Harrod, M.J.E. and C.D. Kastritsis.
University of Texas (Southwestern) Medical School at Dallas. Nuclear inclusions in the salivary gland cells of D. pseuddobscura.

During an investigation of ultrastructural changes in the salivary glands of developing Drosophila pseudoobscura larvae we found certain nuclear inclusions. These occur in many of the cells examined both during the late third instar and the spiracle eversion stages.

The inclusions usually are found in contact with the nuclear envelope (Fig. 1 & 2) and frequently in conjunction with a bleb of that envelope (Fig. 1). They appear to be membrane-bound and to consist of from one to many discreet oval-shaped (also membrane-bound) bodies approximately 1600Å to 2500Å in length. The membrane surrounding the inclusion is frequently covered by an extension of the internal dense lamella of the inner membrane of the nuclear envelope (Fig. 1); this lamella is not seen to extend into the observed nuclear blebs. This

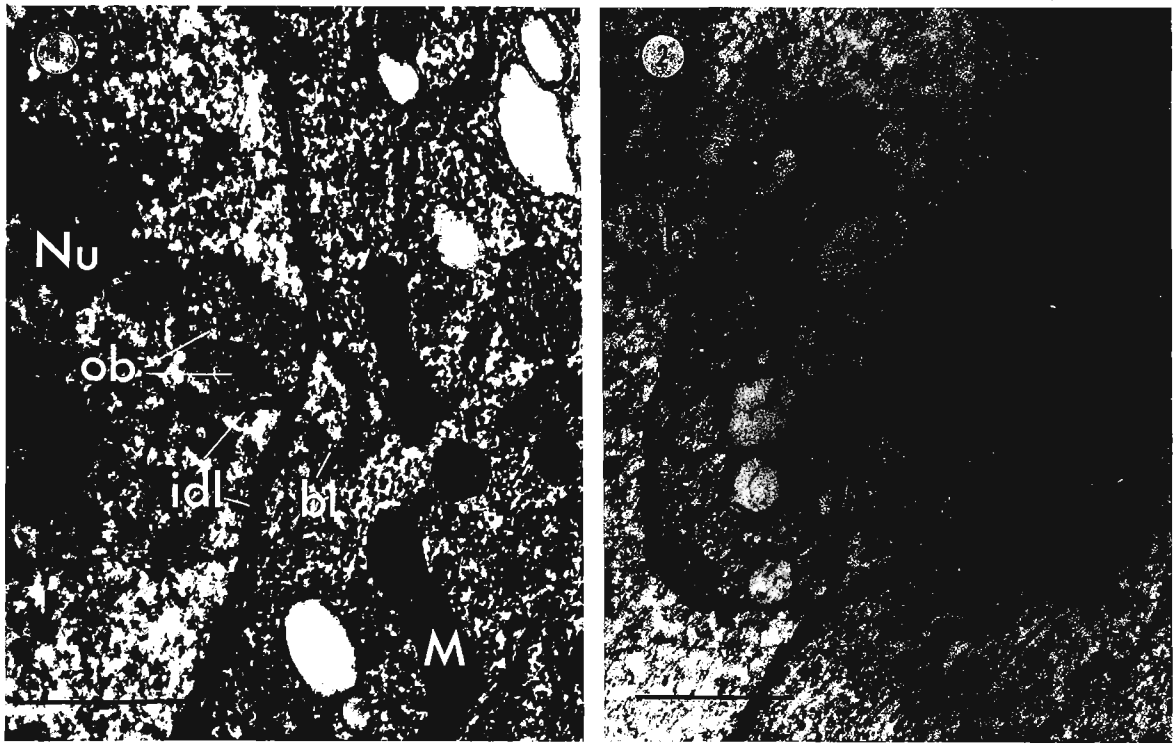

Fig. 1, 2. Electron micrographs of D. pseudoobscura salivary gland cells. Nucleus (Nu); internal dense lamella (idl); oval bodies (ob); nuclear bleb (bl); mitochondria (M). Bars represent 0.5μ in each case.

observation extends the list of species in which such a dense lamella is found to include D. pseudoobscura (Stevens and André, 1969). In a number of sections an oval body appears to be entering the nuclear bleb, possibly for extrusion into the cytoplasm; however, no unequivocal findings have been made of such bodies within the cytoplasm at any distance from the nuclear envelope.

Whether the nuclear inclusions observed are parasitic organisms or the result of some normal or abnormal cellular process in D. pseuddobscura is unknown at this time. Investigation will continue with earlier and later stages of larvae and an effort will be made to correlate these findings with the present data in an attempt to explain the origin and significance of the inclusion bodies.

Work supported in part by grant GM 16736-02 from the National Institutes of Health.

References: Stevens, B.J. and J. André, 1969 The Nuclear Envelope in The Handbook of Molecular Cytology. North-Holland Publishing Co., Amsterdam & London.