underdiagnosis in areas without large-scale asbestos industry, or to bias on the part of the interviewers who might have been more assiduous in pursuing an asbestos association history in cases of definitive mesothelioma. Ideally it would have been desirable to conceal from interviewers the diagnosis in individual cases, but on account of limited manpower the interviewer may have been responsible for identifying cases and arranging for confirmation of diagnosis. On the other hand, the number of notifications which were not subsequently fully confirmed but had known asbestos exposure may have been the result of over-diagnosis because of the well-known association of mesothelioma with this occupational history thus introducing a bias in the opposite direction.

The individual occupations of confirmed cases with industrial exposure are shown in Table 5. The degree of risk associated with these occupations cannot be computed because the population exposed, over a period of 50 years, is unknown and cannot even be guessed.

Table 6 lists those subjects with mesothelioma where a history of exposure to asbestos, not occupational in origin, was obtained. Of those subjects with neighbourhood exposure, the first four lived near the same asbestos factory in a district where chest physicians have a high awareness of mesothelioma. The final four subjects listed had exposures that might be considered minimal and common experience.

In cases notified to the register by the Registrar General for England and Wales a control group was established (from 1 January 1968), the next death registration matched for age and sex but not for area being notified to the register for comparison of occupation. It was found, however, that as cases of mesothelioma were more commonly referred to coroners than were other subjects the job description was frequently qualified to indicate asbestos exposure; for example, 'plumber' or 'fitter' was further categorized as 'shipyard', whereas no such qualification appeared in the controls. Even 'housewife' and 'widow' were recorded as occupations with the disease attributed to asbestos exposure.

Ethical considerations prevented the interviewing of control subjects (or their relatives) though it is

TABLE 5

INDUSTRY OR JOB TITLE IN 167 'DEFINITE' MESOTHELIOMAS WITH DEFINITE OCCUPATIONAL EXPOSURE TO ASBESTOS

Industry or job	*Number of mesotheliomas*
Shipworker	75
Asbestos factory worker	39
Insulation worker (not marine)	13
Boiler house worker (not marine)	5
Chemical worker	5
Docker	4
Welding rod manufacture	4
Building worker	3
Electrician	3
Sack cleaner/repairer	3
Welder/plater	3
Battery box manufacture	2
Electricity generating industry	2
Gas worker	2
Railway coach/locomotive builder	2
Motor mechanic	1
Refuse work	1

TABLE 6

NON-OCCUPATIONAL ASBESTOS EXPOSURE HISTORIES OBTAINED IN CASES OF MESOTHELIOMA

Case number	*Duration of exposure*	*Nature of exposure*
EW 67/70	25 years	Resident within yards of an asbestos factory; at school nearby
EW 68/174	14 years	Resident close to an asbestos factory; probably went to school nearby; both parents worked in asbestos factory
EW 68/38	3 years	Worked next door to asbestos factory
	22 years	Resident 1½ miles from same asbestos factory
	Unknown	Hobby: relining and refitting clutches and brakes
EW 68/86	15 years	Resident 200 yards from an asbestos factory
S 68/71	30 years	Resident < ½ mile from a shipyard
S 68/31	Unknown	Resident < ½ mile from a shipyard
S 68/23	14 years	Resident ½ mile from an asbestos using factory
EW 67/82	Unknown	Resident < ½ mile from an asbestos factory
EW 67/115	17 years	Resident < 1 mile from asbestos factory
EW 68/19	40 years	Resident < 1 mile from an asbestos factory
	2 years	Husband worked in an asbestos factory
EW 68/88	Unknown	Lived in a house largely composed of asbestos cement sheeting
EW 68/190	4 years	Worked on and lived adjacent to chicken farm composed of asbestos cement buildings
EW 68/186	3 years	Intermittent exposure to brother's overalls contaminated with asbestos
EW 68/80	1 day	Sawing up asbestos cement sheets to construct two sheds

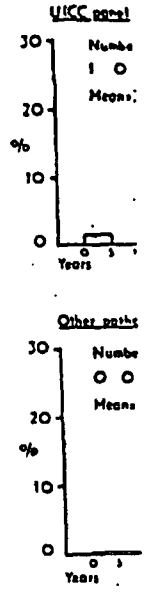

FIG. 2. Definite asbestos exposu

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Amosite only
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Mixed asbestos
Type not ascerta
Total