microscope, *i.e.*, before extensive drying of the medium has occurred. The characters and appearance of all colonies investigated were profoundly modified by a change in this variable. Marked variation from controls over water occurs with the solutions used having a water vapor tension of 75 to 85 per cent. relative humidity, thus showing that a relatively slight departure from saturated conditions is of considerable importance in bacterial surface cultures.

It might be added that the simple device above described serves excellently for anaërobic plate cultures, with alkaline pyrogallate solution in place of the dehydrating solutions, dextrose-methylene blue media being easily decolorized and remaining so.

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Councilmania lafleuri, a new amœba of the human intestine.

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There exists some confusion and uncertainty among investigators of human intestinal amœbæ as to certain features of structure and activities of the non-pathogenic *Endamœba coli* (Loesch) Schaudinn. The points in debate are its habit of ingesting red blood corpuscles, its mobility in the free state, the existence of more than one type of cyst, the structure and location of the karyosome, the presence of cysts with an irregular number of nuclei (other than 2, 4, 8, 16), and the escape of amœbulæ from the cysts in fæces.

We believe these questions have arisen from the confusion hitherto by investigators, of two species, *Endamœba coli* and a new one, generically distinct, which we designate as *Councilmania*

lafleuri in honor of the two investigators who first clearly demonstrated the pathogenicity of the amœba which they called *Amœba dysenteriæ* and which Schaudinn, in ignorance of their work, later named *Entamœba histolytica*.

This new amœba was found by us in stools wholly free from *Endamœba dysenteriæ*, especially in blood and mucus strands, during sixteen weeks almost continuous daily examinations. It was present in large numbers on every day but three, and free stages were obtained in liquid stools, especially in mucus, and strands of cellular tissue therein. Continued intestinal disturbance accompanied this case of infection which occurred in a returned soldier from overseas who had been four months in the hospital in France with dysentery and had had two treatments here for *Endamœba dysenteriæ*, with emetin bismuth iodide, the last with salvarsan treatment also. After the second treatment this amœba entirely disappeared. Five other cases of infection have been observed by us. Amœbæ which are probably *Councilmania* appear in the figures of Casagrandi and Barbagallo (1897), Prowazek (1911), Werner (in Prowazek's "Handbuch") (1911), Walker and Sellards (1913), Mathis and Mercier (1917), Clauri (1917), and possibly elsewhere. It is probably widely distributed as a human parasite.

In the free stage it has survived for five hours in the mobile condition in the thermos bottle. It is extraordinarily mobile, throws out perfectly hyaline, broadly rounded, single pseudopodia with expulsive suddenness and travels rapidly through obstacles. Its cytoplasm is gorged with food vacuoles including bacteria, and cysts of *Chilomastix*. In the mucus strands it was frequently filled with red blood corpuscles.

In the encysted stage it runs through 1-, 2-, 4-, and 8-cell stages. We have seen one 12-cell cyst. Most of the cysts, except in liquid stools, are in the 8-cell stage when discharged in the fæces.

The cysts are exceptionally thick-walled, are double-contoured, tend to be ellipsoidal or spheroidal rather than spherical, and range from 11 to 34 μ, generally 16–20 μ, in longest diameter. Some of the cysts are found to have a chromophile protoplasmic

ridge which eventually pierces the cyst wall and forms the avenue of escape of the small amœbulæ. This may occur in the fæces at the time of discharge or even later.

The structure of the nucleus differs from that in *E. coli*. The cysts are more difficult to stain. In the cysts the nuclear membrane is lightly encrusted with granular chromatin, the central karyosome is large, often asymmetrical or reniform, and in the prophase is broken up into more or less distinct granules. It is less often excentric than in *E. coli*. The interzonal area between the karysome and nuclear wall stains lightly, if at all, in iron hæmatoxylin. There are eight chromosomes at the metaphase, while *E. coli* has six. An intradesmose forms within the nucleus on the nuclear membrane at mitosis between the daughter centrosomes which form deeply stained massive polar caps.

The chromatoidal bodies are often massed in the early stages, are splinter-like or thread-like, and pointed, and are rarely found after the four-cell stage, except as rounding-up bodies. They show a greater tendency to mass than in *E. coli*.

The "glycogen" vacuole is present in the one to four-cell stages. It is spheroidal, central, and lobed as it disappears. It does not stain brown in iodine as in *E. coli*, though the cyst as a whole stains yellow. It does not give the typical glycogen reaction in Best's carmine. Otherwise in occurrence and behavior it resembles the glycogen body of *E. coli*.

As a result of bud formation and the discharge of amœbulæ one finds cysts with varying numbers of nuclei. We have seen from three to twelve. The latter number appears to result from nuclear multiplication during the period of escape of the amœbulæ. We have never seen this phenomenon of the ridge-like bud and the successive discharge of amœbulæ in *E. coli*. This budding of amœbulæ and the structure of the nucleus in the cysts distinguish *Councilmania* from *Endamœba* and *Endolimax*. *Councilmania* appears to be pathogenic, but more evidence is needed on this point. It occurs also in carriers.