

IDENTIFICATION, DISTRIBUTION, AND ASPECTS OF THE BIOLOGY OF TEN ANTHURIDEAN ISOPOD SPECIES FROM THE SHALLOW CONTINENTAL SHELF OF THE U.S. GULF AND EAST COAST

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ABSTRACT With the aim of easing identification of continental shelf isopods, ten species of anthurideans, viz. *Amakusanthura magnifica*, *Amakusanthura signata*, *Cyathura burbancki*, *Ptilanthura colpos*, *Ptilanthura tenuis*, *Hyssura bacescui*, *Kupellonura formosa*, *Neohyssura irpex*, *Xenanthura brevitelson*, and *Accalathura crenulata*, are given brief diagnoses. A map showing the distribution of records, line figures illustrating diagnostic features, and a key to families, genera, and species are also provided.

INTRODUCTION

While it may seem quirky to deal with only the anthuridean isopod species from among all the records of isopods from the continental shelf of the east coast of the United States, there are cogent reasons for doing so. The ten anthurideans all have a similar habitus, i.e. an elongate and slender body form, and are sometimes difficult to distinguish. Some of the species are extremely abundant and constitute a major element of the infauna of the continental shelf, where they are detritivores and scavengers. Many of the anthurideans are protogynous hermaphrodites and display unusual sex ratios and reproductive strategies that in part explain their success in this habitat. Much of the material reported here comes from Bureau of Land Management/Minerals Management Service (BLM/MMS) surveys, and is deposited in the National Museum of Natural History. Additional records from the NMNH collections have been used.

For each of these species, a map of occurrences is provided, along with line drawings of the animals having diagnostic features emphasized by arrows, as an aid to identification. The original description of the species is referenced, with a brief (and not necessarily complete) diagnosis that emphasizes the most useful features for distinguishing the species. In several cases, the male cephalon with its elongate antennules is illustrated. Reference is made to males and pre-males; the latter differ from mature males in that the elongate antennules do not possess dense whorls of aesthetascs. Often the copulatory stylet of pre-males is not as developed as in the mature males. Some information on sex ratios, reproductive status, and depth distribution, is also given. Appendix 1 lists station data for the ten species.

Key to the Anthuridea of the shallow continental shelf of the eastern U.S.A.

1. Pleonites 1-5 free, length of each pleonite at least half of width, sometimes longer Hyssuridae2
- Pleonites free but length much less than width, or pleonites fused6
2. Telson shorter than, and hidden by, subcircular uropodal exopods.....*Xenanthura brevitelson*
Telson not short, not completely hidden by uropodal exopods.....3
3. Uropodal exopods armed with 3 large teeth on mesial margin.....*Neohyssura irpex*
Uropodal exopods lacking teeth4
4. Lateral margins of telson serrate; Telson apically narrowly rounded.....*Kupellonura formosa*
Lateral margins of telson entire; Telson apically with short, central, truncate, offset region *Hyssura*.....5
5. Lateral margins of telson roughly parallel
.....*Hyssura bacescui*
Lateral margins of telson convex.....[*Hyssura vimsae* (Kensley 1978); deep shelf/slope species off New Jersey and Virginia, 350-460 m]
6. Mouthparts slender, styliiform, adapted for piercing and sucking...Paranthuridae.....*Accalathura crenulata*
Mouthparts not styliiform, adapted for cutting
..... Anthuridae.....7
7. Telson having 3 longitudinal ridges dorsally
.....*Ptilanthura*.....8
8. Telson lacking dorsal longitudinal ridges9
8. Telson roughly parallel-sided, apically truncate
.....*Ptilanthura colpos*
Lateral margins of telson convex, apically broadly rounded.....*Ptilanthura tenuis*
9. Pleonites demarked by dorsal lines or folds; that between pleonites 4 and 5 incomplete
..... *Amakusanthura*10
- Pleonites 1-5 completely fused, lacking dorsal lines or folds.....*Cyathura burbancki*

10. Telson having dorsal raised ridge anteriorly, ridge widening posteriorly; uropodal exopod with weak laterodistal notch.....*Amakusanthura magnifica*
 Telson dorsally flat; uropodal exopod with strong laterodistal notch.....*Amakusanthura signata*

Family Anthuridae Leach 1814

Diagnosis. Mouthparts adapted for cutting and tearing. Pleonites 1-5 fused, pleonite 6 often indicated dorsally, or fused with telson. Exopod of pleopod 1 operculiform, covering rest of pleopods. Pair of basal statocysts present on telson.

Amakusanthura magnifica (Menzies and Frankenberg 1966) (Figures 1 A, B, 2)

Apanthura magnifica Menzies and Frankenberg 1966:40, Figure 17.

Material. 59 ♂, 1544 non-ovigerous ♀ and juveniles. Occurrences: 338 stations, depth range 1-206 m, mean depth for 338 stations - 64 m.

Diagnosis. Small well pigmented eyes present. Pleonites 4 and 5 dorsally incompletely separated. Uropodal exopod with slight notch in lateral margin. Telson with broad dorsal raised area in posterior half, narrowing anteriorly to median rounded ridge. Antennule in male reaching posteriorly to pereonite 2.

Amakusanthura signata (Menzies and Glynn 1968) (Figure 1 C, D, 3)

Apanthura signata Menzies and Glynn 1968:28, Figure 10.

Material. 6 ♂ and pre-♂, 114 non-ovigerous ♀. Occurrences: 35 stations, depth range 1-159 m, mean depth for 35 stations - 39 m.

Diagnosis. Small well pigmented eyes present. Pleonites 4 and 5 dorsally incompletely separated. Uropodal exopod with strong notch in distolateral margin. Telson dorsally flat, posterior margin with slight terminal notch. Antennule in male reaching posteriorly to pereonite 2.

Cyathura burbancki Frankenberg 1965 (Figure 1 E, F, 4)

Cyathura burbancki Frankenberg 1965:206, Figures. 1-3.

Material. 11 ♂, 5 ovigerous ♀, 25 non-ovigerous ♀. Occurrences: 13 stations, depth range 11-225 m, mean depth from 13 stations - 32 m.

Diagnosis. Eyes small, well pigmented. Antennule in male with distal brush of aesthetascs. Pleonites 1-5 fused, shorter than pereonite 7; pleonite 6 demarked

dorsally. Telson gently tapering, apex narrowly rounded. Distinguished from estuarine/shallow-water *C. polita* by pleonite 6 being dorsally demarked (fused with telson in *C. polita*) (see Frankenburg 1965 Table 1 for differences).

Ptilanthura colpos Kensley 1996 (Figure 5 A, 6)

Ptilanthura colpos Kensley 1996:

Material. 31 non-ovigerous ♀, 7 manca. Occurrences: 26 stations, depth range 14-88 m, mean depth for 26 stations - 38 m.

Diagnosis. Cephalon longer than broad. Pereonite 1 anterodorsal emargination straight. Telson widest at midlength, having rounded median longitudinal ridge and two shorter lateral ridges in posterior half, almost parallel-sided, posterior margin truncate.

Ptilanthura tenuis Harger 1878 (Figure 5 B, C, D, 7)

Ptilanthura tenuis Harger 1878:377.

Material. 31 ♂ and pre-♂, 438 non-ovigerous ♀, 100 manca. Occurrences: 206 stations, depth range Intertidal - 339 m, mean depth for 206 stations - 71 m.

Diagnosis. Cephalon as broad or broader than long. Pereonite 1 anterior margin with triangular emargination. Telson widest in posterior half, having rounded median longitudinal ridge and two shorter lateral ridges in posterior half; posterior margin rounded. Primary male having 10 articles in antennular flagellum, latter rarely reaching posterior margin of pereonite 1. Secondary male having 22 articles in antennular flagellum, latter reaching well beyond pereonite 1.

Family Hyssuridae Wägele 1981

Diagnosis. Mouthparts adapted for cutting and tearing. Pereopods 1-3 subchelate, similar. Pleonites 1-6 free, large, often as long as wide. Pleopod 1 similar to following pleopods, not operculiform. Telson lacking statocysts.

Hyssura bacescui (George and Negoescu-Vladescu 1982) (Figure 5 E, 8)

Ocsanthura bacescui George and Negoescu-Vladescu 1982:97, Figures. 1-3.

Material. 7 non-ovigerous ♀. Occurrences: 6 stations, depth range 37-445 m, mean depth for 6 stations - 230 m.

Diagnosis. Eyes lacking. Uropodal exopod distally

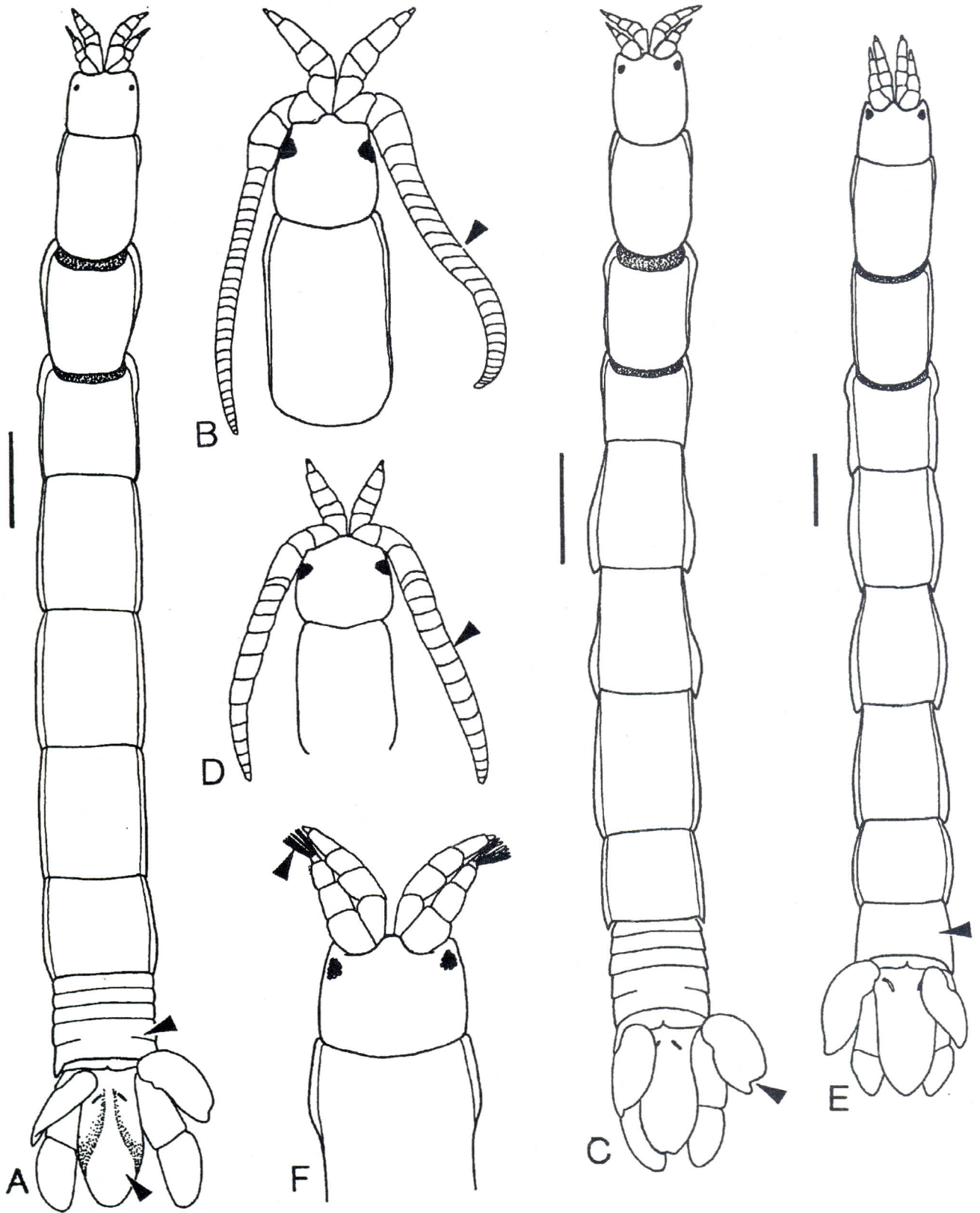


Figure 1. A, *Amakusanthura magnifica* ♀, scale = 1 mm; B, *Amakusanthura magnifica*, cephalon and pereonite 1 ♂, aesthetascs omitted; C, *Amakusanthura signata* ♀, scale = 0.5 mm; D, *Amakusanthura signata*, cephalon and pereonite 1 ♂, aesthetascs omitted; E, *Cyathura burbancki* ♀, scale = 1 mm; F, *Cyathura burbancki* ♂, cephalon and pereonite 1.

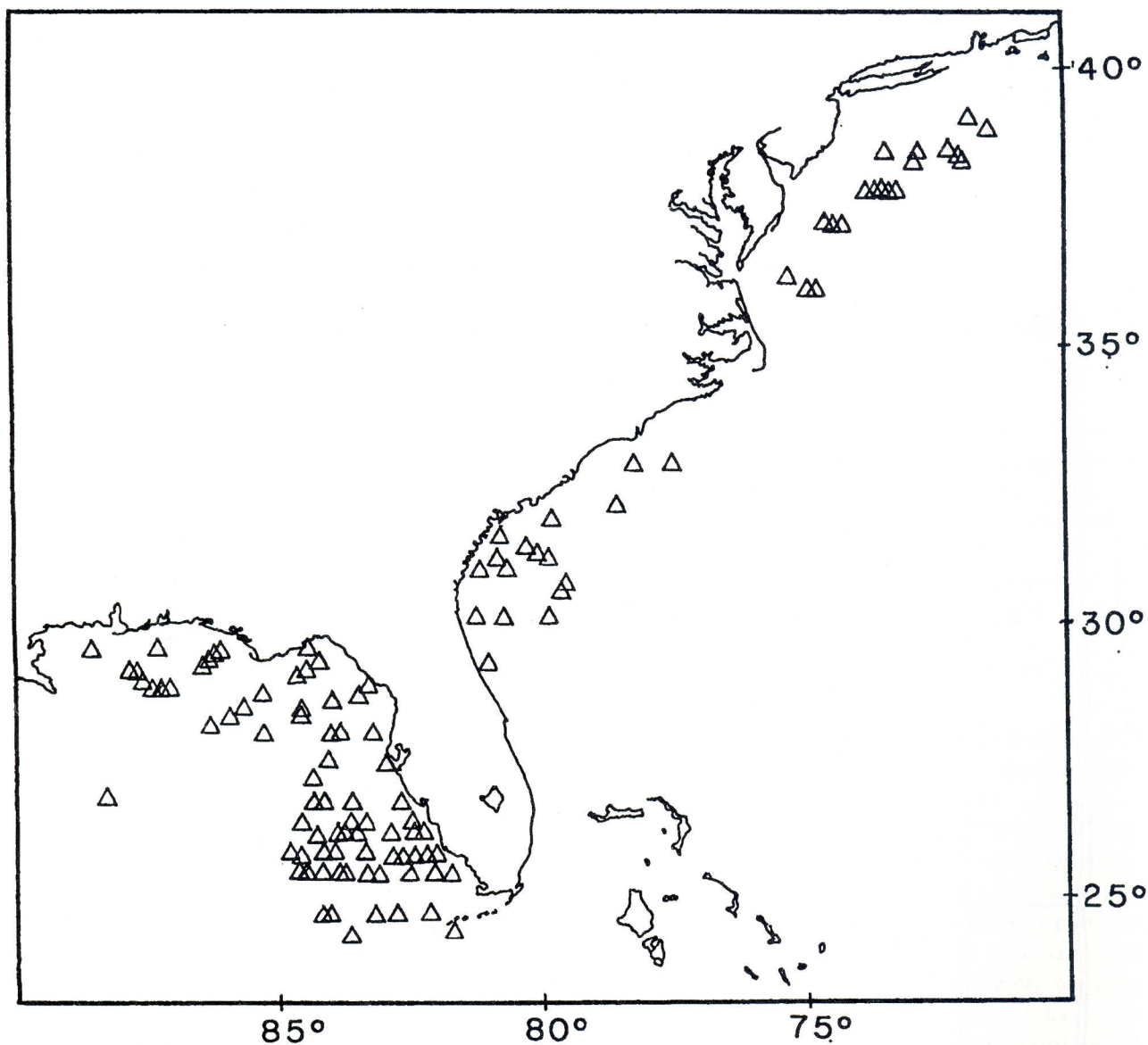


Figure 2. *Amakusanthura magnifica* occurrences.

broad, rounded; endopod about twice longer than wide, distally rounded. Telson parallel-sided, posterior margin with short central truncate region offset from broad main body of telson.

Kupellonura formosa (Menzies and Frankenberg 1966)
(Figure 9 A, B, C, 10)

Panathura formosa Menzies and Frankenberg 1966:39,
Figure 16.

Material. 13 ♂ and pre-♂, 94 non-ovigerous ♀.
Occurrences: 26 stations, depth range 14-159 m, mean
depth for 26 stations - 63 m.

Diagnosis. Cephalon having small pigmented eyes, larger
in male than in female. Uropodal exopod broad, with lateral
margin distally broadly emarginate. Telson with posterolateral
margins finely serrate; apically narrowly rounded.

Neohyssura irpex (Menzies and Frankenberg 1966)
(Figure 9 D, E, F, 11)

Horoloanthura irpex Menzies and Frankenberg 1966:42,
Figure 18.

Material. 9 ♂ and pre-♂, 484 non-ovigerous ♀ and
juveniles. Occurrences: 212 stations, depth range 10-460
m, mean depth for 212 stations - 70 m.

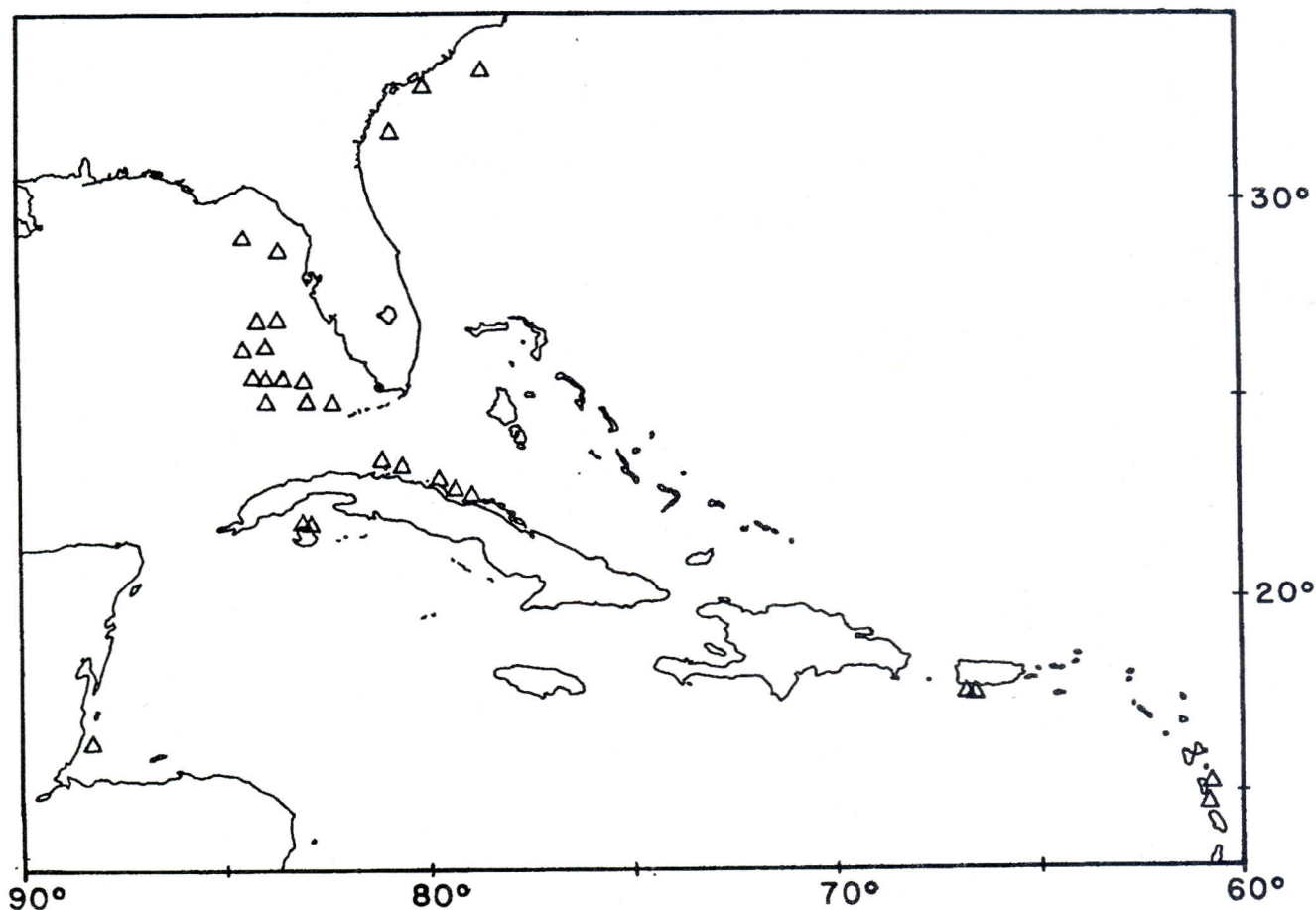


Figure 3. *Amakusanthura signata* occurrences.

Diagnosis. Eyes lacking. Pereopods 1-3 subchelate, having expanded propodi. Uropodal exopod having 3 prominent teeth on mesial margin. Telson tapering to narrow truncate apex.

Xenanthura brevitelson Barnard 1925

(Figure 12 A, B, C, 13)

Xenanthura brevitelson Barnard 1925:138, pl. 4, Figure 14.

Material. 209 ♂ and pre-♂, 2235 non-ovigerous ♀ and juveniles. Occurrences: 516 station, depth range Intertidal-180 m, mean depth for 516 stations - 58 m.

Diagnosis. Cephalon having row of 3 or 4 large ommatidia with pigment on each side. Pereopods 1-3 with propodi expanded, much broader than following pereopods. Uropodal exopods overlapping, subcircular; endopod with distomesial margin concave, bearing 3 stout setae. Telson tapering, much shorter than, and obscured by, subcircular uropodal exopods; posterior margin concave, bearing 2 stout setae.

Family Paranthuridae Menzies and Glynn 1968

Diagnosis. Mouthparts slender, styliform, adapted for piercing and sucking. Pleonites free or fused; if free, segments much shorter than wide. Telson having single basal statocyst, or lacking statocyst.

Accalathura crenulata (Richardson 1901)

(Figure 12 D, E, 14)

Calathura crenulata Richardson 1901:509.

Material. 20 ♂, 13 ovigerous ♀, 152 non-ovigerous ♀ and juveniles. Occurrences: 101 stations, depth range 1-90 m, mean depth for 101 stations, 37 m.

Diagnosis. Large well pigmented eyes present. Flagella of antennule and antenna multiarticulate. Uropodal exopod widest basally, narrowed and tapering distally; endopod ovate, short, one-third length of protopod. Telson lanciform, with single basal statocyst.

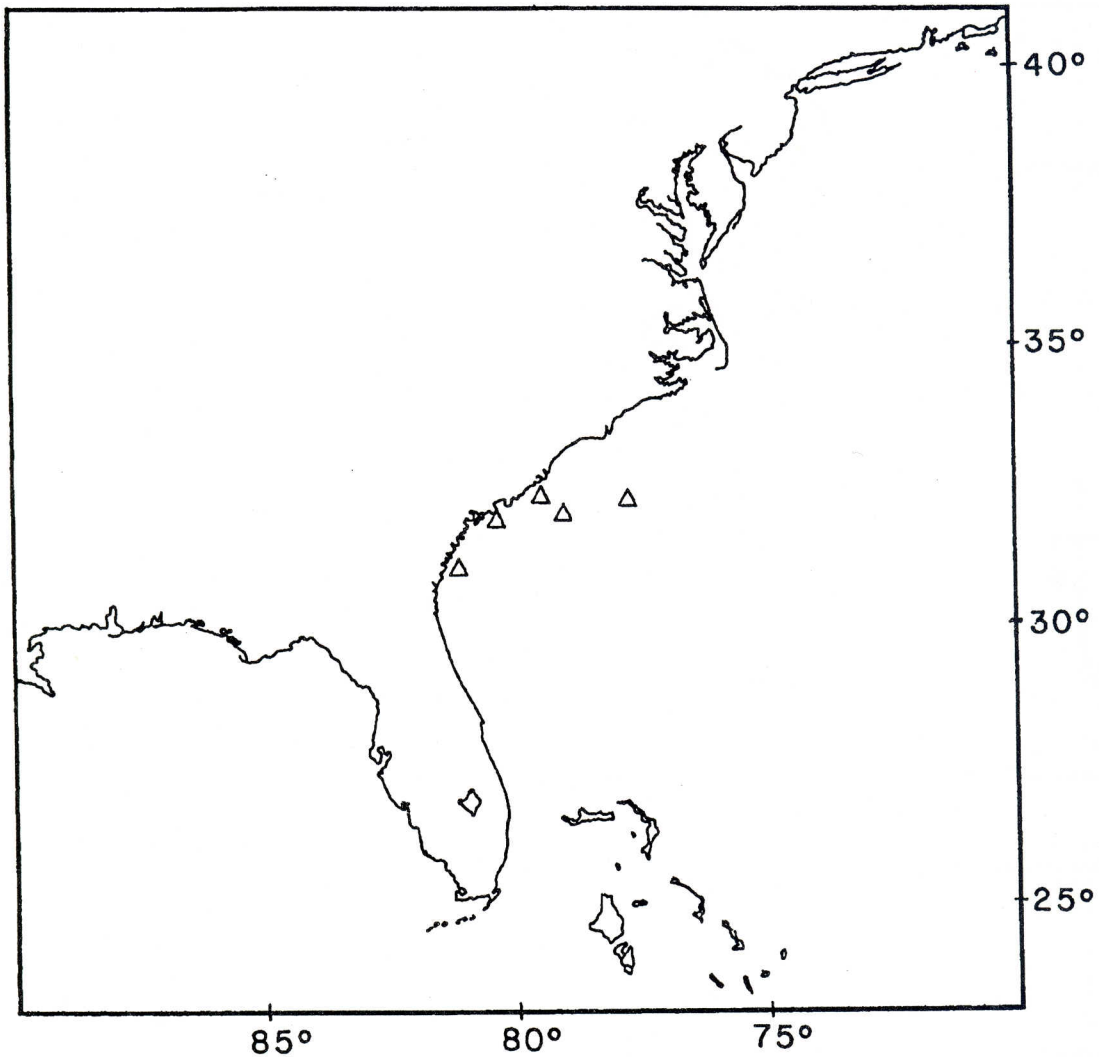


Figure 4. *Cyathura burbancki* occurrences.

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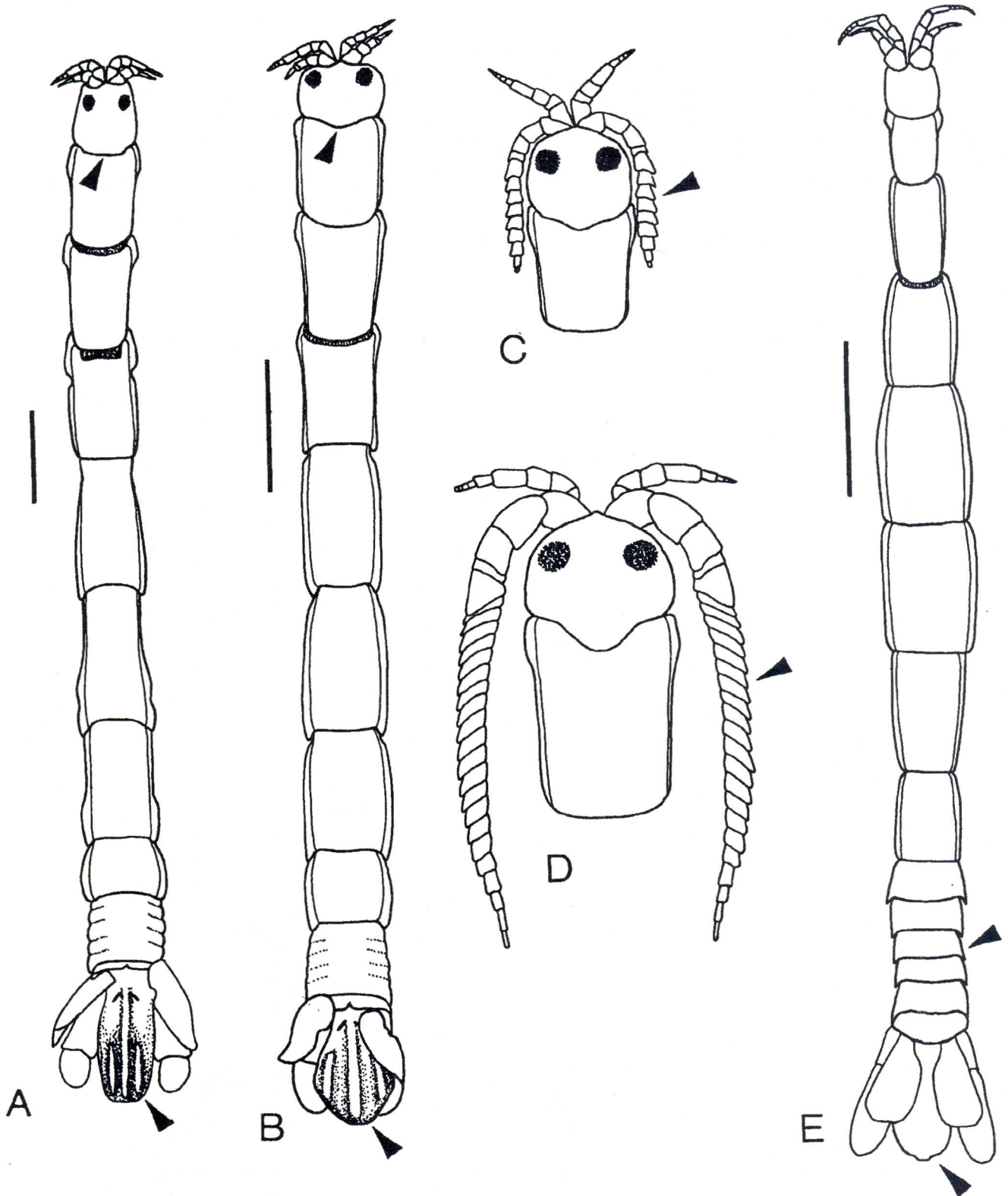


Figure 5. A, *Ptilanthura colpos* ♀, scale = 1 mm; B, *Ptilanthura tenuis* ♀, scale = 1 mm; C, *Ptilanthura tenuis*, cephalon and pereonite 1, primary ♂; D, *Ptilanthura tenuis*, cephalon and pereonite 1, secondary ♂; E, *Hyssura bacescui* ♀, scale = 1 mm.

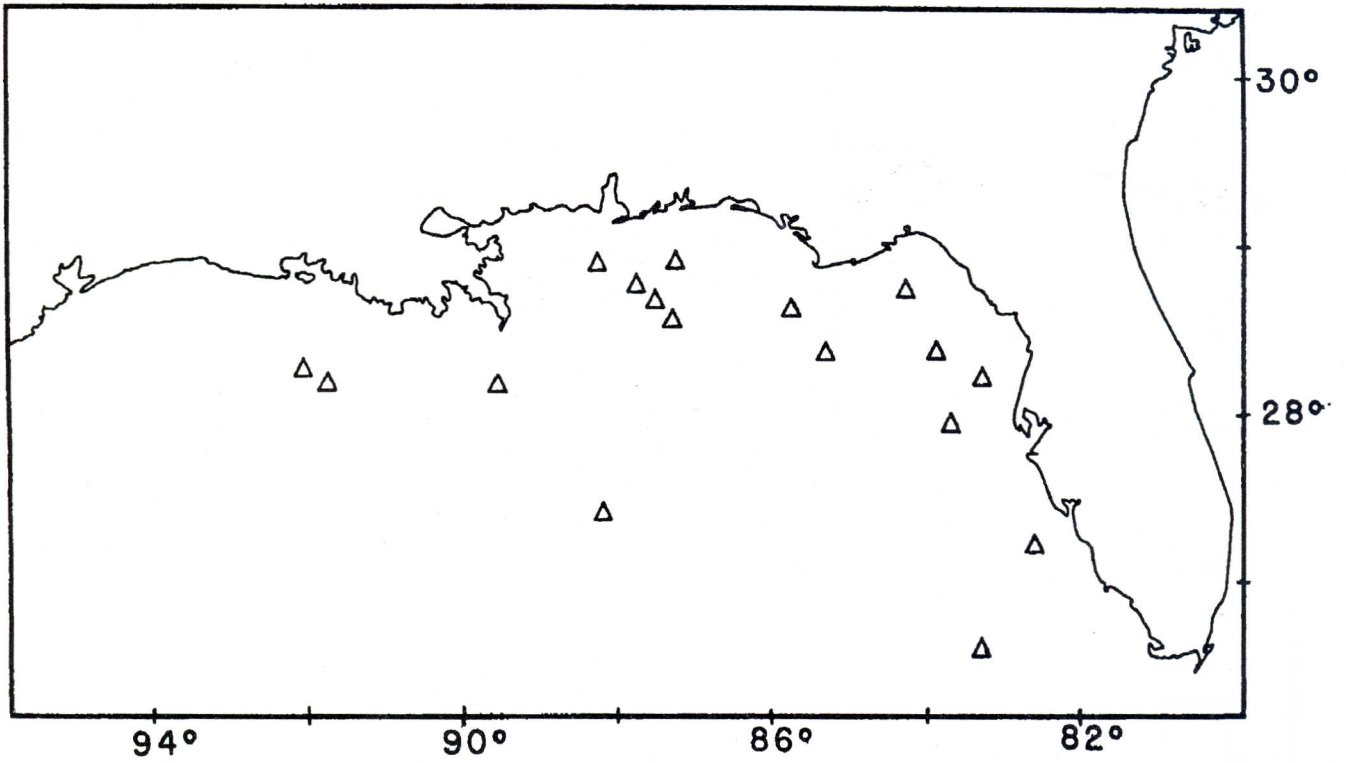


Figure 6. *Ptilanthura colpos* occurrences.

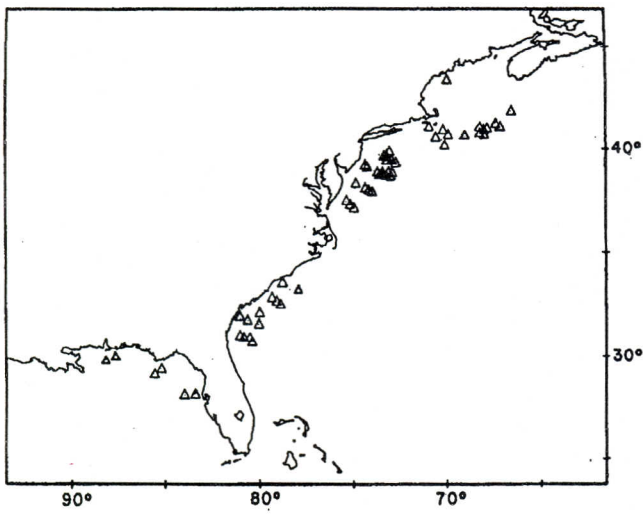


Figure 7. *Ptilanthura tenuis* occurrences.

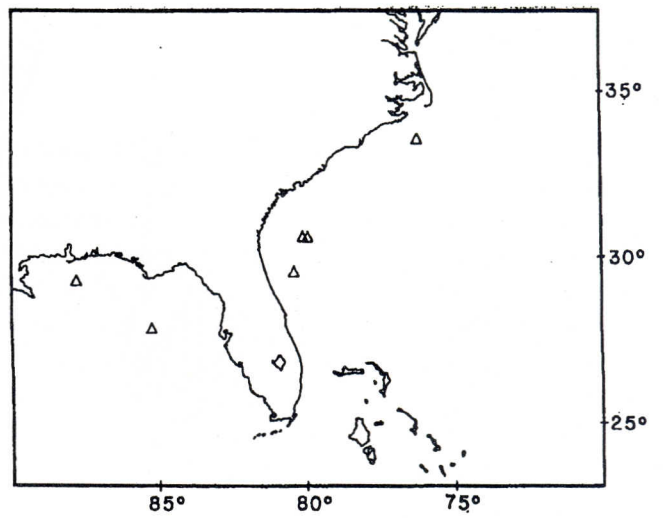


Figure 8. *Hyssura bacescui* occurrences

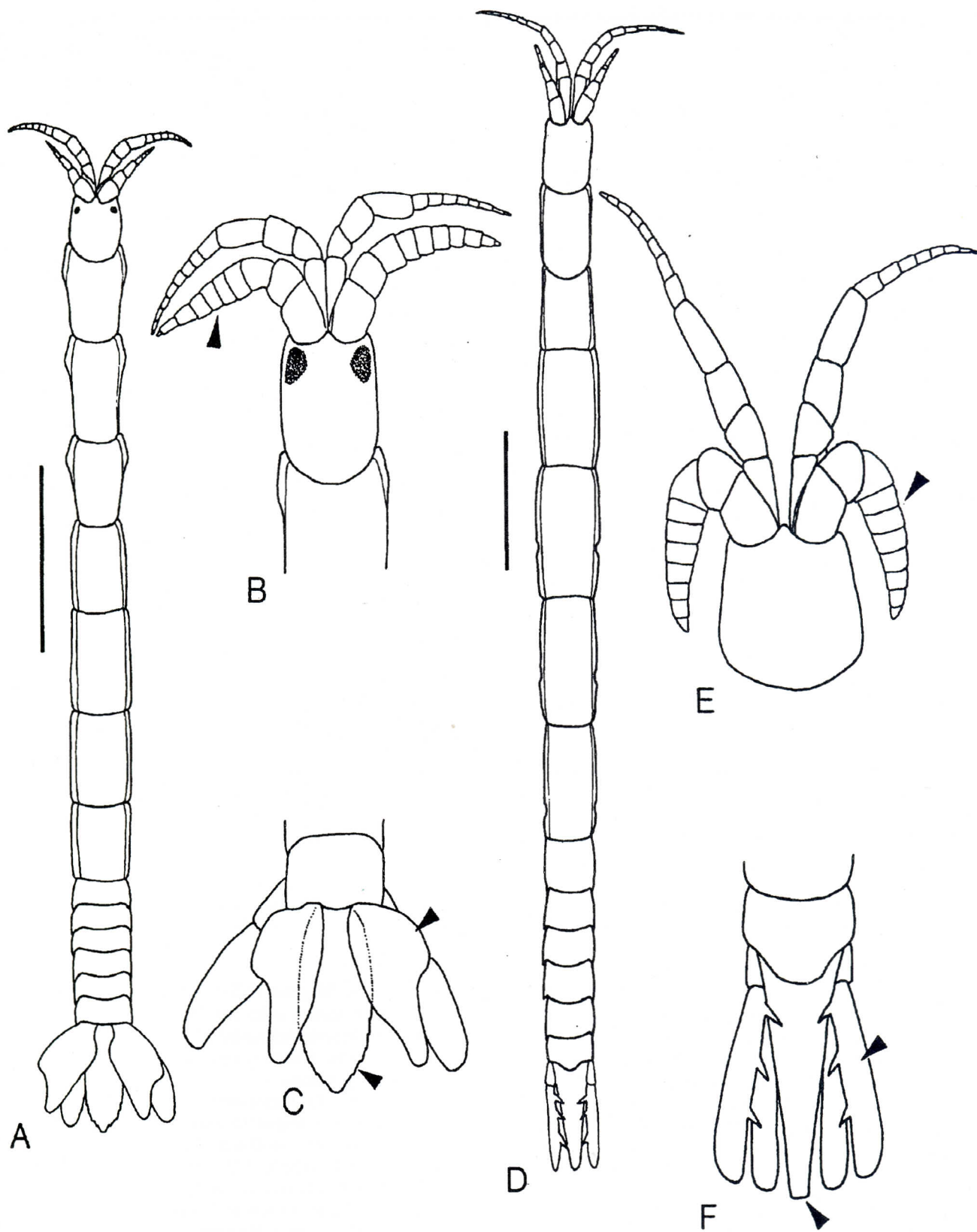


Figure 9. A, *Kupellonura formosa* ♀, scale = 1 mm; B, *Kupellonura formosa*, cephalon and pereonite 1 ♂, aesthetascs omitted; C, *Kupellonura formosa*, pleonite 6 and tail-fan; D, *Neohyssura irpex* ♀, scale = 0.5 mm; E, *Neohyssura irpex* cephalon ♂, aesthetascs omitted; F, *Neohyssura irpex*, pleonite 6 and tailfan.

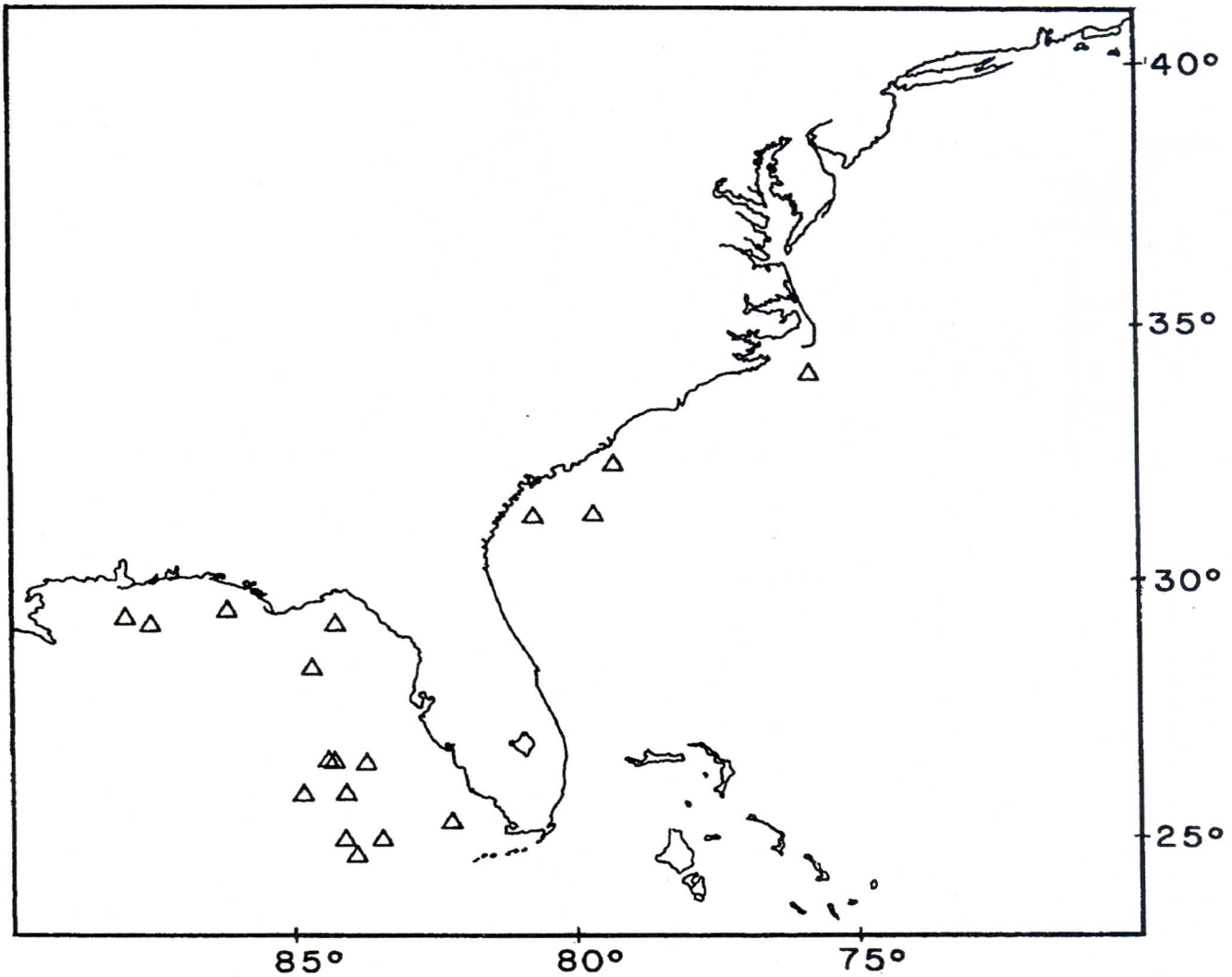


Figure 10. *Kupellonura formosa* occurrences.

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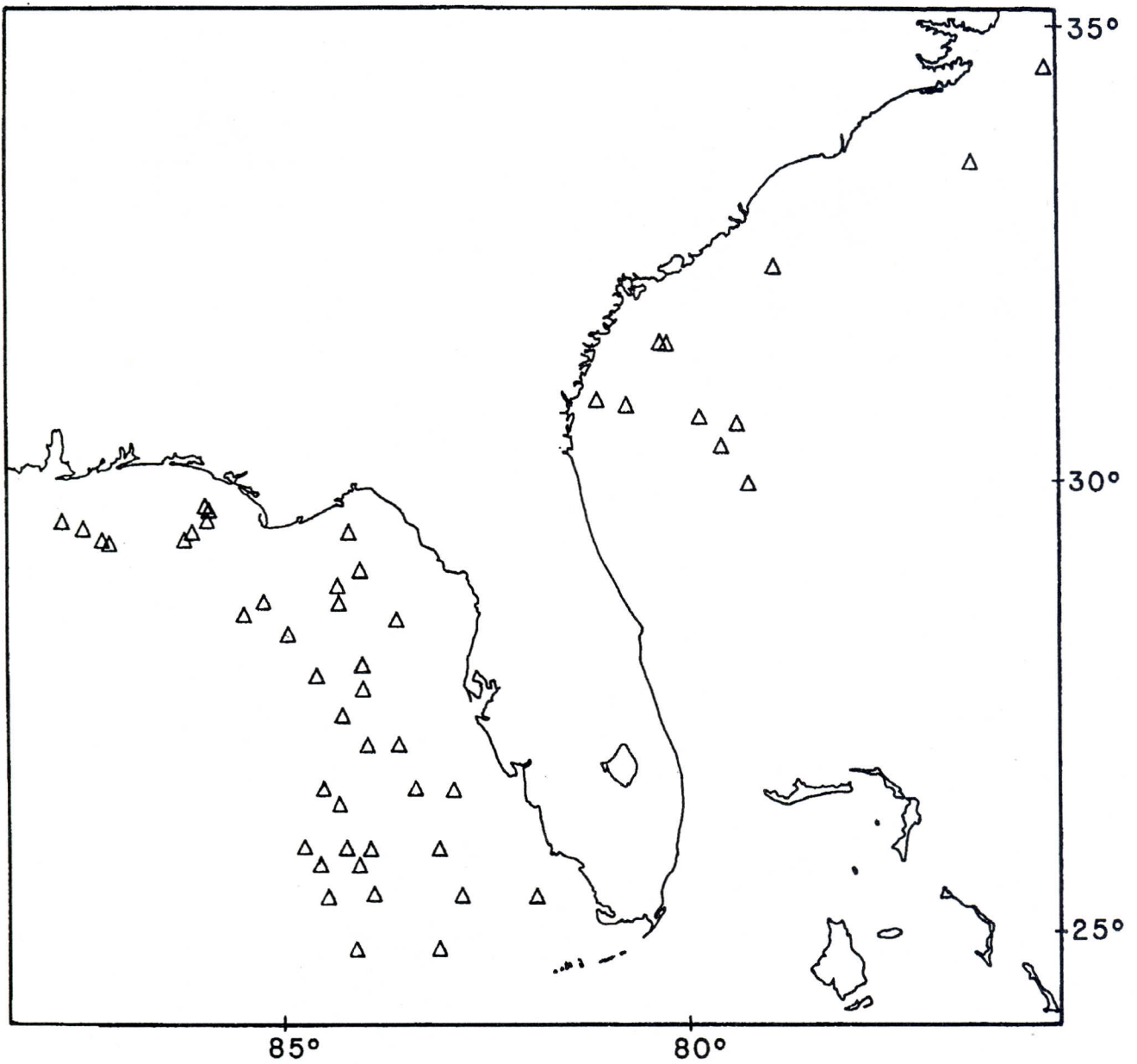


Figure 11. *Neohyssura irpex* occurrences.

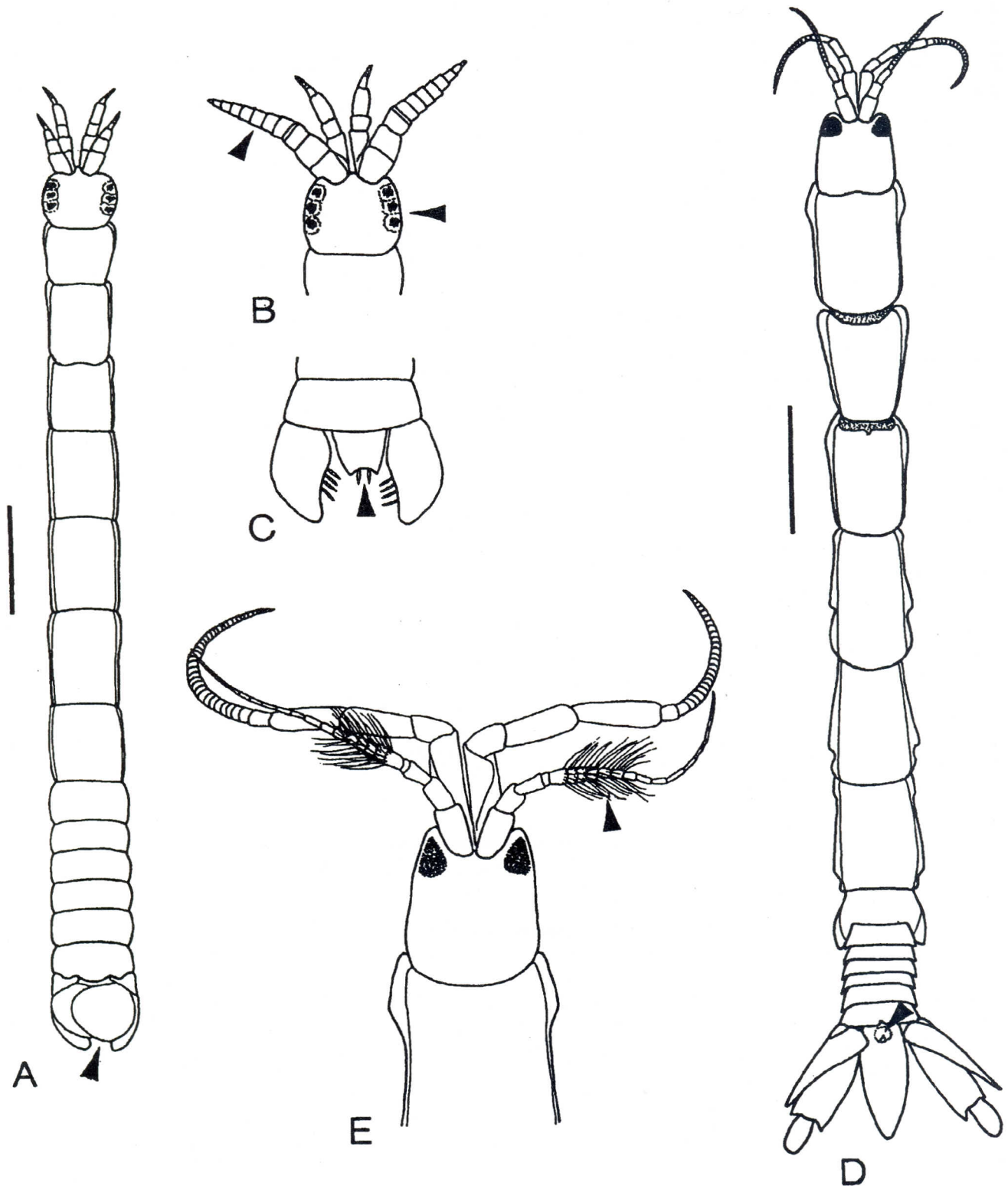


Figure 12. A, *Xenanthura brevitelson* ♀, scale = 0.5 mm; B, *Xenanthura brevitelson*, cephalon ♂; C, *Xenanthura brevitelson*, pleonite 6, telson, and uropodal endopods, uropodal exopods removed; D, *Accalathura crenulata* ♀, scale = 2 mm; E, *Accalathura crenulata*, cephalon ♂.

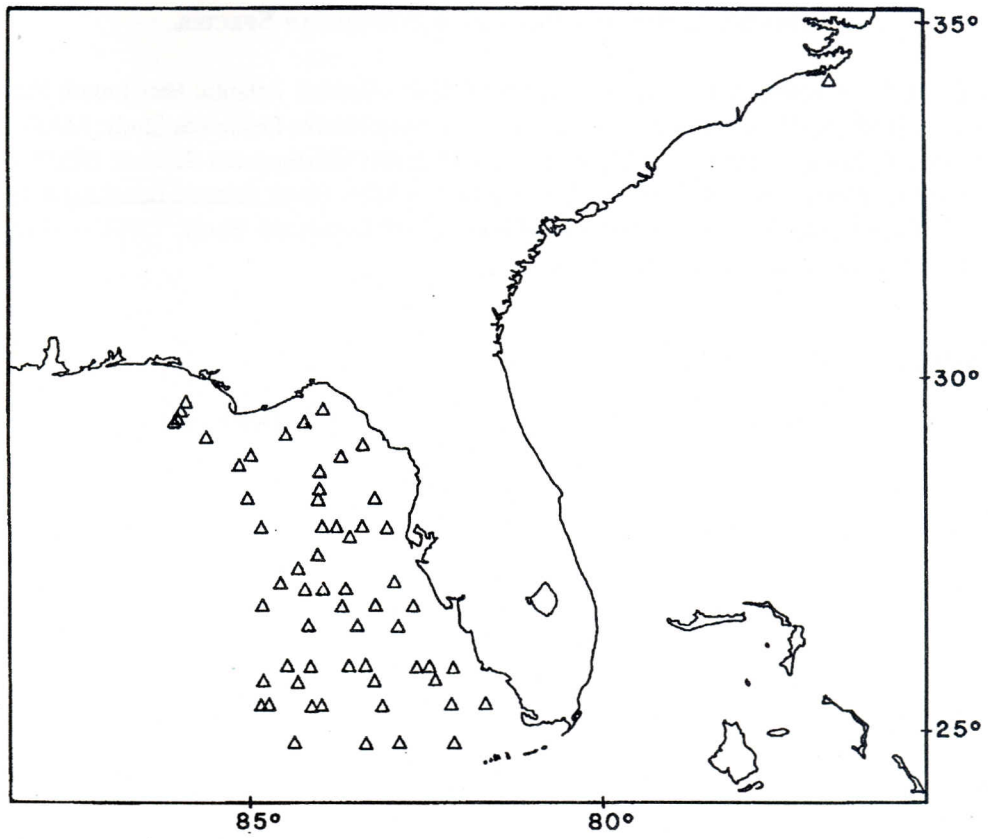


Figure 13. *Xenanthura brevitelson* occurrences.

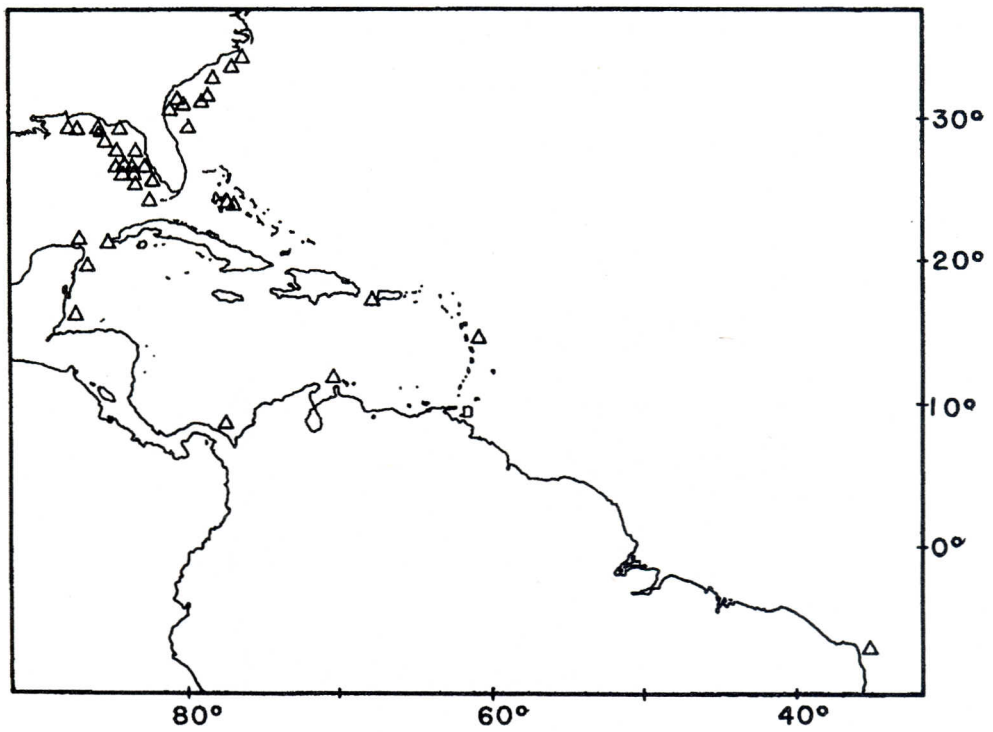


Figure 14. *Accalathura crenulata* occurrences.

APPENDIX 1. STATION DATA BY ANTHURIDEAN SPECIES.

Abbreviations: ACE - Albatross Caribbean Expedition; CABP - Central Atlantic Benchmark Program; CGPS - Central Gulf Platform Study; K+S - Kensley & Schotte; LMRS - Living Marine Resources Study; MAFLA - Mississippi Alabama Florida Survey; M&G - Menzies & Glynn; MMS - Minerals Management Service; NEEB - New England Environmental Benchmark Program; P+R - Pilsbry & Richardson; SABP - South Atlantic Benchmark Program; S-BE - Smithsonian-Bredin Expedition; SOFLA - Southwest Florida Shelf Ecosystem Study; USFC - United States Fish Commission; USGS - United States Geological Service.

ACCALATHURA

CRENULATA

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected
		08°55'--"N 077°42'--"W		-- --- ----
		12°30'--"N 069°58'--"W	43.9	-- --- ----
		16°48'--"N 088°05'--"W		12 JAN 1976
	1	16°48'--"N 088°05'--"W		17 JAN 1976
	147	16°48'--"N 088°05'--"W	3	27 APR 1977
ACE		21°50'--"N 084°57'--"W	9.15	07 MAY 1884
ACE	2363	21°35'--"N 087°05'--"W	38.41	30 JAN 1885
ALBATROSS R/V	2758	05°29'--"S 035°16'--"W	36.58	16 DEC 1887
BARTSCH, P.		24°26'--"N 077°57'--"W		09 FEB 1912
BARTSCH, P.		24°26'--"N 077°57'--"W		13 MAY 1912
CORTEZ, H.	67-21	26°24'--"N 083°22'--"W	55	13 JAN 1967
CORTEZ, H.	67-342	27°37'--"N 083°58'--"W	55	06 OCT 1967
CORTEZ, H.	67-352	26°24'--"N 083°22'--"W	55	12 OCT 1967
FISHHAWK R/V	(137) 6065	18°12'--"N 067°10'--"W	7.32-10.97	20 JAN 1899
K & S	K-DOM-21	15°14'--"N 061°19'--"W	3-5	18 NOV 1992
KENSLEY, B.	K-11	17°05'--"N 088°05'--"W	6.1	01 FEB 1978
KENSLEY, B.	K-12	16°50'--"N 088°05'--"W		02 FEB 1978
LMRS	IS02	31°23'36"N 080°53'12"W	18	15 NOV 1981
LMRS	MS03	30°54'18"N 080°36'12"W	35	04 SEP 1980
LMRS	MS06	32°49'18"N 078°39'54"W	33	08 AUG 1981
LMRS	MS06	32°49'24"N 078°39'48"W	34	27 JUL 1981
LMRS	MS06	32°49'30"N 078°39'48"W	34	25 MAY 1981
LMRS	OS01	31°32'00"N 079°44'18"W	57	29 OCT 1981
LMRS	OS01	31°32'06"N 079°44'12"W	58	03 MAY 1981
LMRS	OS02	31°07'18"N 079°55'06"W	50	11 SEP 1980
LMRS	OS02	31°08'00"N 079°54'54"W	55	11 SEP 1980
LMRS	OS03	30°37'00"N 081°10'42"W	22	04 AUG 1980
MAFLA	2101	26°25'00"N 081°15'09"W	11	--- NOV 1977
MAFLA	2103	26°25'00"N 082°58'00"W	33	--- JUL 1976
MAFLA	2104	26°25'00"N 083°23'01"W	53	--- SEP 1975
MAFLA	2105	26°45'00"N 083°49'58"W	90	--- --- --- ----
MAFLA	2210	27°57'29"N 083°42'29"W	37	--- JUL 1976
MAFLA	2211	27°56'30"N 083°53'00"W	43	--- JAN 1977
MAFLA	2315	28°33'59"N 084°20'09"W	38	30 AUG 1977
MAFLA	2422	29°30'--"N 084°27'--"W	24	--- --- 1976
MAFLA	2528	29°54'59"N 086°04'58"W	37	-- JUL 1976
MAFLA	2531	29°47'59"N 086°09'29"W	45	-- SEP 1977
MAFLA	2640	29°43'29"N 087°54'30"W	35	18 JAN 1976
MAFLA	2644	29°36'12"N 087°23'30"W	75	-- --- ----
MAFLA	2747	27°24'12"N 084°07'18"W	74	--- NOV 1977

U.S. ANTHURIDEAN SHELF ISOPODS

MAFLA	2748	27°37'12"N 083°53'30"W	50	--	JUL	1976
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	---	1976
MAFLA	2854	29°24'00"N 085°42'02"W	42	--	JUL	1976
P & R		24°46'--"N 077°39'--"W		--	---	1875
SABP	7D	29°34'06"N 080°21'51"W	44	27	NOV	1977
SABP	IS03	30°37'00"N 081°10'42"W	20	--	---	----
SABP	IS05	34°23'06"N 076°34'12"W	20	--	---	----
SABP	MS04	33°32'12"N 077°24'30"W	29	--	---	----
SABP	MS04	33°32'18"N 077°25'00"W	30	--	---	----
S-BE	48-60	20°25'--"N 086°55'--"W		08	APR	1960
SOFLA	04	26°45'49"N 083°32'07"W	52.2	--	---	----
SOFLA	22	25°17'11"N 083°02'04"W	52.2	--	---	----
SOFLA	40	26°46'45"N 082°30'25"W	18	--	---	----
SOFLA	48	25°45'58"N 082°01'08"W	18	--	---	----
SOFLA	54	C 24°49'55"N 081°50'33"W	17	--	---	1974
TALISMAN R/V		16°50'--"N 025°00'--"W	10-30	--	---	1883

AMAKUSANTHURA MAGNIFICA

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
CABP	A1	39°14'24"N 072°47'18"W	90	12	FEB	1977
CABP	A2	39°21'36"N 072°31'18"W	129	07	AUG	1977
CABP	A2	39°22'12"N 072°31'00"W	127	05	MAR	1976
CABP	A3	39°16'18"N 072°29'18"W	149	07	AUG	1977
CABP	A3	39°16'30"N 072°29'36"W	136	22	AUG	1976
CABP	A3	39°16'30"N 072°29'48"W	136	12	FEB	1977
CABP	A3	39°16'30"N 072°29'48"W	139	16	NOV	1976
CABP	A4	39°14'18"N 072°26'48"W	196	23	JUN	1976
CABP	B1	39°19'18"N 073°10'12"W	63	04	NOV	1975
CABP	F1	38°43'30"N 073°13'54"W	84	20	AUG	1976
CABP	F1	38°44'18"N 073°14'36"W	86	19	JUN	1976
CABP	F1	38°45'24"N 073°16'18"W	79	09	FEB	1977
CABP	F2	38°43'42"N 073°08'30"W	113	20	AUG	1976
CABP	F2	38°44'12"N 073°09'06"W	116	11	AUG	1977
CABP	F2	38°44'12"N 073°09'18"W	112	19	JUN	1976
CABP	F2	38°44'18"N 073°09'18"W	111	12	NOV	1976
CABP	F3	38°43'36"N 073°04'00"W	153	20	AUG	1976
CABP	F3	38°43'48"N 073°04'06"W	155	10	FEB	1977
CABP	F3	38°43'54"N 073°04'06"W	162	10	AUG	1977
CABP	F4	38°44'12"N 073°02'36"W	206	10	FEB	1977
CABP	F4	38°44'18"N 073°03'06"W	184	20	JUN	1976
CABP	F4	38°44'30"N 073°03'00"W	180	10	AUG	1977
CABP	F4	38°44'30"N 073°03'12"W	179	12	NOV	1976
CABP	F4	38°44'36"N 073°03'06"W	183	18	MAR	1976
CABP	G5	39°48'54"N 072°12'06"W	85	08	MAR	1977
CABP	G5	39°48'54"N 072°12'18"W	90	09	MAR	1976
CABP	G5	39°48'54"N 072°12'24"W	92	27	AUG	1976
CABP	G5	39°49'00"N 072°12'06"W	90	14	AUG	1977
CABP	G6	39°40'36"N 072°00'48"W	167	09	MAR	1976
CABP	I2	39°07'30"N 072°48'54"W	93	22	AUG	1976
CABP	I2	39°07'30"N 072°49'00"W	95	09	AUG	1977
CABP	I2	39°07'30"N 072°49'06"W	93	13	FEB	1977
CABP	K4	38°04'36"N 074°01'42"W	103	16	FEB	1977
CABP	K5	38°01'30"N 073°53'48"W	152	16	FEB	1977

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CABP	K5	38°04'36"N 073°53'54"W	140-150	31	AUG	1976
CABP	L3	37°13'36"N 074°46'36"W	66	01	SEP	1976
CABP	L4	37°08'06"N 074°36'54"W	90-91	01	SEP	1976
CABP	L4	37°08'06"N 074°36'54"W	94	13	MAR	1977
CABP	L4	37°08'06"N 074°36'54"W	97	04	AUG	1977
CABP	L4	37°08'06"N 074°37'00"W	94	22	MAR	1976
CABP	L5	37°06'12"N 074°33'24"W	190	16	FEB	1977
CABP	L5	37°06'30"N 074°33'36"W	140	05	AUG	1977
GODCHARLES, M.E.		27°36'08"N 082°46'32"W	3.66	15	APR	1970
GRAY, M.	359	30°48'05"N 080°00'00"W	140.61	12	SEP	1963
HUBRICHT, L.		29°48'42"N 085°18'11"W		31	JUL	1939
K & S	FLK2,3,5,6+	24°32'53"N 081°24'22"W.	31-6.1	08	SEP	1982
LMRS	MS02	31°41'06"N 080°20'48"W	27	05	NOV	1981
MAFLA	2101	26°25'00"N 081°15'09"W	11	--	MAY	1976
MAFLA	2102	26°25'00"N 082°25'00"W	18	--	---	----
MAFLA	2103	26°25'00"N 082°58'00"W	33	--	JUL	1976
MAFLA	2104	26°25'00"N 083°23'01"W	53	--	AUG	1977
MAFLA	2105	26°45'00"N 083°49'58"W	90	--	JUL	1976
MAFLA	2062	6°24'57"N 084°15'00"W	168	--	---	----
MAFLA	2207	27°57'00"N 083°09'00"W	19	--	AUG	1977
MAFLA	2210	27°57'29"N 083°42'29"W	37	--	JUL	1975
MAFLA	2211	27°56'30"N 083°53'00"W	43	--	AUG	1977
MAFLA	2212	27°57'00"N 084°48'00"W	189	--	NOV	1977
MAFLA	2313	28°23'59"N 085°15'03"W	177	29	AUG	1977
MAFLA	2314	28°29'--"N 084°21'--"W	29	--	---	----
MAFLA	2315	28°33'59"N 084°20'09"W	38	--	---	1974
MAFLA	2317	28°56'00"N 084°06'00"W	29	--	NOV	1977
MAFLA	2318	29°05'01"N 083°45'00"W	20	--	JUL	1976
MAFLA	2419	29°47'00"N 084°05'00"W	10	--	SEP	1977
MAFLA	2422	29°30'--"N 084°27'--"W	24	--	---	----
MAFLA	2423	29°37'01"N 084°17'00"W	19	--	AUG	1977
MAFLA	2424	29°13'01"N 085°00'01"W	27	--	---	1975
MAFLA	2425	29°05'--"N 085°15'--"W	36	--	---	----
MAFLA	2426	28°57'59"N 085°23'00"W	82	--	SEP	1977
MAFLA	2427	28°49'59"N 085°37'02"W	175	--	FEB	1975
MAFLA	2528	29°54'59"N 086°04'58"W	37	--	JUL	1976
MAFLA	2529	29°55'59"N 086°06'29"W	38	--	JUL	1976
MAFLA	2530	29°51'--"N 086°06'30"W	41	07	FEB	1976
MAFLA	2531	29°47'59"N 086°09'29"W	45	07	FEB	1976
MAFLA	2532	29°46'--"N 086°12'30"W	52	--	JUL	1976
MAFLA	2533	29°43'00"N 085°15'29"W	67	--	---	----
MAFLA	2534	29°40'--"N 086°17'--"W	73	--	---	----
MAFLA	2638	29°55'29"N 088°33'28"W	24	--	---	----
MAFLA	2639	26°53'30"N 088°12'28"W	32	18	JAN	1976
MAFLA	2640	29°43'29"N 087°54'30"W	35	--	JUL	1976
MAFLA	2641	29°45'29"N 087°46'30"W	37	--	JUL	1976
MAFLA	2642	29°40'30"N 087°37'--"W	36	18	JAN	1976
MAFLA	2643	29°36'31"N 087°27'01"W	69	19	JAN	1976
MAFLA	2644	29°36'12"N 087°23'30"W	75	27	SEP	1975
MAFLA	2645	29°35'00"N 087°20'02"W	106	19	JAN	1976
MAFLA	2747	27°24'12"N 084°07'18"W	74	--	AUG	1977
MAFLA	2748	27°37'12"N 083°53'30"W	50	--	SEP	1977
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	---	----
MAFLA	2856	29°54'01"N 087°24'00"W	30	--	JUL	1976
MAFLA	2957	25°40'--"N 084°15'--"W	180	--	NOV	1977

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MAFLA	2959	25°40'--"N 083°05'--"W	60	--	FEB	1978
MAFLA	2960	25°40'--"N 082°20'--"W	27	--	AUG	1977
MARKHAM, J.C.		32°20'--"N 064°40'--"W	90	30	OCT	1976
MMS		31°23'36"N 080°53'12"W	.61	--	---	----
MMS		33°32'18"N 077°25'00"W	1	--	---	----
PIERCE, E.L.		29°09'28"N 083°02'48"W		13	APR	1957
PIERCE, E.L.		29°09'28"N 083°02'48"W	3.05	19	JAN	1957
SABP	1C	33°35'06"N 078°03'58"W	16	16	NOV	1977
SABP	2E	32°39'58"N 078°47'03"W	35	18	AUG	1977
SABP	3C	32°13'00"N 079°52'03"W	20	23	AUG	1977
SABP	4B	31°53'01"N 080°46'00"W	8	25	AUG	1977
SABP	4C	31°45'26"N 080°29'03"W	20	24	FEB	1977
SABP	4C	31°45'27"N 080°29'06"W	18	25	AUG	1977
SABP	4D	31°39'59"N 080°16'05"W	26	24	FEB	1977
SABP	5B	31°11'59"N 081°08'00"W	10.5	21	FEB	1977
SABP	5B	31°11'59"N 081°08'00"W	11	23	NOV	1977
SABP	5C	31°07'59"N 080°49'55"W	15	16	MAY	1977
SABP	5C	31°08'01"N 080°49'57"W	19	23	NOV	1977
SABP	5C	31°08'01"N 080°49'58"W	19	23	NOV	1977
SABP	5C	31°08'02"N 080°49'57"W	19	23	NOV	1977
SABP	5H	30°57'03"N 079°57'58"W	92	25	NOV	1977
SABP	6B	30°22'59"N 081°15'02"W	19	28	FEB	1977
SABP	6B	30°22'59"N 081°15'03"W	12	31	AUG	1977
SABP	6B	30°22'59"N 081°15'03"W	19	28	FEB	1977
SABP	6C	30°22'59"N 080°51'00"W	29	28	FEB	1977
SABP	6G	30°23'06"N 080°09'59"W	149	01	MAR	1977
SABP	7B	29°28'00"N 080°57'08"W	14	04	SEP	1977
SOFLA	03	26°45'52"N 083°21'26"W	50.2	--	---	----
SOFLA	05	26°45'42"N 084°00'08"W	89.8	--	---	----
SOFLA	07	26°16'49"N 082°44'01"W	30.4	--	---	----
SOFLA	09	26°16'50"N 083°23'49"W	55.5	--	---	1974
SOFLA	10	26°16'44"N 083°42'49"W	71.3	--	---	1974
SOFLA	11	26°16'43"N 083°46'49"W	77	--	---	----
SOFLA	12	26°16'43"N 083°47'40"W	89.8	30	APR	1981
SOFLA	13	25°45'56"N 082°09'21"W	19.6	--	---	----
SOFLA	14	25°46'01"N 082°23'49"W	26.1	28	JUL	1981
SOFLA	15	25°45'53"N 082°31'37"W	31.5	--	---	----
SOFLA	16	25°45'42"N 083°11'04"W	53.7	28	JUL	1981
SOFLA	18	25°45'22"N 083°42'13"W	86.1	--	---	1974
SOFLA	19	25°17'22"N 082°09'00"W	22.5	--	---	1974
SOFLA	20	25°17'20"N 082°09'44"W	22.7	--	---	1974
SOFLA	21	25°17'16"N 082°52'10"W	44.2	--	---	----
SOFLA	22	25°17'11"N 083°02'04"W	52.2	01	AUG	1981
SOFLA	23	25°16'53"N 083°37'47"W	70	--	---	----
SOFLA	24	25°16'54"N 083°43'11"W	88.2	--	---	----
SOFLA	25	24°47'57"N 082°13'16"W	24	--	---	----
SOFLA	26	24°47'49"N 082°52'04"W	38	--	---	----
SOFLA	28	24°47'07"N 083°13'05"W	58.6	04	AUG	1981
SOFLA	29	24°27'31"N 083°41'11"W	62.5	--	---	1974
SOFLA	30	24°47'25"N 083°51'09"W	76.1	--	---	1974
SOFLA	33	26°16'32"N 084°05'58"W	145.5	--	---	----
SOFLA	34	25°45'19"N 083°57'38"W	135.5	27	JUL	1981
SOFLA	35	25°44'50"N 084°21'02"W	159	--	---	----
SOFLA	36	25°16'50"N 083°57'21"W	127	--	---	----
SOFLA	37	25°16'38"N 084°09'23"W	148	02	AUG	1981

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SOFLA	38	25°16'30"N 084°14'46"W	159	--	---	1974
SOFLA	39	24°47'10"N 083°55'22"W		--	---	----
SOFLA	40	26°46'45"N 082°30'25"W	18	--	---	----
SOFLA	42	26°17'01"N 082°25'25"W	17	--	---	1974
SOFLA	43	26°17'24"N 082°18'53"W	16	--	---	1974
SOFLA	45	26°03'11"N 082°08'27"W	17	--	---	----
SOFLA	46	26°01'01"N 082°07'53"W	18	--	---	1974
SOFLA	48	25°46'09"N 082°01'06"W	16	--	---	1974
SOFLA	50	25°17'48"N 081°39'48"W	14	--	---	1974
SOFLA	50	25°20'30"N 081°51'30"W	16	--	---	1974
VOGEL, J.		27°41'18"N 082°34'21"W		17	MAY	1967
VOGEL, J.		27°53'09"N 082°33'31"W		01	OCT	1966
VOGEL, J.		27°53'09"N 082°33'31"W		09	NOV	1966
VOGEL, J.		27°53'09"N 082°33'31"W		10	JUL	1966
WASS, M.	0	29°56'51"N 084°20'29"W		01	DEC	1955

AMAKUSANTHURA SIGNATA

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
AUSTIN, H.	VII-9	17°58'--"N 067°04'--"W	1.53	23	JUL	1966
K & S	K-DOM-19,20,22	15°14'--"N 061°19'--"W	.5-5	18	NOV	1992
K & S	K-DOM-4,25,26	15°35'--"N 061°16'--"W		22	MAR	1989
KENSLEY, B.	K-10	16°48'--"N 088°05'--"W	1.2	01	FEB	1978
LMRS	IS01	32°29'18"N 079°42'42"W	18	31	JUL	1981
LMRS	IS01	32°29'36"N 079°42'30"W	18	26	---	1981
LMRS	IS02	31°23'30"N 080°53'12"W	18	28	JUL	1981
LMRS	IS02	31°23'36"N 080°53'12"W	17	13	MAY	1981
LMRS	IS02	31°23'36"N 080°53'12"W	18	28	JUL	1981
LMRS	IS02	31°23'36"N 080°53'12"W	19	26	FEB	1981
LMRS	MS06	32°49'24"N 078°39'48"W	34	--	---	----
MAFLA	2101	26°25'00"N 081°15'09"W	11	--	AUG	1977
MAFLA	2316	28°42'00"N 084°20'01"W	35	--	FEB	1978
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	AUG	1977
M & G	VIII-15	17°56'--"N 067°06'--"W		06	AUG	1966
SOFLA	11	26°16'43"N 083°46'49"W	77	--	---	----
SOFLA	12	26°16'43"N 083°47'40"W	89.8	--	---	----
SOFLA	22	25°17'11"N 083°02'04"W	52.2	--	---	----
SOFLA	23	25°16'53"N 083°37'47"W	70	--	---	----
SOFLA	25	24°47'57"N 082°13'16"W	24	--	---	----
SOFLA	26	24°47'49"N 082°52'04"W	38	--	---	----
SOFLA	30	24°47'25"N 083°51'09"W	76.1	--	---	----
SOFLA	33	26°16'32"N 084°05'58"W	145.5	--	---	----
SOFLA	34	25°45'19"N 083°57'38"W	135.5	--	---	----
SOFLA	35	25°44'50"N 084°21'02"W	159	--	---	----
SOFLA	36	25°16'50"N 083°57'21"W	127	--	---	----
SOFLA	37	25°16'38"N 084°09'23"W	148	--	---	----

CYATHURA BURBANCKI

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
		40°36'44"N 073°41'34"W	1.22	24	JUL	1967
FRANKENBERG, D.		31°19'15"N 081°07'45"W	17	26	APR	1963
SABP	1F	33°00'56"N 077°20'15"W	225	17	AUG	1977

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SABP	2A	32°56'59"N 079°16'54"W	15	19	AUG	1977
SABP	2F	32°36'02"N 078°38'58"W	44	14	FEB	1977
SABP	3B	32°23'00"N 080°09'00"W	13.7	17	FEB	1977
SABP	3B	32°23'26"N 080°08'56"W	11	23	AUG	1977
SABP	3B	32°23'27"N 080°08'56"W	11	23	AUG	1977
SOFLA	01	26°45'46"N 082°43'07"W	24	--	---	----

HYSSURA BACESCUI

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
EASTWARD R/V	738	34°17'30"N 075°49'--"W	445	13	MAR	1965
MAFLA	13G	29°45'29"N 087°46'30"W	37	--	JUN	1975
MAFLA	2313	28°23'59"N 085°15'03"W	177	--	---	----
SABP	5H	30°57'05"N 079°58'04"W	79	17	MAY	1977
SABP	5I	30°54'04"N 079°43'38"W	422	25	NOV	1977
SABP	7E	29°36'02"N 080°10'51"W	225	27	NOV	1977

KUPELLONURA FORMOSA

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
GRAY, M.	298	31°26'32"N 079°42'13"W	76.86-88.76	06	AUG	1963
HIGGINS, R.		27°26'47"N 080°15'33"W	15	--	---	----
LMRS	IS02	31°23'36"N 080°53'12"W	17	13	MAY	1981
MAFLA	2316	28°42'00"N 084°20'01"W	35	--	---	1976
MAFLA	2420	29°42'--"N 084°11'--"W	14	--	---	1975
MAFLA	2528	29°54'59"N 086°04'58"W	37	--	NOV	1977
MAFLA	2640	29°43'29"N 087°54'30"W	35	--	FEB	1978
MAFLA	2643	29°36'31"N 087°27'01"W	69	--	---	----
SABP	2B	32°54'00"N 079°12'00"W	16	12	FEB	1977
SABP	IS02	31°23'36"N 080°53'12"W	17	--	---	----
SABP	OS02	34°51'24"N 075°31'12"W	57	--	---	----
SOFLA	12	26°16'43"N 083°47'40"W	89.8	--	---	----
SOFLA	20	25°17'20"N 082°09'44"W	22.7	--	---	----
SOFLA	28	24°47'07"N 083°13'05"W	58.6	04	AUG	1981
SOFLA	29	24°27'31"N 083°41'11"W	62.5	--	---	----
SOFLA	30	24°47'25"N 083°51'09"W	76.1	--	---	----
SOFLA	32	26°16'40"N 084°04'05"W	137	--	---	--
SOFLA	33	26°16'32"N 084°05'58"W	145.5	--	---	----
SOFLA	34	25°45'19"N 083°57'38"W	135.5	--	---	----
SOFLA	35	25°44'50"N 084°21'02"W	159	--	---	----

NEOHYSSURA IRPEX

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
GRAY, M.	366	30°45'00"N 080°02'56"W	86.93	12	SEP	1963
MAFLA	2103	26°25'00"N 082°58'00"W	33	--	---	----
MAFLA	2104	26°25'00"N 083°23'01"W	53	--	AUG	1977
MAFLA	2105	26°45'00"N 083°49'58"W	90	--	MAY	1975
MAFLA	2106	26°24'57"N 084°15'00"W	168	--	---	1977
MAFLA	2211	27°56'30"N 083°53'00"W	43	--	AUG	1978
MAFLA	2313	28°23'59"N 085°15'03"W	177	--	AUG	1977
MAFLA	2315	28°33'59"N 084°20'09"W	38	--	---	1974

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MAFLA	2316	28°42'00"N 084°20'01"W	35	--	---	1976
MAFLA	2317	28°56'00"N 084°06'00"W	29	--	---	----
MAFLA	2423	29°37'01"N 084°17'00"W	19	--	SEP	1977
MAFLA	2426	28°57'59"N 085°23'00"W	82	--	NOV	1977
MAFLA	2427	28°49'59"N 085°37'02"W	175	--	---	----
MAFLA	2528	29°54'59"N 086°04'58"W	37	--	SEP	1977
MAFLA	2529	29°55'59"N 086°06'29"W	38	--	SEP	1977
MAFLA	2530	29°51'--"N 086°06'30"W	41	--	---	----
MAFLA	2531	29°47'59"N 086°09'29"W	45	--	FEB	1978
MAFLA	2533	29°43'00"N 085°15'29"W	67	--	AUG	1977
MAFLA	2534	29°40'--"N 086°17'--"W	73	--	---	----
MAFLA	2535	29°37'00"N 086°20'00"W	117	--	---	----
MAFLA	2640	29°43'29"N 087°54'30"W	35	--	AUG	1977
MAFLA	2642	29°40'30"N 087°37'--"W	36	--	---	----
MAFLA	2644	29°36'12"N 087°23'30"W	75	--	---	----
MAFLA	2645	29°35'00"N 087°20'02"W	106	--	SEP	1977
MAFLA	2747	27°24'12"N 084°07'18"W	74	--	---	----
MAFLA	2748	27°37'12"N 083°53'30"W	50	--	AUG	1977
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	---	----
MAFLA	2957	25°40'--"N 084°15'--"W	180	--	AUG	1977
MAFLA	2958	25°40'--"N 083°50'--"W	120	--	AUG	1977
SABP	2D	32°44'55"N 078°55'56"W	32	18	AUG	1977
SABP	4C	31°45'--"N 080°28'--"W	16	--	---	1977
SABP	4C	31°45'26"N 080°29'03"W	20	24	FEB	1977
SABP	4C	31°45'27"N 080°29'06"W	18	25	AUG	1977
SABP	5B	31°11'59"N 081°08'00"W	10.5	21	FEB	1977
SABP	5B	31°12'--"N 081°08'--"W	11	--	---	1977
SABP	5B	31°12'00"N 081°07'59"W	10.5	21	FEB	1977
SABP	5C	31°08'00"N 080°49'57"W	19	25	FEB	1977
SABP	5C	31°08'02"N 080°49'57"W	19	23	NOV	1977
SABP	5F	31°01'01"N 080°16'59"W	36	17	MAY	1977
SABP	5F	31°01'02"N 080°16'57"W	36	16	MAY	1977
SABP	5H	30°57'05"N 079°58'04"W	79	17	MAY	1977
SABP	6H	30°23'03"N 079°56'59"W	460	02	MAR	1977
SABP	OS04	34°51'24"N 075°31'12"W	57	--	---	----
SABP	OS05	33°49'48"N 076°34'36"W	61	--	---	----
SOFLA	04	26°45'49"N 083°32'07"W	55.2	29	OCT	1980
SOFLA	16	25°45'42"N 083°11'04"W	53.7	09	NOV	1980
SOFLA	18	25°45'22"N 083°42'13"W	86.1	15	NOV	1980
SOFLA	19	25°17'22"N 082°09'00"W	22.5	18	NOV	1980
SOFLA	20	25°17'20"N 082°09'44"W	22.7	18	NOV	1980
SOFLA	22	25°17'11"N 083°02'04"W	52.2	17	NOV	1980
SOFLA	24	25°16'54"N 083°43'11"W	88.2	16	NOV	1980
SOFLA	28	24°47'07"N 083°13'05"W	58.6	20	NOV	1980
SOFLA	33	26°16'32"N 084°05'58"W	145.5	05	FEB	1982
SOFLA	34	25°45'19"N 083°57'38"W	135.5	27	JUL	1981
SOFLA	35	25°44'50"N 084°21'02"W	159	07	FEB	1982
SOFLA	37	25°16'38"N 084°09'23"W	148	09	FEB	1982
SOFLA	39	24°47'10"N 083°55'22"W	151.5	10	FEB	1982

PTILANTHURA COLPOS

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected
CGPS	03P-W2000-05	28°40'02"N 090°14'43"W	32	29 MAY 1978

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CGPS	03P-W2000-07	28°40'02"N 090°14'43"W	32	29	MAY	1978
CGPS	14S-N2000-07	28°41'51"N 091°37'21"W	27	20	SEP	1978
CGPS	14S-N500-08	28°41'51"N 091°37'21"W	27	20	SEP	1978
CGPS	18S-N2000-07	28°48'50"N 091°44'20"W	24	20	SEP	1978
CGPS	18S-N2000-08	28°48'50"N 091°44'20"W	24	20	SEP	1978
MAFLA	15I	29°45'29"N 087°46'30"W	37	--	---	1974
MAFLA	17F	29°36'31"N 087°27'01"W	69	--	---	1975
MAFLA	2102	26°25'00"N 082°25'00"W	18	--	---	----
MAFLA	2210	27°57'29"N 083°42'49"W	37	--	JUL	1975
MAFLA	2317	28°56'00"N 084°06'00"W	20	--	---	1975
MAFLA	2420	29°42'--"N 084°11'--"W	14	--	---	1976
MAFLA	2426	28°57'59"N 085°23'00"W	82	--	JUL	1978
MAFLA	2639	26°53'30"N 088°12'28"W	32	18	JAN	1976
MAFLA	2641	29°45'29"N 087°46'30"W	37	--	JUL	1976
MAFLA	2642	29°40'30"N 087°37'--"W	36	27	SEP	1975
MAFLA	2643	29°36'31"N 087°27'01"W	69	--	---	----
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	---	1976
MAFLA	2854	29°24'00"N 085°42'02"W	42	--	JUL	1976
MAFLA	2856	29°54'01"N 087°24'00"W	30	--	JUL	1976
MAFLA	8G	29°53'30"N 088°12'28"W	32	--	---	1974
SOFLA	24	25°16'54"N 083°43'11"W	88.2	14	AUG	1981

PTILANTHURA TENUIS

Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected		
BATTELLE	FF 10 REP. 3	42°24'52"N 070°52'44"W	29	16	AUG	1993
BATTELLE	NF 14 REP. 2	42°23'15"N 070°49'25"W	34	16	AUG	1993
BATTELLE	NF 4 REP. 1	42°24'58"N 070°48'23"W	38	15	AUG	1993
CABP	A1	39°14'18"N 072°46'48"W	90	21	AUG	1976
CABP	A1	39°14'30"N 072°47'30"W	91	15	NOV	1976
CABP	A1	39°14'42"N 072°42'24"W	89	07	AUG	1977
CABP	B2	39°23'18"N 073°00'36"W	61	04	MAR	1976
CABP	B3	39°19'42"N 073°00'12"W	72	11	FEB	1977
CABP	B3	39°19'42"N 073°00'18"W	72	04	MAR	1976
CABP	B3	39°19'42"N 073°00'24"W	72	04	NOV	1975
CABP	BD2	39°28'24"N 072°58'42"W	64	15	NOV	1976
CABP	BD6	39°20'06"N 072°59'00"W	74	15	NOV	1976
CABP	BD7	39°20'54"N 073°08'06"W	64	15	NOV	1976
CABP	BD8	39°20'18"N 073°10'06"W	64	15	NOV	1976
CABP	BF2	39°28'54"N 073°06'48"W	54	15	NOV	1976
CABP	BF3	39°26'06"N 073°08'24"W	58	15	NOV	1976
CABP	BF6	39°21'54"N 073°09'48"W	62	15	NOV	1976
CABP	BM1	39°25'00"N 073°13'48"W	56	15	NOV	1976
CABP	BM2	39°23'42"N 073°13'12"W	58	15	NOV	1976
CABP	BM4	39°22'24"N 073°12'54"W	56	15	NOV	1976
CABP	BM5	39°20'06"N 073°12'42"W	63	15	NOV	1976
CABP	BM6	39°20'00"N 073°10'42"W	63	15	NOV	1976
CABP	BP4	39°32'54"N 073°08'30"W	46	15	NOV	1976
CABP	BR1	39°21'24"N 073°11'00"W	62	15	NOV	1976
CABP	BR3	39°22'18"N 073°03'30"W	66	14	NOV	1976
CABP	BR4	39°19'48"N 072°58'30"W	65	15	NOV	1976
CABP	BR6	39°30'36"N 072°59'24"W	66	15	NOV	1976
CABP	BR8	39°34'30"N 072°57'24"W	65	15	NOV	1976
CABP	BR9	39°32'18"N 072°57'30"W	62	15	NOV	1976

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CABP	BS0	39°27'54"N 072°58'30"W	66	15	NOV	1976
CABP	BS1	39°32'00"N 073°01'30"W	71	15	NOV	1976
CABP	BS2	39°30'24"N 073°00'42"W	69	15	NOV	1976
CABP	BS3	39°28'42"N 073°05'06"W	66	15	NOV	1976
CABP	BS4	39°24'54"N 073°07'30"W	64	15	NOV	1976
CABP	BS5	39°25'06"N 073°06'30"W	66	15	NOV	1976
CABP	BS6	39°24'12"N 073°06'12"W	66	15	NOV	1976
CABP	BS8	39°20'24"N 073°00'00"W	75	15	NOV	1976
CABP	BS9	39°20'48"N 072°58'18"W	74	15	NOV	1976
CABP	D1	39°04'36"N 073°53'30"W	39-40	21	FEB	1976
CABP	D4	39°02'54"N 073°47'06"W	48	17	AUG	1976
CABP	D4	39°02'54"N 073°47'06"W	51	17	JUN	1976
CABP	D4	39°02'54"N 073°47'12"W	49	21	FEB	1976
CABP	D4	39°03'00"N 073°47'12"W	49	08	FEB	1977
CABP	D4	39°03'00"N 073°47'12"W	49	12	AUG	1977
CABP	E1	38°47'06"N 073°27'24"W	66	17	JUN	1976
CABP	E1	38°47'18"N 073°23'48"W	68	17	AUG	1976
CABP	E1	38°49'00"N 073°25'18"W	60	09	FEB	1977
CABP	E1	38°49'06"N 073°25'18"W	63	11	AUG	1977
CABP	E2	38°44'06"N 073°25'00"W	73	18	JUN	1976
CABP	E2	38°44'12"N 073°25'36"W	70	18	AUG	1976
CABP	E2	38°44'18"N 073°25'30"W	74	09	MAR	1977
CABP	E2	38°45'12"N 073°25'12"W	76	11	AUG	1977
CABP	E3	38°41'18"N 073°32'00"W	63	18	AUG	1976
CABP	E3	38°41'24"N 073°32'24"W	56	18	JUN	1976
CABP	E4	38°42'36"N 073°24'18"W	75	18	AUG	1976
CABP	E4	38°42'42"N 073°24'54"W	80	11	AUG	1977
CABP	E4	38°42'48"N 073°24'18"W	80	17	JUN	1976
CABP	ED1	38°41'12"N 073°30'48"W	69	09	NOV	1976
CABP	ED2	38°46'00"N 073°26'54"W	70	10	NOV	1976
CABP	ED3	38°46'00"N 073°30'06"W	70	10	NOV	1976
CABP	ED4	38°48'18"N 073°29'00"W	70	10	NOV	1976
CABP	ED5	38°50'12"N 073°25'12"W	69	10	NOV	1976
CABP	EF1	38°48'30"N 073°36'36"W	57	10	NOV	1976
CABP	EF3	38°45'48"N 073°36'00"W	62	10	NOV	1976
CABP	EF5	38°44'54"N 073°34'00"W	66	10	NOV	1976
CABP	EL4	38°41'06"N 073°17'06"W	89	11	NOV	1976
CABP	EL5	38°40'12"N 073°17'54"W	87	11	NOV	1976
CABP	ES8	38°44'48"N 073°17'24"W	79	11	NOV	1976
CABP	F1	38°43'30"N 073°13'54"W	84	20	AUG	1976
CABP	F1	38°44'06"N 073°14'42"W	85	12	NOV	1976
CABP	F1	38°44'18"N 073°14'36"W	86	19	JUN	1976
CABP	F1	38°45'24"N 073°16'18"W	79	09	FEB	1977
CABP	F1	38°45'24"N 073°16'30"W	82	10	AUG	1977
CABP	F2	38°43'42"N 073°08'30"W	113	20	AUG	1976
CABP	F2	38°44'12"N 073°09'06"W	110	18	MAR	1976
CABP	F2	38°44'12"N 073°09'06"W	116	11	AUG	1977
CABP	F2	38°44'18"N 073°08'54"W	103	10	FEB	1977
CABP	F2	38°44'18"N 073°09'18"W	111	12	NOV	1976
CABP	F3	38°43'36"N 073°04'30"W	151	12	NOV	1976
CABP	F3	38°43'48"N 073°04'06"W	155	10	FEB	1977
CABP	F3	38°43'54"N 073°04'06"W	162	10	AUG	1977
CABP	G3	39°43'00"N 072°54'06"W	71	08	MAR	1977
CABP	G3	39°43'06"N 072°54'12"W	73	27	AUG	1976
CABP	G3	39°43'06"N 072°54'12"W	74	14	AUG	1977

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CABP	G3	39°43'42"N 072°54'42"W	73-74	08	MAR	1976
CABP	I1	39°06'36"N 072°59'00"W	77	23	AUG	1976
CABP	K2	38°12'36"N 074°26'30"W	42	23	AUG	1976
CABP	K4	38°04'30"N 074°01'36"W	103	16	AUG	1977
CABP	K4	38°04'30"N 074°01'42"W	105	12	MAR	1976
CABP	K4	38°04'36"N 074°01'42"W	103	16	FEB	1977
CABP	K5	38°01'30"N 073°53'48"W	152	16	FEB	1977
CABP	K5	38°04'36"N 073°53'54"W	140-150	31	AUG	1976
CABP	K6	38°00'36"N 073°51'54"W	339-370	31	AUG	1976
CABP	L2	37°20'12"N 074°58'36"W	41	22	MAR	1976
CABP	L2	37°20'12"N 074°58'36"W	43	04	AUG	1977
CABP	L2	37°20'12"N 074°58'36"W	43	17	FEB	1977
CABP	L2	37°20'12"N 074°58'36"W	48	01	SEP	1976
CABP	L3	37°13'36"N 074°46'36"W	58	22	MAR	1976
CABP	L4	37°08'06"N 074°36'54"W	90-91	01	SEP	1976
CABP	L4	37°08'06"N 074°36'54"W	94	13	MAR	1977
CABP	L4	37°08'06"N 074°36'54"W	97	04	AUG	1977
CABP	L4	37°08'06"N 074°37'00"W	94	22	MAR	1976
GRAY, M.B.	229	31°07'59"N 080°27'17"W	28.37	08	JUL	1963
MAFLA	2207	27°57'00"N 083°09'00"W	19	--	---	----
MAFLA	2210	27°57'29"N 083°42'29"W	37	--	---	----
MAFLA	2424	29°13'01"N 085°00'01"W	27	--	---	----
MAFLA	2426	28°57'59"N 085°23'00"W	82	--	---	----
MAFLA	2640	29°43'29"N 087°54'30"W	35	--	---	----
MAFLA	2856	29°54'01"N 087°24'00"W	30	--	---	----
NEEB	01	41°07'12"N 070°32'58"W	38	11	FEB	1977
NEEB	01	41°07'37"N 070°33'04"W	38	11	FEB	1977
NEEB	02	40°43'18"N 069°52'05"W	45	15	FEB	1977
NEEB	02	40°43'26"N 069°52'26"W	46	15	FEB	1977
NEEB	03	40°39'27"N 069°27'25"W	57	15	FEB	1977
NEEB	03	40°39'38"N 069°27'23"W	56	15	FEB	1977
NEEB	03	40°39'39"N 069°27'21"W	58	15	FEB	1977
NEEB	06	40°25'45"N 070°03'09"W	73	12	FEB	1977
NEEB	07	40°13'13"N 069°47'14"W	87	22	MAY	1977
NEEB	07	40°13'26"N 069°47'23"W	86	13	FEB	1977
NEEB	08	40°21'22"N 068°29'35"W	106	06	MAY	1977
NEEB	13	40°41'21"N 067°35'31"W	84	06	MAR	1977
NEEB	13	40°41'47"N 067°35'04"W	84	06	MAR	1977
NEEB	13	40°41'47"N 067°35'07"W	84	06	MAR	1977
NEEB	14	40°43'18"N 067°36'18"W	79	08	MAY	1977
NEEB	14	40°43'23"N 067°36'10"W	80	18	FEB	1977
NEEB	14	40°43'28"N 067°36'26"W	79	08	MAY	1977
NEEB	15	40°43'34"N 067°33'55"W	83	08	MAY	1977
NEEB	16	40°42'26"N 067°34'22"W	84	08	MAY	1977
NEEB	16	40°42'28"N 067°34'16"W	84	08	MAY	1977
NEEB	16	40°42'30"N 067°34'26"W	86	19	FEB	1977
NEEB	16	40°42'30"N 067°34'26"W	87	19	FEB	1977
NEEB	16	40°42'49"N 067°34'15"W	83	08	MAY	1977
NEEB	16	40°42'49"N 067°34'29"W	83	08	MAY	1977
NEEB	19	40°34'24"N 067°45'00"W	84	18	FEB	1977
NEEB	19	40°34'24"N 067°45'00"W	87	18	FEB	1977
NEEB	19	40°34'24"N 067°45'00"W	90	17	FEB	1977
NEEB	19	40°34'32"N 067°45'10"W	95	07	MAY	1977
NEEB	20	40°35'58"N 067°44'39"W	77	18	FEB	1977
NEEB	20	40°36'09"N 067°45'07"W	84	07	MAY	1977

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NEEB	20	40°36'11"N 067°45'04"W	84	07 MAY 1977
NEEB	21	40°43'59"N 067°18'36"W	96	09 MAY 1977
NEEB	21	40°43'59"N 067°18'38"W	98	09 MAY 1977
NEEB	21	40°44'02"N 067°18'31"W	96	09 MAY 1977
NEEB	21	40°44'12"N 067°18'27"W	90	20 FEB 1977
NEEB	22	40°23'44"N 067°28'41"W	253	07 MAY 1977
NEEB	23	40°29'38"N 067°42'39"W	178	16 FEB 1977
NEEB	28	40°54'34"N 066°46'56"W	93	20 FEB 1977
NEEB	28	40°54'42"N 066°46'41"W	89	21 AUG 1977
NEEB	29	40°58'22"N 066°54'58"W	68	20 FEB 1977
NEEB	29	40°58'24"N 066°55'04"W	73	10 MAY 1977
NEEB	33	41°32'26"N 066°02'51"W	104	04 MAR 1977
SABP	1A	33°49'38"N 078°23'08"W	10	15 AUG 1977
SABP	1E	33°12'02"N 077°35'11"W	43	10 MAY 1977
SABP	1E	33°12'02"N 077°35'12"W	43	10 MAY 1977
SABP	1E	33°12'03"N 077°35'11"W	43	10 MAY 1977
SABP	1E	33°12'05"N 077°35'13"W	44	19 NOV 1977
SABP	2D	32°44'55"N 078°55'56"W	32	18 AUG 1977
SABP	2E	32°39'58"N 078°47'03"W	35	18 AUG 1977
SABP	2F	32°36'02"N 078°38'58"W	44	14 FEB 1977
SABP	3D	32°05'00"N 079°37'58"W	39	17 FEB 1977
SABP	4B	31°53'01"N 080°46'00"W	8	25 AUG 1977
SABP	4D	31°39'59"N 080°16'01"W	21	27 AUG 1977
SABP	4F	31°27'00"N 079°46'03"W	65	23 FEB 1977
SABP	5D	31°05'--"N 080°35'--"W	21	-- --- ----
SABP	5E	31°02'58"N 080°25'59"W	33	26 FEB 1977
SABP	5F	31°01'00"N 080°17'01"W	36	17 MAY 1977
SABP	5C	31°08'00"N 080°49'50"W	13	31 AUG 1977
USFC		43°45'--"N 070°00'--"W		04 AUG 1973
USGS	WH2	42°22'52"N 070°48'53"W	32	-- MAY 1992

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Program/Donor	Station	Latitude/Longitude	Depth (meters)	Date Collected
CGPS	03P	28°40'02"N 090°14'43"W	29	09 JAN 1979
CGPS	03P	28°40'02"N 090°14'43"W	32	28 MAY 1978
CRYSTAL RIVER 316 STUDIES	13	28°55'23"N 082°42'50"W	.39-.96	13 JUN 1983
DUKE UNIV. LAB	473	34°41'37"N 076°40'00"W		-- --- ----
HEARD, R.		24°20'--"N 077°51'--"W	.5-1	14 APR 1988
MAFLA	11	29°43'29"N 087°54'30"W	35	-- --- 1974
MAFLA	13J	29°38'30"N 087°45'--"W	35	-- --- 1974
MAFLA	14	29°36'00"N 087°48'00"W	37	-- --- ----
MAFLA	15	29°45'29"N 087°46'30"W	37	-- --- 1974
MAFLA	16	29°40'30"N 087°37'00"W	36	-- --- 1974
MAFLA	17	29°36'31"N 087°27'01"W	69	-- JUN 1975
MAFLA	2101	26°25'00"N 081°15'09"W	11	-- MAY 1975
MAFLA	2102	26°25'00"N 082°25'00"W	18	-- MAY 1975
MAFLA	2103	26°25'00"N 082°58'00"W	33	-- JUL 1976
MAFLA	2104	26°25'00"N 083°23'01"W	53	-- MAY 1975
MAFLA	2105	26°45'00"N 083°49'58"W	90	-- MAY 1975
MAFLA	2106	26°24'57"N 084°15'00"W	168	-- MAY 1975
MAFLA	2207	27°57'00"N 083°09'00"W	19	-- SEP 1975
MAFLA	2208	27°56'00"N 083°27'30"W	30	-- --- ----
MAFLA	2209	27°52'00"N 083°33'59"W	34	-- FEB 1978

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MAFLA	2210	27°57'29"N 083°42'29"W	37	--	JUL	1975
MAFLA	2211	27°56'30"N 083°53'00"W	43	--	FEB	1976
MAFLA	2212	27°57'00"N 084°48'00"W	189	--	---	1976
MAFLA	2313	28°23'59"N 085°15'03"W	177	--	---	----
MAFLA	2314	28°29'--"N 084°21'--"W	29	--	---	1976
MAFLA	2315	28°33'59"N 084°20'09"W	38	--	---	1975
MAFLA	2316	28°42'00"N 084°20'01"W	35	--	FEB	1978
MAFLA	2317	28°56'00"N 084°06'00"W	29	--	---	1975
MAFLA	2318	29°05'01"N 083°45'00"W	20	--	---	1975
MAFLA	2319	29°47'00"N 084°05'00"W	10	--	---	----
MAFLA	2421	29°37'01"N 084°17'00"W	19	--	---	1976
MAFLA	2422	29°30'--"N 084°27'--"W	24	--	---	1976
MAFLA	2423	29°37'01"N 084°17'00"W	19	--	---	1976
MAFLA	2425	29°05'--"N 085°15'--"W	36	--	---	1976
MAFLA	2426	28°57'59"N 085°23'00"W	82	--	---	1975
MAFLA	2528	29°54'59"N 086°04'58"W	37	--	NOV	1977
MAFLA	2530	29°51'--"N 086°06'30"W	41	--	---	----
MAFLA	2531	29°47'59"N 086°09'29"W	45	--	NOV	1977
MAFLA	2640	29°43'29"N 087°54'30"W	35	--	NOV	1977
MAFLA	2641	29°45'29"N 087°46'30"W	37	18	JAN	1976
MAFLA	2642	29°40'30"N 087°37'--"W	36	--	---	----
MAFLA	2643	29°36'31"N 087°27'01"W	69	27	JUL	1975
MAFLA	2644	29°36'12"N 087°23'30"W	75	--	---	----
MAFLA	2746	27°03'30"N 084°13'42"W	121	--	NOV	1976
MAFLA	2747	27°24'12"N 084°07'18"W	74	--	JUL	1976
MAFLA	2748	27°37'12"N 083°53'30"W	50	--	JUL	1976
MAFLA	2851	27°03'26"N 083°01'08"W	36	--	---	1976
MAFLA	2852	28°30'00"N 083°29'58"W	22	--	---	1976
MAFLA	2854	29°24'00"N 085°42'02"W	42	--	JUL	1976
MAFLA	2957	25°40'--"N 084°15'--"W	180	--	NOV	1977
MAFLA	2958	25°40'--"N 083°50'--"W	120	--	NOV	1977
MAFLA	2959	25°40'--"N 083°05'--"W	60	--	AUG	1977
MAFLA	2960	25°40'--"N 082°20'--"W	27	--	FEB	1978
MAFLA	30	29°46'--"N 086°12'30"W	52	--	---	----
MAFLA	46	28°42'00"N 084°20'01"W	35	--	---	1974
MAFLA	55	27°56'30"N 083°53'00"W	43	--	---	----
MAFLA	9	29°53'30"N 088°12'28"W	32	--	---	1974
SOFLA	01	26°45'46"N 082°43'07"W	24	28	OCT	1980
SOFLA	04	26°45'49"N 083°32'07"W	55.2	29	OCT	1980
SOFLA	05	26°45'42"N 084°00'08"W	89.8	02	NOV	1980
SOFLA	06	26°16'47"N 082°38'21"W	26.2	03	MAY	1981
SOFLA	08	26°16'43"N 083°12'49"W	48.4	03	MAY	1981
SOFLA	12	26°16'43"N 083°47'40"W	89.8	30	APR	1981
SOFLA	13	25°45'56"N 082°09'21"W	19.6	28	APR	1981
SOFLA	14	25°46'01"N 082°23'49"W	26.1	28	APR	1981
SOFLA	15	25°45'53"N 082°31'37"W	31.5	28	APR	1981
SOFLA	16	25°45'42"N 083°11'04"W	53.7	29	APR	1981
SOFLA	17	25°45'35"N 083°20'14"W	58.5	29	APR	1981
SOFLA	18	25°45'22"N 083°42'13"W	86.1	29	APR	1981
SOFLA	19	25°17'22"N 082°09'00"W	22.5	27	APR	1981
SOFLA	20	25°17'20"N 082°09'44"W	22.7	27	APR	1981
SOFLA	22	25°17'11"N 083°02'04"W	52.2	26	APR	1981
SOFLA	23	25°16'53"N 083°37'47"W	70	26	APR	1981
SOFLA	24	25°16'54"N 083°43'11"W	88.2	25	APR	1981
SOFLA	25	24°47'57"N 082°13'16"W	24	23	APR	1981

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SOFLA	26	24°47'49"N 082°52'04"W	38	23	APR	1981
SOFLA	28	24°47'07"N 083°13'05"W	58.6	24	APR	1981
SOFLA	30	24°47'25"N 083°51'09"W	76.1	25	APR	1981
SOFLA	34	25°45'19"N 083°57'38"W	135.5	27	JUL	1981
SOFLA	37	25°16'38"N 084°09'23"W	148	02	AUG	1981
SOFLA	38	25°16'30"N 084°14'46"W	159	02	AUG	1981
SOFLA	52	25°17'48"N 081°39'48"W	14	09	DEC	1982
WILLIAMS, M.W.	M - 12	30°22'09"N 088°49'54"W		12	DEC	1943