

There were also worn valves of several other *Mactridæ* collected. *Mesodesma arechavalettoi* (Ihering MS.) Pilsbry. Maldonado Bay, Uruguay (young); Mar del Plata, Argentina.

Mytilus darwinianus Orb.

Mytilus edulis L. (? *platensis* Orb.).

Mytilus canaliculus Hanl.

Nucula puelcha d'Orb. *N. uruguayensis* E. A. Smith does not seem to differ materially from this species.

Ostræa puelchana d'Orb.

Pecten nucleus Born, var.?

Pecten sp. undet.

Pectunculus longior Sowb.

Petricola like *pholadiformis*, but less strongly sculptured. One valve.

Plicatula ramosa Lam.

Semele (*Abra*?) *uruguayensis* n. sp.

Tagelus gibbus Spengl. (*platensis* Orb.).

Tellina uruguayensis E. A. Smith.

Thracia Rushii n. sp.

ISAAC LEA DEPARTMENT.

[Conducted in the interest of the Isaac Lea Conchological Chapter of the Agassiz Association by its General Secretary, Mrs. M. Burton Williamson.]

The name of Miss Zeola Downing, Long Beach, California, is added to the membership roll of our Chapter.

When last heard from Miss Anna Goodsell of San Diego, California, was in Cairo, Egypt, after having visited many countries in the Orient.

FRESH WATER SHELLS IN THE NORTHEAST OF MAINE.

[From the report of Mr. Olof O. Nylander. From the Transactions of the Isaac Lea Conchological Chapter for 1896].

This article is devoted to the fresh water shells found in the Fish River Lakes and Aroostook River, northeast of Maine. After securing a good supply of provisions, tent, boat and apparatus needed for a long collecting trip in the forest region, a man was employed to accompany us through the journey, and a man with a team to haul me the distance of 25 miles to Cross Lake on the Fish River.

Arriving at Cross Lake my work was immediately to collect and my companion's duty throughout the journey to prepare the tent, cut wood and cook, and other duties connected with camp life in the woods.

At the Cross Lake inlet the following were collected : *Unio complanatus*, *Margaritana undulata*, *Anodonta fragilis*, *Sphærium sulcatum*, *Pisidium compressum*, *P. variabile*, *P. n. sp.*, *Planorbis campanulatus*, *P. bicarinatus*, *P. deflectus*, *Limnæa emarginata*, *L. desidiosa*, *Pomatiopsis cincinnatiensis*, etc.

The second place visited was on the west side about 2 miles south from the inlet. *Planorbis trivolvus* was obtained in a place that appeared to be covered with water only in the Spring. *Ancylus parallelus* was found in large numbers, and a lot of good large specimens of *Limnæa emarginata* in two feet of water. They seemed to feed on vegetation on the rocks. A little further down on the west side was a small stream in which a lot of *Sphæria* and *Pisidia* were obtained. *Unio complanatus* Sol., *Margaritana undulata* Say and *Anodonta fragilis* Lam., are found all over the Fish River Lake, and need not be referred to as of especial interest to any locality.

On the east side where some large hills rise from the lake a small lot was obtained by dredging ; nearest the shore *Pomatiopsis cincinnatiensis* were plentiful in 15 feet of water ; *Campeloma decisum*, of small size, *Pisidium variabile* and *P. compressum* were found from the shore to 25 feet, showing some variation in forms. On the shore *Succinea ovalis*, and, near by, in the woods under rocks, *S. avara* were found. Also *Conulus fulvus*, *Strobila labyrinthica*, *Zonites exiguus*, *Carychium exiguum* and fragments of *Pupa* or *Vertigo*.

The south end of Cross Lake afforded the best dredging ground, and some time was spent here. *Pomatiopsis cincinnatiensis* Lea, was very plentiful, and *Valvata tricarinata* Say, *V. sincera* Say, were collected from 5 to 20 feet. *Planorbis trivolvus*, *P. campanulatus*, *P. bicarinatus*, *P. deflectus* and *P. hirsutus* were not plentiful.

One of the most interesting collecting grounds is Square Lake, which is the largest and handsomest lake in Aroostook Co. At the inlet from Cross Lake the bottom is covered with large and fine specimens of *Limnæa emarginata* and the var. *Mighelsi*. *Planorbis parvus* (?) Say, *Planorbis* sp.?, a peculiar specimen, *P. campanulatus*, a form of small size, *P. bicarinatus*, *Physa ancillaria* Say, are plentiful in this place, but nowhere else in this region to my knowledge. The shore is covered with dead shells of the above named species.

From the inlet at the northeast of Square Lake, the east side was followed to the south, a distance of about 8 miles. The wind blowing prevented us from doing any dredging, and the bottom is generally stone.

In the south end of the lake the bottom is covered with fine sand and afforded very fine dredging ground for 2 or 3 square miles. From the shore to 10 feet deep *Pomatiopsis cincinnatiensis* was very common, and a few specimens of *Pisidium* were found from 10 to 25 feet. *Valvata tricarinata* and *V. sincera* were found, but beyond the depth of 25 feet all the shells seemed to disappear, and the dredge was filled with nothing to collect. The western shore of the lake is rocky and the only place visited is Limekiln Point, where I have spent a good deal of time in past years. This very interesting locality of the Upper Silurian limestone of the Lower Helderberg group, contains many fine specimens of fossils, many of them peculiar to this locality. A very fine collection has been found at this place. * * * From Limekiln Point to Eagle Lake every part was carefully surveyed, yet nothing of special interest appeared. Eagle Lake is the longest of Aroostook Lakes, being about 18 miles long and 1 wide. In one place I could not reach bottom with a 100 foot line.

Along the north shore I obtained the same species as I found in Cross and Square Lakes, and from the deep water I obtained only rocks and gravel, and not a fragment of a shell. Where the south branch of Fish River enters Eagle Lake, in a sand bar, a lot of fine living specimens of *Sphærium striatinum* Lamk., and *Margaritana undulata* were collected. Throughout the thoroughfare to Portage Lake *Sphærium striatinum* is plentiful. * * * * Nothing new was added. A good deal of hard work was done dragging the boat through the rapids and over rocks and ledges to Portage Lake.

Portage Lake is in parts surrounded by high hills and a very attractive place for tourists. The western part is a good finding place for mollusks. *Pomatiopsis cincinnatiensis* Lea, is obtained somewhat larger in size as it approaches deep water; *Planorbis companulatus* and *P. bicarinatus* are also of large size, and the angles of the whorls in *bicarinatus* are very sharp. *Planorbis deflectus* is found at the bend of the lake, very large, from 8 to 9 mm.; *Valvata tricarinata* and *V. sincera* are also of good size.

Near the south and east corner of the lake a colony of good, large specimens of *Campeloma decisum* in 6 inches of water were found. This

was the first place I had any opportunity to see them in any number in the north of Maine. From this place I had intended to go to Big Fish Lake, about 20 miles west from Portage Lake, but some of my provisions were spoiled by hot and rainy weather and I was not able to obtain any from the farmers, therefore at the south of the lake I engaged a team to transport us to Aroostook River, a distance of 10 miles, over a good road.

Aroostook River is rapid and rocky the whole distance from Ashland to Caribou, and shells are seldom found. *Margaritana margaritifera* Lin., are found among the rocks in from 5 to 6 feet of water; a dozen living specimens were obtained in the distance of 40 miles. *Anodonta fragilis* lives in the small streams which empty into the river. *Planorbis bicarinatus* and *Physa heterostropha* are sometimes plentiful. *Sphærium truncatum* and a few *Pisidia* have been found. *Campelema decisum* were collected in two places, and *Ancylus tardus* Say, was found on rocks in a place near Caribou in the summer of 1895.

After three weeks have been spent in the woods it is pleasant to arrive at home again. The specimens collected during this trip have not all been identified.

In past years I have received valuable assistance from Professor H. A. Pilsbry. Mr. Bryant Walker, of Mich., sent me a dredge which has been of great value, and Dr. V. Sterki has kindly determined *Pupidæ*, *Vertigos* and *Pisidia*. My thanks are due to these gentlemen.

TO SUBSCRIBERS.

We wish to impress upon our readers that subscriptions to THE NAUTILUS are payable *in advance*, and that we do not discontinue until notified. Were it not that some subscribers forget to pay at the end of the year it would not be necessary to thus emphasize the terms of subscription. What is a small matter to each individual reader, becomes in the aggregate a large one to us. Our deficit in publishing Vol. X has been somewhat less than in the previous year, but is still more than we can afford to lose. Our screed upon this topic in January seems to have been misunderstood by some cautious persons we have heard from, who for fear THE NAUTILUS would be discontinued, kept their dollars! With this kind of support we could not have continued another month; but stalwart friends of the cause in Massachusetts, Michigan and California said "THE NAUTILUS shall not stop; we will stand by if needed." With this assurance we enter upon another volume.

All who are in arrears are requested to "pay up" *this month*.

H. A. P. & C. W. J.



Nylander, O O. 1897. "Fresh water shells in the northeast of Maine." *The Nautilus* 11, 9-12.

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