

ENDOLIMAX KUENENI N.SP., PARASITIC IN THE
INTESTINAL TRACT OF THE MONKEY
MACACUS CYNOMOLGUS.

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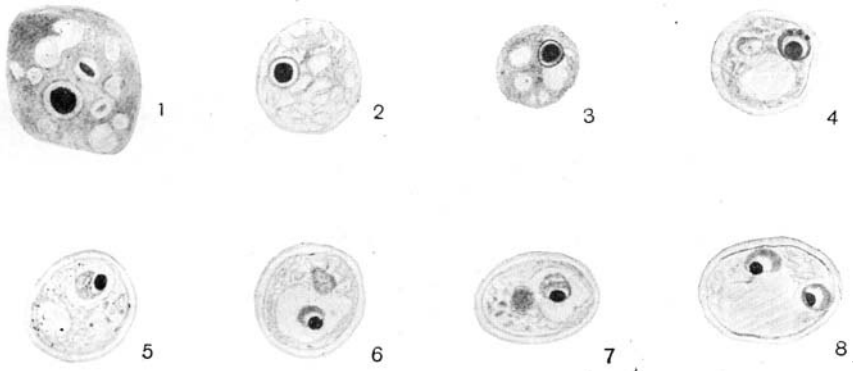
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(With Plate XXIII.)

THIS amoeba was found in the large intestine of a *Macacus cynomolgus*, that was killed because it suffered from paralysis of the hind legs and emaciation. The autopsy showed these symptoms to be dependent on a general tuberculosis, in which, besides many other organs, the spinal matter was involved. Microscopic examination of the intestinal contents revealed the presence of motile amoebae and cysts. Except some small tubercular foci in the serosa no pathological lesions could be detected in the intestine. Close examination of the mucosa failed to reveal any ulceration; blood and mucus were totally absent.

When alive, the motile amoebae did not show a distinct nucleus. The ectoplasm was only visible where pseudopodia were being formed and it was apparently absent in the resting amoeba. The endoplasm was vacuolated, some vacuoles containing small food-particles, mostly bacteria. The amoebae measured 7–12 μ when rounded. The living cysts closely resembled iodine-cysts as described by Wenyon and O'Connor (1917). When the cysts were treated with Weigert's iodine solution, the resemblance with iodine-cysts was emphasised by the appearance of a dark reddish brown stained vacuole measuring $\frac{1}{3}$ – $\frac{2}{3}$ of the cyst's diameter. Moreover, just as in iodine-cysts, Weigert's solution failed to produce a clear nuclear picture. The diameter of the cysts varied between 7 and 10 μ ; they were round or oval-shaped.

On staining with Delafield's haematoxyline or according to Heidenhain's method as modified by Brug (1919), the amoebae showed the nuclear structure which Kuenen and Swellengrebel (1917) consider to be characteristic for the genus "*Endolimax*" (Plate XXIII, Figs. 1–3). The resemblance of the cysts still held good in stained films. The great majority of the cysts from the monkey were mononuclear, binucleate cysts were very rare (Fig. 8). The nucleus consisted of a darkly staining, large, homogeneous looking, excentrically situated, round caryosome, on one side surrounded by a crescent-shaped, less intensely coloured mass. The latter showed a granular structure more distinctly in



Endolimax kueneni ($\times 1500$).

- Fig. 1. Amoeboid form, Delafield's haematoxylin.
Figs. 2, 3. The same, iron haematoxylin.
Fig. 4. Cyst, Delafield's haematoxylin.
Figs. 5-7. Cysts, iron haematoxylin.
Fig. 8. Cyst with two nuclei, iron haematoxylin.

Delafield preparations (Fig. 4) than in Heidenhain-stained films (Fig. 5). Caryosome and crescent were separated by a narrow clearly stained area. The iodophil vacuole appeared as an empty area. The cysts had a double contour, the outer limit of the cyst-wall being visible as a faintly coloured line.

The stained cyst almost always showed a structure which is absent in human iodine cysts. In the protoplasm there occurred a sharply limited area, round or somewhat irregularly shaped, whose periphery stained more darkly than the surrounding protoplasm whilst the centre stained like the protoplasm. (Plate XXIII, Figs. 4, 6). In the minority of the cysts this structure stained homogeneously, without a clear centre (Fig. 7).

But for this darkly staining protoplasmic area in the cysts from the monkey's intestine these might be considered identical with the iodine-cysts of human origin. The constant presence of the darkly staining area in the monkey's parasite and its absence in the human parasite, suffices to differentiate these two amoebae. I therefore regard the former as a separate species, for which I propose the name *Endolimax kueneni*.

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