

able. Measurements made since 1953 show that the mean yearly dust level has been fairly constant from year to year and has varied from place to place between 1 and 2 particles per 100 microns long and at least three times as long as they were wide per c.c. of air. Chrysotile was used predominantly in the factory, but small amounts of crocidolite were also processed at all relevant periods. Death rates have been recorded for all the 250 men who were employed for at least 20 years in the scheduled areas since the first man completed 20 years' exposure in 1916, and for the 558 men and 220 women who were employed for at least 10 years in the scheduled areas but were never employed in these areas before 1933. The results show a substantially increased mortality for men who were exposed for 10 or more years before 1933 (48 deaths from all causes against 17.1 expected). The increased mortality among these men can be accounted for by an increased mortality from cancer of the lung (12 deaths against 1.2 expected) and from diseases of the respiratory and circulatory systems associated with asbestosis. Men employed before 1933, but for less than 10 years, showed an increased mortality from lung cancer (5 deaths against 2.4 expected), but no significant increase from other causes. Men and women who were exposed only since January 1, 1933, have had a mortality experience close to the national average. Analysis of the trends in mortality shows (1) a decrease in mortality from lung cancer and other deaths associated with asbestosis with reduction in length of employment before 1933, and (2) an increase in mortality from lung cancer and other deaths without asbestosis with age. Twenty-three cases of lung cancer occurred in men who had been employed in the scheduled areas for at least 20 years. One was regarded as a pleural mesothelioma and the rest (approximately 18 in excess of expected) appear to have been ordinary bronchial carcinomas. Four other mesotheliomas have been diagnosed since 1963, all in men and women with less than 10 years' exposure, one with only seven months' exposure, and one in a man who had been employed in the scheduled areas only since 1937. The results provide grounds for believing that the occupational hazard of bronchial carcinoma has been largely eliminated, but the data are insufficient to estimate the extent of the risk which may remain.

--Authors' abst.

- 80 Fibrous and Mineral Content of Cosmetic Talcum Products. L. J. Cralley, et al. Am. Ind. Hyg. Assn. J. 29, 350-354 (July-Aug., 1968).

With the exception of 4 of the 22 cosmetic talcum products analyzed, the levels of free silica, cobalt, nickel, chromium, and manganese were generally of a low magnitude and within a narrow range. It is not known whether the four products represent a significant proportion of sales in the industry or to what extent the sources of the talc in these four formulations are the same as sources of talc specified for use in other talcum products in the competitive market. The levels of silica, chromium, and nickel in these four products are sufficiently high, however, to be of concern in their potential to cause disease. All of the 22 talcum products analyzed have an appreciable fiber content, ranging from 8 to 30% by count of the total talcum particulates, and averaging 19%. The fibrous material was predominantly talc but probably contained minor amounts of tremolite, anthophyllite, and chrysotile as these are often present in fibrous talc mineral deposits. Cosmetic talcum products should be included as a source of the fibers, from which may be derived ferruginous bodies observed in the lungs of humans. The meaning of the presence of these ferruginous bodies, however, is uncertain. Industry has the know-how to safely handle fibrous material as well as toxic metals such as nickel, chromium, cobalt, and manganese once adequate criteria have been established. Unknown significant amounts of such materials in products that may be used without precautions may create an unsuspected problem. For this reason continued research and investigations and communication of findings are necessary in this area. There are 24 references.

--Authors' conclusions

- 81 Ferruginous Bodies in Human Lungs. Prevalence at Random Autopsies. M. D. Utidjian, P. Gross, and R. T. P. deTreville. Arch. Environmental Health 17, 327-333 (Sept., 1968). Reprints available from Industrial Hygiene Foundation, 5231 Centre Ave., Pittsburgh, Pa., 15235.

Ferruginous bodies with transparent central core or no visible central core were present in 17 of 100 autopsies; they were found in 55 of 50 men and 12 of 12 women. The youngest subject with ferruginous bodies was a 24-year-old woman. The bodies were generally more abundant in the lungs of the men. Thirteen-two patients in this series had some form of malignant disease, but there was no apparent association between the malignancies and the relative abundance of ferruginous bodies. There were two cases of primary lung cancer in men.