Correspondence

Metal polishing, stomach cancer, and clearing houses

SIR,—In a letter published in your June issue (p 429) Drs Mant and Mayon-White expressed the need for a "clearing house" to deal with sporadic clusters of disease. This is a matter which the Medical Division of the Health and Safety Executive and the Employment Medical Advisory Service have attempted to deal with.

Some years ago "an early warning system" was established for reporting clusters or single cases of disease where a hitherto unrecognised occupational aetiology might be postulated. This was advertised through our field force of employment medical advisers and the Society of Occupational Medicine's Newsletter. In the ensuing two years fewer than half a dozen notifications were received, since then even fewer have been received.

The need for a workable scheme is undeniable, but the resources required for investigation and collation of data and feedback to physicians are considerable. The success of any such venture would depend on sufficient publicity to ensure a continued awareness of the scheme.

The Health and Safety Executive is at present considering ways in which information on occupational ill health may be improved, and would be interested to hear of possible health problems associated with occupation.

R D JONES

Senior Employment Medical Adviser,
Epidemiology Medical Statistics Unit,
Health and Safety Executive,
Magdalen House,
Stanley Precinct,
Bootle L20 3QZ,
Merseyside.

Risk assessment in the asbestos cement industry

SIR,—Hughes and colleagues have recently published (1987;44:161-74) an updated study of mortality of workers employed in two American asbestos cement manufacturing plants and have presented an estimate of lung cancer risk in the asbestos cement industry. By tracing over 95% of the workers they have corrected the serious flaw in their earlier study¹ which had left the vital status of many workers uncertain. Several problems persist with respect to the interpretation of the latest report, however.

The authors have presented dose response relations for lung cancer derived by combining estimates of

individual cumulative asbestos exposures with diagnoses of lung cancer obtained from death certificates. In plant 1 the slope of the relation was not significantly different from zero; nor was it significantly different from zero in plant 2, but by resorting to the technique of forcing the intercept through zero, the authors were able to obtain a "significant" slope for the regression line. The regression method they used was that of iteratively weighted least squares, and the authors of this method have stated that they consider the slope obtained by forcing the intercept through zero to be less meaningful than the unrestricted slope.² The numerical result presented by Hughes and colleagues must thus be viewed with some caution.

As part of their discussion, the authors reviewed the findings for lung cancer and mesothelioma in seven cohorts of asbestos cement workers. They compared the results of the various studies by plotting the observed lung cancer risk by the estimated median employment duration. This method of comparison does not, however, produce a meaningful result, for, as Johnson has recently reminded readers of this journal, duration of exposure is a good surrogate for dose only when exposed individuals were subject to *equal* exposures for different periods.³ Exposure estimates were available for only three of the seven cohorts, and among these three, estimates were not the same. The appropriate method of comparison is to take account of the cumulative exposures of the workers. The most comparable of the cohorts are a Canadian cohort. I have studied the workers from plant 2 of Hughes *et al* since both factories were owned by the same multinational corporation and they manufactured similar products. The ratios of observed to expected deaths per fibre-year of cumulative exposure, using the figures of Hughes *et al*, are about 0.045 and 0.068 (United States cohorts) and 0.054 (Canadian cohort).

Despite this apparent agreement in lung cancer risk, a more careful comparison shows that there are substantial differences. The Canadian cohort comprised workers employed one year or more. Their average cumulative exposure was estimated to be 60 fibre-years/ml, within an estimated range of error of three to fivefold, and the lung cancer SMR was 512. From table 10 of Hughes *et al* I estimate that the average cumulative exposure of the plant 2 employees who worked one year or more was about 85 fy/ml and the lung cancer SMR was 180 (table 7). How can one account for the threefold difference in risk?

One may look for explanations on both sides of the dose response equation. The Canadian exposure estimates were stated to be uncertain to within a factor of three to five, so that increasing the estimated exposure to the upper end of this range could account for much of the difference. On the other hand, both plants were owned and operated by the same multi-