after fusion of the sperm-aster, a single 'centrosome' is found at the center of each aster. In later stages the center of the aster is occupied by a well-defined reticulated sphere, somewhat smaller than is the case after strong sublimate-acetic, and containing a group of distinct intensely shining granules (10–20 in number). The central sphere often has a sharp boundary and gives almost the appearance of a minute cell nucleus. Whether this appearance is normal remains to be seen, but the possibility must be born in mind that even related forms may differ considerably in respect to the morphology of the centrosome and centrosphere.

Observations upon Fertilization in Gasteropods. H. E. CRAMPTON, JR.

The observations were made upon a species of Doris collected on the Pacific coast and upon a species of Bulla from Wood's Holl. A complete confirmation was obtained of the accounts of fertilization given by Wilson and Matthews, Boveri and Hill upon sea urchins, Mead upon *Chætopterus*, Kostanecki and Wierjeroski upon *Physa*. The sperm nucleus is preceded by the divided centrosome, although an aster is not formed till after the union of the germ nuclei. The first polar spindle of the egg has a double centrosome at the poles, while the second maturation spindle bears but a single centrosome at the pole. These, however, are very large, and the one remaining in the egg finally breaks up, the centrosomes of the cleavage spindle being derived from the sperm. The germ nuclei never fuse, but lie in very close contact to one another.

The Maturation and Fertilization of the Eggs of Limax. E. F. BYRNES.

After leaving the ovo-testis, the eggs of *Limax agrestis* are stored in the albuminous gland, where they are fertilized prior to the formation of the capsules.

By the time the egg reaches the albuminous gland the first polar spindle is already formed and occupies the middle of the egg (the stage of the 'archiamphiaster').

The center of the egg-astrosphere appears under widely different forms. In the stage of the archiamphiaster it appears as a central group of granules surrounded by two sharply outlined, homogeneous envelopes, an inner colorless envelope and an outer deeply staining one.

At the time of the formation of the first and second polar bodies the center of the astrosphere appears as a deeply staining center, surrounded by an almost colorless envelope from which the astral rays diverge.

After the extrusion of the first polar body it appears as a uniform finely granular sphere in which two tiny centrosomes are often distinguishable.

After the extrusion of the second polar body the center of the aster appears as a large, clear, spherical structure, traversed by a loose reticulum which connects, at the center of the sphere, with a large, deeply staining body. As the sphere increases in size the central body fades out, giving place to a reticulum which occupies the entire sphere. The egg-astrosphere then disappears.

The sperm enters the egg at the lower pole. As the sperm nucleus approaches the upper pole it keeps pace with the growth of the egg nucleus.

The centrosome of the segmenting egg enters the egg with the sperm, but the time of the appearance of the sperm-asters is variable.

1. *A New Microtome.*
2. *Laboratory Methods.* C. S. MINOT.

A new microtome was exhibited and its mode of working described; methods for polishing the edges of microtome knives, for storing pamphlets, and other matters of laboratory administration, were presented.