

TWO PHILIPPINE BORING MOLLUSCS

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ONE PLATE

Pholads are known to attack rocks of various kinds by tunnelling or rasping holes in similar manner as teredo does in wood. Among rock borers, *Parapholas concamerita* Desh., is reported to occur and to be fairly common on the rocky coasts of the Philippines. This species measures 3 inches or more in length. Ablan (1938) noted *Pholas orientales* Gmelin living in colonies, burrowing in the sandy mud in Pontevedra, Negros Occidental. Many of this species were removed from the soil 9 to 22 inches deep.

Among molluscan borers the teredo is the most destructive wormlike bivalve. Its shells at one end are reduced to a pair of hard chisels which are moved up and down by powerful muscles with which to excavate its burrow in the wood. Its stomach secretes a digestive ferment which converts some of the wood into sugars. The teredo is considered to be one of the few highly organized animals capable of digesting wood fiber. It is the only boring animal in the sea dependent for food and shelter on the material which it bores and is so highly specialized that it can only begin a burrow at a very early stage of its existence. If an adult teredo is dislodged from its burrow, it cannot make a new one but dies helplessly.

The writer, on October 15, 1948, came across a floating piece of worn-out piece of wood (*Avicennia officinalis* Linnæus) measuring about a meter long and 15 centimeters in diameter badly tunnelled on the surface and drifted ashore by the tide in the Provincial Demonstration Oyster Farm at Manat, Binmaley, Pangasinan Province. Splitting the wood with a hatchet, he dislodged and saved for study two species of molluscs embedded in large number in the wood. The two species are of the genera *Gastrochaena* and *Barnea* of the family Pholadidæ. At present it is not known with certainty as to whether a certain species of the genera is specific to the kind of surface and nature of wood it attacks. *Gastrochaena rostrata* Speng., one of the species here described, attacks readily bamboo [*Bambusa*

spinosa Roxb. (Gram)] splits which are usually employed as oyster spat collectors and fish corrals. This borer also destroys spat collectors planted in oyster beds.

The attacked piece of wood is a mangrove species locally abundant along muddy seashores of Philippine tidal streams. Its ash is leached and the resulting liquor is an important ingredient in soap making. This particular wood is known locally as *kalapini*, *kalumpini* (Ilocos Norte, Pangasinan, Zambales); *mangitit* (Zambales); *bongalon* (Pangasinan, Polillo, Marinduque, Mindoro, Iloilo, Negros Occidental); *bungalin* (Pampanga); *api-api* (Bataan, Capiz, Mindoro, Masbate, Cotabato, Zamboanga); *api mavani* (Albay); *kuyapi* (Camarines); *pepisik* (Tayabas, Camarines); *miapi*, *piapi* (Tayabas, Samar, Leyte, Misamis); *kilassi* (Cotabato, Davao); *pundung* (Davao). Reyes (1933) characterizes this species of wood to have decidedly crossed grains which are irregularly wavy or twisted, slightly salty in taste, and perishable when exposed to weather or in contact with the ground.

DESCRIPTION OF SPECIES

BARNEA MANILENSES Phil. Plate 1, fig. 2.

Shell elongate and corncoblike, dull-white; anterior gradually bulging from posterior side; surface laminated with toothed clockwise ridges. Anterior tips sharp, anteventral margin toothed. Shell with an elongated and pointed shell piece. Inside shell surface whitish. Prominent spines present, one each below hinge of each valve. Open on both ends.

Measurement of *Barnea manilensis* Phil. in inches.

Sample number	Greatest thickness	Shell valves	
		Length	Width
1			
2			
3	3/4	2-3/16	3/4
4	5/8	2-5/16	3/4
5	11/16	2	3/8
6	7/8	2-7/8	3/4
7	3/4	1-7/8	3/4
8	11/16	2-1/16	5/8
9	11/16	2	5/8
10	7/8	2-3/8	3/8
11	5/8	1-15/16	5/8
12	3/4	2-9/16	3/4
13	11/16	2-1/8	11/16
14	11/16	2-1/8	11/16
15	5/8	2-1/8	5/8
16	3/4	2-1/4	11/16
17	5/8	2	5/8
	5/8	1-13/16	5/8
	5/8	1-7/8	5/8

The type specimen was collected in Manila and described as a fine white 2.5-inch shell which lives in burrows along the Philippine coasts. It is quite similar to other species of which there are a dozen or more in the genus.

GASTROCHAENA ROSTRATA Speng. Plate 1, fig. 4.

Shell irregular in shape, tapering posteriorly, bulkier and rounded anteriorly, well fitted with opening on both ends, crowned with a rounded shell piece. Fine undulating ridges present below crown. Prominent horizontal groove present on anterior of shell. Dull-white anteriorly, dull-yellow posteriorly. Interior of shell whitish. Under hinge a spine present on each valve.

These little borers are also common in the West Indies and can perform wonders with a good thick plank or post to work on. They will bore so many holes leaving only a skeleton of the object left which is easily crushed in your hands. There are three species on the east coast of the United States, from North Carolina southward. Some species bore in clay.

Measurement of Gastrochaena rostrata Speng. in inches.

Sample number	Greatest thickness	Shell valves	
		Length	Width
1	7/16	7/16	1/2
2	1/2	1-5/16	1/2
3	7/16	1-7/16	7/16
4	7/16	1-5/16	7/16
5	3/8	1-3/8	3/8
6	3/8	1-1/16	3/8
7	7/16	1-1/16	7/16
8	7/16	7/8	7/16
9	3/8	3/4	3/8
10	3/8	5/8	3/8

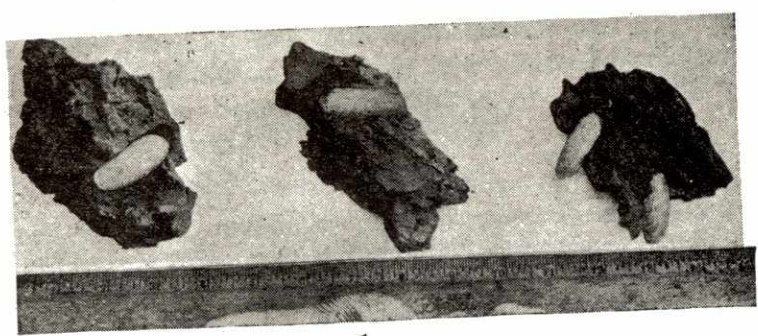
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5. WEBB, WALTER F. Handbook for shell collectors (1936) 171.

ILLUSTRATIONS

PLATE 1

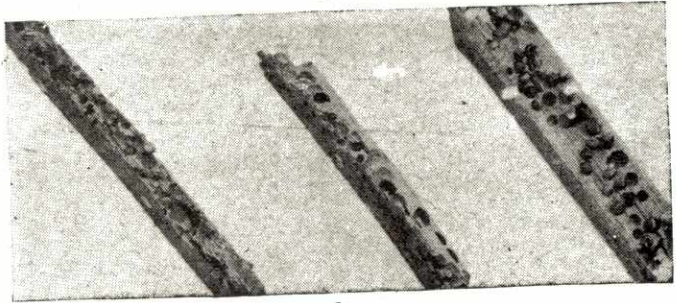
- FIG. 1. *Barnea manilensis*.
2. External and inside feature of shell of *Barnea manilensis*.
 3. Surface of bamboo pieces attacked with *Gastrochaena rostrata*.
 4. External and inside features of shell of *Gastrochaena rostrata*.



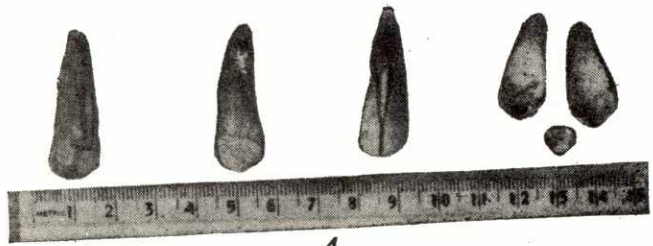
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