

about 30 miles N. W., where they are buried beneath 50 to 100 feet of more recent Tertiary sands and gravels.

Most of the other species (Lower Miocene) that have previously been noticed in the state occur at Shiloh, near Bridgeton, in Cumberland County, while others are found in Salem County. The lower strata from which they were obtained also probably exists in a direct N. W. line 33 to 35 miles from Atlantic City; but these are likewise covered by more recent Tertiary strata.

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NOVEMBER 22.

REV. HENRY C. MCCOOK, D. D., Vice-President, in the chair.

Twenty-eight persons present.

*Note on Cyrtophora bifurca and her cocoons, a New Orb-weaving Spider.*—Dr Henry C. McCook remarked that during a temporary stay in Florida, April 1886, he found nested upon the porch of Dr. Wittfeld's place, Fairyland, Merrit's Island, on the Indian River a little way below Rockledge, a spider which appears to be new to science. Its snare resembles that of *Cyrtophora caudata*, Hentz. It also resembles that spider in the manner of hanging its cocoon string in the vertical axis of its orb just above the hub. The character of the cocoon, however, differs entirely from that of *caudata*. It is in the shape of a somewhat irregular octogon, and is of a light green color. The speaker had found as many as twelve cocoons in one string overlapping one another in the manner which he had frequently observed with the cocoons of the Labyrinth spider, (*Epeira labyrinthea* Hentz) and which may also be seen at times with the cocoons of *caudata*, although for the most part, the latter are arranged at intervals along the string.

The cocoon strings collected varied in the number of cocoons attached thereto,—probably according to the period of advancement in the process of ovipositing on the part of the mother. Of the specimens collected one string contained 14, another 12, and another 10 cocoons. They are bound together along one side by continuous series of thick white threads which extend from the top to the bottom of the string. Each cocoon consists of two parts which have evidently been fastened together by a selvage. These parts present the appearance of two dishes placed together edge to edge. They are woven of a soft but rather tough texture. A very slight tuft of flossy white silk is found inside, and within this the eggs are deposited. In one cocoon of a string of thirteen, twenty five minute dead spiders were counted which had passed their first moult. In another cocoon taken from a string of five only, there were twenty six. The number varies a good deal, however. The cocooning period appears to extend into May; at least Dr. McCook had received from Miss Anna Wittfield, as late as the middle of June, a string in which were some cocoons empty, one with spiderlings passed the



first moult several days, and another with young who had just broken the egg. There was no trace of the bifurcated abdomen upon these younglings.

The spider is of a uniform light green color, about the shade of its cocoon. The cephalothorax is of the same color as the abdomen; in this respect differing from *caudata* which is black. The head also is not so much elevated as is that of *caudata*. The adult female is three-eighths of an inch in length, and the only specimen of a male obtained is about three-sixteenths of an inch in length, although it is an immature specimen apparently lacking one moult of maturity. The most striking characteristic of the female spider is that the conical prolongation of the abdomen which marks the genus is distinctly cleft at the apex, giving it thus the appearance of the tail of certain fishes and birds, and for this reason it is named *Cyrtophora bifurca*. In this respect it decidedly differs from *caudata* whose apex is without a cleft. On the basal part of the dorsum of the abdomen are four conical processes arranged two on each side symmetrically, the hind pair being the smaller. These processes are soft resembling thus the like cones on the abdomens of the Angulata group of Epeiroids rather than the tough spinous processes upon *Acrosoma* and *Gasteracantha*. The spinnerets are surrounded by a broad white band which extends along the venter as far as the epigynum. The lip is sharply triangular, and the mandibles cut square across. In both these respects the species differs from *caudata*. The eyes of the front row are about equally separated from each other, although the interval between the mid-fronts is slightly less. The side eyes are barely separated from each other. The male specimen alluded to above, Dr. McCook could not certainly affirm to belong to this spider. It resembles *caudata* in its general appearance, the abdomen lacking the bifurcation which marks the female, and the cephalothorax being of a jet black.

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NOVEMBER 29.

The President, DR. LEIDY, in the chair.

Twenty-nine persons present,

The following were elected members:—

Messrs Garvin W. Hart, Charles A. Davis, Rev. R. H. Fulton, D.D. and Miss Mary E. Shively.

Orville A. Derby of Rio Janeiro was elected a correspondent.

The following were ordered to be printed:—



McCook, H C. 1887. "Note on *Cyrtophora bifurca* (n. sp.) and her cocoons, a new orb-weaving spider." *Proceedings of the Academy of Natural Sciences of Philadelphia* 1887, 342–343.

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