3-1-3. Fine Structural Analysis of the Silk Glands in the Funnel-web Spider, *Agelena limbata*

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The histological and fine structural characteristics of the silk glands in the adult funnel-web spider, *Agelena limbata,* were analysed with the light and electron microscopy. *Agelena limbata* has four kind of silk glands which are ampullate, tubuliform, pyriform, and aciniform gland. Each type of the silk gland was consisted of typical duct, secretory sac and tail regions respectively. The cuticle that lines the duct has the structure of an advanced hollow fiber dialysis membrane. The apical surfaces of the glandular epithelial cells are covered with numerous microvilli. Glandular epithelium of the secretory sac was composed of simple columnar epithelial cells which deposit secretory products into the lumen. The secretory granules were aggregated in the cytoplasm of the epithelial cell and excreted to the central lumen by the mechanism of apocrine secretion. We have presented evidence that the thread is drawn from a previously orientated liquid crystalline feedstock in the lumen of silk gland.