From them, death rates for the general population of Quebec and of individual counties were calculated for specific years and analyzed by cause.

Practically all employees of one company are covered by a group policy of life insurance which, fortunately, nearly all of them continue to carry when they retire. A very few are not covered by this policy, and those who leave the industry for one reason or another except retirement usually are no longer covered, but this is likewise a small number. As an additional check upon the information obtained from the clinical records on this group, the records of the life insurance company were examined for all death claims paid under the policy, and particular notice was taken of the claims in which the proof of death was based on cancer of the lung.

Deaths from lung cancer among asbestos miners were thus determined from the clinical records in the medical service of the industry and checked by means of the death certificates and insurance company records. The deaths were then verified individually by reviewing them with the physicians in charge of the medical services. In this manner, there was established a list of cases in which primary cancer of the lung is considered to have been proved as the cause of death. A few cases in which lung cancer is strongly suspected but not proved as the cause of death were considered separately. Mortality rates have been calculated using both the "proved" and the total of "proved" and "suspected" cases during the years under observation. Comparisons were then made between the death rates from the same cause among specific segments of unexposed persons. All lung cancer deaths, both suspected and proved, were carefully analyzed to determine possible relationship or correlations between the development of lung cancer and any factor known from the clinical records, such as family history of cancer, personal history of heavy smoking, occurrence of asbestosis, or exposure to asbestos.

In addition to this analysis of deaths occurring in the cohort and during the years under observation, every known death from cancer of the lung, as well as every case diagnosed but still living, has been tabulated and analyzed. They will be discussed separately from those included in the population and time-interval under study.

A comparison of lung cancer mortality in the asbestos-producing counties has been made with that in counties which are far removed from the asbestos mines and in which, presumably, no asbestos miners live.

Finally, in order to broaden the comparison of death rates in different population groups, the rates have been collected for Canada generally, and for the United States, according to the most recent published and unpublished material.

## Results and Interpretation

The cohort which was constructed according to the criteria described in the preceding section has been considered individually and compared with the general population. Description of the cohort will be presented here as a preface to the results of the study:

| | |
|---|---|
| Original Cohort | 6,091 |
| Lost Persons Deducted | 133 |
| Final Cohort | 5,958 |
| Living in 1955 (working and retired) | 5,771 |
| Dead by 1955 | 187 |
| Cancer of lung | 9 |
| Questionable cancer of lung | 3 |
| Other causes | 169 |
| Unknown causes | 6 |
| Smokers | 4,873 |
| Nonsmokers | 1,265 |
| Unknown | 20 |

Tables 1, 2, 3, and 4 present age, number of years of employment, weighted average exposure, and smoking habits of the cohort.

A comparison of the exposure to asbestos dust is presented in Table 3. All members of the cohort were placed in one of three categories, representing increasing degrees of exposure based on a weighted average of the years spent at various levels of dustiness. The degree of dustiness for each job category was determined after consultation with persons familiar with the environment and conditions in the various work



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