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WM. D. AVERELL,

EDITOR AND PUBLISHER.

Correspondence upon Conchology, as well as reliable items of interest concerning the Mollusca, their habits, localities, etc., kindly solicited from all.

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SINCE the first of August, 1886, we have distributed freely among the scientists of this and foreign countries upwards of 15,000 copies of THE CONCHOLOGISTS' EXCHANGE and we have the great satisfaction of hearing from many sources that our liberality is appreciated. A glance at our columns in this number will convince you that we justly think our publication of more value to science than ever, while a kindly comparison with the early numbers will clinch the argument. As promised, Mr. William A. Marsh begins in this number a highly interesting series of original articles on the land and fresh-water shells

of Mercer County, Illinois. Mr. Charles T. Simpson of Ogallala, Nebraska, contributes a valuable paper which will throw much light upon the molluscan fauna of Tampa Bay, Florida. Our Young Collectors' Corner makes its first appearance this month and is designed, as its title indicates, for beginners in Conchology. Dr. V. Sterki, late of Switzerland, has written for this column an article which will be of especial value to our young friends in collecting shells. We agree with Dr. Sterki in urging the young to collect and study the smaller shells as well as the larger specimens, for in no other way can the youthful scholar hope to excel.

A NOTABLE instance of unchanged habitat is furnished in the case of *Cyclostoma elegans*. This pretty shell is found to-day in Burwell Wood, Lincolnshire, England, in the same locality in which it was found in 1678 by Dr. Martin Lister an enthusiastic conchologist who records the fact in his quaint work entitled "Historæ Animalium Angliæ." Dr. Lister also found *Zonites fulvus* in moss at the roots of trees in the same noted forest, but later writers have pronounced it extinct in that locality. Apropos of this circumstance, and in view of the painstaking and loving care with which successful collectors pursue their studies in Conchology, we wish to impress upon young collectors the importance of exactness in recording the details of their rural excursions and evening experiments.

THE next number will contain an article upon the Helicidae, by Mr. C. F. Ancey, continued from No. 5; one from Rev. W. M. Beauchamp upon "The Erosion of Fresh-Water Shells," together with a continuation of the two leading contributions begun in this issue. The admission to this feast will be a fully paid subscription presented at the door.

BRIEF NOTES ON THE LAND AND FRESH-WATER SHELLS OF MERCER CO., ILL.

BY WILLIAM A. MARSH.

THERE is, perhaps, no locality in the Northern States that can furnish to the ardent collector more species of fluviatile mollusks than Mercer County, Illinois. The Mississippi River, which washes its whole Western boundary, with its numerous sloughs, the great number of small lakes and ponds in the Northwestern part of the County, known as the Bog Island, make it a grand repository for molluscan life. We have, also, Edwards and Pope Creeks running the entire length of the County from East to West, and emptying their waters into the Mississippi River, besides some four or five smaller streams—all of which furnish a few species not found in the river proper. An experience of nearly fifteen years careful collecting in the waters of this County has very likely brought to light about all the species that will be found in the County. The family *Unionida* is represented by fifty-seven described species, forty-five of which belong to the sub-genus *Unio*, five to *Margaritana*, and seven to the sub-genus *Anodonta*.

NOTES ON FLUVIATILE SPECIES, FAMILY

Unionida, SUB-GENUS *Unio*.

1.—*Unio anodontoides*, Lea.

This fine and very distinct species (which has a geographical distribution from Western New York to the Colorado River of Texas), is found rather commonly in the Mississippi River, and very abundantly in the adjoining sloughs. The forms found in the river are either of a milky white or light straw-colored epidermis; while the forms found in the sloughs are beautifully rayed. It is a smooth, wide species with a rather thick shell. It seems to be quite an active species, for I have often found it in considerable numbers very near the margin of the river, or slough, in times of high water.

2.—*Unio Æsopus*, Green.

This is a sparsely nodulous *Unio*, oblique in outline. It is found rather commonly in the river and usually keeps in deep water. This species attains a large size and when adult has a dark brown epidermis. It is very distinct from any other species found in our locality, and when once known may be easily identified. The animal of *Æsopus* is always of a reddish or salmon color.

3.—*Unio alatus*, Say.

This beautiful species occurs rather rarely in the Mississippi, but is more common in the sloughs along the river. It is a winged or symphynote shell and is usually covered with dark green rays. The nacre is always of a pink or chocolate color. *Alatus* often attains a large size, the finest specimens being obtained from the sloughs.

4.—*Unio arctor*, Lea.

This shell is probably only a variety of *Unio gibbosus*, Barnes. It however differs from *gibbosus* in having a white nacre and it seems to attain a larger size. I have found it in but one stream (Edwards Creek) and regard it as a very rare species in this locality. I have received this shell from Ohio, Indiana, Tennessee, Alabama and Arkansas.

5.—*Unio asperimus*, Lea.

This very fine nodulous shell is very close to our *Unio lacrymosus*, Lea, differing in its larger size and very much longer and sharper tubercles and it is also more inflated. *Unio asperimus* occurs only in the Mississippi and is very rare. I have not found over a dozen of this species.

6.—*Unio capax*, Green.

Capax is one of our finest and most interesting species. It is found only in the Mississippi and I regard it as a rather rare shell. It is a very active species and when the river is low it may be found busily plowing its way through the sand. The epidermis is smooth and of a yellowish horn color, although occasionally a specimen may be found having a beautiful pink nacre and covered with dull

green rays. In some respects *Unio capax* favors *Unio ventrisosus* but it is very distinct, however, from that shell.

7.—*Unio coccineus*, Hildreth.

This extremely variable species is found only in Edwards Creek, where it is associated with *Unio rubiginosus*, Lea, which it much resembles, but as found has a much smoother epidermis, is more beautifully rayed, and has a beautiful pink nacre. It is a very rare species here and will probably soon be extinct.

8.—*Unio cornutus*, Barnes.

This species is found rather sparingly in the Mississippi. I regard it as very constant in its characteristics, although I often find individuals entirely devoid of rays. It is a tuberculate shell, and is usually very finely colored with greenish dots and rays.

9.—*Unio crassidens*, Lam.

This is a very thick and heavy species, with dark pink nacre. When young, *crassidens* is beautifully rayed, but the rays usually become obsolete as the shell grows older. It is found only in the river and is very rare, as in fifteen years' collecting I have secured but three specimens.

10.—*Unio donaciformis*, Lea.

This small and very handsome species is found rather commonly in the river and adjoining sloughs. It is the male of *Unio zig-zag*, Lea, and as Mr. Lea named it first, it takes precedence. Mr. Lea's types were from Tennessee but there is little difference between our shells and those in my cabinet from the Cumberland River, Tennessee.

11.—*Unio Dorfeuillianus*, Lea.

I have very rarely found this species in the river. It is a fine shell and apparently very closely allied to *Unio pustulosus*, Lea, although it seems to differ from *pustulosus* in having a darker epidermis and fewer nodules. It also differs in outline, which is triangular, while *pustulosus* is subrotund. For some reason I have not been able to secure a single specimen of it for some three or four years.

12.—*Unio ebenus*, Lea.

This common species has a dark brown epidermis and is thick and solid in structure. The male is quite different in outline from the female. This is the most abundant species in the river, equalling in numbers all other species of Uniones combined. When collecting in deep water it proves very troublesome as it is often necessary to handle a vast number of this shell in order to obtain other more desirable kinds. It is a deep water shell and very sluggish in its movements, preferring soft, gravelly bottoms, and seems to discard muddy locations. Ebenus has a white, pearly and very iridescent nacre, but occasionally I have found it having the nacre tinged with pink.

13.—*Unio ellipsis*, Lea.

This is a very abundant species and takes rank next to *Unio ebenus* for numbers. It is of a smooth, elliptical form, with a dark brown or dark green epidermis. Some specimens have finely marked rays, while many are (especially when adult) entirely devoid of them. This species is at times very active and may be found near the margin of the Mississippi in great numbers, especially the very young and half-grown individuals.

14.—*Unio elegans*, Lea.

As its name implies, this is one of our most beautiful species. It is only found in the river and is rather a rare shell. In its surface marking and nacre, it is extremely variable, hardly any two shells being found alike. Some specimens have a salmon colored nacre, some are pink, others are white, shining and very iridescent; others, still, are beautifully rayed, while some are found entirely devoid of rays. The color of the epidermis is also variable, ranging from a light straw, through the various shades of green to those of dark and light olive in different specimens. The epidermal markings of some are very remarkable, being covered with greenish spots, some cuneiform and others zig-zag, interrupted by lines of growth.

To be continued.

RECORD OF A TWO DAYS' DREDG- ING CRUISE IN TAMPA BAY, FLORIDA.

BY CHAS. T. SIMPSON.

THE following record of a two days' dredging cruise in Tampa Bay, Florida, will serve to show the wonderful richness of marine molluscan life upon the West coast of Florida, both as to numbers and species. I found this locality to be one of the richest for small species of any visited in my sojourn of four years in the state. The record was made out immediately after the work was done. Some names have been added and corrections made since.

Locality: Tampa Bay, Florida, from mouth of Manatee River to Point Pinellas, Mullet Key and return. Depth, one to six fathoms. Date, August 3d and 4th, 1885.

SPECIES	LIVING	DEAD
<i>Strombus pugilis</i> , L.	Many	. .
<i>Strombus pugilis</i> , var <i>alatus</i> , Gmel. (Young.)	3	I
<i>Murex pomum</i> , Gmel.		I
(Dead and Worn.)		
<i>Murex nuceus</i> , Morch	Many	. .
<i>Muricidea Hemphilli</i> , Dall	Many	A few
<i>Murex cellulosa</i> , Con. ?	Many	. .
This shell agrees better with Conrad's description of this than anything else. The species is unfigured.		
<i>Urosalpinx cinerea</i> , Say	Many	. .
<i>Eupleura caudata</i> , Say	5	. .
<i>Fasciolaria distans</i> , Lam.	I	. .
Young.		
<i>Fulgur pyrum</i> , Dill	I	. .
(Very young.)		
<i>Nassa vibex</i> , Say	Many	. .
" <i>ambigua</i> , Mont.	I	. .
(Very fine: the form <i>consensa</i> , Rav.)		
<i>Marginella apicina</i> , Mke.	4	. .
" <i>nitida</i> , Hds.	I	. .
(Small, but full grown.)		
<i>Olivella mutica</i> , Say	Many	Many
(Mostly quite small.)		

SPECIES	LIVING	DEAD
<i>Olivella mutica</i> , var.	Many	. .
(Young; a delicate form, zig-zagged with yellow lines.)		
<i>Oliva literata</i> , Lam.	5	. .
(In six fathoms.)		
<i>Columbella mercatoria</i> , L.	I	. .
(Young, but fine.)		
<i>Columbella lunata</i> , Say	6	. .
" <i>semiplicata</i> , Stns	A Few	Many
(All incrusted; many dead with hermit crabs.)		
<i>Columbella acuta</i> , Stearns	3	. .
" <i>Stearnsii</i> , Tryon	I	. .
" <i>Hottessiuri</i> , Orb.	2	. .
<i>Conus pygmaeus</i> , Rve.	2	. .
(Very dark; fresh.)		
<i>Conus Pealii</i> , Green	2	. .
(Covered with barnacles and shells.)		
<i>Terebra protexta</i> , Con.	Many	. .
(Some quite fresh.)		
<i>Terebra dislocatus</i> , Say	Many	. .
" <i>concava</i> , Say	I	I
(Not hitherto reported on the West coast that I know of.)		
<i>Pyramidella tessellata</i> , Ad.	4	. .
<i>Eulima conoidea</i> , Ktz. & Stm	3	2
(Live specimens, very fine, covered with young oysters.)		
<i>Scalaria angulata</i> , Say	I	. .
<i>Turbonilla viridaria</i> , Dall.	Many	. .
<i>Natica pussilla</i> , Say	Several	. .
(Young; very richly marked, carried by hermit crabs.)		
<i>Natica duplicata</i> , Say	I	. .
<i>Sigaretus perspectivus</i> , Say	I	. .
<i>Rissoina pulchra</i> , C. B. Ad (?).	6	. .
<i>Bittium nigrum</i> , Tatt	Many	Many
(Both the dark and pale varieties.)		
<i>Galerus caudatus</i> , Orb.	I	Several
(The only living specimen I ever obtained.)		
<i>Odotostoma granatina</i> , Dall	3	. .
<i>Niso angles</i> , Bush	4	. .
(Two young.)		
<i>Crepidula fornicata</i> , Say	Many	. .
" <i>plana</i> , Say	Many	. .
(On interior of dead shells.)		
<i>Phasianella umbilicata</i> , Orb.
<i>Bulla occidentalis</i> , Ad.	I	. .
<i>Actæon punctatus</i> , Orb	5	. .
" <i>floridanus</i> , Con.	I	3

To be continued.

Young Collectors' Corner.

COLLECTING SHELLS IN DRIFT.

BY V. STERKI, M. D. NEW PHILADELPHIA, O.

AT this time of the year freshets are very prevalent throughout the country, and this very fact furnishes you with an excellent opportunity to collect the smaller species of land and fresh-water shells. Gather carefully the fine drift deposited in smaller or larger quantities—sometimes very little and yet valuable—at the edge of high water, by basketfuls or even bushels, carry it home and let it dry upon a suitable piece of cloth, such as an old bed sheet. When the drift is dry, shake and rub it gently, pass it through a sieve or handle it otherwise so that the smaller particles may be separated. Place these by handfuls upon the table and pick out the small shells with the aid of a fine pair of pincers. You will, in most instances, find many valuable specimens. Look especially for Pupae and Vertigos.

Many of these shells will be more or less weathered, while a part of them will be found in good condition. You may find species in this way which you have looked for in vain elsewhere, while your attention may be directed to certain new forms not thought of before.

VALVES.

Shells have valves just as books have leaves, and upon these valves you may read their life-histories.

President Dwight, of Yale College, has a scholarly stoop in his shoulders, and seeing this and not meaning any disrespect, a little New Haven girl said to her mother: "Mamma, I think he is the *stoopedest* man I ever did see."

A funny little mollusk dwells in the harbor of Sydney, Australia, known by the name of *Trigonia*, (three-cornered). A specimen of the comb-like *Trigonia* or *T. pectinata*, Lam. when placed on the gunwale of his boat by

Mr. Stutchbury, leapt overboard, clearing a ledge of four inches.

The boys and girls interested in shells and living near San Joaquin River, Cala., will have no trouble in collecting fresh-water mussels (*Unionidae*) now, as the water is low and the river bed and the bottom of the large sloughs are fairly covered with them. Pearls of fair color are found in these bivalves.

Did you ever collect shells at Cape Henlopen, Delaware? We have, and at low tide have secured fine specimens of *Busycon*, *Pyruia*, *Natica*, *Crepidula*, *Sigaretus*, *Petricola*, *Littorina*, *Solen*, and many others too numerous to mention here, certainly enough specimens to keep your hands and heads busy for many evenings and leisure days.

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Continued on page 48

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AULOPOMA helicinum, Chem (Ceylon)	15	Samoensis, Rve	15	lirata, Mouss	5, 10
AMPULLARIA Layardi, Rve	25, 30	corporosa, Gould	10, 15	lugubris, Pse (Type)	15
CYCLOSTOMA Kraussianum, Pfr. (Natal)	20	PYRAMIDELLA maculata, Lam	25	lutea, Less	10, 15
HELICINA tectiformis, Mouss	10	OLIVA guttata, Lam	30	Navigatoria, Pfr	20
miniata, Less	5	TURRICULA exasperata, Chem	10, 15	Otaheitana, Brg	10, 15
LITTORINA obesa, Sby	5	TEREBRA affinis, Quoy	10	Otaheitana, Brg. var, Reeveana	10, 15
MELANIA Maiuensis, Lea	15, 20	PARTULA decussatula, Pfr	10	Raiatensis, Garr	10, 15
Newcombi, Lea	10, 15	dentifera, Pfr	10	rosea, Brod. (Type)	15
Graffiii, Mohss	15	fabu Mtn (Type)	20	rosea, Brod. var. bicolor	15
Scipio, Gld	20	fabu Mtn. var. amanda	15	rosea, Brod. var. purpur- ascens	15
scitula, Gld	10, 15	fabu Mtn. var. subangulata	15	rosea, Brod. var. straminea	10, 15
Assaviensis, Mouss	5, 10	formosa, Pse	20	taeniata, Mch. (Type)	15
picta, Hds	10	Ganymedes, Pfr	10	taeniata, v. simulans, Pse.	5, 10
Montrouzieri, Garr	5, 10	Garrettii, Pse	10	taeniata, v. strolata, Pse.	10
tetrica, Gld	15, 10	imperfectora, Pse	10	taeniata, v. unicolor, Pse.	5, 10
villosa, Phil	25	inflata, Rve	10, 15	Thalia, Garr	10
				umbilicata, Pse.	5, 10
				varia, Brod.	5
				varia, Brod. v. glutinosa	10
				vexillum, Pse	10