

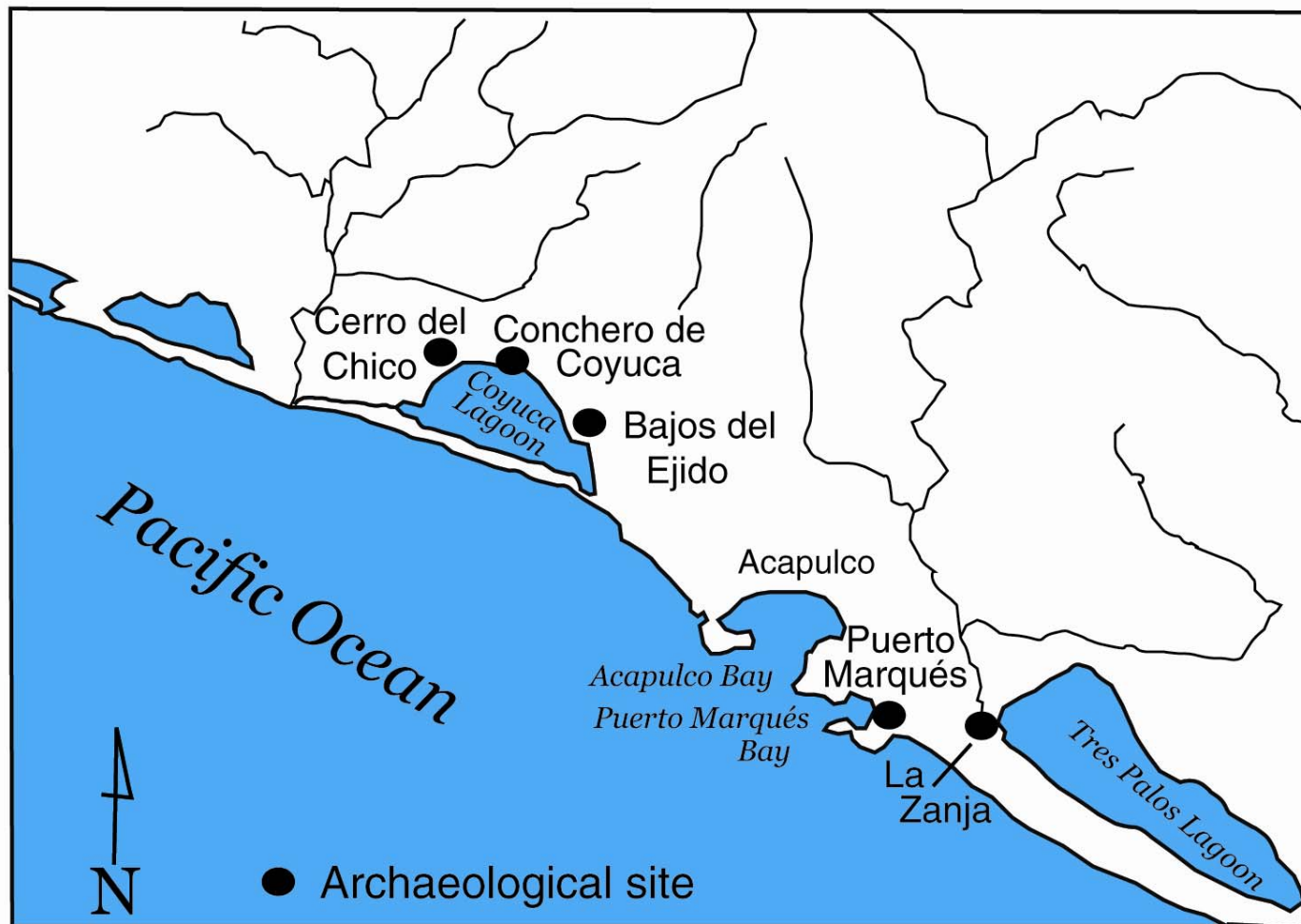
# Archeomollusks from the vicinity of Acapulco, Guerrero, Mexico

Prepared by Barbara Voorhies  
University of California, Santa Barbara

Identifications by Henry Chaney and  
Paul Valentich-Scott  
Santa Barbara Museum of Natural History

## Proyecto Costero Arcaico-Formativo

- These shells were recovered from several archaeological sites near Acapulco, Guerrero, Mexico during a field project in January 2003. The project was directed by Douglas J. Kennett, University of Oregon, Eugene and authorized by the Instituto Nacional de Antropología e Historia, Mexico. It was funded by a grant from the National Science Foundation.
- The principal source of the shells presented here is the archaeological site of Puerto Marques, located by the bay of the same name. Additional shells came from La Zanja, a site situated at the upper end of the Tres Palos Lagoon, and additional lagoonside sites north of Laguna de Coyuca (see map on next slide).
- The preparation of this reference collection was carried out by Barbara Voorhies, University of California, Santa Barbara.



Study Sites

# *Cardita megastropha*

- Offshore to 100 m  
(Keen 1971:109)
- Intertidal sand  
beach/flats to 10 m  
(Parker 1964a)



# *Chione subrugosa*

- Formerly *Anomalocardia subrugosa*
- Lagoons or mudflats; not offshore (Keen 1971:190)
- Abbott (1982) says abundant food clam (*A. subrugosa*)



# *Crucibulum scutellatum*

- Stones or shell substrates from intertidal mudflats to 27 m (Keen 1971:463)
- Common (Abbott & Dance 1982:73)



# *Diplodonta sericata*

- Mid tidal zone to 75 m in mud to coarse sand (PVS)
- Intertidal sand beaches/flats to 10 m (Parker 1964a)



# *Dosinia ponderosa*

- Offshore to 60 m  
(Keen 1971:178)
- Intertidal sand  
beach/flats to 10 m  
(Parker 1964a)



# *Glycymeris gigantea*

- Offshore; not intertidal (Keen 1971:55)
- Intertidal sand beach/flats to 10 m (Parker 1969a)



# *Ipigenia altior*

- Intertidal to 24 m  
(Keen 1971:239)
- Collected from  
sandbar at Boca del  
Cielo, Chis., one  
with bird predation



# *Laevicardium substriatum*

- Intertidal zone to 60 m in mud or sand; little egg cockle (Keen 1971:160)
- Intertidal sand beach/flats to 10 m; nearshore sand/mud 11-26 m (Parker 1964a)
- Sandflats, common in Panama (Abbott 1982:349)



# *Ostrea palmula*

- Attached to mangrove roots or rocks especially on reefs exposed to surf in depths to 7 m (Keen 1971:84).
- A type of flat oyster



# *Ostrea palmula*

- Attached to mangrove roots or rocks especially on reefs exposed to surf in depths to 7 m (PVS)



# *Megabalanus* sp.

- Intertidal marine on rocks



# *Mytella strigata (falcata)*

- Intertidally on mudflats or shallow lagoons to depths of 6 fathoms (Keen 1958:49; Keen 1971:63).
- *M. falcata*, Falcate Swamp Mussel, occurs in mud near mangroves; common (Abbott 1982:298)
- Low salinity lagoons & mangroves (Parker 1964a).



# Pinnidae fragments

- Pen shells live buried in muds and gravels in quiet bays (shell fragile)



# *Plicopurpura pansa*

- Rocks at high tidal zone (Keen 1971:553).
- Intertidal rocky shore (Parker 1964a)
- Formerly *Purpura pansa*



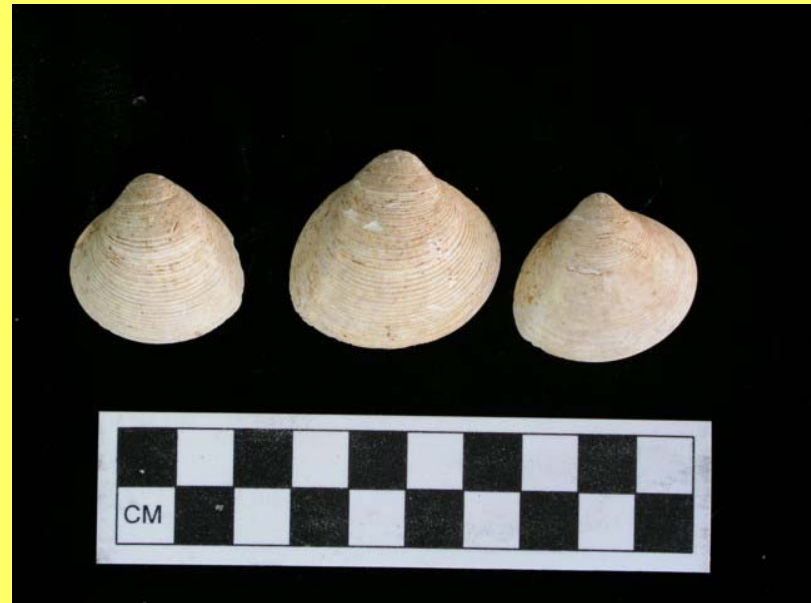
# *Pododesmus macrochisma*

- Intertidal to 90 m;  
attach to hard  
substrate (Coan et  
al 2000:256)



# *Polymesoda* sp.

- Brackish to freshwater; not sandy beach. Estuarine (Keen 1971:112)
- Low salinity lagoons & mangroves (Parker 1964a)



# *Tagelus affinis*

- Low intertidal to 80 m (offshore) in mud (Coan et al. 2000:441).
- Intertidal sand beach/flats to 10 m (Parker 1964a)
- Mud flats or offshore to depths of 73 m (Keen 1971:246)
- Could be *T. californianus*



# *Megapitaria aurantiaca*

- At or below low water to 10 m (intertidal to offshore; Keen 1971:176);
- Tidal flats to 10 m, common (Abbott & Dance 1982:359)



# *Chama mexicana*

- Intertidal to 53 m, common (Keen 1971:149).



# *Chione californiensis*

- Intertidal on mud flats and offshore to depths of 69 m on mud bottom (Keen 1971:185).
- Intertidal to 50 m on sandy mud flats in bays



# *Trachycardium consors*

- Common on tidal flats to 45 m (Keen 1971:153)
- Intertidal sand/beach flats to 10 m (Parker 1964)



# *Anadara multicosata*

- Sand bars taken at extreme low tide (Keen 1971:48).
- Near mangroves in black mud, common (Abbott and Dance 1982:292).



# *Anadara multicosata*

- Shows worked umbones.
- Puerto Marques, 2.40-2.60 m
- FS 03-199



# *Theodoxus luteofasiatus*

- Margins of mangrove swamps and on mudflats (Keen 1971:360)



# *Antigona multicostata*

- Sand, among rocks, at extreme low tide: marine (PVS)
- Formerly *Periglypta multicostata*??? (Keen 1971:161)



# *Undulostrea megodon*

- Low intertidal to deep (110 m) on rocks; marine (PVS)
- Formerly *Ostrea megodon* (Keen 1971:84). Shells may occur in shallow water or be dredged offshore to 110m



# *Lyropecten subnodosus*

- Marine; offshore (PVS)
- Shells on beach but requires divers for good specimens (Keen 1971:93).



# *Spondylus calcifer*

- Low tide to 18 m;  
marine (PVS)
- Exposed boulders,  
under ledges, attached  
to rocks
- Spaniards used the  
lime of these shells for  
cement (Keen  
1971:96)



# *Anadara formosa*

- Marine offshore, 11-82 m (Keen 1971:48)
- Attached by byssus to rocks



# *Spondylus calcifer* (l.); *S. leucacantha* (r.)

- *S. calcifer*: Marine offshore; Intertidal to 18 m
- *S. leucacantha*: Marine, offshore 15-90 m
- Synonym is *S. princeps*. Keen 1971:96; no habitat



# *Tivela hians*

- Probably nearshore sand, marine (PVS)



# *Tucetona multicostrata*

- Marine offshore to 90 m (Keen 1971:57)
- Formerly *Glycymeris multicostrata*



# *Noetia reversa*

- Intertidal to 73 m  
(PVS)



# Columna from univalves



# *Hexaplex erythrostomus*

- Marine; aggregate for breeding; prey on large clams and may be caught in offshore traps (Keen 1971:516).
- Intertidal sand beach/flats to 10 m (Parker 1964a)



# *Hexaplex* damage

- Marine; aggregate for breeding; prey on large clams and may be caught in offshore traps (Keen 1971:516).
- Intertidal sand beach/flats to 10 m (Parker 1964a)



# *Strombus galeatus*

- Shallow water marine on sand and rubble (HC). Just below high tide (Keen 1971:421).
- Shallow water, uncommon (Abbott and Dance 1982:76)



# *Strombus granulatus*

- Exposed beaches, rock and sand, mostly offshore to 75 m (Keen 1971:421)
- rocks and sand offshore, common (Abbott and Dance 1982:80)
- Intertidal sand beach/flats to 10 m (Parker 1964a).



# *Stramonita biserialis*

- Intertidal on rocks  
(Keen 1971:549).  
Marine. Is El Niño  
marker (HC).



# Broken *Stramonita biserialis*

- Intertidal on rocks (Keen 1971:549). Marine. Is El Niño marker (HC).



# *Strombus granulatus*

- Marine on sand with algae (HC)
- On exposed beaches of rock and sand but mostly offshore in depths to 75m (Keen 1971:421)



# *Strombus granulatus*

- Sand with algae (HC)
- On exposed beaches of rock and sand but mostly offshore to depths of 75m (Keen 1971:421)



# *Strombus granulatus* damage



# *Cerithidea mazatlantica*

- Tidal flats, mud, marshes (Keen 1971:419).
- Intertidal sand beach/flats to 10 m. Also low-salinity lagoons (Parker 1964a)



# *Cerithium stercusmuscarum*

- Common in estuaries and sand flats (Keen 1971:411).
- Intertidal rocky shore (Parker 1964a)



# *Cymatium wiegmanni*

- Deeper water on rocks but favored by hermit crabs (HC)
- Keen 1971:505 (no info re habitat)



# Whelk with attached oysters

- Puerto Marqués
- 2.20-2.40 m
- FS 03-188



# *Turritella leucostoma*

- Marine to depths of 40 m (Keen 1971:392)
- In mud, common (Abbott and Dance 1982:60)
- Sand beaches/flats to 10 m (Parker 1964a)



# *Melongena patula*

- On sand and mudflats, lagoons, estuaries, intertidal (Keen 1971:604).



# *Nassarius luteostoma*

- Common mud snail  
intertidal; scavenger  
(Keen 1971:610)



# *Tripsycha* sp.

- Marine (Keen 1971:405).



# *Natica chemnitzii*

- Intertidal mudflats and sand (Keen 1971:473-4).
- Marine, but might tolerate lower salinity (HC).
- Intertidal sand beach/flats to 10 m; Nearshore sand/mud; 11-26 m (Parker 1964a).



# *Cypraea arabicula*

- Intertidal under rocks (HC)
- Keen 1971:493; no habitat



# *Oliva incrassata*

- Sand flats, low tide (HC)
- Preferred habitat is outer edge of sandspits at extreme low tide (Keen 1971:622)



# *Ancistromesus mexicanus*

- Low tide on rocks (HC)
- Surf beaten rocks at low water line (Keen 1971:322)



# *Astraea unguis*(l.); *Strombus galeatus* (r.)

- *A. unguis*: rocks (HC)
- Rocky areas at low tide and just offshore (Keen 1971:356)
- *S. galeatus*: offshore, sand (HC)
- Favored food among Mexicans large shell heaps along Gulf of CA (Keen 1971:421)



# *Crepidula lessonii*

- Intertidal under rocks  
(HC; Keen 1971:460).



# *Fissurella virescens*

- Intertidal under rocks(HC)
- Intertidal(Keen 1971:321)



# *Conus perplexus* (l.); *Conus californicus* (r.)

- *C. perplexus*: sand flats at low tide (HC)
- Mostly on sandbars but to depths of 37 m (Keen 1971:669)
- *C. californicus*: P sandy mud (way out of range)(HC).
- Shore loving species (Keen 1971:663)



# *Littorina modesta* (l.); *Columbella fuscata* (r.)

- *L. modesta*: high tide, rocks (HC)
- Keen 1971:366; no habitat
- Archaeological specimen is a drilled bead
- *C. fuscata*: intertidal under rocks (HC)
- Keen 1971:574; no habitat



# *Donax punctatostriatus*

- Intertidal to 5 m;  
marine (PVS)
- Keen 1971:239; no  
habitat



# *Semicassis centiquadrata* (l.); *Malea ringens* (r.)

- *S. centriquadratum*: full marine, estuary sand (HC)
- Living in sand at very low water (Keen 1971:501)
- *M. ringens*: marine, deeper water (HC)
- Under ledges of rocks at extreme low tides (Keen 1971:499)



# *Malea ringens*

- Marine in deeper water (HC)
- Under ledges of rock at extreme low tides (Keen 1971:499).



# *Nerita scabricosta*

- Mid to high tide on rocks (HC)
- Can be found in splash zone (Keen 1971:359)



# *Orthalicus princeps*

- Land snail (HC)



# Gooseneck barnacle plate

- Marine



# *Northia northiae*

- Offshore



# *Pleuroploca princeps*

- Rocky shore (HC)

