

## DEVELOPMENT OF SEXUAL ORGANS IN CYMOTOGASTER. BY C. H. EIGENMANN.

[ABSTRACT.]

Reproductive cells are segregated very early before any protovertebrae are formed, and the embryo is no more than .3 mm. in diameter. About a dozen cells are present at this early time. These migrate backward with the growth of the embryo, but do not share in the general development. When the larva has attained a length of 7 mm. the cells begin to divide, and by the time the larva has reached a length of 8 mm. all have undergone division, so that about 24 cells are present. These are arranged in a V shaped area. The arms are formed by the folds in the peritoneum in which the sex cells lie.

The sexes become differentiated when the larvae have reached 10 mm. The differentiation becomes apparent in the general shape of the reproductive glands before any difference is noted in the reproductive cells.

At 20 mm. the grouping of the cells has become characteristic of the sexes.

FORMATION OF OVARIAN CAVITY.—The reproductive cells never lose their identity, they are never transformed into other tissue, and no other cells are ever transformed into reproductive cells.

## THE VEGETATION HOUSE AS AN AID IN RESEARCH. BY J. C. ARTHUR.

[ABSTRACT.]

The general construction and purpose of a vegetation house were described, and examples of work performed during the season of 1894 in the one at Purdue university were given in illustration of what may be accomplished when such facilities are available. A vegetation house is essentially a structure to protect growing plants from wind, rain, extremes of cold, and other accidents to which they are subject in the open field. The plants are grown in suitable pots or beds mounted upon trucks, which run on wooden or iron tracks. The plants are only run into the vegetation house when requiring protection, and at other times are left in the open. Although the house is a glass structure, it has no heating arrangements, and is chiefly used during the summer season.

Interesting results obtained by feeding oats and purslane with variable amounts of potash, were explained, and by growing potatoes with a greater or less supply of water, and some other experiments. Photographs accompanied the paper. Some possibilities in the study of the physiology of plants were outlined.

## MASS AND MOLECULAR MOTION. BY M. N. EIROD.