found several well-marked forms of epidermal organs, one of which is characterized by the presence of intracellular sacks or ampullæ leading into anastomosing canals. Such organs contain both sensory and glandular cells, but in the gland cells alone are found the intracellular sacks.

These organs present several well-marked conditions corresponding with different stages of functional activity. One suggestive condition shows the following details of structure. In the upper part of each gland cell are two sacks lying one within the other and separated by a considerable space. This intervening space is traversed by many delicate filaments connecting the walls of the two sacks. The inner sack becomes continuous at its outer end, with a narrow canal, while the outer sack is continuous with a sheath surrounding this canal. The several canals unite to form larger canals, and there finally results one main duct opening to the exterior. This duct is surrounded by a broad sheath, which is a continuation of the sheaths enveloping the ampullæ and primary canals. By the side of the main duct, within its enveloping sheath, is a large nucleus surrounded by a clear area, which probably represents a vacuole. Regarding this nucleus the ampullæ, canals and sheaths the following hypothesis is offered. The sheath of the main duct and its branches, including the radial vesicles surrounding the ampullæ, together constitute a cell of very irregular shape, a cell which in form may be compared to a bunch of grapes with its stem. This single cell contains the main duct, its branches and their terminal ampullæ, and itself reaches down flask-shaped processes containing the ampullæ, which are embedded in the outer ends of the surrounding gland cells. The walls of the outer sacks, and their continuations as the outer wall of the sheath, represent the boundary of this highly differentiated cell.

*The Development of the Adhesive Organ of Amia.* Jacob Reighard. (Presented for Miss Jessie Phelps.)

The adhesive organ of *Amia* consists of a pair of semicircular or sausage-shaped ridges forming together an incomplete ring on the end of the snout of the young larva. Each ridge is a row of six to eight epithelial cups which open on the surface of the snout. Their cells secrete a mucus by means of which the animal attaches itself.

The organ is formed in a very early stage as a diverticulum of the fore gut. This diverticulum subsequently divides into two, each of which continues to communicate for a time with the cavity of the foregut.

Each of the two diverticula later separates from the foregut, becomes elongated and curved into the form of a semicircle and divides into from six to eight closed vesicles. The vesicles finally open to the exterior and are thus converted into cups.

After being functionally active for a time the organ is pushed beneath the surface by the thickening ectoblast, becomes infiltrated with leucocytes, and finally disappears (larvæ of 20 to 25 mm.) without leaving any trace behind it.

The integumentary sense organs appear in the neighboring ectoblast, quite independently of the adhesive organ.

Dean's comparison of the cups of the adhesive organ with the integumentary sense organs is thus seen to be untenable.

*Notes on Loxosoma Davenporti.* W. S. Nickerson.

A pair of flask-shaped glandular organs is commonly present in the American species of *Loxosoma*, attached by their broader rounded ends nearly opposite the lower end of the stomach, one upon each side. Each consists of a central core of 4 or 5 glandular cells and a peripheral layer of flattened epithelial cells continuous with the epithelial body-covering of the animal. The gland