

2. *Pupa Bigsbyi* s. n. (Figs. 5 and 6.)

Description.—Shell half the size of *Pupa vetusta*, or between three and four millimeters in length and one and five-tenths millimeters in breadth. Form, long conical. Body whorl about one-third of the entire length, giving the shell a somewhat bulboid form. Whorls five in the largest specimens found. Tumid, suture much impressed. Surface smooth. Aperture apparently oval in form, but not perfectly known, as the body whorl is crushed in all the specimens.

A few specimens, none of them quite perfect, were found in the erect trees of group XV at the Joggins, along with *Pupa vetusta*. They differ from that species in smaller size, different form and absence of sculpture. The specimens do not show whether the aperture was toothed or simple, but it was probably the latter, as the lip is evidently very thin and delicate. From its form it is probable that it belongs to a different subgenus from *P. vetusta*. It is very much more rare than that species in the erect trees, and has not been found elsewhere.

I dedicate it to my venerable and dear friend Dr. Bigsby F.R.S., of London, a pioneer in American geology, and still an indefatigable worker in the science.

3. *Pupa Vermilionensis* Bradley. (Figs. 8 and 9, and 14c.)

[Bradley in Report of Geological Survey of Illinois, vol. iv, p. 254. Id. in Am Journ. Sci., III, vol. iv, p. 87.]

Description.—Shell spindle-shaped, tapering to an obtuse apex, covered with microscopic ridges (25 to 30 in a millimeter) parallel to the lines of growth. Aperture oblique, oval. Outer lip thin, slightly reflexed. Columella lip reflexed, thickened; furnished with a single central curved tooth, projecting nearly half way across the aperture. Junction of columella and outer lip somewhat angular and dentiform. In old individuals the columella tooth is often continuous through an entire turn or farther. It is not seen on shells having less than three turns. The last turn forms nearly half the length of the shell. Whorls rounded. Suture impressed. Surface glossy. Color black or gray. Length three and six-tenths millimeters. Width two millimeters. Some individuals are smooth or destitute of the fine microscopic ridges, but whether this is a natural peculiarity or a result of injury to the outer surface, is not certain.

As compared with *Pupa vetusta* this shell is less than half the size, of a less cylindrical form, its whorls more rounded, and its body whorl much larger in proportion. Its sculpture is much finer. The conspicuous tooth in the aperture is of

* Slightly modified from Bradley.