

DESCRIPTION OF NEW VARIETIES OF LAND AND FRESH
WATER MOLLUSKS FROM PLEISTOCENE DEPOSITS
IN ILLINOIS*

BY FRANK COLLINS BAKER

During the summer of 1927 the Illinois Geological Survey carried on rather extensive investigations into Pleistocene formations in Fulton County, Illinois, Dr. Harold R. Wanless having charge of the field work. The animal life in these deposits, consisting almost entirely of mollusks, has been referred to the writer for determination and a paper is in preparation describing the entire fauna, which included material from Aftonian, Yarmouth, Peorian and Early Wisconsin intervals. A large amount of material was collected which has made possible a more satisfactory study of variation among the species of this latest of geological horizons. Included in this material were several species and varieties which appeared sufficiently characteristic to warrant designation in a formal manner. The writer is indebted to Dr. M. M. Leighton, Chief of the Geological Survey, for the opportunity of studying the collections.

POLYGYRA MULTILINEATA WANLESSI nov. var.

Shell differing from recent *multilineata* in being smaller, the body whorl somewhat gibbous, of greater diameter as compared with height, the aperture somewhat narrower, and the base flattened and indented about the umbilical region, which may be narrowly perforate or completely closed. It may be distinguished from variety *algonquinensis* Nason, by its usually larger size, more gibbous whorls, especially the body whorl, and the deeper indentation of the umbilical region. There are faint indications of color lines

* Contribution from the Museum of Natural History, University of Illinois, No. 48.

or stripes on a few specimens, but the majority were probably unicolored as are some specimens of *multilineata* at the present time. Adults are usually imperforate but immature shells appear to be always umbilicated.

Height 13.5; diameter 21.5 mm. Holotype.

Height 13.0; diameter 21.0 mm. Paratype.

Height 12.6; diameter 19.5 mm. Paratype.

Height 11.1; diameter 18.5 mm. Paratype.

Type locality: Fulton County, Illinois, east of Havana, in Peorian loess. *Types*: Museum Natural History, Univ. Ill., No. P2358. *Paratypes*: Acad. Nat. Sci. Phil., No. 144921.

This variety of the common *multilineata* occurs in deposits from Yarmouth to Early Wisconsin time. It is more or less abundant in the loess of Fulton County but has been seen from but one other region, New Harmony, Indiana, in loess believed to be of Peorian age. The variety is named in honor of Dr. Harold R. Wanless, of the Department of Geology, University of Illinois, who collected the material.

GONYODISCUS MACCLINTOCKI nov. sp.

Shell orbicular, with convex, dome-shaped spire; whorls six, slowly and regularly increasing in size, tightly wound, slightly convex, the body whorl typically flatly rounded; sutures well impressed; base flatly rounded, excavated near the widely open umbilicus, which exhibits all of the whorls including the nucleus; sculpture of many close-set, distinct ribs, which become finer on the base, there being usually an almost smooth space in the center of lower part of the body whorl; aperture widely or roundly lunate, arched above where the outer lip joins the body whorl; peristome simple, acute, without parietal callus, the terminations of the outer and columellar lip being widely separated.

Height 3.6; diameter 6.5 mm. Holotype.

Height 3.5; diameter 6.0 mm. Paratype.

Height 3.6; diameter 6.2 mm. Paratype.

Height 3.2; diameter 6.1 mm. Paratype.

Type locality: Peorian loess, $3\frac{1}{2}$ miles east and $1\frac{3}{4}$ miles south of Lewiston, Liverpool Township, Illinois. *Types*: Museum Natural History, Univ. Ill., No P2367. *Paratypes*: Acad. Nat. Sci. Phil., No. 145108.

Macclintocki is related to *perspectiva*, differing in being smaller, having a more convex spire, a smaller umbilicus, a rounder aperture, and finer sculpture, the ribs being more numerous and closer together, almost disappearing on the base. It has been confused with *shimekii*, which is smaller, has fewer whorls which are wider, and the sculpture is coarser. The spire, also, is quite different. It has been seen only from deposits of Peorian age. As *perspectiva* is not at present known from Pleistocene deposits earlier than Late Wisconsin (at least in Illinois) it is thought that this species may be ancestral to the large, widely umbilicated form so common in Illinois and other parts of the United States in the recent fauna.

GONYODISCUS MACCLINTOCKI ANGULATA nov. var.

Shell differing from typical *macclintocki* in having a more depressed somewhat flattened spire, flatter base and shallower umbilicus, and a subangulated periphery. On the average rather larger than the typical form.

Height 2.9; diameter 6.2 mm. Holotype.

Height 3.0; diameter 7.0 mm. Paratype.

Height 3.0; diameter 8.0 mm. Paratype.

Type locality: Fulton County, Illinois, east of Havana, in loess of Yarmouth age. *Types*: Museum Natural History, Univ. Ill., No. P2359. *Paratypes*: Acad. Nat. Sci. Phil., No. 144922.

This race differs uniformly from the more abundant *macclintocki* of the Peorian interval in its depressed spire, wide umbilicus, and subangulated periphery. This angulated form persisted throughout the Yarmouth interval and died out in the Peorian, a few scattered specimens having been seen among a large number of the rounded-whorled Peorian

form. What the Sangamon form may have been like is not at present known, none being in our collection from this horizon. The species is named in honor of Dr. Paul MacClintock, of the Department of Geology, University of Chicago, a careful student of Pleistocene phenomena.

VERTIGO GOULDII LOESSENSIS nov. var.

Shell differing from recent *gouldii* in being more ventricose, especially on the last whorl, having the apical whorls wider and more obtuse, the outer lip more auricled causing the aperture to have its longest diameter more diagonal than in *gouldii*. There are five denticles placed as in *gouldii*, but more delicate than in the typical form; the palatal denticles are long and subequal.

Length 2.0; diameter 1.3 mm. Holotype.

Length 2.0; diameter 1.3 mm. Paratype.

Length 2.1; diameter 1.1 mm. Paratype.

Type locality: $3\frac{1}{2}$ miles east and $1\frac{3}{4}$ miles south of Lewistown, Fulton County (Liverpool township), Illinois, in loess of Peorian age. *Types*: Museum Natural History, University of Illinois, No. P2366. *Paratypes*: Acad. Nat. Sci. Phil., No. 145107.

This Vertigo has been listed as *gouldii* but is different from the typical species as living today. It has also been listed as *ventricosa*, and some small, wide specimens do resemble this species. *Loessensis* strongly resembles *Vertigo elatior* Sterki, and Sterki has referred certain forms found in loess at New Harmony, Indiana to this species. They lack the strong palatal callus so characteristic of *elatior* and are the same as the Illinois variety here differentiated. It is probable that the Vertigo listed as *gouldii* by Hanna (Kansas Science Bull., VII, p. 120, pl. xviii, fig. 4) is also this variety. It is found in the Pleistocene from Yarmouth to Early Wisconsin time. The form is here considered a marked variety of *gouldii* but it might be advisable to consider it a distinct species.

SUCCINEA RETUSA FULTONENSIS var. nov.

Shell elongately ovate, compressed, spire long, conic, sutures well impressed; whorls three, somewhat oblique, narrow, the second whorl much swollen as compared with the first whorl which appears above the second whorl as a small knob; aperture narrow, ovate, narrowed above, widely rounded below; columella somewhat incurved.

Height 8.1; diameter 4.0; aperture height 5.0; diameter 2.8 mm. Holotype.

Height 7.5; diameter 4.0; aperture height 4.2; diameter 2.2 mm. Paratype.

Height 7.6; diameter 4.0; aperture height 5.0; diameter 2.4 mm. Paratype.

Type locality: Fulton County, Illinois, $2\frac{1}{4}$ miles west and $\frac{3}{4}$ mile south of Lewiston, in deposit of Early Wisconsin age. *Types*: Museum Natural History, Univ. Ill., No. P2368. *Paratypes*: Acad. Nat. Sci. Phil., No. 145109.

This narrow *Succinea* is related to the recent *decampii* Tryon, differing in its smaller size, with less compressed whorls, longer spire, deeper sutures, rounder whorls, and shorter aperture. The presence of specimens resembling small *decampii* indicate that the fossil form is a variant of the recent variety. It is much narrower than *grosvenori gelida* and also larger. It has been seen from the Yarmouth, Peorian, and Early Wisconsin intervals of the Pleistocene and apparently was widely distributed. It has been previously reported from Illinois deposits as both *retusa* and *decampii*. It appears to be ancestral to the recent *retusa* since that species has not yet been seen in Pleistocene strata in Illinois.

VALVATA LEWISII PRECURSOR var. nov.

Shell somewhat larger than *lewisii*, spire elevated, scalariform, the sutures deeply impressed, the whorls notably rounded and set one above another in turban fashion; whorls rather more than four with four full coils visible in front view, the two upper whorls projecting well above each

other; the body whorl high, increasing in diameter as it approaches the aperture; umbilicus wide, deep; aperture large, rounded, entire, the inner lip only touching the parietal wall; sculpture of rather distinct, longitudinal lines of growth resembling tightly wound thread.

Height 4.3; diameter 5.0 mm. Holotype.

Height 4.4; diameter 5.6 mm. Paratype.

Height 4.2; diameter 5.0 mm. Paratype.

Height 3.7; diameter 5.0 mm. Paratype.

Height 4.0; diameter 5.0 mm. Paratype.

Type locality: Fulton County, Illinois, east of Havana, in gray silt of Early Wisconsin age. *Types*: Museum Natural History, Univ. Ill., No. P2360. *Paratypes*: Acad. Nat. Sci. Phil., No. 144923.

This *Valvata* occurs in this deposit literally by thousands and must have been exceedingly abundant in the stream which it inhabited in Early Wisconsin time. It appears to bear much the same relationship to *lewisii* that *danielsi* Walker, does to *sincera*, both, perhaps, being ancestral to the species as they exist today. The high, pointed spire with its four fully exhibited whorls in lateral view are its chief characteristics.

STUART WELLER

The death of Dr. Weller is a great loss to the sciences of geology and paleontology. He was born at Maine, Broome Co., N. Y., December 26, 1870. At an early age he became interested in geology and with a view of making this science his life work he entered Cornell University in 1891, graduating in 1894, later receiving the degree of Ph. D. from Yale. He had been connected with the U. S. Geological Survey, the Geological Survey of Missouri, the



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