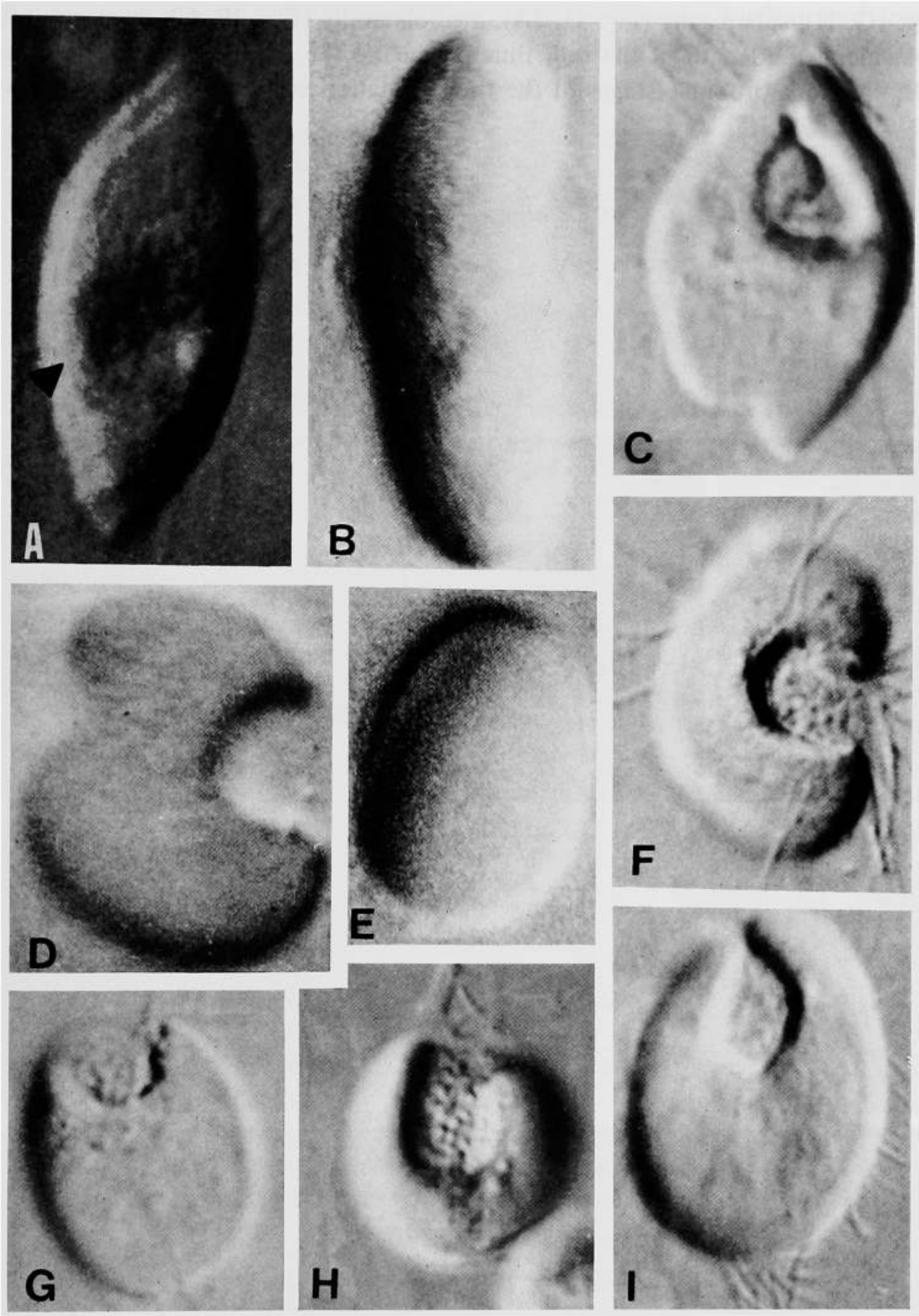
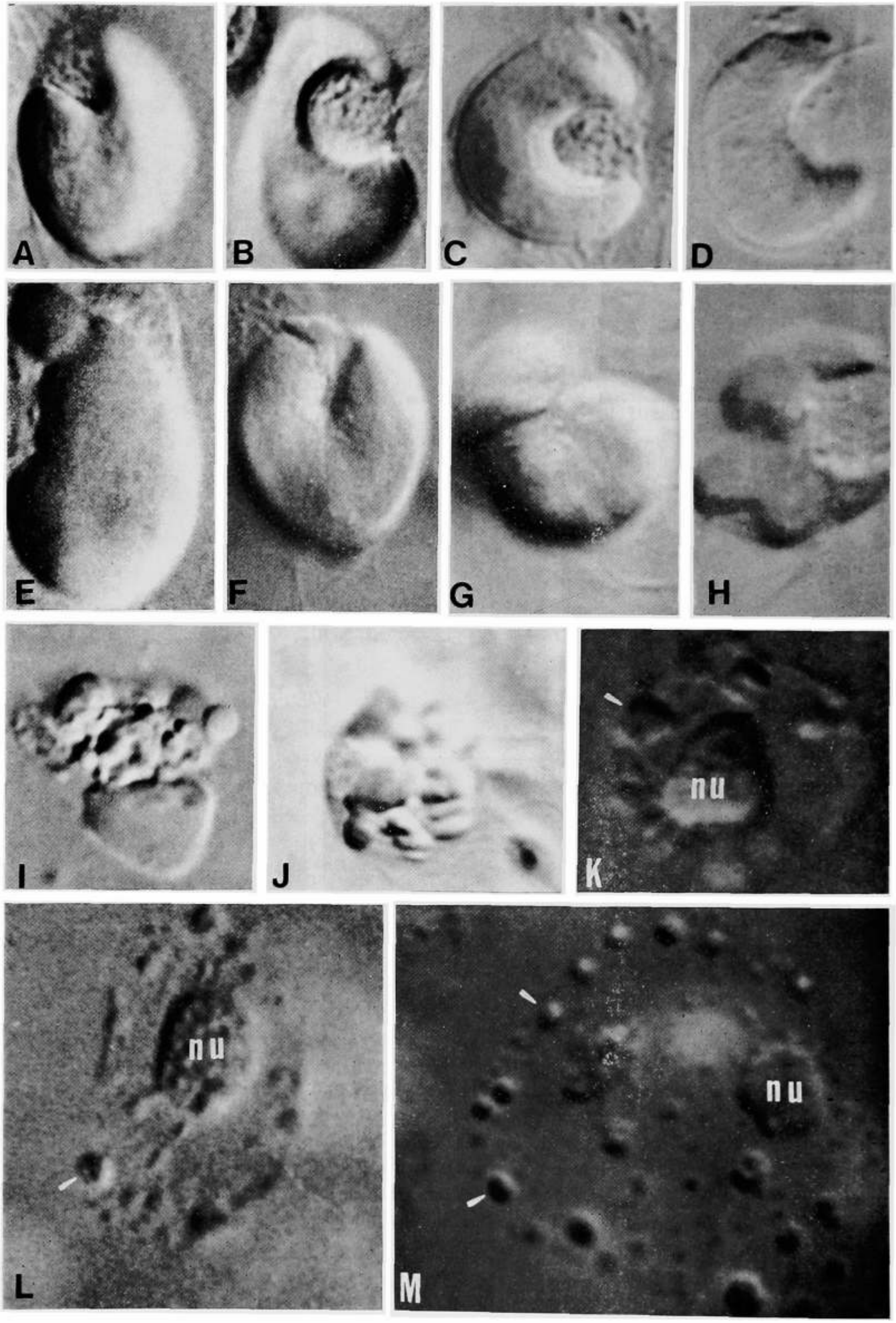



Fig. 1. This shows various polymorphic OEs and apical and subapical nuclear extrusion: A, spindle-shaped OE. Note outline of inclusion body (arrowhead). ×1,800. B, elongated OE. ×1,900. C, barrel-shaped OE. ×1,700. D, dumb-bell-shaped OE. ×1,700. E, oval OE. ×1,600. F, reniform OE. Note cytoplasmic strands. ×1,600. G, oval OE showing apical nuclear extrusion. ×1,400. H, spherical OE showing apical nuclear extrusion. ×1,300. I, oval OE showing initial stage of subapical nuclear extrusion. ×1,700.

(Fig. 1G, H), subapically (Fig. 1I, 2A), mediolaterally (Fig. 2B, C), or at any other point along the length of the cell, thus producing the various forms of anucleate cells. Various probable stages of the transformation of the so-called crescent cell



from an oval cell with a central nucleus to the penultimate nuclear and terminal anuclear stages have been reconstructed in Figs. 1H, I, 2A, D. In two instances, I was able to observe all these stages in single monolayer, and in Giemsa-stained film preparations from single cockroaches. How soon after nuclear extrusion the

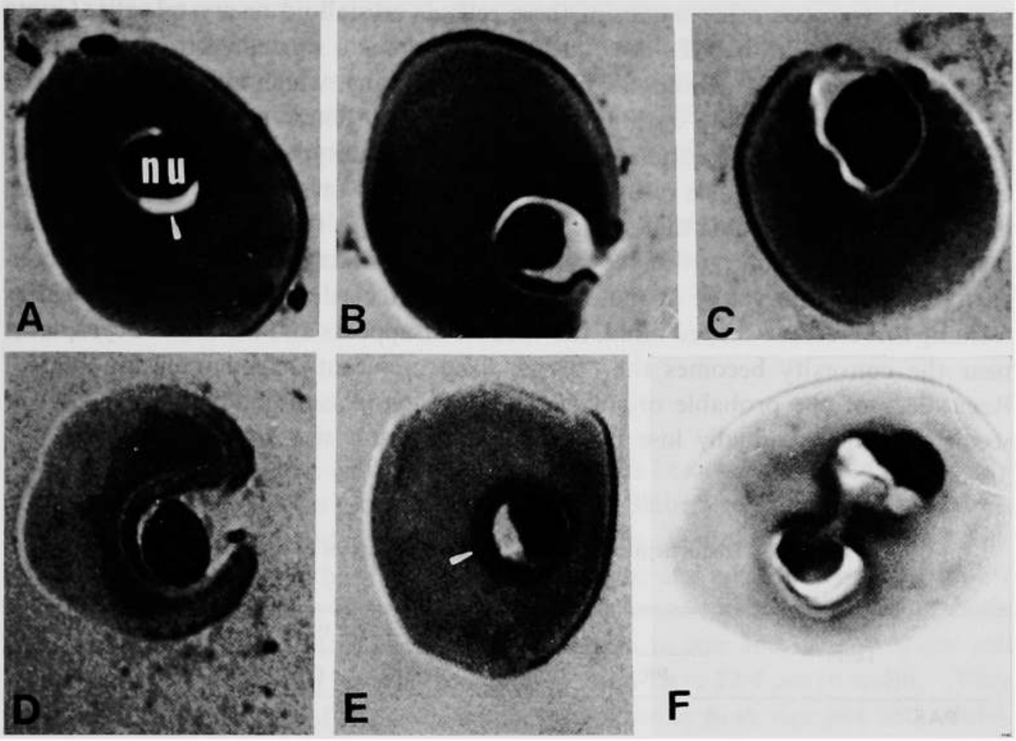



Fig. 3. Giemsa-stained preparations: A, OE with inclusion body filling cell. Note perinuclear space (arrowhead) and density of inclusion body. ×1,600. B, OE with subapical nucleus in the process of extrusion. Note reduction in the density and size of inclusion body and increase in the perinuclear space. ×1,600. C, later stage of B. ×1,600. D, nuclear extrusion about to occur. Note ruptured cell wall and reduction in the size of the inclusion body. ×1,600. E, OE in which the perinuclear inclusion body is considerably reduced prior to nuclear extrusion. ×1,500. F, OE with mitotic nucleus. ×1,600.

cell disintegrates is uncertain, although it perhaps depends on the physiological state of the cockroach.

The anucleate (Figs. 1A, B, D, E, 2D, E) OEs are the most common hemocytes in hemolymph samples and were probably responsible in influencing Ritter (1965)

Fig. 2. This shows various types of nuclear extrusion and disintegration of OEs and COs: A, oval OE showing later stage of subapical nuclear extrusion. ×1,400. B, oval OE showing mediolateral nuclear extrusion. ×1,600. C, spherical OE showing mediolateral nuclear extrusion. ×1,400. D, crescent-shaped OE after nuclear extrusion. ×1,500. E–J: stages in the disintegration of OEs. E, note apical disintegrating fragment. ×1,800. F, apical disintegration. ×1,400. G, OE splitting across entire width. ×1,400. H, a crescent-shaped OE disintegrating. ×1,400. I, advanced stage of disintegration. ×1,300. J, same as I. ×1,300. K, coagulocyte showing initial stage of disintegration. Note presence of peripheral cysts (arrowhead) and central nucleus (nu). ×1,600. L, coagulocyte showing a later stage of disintegration. ×1,800. M, coagulocyte showing the terminal stage of disintegration. ×1,800.