

in producing differentiation in a single type of shell. *P. levettei*, *chiricahuana*, *ashmuni*, *pseudodonta* and *rhyssa* are obviously offshoots of a common stock.

CONCHOLOGICAL NOTES FROM LOUISIANA.

BY LORRAINE S. FRIERSON.

Being, so far as I know, the only student of conchology in Louisiana, perhaps a few notes may be of interest.

My station consists of an arm of Red River (Bayou Pierre), a lake and numerous creeks.

In these waters occur about 50 species of Mollusca, of which 30 are Unionidæ. An interesting fact, and one which I have never seen mentioned, is the sharp line of separation between the forms found in the creeks and those growing in the Red River waters.

In the creeks are found 5 Unios and 2 Anodontas. While in the Red River waters are found 25 Unionidæ. No creek shell grows in Red River waters (with but two exceptions noted below) and no species living in Red River waters are ever found in the creeks.

At the junction of a creek with the river occurs a zone where *no mollusca can be found*. The exceptions noted are *U. texasensis* Lea, which, while pre-eminently a *creek* shell, is found *sparingly* in Red River waters. Another possible exception is in the case of *U. declivis* Say. This shell is found abundantly in the creeks, and grows to a large size. A rather rare shell is found in the Red River waters which is said by our authorities to be a form of *U. declivis* Say known as *tetralasmus* Say or *geometricus* Lea.

Declivis proper never occurs in the Red River waters, nor does *tetralasmus* ever grow in creek waters. Perhaps this fact will help show that these shells are really distinct species and not synonyms.

The most variable and, perhaps, the most abundant Unio is *U. multiplicatus* Lea. West of the Mississippi drainage this shell merges into *U. eightsii* Lea, and here, at the middle ground, a mixture of types is seen. An interesting shell is sparingly found here, close to its extreme southern limit, probably. It is a dwarfed, almost "run out" form of *U. donaciformis* Lea. Another "Yankee down south" is a very small but brilliantly colored *Anodonta suborbiculata* Say. It is found in the soft, deep mud of Edwards' Lake, and disputes its territory with *Anodonta virens* Lea. *A. imbecilis*

Frierson

also grows with these, but does not live in the *mud*, but escapes this by growing in the fissures of the cypress trees, a prisoner for life, by choice.

Thus far my researches have been productive of one new species, *U. friersoni* Wright, and the extending of habitat of three shells. But I hope to accomplish much more in the future, which, if successful, will be given to the readers of THE NAUTILUS.

Frierson Mill, De Soto Parrish, Louisiana.

CONTRIBUTION TO A KNOWLEDGE OF UNITED STATES UNIONIDÆ.

BY S. HART WRIGHT.

(Concluded.)

Unio swordianus sp. nov.

Shell oval, massive, very inequilateral, rounded before, highly arched above and rounded at base, very bluntly pointed behind. Sides flattish, constricted slightly or not at all, and the umbonal ridge usually obsolete. Epidermis brownish or somewhat horn-colored, rayless, and the surface roughened with close growth-lines. Ligament darkened, heavy, short and much elevated. Beaks pointed, small and very low. Beak cavity shallow, extending slightly under both cardinal and lateral teeth, thus making it very broad and with obtusely rounded sides. Cardinal teeth double in the left valve, single in the right and smoothish, or crested and short. Lateral teeth heavy, slightly curved, wide apart, arising from a thick dorsal plate. The cardinal of right valve with an oblong groove at its base. Cicatrices distinct; dorsal cicatrices confluent into an oblong groove under the dorsum. Pallial impression deep and denticulate. Nacre usually pure white, often more or less with waxy discolorations or mottlings or even dirty white. Width 4 inches, length 2, diameter $1\frac{1}{2}$.

Habitat: Powell's Creek, Lee Co., Va.

Remarks: Affinity, *U. bursapastoris* B. H. Wright and *U. abacus* Hald. Our shell differs from the first in having a lighter epidermis, an arched dorsum, shell cavity greater, beak cavity very much less, being nearly extinct, and the posterior dorsal area narrower and very abrupt in its descent. From *U. abacus* it differs in the beak cavity, and is much more inequilateral. Ten specimens were obtained from the collector, Mr. T. F. Sword, for whom it is named.

Unio Diazens

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