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OCCUPATIONAL CANCER

OF THE URINARY BLADDER IN DYE-STUFF OPERATIVES AND OF THE LUNG IN
ASBESTOS TEXTILE WORKERS AND IRON-ORE MINERS

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The study of occupational cancer has proved to be a valuable method of learning some aspects of the biology of cancer in its wider sense. This form of cancer is an unwitting experiment in man, but until it can be reproduced in animals at will, doubt must always exist as to the exact nature of the carcinogen involved and of its mode of action. The time lag between the observation that cancer occurs in those engaged in certain occupations and the successful induction of the disease in animals may be very long. For example, Percival Pott¹² described cancer of the scrotum in chimney sweeps in 1775, but it was not until 1922 that Passey¹³ induced cancer of the skin of mice by means of an ether extract of soot. Similarly, in 1893, Rehn¹⁴ described cancer of the bladder occurring in workers engaged in the manufacture of aniline dyes, but it was not until 1937 that Hueper and his co-workers¹⁵ were able to induce bladder cancer in dogs by means of ingestion of the dye intermediates. So far no attempt has succeeded in reproducing the lung cancers of the Schneeberg and Joachimstal miners (Haerting and Hesse, 1879;¹⁶ Siki, 1930¹⁷), though this disease has been known for centuries. The induction of a few local sarcomas in rats following injection of cobalt metal (Heath, 1954¹⁸) might be a stimulus to further experimental work.

We are well advised to be ready to recognize new forms of hazard in any industrial process, but it is even more important to advise industry of the dangers that are likely to be inherent in the manufacture or use of suspected or proved carcinogens. This was certainly done when the new plants for effecting the catalytic cracking of oils were set up (Symposium on a Cancer Control Program, 1951).¹⁹

As such a variety of occupational cancers is now recognized, this presentation is confined to making a classification of the most important and to discussion of those with which the authors are most familiar (Table 1). It seems hardly necessary to say that, before it can be claimed that any particular form of cancer has an industrial origin, it must be shown that the incidence is significantly higher in exposed workmen than it is in the general population. This is not always easy, as morbidity statistics of cancer in most countries are not available, hospital statistics being quite fallaciously high. Secondly, in sites where there is a high natural incidence, any occupational risk tends to be masked.

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List of Some Sus

Substance

Minerals
Asbestos

Chromium (ore)

Nickel
Silica
Asbestos
Iron (hematite)
Beryllium

Unknown

oils
Lubricating
Petroleum

Pitches
Soot
Tar

Rays
Atomic

Röntgen

Luminous poi
dium)

Organic chemica
Dye intermedi

A very signi
emphasized by
given populati
proportions of
example, there
contrast with
carcinoma of
European popu
population the
compared with