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The Occurrence of the Brachiopod *Bilobites bilobus* in the Silurian of Iowa

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NOTES ON THE PROGRESS OF THE PHYSIOGRAPHIC
EVOLUTION OF LAKE COOPER

BEN H. WILSON

(*ABSTRACT*)

1. Lakes possess life histories which develop along orderly lines.
2. This fact holds true for artificial lakes as well as for those formed in the processes of natural earth history.
3. A historic, geographic and physiographic description of Lake Cooper.
4. A brief statement of those processes which are involved in the orderly evolution of Lake Cooper.
5. A brief examination into the present state and stage of these processes.

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THE OCCURRENCE OF THE BRACHIOPOD *BILOBITES*
BILOBUS IN THE SILURIAN OF IOWA

A. O. THOMAS

Plate — fig. 1

The small brachiopod, *Bilobites bilobus*, was first described by Linnaeus in the 12th edition of his *Systema Naturae* in 1767. Though frequently reported since then from several Silurian horizons in both Europe and America this is the first occurrence in the Silurian of Iowa.

The shell is very small, strongly bilobate, deeply sinuous in front, and its width anteriorly is nearly twice the length of the short straight hingeline. In general shape the shell of this brachiopod resembles a part of the flower of a small bleeding heart or Dutchman's Breeches (*Dicentra*).

Pedicle valve convex, highest on the umbo, beak pointed and but little incurved over the high and nearly flat cardinal area; delthyrium comparatively large, open and triangular. Brachial valve less thick than the pedicle, the umbo is low and the surface of the valve from the umbo to the anterior ends of the lobes is gently concave. Both valves marked by 30 to 40 fine radiating costae which increase by implantation; the costae are better developed

on the pedicle than on the brachial valve, on the lobes than in the sinuses, and are meagerly developed or absent on the cardino-lateral regions of the brachial valve. Muscle scars and other internal features not seen. Young shells about one millimeter long are wedge-shaped, their umbones are far apart, the pedicle openings and cardinal area are unduly large, their valves are quadrilateral in outline and are without any indications of sinuses. At a length of less than two millimeters bilobation has definitely begun.

Occurrence.— In beds of the Hopkinton stage, Niagaran series of the Silurian at Scotch Grove, Jones county, Iowa. The first specimens were observed in residues remaining after dissolving blocks of the porous coralline dolomite in hydrochloric acid. Further examination of more material resulted in the finding of a series of perfectly preserved and thoroughly silicified white shells. They range in size from less than a millimeter in youth to adults four millimeters long.

PROBOSCIDIAN REMAINS FROM RED OAK AND
OTTUMWA, IOWA

A. O. THOMAS

(*ABSTRACT*)

During the past year several very interesting proboscidian bones have been found in the Pleistocene deposits of Iowa. The first of these is the skull of a mastodon unearthed at some depth in an excavation near Red Oak. The mandible and tusks are lacking and the brain case has been broken away posteriorly. The face is well preserved and shows clearly the sutures, the various foramina, the anterior nares, the high forehead, and the great alveoli for the massive tusks. A well preserved molar is in place in each half jaw. The damaged condition posteriorly reveals unusually well the cancellated bony structure or diploë characteristic of proboscidian skulls. From tip of alveoli to top of skull the face measures 36 inches and the width of the face between the eyes 20.5 inches.

The second find is the mandible of a mastodon from the bed of the Des Moines river near Cliffland below Ottumwa. The jaw was discovered at time of low water firmly imbedded in a hard red gravel. Two molar teeth are in place in each half jaw and there is an alveolar depression 1.5 inches in diameter on each side of the symphysis. The animal did not have mandibular tusks.