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A Photographic Guide to the Gelasian (Early Pleistocene) Mollusca of Southeastern North Carolina

2021

Waccamaw Mollusca Review Copy Pt. 5: Conoidea

Timothy Campbell

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*A Photographic Guide to the
Gelasian (Early Pleistocene)
Mollusca of
Southeastern North Carolina*

Timothy Campbell

Review Copy Pt. V:
Conoidea

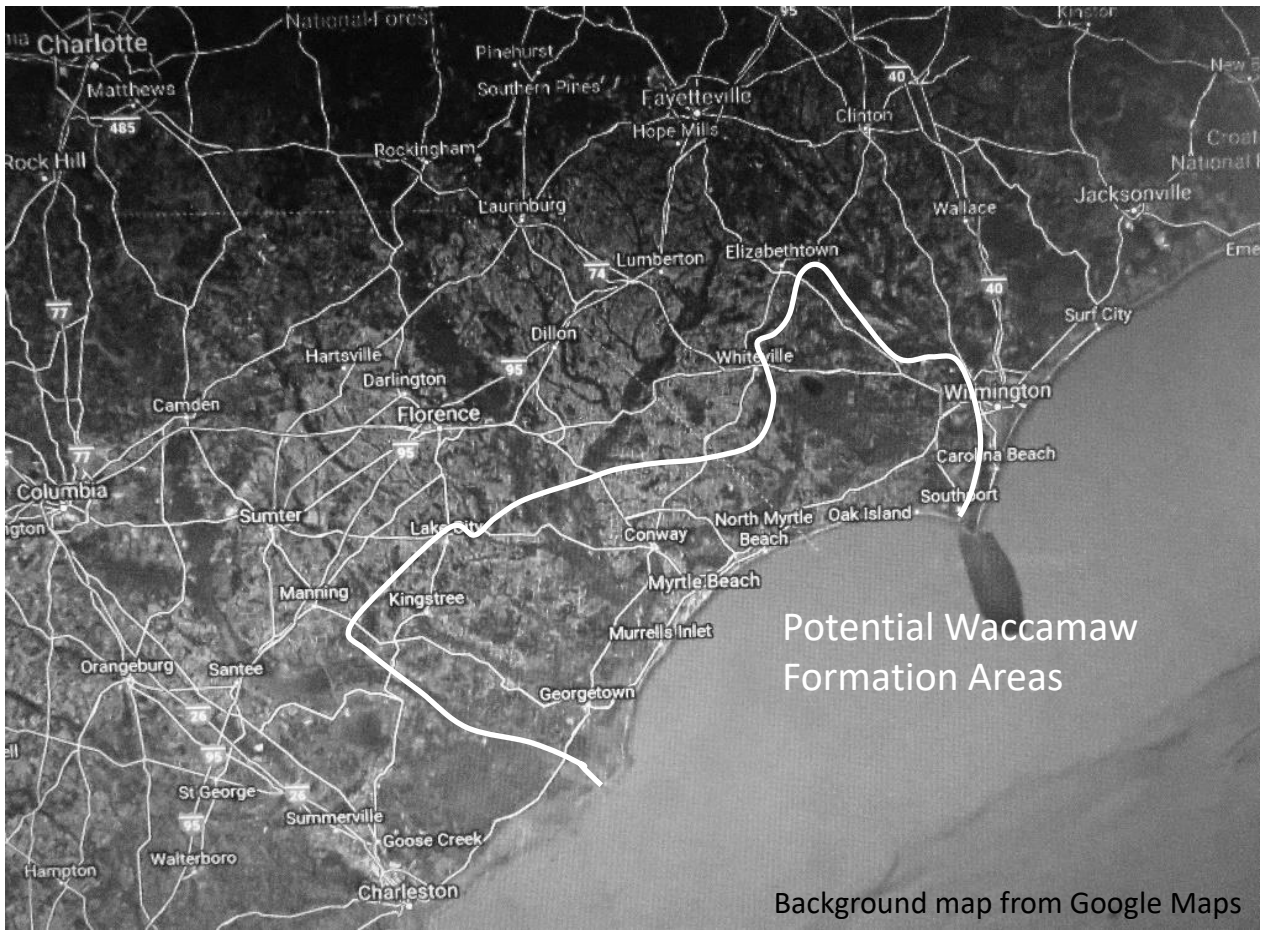
Introduction

Location

The Lower Waccamaw Formation contains a rich basal Pleistocene (early Gelasian, 2.4-2.0 million years old) fauna with an extreme abundance and diversity of mollusks (>90% of the fossils and 900+ species) in addition to various echinoderms, arthropods, annelids, corals, bryozoans, and vertebrates. Based upon the ranges of the extant species, the climate seems to have been warmer than today. This diverse subtropical fauna can be found in patches in southeastern North Carolina and northeastern South Carolina. It is roughly equivalent to the modern fauna of central South Carolina to North Florida, however, there was dramatic faunal turnover about 1.7 MYA and the modern Carolinian fauna is much more similar to the modern Caribbean fauna than the Waccamaw Formation fossils are to equivalent age Caribbean faunas.

Fossils have been known from the Lower Waccamaw Formation since prehistory. Although the first scientific study was Tuomey and Holmes, 1856, no single monograph exists.

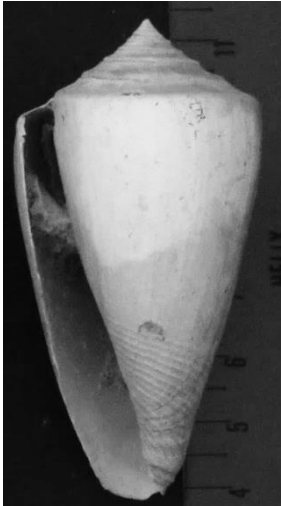
Roughly 40% of the species are extant. The species derive from multiple habitats, including 30-50 m sandy-bottom shelf, cementing bivalve reef, 10-20 m sandy-bottom shelf, surf to subtidal, saltmarsh, muddy-bottom sound, and freshwater to brackish.



Potential Waccamaw Formation Areas

Background map from Google Maps

Conidae



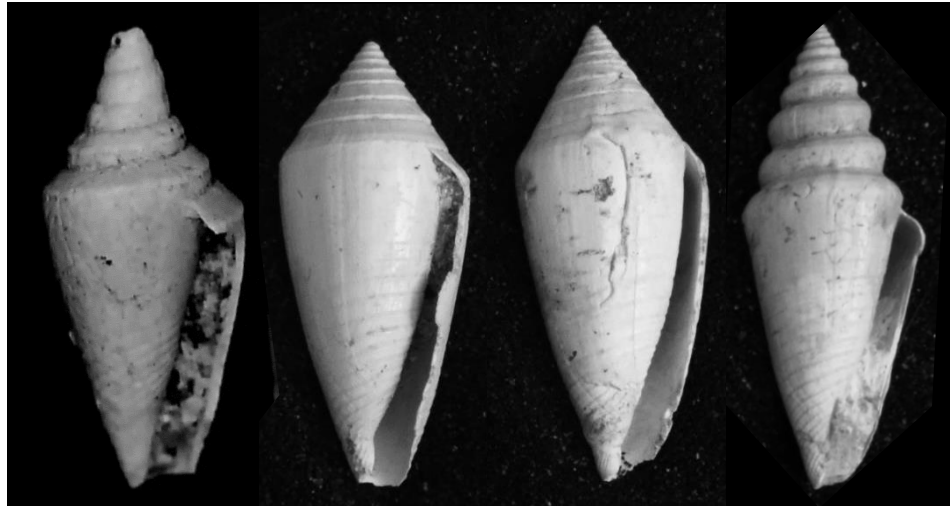
Conus adversarius
Conrad, 1841
74 mm
Sinistral



Conus delessertii
Récluz, 1843
43 mm
Concave spire; stronger suture



Conus cf. anabathrum
Crosse, 1865
54 mm
Highly concave spire;
Broader

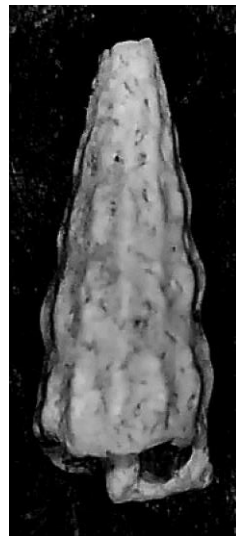


Conus oniscus
Woodring, 1928
Juvenile; var. 1; var. 2; Aberrant
5 mm; 32 mm; 44 mm; 41 mm
Conical spire; Strongly stepped spire on aberrant

Conoidea *incertae sedis*

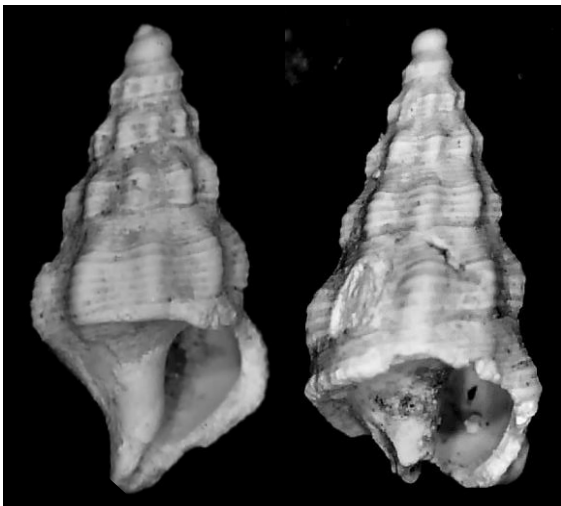


Conoidea incertae sedis 1
Juvenile
1.2 mm
Highly distinctive sculpture

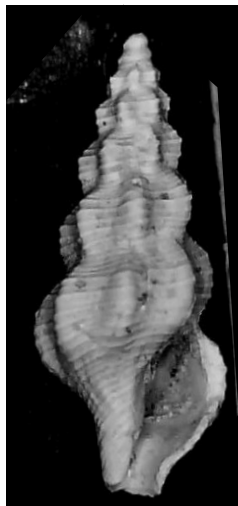


Conoidea incertae sedis 2
Broken
7 mm
Highly distinctive sculpture

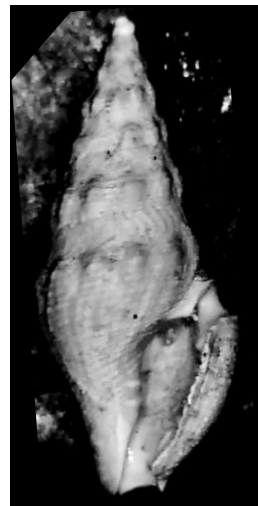
Clathurellidae



Glyphostoma sp. 2
Broken; Broken
5.2 mm; 6 mm
Large protoconch



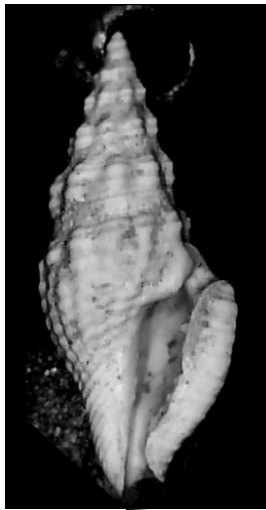
Glyphostoma sp. 3
Broken
7.2 mm
Very strong axial sculpture



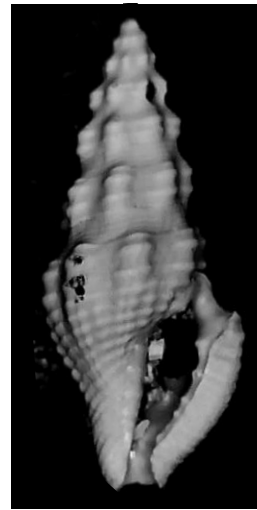
Glyphostoma sp. 4
12.5 mm
Faint axial sculpture



Glyphostoma sp. 1
9 mm; max ~10.5 mm
Fine spiral sculpture

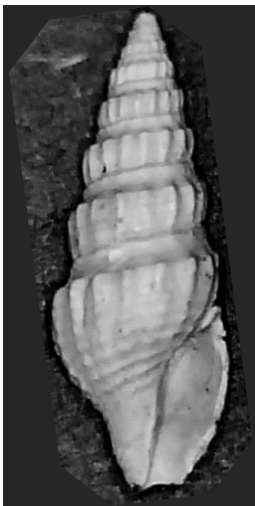


Glyphostoma cf. *polysculptum*
Fargo in Olsson & Harbison, 1953
9 mm
Highly distinctive sculpture

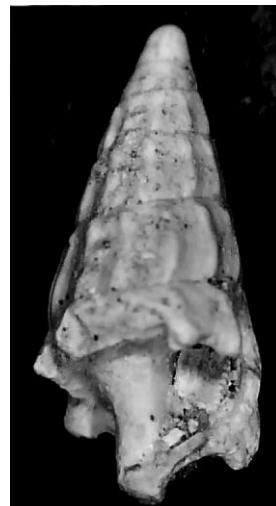


Glyphostoma *sapita*
Fargo in Olsson & Harbison, 1953
9 mm
Coarser spiral sculpture

Strictispiridae & Drilliidae I



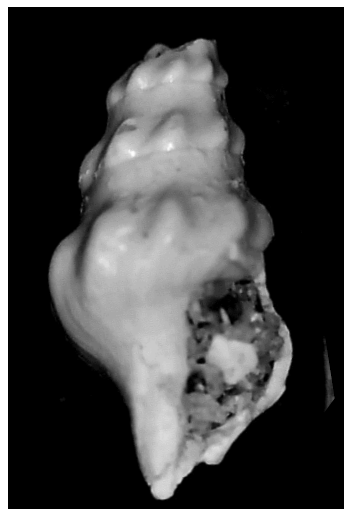
Strictispira acurugata
(Dall, 1890)
16 mm
Strongly stepped spire



Drilliidae *incertae sedis*
7 mm
Broad; Straight spired



Douglassia n. sp.
13 mm
Very broad



Drillia sp.
Broken
5.3 mm
Highly distinctive shape

Cerodrillia I



Cerodrillia n. sp.
11 mm
Straight-sided;
8-10 oblique axial ridges



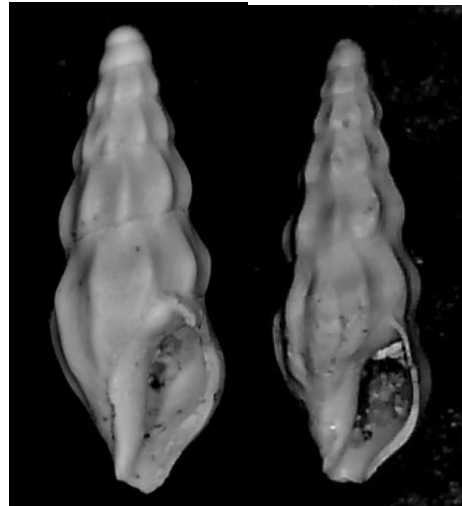
Cerodrillia sp. 1
9 mm; 9.2 mm
10-12 axial ridges



Cerodrillia sp. 2
8.5 mm; 10 mm
10 curved axial ridges



Cerodrillia sp. 3
7 mm; 8 mm
Broader

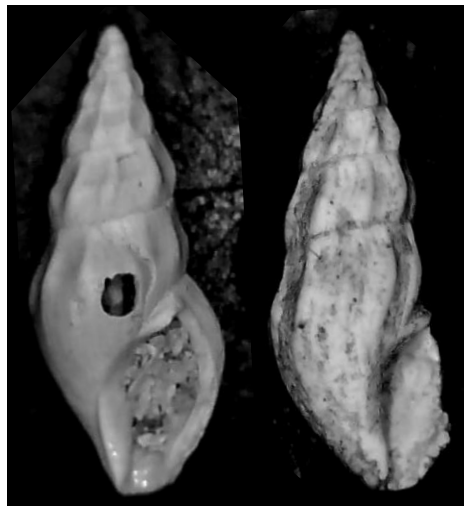


Cerodrillia sp. 4
6 mm; 7 mm
Straighter axial ridges

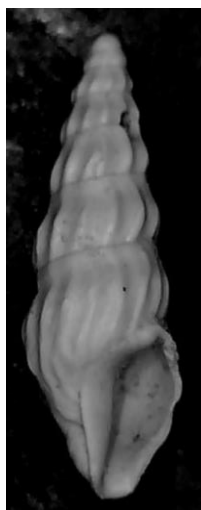
Cerodrillia II



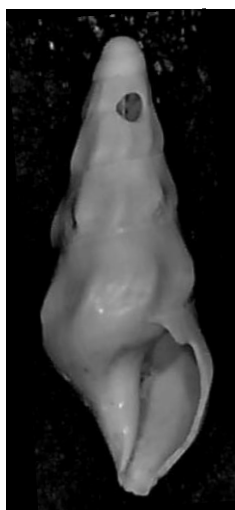
Cerodrillia sp. 5
7 mm
Rounded body whorl



Cerodrillia sp. 6
Subadult; Broken
8.2 mm; 10.3 mm
Broad; 8-10 curved axial ridges



Cerodrillia sp. 7
Subadult
9.1 mm
Narrow; 14 curved axial ridges



Cerodrillia sp. 8
Subadult
6.5 mm
Narrow; Smooth



Cerodrillia sp. 9
8.7 mm
Broad; 12 axial ridges

Bellaspira



Bellaspira sp. 1
6 mm
Narrower



Bellaspira sp. 2
10 mm
More conical



Bellaspira sp. 3
7.3 mm
Very broad



Bellaspira sp. 4
10.5 mm
Straight-sided



Bellaspira virginiana
(Conrad, 1862)
13 mm
Common *Bellaspira*

Cymatosyrinx & *Syntomodrillia*



Cymatosyrinx sp.
26 mm; max ~31 mm
Large; Strong axial sculpture



Syntomodrillia sp. 1
Juvenile
7.3 mm
Very broad

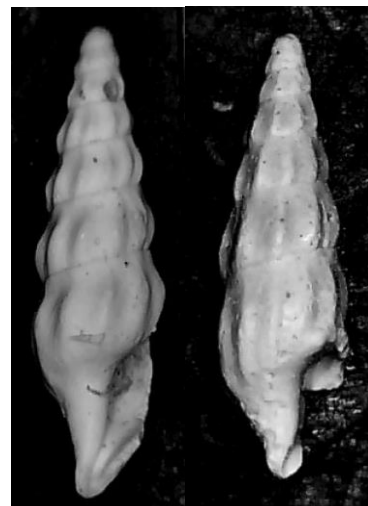


Syntomodrillia sp. 2
17 mm
Narrower

Lissodrillia



Lissodrillia sp. 1
Broken
19 mm
Larger



Lissodrillia sp. 2
Broken
8 mm; 8 mm
Convex whorls

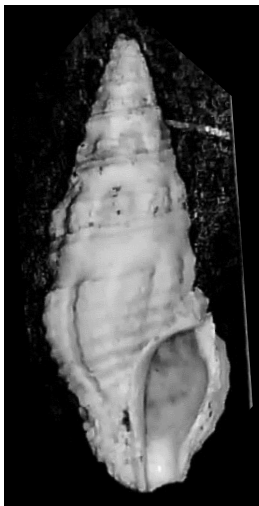


Lissodrillia sp. 3
12 mm
Broad gap in sculpture



Lissodrillia simpsoni
(Dall, 1887)
7 mm
Smaller

Sedilia



Sedilia acucinata
(Dall, 1892)
21 mm
Highly distinctive sculpture



Sedilia sp.
9.7 mm
Highly distinctive sculpture

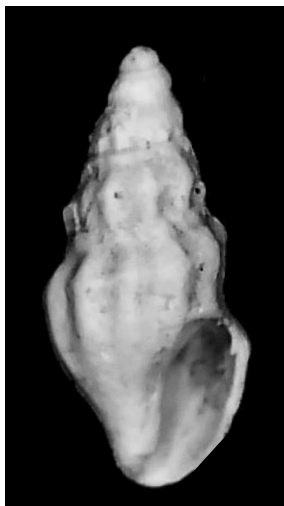


Sedilia ochoidea
Fargo in Olsson & Harbison, 1953
9.9 mm; 13.5 mm
10 nodes per whorl

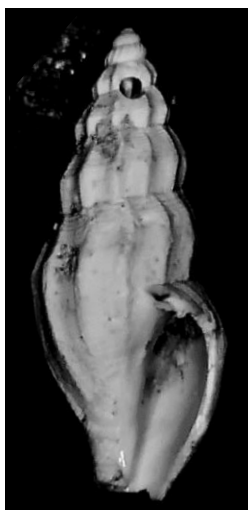


Sedilia cf. *sedilia*
(Dall, 1890)
15 mm
14 nodes per whorl

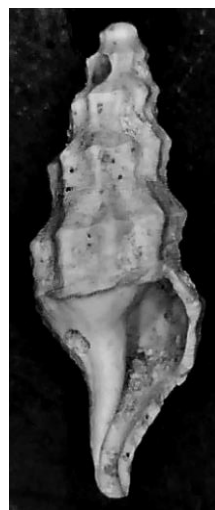
Mangeliidae *incertae sedis*



Mangeliidae *incertae sedis* 1
3.9 mm
Distinctive sculpture

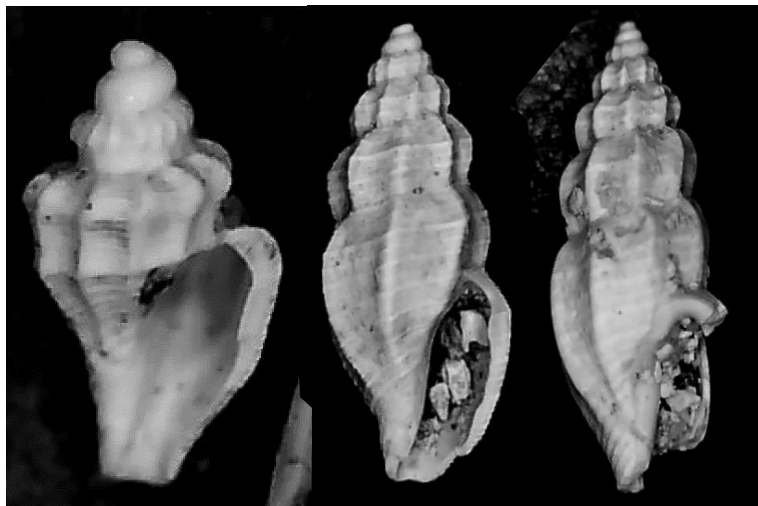


Mangeliidae *incertae sedis* 2
7.6 mm
Distinctive sculpture



Mangeliidae *incertae sedis* 3
Broken
7.4 mm
Distinctive sculpture

Mangeliidae II



Agathotoma cf. candidissima

(C. B. Adams, 1845)

Juvenile; Adult

1.7 mm; 4.2 mm; 6 mm

Taller

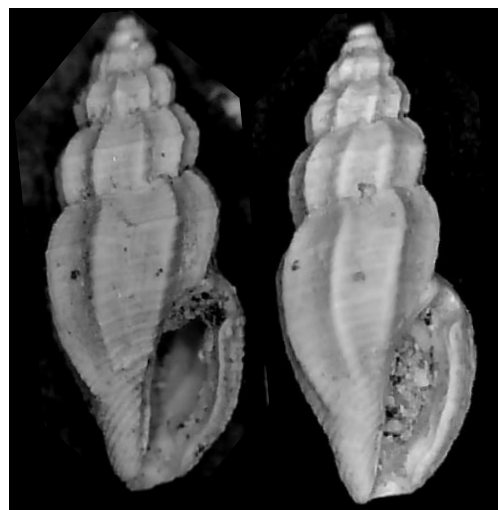


Cryoturrus sarta

Fargo in Olsson & Harbison, 1953

4.3 mm; 5 mm

Broader



Glabrocythara locklini

Fargo in Olsson & Harbison, 1953

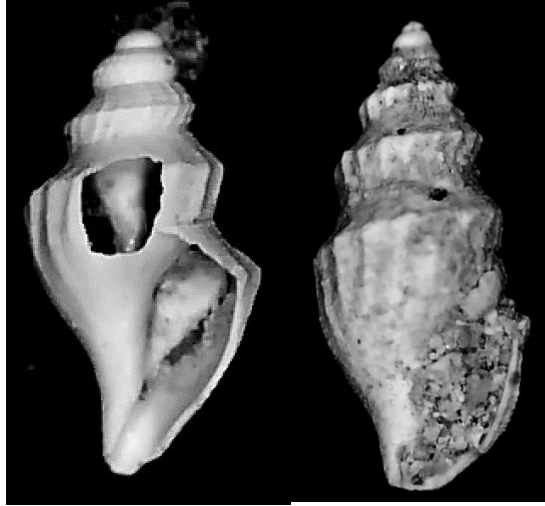
4.1 mm; 4.8 mm

Narrower

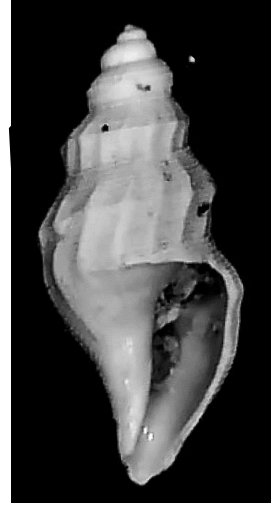
Kurtziella



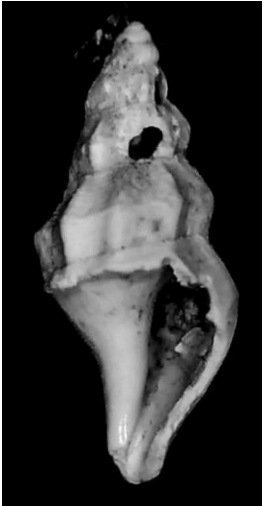
Kurtziella sp. 1
7 mm
More stepped whorls



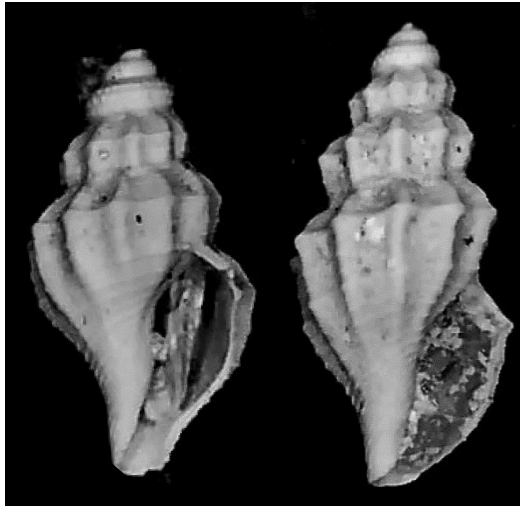
Kurtziella sp. 2
3mm; 5.8 mm
Broader; Finer axial ribs



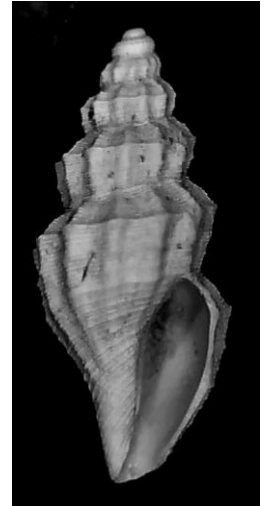
Kurtziella sp. 3
3.8 mm
More rounded whorls



Kurtziella sp. 4
6 mm
Less spiral sculpture



Kurtziella n. sp.
2.9 mm; 4 mm
More convex whorls

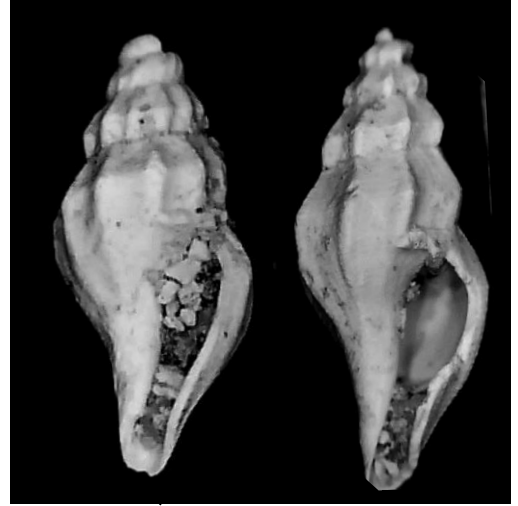


Kurtziella cf. *margaritifera*
Fargo in Olsson & Harbison, 1953
5.6 mm
Most common *Kurtziella*

Ithyocythara I



Ithyocythara sp. 1
Subadult; Broken
7.7 mm; 10.5 mm
8 axial ribs



Ithyocythara sp. 2
Subadult; Broken
4.2 mm; 8.3 mm
Broader

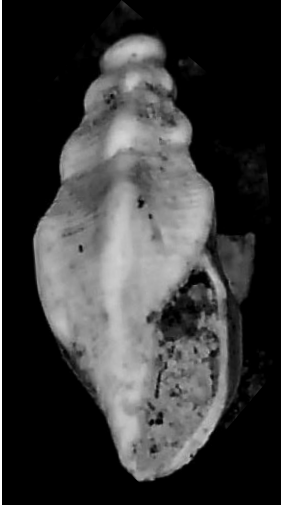


Ithyocythara sp. 4
13 mm
Broad sculpture; Narrow



Ithyocythara cf. *lanceolata*
(C. B. Adams, 1850)
11 mm
Narrow

Ithycythara II



Ithycythara sp. 3
 Juvenile
 2.7 mm
 Broad sculpture



Ithycythara maera
 Woodring, 1928
 4.2 mm
 Highly distinctive sculpture



Ithycythara sp. 5
 5.7 mm
 10 axial ribs



Ithycythara sp. 6
 11 mm
 Curved sculpture

Brachyocythara



Brachyocythara cf. dimonia

Fargo in Olsson & Harbison, 1953

3.4 mm; 8.3 mm

More angled sculpture



Brachyocythara cf. galae

Fargo in Olsson & Harbison, 1953

8.5 mm

More curved sculpture

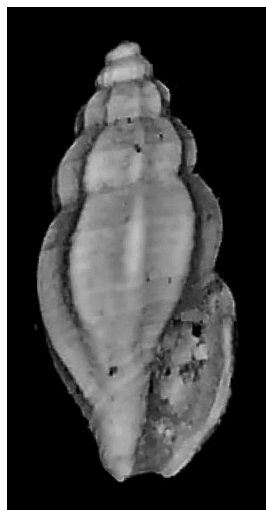


Brachyocythara sp. 1

Juvenile

2.1 mm

Highly distinctive sculpture



Brachyocythara sp. 2

Juvenile ?

3.6 mm

Convex whorls



Brachyocythara sp. 3

7.8 mm

Narrow; Rounded axial ribs

Vitricythara, *Granoturris* & Mitromorphidae



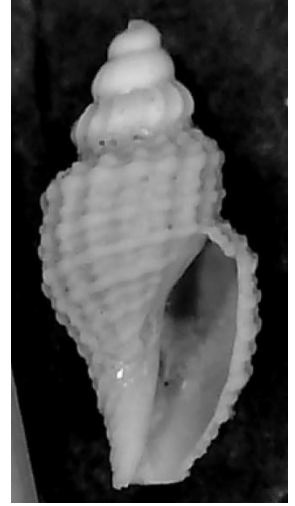
Vitricythara metria

(Dall, 1903)

Subadult; Broken

4.4 mm; 6.2 mm

Equal strength spiral and axial ridges

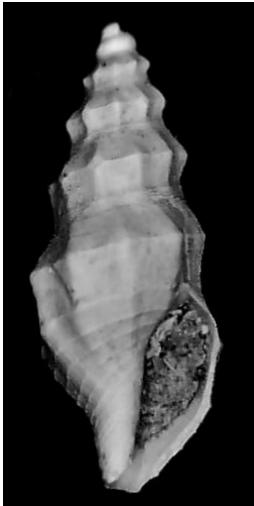


Vitricythara micromeris

(Dall, 1903)

2 mm

Stronger spiral ridges



Granoturris padolina

Fargo in Olsson & Harbison, 1953

Subadult

5.5 mm

Highly distinctive sculpture



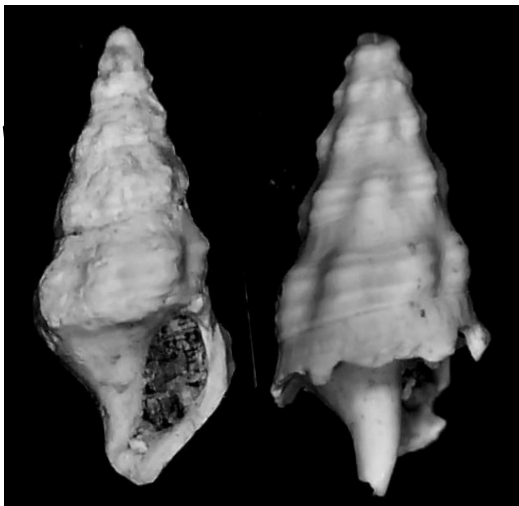
Mitromorpha cf. pygmaea

Dall, 1890

5.8 mm

Highly distinctive sculpture

Pseudomelatomidae I



Pseudomelatomidae incertae sedis 1
4.8 mm; 5 mm
More oblique sculpture



Pseudomelatomidae incertae sedis 2
10 mm; 9 mm
Finer sculpture



Lioglyphostoma woodringi
Fargo in Olsson & Harbison, 1953
13 mm; 14 mm
Highly distinctive sculpture

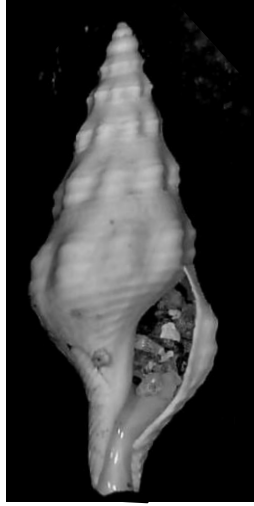


Pilsbryspira leucocyma
(Dall, 1883)
12 mm
Highly distinctive sculpture

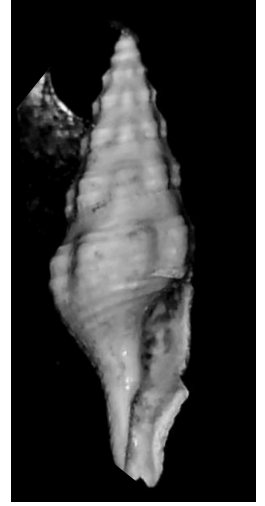
Compsodrillia



Compsodrillia sp. 1
6.8 mm
Very broad gap



Compsodrillia sp. 2
7 mm
Very distinct siphon



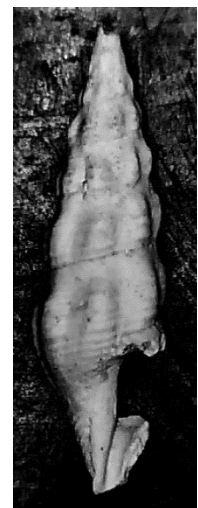
Compsodrillia sp. 3
8.2 mm
Moderate breadth



Compsodrillia sp. 4
9.5 mm
Narrow; Fine spiral sculpture



Compsodrillia sp. 5
10 mm
Broad; Fine spiral sculpture

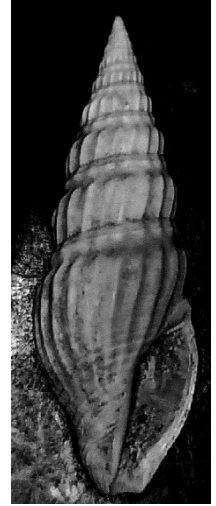


Compsodrillia drewi pinellas
Fargo in Olsson & Harbison, 1953
13.5 mm
Very narrow

Crassispira



Crassispira cf. gastrophilia
(Olsson, 1916)
Subadult; Subadult
7 mm; 9.2 mm
Highly distinctive sculpture



Crassispira n. sp.
27 mm
Less rounded spire



Crassispira perspirata
(Dall, 1890)
7.5 mm
Smaller; Narrower

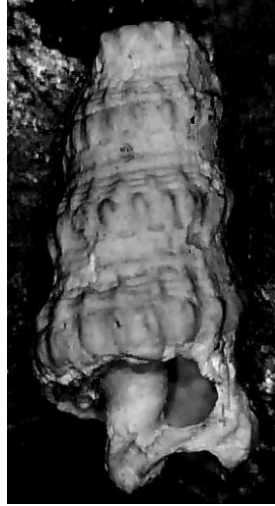


Crassispira virginiana
(Conrad, 1834)
16 mm
Larger; Broader

Terebridae I



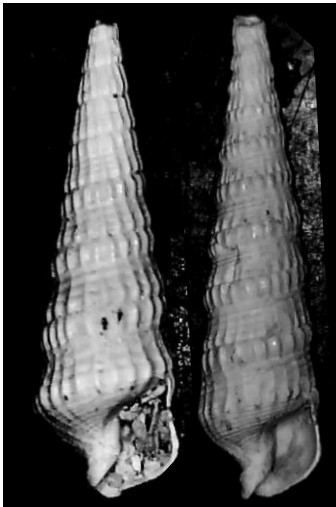
Neoterebra sp. 1
12 mm
Very little spiral sculpture



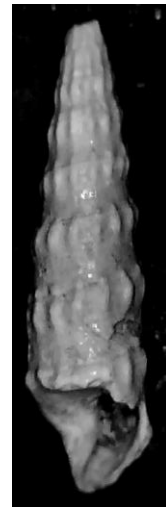
Neoterebra sp. 2
11 mm
Broken
Convex whorls



Neoterebra sp. 3
10 mm
Broken
Strong axial sculpture

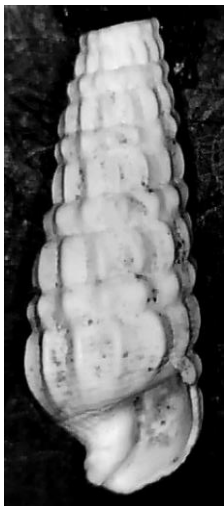


Neoterebra concava
(Say, 1826)
9.5 mm; 25 mm
Broken
Highly distinctive sculpture

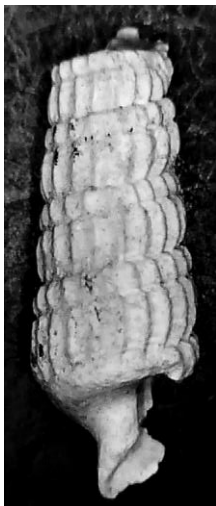


Neoterebra ? vertebralis
(Olsson & Harbisson, 1953)
11 mm
Broken
Highly distinctive sculpture

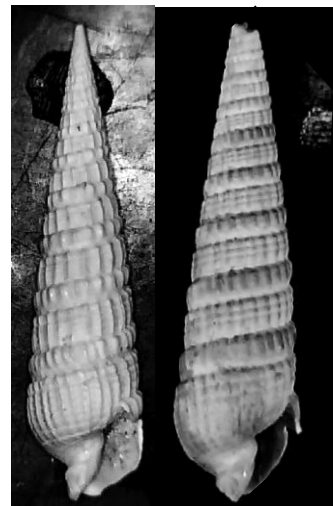
Terebridae II



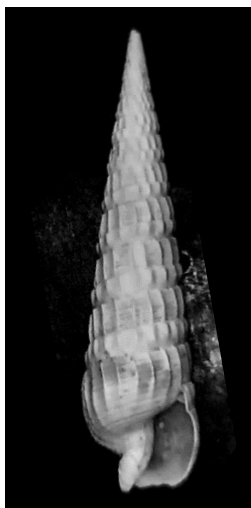
Neoterebra sp. 4
12 mm
Broken
Convex whorls



Neoterebra sp. 5
15 mm
Broken
Convex whorls



Neoterebra cf. *brightonensis*
(Olsson, 1967)
Broken
38 mm; 56 mm 2OD
Fine spiral sculpture



Neoterebra cf. *dislocata*
(Say, 1822)
36 mm; max ~48 mm
Band-like sutures; Larger



Neoterebra "*petiti*"
(Olsson, 1967)
Broken; Secondary Homonym
16 mm
Narrow spiral sculpture



Neoterebra cf. *protexta*
(Conrad, 1846)
Broken
12 mm
Broad spiral sculpture