it is found that the average daily turnover is in the region of 400 to 500 syringes.

Expenditure.—The following items of expenditure are based on the first year's experience with the service: cost of initial outlay on syringes and needles, £600; cost of replacements, £750; cost of labour, £300.

Breakages and Lost Syringes.—As will be seen from the expenditure figures, the cost of replacements has been very high during the first year's trial period, the average number of breakages being approximately 1% per day. If this rate of loss were to continue the service would hardly justify the expense. Approximately 50% of these losses were due to chipped and broken nozzles, and the introduction of metal nosepieces has proved a great saving. Moreover, to avoid clerical work, an over-generous attitude was originally adopted to the issue of syringes, but it is felt that the system is not conducive to careful handling on the part of the users, so a system has been instituted by which each ward and each department are allotted an adequate number of syringes, and sterilized units are issued only in exchange for used syringes. It is already becoming apparent that the introduction of metal-and-glass types, together with the more rigid check on the return of the syringes, is resulting in a decrease in the number of breakages.

It has been found that one person working eight hours a day is capable of servicing 300 syringes daily. This includes cleaning, assembling, sterilizing, and sharpening of needles.

Conclusion

It is hoped that this short account will save others needless expense and trouble. In particular it is emphasized that before ordering large numbers of syringes the manufacturer's claims should be thoroughly confirmed.

AMOEBIASIS IN ENGLAND AS A HOUSEHOLD DISEASE

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The recorded cases of acute amoebic dysentery or amoebic liver abscess occurring in persons who have not been out of Great Britain have for the most part been described as isolated instances, without regard to the source of the infection or of their infectivity to contacts. There have recently come to our notice three families, living in Liverpool, in each of which more than one member of the household was suffering from amoebiasis.

Case Reports

In July, 1947, we were consulted by a ship's officer who had developed dysentery during the previous few weeks. Examination of his stools showed vegetative *Entamoeba histolytica*. While receiving treatment in hospital he mentioned that his wife, who had not been overseas, had recently developed diarrhoea, and he inquired whether he might not have infected her with his complaint. He was assured that this was most unlikely, but, as his wife's diarrhoea continued, her stools were examined, and it was found that she, too, had acute amoebic dysentery.

In July, 1948, a boy aged 16 came under our care suffering from dysentery of undetermined causation which he had had intermittently for the previous two years. His stools contained blood, mucus, and numerous vegetative *E. histolytica*. This boy had dwelt all his life in a Liverpool slum. In the household were his mother, stepfather (a dock-labourer), and six other children, none of whom had lived out of Liverpool. On inquiry it was found that the boy's mother had been troubled with diarrhoea during the previous two months. Examination of her stools showed that she had acute amoebic dysentery. The remainder of the family were in good health, but it was found that the stepfather and four of the six children were passing cysts of *E. histolytica*. This family was also largely infected with threadworms, *Giardia lamblia*, and *Entamoeba coli*.

In February, 1949, a boy aged 7 was admitted under our care suffering from an intractable colitis which he had had for three years. His stools contained blood, mucus, and very large numbers of vegetative *E. histolytica*. This boy had never lived out of Liverpool. Specimens of faeces were obtained from his family, which consisted of his mother, stepfather, and three sisters. Of these the stepfather was found to be passing *E. histolytica* cysts. He had no history of dysentery, but it is of interest that he was born in India and had lived there until he was 13, since when (he is now 45) he has been in England. The remainder of the family had not been abroad.

Comment

The experience of these families serves as a reminder that amoebiasis is a condition which may easily spread in a household where personal cleanliness is not of a high order. This fact, though plain enough, has perhaps suffered from a lack of attention in this country. By contrast, French medical publications contain a number of instances of autochthonous amoebic dysentery in which association with proved carriers was established. Dopter (1917) reviews these; see also Garin and Lépine (1924).

Finally, we would stress the undesirability of diagnosing ulcerative colitis before excluding amoebic dysentery as a possible cause of the syndrome by microscopical examination of the stools by someone familiar with the appearance of *E. histolytica*. Two of the cases recorded here had been ill for years and were sadly reduced in health from the want of this precaution.

REFERENCES

- Dopter, C. (1917). *Paris méd.*, **21**, 389.
Garin, C., and Lépine, P. (1924). *Pr. méd.*, **32**, 927.

The National Tuberculosis Association of the United States has made 22 grants for research during the present year. Four of these awards are new; the remainder are for the continuance of work already started. Dr. E. R. Long, director of medical research, has given details of current work aided by the association. Professor James Waring, University of Colorado, will be investigating the modification of tubercle formation to allow better access of drugs to the bacillus. Constitutional factors responsible for resistance and susceptibility to tuberculous infection are being investigated by Dr. P. B. Sawin, of Maine, and Dr. M. B. Lurie, of Philadelphia. Dr. D. Seligson, of Vancouver, Washington, will be making a study of the blood pictures of tuberculous patients. Work on the virulence of strains of the organism and their resistance to drugs is being done by Dr. Mary Bunting, of Yale. Grants have also been made for further research into the factors responsible for caseation, and it is hoped these studies will indicate how tissue destruction in tuberculosis can be reduced. The chemistry of tuberculin is currently under examination in the Universities of Pennsylvania and Wisconsin; an investigation of moulds to discover an additional therapeutic agent against tuberculosis is being made at the University of Colorado. Most of the remaining grants are for clinical work in tuberculosis.