

NOTES ON A COLLECTION OF MOLLUSKS FROM
NORTH WESTERN LOUISIANA, AND HARRISON
COUNTY, TEXAS.

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INTRODUCTORY REMARKS.

For several years, while resident in Louisiana, I busied myself in trying to bring together as good a local collection of the mollusks of the region as possible. During the past summer, while at work on the *Louisiana Geological Survey*, I continued my collecting, obtaining many specimens of land-shells, and a few fresh-water shells. Through the kindness of Mr. George Williamson, of Grand Cone, La., of Mr. O. B. Lewis, of Burk Place, and Messrs J. D. and J. E. Bailey, of Summerfield, coupled with my own efforts, it is likely that I have obtained more species from this section than anyone else. In view of this it seems highly probable that a few notes on this collection would be of passing interest to conchologists.

The largest part of the section that these remarks apply to is included between Ouachita River on the east, a line through Alexandria on the south, and the Texas and Arkansas lines, but I have transgressed these lines in speaking of a few specimens collected to the south of it in St. Landry Parish, and have included in the discussion, as the title denotes, Harrison County, Texas.

This list undoubtedly does not contain all of the species found in this region, for a few species originally described from this section have not been rediscovered. Undoubtedly, many more species of *Cyrenidae*, *Pupidae*, and other families will be found later. It is worthy of notice that the collecting of my friends and myself have brought to light no species of that large family *Pleuroceridae* (*Strepomatidae*) that is found in such large numbers in the southern States east of the Mississippi River. Some species of this family have been noted from Louisiana.

Ammnicola sayana Anthony, Cross Lake at Shreveport. Not very abundant.

UNIONIDÆ.

UNIO.

Unio anodontoides Lea, is extremely abundant in many of the bayous and lakes. It was collected in Cross Lake, Caddo Lake, Red River at Shreveport, Lake Bisteneau, Corney Bayou, Bayou Pierre, etc. It was found most abundantly in Lake Bisteneau, the species from Red River at Shreveport were the most perfect. Although this species exhibits some variation in size and relative thickness of the shell, the variation is rather slight when compared to the great amount of some other species.

Unio gracilis Barnes, is not very abundant. In Caddo Lake a fine lot of young specimens were collected. It was also found in Cross Lake, Red River (at Shreveport), Dorcheat Bayou, Corney Bayou, Bayou Pierre, and Lake Bisteneau.

Unio purpuratus Lam. This handsome *Unio* is rather abundant. It was collected in Cypress Bayou (Texas), Caddo Lake, Cross Lake, Corney Bayou, Dorcheat Bayou, Bayou Pierre and Lake Bisteneau. The most perfect specimens were in Caddo Lake; here a considerable number of perfect young were obtained. The largest specimen was a dead valve from Dorcheat Bayou, it being about six inches in length. A large number of specimens were collected from little pockets that had been formed alongside Corney Bayou. The characters of this species are very constant.

Unio levissimus Lea, Caddo Lake, Red River at Shreveport. Rather rare. Some beautiful young were obtained in Caddo Lake.

Unio nigerrimus Lea. Localities: Corney Bayou, Cypress Bayou, La., Dorcheat Bayou and creek near Rosefield. This species is rather abundant. The largest specimens were obtained from Dorcheat Bayou, where the shells, besides being larger than those of the neighboring streams, have thick, somewhat massive, shells.

Unio haleianus Lea. A single specimen was collected by Mr. O. B. Lewis, at Burk Place, in a small creek. I collected a

specimen in Castor Bayou, Catahoula Parish, that I take to be of the same species.

Unio mississippiensis Conrad, is abundant in the ponds and creeks throughout the section. It was found in Dorcheat Bayou and in Bayou Pierre, but is usually not abundant in the larger streams. The species does not present very much variation.

Unio hydianus Lea, is found in all of the larger bayous in which I collected—Dorcheat, Corney, etc. The specimens are very numerous. The variation is great, from individuals that are sub-compressed, to those that are very much inflated. There is a marked tendency to become much inflated in old age forms. The number and size of the rays vary much, some specimens have wide rays, others narrow rays, and still others are scarcely rayed at all. This species, on account of its enormous amount of variation, is one of our most attractive and instructive forms.

Unio approximatus Lea. A specimen of this species was found in a small creek in Rapides Parish. We think that we are not alone when we consider the difference between *hydianus* and *approximatus* almost nominal.

Unio obtusus Lea, was collected by Mr. O. B. Lewis in a branch near Burk Place, in Bienville Parish. Mr. C. T. Simpson so determines a specimen that I sent him, and from Lea's figures and descriptions I would so consider it.

Unio parvus Barnes, is found in a good many of the bayous. It is almost impossible, if not entirely so, to separate this and the three following species, but a good many of my specimens seem undoubtedly *parvus*.

Unio texasensis Lea, abundant everywhere that I collected *Unionida*, except in Red River, Cross Lake, and a few very small creeks. These specimens can be gathered by thousands. The variation is enormous, from elongated to rather short; from thin to rather thick shelled, etc.

Unio bairdianus Lea, is considered a synonym of the above. It is abundant in the creeks of the section.

Unio bealei Lea, were collected in the creeks around Mt. Lebanon. This form is extremely close to *texasensis*.

Unio camptodon Say, is found abundantly in the smaller streams throughout northwestern Louisiana. It seems to thrive best in small creeks and brooks that flow moderately rapidly, and have sandy bottoms. This species is so very abundant that, possibly excepting *Unio texasensis*, we are inclined to call it the most abundant species. Its range of variation is extremely great, and from the large suites that we obtained of it and the three following species, it seemed to us that we could trace their intergradation.

Unio declivis Say. Corney and Cypress Bayous in Claiborne Parish, near Mt. Lebanon, and near Jonesville, Texas. Mr. Williamson sent me a specimen with pink nacre.

Unio symmetricus Lea, in the creeks and bayous near Grand Cane. I have a good many specimens through the courtesy of Mr. Geo. Williamson, of Grand Cane. This species and *jamesianus* are, without doubt, synonyms, though a typical *symmetricus* can be distinguished from a typical *jamesianus*. I have seen Lea's types at the U. S. National Museum, and believe these to be pretty typical.

Unio jamesianus Lea, is abundant in the brooks and small creeks around Jonesville, and Port Caddo in Texas. Its habits closely resemble those of *camptodon*, with which it seems to connect by intermediate forms.

Unio lachrymosus Lea, is one of the most abundant of the species found in the section. Specimens were collected in Lake Bisteneau, Caddo and Cross Lakes, and in Bayous Dorcheat and Corney. The specimens are found in large numbers. The amount of variation is considerable, some specimens having a great number of pustules, while others have relatively few. Some specimens are much more compressed than others. The largest and heaviest specimens were from Caddo Lake.

Unio asper Lea, Corney Bayou, is found in other localities most likely; shows some variation in the number of pustules

Unio pustulosus Lea, is not very abundant. Is found in most of the lakes and principal bayous. It is most abundant in Dorcheat Bayou. The specimens from this place are somewhat more inflated than most of the specimens that I have seen from the more northern States. Some of the variations

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of *pustulosus* approach very near to *turgidus*, and I am inclined to the opinion that these two forms connect by intermediate examples.

Unio schoolcraftii Lea. Corney Bayou. Not very abundant.

Unio nodiferus Conrad. Corney Bayou. Not very abundant. These specimens seem almost fac-similes of those in the Philadelphia Academy of Natural Sciences collection from Neches River, Texas.

Unio turgidus Lea. Dorcheat Bayou. Somewhat abundant in this stream.

Unio pustulatus Lea. Caddo and Cross Lakes, Lake Bisteneau. It is abundant in the two first lakes. It varies very much in the amount of the development of the pustules.

Unio houstonensis Lea, is found in the three larger lakes and Bayou Pierre.

Unio trigonus Lea. Cross Lake, Bayou Pierre and Dorcheat Bayou. This species and the next two form a most interesting and a somewhat perplexing set of forms.

Unio cerinus Conrad, is found abundantly in nearly all of the bayous and the larger creeks throughout northwestern Louisiana. Many hundreds of specimens were obtained from Corney Bayou. It varies enormously, and undoubtedly grades into the next species.

Unio chunii Lea. Corney Bayou, Dorcheat Bayou, Cross Lake. It is somewhat abundant in Corney Bayou. It varies greatly, sometimes being arcuate on the base, almost hooked as the posterior margin is approached. The sharpness of the posterior ridge from the umbo varies much, as does the amount of inflation of the valves, forming, it seems to me, perfect gradations into *cerinus*.

Unio cuneus Conrad. Corney Bayou. Rare.

Unio cornutus Barnes. Caddo Lake, Cross Lake, Bayou Pierre. Not very abundant, and very constant in its characters.

Unio castaneus Lea. Corney Bayou, Cypress Bayou, Dorcheat Bayou. It is very abundant in these streams. The specimens from the two first are very small and somewhat compressed; those from Dorcheat are the largest that I have ever

seen. These latter specimens are much thickened anteriorly are much inflated in that portion, but are compressed posteriorly. The male individuals are rather pointed behind, and the females are truncated.

Unio elegans Lea. Caddo Lake, Cross Lake, Corney Bayou, and Bayou Pierre. Very scarce.

Unio donaciformis Lea, in the larger Lakes and Bayou Pierre. Very scarce.

Unio plicatus Lea. Bayou Pierre. Mr. Williamson sent me the only specimens that seem to me undoubtedly this species.

Unio perplicatus Con. Ouachita River, Bayou Pierre.

Unio multiplicatus Lea. Caddo Lake, Cross Lake, Dorcheat Bayou, Bayou Pierre. The finest specimens were from Cross Lake, near Shreveport. These would rival some of the monsters from Spoon River, Ill., and seem entitled to the name *heros*.

Unio undulatus Barnes, Bayou Pierre. Mr. Williamson has sent me some specimens that seem best placed under this species, though they could, without especial violence, be called *multiplicatus*.

Unio boykinianus? Lea. Dorcheat Bayou. I collected one specimen that has been so identified by Mr. A. A. Hinckley. I have seen specimens of the species in the Philadelphia Academy, and have looked up Lea's figure, and think that my friend is about as nearly right as can be in some of these delicate matters.

Unio trapezoides Lea, abundant in the larger lakes and bayous. I have also received specimens from the Ouachita River in Union Parish. In Caddo Lake this species is the most abundant. I collected many hundreds there. Some of the largest specimens, however, were from Cross Lake. This species seems to like the larger bodies of water where it has a considerable extent of rather level bottom of somewhat soft mud to dwell in. The characters of this species are, in the main, rather constant. The amount of inflation varies a good deal, as also does the postero-basal angle in sharpness; and the posterior ridge from dorsal to basal margins varies in its acuteness. There is a considerable variation in the distinctness of the folds, but the trapezoidal outline, the black epidermis, the

purple naere remain constant, the variations being of essentially one type of structure.

Unio tuberculatus Lea. Corney Bayou, Dorcheat Bayou, Bayou Pierre, Cross Lake. It is rather abundant in the two first localities. Some of the specimens from Corney Bayou had the posterior portion very much elongated. Both the purple-naered and white-naered varieties were found.

Unio gibbosus Barnes. Corney Bayou. A small, compressed variety was found in great abundance in this stream.

Unio rotundatus Lamarck. Cross Lake, Bayou Pierre. This species is rather rare in Cross Lake, but, judging from the number sent me by Mr. Williamson from Bayou Pierre, it must be very abundant there. It is found abundantly in southern Louisiana. It appears that when northern Louisiana is reached, the northern extension of the species is being approached. A specimen of this species was collected on the border of Cross Lake, September 26, 1891, supposed to be dead. It was laid upon my table to await a convenient opportunity for washing and putting away. On November 18, I tried to prize the valves open, but they would not yield. The animal was cut out, and its heart was seen to be still beating. The mussel had lived almost two months on my table, out of the water.

MARGARITANA.

Margaritana confragosa Say. Caddo Lake, Lake Bisteneau, Cross Lake, Corney Bayou, Bayou Pierre. The species is rare everywhere, but is most abundant in Caddo Lake, where I collected about one dozen specimens.

Margaritana complanata Barnes. Corney Bayou. Rare. Out of a great many thousand specimens of *Unionidæ* from Corney, I obtained only two of this species.

ANODONTA.

Anodonta tetragona Lea. Dorcheat and Corney Bayous. Not abundant.

Anodonta stewartiana Lea. Lake Bisteneau and in a pond near Jonesville, Texas. Rare.

Anodonta gigantia Lea. Pond near Shreveport, and in a pond in Claiborne Parish. Near Shreveport, in a sequestered pond, into whose surface the sunbeams filtered through the willows, I made a rich "find" of a bushel of these *Anodontas*. They were the most beautiful specimens of the genus that I have seen, many being a most beautiful but subdued green—all as thin as egg-shells.

Anodonta corpulenta Cooper. Caddo Lake, pond near Shreveport, Bayou Pierre. Not abundant. This *Anodonta*, with the two mentioned just above, have a wonderfully close resemblance, and I would not like to undertake to never get them mixed up. I am inclined to believe that they are *naturally* mixed up, and that it is *artificial* to try to draw sharp lines between them.

Anodonta opaca Lea. Cypress Bayou, Black Lake Bayou, Corney Bayou, ponds around Jonesville, Texas; around Grand Cane; and I have received some good specimens from southern Arkansas. The finest specimens were from Jonesville, some being about six inches long, and with an epidermis of a beautiful polished mahogany color. This is by far the most common of the *Anodontas* in the section. At one time I had two hundred and fifty specimens from *one* bayou. The variation is enormous. The color is from mahogany to green, the form may vary from an elongated oval to a short oval, or the base may be arcuate, the size may vary in what appears to be adult specimens from two to five inches. Yet in spite of all this variation with a good suite of specimens, one readily sees that it is all the same species, for every intermediate form exists.

Anodonta suborbiculata Say. Caddo Lake. Very rare. This is such a handsome species that one wishes it could be found wherever he collects, but he is disappointed in Louisiana. In Caddo Lake a few small specimens are found.

CYRENIDÆ.

PISIDIUM.

Pisidium variable Prime, found in many of the small branches. Near Port Caddo, Texas, not far from Cypress Bayou, small peat mosses have formed between the bases of