Correspondence

Respiratory disability in ex-cotton workers

SIR,—Elwood and his colleagues (1986;43:580–6) observed a small permanent effect on respiratory function from past exposure to dust among ex-cotton workers. There are two reasons, however, why their survey is likely to underestimate the real extent of any permanent disability.

Firstly, their population included 472 ex-cotton workers, but only 116 were from the card room, the group most heavily exposed to dust; the 22 men in this group had on average spent 14 years and the 94 women 15 years in the card room. Disabling byssinosis of at least moderate severity is generally seen in cotton workers with much longer exposures.^{1–3}

Secondly, workers are affected unequally. In a survey of Lancashire textile workers, mostly from card rooms, more than 75% did not have work related symptoms.⁴ Individuals exposed to similar dust concentrations have widely different acute responses. FEV losses range from almost zero to nearly 0.51.^{5,6} To avoid bias, Elwood *et al* did not question subjects about work related symptoms but their study must have included mainly people without byssinosis. Their lung function results are expressed as mean values for each occupational group. Means obscure the heterogeneity of response, which is well recognised in relation to occupational exposures.

The authors take account very roughly of each individual's degree of exposure by multiplying arbitrary dust scores based on another survey⁷ by number of years exposed. Regression coefficients for exposure show significant increases in adverse effect on FEV₁ ($p < 0.01$) and FVC ($p < 0.001$) for men and FVC ($p < 0.05$) for women. The authors conclude that the effect is real but small and that even after prolonged exposure to the worst dust conditions the loss is comparable with that associated with light smoking. These findings are to be expected in a population which has only 22 male card room workers, the most heavily exposed group, and even fewer with exposures long enough to be likely to lead to moderately severe disability.

The overall results of this survey of ex-cotton workers do not provide any evidence to contradict previous clinical and epidemiological observations that cotton workers with heavy and lengthy exposures are at risk of developing pronounced loss of lung function and accompanying disability.^{1–3,8} It would have been better to undertake a prospective survey of workers who are now employed in the cotton industry

British Journal of Industrial Medicine 1987;44:571–572

to find out if the considerably reduced exposures cause any permanent respiratory impairment.

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Dr Elwood replies:

In an attempt to determine the permanent disability of exposure to textile dusts we conducted two surveys, one of ex-cotton workers and the other of ex-flax workers. We had hoped that the two studies would have been published together so that conclusions about the effects of textile dusts could be based on both sets of data. We were unable to achieve this and the report on the ex-flax workers¹ preceded that on the ex-cotton workers.² Nevertheless, we urge that the two are considered together: the prevalence of byssinosis was similar in the two industries³ and our two studies of ex-workers were designed to be as nearly similar as possible.

Taken together, the two surveys give no convincing evidence of a permanent effect of exposure to textile dusts. On the one hand, there were small effects in the ex-cotton workers consistent with permanent disability but no such effects were shown by the ex-flax workers. Furthermore, there was evidence in both surveys of previous selection of textile workers in that the height of the ex-textile workers was 1–2 cm shorter than the non-textile workers. As we argue in

our reports, height is a sensitive index of past social and nutritional factors and both these are strong determinants of respiratory health. We also refer in our report to an earlier study that had failed to detect any excess mortality in a large cohort of ex-textile workers.⁴

Schilling argues that the evidence from the survey of ex-cotton workers does not exclude the possibility that a small subgroup of textile workers develop a "pronounced loss of lung function and accompanying disability." While no epidemiological or other evidence can ever exclude such a possibility with certainty we would, at the least, ask that the evidence from all these studies is considered together.

References

- 1 Elwood JH, Elwood PC, Campbell MJ. Respiratory disability in ex-flax workers. *Br J Ind Med* 1986;43:300-6.
- 2 Elwood PC, Sweetnam PM, Bevan C, Saunders MJ. Respiratory disability in ex-cotton workers. *Br J Ind Med* 1986;43:580-6.
- 3 Elwood PC, Pemberton J, Merrett JD, Carey GCR, McAulay IR. Byssinosis and other respiratory symptoms in flax workers in Northern Ireland. *Br J Ind Med* 1965;22:27-37.
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Wet cleaning machines (soil extraction systems)

SIR,—The recent increase in carpeted areas in hospitals has seen more of these wet cleaning machines in use. They act by producing an aerosol of treated water containing either disinfectant or detergent which is then sucked back to a return tank. These machines are frequently used to remove spills of biological fluid such as blood, urine, and vomit.

While there seems to be little evidence of any bacteriological hazard arising from them it may be that the operator is at risk from several sources. In particular, cleaning the machine is difficult; the detergent tank is difficult to empty completely and clean thoroughly and in some versions metal gauze filters pose a hazard to operators' fingers during removal. A draft code of practice is being discussed by the DHSS Microbiology Advisory Committee. As a result, various "containment areas" are identified in hospitals, of which isolation wards, immunosuppressed treatment patient areas, and certain paediatric areas pose a special problem. Ideally, these areas should not be carpeted and it would seem sensible to use other methods for cleaning up biological spills. The production of a possibly respirably sized aerosol of disinfectant or detergent treated water may pose a hazard to the

lungs of operators since some disinfectants are suspected of causing respiratory allergy.

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Notices

International Symposium of Work in a Hot Environment and Heat related disorders, Khartoum, January 1988.

The major task of this meeting is the scientific documentation and updating of health risks, problems of dysfunctions, and efficiency of performance in man resulting from exposure to hot environments. For further information contact Dr Moneium Attia, chief occupational physiologist, Ministry of Health, PO Box 303, Khartoum, Sudan.

Sampling and Evaluating Airborne Asbestos Dust (NIOSH 582), Chapel Hill, NC, 5-9 October, 1987.

This 4½ day course covers the aspects of collecting and counting airborne asbestos. Attendees will be able to use the equipment necessary to collect and evaluate airborne asbestos samples. Content: asbestos toxicology, sampling and calibrating equipment, sampling procedures, using the microscope, counting procedures, and optical methods. Labs in: airflow calibration, microscope set up, filter mounting, and counting. 32 hours. Four ABIH certification points awarded. Contact: University of North Carolina Occupational Safety and Health Educational Resource Center, 109 Conner Dr, Suite 1101, Chapel Hill, NC 27514. Fee: \$550.

The Health and Safety Executive Library and Information Service has indexed all articles relevant to health and safety at work in the *British Journal of Industrial Medicine* from 1944 to date. Approximately 1600 items are available in the HSELINE database, information on which is available on Pergamon Infoline Computer Services, European Space Agency Information Retrieval Services, Datastar, Compact disc Read Only Memory.