

out of Urocoptids, fine
Liquus. Doctor Torre
ad, so boarded the train
welcome and charming

ght from Guane. One
newhere upon its steep
tti; the other is called
unably lived in security
bergiana.

We prepared for their
ertain climbers give to
orseback and by volanta
began our recognizance,

There were, however,
le glorious by a catch of
airly shines in memory,
th Simpson many times

made our second attack.
be done. Far up on one
bjects out from the mass
in, like the forehead of
ndicular, forbidding and
out it, and it is likely to
wasps; but just in such
scant offerings. I felt it

ing, slipping, clinging to
now and then to catch a
Up until the blue Carib-
ins of Pinar del Rio lay
the base of the cliff was
narrow crevasses I wrig-
nd exhausted, I lay for a
cool off and to speculate
me, etc. Then, not sud-
a remarkable sight. It
the psychologists call the
heart began to thump and

my excitement to grow until I almost feared to trust myself alone upon such a height. All over the rocks, on the perpendicular cliffs, and exposed to the glare of a dazzling sun, were myriads of *U. elliotti*, clinging in their peculiar fashion to the surface, all alive and in finest condition of unbroken spires, and that color tone of health possessed only by fresh, living shells.

But now arose the problem as to how to gather them. It takes one hand to hold a box, another to pick specimens from their moorings, and it requires two more to hang on to the wall of smooth rock. Fortunately there was a breast pocket in my shirt, and with a twig I could keep it gaping open. Then with my lips I tenderly gathered them one by one, slowly and cautiously, and spat them into that happy pocket.

Had any telescope been trained upon me I would only have furnished one further evidence of hopeless mental condition, for indeed what sane man would spend an hour, or a moment as for that, fondly kissing a lofty cliff in Pinar del Rio?

If any reader of the NAUTILUS cares to take a chance on that telescope down below, and also the risk of a long fall, I can assure him that there are still a hundred thousand fine *U. elliotti* waiting for him right there on the Sierre de Guane.

REMARKS ON UNIO VARICOSUS, CICATRICOSUS AND UNIO COMPERTUS,
NEW SPECIES.

BY L. S. FRIERSON.

A study of the shells generally known as either *Unio cicatricosus* Say or as *varicosus* Lea has brought to light a singular state of affairs. The *U. cicatricosus* was described by Say in manuscript, "together with about twenty others," in 1826, and published with such others as he supposed had not yet been described by other authors, in 1829. Taking, with his very incomplete description, the illuminating remarks following, we find that Say's species was a large, thick shell, with high beaks, but not so high as in the allied *Unio cordatus* (*obliquus* Lam.), and having a single row of transverse elevations down the center of the disc, and that it is "a common inhabitant of the Wabash river." This is applicable to no known *Unio* except the *aesopus* of Green. This conclusion is fortified by the fact that

Conrad, who shortly after this time had become quite intimate with Say, so considered it in his "New Fresh-water Shells," published in 1834. So did Dr. Lea, but the opinion of the latter was discounted by conchologists because of the well-known enmity which unfortunately had sprung up between Say and Lea. Say himself placed Lea's *Unio varicosus* as a synonym of his *Unio cicatricosus*, in the short and exceedingly erroneous Synopsis of 1834. This dictum of Say has been accepted by nearly all conchologists since, but Say had never seen Lea's species, and his idea no doubt arose from Lea having compared his *varicosus* with the *aesopus* of Green. Say having shortly afterwards died, this dictum was never corrected by him.

It is true that Green had in 1827 published his *Unio aesopus*; but Say tells us that he had to forego at this time (1829) a design of compiling a synopsis of the western Uniones, because of the impossibility of procuring books, etc., in his insulated abode, and Dr. Green's article, which was published in a rather obscure publication, no doubt had escaped his notice. At any rate the assignment of the Wabash as a common habitat of the *cicatricosus* effectually bars his shell from being the same as Lea's species, as the *varicosus* does not live in that river. Say's name then, being a synonym of *aesopus*, cannot be used for Lea's shell. Lea's name, as he tells us himself, had already been used by Lamarck; consequently his shell has no name.

Turning now to the shells themselves, we find equally as much confusion. There are no less than four distinct species so called to be found in our various museums and collections. Lea himself did not know his own shell very well, since, I am told by Dr. Dall, specimens of genuine *varicosus* were labeled by him as *subrotundus*, while on the other hand we are informed by Dr. A. E. Ortmann that a shell labeled *cicatricosus*, from the Beaver river, Pa., in the Academy of Natural Sciences, is in reality only an old *Unio subrotundus*. In the *Conchologia Iconica* of Reeve we are given two plates of this species (figs. 31 and 50) which evidently represent two different shells. Plates and names, therefore, will be given that students may recognize the sundry shells which at present go under the common names under discussion.

UNIO DETECTUS, new name. Plate II, lower, pl. III, upper figures.
This is the true *varicosus* of Lea, whose type shell is not typical

of the species (i. e., is not this shell, though itself present). In its general facies the *midatus*, with the addition Swainson mentioned the pustules down the center shell of this species before me by Dr. Dall, and the Museum. It measures, 1

UNIO CICATRICOIDES, new name

This is the shell figured graphy (page 115, plate 1 *lusca* (Indiana Geological tion and plate reference much more like *aesopus* being more inflated (especially lateral teeth are much more sinus of the hinge margin color of the epidermis is a 93, alt. 69, diam. 55½ mm

UNIO COMPERTUS, new name

Shell medium in size; Apparently dimorphic, the males and more rounded and pointed behind, beaks seen). Epidermis dirty Basal outline rounded, and shell not very much inflated becomes more and more narrow, with several more margin. Down the center in the females, as well as white, quite thick in front tules, from thence it becomes erect and fairly stout; two and one each in the right.

had become quite intimate with "Fresh-water Shells," published in 1829. His opinion of the latter was discolored by the well-known enmity which existed between Say and Lea. Say himself gave the synonymy of his *Unio cicatricosus*, in his "Synopsis" of 1834. This has been followed by nearly all conchologists since, and his idea no doubt arose from the fact that *cicatricosus* was never corrected to *aesopus* of Green.

Dr. Green published his *Unio aesopus*; but at this time (1829) a design of the *Uniones*, because of the impossibility of their abode, and Dr. Green's rather obscure publication, no one has taken notice of. At any rate the assignment of the name *cicatricosus* effectually bars his species, as the *varicosus* does not then, being a synonym of *aesopus*, have Lea's name, as he tells us himself, had consequently his shell has no name. In themselves, we find equally as much as in the *Uniones*, four distinct species so called to us in our collections. Lea himself did not know this, since, I am told by Dr. Dall, that the shells were labeled by him as *subrotundus*, and informed by Dr. A. E. Ortmann that the shells from the Beaver river, Pa., in the collection of Reeve are in reality only an old *Unio subrotundus* of Reeve (see also p. 50) which evidently represent two distinct species, therefore, will be given that name, and the shells which at present go under the name of *subrotundus*.

Plate II, lower, pl. III, upper figures. The shells of Lea, whose type shell is not typical

of the species (i. e., is not an average specimen). The best figure of this shell, though itself poor, is that given by Küster (Taf. 58, fig. 2). In its general facies the shell somewhat resembles the *Unio pyramidatus*, with the addition of the characteristic elevations. Mr. Swainson mentioned that he had seen a specimen of *mytiloides* with pustules down the center. There can be no doubt that he had a shell of this species before him. The specimen figured was given me by Dr. Dall, and came from the collection of the National Museum. It measures, length 87, alt. 70, diam. 39½ mm.

UNIO CICATRICOIDES, new name. Pl. II, upper figure.

This is the shell figured and described by Conrad in his Monography (page 115, plate 64), and also by R. E. Call, Indiana Mollusca (Indiana Geological Report, 1900), plate 55, to which description and plate reference is herewith made. Its general facies is much more like *aesopus* than *detectus*, from which latter it differs in being more inflated (especially behind) and is a larger shell; its lateral teeth are much more club-shaped and larger; the posterior sinus of the hinge margin is nearer the end of the ligament; the color of the epidermis is also different from that of *detectus*. Length 93, alt. 69, diam. 55½ mm.

UNIO COMPERTUS, new species. Pl. III, middle and lower figs.

Shell medium in size; length 2.3, height 2.1, diameter 1.3 inches. Apparently dimorphic, the females (?) being broader behind than the males and more rounded, the males (?) being somewhat triangular and pointed behind, beaks high and well forward (their sculpture not seen). Epidermis dirty yellow, darker before (as in *circulus*). Basal outline rounded, and in the females expanded in the middle; shell not very much inflated. The posterior ridge is rounded, and becomes more and more inflated with age. The posterior area is narrow, with several more or less well-defined lines from beak to margin. Down the center of the disc runs a row of pustules, larger in the females, as well as more numerous. Inside, the nacre is white, quite thick in front, as far back as the center, or row of pustules, from thence it becomes remarkably thin in comparison, producing a trough-like excavation from beak to posterior base. Teeth erect and fairly stout; two cardinals and two laterals in the left valve and one each in the right.

Habitat: Clinch and Holston rivers.

The examples figured had been labeled *Unio cicatricosus* by Dr. James Lewis, and his determination had been O. K.'d by Mr. C. T. Simpson. Shells the same as these have been loaned the writer by Mr. W. A. Marsh under the same name (i. e., *varicosus*). Others of the same species had been given the writer by Mr. Bryant Walker as being the *varicosus* of Lea. With their attention called more carefully to the shell, however, both of these gentlemen now concur with me as to their novelty. Type in my collection. This shell is remotely, if at all, related to the other shells above mentioned. There is apparently a slight relationship to *Unio propinquus* in its general facies, but the species is in reality very distinct.

NOTE.—The term *Unio* is used above in the old broad sense of denoting a naiad shell having both lateral and cardinal teeth, and not in the restricted sense now held by our modern conchologists, and so embraces the various divisions of *Quadrula*, *Pleurobema*, *Plethobasis*, etc., etc., as the future study of the soft parts may incline the future systematists to place them.

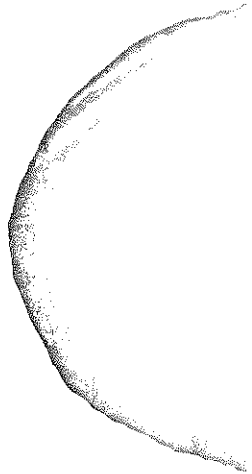
CORRESPONDENCE FROM BRAZIL.

BY FRED. BAKER.

S. S. RHAETIA, HAMBURG-AMERICA LINE,
ON THE RIO NEGRO, 950 MILES FROM THE MOUTH
OF THE AMAZON, July 24, 1911.

Dear Dr. Pilsbry:

This goes in compliance with my promise to report of our progress. We left Natal, in the State of Rio Grande do Norte, on July 1st for Pará, after a stay that was comparatively barren of results zoologically. The reptilian collection is good, but in all other lines the number of species is small. My collection of marine shells—notwithstanding several days spent in dredging—is small enough, so that I feel sure that they are not to be found on this immediate coast, for reasons that we can only guess at at present. By interesting the ubiquitous small boy in a couple of interior towns I was able to secure several thousand land and fresh-water shells of a rather limited number of species. I feel reasonably sure that I have two new species



1. UNIO
2. UNIO

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 been O. K.'d by Mr. C. T.
 been loaned the writer by
 (i. e., *varicosus*). Others
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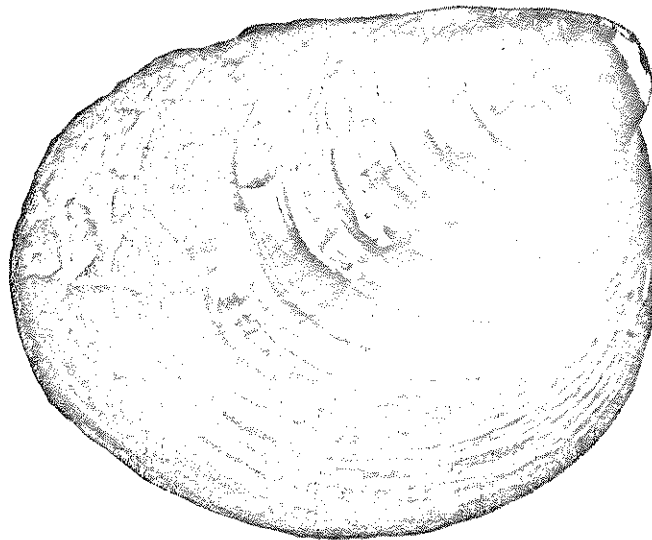
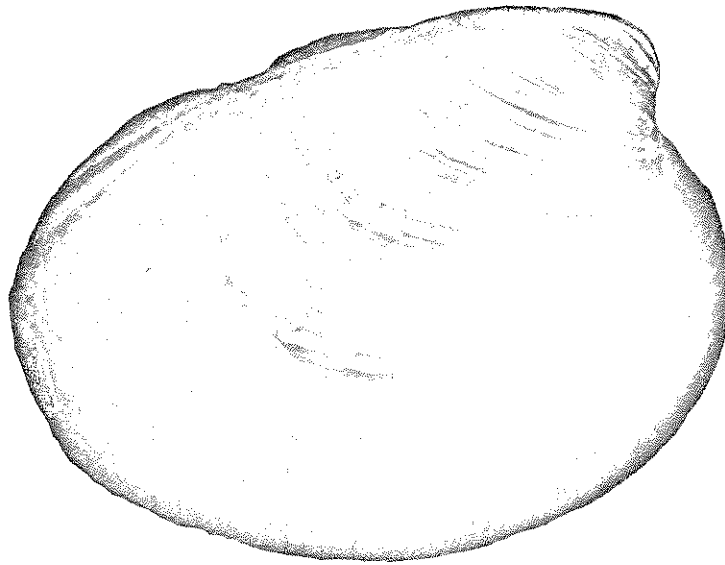
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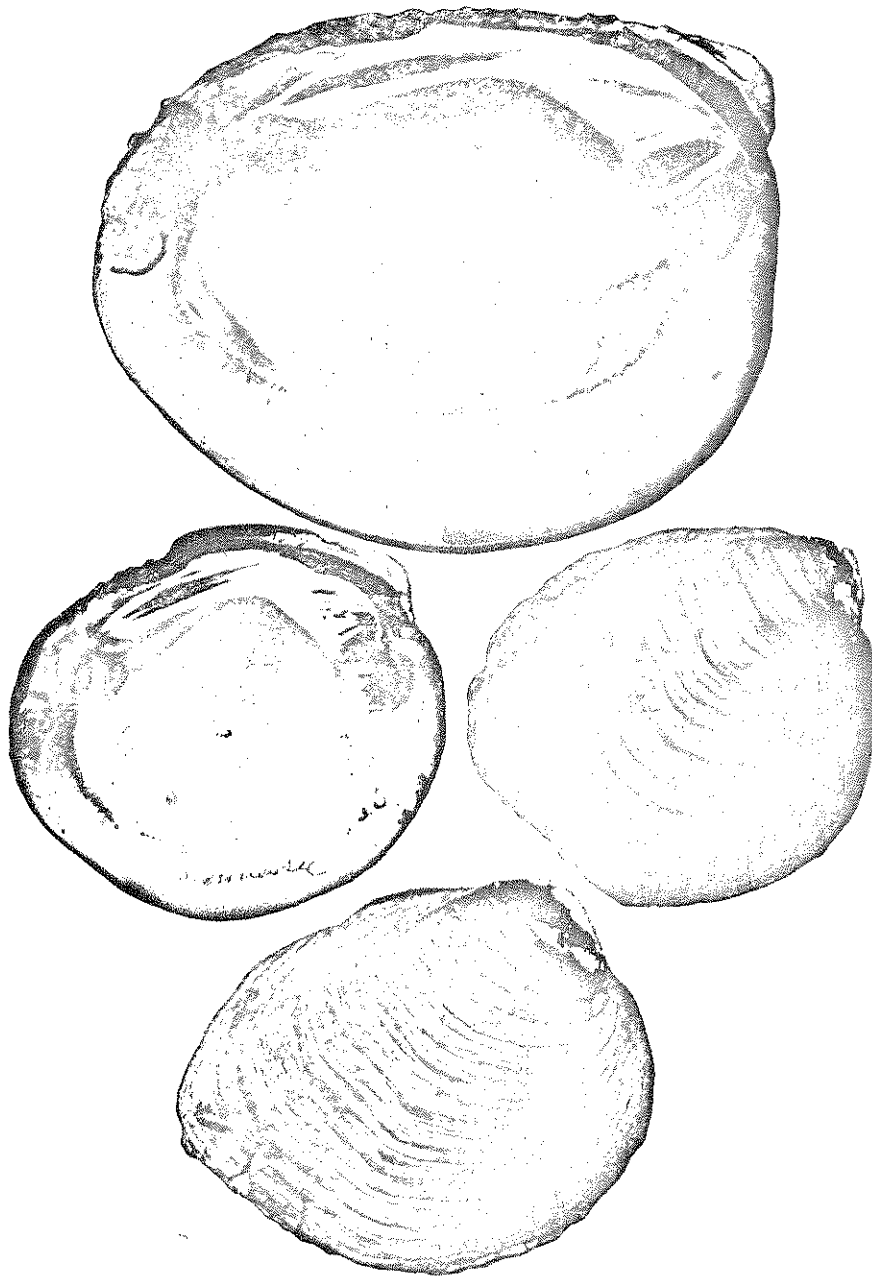
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MBURG-AMERICA LINE,
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1. UNIO CICATRICOIDES FRIERSON.
 2. UNIO DETECTUS FRIERSON.



1. UNIO DETECTUS FRIERSON.
2, 3, 4. UNIO COMPERTUS FRIERSON.

TH

of *Tomigerus*, but the other *Planorbis*, seem likely to pro

On the way up the coast t
be a shame to visit Brazil an
the rest of the party off for l
run at least as far up as Man
the Amazonian mouths. O
Bates and Wallace, or even t
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We shall get in this evening,
morning.

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for passes up the Madeira riv
works of the Madeira & Man
is building some two hundred
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sand miles of navigable river
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cians, and we are assured of
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I believe that no land or
this Madeira country, so that
value if I get any. Likewise
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we shall have at least a month

Meanwhile we have had a r
couple of hours ago, when we
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