

NEW PEARLY FRESH-WATER MUSSELS FROM MEXICO AND URUGUAY.

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Among a lot of material recently received for determination from Dr. Florentino Felippone, of Montevideo, Uruguay, and from Dr. A. L. Herrera, Director of Estudios Biologicos, City of Mexico, Mexico, were three new species which are herein described.

ELLIPTIO HERRERAE, new species.

Plate 1, figs. 6-8; plate 2, figs. 4, 5; plate 3.

Shell inflated, strong, moderately heavy; outline nearly elliptical, very slightly narrower in front, dorsal margin lightly arched, with a small elongate lunule in front of beaks, ventral margin rounded; nepionic shell with several indistinct concentric raised lines but without granules; later the young shell develops a number of slightly elongated granules arranged in quincunx order, and the upper part of the posterior dorsal area has a number of curving raised lines running from the posterior ridge to the margin; periostracum smooth, unctuous, slightly glossy, closely applied, and with no tendency to peel; color pale at the tips of the beaks, then deep green, changing farther down to light chestnut, nearly the whole shell plentifully rayed with darker green, even the very young shell showing these green rays. Nacre silvery white, very iridescent posteriorly, thicker in front; pallial line well marked, much crinkled; anterior adductor scars deep, clifflike at the upper part, the bottoms with roughened steplike thickenings; posterior adductor scars well marked, fairly deep at upper part; pseudocardinal teeth very rough and grooved and not distinctly divided into two parts in each valve; lateral tooth of left valve long, a little spatulate, slightly granular, obliquely grooved lengthwise; laterals of left valve two, the inner one larger and much like the lateral of the right valve, prismatic margin very narrow, not over a millimeter wide at the widest part, its color grayish-ashy.

Type.—Cat. No. 347183, U.S.N.M. It measures: Length, 71 mm.; height, 45 mm.; diameter, 32 mm. It comes from Estera del Avileno, in the State of Tamaulipas, Mexico. It and another speci-

men from the same place, Cat. No. 347184, U.S.N.M., were received from Dr. A. L. Herrera, director of Estudios Biologicos, City of Mexico. A third specimen from the same locality was returned to Doctor Herrera.

This species falls into the group of *Elliptio semigitanosus* v. d. Busch. From that species it differs in being elliptical instead of subtriangular and in nacre and color of periostracum. It is, perhaps, more nearly related to *Elliptio distinctus* Crosse and Fischer, which, however, has reticulations near the beaks instead of the nodules of the present species. The nacre of *distinctus* is coppery, and its periostracum is olive-brown, while the nacre of *herrerae* is white and its periostracum is dark green and chestnut, with many rays.

DIPLODON (BULLOIDEUS ?) PERFRAGILIS, new species.

Plate 1, figs. 3, 4; plate 2, figs. 1-3.

Shell thin, delicate, translucent, inflated, oblique, narrow in front, broad behind, narrowly rounded in front, widely rounded behind, dorsal line nearly straight, but slightly bending downward in front of the beaks, very lightly winged both anteriorly and posteriorly, beaks located at about the front two-fifths of the dorsal line. Ventral margin rounded, posterior dorsal ridge very high, regularly rounded, the posterior dorsal area broad and rapidly descending to the margin. Concentric sculpture consisting of a number of rounded growth ridges, with three rest periods plainly indicated. Beaks each with 14 radiating bars spreading out like the ribs of a fan, no two of them joining into a V as seen in many of the *Diplodons*, the ninth bar the stoutest, the eighth and tenth the longest, these two reaching about two-fifths across the surface of the shell. Periostracum nearly smooth, slightly glossy, closely applied showing no tendency to peel, with several radiating wrinkles on the anterior and posterior areas. External coloring uniform light chestnut with a pinkish tint at the beaks. Interior showing the external sculpture, the radiating bars of the beaks showing as radiating sulci. Whole interior pinkish, becoming somewhat whitish near the ventral margin, nacre bright but with little iridescence. Pseudocardinal teeth of right valve, two, elongated, thin, joining in a point near the beak, the outer one the smaller, the summit of the inner one slightly overarching the narrow groove between the two. Pseudocardinal of left valve triangular, high, spatulate. The lateral of the right valve is very high at the far end; the laterals of the left valve long and high, the inner one the longer and higher.

Type.—Cat. No. 346801, U.S.N.M. It measures: Length, 28 mm.; height, 20 mm.; diameter, 15 mm. It comes from the Department

of Colonia, Uruguay, and was collected and presented by Dr. Florentino Felippone, of Montevideo.

The delicate nature of the shell may be judged by considering its size in connection with the combined weight of the two valves, which is only 0.8346 gram, or approximately one thirty-fifth of an ounce. The species does not seem to bear any close relationship to any of the other species of the genus, its nearest relative being *Diplodon* (*Bulloideus*) *bulloides* Lea, of which the type is in the collection of the United States National Museum. *Perfragilis* is readily distinguished from *bulloideus* by its fragile nature, its more elongated form, the absence of a markedly angular posterior ridge, and the pinkish cast to the whole shell. The radiating bars on the umbones are very much stronger than is usual in *Diplodon* and lead one's thoughts to the genus *Castalina*. Further investigation with more material available, especially the soft parts which, unfortunately, are lacking in this specimen, may show that a new subgenus or section is needed for it. At present the section *Bulloideus* affords the best resting place for it.

DIPLODON PODAGROSUS, new species.

Plate 1, figs. 1, 2, 5; plate 2, figs. 6, 7.

Shell inflated, thick, subelliptic in outline, broadly rounded and subtruncate posteriorly, more narrowly rounded anteriorly. Hinge line lightly arched, joining the anterior margin in a curve with no perceptible angle, joining the posterior margin in a rounded angle. Sculpture of rather rude growth ridges with finer concentric lines between them and obscure indications of crude radial sculpture. Posterior ridge high, broadly rounded. Posterior dorsal area broad with a shallow indistinct groove running from the beak to the middle of the posterior margin. Beaks eroded, high, and full. Ventral margin gently curved, appearing to be slightly cut away anteriorly. Periostracum thick, dull, of a nearly uniform dark chestnut brown. Interior white with a pale flesh tint and with but little iridescence except at the adductor and pallial scars. Of the two pseudocardinal teeth of the right valve the inner one is long and high and sharply serrated on its upper edge. The outer one is a low, thin, long, indistinct plate. The single lateral tooth of this valve is long and high and spatulate, its edge sharply crenulated, and its faces granulate and obliquely striate. The single pseudocardinal of the left valve is thin, high, serrate, and obliquely striate, its inner base standing on a little shelf. Of the two lateral teeth in this valve, the outer one is slightly the lower and the shorter, its edge sharply serrated. Edge of inner tooth lightly serrated. The two faces of these teeth facing each other are granularly, obliquely striated.

Type.—Cat. No. 346770, U.S.N.M. It measures: Length, 52 mm.; height, 33 mm.; diameter, 28 mm. It comes from Colon, in the Province of Entre Rios, Argentina, and was presented by Doctor Felippone. This locality is nearly opposite the city of Paysandu, Uruguay. This species classifies with *Diplodon firmus* Lea, to which it bears a close relationship. It is shorter, higher, and very much more inflated than *firmus*.

EXPLANATION OF PLATES.

PLATE 1.

All figures slightly reduced.

- FIG. 1. *Diplodon podagrosus*, new species, right valve.
2. *Diplodon podagrosus*, new species, left valve.
3. *Diplodon (Bulloideus?) perfragilis*, new species, right valve.
4. *Diplodon (Bulloideus?) perfragilis*, new species, left valve.
5. *Diplodon podagrosus*, new species, dorsal view.
6. *Elliptio herrerae*, new species, right valve.
7. *Elliptio herrerae*, new species, left valve.
8. *Elliptio herrerae*, new species, dorsal view.

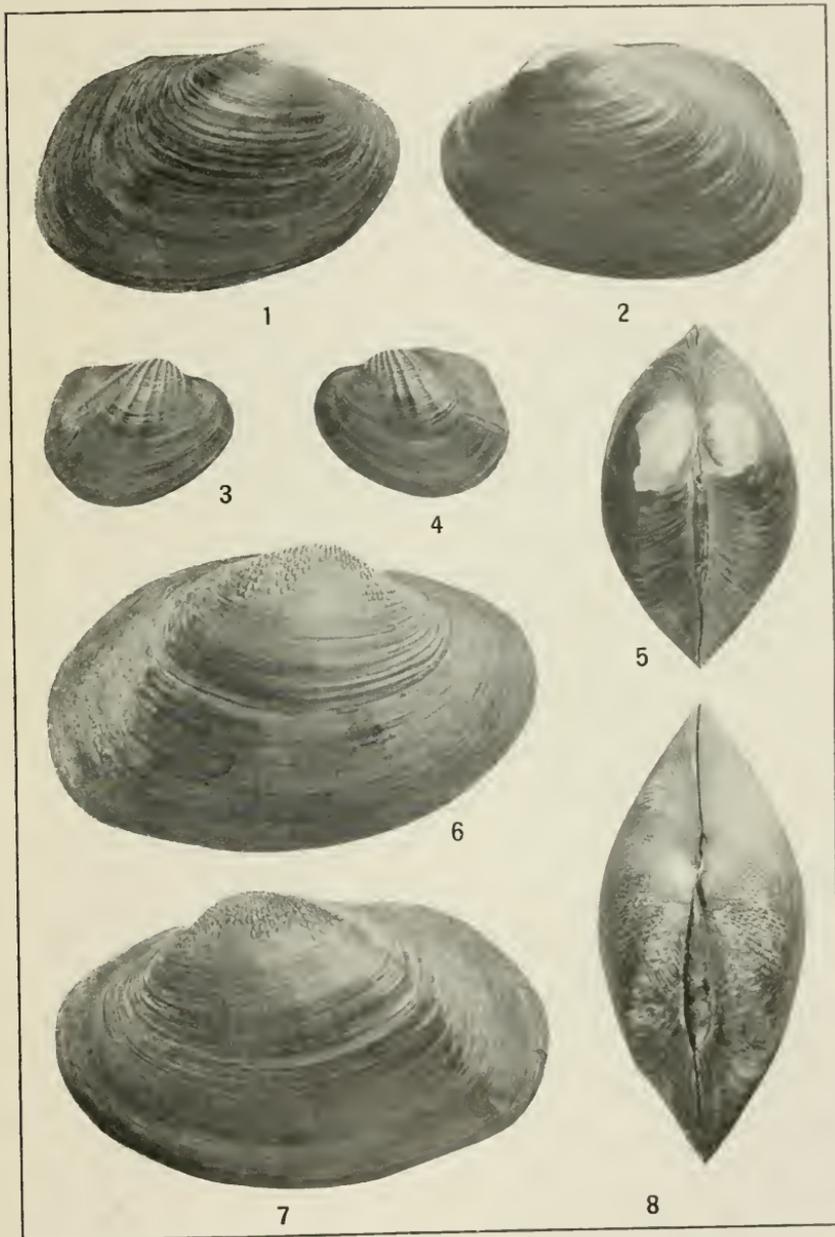
PLATE 2.

All figures slightly reduced.

- FIG. 1. *Diplodon (Bulloideus?) perfragilis*, new species, left valve.
2. *Diplodon (Bulloideus?) perfragilis*, new species, dorsal view.
3. *Diplodon (Bulloideus?) perfragilis*, new species, right valve.
4. *Elliptio herrerae*, new species, right valve.
5. *Elliptio herrerae*, new species, left valve.
6. *Diplodon podagrosus*, new species, left valve.
7. *Diplodon podagrosus*, new species, right valve.

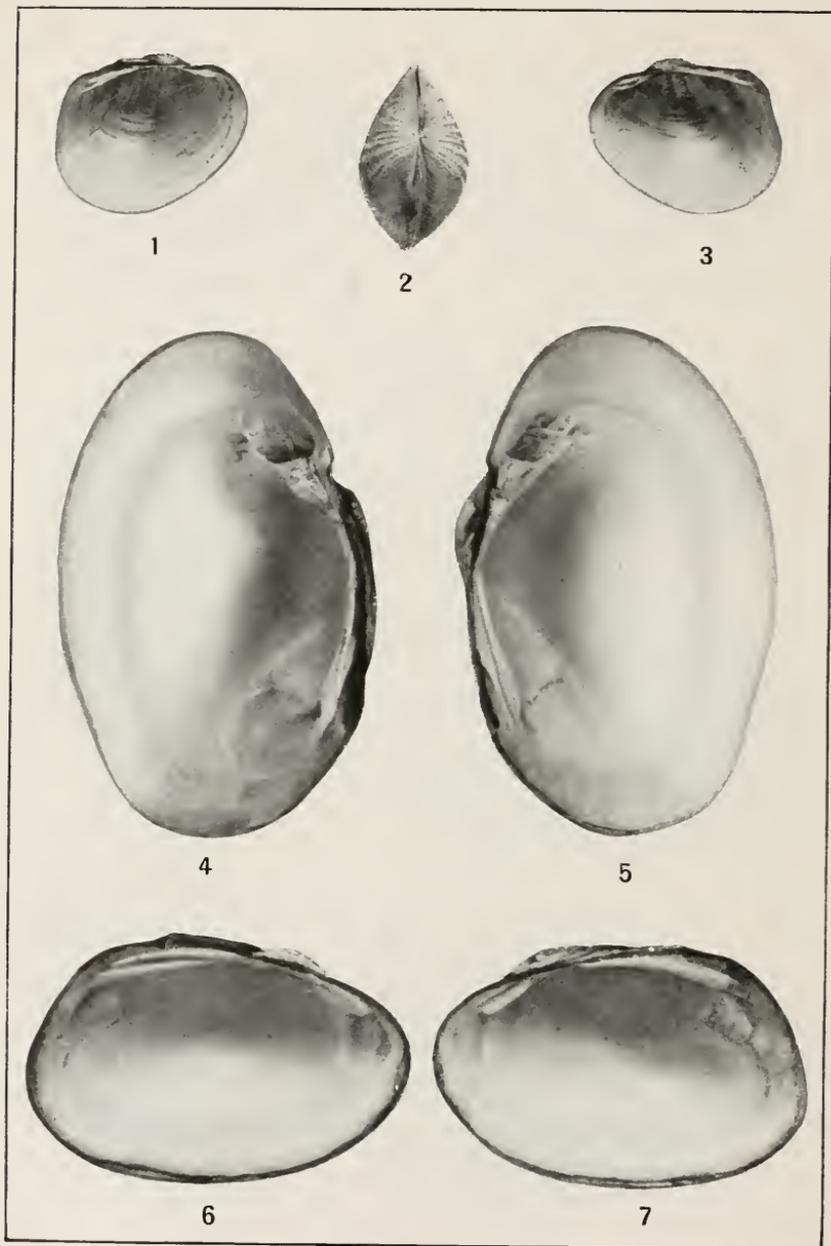
PLATE 3.

Elliptio herrerae, new species, right valve, enlarged.



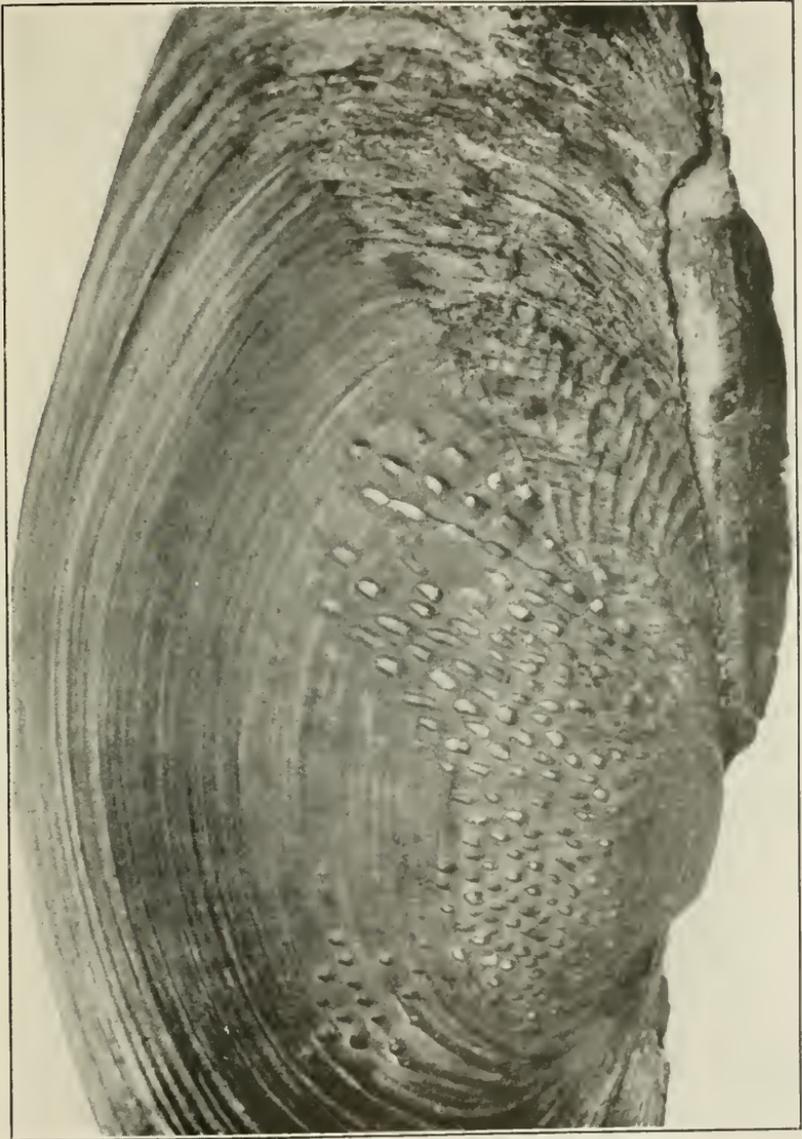
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FOR EXPLANATION OF PLATE SEE PAGE 4.



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NEW FRESH-WATER MOLLUSK FROM URUGUAY.

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