

Thus three factors—Clause 5, the records of the school health service (available under Clause 1 (6)), and the powers of Clause 2—will make it possible to institute a selective system of examining young persons.

The Bill, like the Factories Act, 1961, addresses itself mainly to the duties of employers. They are instructed, for example, to make it possible for an employee to attend for medical examination when, in the opinion of the employment medical adviser, there ought to be a medical examination. What is not clear is the rights of the employee in the matter. Can he or she refuse to be examined? More, too, needs to be known about the selective system of examining young persons. The Bill would give the employment medical adviser the right to demand from the education authority a young person's school medical record, but would the young person or his parents be able to refuse to allow this information to be disclosed? School medical examinations are compulsory, and if there are good reasons for that they disappear if control over the confidentiality of the records is taken from the school medical officer and from the scholar. However well meaning Clause 1 (6) of this Bill may be, it would be a bad thing if it resulted in infringements of the rights of the individual.

Enzyme Detergents

The incidence of dermatitis of the hands in housewives and others who have to immerse their hands in soap and detergents is low compared to the number of people concerned. Surprisingly, controlled trials have shown no harmful effects when soap and detergents have been applied to eczematous hands, and changes in temperature and humidity are thought to be possibly more important factors.^{1 2} Despite this negative evidence F. R. Bettley^{3 4} has shown that in vitro detergents do enhance the permeability of epidermis for water and soluble ions, possibly by denaturing the keratin which protects the underlying living cells.

Proteolytic enzymes produced by the fermentation of strains of *Bacillus subtilis* have recently been added to the usual synthetic detergents and marketed widely in Europe, the

U.S.A., and Britain. The predominant enzyme is an alkaline protease resembling trypsin, which can digest blood and other proteins. Extensive tests have been claimed to show no untoward effects on the skin.

A letter from N. E. Jensen (31 January, p. 299) was the first report that these enzymes might be harmful to the skin, though an allergic pulmonary disorder had been reported by M. L. H. Flindt⁴ in workers in enzyme manufacturing plants. Jensen described 13 housewives who developed acute dermatitis of the hands after exposure to a biological detergent, in some cases after one exposure. Irritation and burning of the hands was noted from within a few hours to a week after the use of the detergent. Clinically the dermatitis was that of a primary irritant type and was peculiarly persistent; unlike a normal traumatic dermatitis it did not respond easily to treatment.

A similar unusual pattern of dermatitis is reported at p. 537 by Dr. Christina Ducksbury and Dr. V. K. Dave among home helps who had also used biological detergents. In 4 of their 12 cases symptoms arose within six hours of first contact with an enzyme detergent and in two others within two days. As in Jensen's patients, the reaction was severe and persistent and appeared to account for a rise in the sickness rate in this group of experienced home helps. The overall incidence, however, was low—only 12 out of a total of 310 were affected.

In spite of the previous good safety record of these products it is difficult to avoid the conclusion that enzyme detergents played some part in the causation of the dermatitis. The short interval between exposure and onset of symptoms suggests a primary irritant rather than an allergic effect. Under experimental conditions enzyme detergents are more irritant to the skin than detergent alone,⁵ and it is interesting that a blind usage test by the Nottingham workers produced a recurrence of dermatitis when the enzyme detergent was used but not with the ordinary detergent.

Both Jensen's and Ducksbury and Dave's patients developed symptoms only in the particularly good summer of 1969, and possibly aggravation by exposure to sunlight may have played a part. At the present time the incidence of biological enzyme dermatitis appears to be very low in relation to the millions of housewives who use these products, and only further experience will show whether they constitute a significant risk to the user.

¹ Suskind, R. R., Meister, M. M., Scheen, S. R., and Rebello, D. J. A., *Archives of Dermatology*, 1963, **88**, 117.

² Bettley, F. R., *British Journal of Dermatology*, 1961, **73**, 448.

³ Bettley, F. R., *British Journal of Dermatology*, 1965, **77**, 98.

⁴ Flindt, M. L. H., *Lancet*, 1969, **1**, 1177.

⁵ Griffith, J. F., et al., *Food and Cosmetics Toxicology*, 1969, **7**, 581.