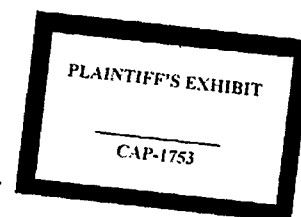


FINAL DRAFT

File 13.1.8.



CAPE BLUE ASBESTOS
PREMATURE PREJUDICE?

1. For more than 20 years particular attention has been focused all over the world on potential health hazards associated with Cape blue asbestos.
2. It has been stressed repeatedly at almost every conference since Lyon in 1972 (3, 4, 5, 6) that there is no difference between all the commercial asbestos fibre types in relation to asbestosis and bronchogenic carcinoma. This has also been confirmed at the three latest scientific conferences on health hazards of asbestos, namely, the Johannesburg Asbestos Symposium of October 1977, the Washington Conference in December 1977 of the Society for Occupational & Environmental Health and the Science Week Conferences organised by the New York Academy of Sciences in June 1978.
 - 2.1 It is only in conjunction with mesothelioma that some countries, e.g. U.K., Ireland, Holland, Japan, Norway and Sweden, accept a higher risk for crocidolite for which assumption to date no conclusive scientific evidence has been produced. (7)
 - 2.2 It would appear that the known and proved number of primary diffuse mesothelioma cases all over the world is still confined to under 5 000 as indicated by Professor J.C. McDonald at the Johannesburg Asbestos Symposium in October 1977, (8) where he presented an updated version of a paper specially prepared for the 18th International Congress on Occupational Diseases at Brighton in September 1975.

2.2.1 /2.....

- 2.2.1 In general, this paper did not give additional information to that presented at the Brighton Conference, except for quoting and over-emphasising the incidence of the disease in personnel employed during World War II in two gas-mask factories, one in England and the other in Canada, with high rates of cases at relative low exposure. However, during discussions it was proved that those exposures were not as low as indicated by Professor McDonald, but were in fact very high. Crocidolite was dustier to handle and the gas masks had contained loosely bound pads. (9)
- 2.2.2 Those 5 000 cases have been reported throughout the world over a period of 15 to 25 years. (McDonald quotes a period of 15 years from 1960 to 1975, whereas other researchers cover up to 25 years). However, the annual incidence of lung cancer amongst males in the U.K. amounts to just over 25 000 (10%) and in the United States of America to more than 50 000 cases (5%). According to Selikoff at the Johannesburg Asbestos Symposium (10, 11) and subsequently confirmed by Dr. R. Saracci for the IARC of Lyon at the Washington Conference, lung cancer is in fact a far bigger risk than mesothelioma, mainly in conjunction with smoking.
- 2.2.3 Where employment records were available (2 721 cases only) 66% of mesothelioma cases could be attributed to asbestos exposure (12) depending on cohorts examined or reviewed.
- 2.2.4 However, there was positively no asbestos exposure in 34% of the cases. It seems strange that hardly any attention has been paid to this phenomenon although for several years it had

been /3.....

been known that in two villages of Eastern Anatolia, Turkey, pleural and peritoneal mesothelioma were of higher incidence than reported anywhere ~~else~~ in the world. All soil samples were negative of asbestos. At the New York Conference it was confirmed that recent mineralogical studies established that certain zeolite minerals, namely, erionite and chabazite, were the causative agents for these diseases in that region.

- 2.2.5 The ecology of mesothelioma is still unknown and there is as yet no reliable method of early diagnosis of the disease. (13)
 - 2.2.6 Looking back one is amazed when realising that it was through scantily deduced and by no means subsequently proven constant association with this still relatively rare tumour that Cape blue asbestos was incriminated as being the most hazardous of all asbestos fibres. This occurred mainly in South Africa where blue asbestos was considered the sole causal agent, but not so in other countries.
 - 2.2.7 Hammond and Selikoff report a high incidence of cases among insulation workers who, they emphasise repeatedly, were exposed largely to chrysotile and amosite. (14) Apparently, crocidolite was not used in the U.S.A. for insulation purposes. The largest asbestos manufacturer in the U.S.A. never used crocidolite for insulation at any time, employing it only in two product lines, namely, AC pipes and packing. (15)
3. The whole concept of asbestos exposure was queried at the Johannesburg and Washington Conferences. According to Dr. George Wright it was intellectual arrogance to speak about asbestos exposure "being characterised solely by the number of fibres of varying sizes present in the environment" of the working place. "In the real world of those exposed in the workplace /4...

workplace nothing could be further from the facts". No people anywhere in asbestos mining, milling and/or manufacturing were exposed to asbestos only. There were various risks other than asbestos which, except for the synergistic effects of cigarette smoking, had so far been completely ignored. (16)

4. Past exposure was incredibly high by modern standards, definitely in the hundreds, peak periods in the thousands. (17, 18, 19, 21, 22, 23) Most exposure estimates were vague to the extent that today one should not even bother to consider them.
5. Except in the case of asbestos mining, it is unusual for workers to be exposed to one type of asbestos only in the course of a lifetime, and except for very few and fairly small applications, blue asbestos fibres are never used on their own but mainly in relatively small quantities as supplementary fibres with fibrous mixes of the asbestos-cement industry.
6. Although Cape crocidolite has been used in the asbestos-cement industry all over the world for more than half a century, few confirmed cases of mesothelioma have been reported from these factories.
7. For a number of years before and after World War II, blue asbestos was used extensively in Britain for insulation purposes. Nevertheless, it has been confirmed by Greenberg and Davis that under industrial conditions prevailing in Wales and England, the significance of crocidolite in the ecology of mesotheliomas could not be determined. (24)
8. Professors A. and J.C. McDonald maintained that mining

environments /5.....

environments may well be free from carcinogens of the kind found in factories, ports and industrial cities. Moreover, fibre as produced at mills almost certainly differs in length and diameter from that used in application and processing. (25, 26)

9. Many observers completely ignore the fact that in the earlier reports of Wagner there were only a few cases of occupational exposure, the balance being environmental where other pollutants, tubercular scarring, climatic conditions, ethnic factors, etc. could have been the cause of the disease or would have had synergistic effects.
10. On the assumption that mining and milling would undoubtedly have been the heaviest industrial exposure to Cape blue asbestos in South Africa, it is worthwhile to look at Professor Webster's figures as quoted at the Johannesburg Asbestos Symposium in October 1977.
 - 10.1 The South African Asbestos Tumour Reference Panel had 712 cases on its register, which included all the known cases since 1956.
 - 10.2 Occupational exposure had been established in only 420 cases and in 10% of these there was no suggestion of asbestos exposure.
 - 10.3 Actual mining exposure accounted for 33% of these cases, or roughly 20% of the total.
 - 10.4 There were another 20% environmental cases, mainly from the north-western Cape, 20% non-mining industrials and 30% with no knowledge of any exposure or details of occupational history.

11. At /6.....

11. At the New York Conference it was emphasised that :

11.1 Respirable asbestos fibres are ubiquitous anywhere in the world. Many short fibres found in human lungs may have nothing to do with commercial types but may have been completely untreated natural fibres inhaled from the ambient atmosphere.

11.2 There must be an exposure level which can be tolerated otherwise we would have had many more cases of mesothelioma apart from more interstitial fibrosis on mines and mills.

11.3 In British ships much use was made of blue asbestos for the spraying of decks and bulkheads. Thousands of people must have lived constantly under these conditions. One and a half million men have served in the British Navy between World War I and now.

This means there does exist a level of exposure which is safe; unless respirable fibre is released through stripping or demolition, there appears to be no risk.

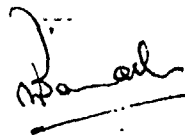
12. CONCLUSIONS:

The main arguments against crocidolite were and are still being taken from initial South African investigations of limited industrial and mainly environmental exposure. Anywhere else in the world, industrial asbestos exposures were mixed and in most cases extremely heavy. No valid conclusions can, therefore, be drawn regarding the specific involvement of this particular type of asbestos. When summarising the discussions of the special session at Lyon dealing with malignancy and fibre type, Rossitter states that each commercial variety of asbestos fibre, except anthophyllite, has been associated with excessive mesothelioma. (27) This has been confirmed at subsequent conferences.

There /7.....

There are still many serious gaps in the medical knowledge of asbestos-related diseases apart from the fact that many medical evaluations are not internationally comparable by reason of differences in diagnosis and incompatibility of statistical information and documentation.

The absolute carcinogenicity of the various asbestos fibres is unknown. According to Langer the present emphasis on crocidolite is premature. (28)

A handwritten signature, possibly reading "J. Langer", is written in dark ink. The signature is stylized and appears to be written over a horizontal line.

FB/WA

Johannesburg

2. November, 1978.

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