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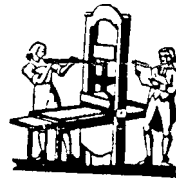
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[The Hazards of Industry]

MODERN HOME MEDICAL ADVISER

YOUR HEALTH AND HOW TO PRESERVE IT

Edited by
Morris Fishbein, M.D.



Unabridged

WITH 136 LINECUT AND HALFTONE ILLUSTRATIONS

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over forty should keep in mind
d; everyone is liable to cancer;
therefore consult a physician.
promptly and properly treated,
, and take his advice at once.

CHAPTER XXIV

The Hazards of Industry

CAREY P. McCORD, M.D.

INTRODUCTION: OCCUPATIONAL DISEASES

EVERY JOB ON WHICH anyone works brings with it some degree of exposure to risk from contact with chemical substances, with electric power, with conditions of temperature, humidity or similar changes in the environment that may cause illness. The occupations are now recognized as of first importance as a factor in causing disability.

The human body has in it certain factors for controlling its own temperature, but sometimes outside conditions become so severe that the body's own thermostatic function will not control. Cold constricts the blood vessels in the skin; heat expands them. Sudden changes of temperature, particularly from extreme heat to cold, result in discomfort and are believed to be associated with pains in the limbs and with catching cold. Excessive heat for long periods of time can produce changes in the body leading to unconsciousness and even to death.

In the article which follows, Dr. Carey P. McCord considers first the general conditions associated with occupational diseases and then classifies them according to the chief factor involved in bringing about the illness. For example, if anyone is exposed to extreme dry heat he can develop heat stroke. This is associated with fever, a rapid pulse, flushing of the skin, profuse sweating, and a fall in the blood pressure. Eventually, of course, exposure to extreme heat may so affect the organs and tissues of the body that anemia, inflammations of the skin, disturbances of the kidney, and breakdown of many of the other organs of the body may follow. There are innumerable occupations in which heat is a factor, particularly such occupations as those of blast-furnace and boiler-room workers, of workers in the chemical and cement industries, of cooks, laundry workers, tanners, and similar occupations.

Sudden changes in the temperature are particularly likely to occur to men in the ice industry, to butchers, to candy makers, cooks, drivers, electrotypers, fishermen, florists, miners, packing-house employees, soap makers, and similar occupations.

CAISSON DISEASE

One of the most interesting of all occupational diseases is called caisson disease. It is associated with work under conditions in which the air is compressed. In building tunnels, laying deep foundations for buildings, and in submarines, work has to be done under increased air pressure in order to keep out water. The worker is lowered gradually, and at short intervals the pressure of the air in the tunnel is increased. He first feels the sensation of compression in his ear-drums, and this can be relieved by swallowing. If the air is compressed too quickly, bleeding may occur. On account of the compression, the blood and the tissues of the body dissolve an increased amount of air. If now the pressure is suddenly decreased, bubbles of nitrogen are formed which cut off the blood supply from various parts of the body. As a result, the patient develops the condition called the bends, known scientifically as caisson disease. The chief symptoms of this condition are weakness, dizziness, pains in the back and legs, painful constriction of the chest, difficulty with hearing, and occasionally paralysis.

DAMPNESS

Occasionally workers are employed in places which are exceedingly damp. This happens particularly in such occupations as those of the fisherman, leather preparers in the glove industry, laundry workers, packing-house employees, workers in the paper industry, pottery workers, sewer workers, and farmers. Most occupations in which dampness occurs are also associated with high and low temperatures and with high humidity.

There are, however, some conditions in which the wetness alone is the serious factor. Exposure to dampness is usually associated as a contributing factor with coughs and colds, in rheumatic disease, and in changes in the skin. Of course, the human being is not adapted to living in exceedingly damp areas; hence he should endeavor to avoid the dampness by wearing waterproof clothing, rubber boots, and similar protective coverings. Moreover, accumulation of water can

ADVISER

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THE HAZARDS OF INDUSTRY

641

frequently be prevented by digging channels or ditches to carry away
the excess.

DUST AS A HAZARD

The most serious hazard today in many industries is dust. The dusts
not only block the tissues, but in some cases act as an irritant, so that
there are inflammation, swelling, and even destruction. Moreover, the
dusts sometimes carry germs with them into the tissues, and once in
the body the germs may set up inflammations.

Among the most dangerous of the dusts which affect mankind is
silica. This produces a condition known as silicosis. X-ray pictures
show the lungs full of nodules following the lodgment of the silica in the
lymphatics. When the disease is well advanced, the lungs do not ex-
pand, and breathing is difficult, and there may be continuous coughing.

The dust from asbestos produces the same type of inflammation that
silica produces, although apparently milder. In order to prevent
silicosis, workers in any industry in which silica is much used should
avoid inhalation, and the head of the industry can aid the worker with
certain simple procedures. Water or oil may be used to wet the dust,
thus preventing it from rising and filling the air. Exhaust systems
can be applied to remove the dust at the point where it develops.
Sometimes the work can be done in an enclosed chamber with the
worker outside. Finally, where dust is exceedingly excessive, helmets
may be worn by the workers to cover the head and neck, and they can
get their air by breathing through pipes from a non-dusty area.

Workers in such an industry should have their lungs X-rayed
regularly, and there should be a physician in the plant who is familiar
with the changes that take place in the lungs under exposure. When-
ever a worker in a dusty trade has a cough, a dryness of the nose and
throat, pain on breathing and hoarseness, whenever he coughs or ex-
pectorates blood, and develops colds which simply refuse to clear up,
he should begin to wonder whether or not the dust is affecting him
unfavorably. There are hundreds of industries in which dust is a
serious factor. In all of them it is a hazard, but when it is silica or
asbestos dust, it is a menace to health and life.

INFECTIONS OF INDUSTRY

Certain industries are associated with the likelihood of special in-
fections of the body. For example: workers with hides and animal hair

MODERN HOME MEDICAL ADVISER

are constantly exposed to infection with anthrax. This begins as a malignant pustule, an inflamed pimple or a boil, which becomes hard, has a purple center and a deep red zone around it. Gradually the breaks down and discharges a thick, bloody material, and eventually may even become gangrenous. The lymph glands in the neighborhood swell, and the veins become inflamed. Associated with this there may be general weakness, including chilliness, loss of appetite, vomiting, and a high fever.

Anthrax is a dangerous disease, and workers with hides must do everything possible to prevent infection. Foreign skins or hair should never be carried on the unprotected shoulder. All hides and animal hair should be thoroughly sterilized. The workers should wash their hands frequently in antiseptic solutions, and those who sort hair should wear breathing devices to prevent inhalation.

As is pointed out elsewhere, the body may become infected from the tissue of infected rabbit with tularemia, from infected straw with actinomycosis, from a contaminated nail with tetanus, from infected milk with undulant fever, and so on, from various substances. Workers in mines and on farms who walk about barefooted may develop hookworm infection.

Every cut, scratch, or abrasion sustained in any industry should be treated at once with suitable antiseptics, such as iodine, to prevent infection. Industries in which infections of the skin, such as boils, carbuncles, and abscesses, are most likely to develop are those of the butcher, the canner, feather workers, fertilizer makers, garbage workers, glue makers, hair workers, dairy workers, silk workers, soap makers, and veterinarians.

RADIANT ENERGY DISEASES

Among the most serious of the occupational diseases recently developed are those associated with the use of radium, the X-ray, and various radioactive substances. Exposure to X-rays and to the emanations from radium may produce serious burns and irritations of the skin which result in cancer. They also affect the blood and the blood-forming organs seriously, so that deficiencies of both the red and the white blood cells are exceedingly common.

Employees in watch factories who prepare the luminous dials have sustained generalized radium poisoning with disastrous results. Workers must learn to protect themselves against these hazards, first