

mentary test to bioassays depending on fatal dosage. The M. E. D. of ouabain is about 0.045 mg. per kilo.

Use of this method in bioassaying different tinctures and infusions of digitalis has given results, as good as, and better than the one-hour frog method. It has the following advantages over the official (U. S. P.) frog method, the cat method, and in fact, most bioassays; no operation or anesthesia is required, uniformity, simplicity, convenience, economy of time and material, ease of application, the index is about therapeutic, while all other methods depend on fatal dosage and the accuracy appears to be equal to that of any method. Provisionally it appears that standardization of pigeons will not be necessary. However, the influence of various factors and further details and possibilities of the method are being investigated.

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The occurrence of cysts of *Councilmania lafleuri* Kofoid and Swezy in the duodenal drainage.

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A case of infection by *Endamoeba dysenteriae* and *Councilmania lafleuri*, amœbae of the human digestive tract, was treated in May, 1921, for the former, by the emetin-bismuth-iodide method. The results were negative for it on eight stool examinations six to seven months later. Duodenal drainage from this case, examined after treatment, contained a considerable number of cysts of *C. lafleuri* of the characteristic size, shape, number of nuclei, and nuclear structure. There were also some empty cysts, bile-stained, of similar appearance in the fresh drainage.

Duodenal drainage was also examined from a second case of infection by *Councilmania lafleuri* but no *E. dysenteriae*. In this case 67 stool examinations have been made since November 23, 1922, with 41 positives. In the heavy bile of the first bottle of duodenal drainages a number of typical cysts of *C. lafleuri* have been found on two tests of four made. Upon staining by iron

hæmatoxylin these cysts had both the cytoplasmic and nuclear structure of the cysts of this parasitic amœba discharged in the stool.

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On the culture in vitro of *Councilmania lafleuri* and
Endamoeba coli.

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During the past year cultures have been made by us from fifty stools from eight cases of infection by intestinal amœbæ. Three of these had *Endamoeba coli* and *Councilmania lafleuri*, three had *C. lafleuri*, and two had *E. coli*. Upon culture of stools from the first group both species of amœba appeared in the cultures from two of the three cases. Of the third only one attempt with 6 tubes was made. Not infrequently attempts at culture on any case will fail from some stools. In the second group containing infections of *C. lafleuri*, this species only was obtained in cultures. In the third group containing *E. coli* this was obtained in culture from one of the two cases. One stool only, however, was used from each case.

Cultures have been made from 49 stools. All cases cultured had infections of *Blastocystis*. This organism invariably overgrows cultures of amœba sooner or later, generally within four to six days in Boeck's media. Transplants of *C. lafleuri* must be made every twenty-four to forty-eight hours. If, however, the dextrose is omitted, cultures have survived with transplantation for fourteen days, and in one instance only motile amœbæ survived in the same tube for twelve days. In Locke's solution with 0.5 per cent defibrinated rat's blood plus 1:60500 acroflavine transferred cultures were continued for twenty-one and twenty-eight days in two instances. In case of *E. coli* no culture could be continued beyond seven days in any of the media. It is much more susceptible than *C. lafleuri* and is always much less abundant than that species in both the stools and the cultures.