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### Cultivation of *Entamoeba Histolytica* From a Hepatic Amoebic Abscess.

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Through the employment of Locke egg-serum medium for the culture of *Entamoeba histolytica* as used by Boeck and Drbohlav<sup>1</sup> and somewhat augmented by Dobell and Laidlaw,<sup>2</sup> the cultivation of this protozoa has now become of very practical service. Nearly all such isolations have been recovered from the intestinal tract of man. In many of the reported instances there exists considerable doubt as to the species of the cultivated amoeba. There is no question, however, that such microorganisms of the histolytica type have been cultivated, as many of the reports are by workers who are recognized authorities in this field and therefore well versed in the biological and morphological features recognized as differential and diagnostic for such species. Dobell<sup>3</sup> reports the cultivation of amoeba from different types of monkeys which he indicates are not to be differentiated from *Entamoeba histolytica* of man. This is of much importance in the consideration of the experimental transmission of this infection to such types of anthropoid animals.

The opportunity was recently presented of investigating a very typical instance of amoebic dysentery in man with a complicating amoebic abscess of the liver. At operation a specimen of pus-like material was removed from the hepatic lesion. Cultures and smear preparations of this specimen were made for ordinary bacteria and found negative. The subject died 24 hours after the operation and at autopsy the liver showed extensive destruction or so-called abscess formation. Examination of the fresh material scraped from the necrotic walls revealed many actively motile amoeba. Cultures of such material were prepared in Dobell's modification of the Boeck-Drbohlav medium and the amoeba grew freely in certain of the tubes. The culture has been carried for 5 months representing approximately 30 generations.

While the smears of material obtained at the time of operation as well as the cultures made on routine laboratory media showed no contaminating or pathogenic bacteria, the primary amoebic cultures

<sup>1</sup> Boeck, W. C., and Drbohlav, J., *Am. J. Hyg.*, 1925, v, 371.

<sup>2</sup> Dobell, C., and Laidlaw, P. P., *Parasitol.*, 1926, xviii, 283.

<sup>3</sup> Dobell, C., *Parasitol.*, 1927, xix, 288.

made post-mortem from the scrapings of the abscess wall showed definite contamination composed in greater part of members of the colon group. It is apparent that bacterial invasion had occurred post-mortem during the interval between death and the autopsy, which was approximately 12 hours.

The examination of the material from the scrapings of the liver wall showed many actively motile amoeba, the general features of which corresponded to those of the histolytica type. Smear preparations were made from this material and from the cultures and were stained by Heidenhain's iron haematoxylin method. A study of these stained specimens revealed the morphological features that have been regarded as indicative of the species histolytica.

The microscopic study of sections of the liver showed the characteristic autolysis of the hepatic structure as evidenced by massive necrosis with karyorhexis and karyolysis and few, if any, inflammatory cellular elements were present. Many amoeba were present in the tissue sections and were found especially at the margin of the necrotic and partially injured liver tissue.

While cultures from the intestinal tract may present a varied assortment of non-pathogenic amoeba, there seems but very remote likelihood of such condition occurring in the liver lesion wherein a definite clinical and pathological picture of amoebic infection exists, as was seen in the present instance.

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### Injection into the Rabbit of Cultures of *Entamoeba Histolytica*.

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Cultures of *Entamoeba histolytica* obtained from the stools of human cases of amoebic infection have been introduced into the intestinal tract of kittens by Cutler<sup>1</sup> and Boeck and Drbohlav<sup>2</sup> and the disease apparently successfully reproduced in this type of animal.

A rather generalized systemic invasion by *Entamoeba histolytica* has also been described by other workers, but there are many who question the cellular structures considered as amoeba in such re-

<sup>1</sup> Cutler, D. W., *J. Path. and Bact.*, 1918, xxii, 22.

<sup>2</sup> Boeck, W. C., and Drbohlav, J., *Am. J. Hyg.*, 1925, v, 371.