

where the shell reaches its greatest diameter. After that the whorls are nearly smooth, rather glossy, and the shell diminishes slowly in diameter to the base. The last two whorls have retractive axial ribs which gradually increase in strength, and are strongest on the straight part of the last whorl and base. The last whorl is somewhat compressed laterally and projects, carrying the aperture well forward. Aperture is very shortly ovate, almost circular, light brown within. Peristome very broad, flatly reflexed, white. The internal axis is smooth throughout, rather slender, tapering downwards, with a diameter of about 1 mm. in the widest part.

Length 23.5, greatest diam. 6 mm.; whorls 14.

Length 22.6, greatest diam. 6.3 mm.; whorls $13\frac{1}{2}$.

Length 20, greatest diam. 5.8 mm.; whorls $12\frac{3}{4}$.

Sanderson, Terrell Co., Texas, on a low limestone ledge along the railroad. Elevation 2800-2900 ft. Types no. 107001 A. N. S. P., collected August 25, 1912 by Messrs. Morgan Hebard and J. A. G. Rehn.

This handsome *Holospira* is most closely related to *H. semisculpta* Stearns, which was described from a canyon above San Carlos, Chihuahua, a place on the Mexican side of the Great Bend of the Rio Grande. Dr. Dall and Dr. Bartsch have kindly compared specimens with the type of *semisculpta*, and report that the new species "differs in the profile, which in your shell is more contracted toward the base, rendering it spindle-shaped, while the former is more cylindrical. The ribs in yours do not extend over so many of the basal whorls, and the expanded peristome gives it a very distinct appearance. It is doubtless a distinct species."

With the *Holospira* were found specimens of *Polygyra texasiana texasensis* and a *Succinea*.

SHELLS OF SOUTHEAST MISSOURI.

BY F. A. SAMPSON, COLUMBIA, MO.

During a late trip through southeast Missouri I had a few hours' time for collecting shells, and the result, combined with some former collecting, is here given.

Fern Glen, St. Louis County.

This is on the Merimac river, twenty-one miles from St. Louis. The rock exposures are of Chouteau and Burlington limestone, but none of the shells were found in abundance.

Polygyra zaleta Binn. These cannot be distinguished from Ohio specimens, and are of about the same size, up to 29 mm. diameter. From other places in Missouri I have the *P. zaleta ozarkensis* of 19 mm. or less diameter, contrasting quite sharply with these.

Polygyra thyroides Say. I found only dead shells, but doubt not that on the low ground living ones could be found.

Polygyra clausa Say. Dead shells not differing from others in the state.

Polygyra pennsylvanica Green. A single shell that looks like a postpliocene fossil, but I think it is not such. I have found it in the postpliocene at Providence, Boone county, and living as noted below.

Polygyra elevata Say. Typical shells.

Polygyra appressa Say. With rather heavy striation, and from $17\frac{1}{2}$ to 25 mm. diameter.

Polygyra fraudulenta Pils. Rather more numerous than any other kind, and not found in Missouri except in localities noted on this trip.

Polygyra inflecta Say. Three dead shells. The umbilicus of two was not covered. Similar specimens are noted from Shepard's Mountain and from Rivermines.

Polygyra hirsuta Say. A single shell. Pilsbry says that evidence is wanting to show that this is found west of the Mississippi and south of Kansas and Pettis County, Missouri whence I reported it some years ago. The shell from this place and those from two other places, hereafter noted are of this species; they certainly are neither *blandiana* nor *uncifera*.

Polygyra fraterna Say. With quite small umbilicus.

Polygyra dorfewilliana Lea. This is the farthest north that I have found this species.

Pyramidula solitaria Say. A single shell, which like the *pennsylvanica* looks like a postpliocene fossil but I do not think it is such.

Circinaria concava Say. A number of dead shells up to 29 mm. diameter.

Bifidaria armifera Say.

Pupoides marginata Say.

Gastrodonta ligera Say.

Vitrea indentata Say.

Physa gyrina Say. In a small pond by the side of the railroad track.

From a pile of mussel shells left by a pearl-hunter I noted seventeen or eighteen species.

Kemmswick, Jefferson County.

Polygyra appressa Say. A search by the railroad and on the bluff above gave a single dead shell of this species, but no other.

Washington County.

Here we are getting away from the limestone formations, and shells are scarce.

Polygyra fraterna aliciae Pils. Mineral Point.

Bifidaria armifera Say. Potosi.

Pupoides marginata Say. Potosi.

Zonitoides arboreus Say. Mineral Point.

Zonitoides minusculus Binn. Potosi.

Vitrea indentata Say. Potosi and Mineral Point.

Physa gyrina Say. In a spring branch at Potosi. In a large stream close by no shells were found. A swift-flowing clear stream at Mineral Point did not show any shells.

Ironton, Iron County.

Polygyra albolabris alleni Weth. A single dead shell was found on Shepard's Mountain adjoining the town. The other land shells were found at the same place.

Polygyra inflecta Say. The umbilicus of the single shell found was not covered.

Polygyra dorfewilliana Lea.

Zonitoides arboreus Say.

Physa gyrina Say. In a spring branch. In a larger stream close by no shells were found.

St. Francois County.

Polygyra thyroides Say. Farmington and Rivermines, the latter 19½ to 25 mm. diameter.

Polygyra appressa Say. Farmington. One of the shells did not have the umbilicus covered.

Polygyra inflecta Say. Rivermines. In three of the shells the umbilicus was not covered.

Polygyra monodon Rack. Rivermines. The small, widely umbilicated shell, not distinguishable from the northern shell, except that the color is not uniform, but usually more or less in stripes with the lines of growth alternately light and dark-colored. A shell from Jackson, Cape Girardeau county, shows the same stripes.

Polygyra fraterna aliciae Pils. Farmington and Rivermines.

Pyramidula solitaria Say. Farmington.

Pyramidula alternata Say. Farmington and Rivermines.

Pyramidula perspectiva Say. Farmington and Rivermines.

Bulinulus dealbatus Say. Rivermines.

Pupoides marginata Say. Rivermines and Farmington.

Bifidaria armifera Say. Rivermines and Farmington.

Zonitoides arboreus Say. Rivermines and Farmington.

Vitrea indentata Say. Rivermines.

Helicodiscus lineata Say. Farmington.

Cape Girardeau County.

Three places in this county were visited: Allanville in the White-water river bottom, Cape Girardeau on the Mississippi river, and Jackson on higher ground between.

Polygyra albolabris alleni Weth. Cape Girardeau.

Polygyra thyroides Say. Allanville and Cape Girardeau, the largest from the former, $28\frac{1}{2}$ mm. diameter.

Polygyra clausa Say. Jackson.

Polygyra pennsylvanica Green. Jackson. This is the only place in the State where living shells have been found.

Polygyra fraudulenta Pils. Allanville. Somewhat larger than those from Fern Glen, $17\frac{1}{2}$ mm. diameter.

Polygyra appressa Say. Cape Girardeau, Allanville. Those from Cape Girardeau vary from the small light colored, very finely striated shells to the larger, dark colored, coarsely striated, but not the same as large, dark reddish colored ones from Allanville, which Pilsbry reports similar to some Arkansas and Illinois shells. They are an unusual variety. An interesting specimen shows that by some injury a part of the last whorl was broken away, and a new

lip was formed more than a half-whorl short of the original one. The original parietal tooth is more than a half-whorl beyond the new one.

Polygyra inflecta Say. Cape Girardeau.

Polygyra leporina Gld. Jackson.

Polygyra monodon Rack. Jackson. See remarks under St. Francois County.

Polygyra fraterna imperforata Pils. Cape Girardeau.

Polygyra hirsuta Say. Jackson and Allanville, the latter the larger.

Pyramidula alternata Say. Jackson and Allanville.

Pyramidula perspectiva Say. Allanville and Jackson.

Omphalina friabilis W. G. B. Cape Girardeau. Pilsbry and Ferriss distinguish this species from *fuliginosa* largely by the appearance of the apical whorls, these being smooth, whitish-corneous and unworn, while in southwestern *fuliginosa* the summit is invariably worn, the cuticle removed from the earlier whorls. The shells from Cape Girardeau are very fine, measuring 28 mm. diameter, and the apex not worn in the least.

Vitrea indentata Say. Allanville.

Zonitoides arboreus Say. Cape Girardeau and Allanville.

Helicodiscus lineata Say. Allanville.

Succinea sp. Cape Girardeau.

Physa gyrina Say. Allanville and Jackson. From a pond on the west side of the Whitewater river at Allanville. The shells were small; from one on the east side a single larger one and of short spire.

Sphaerium solidulum Prime. Jackson.

Musculium elevatum Hald. Jackson.

Musculium transversum Say. Jackson.

St. Genevieve, St. Genevieve County.

Polygyra appressa Say. Found more abundantly than any other, and more like those from central Missouri than others herein noted.

Polygyra fraterna Say.

Polygyra fraterna imperforata Pils. Of ten *fraterna* found six were imperforate, and the others almost so.

Polygyra inflecta Say.

Pupoides marginata Say.

Bifidaria contracta Say.

Bifidaria procera Gld.

Lymnæa obrussa Say. In a spring branch these and the two following were found.

Physa gyrina Say.

Pisidium sp.

SPHÆRIIDÆ, OLD AND NEW, II.

BY V. STERKI.

PISIDIUM PERALTUM St. THE NAUTILUS, XIV, p. 5, 1900.—Specimens have been received from some other places: near Douglas Lake, Cheboygan Co., Mich., collected by Mr. H. B. Baker, and Cedar Lake, Lake Co., Ill., by Dr. F. C. Baker. But those from Ky., Ill. and Ia., formerly referred to *peraltum*, are distinct and range with the following:

PISIDIUM FRAUDULENTUM, n. sp.—Mussel of medium size, barely longer than high, somewhat oblique, rather well inflated; superior margin curved, passing with angles into the adjoining; supero-anterior slope well marked, steeply oblique, straight or nearly so, anterior end a rounded angle situated near the ventral side, inferior margin rounded, posterior truncate at right angles to the longitudinal axis; beaks rather large, rounded or somewhat flattened on top, moderately projecting over the upper margin; surface dullish or with a silky gloss, rather smooth, with fine, crowded, somewhat irregular striæ; color corneous to yellowish; shell opaque or subtranslucent, rather strong, hinge strongly angular, curved, very stout, its whole surface rugulose; right cardinal tooth angular, enclosing a deep excavation for the left anterior, often emarginate in the middle, its anterior part thin, the posterior very thick and usually grooved; left anterior rather short and massive, strongly curved upward, with apex pointed, the posterior short, steep oblique, slightly curved; ligament and resilium rather short, the latter strong.

Long. 4.5, alt. 4.3, diam. 3 mm. (100 : 95 : 66).

Habitat: Va., Ky., Ill., Ia., Mo., Miss.; ditch on the Cameron Run, west of Alexandria, Va., No. 602, types, and Roach's Run, Va.,



Sampson, F. A. 1912. "Shells of Southeast Missouri." *The Nautilus* 26, 90–95.

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