bubucis, Cherie S. Heard, Roy R. Manstan, Jerry McCelland, and Stephen Spotte assisted in the collection of specimens and provided other helpful technical assistance. This is Contribution No. 7 of the Turks and Caicos Coral Reef Ecology Program.

REFERENCES CITED


