

REPORTS FROM THE INDIANA UNIVERSITY BIO-
 LOGICAL STATION AT WINONA LAKE.*

a. THE INDIVIDUALITY OF THE MATERNAL AND PATERNAL CHROMO-
 SOMES IN THE HYBRID BETWEEN *FUNDULUS HETEROCLITUS* AND
MENIDIA NOTATA.

W. J. MOENKHAUS.

[Abstract.]

In the hybrid between *Fundulus heteroclitus* and *Menidia notata* it is possible to distinguish the chromosomes that come from each parent. The chromosomes of *Fundulus heteroclitus* are long and straight while those of *Menidia notata* are short and slightly curved. This difference they maintain in the hybrids. They can best be distinguished during the anaphases. They can not be distinguished in the resting stage. During the first two cleavages each kind of chromosome remains grouped bilaterally upon the spindle. After the second cleavage they become mingled upon the spindle, but the two kinds still retain their individuality and can readily be identified. They have been thus traced to a late cleavage stage, as far as was attempted.

b. AN EXTRA PAIR OF APPENDAGES MODIFIED FOR COPULATORY
 PURPOSES IN *CAMBARUS VIRIDIS*.

W. J. MOENKHAUS.

Among the crayfishes used for dissection in the laboratory we came upon a specimen that had three pairs of abdominal appendages modified for copulatory purposes. This is the first time I have ever seen such abnormality and, furthermore, have not been able to find mention in literature of a similar occurrence. I have, therefore, thought it worth while to make a note of it.

The specimen belonged to the species *viridis* and was about three inches in length. Unfortunately the specimen had been so much mu-

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tilated in the dissection by the time the abnormality was noticed that it was out of the question to get a photograph of all the appendages in position. I, therefore, preserved the appendages and give herewith a drawing of the posterior view of both.

The first and second pairs of appendages were modified in the usual way and in no way differed from the corresponding appendages in the normal males of the same species. The additionally modified third pair



Fig. 1.



Fig. 2.

resemble in plan almost exactly the second pair. The exopod and the segmented flabellum of the endopod are much less reduced and much more extensively provided with feathered setae than the second pair. They are of about the same size and in position converge and fit against the second pair of appendages much in the same manner that these do against the first. Whether they were in any way functional I am, of course, unable to say.

c. DESCRIPTION OF A NEW SPECIES OF DARTER FROM TIPPECANOE LAKE.

W. J. MOENKHAUS.

During the summer of 1896, while collecting large quantities of *Percina caprodes* in Tippecanoe Lake, a single large specimen of darter was taken which could not be identified with any described species. I thought then and since, until recently, that it might be a hybrid between *Percina caprodes* and *Hadropterus aspro* because of evident intermediate characters. After holding the specimen for six years with the hope that other specimens might be taken, I last year published a note in the Proceedings of the Indiana Academy* under the title "An Aberrant Etheostoma" in

* For 1902, pp. 115-116.