

mens have been taken in Southwestern Texas. A few years ago Dr. Edgar A. Mearns collected it abundantly near Ft. Clark, Southwestern Texas, and obtained a number of living specimens, which he sent to me. Some of these were gravid and showed it to be a true *Unio*."

A NEW VARIETY OF GLYPTOSTOMA NEWBERRYANUM.

BY F. W. BRYANT.

G. newberryanum var. *depressum*.

This variety differs from typical *Glyptostoma newberryanum* (W. G. Binney) in being very much depressed, the altitude of shells with an equal number of whorls being less than two-thirds that of Binney's species. The diameter is correspondingly reduced. The aperture is also less round than in *G. newberryanum*. A specimen measures, alt. 11, diam. 27 mm.

Dead shells of this variety are found in abundance on the bluffs north of Ensenada, Lower California.

It has also been collected by Mr. Henry Hemphill near Wilmington, Los Angeles Co., California.

THE MANUFACTURE OF PEARL BUTTONS FROM FRESH-WATER MUSSELS.

In the manufacture of pearl buttons the centre of activity has shifted from the China Sea to the river towns of the Mississippi. Altogether unknown in this region a dozen years ago, this industry has grown to such proportions that it now employs the services of thousands of people, and the output has become so great that it materially affects the button market of the world.

About twelve years ago a German buttonmaker named Boeple wandered into Muscatine from the old country. He saw for the first time the mussel shells of the Mississippi river. He examined them closely and expressed the opinion that they were good material for buttons. Up to this time fresh-water shells were considered unsuitable for any such use, and authorities on the subject were naturally skeptical in regard to Boeple's opinion of their usefulness. He persisted in claiming that the "niggerhead" mussel from the waters of the Mississippi river would make, if properly handled and finished, the finest pearl buttons yet produced. He took some

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specimens to the factories at Waterbury, Conn., and after considerable experimenting one concern there determined that with some changes in their machinery the shell of the strange mussel from the "Father of Waters" would make a button to compete with the best of those from other parts of the world.

First one concern and then another began to use the Mississippi shell, until the foreign one was almost abandoned. In the beginning the shells were shipped east in the rough and prepared for use after their arrival there, but the freight rates were so high that one enterprising firm soon shipped that part of its machinery which makes the "blanks" out to Muscatine, and, what generally results when some pioneer leads the way to a good thing, others soon profited by the example and came also. The industry has spread both up and down the river, until almost every town of any importance, from St. Paul, Minn., to Alton, Ill., is now engaged in some form of the industry.

The manner of catching the mussels is interesting. A fisherman equips himself with what is known to the clan as a "John boat." This is a flatboat on the order of a scow, about 20 feet long and $3\frac{1}{2}$ feet wide. Upon the inside of the boat are placed eight uprights, which are between three and four feet high and have crocheted tops. Four of the uprights are placed on each side of the boat, at just enough distance apart to accommodate the four 10-foot pieces of inch gaspipe that rest upon them. To each of the gaspipes are attached 20 four-foot stagons, similar to those used on an ordinary trout line, and each stagon has four hooks, with four prongs.

The fisherman goes out in his "John boat" with as much confidence as if it were the finest craft afloat. Once in the stream, he casts his gas-pipes, one by one. As the hooks drag along the bottom of the river they come in contact with the open shells of the mussels, which immediately close up on them. Thus attached, they are brought to the surface and taken off. The distance the hooks are dragged each time depends altogether on the thickness of the bed, and varies from three boat-lengths to an eighth of a mile.

The rivers of Arkansas are said to be so thick with mussel beds that they crop out of the water when it is low. The men put on rubber boots and shovel the shells into the boats. In the Upper Mississippi district, shells are quoted in car-lots, ranging from 15 to 30 tons in weight, but the Arkansas dealers have astounded everybody in the business by sending out quotations on 500-ton lots and

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promptly filling all orders sent them. The men sell the mussels to the button factory operators at so much per 100 pounds. The wages they make depend upon their diligence and the luck they meet with in getting in a thick bed, but range from \$1.50 to \$5 per day. There is one big mussel bed near Canton, Mo., about eight miles in length.

The process of making the shells into buttons is interesting. The shells are first cut up into blanks the exact size the buttons are to be; then they go to the grinder, a machine which grinds the black back off of them; after that to the facing machine, which cuts the face on them; next to the backer, which bevels the back; then the drill, which puts in the eye-holes; from here they go to the polishing room, where the glossy finish is put upon them; after that they are sorted, put on cards and boxed up.

There are about 40 factories in Muscatine, and the amount paid out weekly in wages is \$10,000. There are factories in Davenport, Fort Madison, Burlington, Quincy, LaGrange, Canton and many other points.

There is an added interest in the business of mussel fishing on account of the likelihood of finding pearls. It is not an uncommon thing for a fisherman to find a pearl valued at \$100, and one lucky fellow found a beauty which sold for \$5,000. Every follower of the business has a little bottle filled with specimens, which eventually find their way to the market.—*Phila. Record.*

GENERAL NOTES.

~~CANTHARIDUS PERONII Phil. In this journal for May, 1901 (xv, p. 8). I noted that it was Perry who first gave a name to this species, *Bulimus carinatus*. I find that this name cannot stand on account of the earlier *Bulimus carinatus* of Bruguiere, and the name given by Philippi will be retained. In the same note, the second *i* was omitted from the name *Bulimus eximius* Perry, by typographical error.—*H. A. Pilsbry.*~~

~~ANGITREMA VERRUCOSA AT LAWRENCEBURG, INDIANA.—I am able to list an entire new shell to this locality, *Angitrema verrucosa* Raf. This shell had so far never been found in the upper Ohio, the mouth of the Wabash, 275 miles below this point, being its locality according to Say. I was fortunate enough to obtain 60 specimens of this shell, and send you a set for the collection.—*A. C. Billups.*~~