

A NEW MOLLUSK OF THE GENUS *PISIDIUM* FROM ALASKA,
WITH FIELD NOTES BY G. DALLAS HANNA.

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NOTES ON HABITS AND LIFE HISTORY.

The Pribilof group of islands, noted for its fur-seal herds, is located in Bering Sea about 200 miles from land on the north, east, and south. St. Paul and St. George are the largest and most important of the group and are the only ones having bodies of fresh water.

St. George Island has several small, shallow ponds of typical arctic tundra character, the banks of which are composed of spongy moss and the bottoms are covered with a thick layer of decaying vegetable matter which colors the water brown. Crustacea abound in all of these, but fish and mollusks are absent from three and probably all of them.

On St. Paul Island there are a large number of lakes and ponds of a different character. The bottoms of these are sandy or rock, and the water of none has the brown tundra color. A few are brackish. One is over three miles and another is nearly a mile long. The deepest is a little over 8 feet. This *Pisidium* has been found abundant in four of these, which are known as Webster Lake, Ice House Lake, Big Lake, and the small pool above and adjacent to Ice House Lake. These are the only ones that have been carefully examined.

In some of the deeper sections of these ponds the bottoms are covered with a dense green aquatic vegetation, and in shallower parts grasses grow out and project above the water. The *Pisidium* do not seem to burrow in the sand, but crawl about over it, and may be found in abundance at the water's edge. Thus many are frozen solid for seven months of the year, while others, living in the deeper sections, remain active throughout the winter and creep over the stems of grasses and other submerged plants in arboreal, snail-like manner. Large numbers have been collected through the ice, and this method is recommended to malacologists throughout the north.

When creeping, the foot is fully extended from the anterior end of the shell. It is a narrow, white, ribbon-like organ, almost three times as long as the valves. The plantar surface of the foot is on the extreme tip. The movement of the foot is uniform, but the shell is brought up in a series of jerks, as in the *Pupillidae*, progression being as rapid as in any snail of their size. This movement is easily observed by placing the mollusks in a bottle of water, when they will quickly climb up the sides of the glass.

Specimens collected early in September had from one to five young in the umbonal region of the shell. Each of these had a pair of well-developed valves and appeared very large to have escaped from so small an animal. Before the end of September all the young seem to have escaped from the parent and lead a free existence during the first winter.

No definite data can be submitted to show how this and other fresh-water species of animals have come to these islands, which, geologically, are very young, and certainly never have been connected with main land. The young of *Pisidium* does not seem to be adapted for clinging to the feet or feathers of waterfowl, yet this seems to be the only way in which the animals could have been transported over the 200 miles of intervening salt water.

The new species is much more common than *P. scutellatum* Sterki which lives in the same ponds. Neither species seems to have been previously collected on the Pribilof group. Henry W. Elliott lists *Cyclas* as an abundant animal on all the islands. Along with it he gives *Planorbis*, *Melania*, and *Limnea*, which are not found there, so that it is questionable whether he really saw any of them.¹ Dr. W. H. Dall says: "* * * and probably *Pisidium* exists in the pools of St. Paul as it does on many of the Aleutians."² (G. Dallas Hanna.)

DESCRIPTION OF SPECIES.

PISIDIUM HANNAL, new species.

Mussel moderately inequipartite, slightly to barely oblique, medium inflated, the diameter greatest above the middle; outlines of the edges of the valves broadly elliptical, the anterior end almost as broadly rounded as the posterior; beaks slightly behind the middle, rather large, somewhat mammillar, projecting over the upper margin, slightly flattened on top, outward; surface dullish to slightly glossy, with slight, shallow, irregular concentric striae, and a few lines of growth; color yellowish to grayish corneous; shell thin, opaque to subpellucid; hinge rather stout, plate broad, broadest in the middle and with well-marked sinuses towards the anterior and posterior

¹ Seal and Salmon Fisheries and General Resources of Alaska, vol. 3, pp. 19, 227.

² Report of Fur Seal Investigations, 1896-97, part 3, p. 541.

laminae; cardinal teeth rather small, the right slightly curved to nearly straight, with its posterior end equally strong or slightly thicker; left anterior nearly straight, the posterior curved, oblique; laminae rather stout, their cusps ("lateral teeth") somewhat proximal, the left anterior short, abrupt, the others less abrupt, pointed; outer ones in the right valve small, especially so the posterior; ligament and resilium short, rather thick. Length, 3.4; height, 3; diameter, 2.2 mm. Soft parts not seen.

Type.—Cat. No. 273767, U.S.N.M.

Habitat.—St. Paul Island, of the Pribilof Islands, Behring Sea, collected by Mr. G. D. Hanna, in whose honor the species has been named. A good number of specimens was secured, from several places, partly associated with *P. scutellatum* Sterki.

P. hannai does not closely resemble any of the known North American species, and can not be mistaken for any of them. Its distinguishing features are: Its size, the elliptical outlines in lateral aspect, with the supero-anterior slope not marked, the broad beaks, and the hinge-plate being broadest in the middle.

The species is rather variable in several respects. Some specimens are more inflated above than shown in the figure, and from there the valves show nearly a straight line to the ventral margin, in frontal (or rear) aspect; an upper line of growth is often rather deep and marks off the beaks like the "cap" in *Musculium*, probably due to the long winter season. In some instances the demarcation is so abrupt as to form a sharp ridge for rib; in some specimens the hinge is slighter, yet with the plates broader in the middle. It may be noted that in one specimen the posterior part of the hinge is reversed—that is, the posterior laminae.

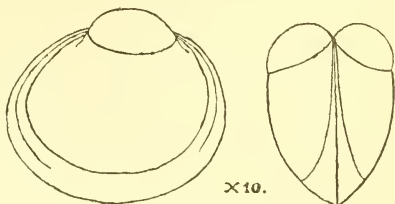


FIG. 1.—PISIDIUM HANNAI. LATERAL VIEW.

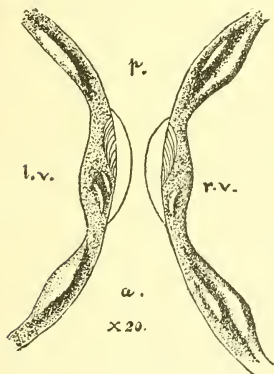


FIG. 2.—PISIDIUM HANNAI. END VIEW AND HINGES. A, ANTERIOR; P, POSTERIOR; L. V., LEFT VALVE; R. V., RIGHT VALVE.