respect their history in the *Drosophila* embryo, up to a late period of development, is completely in accordance with the classical view maintained by Van Beneden, Boveri, Flemming, Heidenhain, Meves and other early leaders of cytology.

We are convinced that the phenomena in *Drosophila* are in no way exceptional in amphiastral mitosis save in respect to the clearness and profusion of the evidence; and we are confident that intensive and impartial study, using an adequate technique, will demonstrate essentially similar conditions in amphiastral mitoses generally.

The foregoing observations will later be set forth in full, with suitable figures, by the junior author.

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A NEW POSTERIOR PITUITARY PREPARATION

DURING July and August, 1930, the following method was developed and tested. The resulting material proved to be so different in chemical and pharmacological properties, that a preliminary report was given at the chemistry section of the Cleveland A. A. A. S. meeting.

Fresh beef posterior pituitary lobes are finely ground with a small quantity of sand and transferred to a flask containing about ten volumes of neutral high grade acetone. It is placed in the ice-box and occasionally shaken. New fresh portions of glands are added as obtained from slaughter house, keeping the same acetone ratio. When enough has been obtained to make a convenient batch (100 grams) the material is filtered and fresh acetone is added, shaken frequently and kept at ice-box temperature. Again it is filtered, washed with acetone and once more suspended in 10 volumes of acetone, shaken and cooled as before. The residue from this last acetone treatment is nearly white and dry. Three treatments (each at least 24 hours) with the best grade ether are now used, the procedure being the same as for acetone. Then three additional treatments with high grade petroleum ether. After the last petroleum ether extraction the material is spread out and the occluded solvent evaporated, then returned to the original flask and extracted with ten volumes of a mixture containing methyl alcohol, 70 per cent.; water, 25 per cent.; acetic acid, 5 per cent. This treatment is much like the preceding ones. The above process is repeated two times more. These three acid alcohol extracts contain the active material. They are evaporated in shallow dishes at low temperature with the aid of a fan. The residue is dissolved in a small volume of acid alcohol and precipitated with acetone and ether. The solution and precipitation is repeated. It is further purified by solution in water containing enough pyridin to dissolve the material and then precipitated with acetone and ether. The yield is very satisfactory.

The use of acetic acid in the above extracting medium is the least objectionable, though the other acids in low concentration are also very effective. In place of methyl alcohol, ethyl or propyl can be used. Sixty per cent. acetone and acetic acid is also a very satisfactory solvent.

The final product is not very soluble in distilled water, though moderately soluble in boiled distilled water. It has a rather sharp iso-electric point at about pH 5. It easily dissolves in dilute acids or dilute alkalies. It is precipitated by copper and zinc salts, by many of the acid protein precipitants and by salting out with ammonium chloride and other salts. The biuret is pale violet. Trypsin, as well as strong acids, destroy the activity and hydrolyze the substance. It is unstable in weak alkali. It seems to be a polypeptide. It contains labile sulfur. It gives strong reaction on blood vessels and isolated uterus, but has no effect on frogs' melanofores.

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THE OCCURRENCE OF FILTERABLE FORMS OF BACTERIA IN NATURE

FOR a number of years many bacteriologists have refused to follow the conventional view that the bacteria are limited in their morphology to the typical cells with which we are familiar in the laboratory. Increasing evidence of pleomorphism and life cycles, which may include ultramicroscopic and filterable forms, has accumulated. Throughout the world the number of workers capitulating to the more "radical" school of bacteriologists has increased during recent years. In America, among others, have been such outstanding investigators as Drs. Mellon, Löhnis, Henrici, Rosenow, Hadley and Alice Evans, who have vigorously supported the newer view in one or more of its several aspects.

To Hadley and his coworkers belongs the honor of having proved beyond reasonable doubt the existence of filterable forms of several of the well-known bacteria. A careful reading of the work of Hadley, Delves and Klimek[1] should be sufficient to convince fair-minded skeptics.

While knowledge of "filterable viruses" as the causes of certain diseases is old, our knowledge of such organisms has been limited to a few obligate parasites. That there exist free-living saprophytes of such a nature has been denied. Thus Barthel and Bengtsson,[2] in a work addressed specifically to this problem, found no evidence of filterable microorganisms in soil. From the work of Hadley and his asso-

[1] *J. Infect. Diseases*, 48, 1–153, 1931.
[2] Meddelande No. 341, Centralanstalten försöks. jordbruk., Bakteriologiska avdelningen No. 47 (1928).