ART. XXXIX.—*Discovery of Eurypterid Remains in the Cambrian of Missouri;* by C. E. BEECHER. (With Plate VII.)

THE wonderful development of merostomes in various parts of the world at about the close of the Silurian has long been recognized, and the suddenness of their appearance out of an apparently clear paleozoic sky has been a matter of considerable speculation. Almost at the same instant of time there appeared on the geologic horizon a marvelous assemblage of these ancient arthopods. A very few scattering forerunners are known from older rocks, but most of them are small and strange creatures, little resembling the characteristic *Eurypterus* and *Pterygotus* of the Upper Silurian, and in fact belonging to other orders of the Merostomata.

In North America the known genera and species of the order Eurypterida belong almost exclusively to the Waterlime group (Rondout) above the Salina beds. Dr. John M. Clarke* has recently announced the discovery, by Mr. C. J. Sarle, of a new Eurypterid fauna at the base of the Salina, which carries this peculiar biologic facies one comparatively brief stage further back. Evidences of still older forms are very meager. A single species of *Eurypterus* (*E. prominens* Hall) is referred to the Clinton beds of the Silurian with considerable doubt. The next indication of a greater antiquity of this order consists of a fragment of an abdominal segment and a single jointed limb, from the Utica slate of New York, described by C. D. Walcott† as *Echinognathus Clevelandi*.

It is therefore of considerable interest and importance that a new and much older horizon for the Eurypterida can now be chronicled.

Mr. Arthur Thacher, President of the Central Lead Company of Missouri, formerly a professor in Washington University, found a nearly entire specimen of a new Eurypterid in the Potosi limestone of St. François county, and through his generosity and the kindly interest of Mr. Frank L. Nason, the specimen was transmitted to the Yale University Museum. Owing to the supposed scarcity of fossils in the Potosi and St. Joseph terranes of Missouri, their correlation was long a matter of uncertainty, until Mr. Nason described certain horizons bearing an abundant and characteristic Cambrian fauna.

* Notes on Paleozoic Crustaceans. N. Y. State Museum, Report of the State Paleontologist for 1900. 1901.

† Description of a New Genus of the Order Eurypterida from the Utica Slate. This Journal (3), vol. xxiii, 1882.

The specimen here described at once suggests the familiar and well-known genus *Eurypterus*, and only when its characters are studied in connection with its geological occurrence is it apparent that its differences are of sufficient importance to warrant its generic separation. The specimen represents nearly the entire dorsal test of the animal and consists of the cephalothorax with the abdominal segments, including the telson spine.

The cephalothorax is comparatively shorter and wider than in *Eurypterus*, the eyes are further forward, nearer together, and more oblique, and besides the telson but eleven abdominal somites can be determined on the dorsal side, instead of twelve as in *Eurypterus*. These differences are considered as indicative of a new genus and it is proposed to recognize this type under the name *Strabops* nov. gen., with *Strabops Thacheri* n. sp., as the type species. The generic name is in allusion to the inward turning or squinting of the eyes (στραβός squinting, and ὄψις face).

Doubtless many generic differences will appear when the appendages of this type are obtained. The differences in the characters available for comparison are quite as great as between *Eurypterus* and *Dolichopterus*, *Stylonurus*, *Anthraconectes*, or *Eusarcus*. This taken with the fact that practically all the Cambrian genera, especially the more highly organized types, became extinct long before the Upper Silurian, lends support to the conclusion that *Strabops* is generically distinct from any hitherto known form.

STRABOPS THACHERI gen. et sp. nov. (Plate VII.)

Body broadly ovate in general outline exclusive of the telson, slightly convex in the specimen, though probably quite arched both transversely and longitudinally in life, as indicated by the outline of the separate segments.

Cephalothorax short and broad, length less than one-half the width, anterior and lateral margins regularly rounded, posterior margin gently curved in the middle and turning obliquely forward toward the genal extremities, which are obtusely angular.

Eyes medium sized, ovate, narrow ends pointing obliquely inward, situated in the middle of the anterior half of the cephalothorax, distant about the length of one eye, connected anteriorly by a distinct arched line or fold. The eye tubercles are mostly exfoliated, and their convexity and surface cannot be determined. *Ocelli* indicated by two spots midway between the eyes.

Abdomen. The dorsal side shows eleven segments exclusive of the telson. The axis in the specimen is slightly convex

and slopes off into the nearly flat pleural region without any line of demarkation. The greatest width is across the third segment. The extremities of the segments are rounded anteriorly and on the sides, and terminate behind as a simple angulation. The first six segments are quite uniform in length, while the three following are somewhat shorter, and the last two are a little longer.

Telson a broad flat spine, obtusely elevated along the middle.

Surface smooth, with an indication of a row of minute crenulations or scale-like markings near the posterior edge of each segment.

Dimensions. Greatest length of specimen 110^{mm}, length exclusive of telson 82^{mm}; greatest width, allowing for compression on left side, 60^{mm}; length of cephalothorax 20^{mm}, width 49^{mm}; greatest width of telson 17^{mm}.

Formation and locality. From the lower members of the Potosi limestone, Flat river, St. François county, Missouri.

The only known genus of merostomes besides *Strabops* occurring in the Cambrian is *Aglaspis* Hall, represented by two species (*A. Barrandi* and *A. Eatoni* Whitf.). But since *Aglaspis* belongs to the order Synxiphosura, it leaves *Strabops* as the present sole representative of the Eurypterida.*

* Although *Aglaspis* was compared with *Limulus* by Professor Hall, and its affinities were distinctly stated as with the Merostomata, yet most subsequent writers have overlooked its true relationships and have included it in their lists of trilobite genera. The family named Aglaspidæ was first employed in 1877 by S. A. Miller in "The American Palæozoic Fossils," p. 208, and the restoration of the family to the Merostomata was first made by the writer in a paper entitled "Outline of a Natural Classification of the Trilobites" (this Journal (4), vol. iii, p. 182, 1897).

EXPLANATION OF PLATE VII.

Strabops Thacheri Beecher.—Dorsal side of type specimen × 3/2. Potosi limestone (Cambrian), St. François county, Missouri. Original in Yale University Museum.

Yale University Museum,
New Haven, Conn., June, 1901.

STRABOPS THACHERI Beecher.