ng road to consumption for the copper.
copper smelter in the Kaibabs and a
the mountains besides the foresters,
They had a wagon road to Fredonia.
top of the Kaibab saddle to Fredonia
that region. An auto was driven
we were there to Bright Angel, on
cross from the hotel. But from Bass
s, there will be no inhabitants through
ohn working out assessments on new

ırs Truly,

JAS. H. FERRISS.

OF LYMNAEA STAGNALIS.

ANK C. BAKER.

NÆ var. nov.

DANIELS, NAUTILUS XXII, p. 120

ALKER, Ann. Rep. Mich. Geol. Surv., 1909).

short spire and elongated, narrow aperger than the spire; whorls flattened, nd sloping, especially the body whorl sharply acuminated; whorls 5½ to 6; ed, roundly shouldered; aperture long ded; axis strongly gyrate; umbilical , narrow chink; sculpture and nuclear sa.

2.00; aperture length, 26.00; width,

9.50; aperture length, 23.50; width,

0.00; aperture length, 24.50; width,

9.50; aperture length, 23.75; width,

9.00; aperture length, 23.25; width,

Length, 28.00; width, 13.00; aperture length, 17.50; width 8.50 mill.

Types: Chicago Academy of Sciences, five specimens, No. 24554.

Type Locality: Tomahawk Lake, Oneida County, Wisconsin.

Range: Michigan and Wisconsin north of the 45th parallel of north latitude.

Records.—Michigan: Isle Royale; various localities. (Adams; Gleason; Walker).

Wisconsin: Quynoch Point, Eagle Bay, and other portions of Tomahawk Lake, Oneida County (Baker).

Ecology: L. s. lillianæ is typically an inhabitant of sandy shores, in shallow water, where it is subjected to heavy wave action, only once was a specimen found in a still-water habitat, and this instance was undoubtedly caused by drifting from its normal habitat. When any number of specimens were found, the habitat was invariably an exposed beach. Associated with *lillianæ* were *Galba emarginata* and *Planorbis binneyi*. Individuals were observed crawling over the sandy beach or attached to water-soaked logs or other shore debris.

The animal of this race exhibits two color phases, one bright yellow and the other black or grayish-black. No cause for this color dimorphism was apparent. It is not protective as both forms occupy the same area of white sandy beach.

(*To be continued.*)

DESCRIPTION OF A NEW SPECIES OF ANODONTA.

BY L. S. FRIERSON.

ANODONTA DAKOTA, n. sp. Plate X.

Shell elliptically rounded before (slightly cut away below) dorsal line nearly straight, base slightly curved. Posterior nearly straight, making the shell trapezoidal in outline. Epidermis straw yellow, with dark bands marking the rest periods.

Umbonal ridge angular, beaks not high, with double loop sculpture, as in *Ano. grandis*, Say.

Umbos inflated, greatest diameter of shell about ⅓ from beak to base.

Length, 3; height, 1.8; diameter 1.6 (inches).

Length 76, height 51, diameter 40 mm.

Found by Mr. W. H. Over, at Ulvers Point, Clear Lake, Deuel Co., South Dakota, July 1, 1909.

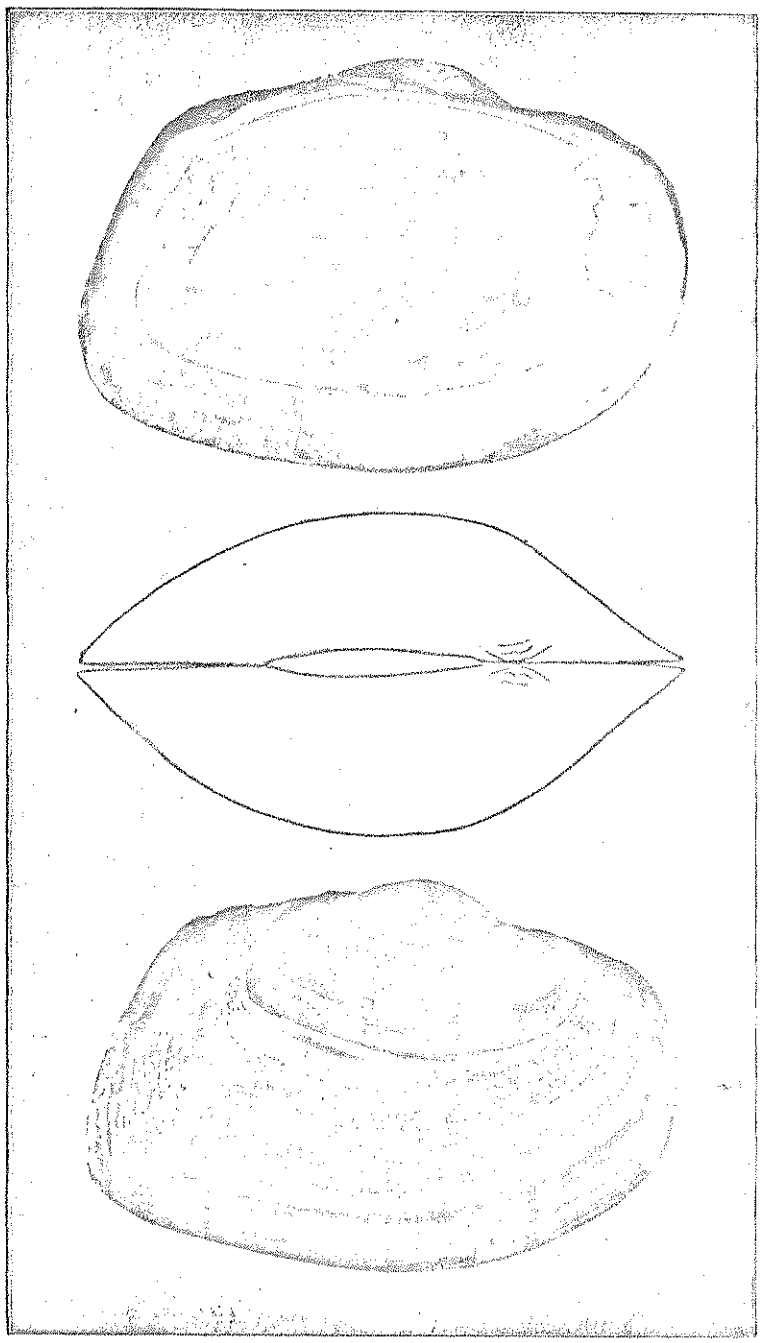
To launch a new *Anodonta* is a perilous undertaking, but in this instance the novelty of the form is unmistakable. The beaks ally the shell, of course, to *Anodonta grandis*, Say. It is nearest to that form called by Mr. Anthony *A. subgibbosa* (and especially to the figure of this species shown in the Conchologia Iconica, which is much more characteristic than the figure in the American Journal of Conchology). From any form of *Ano. grandis* it differs in being more cylindrical, *i. e.*, in lacking the swelling "amidship" so often shown by *A. grandis*; in being rayless (so far as known), but especially by having its posterior point not elevated above the basal line, and by the marked truncation posteriorly, which truncation is as marked as in *Morgaritana morginata* Say, and the straight posterior, and the resulting quadrilateral aspect of the shell. It is more quadrate than *Anodonta doliaris*, Lea. The lack of any *obliquity* is remarkable. Mr. Over also sent me from the same lake examples of *Anodonta grandis*, Say, and the facies of our species was strikingly dissimilar.

A NEW SYSTEM OF THE UNIONIDAE.

BY DR. A. E. ORTMANN, CARNEGIE MUSEUM, PITTSBURGH, PA.

Since October, '09 the present writer has been engaged in the study of the anatomy of the soft parts of the *Unionidæ* of Pennsylvania, collected during the last four years. The material at hand being very rich, it was possible to make out the structure of most of our species, and the results obtained are rather satisfactory, and are apt to furnish new principles for the systematic arrangement of the species.

Simpson (Pr. U. S. Nat. Mus. 22, '00). in his system, has indicated some of the essential principles of classification, in fact, the first pointed out *the* most important feature, the shape of the *marsupium*, Yet this system must be changed considerably, if it is to represent the natural affinities. This is due chiefly to the fact, that Simpson. on the one hand, had rather insufficient material, and on the other, that he did not go into microscopic detail.



ANODONTA DAKOTA FRIERSON.