evidence that it is more common in cities than in rural environments. They do not review the evidence which has been published which suggests that certain forms of asbestos are relatively harmless. They do not inform the reader what they consider to be the source of the asbestos in the urban atmosphere; is it from brake linings or construction materials, for example? I would be grateful if the authors pointed up the nature of the risk to which they allude and stress, if possible, ways of distinguishing between more harmful and less harmful asbestos fibres.

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AUTHORS' REPLY

THE SOURCE of the asbestos fibres in urban air is still a matter of speculation. Some 3 million tons of the material are mined annually and asbestos has very many industrial applications so some general contamination of the air seems certain. Chrysotile is used in brake linings and brake linings are being constantly disintegrated. However, the heat generated when brakes are applied would alter the appearance of the chrysotile fibre in the electron microscope. Some fibrils in our samples appear to have been heated but most of the chrysotile fibrils we observed did not have this appearance and are more likely to have been derived from building material. Photographs by LUMLEY, HARRIES and O'KELLY (1971) illustrate the production of dust from building materials.

The individual fibrils seen in our samples probably have no pathological significance but the appearance of large agglomerates in random samples is less reassuring. They suggest the possible existence of localized sources where the contamination may be appreciable.

Perhaps the most disconcerting aspect of reports on the incidence of asbestosis and related diseases, and particularly mesothelioma, is the frequency with which a "neighbourhood hazard" or "endemic asbestosis" is mentioned, disease occurring in apparently innocent occupations or in members of an asbestos worker's family. Examples that may be quoted are workers near laggers in Glasgow (GOLD and CUTHBERT, 1966), villagers near an asbestos mine in Italy (VIGLIANI, 1960), Finland (KIVILUOTO, 1960) and South Africa (WAGNER, 1959; SELIKOFF, 1963),in carpenters (FLETCHER, 1971) and persons not occupationally exposed to asbestos in London (NEWHOUSE and THOMPSON, 1965) and Hamburg (DALQUEN, DABBERT and HINZ, 1970).

The effects of asbestos may be due, in part, to the morphology of the fibres but, because it is more readily removed from the respiratory part of the lung, chrysotile the commonest form of asbestos is probably the least harmful (BOTHAM and HOLT, 1971a). Submicron glass fibre is also removed at a similar rate to chrysotile (BOTHAM and HOLT, 1971b). Chrysotile can be readily distinguished from other varieties of asbestos with the electron microscope.

Gross fibrosis is probably produced only by very high concentrations of asbestos but the amount needed to produce a carcinoma is not known. STANTON and WRENCH (1972) produced mesothelioma in rats with amosite, crocidolite and chrysotile.

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