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BRIEF NOTE

SURFACE TOPOGRAPHY OF *HAMMERSCHMIDTIELLA DIESINGI* (NEMATODA: OXYUROIDEA) EGGS USING SCANNING ELECTRON MICROSCOPE[1]

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The structure of the egg of *Hammerschmidtiella diesingi* has been mentioned by Finney (1972) and described by Wharton (1975, 1979). This research note is intended to add some new information on the topography of *H. diesingi* egg. The eggs were laid in "cold" Ringer's solution by gravid females of *H. diesingi* collected from the hind gut of naturally infected American cockroach, *Periplaneta americana*. The eggs were washed in "cold" Ringer's solution several times and were then washed in acetic acid for about 30 s. The washed eggs were fixed in AFA and dehydrated in an ascending series ethyl alcohol dilution (50%–100%). The dehydrated specimens were then critical point dried from absolute ethyl alcohol with CO_2 in an Autosamdri-810 Critical Point Dryer. The dried specimens were mounted on double sticky tape on 13-mm diameter aluminum stubs, coated with gold utilizing a Technics Sputtering System, and examined with a Hitach S-500 SEM at accelerating voltage of 20 KV.

Wharton (1979) reported that the uterine layers of the egg shell of *H. diesingi* contain discrete spaces which open to the exterior via pores. At low magnification of SEM, the egg shell shows numerous pores on the surface (fig. 1). The egg shell of

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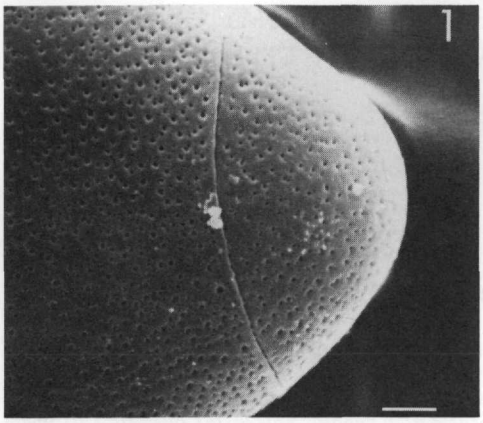

FIGURE 1. One end of the egg of *H. diesingi* shows the operculum. ×3,750.

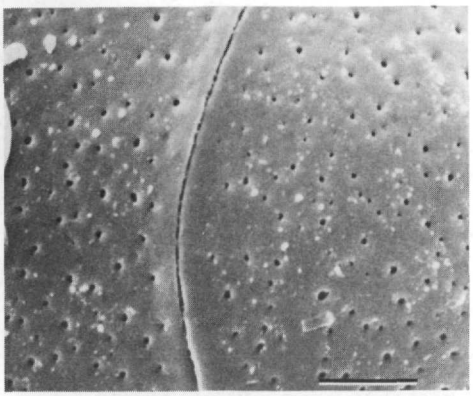

FIGURE 2. The surface structure at the junction between operculum and remainder of the shell. ×6,750.

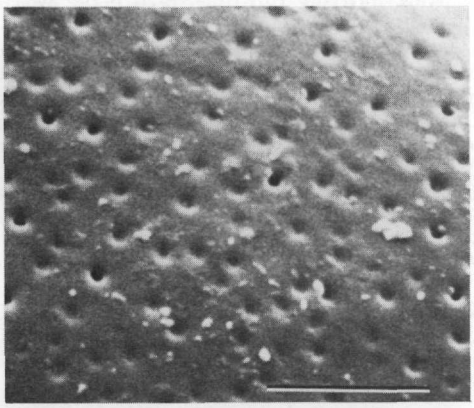

FIGURE 3. The concave pits distributed on the egg surface. ×11,250. All bars = 2 μm.

H. diesingi may be divided into two regions, the operculum and the major part of the egg shell. A groove separates the operculum from the remainder of the shell and two non-pore narrow zones located on each side of the groove (figs. 1 and 2). This suggests that the internal structure of the shell around the groove may lack the uterine layer space. However, transmission electron microscopic studies will be necessary to confirm this speculation. Our photographs show that, in addition to the pores mentioned by Wharton, there are many concave shaped pits irregularly distributed on the egg surface (fig. 3). The concave pits are approximately equal in diameter, but they are more numerous than the pores. The concave pits cannot be easily seen with lower magnification due to their lack of contrast and their small size. The pore diameter is not uniform and some are five to eight times as large as others. This suggests that the volume of space behind the pore may also vary. According to Wharton (1979), when an egg is further developed in the uterus, the internal uterine layer is formed beneath the external uterine layer from the granular secretions of the uterine cells. Later, the material of the internal uterine layer polymerizes forming struts and spaces which open to the exterior via an opening in the external uterine layer. The process of forming spaces must occur at unequal rates in different regions of the egg shell. In some regions of the egg shell, large spaces are formed in the internal uterine layer which open to the outside, but in many other areas of the egg shell only slightly concave pits are formed. The operculum has a structure similar to the rest of egg shell.

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