

able weight to a theory that *P. torrei* is more closely related to *P. constellata* than to *P. stellata*.

EXPLANATION OF FIGURES, PLATE 4.

All figures were drawn with the aid of a camera lucida.

Fig. 1. *P. torrei*: c. central; i, iv laterals; u. uncini.

Fig. 2. Uncini 1 and 2, 38 and 39, 45, 55, 70, 90, 102 (the outermost).

Fig. 3. Central tooth of *P. constellata*.

Fig. 4. Central tooth of *P. stellata*.

Figs. 5, 6, shell of *P. torrei*.

LAMPUS VENTRICOSA COHONGORONTA IN THE POTOMAC VALLEY.

BY WM. B. MARSHALL.

In the NAUTILUS for October, 1917, I recorded the finding of two valves (belonging to the same individual) of this shell by Manly D. Barber in the Potomac River, at Great Falls, Maryland, about eighteen miles above Washington, D. C. Dr. Ortman had already recorded the finding of a single specimen as far south as the Shenandoah River, at Harper's Ferry, W. Va., some fifty miles above Great Falls, and the finding of others at places farther up the river.

On July 7, 1918, Dr. C. Wythe Cooke of the U. S. Geological Survey, found a superb specimen living in a sandy pass at Midriver Island, which is only about a mile and a half above the Falls.

On July 28, 1918, he and I donned bathing suits and made a careful examination of the spot in the hope of finding more specimens, and especially the very young. For two or three hours we explored the sand and the mud beneath with our fingers and toes and passed quantities of sand and mud through our hands and through a fine mesh sieve. The spot thus investigated was about 20 feet wide and 75 feet long. Our efforts were rewarded by the finding of four specimens of *cohongoronta*, the smallest having a length of 40 mm., the largest a length of

72 mm. The specimen found by Dr. Cooke on July 7th had a length of 90 mm. Their occurrence thus in a colony and of different ages establishes *cohongoronta* as a member of the naiad fauna of that vicinity. That the locality is well fitted for them is shown by the great beauty of the specimens, which are highly polished, much rayed with dark green on a ground color varying from yellowish-olive to light green and to very dark brownish-olive. The shells are perfect except for a slight erosion of the beaks. The posterior ridge is high and fairly sharp. The angle at the junction of the posterior and ventral margins is prominent.

Other naiads found at the same station were *Lampsilis cariosa* (9), *Strophitus edentulus undulatus* (1), *Symphynota viridis* (1 dead), *Alasmidonta undulata* (2), *Margaritana marginata* (6), *Unio complanatus* (many), *Unio productus* (many).

Until the present time *Unio productus* and *Unio fisherianus* have been the only naiads in this vicinity which have offered any great difficulty in identification. They are not yet well understood. Further study may show that they belong to the same species or, on the other hand, it may bring to light characters which will more surely differentiate them. *Lampsilis cariosa* and *L. ochracea* have been confusing to some students. Simpson¹ has pointed out the differences between them. To me very rarely have they offered any difficulty. The coming of *cohongoronta* into this neighborhood may probably lead to problems in future times. With passing time this shell, in accommodating itself to new surroundings, may be modified in form and color, and these modifications may trend in the direction of *cariosa*, making it difficult to distinguish between the two species. Whence *cariosa* came and how and why it came we have no positive knowledge, but it has been here since prehistoric times and its make-up must be well established and best suited to its environment. We hardly may expect any great change in this species. *Cohongoronta* is a new arrival. It may find conditions here approximately like those in its an-

¹ Nautilus, VIII, pp. 121-123, 1895. Both species are figured, but the legends beneath the figures should be transposed.

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cestral home, but it is more probable that it will find some conditions different. Environment will not make a change, to suit the mollusk and hence if its residence is not to its liking the naiad will have to adapt itself to the residence or else retire from the field.

Then, too, there is a possibility that the two species will hybridize and produce one or more other forms or races. Hybridizing might wipe out either *cariosa* or *cohongoronta*, or it might wipe out both of them, replacing them by a race of mixed blood. Bearing a resemblance to each other close enough to suggest a common ancestry or a converging development and living now side by side in the same spot, it seems to the writer that a crossing of the two species will be not only possible but highly probable. Indeed, one of the specimens of *cohongoronta* collected in that spot may be a hybrid. Its anterior portion has the glossy, peculiar straw-colored periostracum of *cariosa*, while the other features of the shell are distinctly those of *cohongoronta*. It will be interesting and profitable to note the future history of the two species in this vicinity, especially as the specimens of *cohongoronta* in the U. S. National Museum (Cat. Nos. 219057 and 219058) will show the characters of the shell at the time of its first arrival and form a basis of comparison with the shells of future generations. The specimens of *cariosa* collected at the same time and place form catalogue number 219059.

THE STATUS OF LOBOA BRUNOI VON IHERING.

BY PAUL BARTSCH.

In the "Nautilus" for February, 1917, vol. 30, on pl. 4, fig. 7, and in the number for March, 1917, pp. 121-122, Dr. H. von Ihering describes a new genus and species of landshell from the Island of Trinidad, as *Loboa brunoi*.

During a recent visit to Washington, Dr. Carlos Moreira, of Brazil, submitted a shell to me for determination. This specimen, which is in a subfossil state, also came from the Island