inhaled into the human lung, may become coated with an iron-rich characteristic golden brown material, forming an "asbestos body." These are found, for example, in very large numbers in the lungs of asbestos workers. In 1963, Thomson reported that he found bodies with the same appearance in the lungs of people who were *not* asbestos workers. Smears of the lung bases allowed him to demonstrate these bodies in 26 percent of 500 consecutive autopsies in Capetown. His conclusion was that asbestos had indeed become a modern urban hazard, and he predicted that asbestos-induced mesothelioma might become as frequent as cigarette-associated lung cancer is at the present time.

Thomson's observations have been widely confirmed, and particles having the appearance of asbestos bodies have been reported in similar percentages in Montreal, Milan, London, Newcastle, Glasgow, Belfast, Dresden, Pittsburgh and Miami. In New York City, using a somewhat more sensitive technique, we find that approximately half of the lungs in 1,975 consecutive autopsies examined by us show these particles. When one considers that we examine only one square centimeter of lung tissue 0.0175 centimeter in thickness, it is obvious that these particles are now very common among city dwellers at this time.

Opportunity for non-occupational contact with asbestos at the present time can easily be discovered. There are, for example, some three thousand products which currently utilize this valuable material. To the present, lack of recognition of the potential of non-occupational exposure has led to the absence of appropriate safeguards during industrial use. Demolition of buildings, often rich in asbestos-containing materials, is suspect, while sheer carelessness and ignorance may explain its

TABLE 4

Asbestos Bodies in Shipyard and Construction Workers: Quantitative Results

	Blue Collar (no Shipyard or Construction)	Shipyard and Construction	White Collar Males
Total Number of Workers	246	129	206
Workers Having Asbestos Bodies	121 (49%)	90 (70%)	87 (42%)
Workers Having No Asbestos Bodies	125	39	119
Workers Having Five or More Asbestos Bodies	20 (8%)	29 (23%)	10 (5%)

recommendation and use as playroom material in kindergartens or in toy cosmetics.

Indirect occupational exposure is suggested by recent observations in our laboratory. We find, for example, that while approximately 30 percent of housewives examined at post mortem had asbestos bodies demonstrated, comparable figures are 40 percent for white collar males and 50 percent for blue collar males. This rises to over 70 percent for men with any history whatsoever of having worked either in the construction industry or in shipyards. The latter, moreover, are much more likely to have numerous asbestos bodies than any of the other groups.

A special hazard may be present as the result of an interaction recently described. We have found that there is a special risk of cigarette smoking among asbestos workers. Since January 1, 1963 we have observed 87 experienced insulation workers who were not regular smokers or who were pipe or cigar smokers; we have yet to see a death from bronchogenic carcinoma among these men. On the other hand, of 283 equally experienced workmen who smoked cigarettes and who were watched for the same period of time, we have seen 24 such cancers, although only three were expected. We have calculated that the risk of dying of lung cancer is approximately 92 times greater for an asbestos worker who smokes cigarettes than a man of the same age who neither works with asbestos nor smokes cigarettes.

These observations naturally raise the question whether the inhalation of asbestos fibers among individuals in the general population might carry a special risk among the cigarette smokers in that population.

Wagner's observations have been extended by two recent studies. Muriel L. Newhouse investigated 76 consecutive cases of mesothelioma examined at the London Hospital, the majority within the last several years. She found, to no one's surprise, that

TABLE 3

Asbestos Bodies in New York City
Dwellers Without Occupational Exposure—1,975 Cases

Male Age	Total cases	Total with asbestos bodies	Percent with asbestos bodies	Female Age	Total cases	Total with asbestos bodies	Percent with asbestos bodies
0-1	40	0	—	0-1	34	0	—
10-19	52	0	—	10-19	50	0	—
20-29	22	4	18%	20-29	12	4	33%
30-39	50	14	28%	30-39	18	7	39%
40-49	178	83	47%	40-49	58	18	31%
50-59	280	149	53%	50-59	85	38	45%
60-69	359	205	57%	60-69	147	57	39%
70-79	321	180	56%	70-79	151	65	43%
80-89	105	62	59%	80-89	80	40	50%
90+	7	4	57%	90+	12	8	66%
Total	1368	702	51%	Total	607	240	39%

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