

aminations of incoming students at a professional school in Philadelphia. In the fall of 1931, 401 freshmen were examined, and the results have been published.⁵ Since then, 299 and 360 were added in 1932 and 1933, respectively, making a grand total of 1,060, of whom 351 were women and 709 were men.

From the examination of a single stool per person, it was found that 2.3 per cent. of the women and 4.9 per cent. of the men, or 4.1 per cent. of the total, harbored *E. histolytica*. It has long been held that a single examination of a group of individuals reveals only from 30 per cent. to 40 per cent. of the actual incidence of this amoeba. It is, therefore, safe to estimate that our incidence of 4.1 per cent. based upon one examination probably indicates a true incidence of as much as 10 per cent.

Over 90 per cent. of these 1,060 students came from homes in Pennsylvania or New Jersey, and few had traveled extensively either in the United States or abroad. Hence it is probable that these students became infected before coming to college, so that the incidence found indicates the presence of the parasite in these districts.

It should, of course, be emphasized that most of the students harboring *E. histolytica* were "carriers," as are most of those who harbor this amoeba in temperate climates. The "carrier" shows no symptoms of disease, but discharges cysts which are the infective stages, capable of infecting other persons, some of whom might succumb to the disease. In rural districts and other places where sewage disposal facilities are inadequate, it is known that flies are effective agents in the dissemination of such cysts. In the cities, food-handlers in public eating places who are carriers, and who may be careless or uncleanly in their personal habits, are the most probable sources of infection. Just why some persons when infected by this amoeba become ill, while others do not, is not exactly known. It seems probable, however, that some individuals have a greater natural resistance to this parasite than others and also that some strains of the parasite may be more virulent than others.

Our data support Craig's belief that between 5 per cent. and 10 per cent. of our population harbor the disease-producing amoeba and, if this is true, it is not surprising that a number of people contracted the disease in Chicago this past summer. It may also be seriously questioned whether or not the incidence of amoebic disease was so different from that at other times and in other large centers of population. Since amoebic dysentery is considered to be so rare by many medical men, the true nature of such cases is likely to be overlooked. Amoebic disease is admittedly diffi-

cult to differentiate from other disturbances of the digestive tract and normally requires the finding of the amoebae themselves in the feces or in the tissues obtained at autopsy. With four other amoebae resident in the human bowel, proper diagnosis requires special training in the technique of examination and in the differentiation of these different types of parasites. It may be significant that recognition of the disease in Chicago apparently came at the end of the summer, when deaths occurred and autopsies revealed the nature of the disease in its true light.

In consideration of the above statements, it may be suggested that: (1) The general public, as well as medical men, should be made aware of the wide-spread distribution of *Endamoeba histolytica* and should appreciate the methods by which this potentially pathogenic parasite is disseminated. (2) Public health officials might well arrange for adequate examination of the food-handlers in public eating places to detect carriers among them, positive cases being treated to eliminate the parasite. (3) Many diarrheas, dysenteries and other disturbances of the digestive tract are due to causes other than the presence of amoebae; hence a diagnosis of amoebic disease is scarcely justified unless *Endamoeba histolytica* be found in the stools or detected in material obtained with the proctoscope or in pathological tissues. (4) In view of the fact that four other kinds of amoebae occur in the large intestine of man, two of them with greater frequency than *E. histolytica*, it should be especially emphasized that special training is required before one can hope to recognize the different types and distinguish *E. histolytica* from the others.

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⁵ J. H. Arnett, D. H. Wenrich and R. M. Stabler, "A Survey of 401 College Freshmen for Intestinal Protozoa," *Am. Jour. Trop. Med.*, xiii: 311-315, 1933.