

in this study 333 of 511 employees have worked for less than five years! Only 66 of 511 had worked for more than 10 years. Seventy-three of 511 actually were employed for less than one year (page 47). Moreover, of the 511 studied, 76 were "controls" which consisted of 49 office workers and other employees "not exposed to asbestos dust" and 27 persons seeking employment in the asbestos industry for the first time (page 48). It should be noted that these were not true controls since on page 42 it is learned that even in these areas atmospheric dust concentrations ranged from 120,000 to 1,200,000. We now know that the effect of the environment is potentially very important. In Wagner's studies in South Africa most of the mesotheliomas occurred in association with environmental asbestos exposure and not in an industrial exposure. Controls should have been sought in an area in which asbestos was not present at all. Thus, the baseline eight per cent cough and seven per cent dyspnea may be at least partly significant (page 52) and the findings with less than 25 million-particle-years of 14 per cent cough and 12 per cent dyspnea may have greater significance.

It is important to stress that the five mppcf value is based upon dust counts of all particles, fibrous and particulate, asbestos or not. Therefore, it cannot be presumed to represent a safe limit of asbestos in all applications.

The dust counts given were average. Yet the range was enormous and there is much biological evidence to indicate that peak exposures may be more important than constant overall background exposure since on these occasions the defense mechanisms of the lungs may be overwhelmed with huge retention at these particular times. Pickermen are listed in table 8 as being exposed to from 34.3 to 74.3 mppcf. However, during certain phases of their operations dust concentrations may range as high as 211 mppcf (page 26). In carding, for example, the exposure is listed in table 9 as 29.1 mppcf but when the machines are run slowly, concentrations were as low as 6.4 mppcf and when operated at high speed, the concentration reached 139 mppcf. Similar statistics are available for other operations. Twisting frequently produced concentrations of over 20 mppcf and when low grade materials are used, the dust production is increased. Even the low counts associated sometimes with weaving must be accepted guardedly since proportionately there were more and longer fibers. Table 12 indicated counts of 4.7 mppcf, yet the dust created depended on many factors including the number of warp threads per unit of width, quality of material used, whether or not dry weaving was used, etc. In some weaving operations, counts of more than 140 mppcf were found. Although dry and wet weaving gave different results (table 12), operators were interchangeable and the machines were often side by side. Counts also varied when all looms in a room were used or not, since the room size and exhaust ventilation were constant. What was woven also made a difference, brake lining weav-

ers appeared to have heavy brake lining

Medical data in More than one-half of age (page 47) age of any group that the average with the post office and chemical industry that the asbestos in this country. On 1920" (page 48).

This was a "in difficulties it enters dead are buried. examined in each with caution because is particularly true (page 58).

Finally, note the figure they present. On the basis of cubic foot may be dust exposure un

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2. DARRSEN, W. BAYERN, H asbestos to
3. VORWALD, A. of asbestos
4. BLOOMFIELD, and of and
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6. WAGNER, J. thelioma
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