Correspondence

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Contamination of Disinfectants

SIR,—It is well known that solutions of some disinfectants can become contaminated during use with relatively resistant micro-organisms, and these may contaminate patients and cause infection when applied to skin or to wounds.^{1,2} The contaminants are often Gram-negative bacilli, such as *Pseudomonas* spp., which tend to be less sensitive than staphylococci to many disinfectants and capable of surviving or even multiplying in water with little nutrient content. Hexachlorophane is an example of a disinfectant which is less active against Gram-negative bacilli than against Gram-positive cocci. Liquid soaps and detergent creams containing this compound are very effective in removing staphylococci from the skin when used consistently for handwashing, but they can become contaminated with Gram-negative bacilli and transfer these organisms to the skin; contamination from this source is a potential cause of infection, and one that is widely unsuspected.

In a recent study we have found that a considerable proportion (29/70) of hexachlorophane soaps and hand creams being used in hospitals were contaminated with Gram-negative bacilli, most of which were *Klebsiella* spp., *Pseudomonas aeruginosa*, and *Escherichia coli*. In one hospital unopened supplies of a 2.5% hexachlorophane detergent cream recently received from the manufacturer were sampled and found to be contaminated with *Klebsiella aerogenes*; viable counts showed that large numbers of these bacilli were present (23,000 per ml.). When small inocula of a broth culture of this strain were added to sterile samples of the same hexachlorophane detergent cream, the organism persisted with no reduction (indeed, with a slight increase) in numbers, on standing for seven days at room temperature.

It is important that a preparation used for disinfection of the skin should be supplied free from bacterial contaminants, and that it should destroy contaminants added to it during use; in the case of hexachlorophane, the second of these requirements would involve the addition of a compatible, non-irritant, and non-sensitizing disinfectant which is active against Gram-negative bacilli. We have the assurance of several manufacturers that they are taking urgent steps to make their hexachlorophane preparations meet these requirements. Meanwhile it would, perhaps, be wise for prospective users of these preparations to ask the manufacturers about the sterility of supplies and about the self-disinfecting capacity of the product which they intend to purchase.

It is important, too, that care should be taken to prevent contamination of disinfecting fluids and detergents during use, and here responsibility rests with the user. In particular, the dispenser from which the fluid is squeezed on to the hands must always be thoroughly cleansed and disinfected before it is refilled, and intervals between refilling should not be long. The practice of "topping up" a dispenser before it is empty must be deprecated as it increases the risks of contamination. Even if the fluid in the dispenser has self-disinfecting properties it may take some hours for contaminants to be destroyed; when a solution is used frequently it is clearly better to avoid contamination than to rely on the destruction of contaminants by disinfectants in the solution. It would be helpful if manufacturers provided a label that could be applied to containers and dispensers of these products, giving a

brief note on aseptic precautions in dispensing and using them.

We must emphasize that we do not wish to discourage the practice of disinfectant handwashing, which is a valuable method of reducing the chances of infection in hospital with *Staphylococcus aureus*. A return to the use of soaps containing no disinfectant might follow a loss of confidence in the safety of hexachlorophane preparations; this retrograde step could, however, be averted by carefully tested improvements in the quality of these products, or by the use of alternative agents in which contaminants are not found and will not survive.—We are, etc.,

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Mentally Handicapped Children

SIR,—In his article on mentally handicapped persons (14 December, p. 687), Dr. Brian Kirman states, "For younger children nursery schools, day nurseries, and 'play groups' are essential." Doctors who are aware of this need will also be aware of the desperate shortage of such facilities. During the past two years we have evolved an oppor-