The Identification of Amebae in Fecal Smears by Copper Sulphate and Formalin*

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A TWO PER CENT solution of copper sulphate served to demonstrate the essential characteristic of precystic and vegetative stages of *Endamoeba coli, E. histolytica, Iodamoeba bütschlii,* and a small series of *Endolimax nana.* The technique employed was similar to the routine smear method, excepting the substitution of copper sulphate for the usual physiological saline solution.

The copper sulphate was permitted to act upon the fecal material a short time before microscopical slide examination. In precystic and vegetative examples of *Endamoeba coli* and *E. histolytica* so treated, the chromatin band and karyosome were somewhat thicker than in similar specimens stained with iron hematoxylin.

Vegetative and precystic *Endamoeba coli* and *E. histolytica* after remaining in the solution for several weeks were still suitable for demonstration, though with increased exposure the chromatin band becomes still wider.

The comparative tests made suggest that copper sulphate is superior to D'Antoni's iodine for identification of precystic amebae, though various dilutions of copper sulphate proved useless for cysts.

A ten percent solution of formalin brings out the karyosomal structure of *E. coli* and *E. histolytica* cysts, devoid of color effects. Gentle heating of a small quantity of feces with the formalin in a container accelerates the reaction. The substance was not tried with other cysts. It is without value for the identification of trophic forms.

It is not advocated that copper sulphate and formalin replace standard solutions used for the determination of amebae; vegetative stages may no longer be present in samples delayed in delivery to the laboratory. Copper sulphate offers some promise in the rapid detection of precystic forms. Both copper sulphate and formalin are readily available at low cost and require little preparation. They possess greater stability than Donaldson's iodine, and at times they may be utilized in emergency.

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