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# Fossils of Panama

## Digitizing Specimens to Provide Resources for Scientists and the Public

Kassie Hendy

# Intern at Punta Culebra Nature Center





## A large collection of small, white, rectangular trays arranged in a grid, each containing numerous small, light-colored, spiral shells. The trays are labeled with text, including "CYMATOPHUS FEATCHI", "Florida Museum of Natural History", and "Invertebrate Paleontology Master Collection". The shells are densely packed in each tray, and the labels are printed on the front of the trays. The trays are arranged in a grid, with some trays containing more shells than others. The shells are small, light-colored, and spiral-shaped. The labels are printed on the front of the trays, and some trays have additional handwritten labels. The overall appearance is that of a well-organized collection of fossil shells.



- Fossil Prep Lab Manager in Cruisin' the Fossil Freeway Exhibition





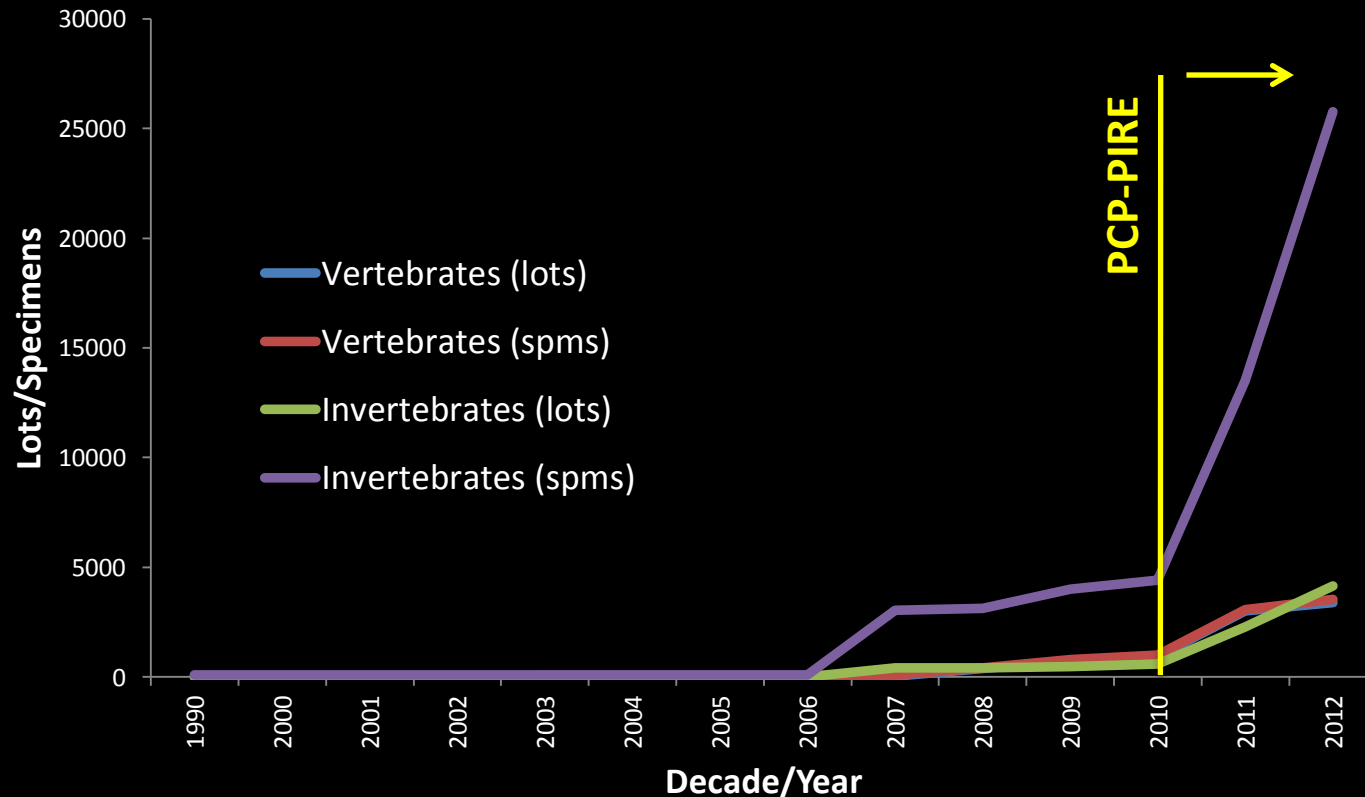
# Panama Canal Project – PIRE





# Curating Panama's heritage

## Growth of FLMNH Panama collections



# Curating Panama's heritage

INSTITUTION	LOTS	SPECIMENS	COMMENTS
USNM (Smithsonian)	61	?	large; important types
<b>FLMNH</b>	<b>7500</b>	<b>29000</b>	
NHM (London U.K.)	1490	?	large; research interest
NMB (Basel, Switz.)	461	1840	large; research interest
ANSP (Philadelphia)	257	?	important types
PRI (Ithaca)	198*	?	important types
LACM (Los Angeles)	191	?	16 localities
YPM (Yale)	146	?	nothing much
UCMP (Berkeley)	43*	?	56 localities
CAS (Cal. Academy)	43*	?	<200 lots in total
Scripps Oceanographic Inst.	?	?	large; high quality for research

# Fossils of Panama Initiative

- Fossils that are collected, prepared, and curated are not used to their full potential
- How do we make these fossils available to:
  - Scientists
  - Teachers
  - Students
  - Panamanians
  - Everyone else!



# Resources for Scientists

## Geology and Paleontology Of Canal Zone and Adjoining Parts of Pa GEOLOGY AND DESCRIPTION OF TERTIARY MOLLUSC TROCHIDAE TO TURRITELLIDAE) GEOLOGICAL SURVEY PROFESSION

108

GEOLOGY AND PALEONTOLOGY OF CANAL ZONE

sculpture suggest *T. gibbera* Say, of the Miocene of Maryland. *T. gibbera* has similar early sculpture, but its growth-line sinus is narrower and deeper, and its growth-line angle is narrower.

*T. mormonensis* occurs in the Gatun formation. It is locally abundant in the lower part of the formation and rare in the middle part.

**Occurrence:** Lower and middle parts of Gatun formation (middle Miocene). Lower part, localities 133 (identification doubtful), 136, 136a, 137, 137a, 138a. Middle part, eastern area, locality 144a (identification doubtful); western area, locality 151c. Tertiary (middle Miocene) and La Vela (late Miocene) formations, Palote, Venezuela.

*Subgenus?*

*Turritella gatenensis* Conrad

Plate 23, figures 4, 5, 9, 14

*Turritella gatenensis* Conrad, Pacific R. R. Expl., v. 6, Geol. Rept., p. 72, pl. 4, fig. 26, 1857 (Miocene, Gatun, Panama). (Oblique, U. S. Geol. Survey Prof. Paper 20, p. 178, 1909). Dall, Wagner Free Inst. Sci. Trans., v. 3, pt. 2, p. 210 (part, not pl. 17, fig. 10a-F, since Dall, 1902 (Miocene, Gatun, Panama). Brown and Fisher, Acad. Nat. Sci. Phila. Proc., v. 62, p. 385, pl. 27, fig. 4, 5, 9, 1911 (Miocene, Canal Zone). Olson, Bull. Am. Paleontology, v. 8, no. 28, p. 148, pl. 14, figs. 12, 13, 1922 (Miocene, northwestern Panama, Costa Rica). Anderson, Calif. Acad. Sci. Proc., 4th ser., v. 18, no. 4, p. 126, 1929 (Miocene, Colombia). La. Geol. Soc. China Bull., v. 9, p. 267, pl. 6, fig. 40, 1932 (Miocene, Panama). Brown and Fisher, Acad. Nat. Sci. Phila. Proc., v. 62, p. 422, 1911. Maria, Bull. Am. Paleontology, v. 13, no. 52, p. 196, 1952 (Miocene, Panama). *Turritella* of *T. gatenensis* Conrad, Weiland, Bull. Am. Paleontology, v. 14, no. 54, p. 93, pl. 9, fig. 7, 1929 (Miocene, Colombia). *Turritella gatenensis* lantana Hodge, ibid., v. 11, no. 45, p. 23, pl. 18, fig. 6, pl. 12, fig. 7, 1926 (Miocene, Venezuela). *Turritella conradi* Toulle, E. k. Geol. Bataviaansche Jaarb., Band 16, p. 694, pl. 25, fig. 4, 1909 (Miocene, Canal Zone). Not *Turritella gatenensis* Conrad, Galloway, Acad. Nat. Sci. Phila. Proc., v. 8, p. 242, pl. 44, figs. 19, 20a, 1911 (Oligocene?), Costa Rica? *T. mormonensis* Brown and Fisher, Jour. Paleontol., v. 8, p. 242, pl. 44, figs. 19, 20a, 1911 (Oligocene?), Not. Phys. Hist. Nat. Geneva Mus., v. 35, p. 182 (Gatun), pl. 4, figs. 26, 27, 1906 (Oligocene, Panama). *T. mormonensis* (Conrad). Mearns, Bull. Am. Paleontology, v. 10, no. 42, p. 229, pl. 42, fig. 12, 1925 (Miocene, Trinidad). *T. mormonensis* Mearns, described as a subspecies of *T. gatenensis*. Mearns, Washington Acad. Sci. Jour., v. 28, p. 102, figs. 1-3, 9, 1929 (Oligocene, Florida).

Modestly large, slender. Posterior part of whorls constricted, anterior part convex between primary spirals. Sculpture consisting of a primary spiral near, but generally behind, middle of whorl, a second primary at anterior third to fourth, and numerous minor spirals. Microscopic spirals generally visible on late whorls. A minor spiral lying behind, and close to, middle primary is almost, or quite, as strong as primary on some specimens. On a few specimens a minor spiral in front

of anterior primary or between primaries is visible. Primaries decreasing in strength on last of some specimens. As they decrease, a whorl becomes more inflated. Spirals attenuated by axial waves on a few specimens, touch cylindrical, of two inflated whorls, which attenuated. A very weak spiral, forming a strong median constriction, spiral adjoining anterior suture, and spiral adjoining posterior suture, appear on half-way between them appear on the whorls. The weak spiral adjoining anterior suture gradually enlarges and becomes a primary. Other weak spirals appear on the whorls. Base sculptured with spiral. Growth-line sinus weak between primaries; growth-line sinus of late whorls smooth or becoming stronger.

Height (almost completely) largest figured specimen.

Type: Lost.

Type locality: Gatun, Panama.

*Turritella gatenensis* is lost.

Cruder than his representation, but

location rests primarily on description. The

of *T. altilira* (Conrad).

*T. gatenensis*, lost.

for designation of

on plate 23, figs.

site, 250 meters

representative of

The typical

present in

Caimito for

abundant

widely

rare in

occurs

sandstone

Int

Each

size

whorls

shells


MIDDLE MIOCENE MOLLUSKS FROM GATUN FORMATION

# Resources for Scientists

Firefox | NMITA - Neogene Marine Biota of Tropi... | nmita.iowa.uiowa.edu/nmita/speciesDetails.page?genusNmFrmSpPg=Nicema&subgenusName=Nicema&speciesName=amara&genstat=38 | nmita

## *Nicema amara*


*Nicema amara* Woodring, 1964



5 mm

(C) The Natural History Museum, London

**Specimen Details:**  
*Nicema amara* Woodring, 1964  
Specimen: BMNH GG 22840 55  
Image Type: light  
Image view: abapertural;  
Scale:  
Reference:  
Locality: No Data,  
[-Enlarge Image-](#)



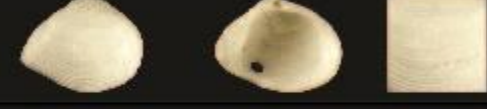








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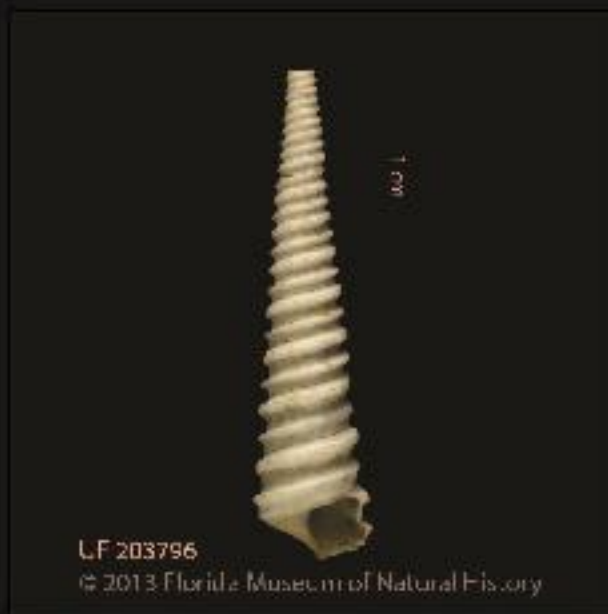


# Goals of FoP

- Short-term: Resources for you to use in the field in Panama & with your students in the classroom
- Long-term: Bilingual educational material for Panamanians
- Web portal for Scientists
- Template for other museum specimens, not just FLMNH fossils from Panama

Fossil	Scientific Name	Common Name
	<i>Anadara chavezii</i>	ark shell/ concha arca
	<i>Anadara dariensis</i>	ark shell/ concha arca
	<i>Caryocorbula oropendula</i>	box clam/ boccina
	<i>Turritella altilira</i>	turret snail/ boccina
	<i>Turritella gatunensis</i>	turret snail/ boccina
	<i>Architectonica nobilis</i>	sundial/ boccina
	<i>Antillophos candeanus</i>	whelk/ boccina
	<i>Oliva gatunensis</i>	olive/ oliva
	<i>Bivetiella dariena</i>	nutmeg/ boccina





## *Turritella altilira*

### turret shell/torrecilla

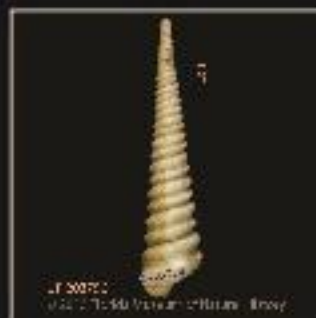
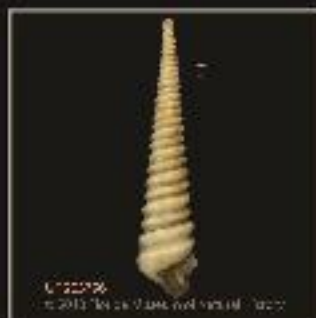
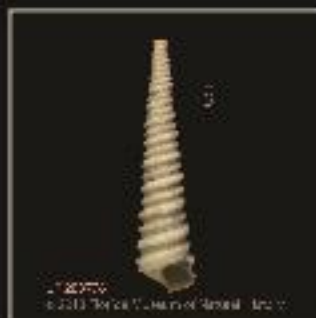
Shell is slender, with two strong ribs per whorl (bicarinate), which are often noded (regular small bumps). Growth lines are often visible on later whorls.

**Size:** 60-80 mm.

**Ecology:** inhabits shallow-offshore marine (10-100 m) waters, burrowing in silt near sediment surface; filter-feeding.

**Geological range:** early Miocene-late Pliocene (20-3 million years ago).

**Geographic distribution:** Caribbean – Panama, Brazil, Colombia, Costa Rica, Dominican Republic, Grenada, Puerto Rico, Trinidad, and Venezuela; Pacific – Panama, Colombia, Ecuador, and Mexico.



# Web site components

- Overview of Geology of Panama
- Guides for Fossils of each of the major formations in Panama
- Hyperlinked Bibliography
- Links to Collections
- Additional resources
- Educational Materials
- Blog



# Goals of FoP

- Short-term: Resources for you to use in the field in Panama & with your students in the classroom
- Long-term: Bilingual educational material for Panamanians
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- Template for other museum specimens, not just FLMNH fossils from Panama





















# FLMNH Florida bivalves

Firefox | Image Gallery Results | Invertebrate Pale... | www.flmnh.ufl.edu/invertpaleo/gallery.asp?gallery=Florida Mollusca-Bivalvia

Google

**Collections**  
Degree Programs  
Staff & Volunteers  
Current Research  
Student Post-Docs, Grants & Awards  
Resources & Links

 4.92 CM	 4.85 CM	 5 CM
MACRALLISTA MACULATA	GLOBIVENUS RUGATINA	LEPORIMETIS INTASTRIATA
 7.1 CM	 5.55 CM	 1.7 CM
SEMELE PERLAMELLOSA	CHAMA MACEROPHYLLA	BRACHTECLLAMYS ANTILLARUM
 1.55 CM	 4 MM	 4 CM
GREGARIELLA CORALLIOPHAGA	LIMATULA SUBOVATA	ANADARA AEQUALITAS
 3.5 CM	 6.3 CM	 2.97 CM
SPONDYLUS AMERICANUS	MODIOLUS AMERICANUS	HIATTELLA ARCTICA

EN 10:56 AM 5/30/2013

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