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This article is based upon data collected by the author from the examination of some 700 workers exposed to aluminum dust in German war industries. The examinations were primarily radiological and clinical but included also 125 vital capacity and sputum tests, and 100 blood counts. The chief complaints recorded in the personal medical histories of these workers were dry cough with stitch-like pains in breathing, dyspnoea, failing appetite and dragging gnawing pains in the abdomen. There were no pathognomonic findings on clinical examination. The blood counts exhibited a relative lymphocytosis and eosinophil cells were somewhat increased up to 5-10 per cent. Total leucocyte counts tended to be low, whilst red cell counts produced no significant changes. Blood sedimentation tests were also normal. Vital capacity tests showed a reduction in capacity. Four cases of spontaneous pneumothorax were noted, one of them fatal.

Radiologically the earliest sign consisted of focal shadows in the apical regions with, later, an increase (often one-sided) of the normal bronchial markings in the upper and middle thirds of the lung, giving a reticular appearance. There was also sometimes an increase in these markings in the lower lobes suggesting increased drainage to the hilum glands. Retraction of the diaphragm and distortion of the heart shadow were found. At a later stage the focal shadows tended to increase and become confluent (unfortunately the radiograms reproduced have been much reduced in size and do not bring out all the finer points mentioned).

One case came to autopsy. On microscopical examination the connective tissue elements of the lung showed coarse, branching hyaline collagenous fibres enclosing phagocytes containing fine and coarsely granular particles which differed from carbon particles by their jagged outlines. In parts of the lung these hyaline collagenous fibres were also found surrounding the walls of the alveoli, which contained phagocytes. These changes were most marked in the right upper lobe. (No illustrations are given.) The regional lymph glands exhibited a few of these dust cells lying chiefly in small groups. It is suggested that these histological changes result from a colloidal reaction between the aluminum dust particles and the tissue fluids.—*Bull. of Hyg.*

THE INJURIOUSNESS OF ALUMINUM DUST TO THE LUNGS.

Jöllen and Eichhoff. *Arbeitsschutz*, pp. 102-109 (1942); *Chem. Zentr.*, vol. II, p. 923 (1942).

Aluminum dust presents an industrial hazard.—*Chem. Abstrs.*

EXAMINATION OF WORKERS IN AN ASBESTOS FACTORY.

A. Böhme. *Arch. f. Gewerbepath. u. Gewerbehyg.*, vol. 11, no. 4, pp. 433-452 (Nov. 10, 1942).

This is a record of clinical and radiological observations made in an asbestos factory during the years 1936-1937 and the year 1940. The factory handled

raw asbestos and manufactured a variety of asbestos products. It employed up to 500 workers. Of 132 persons examined, 29 per cent showed radiological evidence of asbestosis. Correlating these findings with exposure, it is stated that there were in workers with less than three years of exposure 5 per cent of cases, in those with 3-5 years of exposure 12 per cent, in 5-10 years 56 per cent, and in over 10 years 79 per cent. Five cases of pulmonary tuberculosis were noted. The clinical histories of these are recorded.—*Bull. of Hyg.*

FURTHER OBSERVATIONS ON OCCUPATIONAL CARCINOMA IN ASBESTOS WORKERS. A. Wels. *Arch. f. Gewerbepath. u. Gewerbehyg.*, vol. 11, no. 4, pp. 536-560 (Nov. 10, 1942).

This article is a record of two cases of asbestosis complicated by cancer of the lung. The first patient was aged 43, with an exposure of 11 years in an asbestos factory; death was due to squamous cell carcinoma. The second worker had had 30 years' experience in asbestos work and showed at autopsy an atypical epithelial cell new growth.

The author suggests there is a causal relationship between asbestosis and carcinoma.—*Bull. of Hyg.*

INVESTIGATIONS ON THE CAUSE OF INDUSTRIAL LUNG DISEASE IN THE MANSFELD COPPER MINES. J. H. Hellmers and H. Udluft. *Arch. f. Gewerbepath. u. Gewerbehyg.*, vol. 11, no. 4, pp. 480-502 (Nov. 10, 1942).

This article is a general survey of the mineralogical aspects of the industry with special emphasis on their relation to the dust hazard, but very little medical information is contained in it. The copper mines have been worked for a period of 700 years, and what is known as Mansfeld pneumoconiosis ("Mansfelder Staublungen"), has been the subject of a number of articles since 1934, some of the findings of which have been summarized (in *Bull. of Hygiene*, vol. 11, p. 282, 1936). The article consists almost entirely of very elaborate chemical and mineralogical analysis of the raw material of the mines and the dust produced, including, by way of comparison, analyses of a portion of one silicotic lung obtained from a Mansfeld miner. No details of morbid anatomy or of the histological condition of this lung, however, are given. The figures of these analyses are not suitable for abstraction. The dust encountered showed particles of numerous different substances including limestone, kaolin, silica, quartz, feldspar, mica, sericite and rutile. These varied in size from less than 2μ up to more than 50μ .—*Bull. of Hyg.*

ILLNESS CAUSED BY CADMIUM. Joseph J. Schiffler and Henry Mahler. *Amer. J. Pub. Health*, vol. 33, no. 10, pp. 1224-1226 (Oct., 1943).

Two outbreaks of acute cadmium poisoning are described in which 7 persons became ill with acute gastritis

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Published re indicate that karaya gum in arabic) in the persons exposed include confecti engaged in the matches, porcel the known sour gums is present

afterwards the bronchi were filled with aluminum dust. Anatomic examination made at various intervals up to 15 days after the last inhalation showed that the lung purifies itself very quickly. Only a small part remains in several places. The particles are phagocytosed by alveolar epithelium. Aluminum dust is inert as is coal dust and no fibrosis is found. The author says that the experiments covered too short a time to allow conclusions—but he draws conclusions.—*L. Telcky.*

OCCUPATIONAL CANCER AMONG ASBESTOS WORKERS. A. J. Linzbach and H. W. Wedler. *Virchows Arch. f. path. Anal.*, vol. 307, pp. 387-409 (1941).

A 61 year old worker had worked in an asbestos plant from 1921-1939. After 3 yrs. of work he had had respiratory disturbances and at that time changed his working place so that he was scarcely exposed to dust. The development of his asbestosis has been followed radiologically since 1934; by February 1938

there was asbestosis stage III and dense basal fibrosis. The complaints increased. In February, 1940 there was a sharply defined, intensive, nearly homogenous shadow the size of a child's fist above the right diaphragm. Some less dense spots were seen within this shadow in May and later, a large cavity. From that, a cancer was diagnosed. Post mortem there was seen a chronic interstitial pneumonia which showed a very specific peculiarity. Asbestosis bodies were scattered irregularly all over the lungs. The cancer was a squamous cell carcinoma. The author discusses the literature thoroughly and concludes that asbestotic fibrosis creates a local disposition to cancer; one factor is the mechanical irritation from hornblende asbestos, the other the chemical irritation from silicic acid derived from the easily soluble serpentine asbestosis.

The study of this case for many years, the exact case history (Wedler) and the exact description of the pathologic findings (Linzbach) make this publication very valuable.—*L. Telcky.*

DUST, SMOKE, FUMES AND VAPORS: THEIR DETERMINATION AND ELIMINATION

A RAPID METHOD FOR THE MICROANALYSIS OF LEAD. L. T. Fairhall and R. G. Keenan. *J. Am. Chem. Soc.*, vol. 63, pp. 3076-3079 (Nov. 1941).

The authors present data to show that the apparent lead content of urine as indicated by the dithizone procedure is greater than the chemical separation of the total lead from large urine volumes. A rapid procedure for large urine volumes is described. The urine is adjusted to pH 10 with NH_4OH . After allowing the precipitate to settle it is filtered and washed with EtOH . The precipitate, after being transferred to a beaker and dissolved with HNO_3 ,

is boiled for 15 min. Citric acid is added and the sample is neutralized with NH_4OH . The lead is extracted with dithizone, is then removed from the dithizone with nitric acid and determined as the chromate by the Fairhall method, using sodium thiosulfate.—*Leslie Silverman.*

INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS. R. H. Müller. *Ind. & Eng. Chem., Anal. Ed.*, vol. 13, pp. 667-754 (Oct., 1941).

A profusely illustrated monograph with a bibliography of 313 references.—*Philip Drinker.*

OCCUPATIONAL DISEASES OF THE SKIN AND SPECIAL SENSES

GENERALIZED CONTACT DERMATITIS (LEATHER). A. B. Cannon. *Arch. Derm. & Syphil.*, vol. 44, p. 1156 (Soc. trans.) (Dec. 1941).

A 65 yr. old shoemaker was presented. He had suffered for 6 months from a generalized dermatitis which began on the legs as a red, intensely itchy papular eruption. The itching comes in waves at intervals of about 15 min. There is generalized redness, swelling, scaling and crusting, especially on the extremities, with irregular patches on the trunk. When tested with all the leathers he works with, it was found that he was sensitive only to the outer surface of black leather.—*Helen Lawson.*

THE DYNAMICS OF OCCUPATIONAL NYSTAGMUS. V. A. Panova and H. I. Medvedev. *Viestnik Ophth.*, vol. 18, pt. 2, p. 189 (1941).

As a result of this study, made at the Institute of Hygiene and Work, the authors question the validity of the accepted view that the development of miners' nystagmus calls for a transfer of the worker to surface labor. The material studied shows that miners with compensated nystagmus may remain at their jobs and those with mild forms without disagreeable subjective symptoms may remain in the mines doing lighter work, without danger to their vision.—*Ray K. Daily (Am. J. Ophth.).*

OCCURRENCE AND PREVENTION OF INDUSTRIAL ACCIDENTS

ACCIDENTS AMONG PUNCHERS. E. Zanetti. *Med. del lavoro*, vol. 32, pp. 89-96 (1941).

The author investigated the rate of accidents among punchers. Of those who used a hand lever, 13% had

had only 1 accident, and most had occurred in the first years of work.—*L. Telcky.*

A FATAL ACCIDENT ATTRIBUTED TO ANOXIA. G. Benassi. *Rass. med. ind.*, vol. 12, pp. 423-428 (1941).

chamber and which he attributed to oxygen lack. As some scientists expressed doubts that such an accident was possible, and could not explain this diminution of oxygen in the chamber, the author made repeated investigations on the oxygen content in confined spaces. When such chambers had been closed for a long time, he found only 5.88% O_2 . The engineers told him it was impossible that the transformer working in the chamber could consume the oxygen. The author hopes that experiments on a larger scale will be carried out. Judging from other similar circumstances, I believe it possible for the moving and heated oil from the transformer to absorb the oxygen.—*L. Telcky.*

INDUSTRIAL INJURIES IN THE UNITED STATES—1940.

M. D. Kossoris. *U. S. Bur. Lab. Statist., Labor Inform. Bull.*, vol. 8, pp. 8-10 (Oct. 1941).

300,000 more industrial injuries occurred in the United States in 1940 than in the preceding year, presumably because of increased employment, longer working hours and lack of expanded safety programs. 1,890,000 workers sustained injuries of which 18,100 were either fatal or resulted in permanent disability. Logging continued to have the highest accident rate (101.9). In descending order are iron and steel, food production, machinery, textiles and transportation equipment. Industries showing great increase in percentage rise are explosives, metal machinery, ship building and aircraft manufacture. In many cases the percentage increase of accidents does not parallel the rise in employment and hours worked: automobile assembly, automobile parts, building and heavy engineering. Laundries and hotels reported increases.

Of the deaths and total disabilities, 4500 occurred in agriculture and 4100 in construction. In manufacturing, trade, mining and quarrying and service, each group reported about 1900 deaths. The numbers of fatalities and permanent total disabilities per 1000 injuries was highest in the explosives industry. Next was employment at coke ovens and in the cement industry. Injuries to hand and fingers accounted for 77% of all, followed by foot or toe injuries 7%, and eyes 5%, other parts 5%, and arms and legs 3% each. Eye injuries were very common in the cement industry, in sugar refining and in rayon manufacture.—*Helen Lawson.*

ELECTRICAL ACCIDENTS: SHOCK, BURNS AND GLARE INJURIES TO THE EYES. H. E. Fisher. *Arch. Phys. Therap.*, vol. 22, pp. 611-617 (Oct. 1941).

VENTILATING AND AIR CONDITIONING

THE IMPORTANCE OF CLOTHING IN AIR CONDITIONING. C. P. Yaglon and A. Messer. *J. A. M. A.*, vol. 117, pp. 1261-1262 (Oct. 11, 1941).

The conclusion to be drawn from this study is that differences of comfort standards between men and

Dr. Fisher writes that among physicians, that tact with high tension dead, and that artificially the voltage may have condition, since so many picture. The moral is: until a doctor arrives.

Generally speaking, c than alternating current (if in the pathway of t attack the central nerve the respiratory center. voltages is fatal, when high voltages may be fatal. Fisher considers in deciding the severity length of contact. A from a high tension circuit (from the fall). Current important.

In discussing the problem electric injury, Dr. Fisher ment that in his 29 year Director and Chief Surgeon Company), he has new applications or permanent the actual parts destroyed particularly impressive pany's employees are exposed prior to an accident is known.

Where victims are method should be applied described briefly, is successful.

Any surgical care that until the patient has recovered can be put in tent are aseptic at first but The patient's appearance condition.

Injury to the eyes is common but Fisher has transitory. It results purple in the retina.

The paper closes with mention and for the for information on electric

ments of clothing, according to heat.

If women would dress comparable in warmth to comfortable in a tent

ABSTRACT OF THE LITERATURE OF INDUSTRIAL HYGIENE AND TOXICOLOGY

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GENERAL

SUSCEPTIBILITY TO ACCIDENTS. *Flanders Dunbar. Med. Clinics of North America, vol. 28, no. 3, pp. 653-662 (May, 1944).*

Personality profiles are reported which have proved diagnostically useful for the accident habit and accident proneness. Any dynamic formulation relative to the profile of these accident-prone personalities should begin with an investigation of the nature of their defenses. By focusing their values on immediate concrete experience, striving to find satisfactions and security outside the authoritarian hierarchy, and avoiding any marked submission or domination in vocational or social roles, accident-prone people get along without serious conflicts with authority. The defenses work most of the time. When thwarted, deprived, or subjected to unusual strain such as unemployment, or the pressure of a mother-in-law in the family, these persons "do something" to modify the situation or get away from it instead of keeping their anger bottled up inside. It is significant that these patients have a health record far above the average.

When the characteristic defenses fail and conflict with authority becomes unavoidable, the accident happens. Aggressiveness may break out in an act which appears to punish the victim or those responsible for his frustration, or both. Or it may come near enough to the surface to cause the kind of confusion which leaves the person defenseless in the danger situations normally encountered from day to day. Unlike depressed persons who consciously attempt suicide, the accident-prone individual usually reports no conscious premeditation. It is interesting, however, that he occasionally reports a dream or a "hunch" that "something was going to happen today." This trend is illustrated by the statement made so frequently by

these patients after the accident has happened: "you can't get around fate; I got mine today, you'll get yours tomorrow."—*Stephen L. Maday.*

SOME ASPECTS OF SICK ABSENCE IN INDUSTRY. *H. H. Bashford. Brit. J. Indust. Med., vol. 1, no. 1, pp. 7-10 (Jan., 1944).*

The Post Office is unique in being the largest individual employer of labor in the country and in possessing a medical service dating back to the middle of last century. Postal servants below a certain salary receive free medical service from some 2,600 general practitioners all over the country. Accurate sick records are kept of each employee, available to the medical advisers; these records are classified annually for groups of workers. Here is an immense and invaluable basis for following up the effects of many disabilities on working capacities. One instance (concerning five groups working in the same office) is quoted of the effect of lay supervision on sick absenteeism, showing how health and happiness is as infectious as disease.

Men over 40, as a group, incur 55 per cent more sickness than those under 40. Younger people incur more sicknesses, but, as a rule, of shorter duration. Women incur from 10 to 17 per cent more sickness than men. Catarrh and respiratory troubles claim from 20 to 30 per cent of sickness, and digestive disorders about 10 per cent. The sick rates of the outdoor staff tend to be above those of the indoor staff, because certain respiratory and rheumatic affections which might not disable an indoor worker might prevent a telephone linesman or postman from carrying on. A peace-time figure for sick absences in males under 25 was about five days a year, and six days for females of that age. The figures for a general mixed staff were eight or nine

a measured volume of air is entrapped by a paper siphon. The weight of dust so caught is ascertained and then the mass concentration of the total air-borne dust is calculated. The dust is removed from the paper siphon, mixed, and a known weight of it then taken for a sedimentation test. The sedimentometer consists of a glass cell through which passes a flat horizontal beam of light which impinges on a photoelectric cell. Light transmission values are measured: (a) when the cell contains clean alcohol; (b) when a weighed quantity (about 20 mgm.) of the dust sample has been added to the alcohol, and the particles are still in turbulent motion after stirring; and (c) after the lapse of the calculated time which will allow all particles but those smaller than 5 microns to settle below the level at which the light beam traverses the cell.

From the photometric readings the proportion (by weight) of dust below 5 microns is estimated, allowance being made for the fineness of division of the whole dust (as indicated by the "specific surface" of the dust). Hence, since the mass concentration of the whole dust has been ascertained by direct gravimetric methods, the mass concentration of the dust below 5 microns in air can be estimated.

In the report it is admitted that certain criticisms may be levelled at the procedure recommended, and since only a few samples have been so evaluated, no exact statement of the probable error of the method is given. It is said that the probable error will be under 10 per cent, an error which, it is said, is quite small in comparison with those to which other methods at present used in Great Britain are liable. The procedure gives no information about the constituents of the dust. —*Bull. of Hygiene.*

ASBESTOSIS AND PULMONARY CARCINOMA. H. W. Wedler. *Deut. med. Woch.*, vol. 69, no. 31/32, pp. 575-576 (Aug. 6, 1943).

The author has collected the published autopsy records on asbestosis from various countries and finds that there have been 14 instances of malignant disease of the lungs and pleura in 92 post-mortem examinations (16 per cent). This is in excess of the proportion of lung carcinomata in autopsies generally (2-6 per cent). Carcinoma as a complication of asbestosis occurred most frequently in males between 35 and 41 and was generally in the part of the lung most affected with asbestosis. Development of the lesion was slow but corresponded with the length and intensity of the exposure (12-42 years). There was often a long interval between the cessation of exposure and the development of the cancer, which, in the author's view, must now be regarded as an occupational cancer. —*Bull. of Hygiene.*

THE ASBESTOS CORN. H. S. Alden and W. M. Howell. *Arch. Dermat. & Syph.*, vol. 49, p. 312 (May, 1944). Derwitz in 1930 directed attention to warts and corns on the hands and feet of persons who worked with

asbestos and described the discovery of an "asbestos needle" in the cornified layer of tubercles removed from the hands. Alden and Howell observed small painful "warts" or "corns" in 99 of 167 workers who used amosite, a natural form of asbestos, in their work in a navy yard. The workers who have these lesions complain of an original pricking sensation and ability to feel a small splinter-like foreign body. Rough attempts to extract this splinter-like body are usually unsuccessful, but with rubbing or with neglect the sensation tends to disappear. In about ten days a small hard cornlike tumor appears, which slowly grows, often attaining the size of a small split pea. Frequently a pinpoint black center, which defies extraction, can be observed in the excrescence. At this period the small cornified tumor is tender to pressure, as though a splinter were present, and interferes with comfortable work. Cornification becomes more pronounced, a small hard corn resulting, and the area does not become normal in appearance and feeling until the hard center plug is removed by instrumentation. These corns usually appear on the tips of the fingers and knuckles, most often occurring in the thick-skinned areas of the hands. X-ray examination does not reveal abnormal shadows. Biopsy specimens from 4 patients revealed no pathologic changes except extreme thickening of the surface epithelium with hyperkeratosis. The dermis, while fibrous, was essentially normal in appearance and did not present any evidence of inflammation. Despite diligent search, foreign bodies could not be found in the sections. Observations and history of symptoms imply, however, that a foreign body is at some time present in the lesions. There is no relation to asbestosis of the lungs. No satisfactory method of prevention can be offered. —*J. A. M. A.*

EPIDEMIC KERATOCONJUNCTIVITIS: A REPORT OF A CASE WITH MARKED SYSTEMIC MANIFESTATIONS. John J. Curry and Francis C. Lowell. *New England J. Med.*, vol. 231, no. 1, pp. 11-13 (July 6, 1944).

A case is presented that showed many of the signs and symptoms of epidemic keratoconjunctivitis.

The outstanding feature was the presence of severe depression with only mild ocular disease.

Serologic studies during convalescence showed the development of antibody against the virus of epidemic keratoconjunctivitis. —*Authors' summary.*

SURVEY MADE OF HEALTH PROBLEMS IN THE FUR INDUSTRY OF NEW YORK. Harry Heimann. *N. Y. State Indust. Bull.*, vol. 23, no. 6, pp. 217-220 (June, 1944).

Based on a medical study of 694 workers in the fur industry it is concluded that:

1. Traumatic affections of the skin appear characteristically among the occupational groups of fleshers, unhairers, hand-stretchers and nailers.
2. The cases of dermatosis appear among those workers who handle the dyed furs and are not related