Comparison Between Merewether's Findings in 1929 and Prevalence of Asbestosis in 1975.*

	Lewinsohn 1975			Merewether 1929		
No. of Years Employed	No. Exposed	No. of Cases Certified	Group Incidence %	No. Examined	No. of Cases Diagnosed	Group Incidence %
0 - 9	797	1	0.125	230	36	15.6
10 - 14	88	0	—	84	27	32.1
15 - 19	66	3	4.5	28	15	53.6
20 & Over	82	4†	4.9	21	17	80.9
Totals	1033	8	0.77	363	95	26.2

*Only cases of asbestosis in receipt of Industrial Injuries Benefit are included in the 1975 figures.
†3 cases with more than 20 years exposure were first exposed before 1933 (Table IV).

The Advisory Panel did record, however, that although they were inclined to accept the growing use of asbestos as the most probable explanation of the increase in cases, "conversely there is no evidence pointing to a decrease in the attack rate in the industry as a whole although there is such evidence in certain important asbestos using factories."

In 1969, new regulations known as the Asbestos Regulations 1969 were made in the U.K. and they took effect in May 1970.[12] These regulations recognized two things, among many others, namely, the importance of their application to both manufacture and usage of asbestos products and the acceptance of a level of dustiness below which there was no hazard to health. The latter principle was acknowledged by the publication of "Hygiene Standards for Airborne Asbestos Dust Concentrations for Use with Asbestos Regulations 1969" in Technical Data Note 13 (Rev.).[13]

Technical Data Note 13 states that where the dust concentration is less than 2 fibres/ml, HM Factory Inspectorate will not seek to enforce the substantive provisions of the Regulations. This figure is derived from the simple assumption that in order to accumulate an exposure limit of 100 fibres/ml during a working lifetime, the dust level should not exceed an annual average of 2 fibres/ml ∴50 years x 2 f/ml = 100 f. years/ml., 50 years x 4 f/ml = 100 f. years/ml. etc.

'Adequate' Occupational Exposure History

In the determination of an adequate occupational exposure history it is necessary to ascertain the type of asbestos fibre in use. There are four main varieties in commercial use, namely:

Chrysotile — white — 95% world production.
Crocidolite — blue -)
Amosite — brownish -) 5% of world production.
Anthophyllite — brownish -)

It is accepted that all varieties of asbestos can give rise to asbestosis. Asbestosis might be complicated by the development of carcinoma of the lung, and the risk of this complication is multiplied many times by cigarette smoking.

Before discussing the clinical features of asbestosis, one further difficulty in obtaining an adequate occupational exposure history requires reference. Merewether attempted to quantify the dustiness in the textile branch of the industry but was only able to produce a rough guide. The respirability of asbestos dust, because it is composed of fibres and not of spherical or uniform particles, depends upon its aerodynamic behavior which is related to fibre diameter and falling speed. It was not until suitable instruments became available in the late 1940's and early 1950's that routine environmental monitoring could be introduced into industry. The British Occupational Hygiene Society made use of dust measurements and clinical data from a Rochdale asbestos textile factory in its first attempt to set "Hygiene Standards for Chrysotile Asbestos Dust" in 1968. Prior to this the only standard recorded was in the U.S.A. and was 5,000,000 asbestos particles per cubic foot as measured by means of the midget impinger. The BOHS Standard recommended a cumulative dust exposure limit of 100 fibre years per cubic centimeter. This would allow a 1% risk of developing basal rales, which were considered as the earliest physical signs due to the effects of asbestos exposure.

In the medical surveillance of asbestos workers in Britain we are now concerned with two populations for follow-up, namely those people who have worked in the industry when dust measurements were not made and when variable dust control measures were taken and those who have entered since May 1970 when new improved conditions were demanded by new regulations and when environmental monitoring could be added to the data for epidemiological evaluation. HM Chief Inspector of Factories in his Annual Report, 1974,[5] states, "139 new cases of asbestosis were recorded by DHSS during the year. These continued to reflect conditions in past years when the long-term effects of asbestos dust on the Health of Workers was not fully appreciated. The latent period for this disease is such that annual figures cannot yet be expected to reflect improved conditions following the introduction of new legislation in 1970."

What constitutes an adequate occupational history? There is insufficient evidence available from industry to enable this question to be completely resolved, but such evidence as there is allows certain standards to be set in the hope of reducing the risk and providing a base-line for further study. (B.O.H.S. 1968).

Physical Signs of Pulmonary Fibrosis

Where exposure is known, the presence of asbestos bodies and fibers in sputum is of little importance, since their presence simply confirms exposure and their absence does not indicate freedom from disease. The presence of basal rales (crepitations or crackles) and finger clubbing have long been accepted as important clinical findings in conjunction with a history of asbestos exposure. The British Occupational Hygiene Society's Committee on Hygiene Standards, in their publication 'Hygiene Standards for Chrysotile Asbestos Dust' considered basal rales as the "key symptom." The crackles are characteristically of high pitch and occur in end-inspiration, persisting after coughing and most prominent in the dependent areas of the lungs.

It is important to establish that the crackles are persistent and not due to other diseases resulting in pulmonary fibrosis.

Until it is possible to record lung sounds and preserve graphic records, the presence or absence of these fine crackles remains a