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is again directed to the regulations which require stone-dusting to be carried out. It is not always recognized how quickly a potentially dangerous layer of coal dust can accumulate.

During the year 111 persons were killed and 597 injured in accidents owing to underground haulage and transport, while in accidents on the surface 34 were killed and 255 seriously injured. Of the accidents on the surface, 4 of the fatalities and 52 of the others were incurred by youths of less than 18 years of age.

"Beat knee" has occurred with increased frequency in recent years, probably owing to the increased use of conveyors in thinner seams—the ideal knee pad has yet to be designed.

Certified cases of pneumoconiosis in the South Wales coal field (which includes the anthracite area) numbered 3,800, compared with a peak number of 5,821 in 1945. In the other coal fields the number of cases is growing, and reached 950 in 1947. Much energy is being expended on the dust problem.

Appendixes give much statistical information about employment, output, extent of mechanization, accidents and their causes and industrial diseases. The total number of persons employed at the mines was nearly 729,000. These worked an aggregate of 179.7 million man-shifts, and raised 191 to 199 million tons of mineral. Altogether 618 persons were killed and 2,446 seriously injured. Comparative figures for these quantities are given for each year back to 1947.

THOMAS BEDFORD, London, England.

WHEN AND HOW PATIENTS WITH ARTERIAL HYPERTENSION CAN WORK. F. CHIOVINO, *Med. depor. y trab.* 14:2858 (Oct.) 1949.

WORK PLACEMENT. JAN ROUBAL, *Pracovní lék.* 1:95, 1949.

Correct placement of workmen based on medical examination is discussed. There are two main sides to the problem: (1) how to evaluate the ability of the workman and (2) how to evaluate the work and the working surroundings from the point of view of burdening the man. Both these questions are discussed from a broad angle. Different classifications of the working ability of men are compared, as well as classifications of types of work and working surroundings. The mutual relationship of both types of classifications is stressed. The problem of the placement of the partly disabled is discussed, and a classification of their ability to work is given. Finally the responsibilities of the physician, of the engineer, of the social worker and of the management regarding proper placement are considered.

FROM THE AUTHOR'S SUMMARY.

Occupational Diseases and Hazards

PNEUMOCONIOSIS AND LUNG CANCER: WITH SPECIAL REFERENCE TO SILICOSIS AND ASBESTOSIS. L. W. SMITH, *Compens. Med.* 2:3 (Nov.) 1949.

Pneumoconiosis is discussed with particular reference to silicosis and asbestosis and the subsequent association of pulmonary cancer. An attempt has been made to analyze critically the statistical data which has been presented in the literature over the last quarter of a century, both pro and con, respecting the etiologic relationship of these two conditions. The inadequacy of the evidence incriminating silicosis as an etiologic agent in the development of cancer of the lung is pointed out, and it is emphasized that such data should be reviewed by the court in considering

compensation on the basis of insignificant statistical data, with respect to control information, viz., the incidence of carcinoma of the lung in the community in which the patient lives and in the occupational group as a whole, corrected for age and sex. Otherwise, such evidence will be found wanting and inevitably in favor of the claimant. It is recognized that such claims will increase because carcinoma of the lung throughout the world is increasing.

DERMATOSES DUE TO KAMBALA WOODS—ULCERATIONS DUE TO CHROMIUM COMPOUNDS. A. LANGELEZ, PACT 4:26 (Feb.) 1950.

Ulcers of the hands and feet and perforation of the nasal mucosa may occur among workers in plants handling chromium compounds (chrome steel, chromates, bichromates, etc). Prevention consists in the use of barrier creams where possible and where they cannot be used in thorough washing with water and the application of a solution which is 25 per cent hydrochloric acid, 25 per cent alcohol and 50 per cent water, or, alternately, of a 2 per cent astringent solution of iron sulfate. Borated or sulfated cream should be applied to the accessible nasal cavity with the aid of a finger.

Kambala wood workers are exposed to an irritative or toxic dust. The skin lesion which may develop is polymorphous: Mild pruriginous erythema may occur in some persons, while in others isolated or confluent papules may develop. There may be more or less generalized eczema involving the neck and ears. Disseminated papules may appear on the chest, the back or the extremities. The mucosa of the eye may be involved frequently. Certain persons may present involvement of the respiratory passages with the clinical aspect of severe and prolonged attacks of asthma. The dermatosis may subside when exposure ceases temporarily, and immunization may result from the first contact with the irritative dust. On the other hand, permanent sensibilization may result. Local aspiration of dust, protecting clothes and goggles, repeated washing of the hands and the use of barrier creams for hands, face and nostrils may effect control.

SKIN CANCER IN THE ENGINEERING INDUSTRY FROM THE USE OF MINERAL OIL.

C. N. D. CRUICKSHANK and J. R. SQUIRE, Brit. J. Indust. Med. 7:1 (Jan.) 1950.

This study indicates that the hazard of skin cancer is found in certain jobs in the engineering industry. The evidence is drawn from three sources: (a) workers exposed to cutting oils in "bar automatic" shops; (b) records of patients with scrotal cancer at the United Birmingham Hospitals, 1939 to 1948; (c) animals in which tumors were produced by painting with a sample of cutting oil. Of the 138 employees examined, 79.6 per cent showed oil folliculitis and 32.6 per cent showed either hyperkeratotic plaques or pigmented rugose warts similar to the ones observed in tar workers and mule spinners.

A case of scrotal cancer in a patient 42 years of age is reported as further evidence of possible carcinogenicity of cutting oils.

At the United Birmingham Hospitals during the period from 1939 to 1948 34 patients with scrotal cancer were treated. Of these, 6 were machine operators; 6 were workers exposed to oil in the engineering industry; 13 were tar and pitch workers; 9 were employed in other ways.

Biologic tests showed that cutting oil produced benign tumors in 2 of 4 rabbits by the fifty-second week, and a benign keratinized papilloma in 1 of 46 brown pure strain C57 mice after 54 weeks' painting.

EXAMINATION OF SILICOTICS WITH SPECIAL REFERENCE TO OXYGEN DEBT. O. LEHOTAN, *Pracovní Lékařství* 2:61, 1950.

In view of the great scatter of the relative oxygen debt in normal healthy persons and in view of the difference in the norms according to the working conditions of the examined group, it is necessary to treat results obtained by this method of examination with great reserve. Under no circumstances should the oxygen debt be used alone to estimate respiratory deficiency. The behavior of the oxygen debt allows only an estimation of the over-all respiratory and circulatory factors, as well as all other factors influencing the working capacity of the individual.

ADAPTATION OF AUTHOR'S SUMMARY.

THE ASBESTOSIS PROBLEM IN SLOVAKIA. K. HOLOMÁN, *Pracovní Lékařství* 2:69, 1950.

At present not a single case of asbestosis of the lungs has developed in the three plants in Slovakia which have been investigated. This is due to the fact that the majority of the workers were exposed to dust containing asbestos fibers for relatively short periods only. The type of working process in these plants might also be of importance; raw and wet asbestos is used, allowing only relatively long and less noxious asbestos fragments to be suspended in the working atmosphere. Control examinations after longer periods of time will show whether certain suspected roentgenologic findings have an anatomic basis due to asbestos or were due to other causes.

ADAPTATION OF AUTHOR'S SUMMARY.

VANADIUM PENTOXIDE DUST: A CLINICAL AND EXPERIMENTAL INVESTIGATION OF ITS EFFECT AFTER INHALATION. SVEN-GÖSTA SJÖBERG, *Acta. med. Scandinav.*, 1950, Vol. 138, Supp. 238.

Sjöberg presents a comprehensive study of the problems arising from inhalation of vanadium pentoxide dust. The clinical material used consisted of a group of 36 workers engaged in the production of V_2O_5 , all of whom showed symptoms in varying degree. These patients were under the author's close supervision for more than a year. Most characteristic are the respiratory symptoms in the form of irritation of the nose, pharynx and larynx and of the bronchi with symptoms of bronchitis. Acute pneumonic changes in the lungs may also be present. A slight irritation of the conjunctiva is observed. No digestive disorder nor any severe damage to kidney or liver was noted. Chemical analyses showed increased concentration of vanadium in both blood and urine. This increase may be of use in differential diagnosis. A detailed discussion is given of all phases of the very complete clinical study. Symptoms generally appeared within a few days to a week after exposure. The duration of the disease varies from a few days to more than two months. Two weeks was the average duration where sick-leave was required. Treatment was mostly symptomatic.

Analyses of the quantity and chemical composition of the dust in the factory showed that the maximum concentration of vanadium present would have been 6.5 mg./M³. The best prophylaxis is obviously elimination of dust. The measures taken to this end are described. The handling of vanadium compounds without face masks is no longer permitted, and air pressure masks are worn in all processes likely to involve formation of dust. Strict personal hygiene is enforced, and workers are under medical supervision.

The second part of the paper deals with experiments in which rabbits were exposed to V_2O_5 dust of known concentration. High concentrations inhaled for a

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OCCUPATIONAL CAUSES OF CANCER. MAY R. MAYERS, *Compens. Med.* 3:11 (March) 1950.

Little is known about occupational causes of cancer, although there are chemical agents, used in industry, which produce cancer at specific sites in the body. Maximum allowable concentrations for exposure to noncarcinogenic substances have been developed, but such standards are not a guide to control of carcinogenic agents in industry, because there is no known relationship between the toxicologic properties of a substance and its carcinogenic potentialities. Control of carcinogenic agents is also difficult because of the delayed onset of cancer after exposure, and the fact that exposure to carcinogens rarely causes acute illness or death.

The better understood occupational carcinogenic agents discussed are beta naphthylamine and benzidine, producing cancer of the bladder; chromate, cancer of the lung; estrogens, breast cancer, and radiation.

The New York State Occupational Cancer Committee has undertaken a study of the environmental factors which possibly are responsible for the development of cancer. They are taking detailed occupational histories of living patients who have cancer and are supplementing this record with information about the environmental exposures known to be associated with those occupations. A statistical analysis of the data is expected to provide leads for further study of the occupational causes of cancer.

JOHN M. WELLER, Boston.

SKIN HAZARDS IN THE FUR INDUSTRY. M. H. SAMITZ and PRIMO MORI, *Indust. Med. & Surg.* 19:198 (April) 1950.

The authors enumerate the processes of the fur-dressing and dyeing industry and the fur-manufacturing industry. The commonest cause of skin trouble in these industries is trauma. Irritation by formaldehyde and chromic acid is also seen. Epidermal sensitization to natural and dyed fur is infrequent.

R. K. FUNKHOUSER, Cleveland.

A CASE OF PULMONARY ASBESTOSIS. R. LIVINGSTONE and E. W. STREET, *Brit. M. J.* 1:939 (April 22) 1950.

RESEARCH ON SILICOSIS. ENNIO ZANETTI, *Med. d. lavoro* 41:1 (Jan.) 1950.

The roentgenologic and clinical checking of the workers in a factory making abrasive soap, where such preventives as aspiration of dusts, job rotation and "plain" mask wearing are enforced, has shown that 5 out of 40 female workers were affected with silicosis: 2 in the nodular stage with initial conglomeration, 2 in the micronodular stage and 1 with moderate reticulation.

The investigator stresses the characteristics of the roentgenographic picture (small nodular shadows, unevenly distributed and of slight opaqueness, with generally shaded outlines and early tendency toward conglomeration) and the comparatively rapid appearance of the picture.

According to the investigator, the factors responsible for the appearance of silicosis were the 80 per cent quartz content of the soap, the fine grinding of the quartz and the insufficient protection of the workers. The remedial steps suggested include installation of machinery for mechanical handling of the abrasive powder or adoption of masks of greater filtering capacity.

ADAPTED FROM AUTHOR'S SUMMARY.