1. Asbestos bodies are only the tip of the iceberg, representing only the largest fibres (including materials other than asbestos), visible by optical microscopy, but missing fibres below the limit of resolution of the method. Rather, asbestos fibres and fibrils can be directly sought by EM in lungs of city dwellers—and, when they are, found far more frequently than coated bodies (LANGER *et al.*, 1971; POOLEY *et al.*, 1970). Moreover there need not be the insecurity concerning the nature of the asbestos body core (LANGER *et al.*, 1971). As Holt and Young note, by EM chrysotile asbestos has a unique appearance. We know what we are seeing.

2. The authors seem resigned to being unable to satisfactorily express the concentration of asbestos fibres in air. Admittedly, this cannot be done with fine precision, but rather reliable and reproducible estimates can be made. (Duplicate analysis of samples in our Laboratory indicate a factor of two or three is possible.) The techniques they quote (X-ray diffraction and infrared spectrometry) are too insensitive for the purposes. On the other hand, mass concentrations can be calculated from number and size of fibrils, and the density of chrysotile (NICHOLSON *et al.*, 1971). In the United States for example, our early results showed the following concentrations to be found in the air of New York (SELIKOFF *et al.*, 1972; SELIKOFF *et al.*, 1968).

TABLE 1. CHRYSOTILE CONTENT OF AMBIENT AIR IN N.Y.C. PRELIMINARY RESULTS

Sample locations	Asbestos air level in 10^{-9} g m^{-3}
Manhattan	25–60
Bronx	25–28
Brooklyn	19–22
Queens	18–29
Staten island	11–21

Additionally, specific sources of asbestos air pollution were defined from sampling near construction sites.

TABLE 2. CHRYSOTILE CONTENT OF N.Y.C. AIR IN VICINITY OF SPRAY FIREPROOFING WITH ASBESTOS-CONTAINING MATERIALS

Site	Asbestos level in 10^{-9} g m^{-3}
1 (downwind from source)	45–180
2 (45° from source)	15–30
3 (upwind from source)	[illegible]
4 (downwind from source)	45
5 (upwind from source)	20

Since these data were obtained we have quantitated asbestos levels in over 200 samples from 49 U.S. cities and have found asbestos to be present in all.

3. It is difficult to comment upon the relevance of comparative techniques, in the absence of detailed description. Some reservations might be lifted with alterations in methods. For example, were grids scanned visually or were photographs made and fibrils counted (the latter is much more sensitive. We find, for example, that visual scanning can underestimate concentrations by as much as 50 per cent). What magnifications were used? (Higher magnifications—at least 20 000–30 000 ×—are much more revealing.)

It is evident that a good deal is now known of asbestos air pollution and consequent, lung contamination by the ubiquitous fibrils. What has not yet been deciphered, as Holt and Young correctly state, is the disease potential of such general community asbestos air pollution. Cancer may occur with occupational asbestos exposure, with that associated with neighborhood pollution

8000 1399 PQ

PRODUCED BY FORD