

matic figure in mitosis, with special reference to the morphology and cycle of the centrosome.

Preparation I. — Metaphase of the first polar mitosis with two centrioles at each pole (egg of *Cerebratulus*).

Preparation II. — Sperm nucleus with sperm aster, in which each daughter centriole has acquired a new system of rays (egg of *Cerebratulus*).

Preparation III. — Anaphase of the first cleavage mitosis, showing two centrioles in each centrosome (egg of *Cerebratulus*).

Preparation IV. — Telophase of the first cleavage mitosis, showing typical centrosomes (egg of *Ascaris*, Professor Wilson's preparation).

Preparation V. — Mitosis without chromosomes in a late blastula (egg of *Asterias*, unfertilized and etherized). In one of the blastomeres the aster is dividing, forming a typical central spindle, but devoid of chromosomes.

Preparation VI. — Cytasters (egg of *Asterias*, unfertilized and etherized). Many cytasters are found in the cytoplasm, some dividing, some forming synthetic triasters.

Preparation VII. — Cytasters (egg of *Cerebratulus*, unfertilized and treated with a solution of calcium chlorid). Many cytasters have appeared, the first polar mitosis being disturbed.

**46. "The influence of subcutaneous injections and of instillations of adrenalin upon the pupils of frogs,"** with demonstrations: **S. J. MELTZER** and **CLARA MELTZER AUER**.

Many observers have established the fact that subcutaneous injections as well as instillations of adrenalin exert no influence upon the width of the pupil in normal mammals. In a series of experiments published recently by the authors of this report it was shown that from 24 hours to 48 hours after the removal of the superior cervical ganglion, a subcutaneous injection or an instillation of adrenalin caused considerable dilation of the pupil, which lasted an hour or longer.

In the present communication the authors report that in frogs a subcutaneous injection or an instillation of adrenalin into the conjunctival sac causes an unmistakable dilation of the pupils of a normal animal. The dilation lasts a good deal longer than was ever observed in mammals even after removal of the ganglion ;

after instillation some dilation may be perceptible as long as 36 hours. The maximum dilation may even continue as long as 12 hours.

When the cord is severed just below the medulla oblongata, the pupils usually become small and ellipsoid in shape. A subcutaneous injection causes them to become wide and round. Instillation has the same effect. Finally, the effect of instillation can be well shown also on the excised eyes, even when the adrenalin is applied some hours after excision, provided the eyes are kept moist. The experiments were demonstrated.