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INDUSTRIAL HYGIENE DIGEST

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Literature Abstracts

- MEDICAL
- ENGINEERING
- LEGAL --- decisions and trends

Industrial Health News



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FOUNDATION FACTS

Foundation Facts is a monthly news-letter issued to industrial concerns holding membership in Industrial Hygiene Foundation. The Foundation is a non-profit association of industries for the advancement of healthful working conditions.

Vol. 7

January, 1945

No. 1

Veterans Panel No. 2 Published

The panel discussion, "Putting the Disabled Veteran Back to Work, II", a feature of the Foundation's Ninth Annual Meeting, has just been published and is now being mailed to Member Companies and Subscribers. This is a continuation of the panel discussion inaugurated at the Foundation's Eighth Annual Meeting in 1943 and which was issued a year ago, separate from the regular Proceedings. These companion publications are hailed by authorities on veteran rehabilitation as two of the most practical and valuable reports yet issued on the subject.

Other Publications in Press

Instead of printing the Proceedings of the 1944 Annual Meeting in one publication, as in the past, the material will be published in several separate reports to make for more efficient circulation. The veterans panel constitutes Part I. The next part will be the panel discussion on "Sickness Indemnification." This will be followed by the Legal Section of the program at the annual meeting and the Medical and Engineering Sections. The insurance and legal reports will be published shortly.

New Book on Industrial Environment

J.M. DallaValle, a member of the Foundation's Engineering Committee, has completed a book, "The Industrial Environment and Its Control," which is to be published this Spring. The book is divided in two parts, (a) The Worker's Environment, (b) Control of the Environment. For further information address the Foundation or Dr. DallaValle at 70 Pine St., New York City.

Reprints Available on Medical Service in Industry

The Council on Industrial Health of the American Medical Association has, at our request, provided the Foundation with a supply of reprints of its recently revised report on "Medical Service in Industry, Industrial Health Examinations." Members interested in equipment and procedures for physical examinations should have this report. Copies may be secured from the Foundation.

The Council has cancelled its annual Congress on Industrial Health, which was scheduled for February 13-15 in Chicago, in compliance with the recent order of the Office of Defense Transportation respecting national meetings.

Membership Certificates

Membership Certificates for 1945 are now being lettered and Members will receive the certificates as rapidly as they can be completed. Many companies are requesting sufficient copies to post in their various plants or in different sections of a single plant. Members may secure as many certificates as required for their needs.

.....Maintain Manpower!.....

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do not inhibit the development of fibrotic nodules in the tracheobronchial lymph-nodes of mice. The tissue of these nodes, therefore, reacts differently from the lung tissue of rabbits. -- Author's summary.

- 67 Contribution to the Diagnosis of Pulmonary Silicosis by the Investigation of Silica in the Blood and Sputum. H. Oyanguren and E. Bartholin. Rev. med. de Chile, 71, 464 (May, 1943)

The diagnosis of silicosis has been confirmed by demonstration of silica in the sputum and blood of 40 individuals. Silica which is conveyed to the lungs by inhalation is taken up in greater part by the lymphatics and the remainder is expectorated. Silica interferes with the lymphatic circulation, producing a fibrous proliferation which eventually results in the inclusion of the particles themselves. But before this occurs the silica which is inhaled passes through the blood and may be excreted in the urine. Silica may normally be found in the blood but if the quantity is less than 8 mg. percent as determined by the colorimetric method, it is believed to be of no clinical significance. Quantities from 12 to 20 mg. percent are expressed as 1 plus, from 20 to 50 mg. percent 2 plus, and above 50 mg. percent 3 plus. Positive chemical reactions for silica in the sputum may be obtained in all cases of silicosis. The positive reactions in the blood correspond to the amounts of silica contained in the sputum and positive chemical reactions are found only in those individuals who have been exposed to silica-bearing dust. The specific chemical reaction used is that described by Oberhauser and depends on the reaction obtained with nitromolybdenate of ammonia. This may be used equally on the blood and sputum and is a more certain test than the spectrographic methods. -- Am. Rev. Tuberc.

- 68 The Asbestos Corn. H.S. Alden and W.M. Howell. Arch. Dermat. and Syph., 49, 312 (May, 1944)

The author describes corns or warts peculiar to asbestos workers, first noticed by Derwitz in 1930. They have no relation to asbestos of the lungs. One characteristic is that they appear and feel as if a foreign body were present, none is ever found. It is probable, however, that one is present in the very early stages.

- 69 Asbestosis and Pulmonary Carcinoma. H.W. Wedler. Deut. med. Wochschr., 69, 575-576 (Aug. 6, 1943) German.

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 percent). This is in excess of the proportion of lung carcinomata in autopsies generally (2-6 percent). 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. Hyg.

Skin Diseases and Burns

- 70 A New Protective Cream. J.G. Downing, L.M. Ohmart and M.J. Stoklosa. Arch. Dermat. and Syph., 49, 436 (June, 1944)

In industries where workers are exposed, to dermatologic irritants, and where it is necessary to wear gloves, protective creams help to minimize cutaneous ir-

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Editor: J. H. D. ...

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FOUNDATION FACTS

Vol. 7

December, 1945

No. 12

X-Ray Diffraction Laboratory Established

Announcement is made of the establishment of a Department of Research in Chemical Physics at Mellon Institute which will be available to Industrial Hygiene Foundation and further augment the Foundation's services to member companies in maintaining good physical working conditions. This new division includes x-ray diffraction equipment which is essential for the accurate evaluation of factory dusts inasmuch as this method is more dependable than the older chemical or petrographic methods. Dr. Harold P. Klug, formerly of the University of Minnesota, heads the new department and will serve as a consultant to the Foundation. The new laboratory is located on the same floor as the Foundation in the Institute.

The availability of facilities for x-ray diffraction analyses is another important development in the Foundation's work of refining the measurement of dust hazards in the workplace. The I-R-F Composition Sampler permits the Staff to rapidly collect large dust samples from factory air for composition analyses. All dust samples are separated into portions above and below five microns to gain more accurate knowledge of the concentration which workmen may actually breathe.

Coming Publications

The Transactions of the Management Section of the program for the Tenth Annual Meeting will be sent to member companies in the near future. Practically all the papers presented at the annual meeting are now set in type and the proceedings, in four parts, will be published as rapidly as possible. The Management Section will be followed by the Veterans Panel discussion.

Meanwhile, a summary covering highlights of the Engineering Conference, held here on November 13, the day prior to the opening of the annual meeting, will be sent to member companies in a few days.

Industrial Health Codes

The Ohio State Health Department recently announced a proposed code on industrial health and toxicity which contains "maximum allowable concentrations" for a long list of gases, vapors, dusts and fumes. Copies of the proposed code are available to Members upon request. A somewhat similar code was recently adopted in Oregon and such regulations are under consideration or have been recently enacted in several other States.

Trustees Meeting:

A meeting of the Foundation's Board of Trustees will be held late in January.

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pericarditis was found. It is believed the silica particles found their way into the pericardial cavity through the small superficial lymphatic channels of communication between the pericardial and pleural cavities. The fact that the firmest attachments were at the site of the densest pleuro-pericardial adhesions, at which point the pleura and both visceral and parietal pericardium were as one, was the major evidence in favor of this view. -- J.I.H.&T.

- 38 Silicosis - Its Prevention and Treatment. D.A. MacGregor. W. Va. Med. J., 41, 23 pp. (Sept., 1945)

The paper is a general discussion of silicosis, including a summary of recent work on aluminum therapy and aluminum prophylaxis.

- 39 Paligorskite, a Possible Asbestos Substitute. R.B. Fisher, R.L. Thorne and C. Van Cott. U.S. Bur. Mines, Inf. Circ. No. 7313, 5 pp. (Mar., 1945)

Paligorskite is probably a variety of asbestos usually termed mountain leather. A deposit of paligorskite has been found on an Alaskan island, and it may find a number of uses if present in sufficient quantity.

- 40 Some New Aspects and Approaches to the Problem of Dust Diseases. C.U. Dernehl and C.A. Nau. Texas Repts. on Biology and Med., 3, 227-237 (Summer, 1945); Ind. Med., 14, 744-754 (Sept., 1945)

The authors review progress on dust disease during the past few years, including (1) evidence from several sources refuting the silica solubility theory of silicosis; (2) aluminum therapy; (3) pulmonary lesions produced by cotton dust; (4) welders' siderosis. A dust exposure apparatus is described by means of which it has been shown that antimony trioxide is many times more toxic when inhaled as when administered intraperitoneally. Their experiments will be reported later in greater detail.

- 41 Health and Environmental Conditions in the Iron Industry. G.F. Keatinge and N.M. Potter. Brit. J. Ind. Med., 2, 125-141 (July, 1945)

A brief description is given of modern iron-founding methods. Environmental studies were carried out in two foundries employing over 200 workers. These studies included a survey of ventilation and heating, and the dust hazard. To assess the dust hazard in a foundry knowledge is required of (a) the dust concentration in the work atmosphere, (b) the duration of work spells, (c) the chemical composition of inhaled dust, and (d) its particle-size frequency. It is shown that fettlers of medium and large castings have the dustiest occupation in the foundry, and the dust here consists largely of silica particles. It is estimated that the silica hazard of the fettler of large castings is fifty times that of a worker in the general body of the foundry; medium fettling has a nine times greater hazard; and pneumatic mould-filling five times greater; workers in the core shop have the least exposure. The simplest way to maintain routine control of atmospheric pollution in a foundry is by mass concentration estimation of air-borne dust at breathing height. Sickness and accident rates among foundry workers as compared with those in the constructional department showed that: (1) the number of cases of respiratory disease was less although the average number of days lost per case was higher, and while some lungs showed evidence of "dust change" there was no case of silicosis; (2) skin affections were greater, with the most dermatitis among the core workers; (3) the incidence of rheumatic disease was greater; (4) accidents causing injury were fewer and caused less lost time; and (5) among foundrymen heat cramps are uncommon but not unknown. Preventive measures against accident and ill-health are (a) pre-employment medical examination, including chest X-ray; (b) improvement of ventilation by modern construction methods; (c) proper cloak-room, washing and bathing facilities; (d) attention to floors; (e) by adequate protective equipment for the individual worker; and (f) prevention of fumes and