



FOUNDATION FACTS

This news-letter is issued monthly to member companies and trade associations affiliated with the Air Hygiene Foundation. Its purpose is to report Foundation news and activities. Air Hygiene Foundation is a partnership of industry and science organized to protect the health of the 15 million workmen in heavy industry.

Vol. I.

October, 1939

No. 3

"Get Your Program"

Invitations to the annual fall meeting of Air Hygiene Foundation, together with advance copies of the program, are now being mailed to Foundation members. The meeting will be held at Mellon Institute, Pittsburgh, on Tuesday and Wednesday, November 14-15. If your invitation has not been received please let us know. We will also be glad to issue invitations to any of your associates who may wish to attend. Extra copies of the program will be sent upon request. Some member companies may want to call the program to the attention of their personnel, industrial relations, public relations or legal departments if these departments are not on the Foundation's regular mailing list.

Important "OD" Ruling by Federal Court

Theodore C. Waters of the Foundation's Legal Committee has prepared a memorandum for Foundation members covering the case of "Grain Handling Co., Inc., vs. Sweeney and McManigal." Mr. Waters, member of the Baltimore law firm of Mullikin, Stockbridge, and Waters, describes this case as, "the most important that has been decided by our Courts upon the question as to what is an occupational disease." Mr. Waters' memorandum is contained in the attached issue of the Monthly Abstracts.

No Armistice on Health

The Managing Director reported at a meeting of the Executive Committee of Air Hygiene Foundation in Pittsburgh on September 26 that many industrial concerns realize that the increased industrial tempo may increase industrial health hazards. Some companies overlooked that factor in the rush of war business during the World War. Information received by the Foundation indicated that many firms will not make that mistake again, that they are fully aware of the importance of occupational health in periods of increased production. Unquestionably, this subject will come up for discussion at the Foundation's annual meeting next month.

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Air Hygiene Foundation of America, Inc.,
4400 Fifth Avenue,
Pittsburgh, Pa.
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REFERENCES TO RECENT LITERATURE ON INDUSTRIAL DISEASES

(A) News Items

- 704 FOURTH SILICOSIS SYMPOSIUM, Saranac Lake, N. Y.
Word has been received from the Employers' Mutual Liability Insurance Company of Wisconsin, Wausau, Wisconsin, publishers of past proceedings, that the printing of the proceedings of the meeting, held in June, 1939, will not be completed until the end of the year. Notice will be given in the Abstracts when the volume is published. It can be ordered from the company at the address above and will cost \$3.00.
- 705 FIRST ANNUAL SYMPOSIUM FOR INDUSTRIAL NURSES.
The first annual Symposium for Industrial Nurses will be held in Chicago October 26, 27 and 28, 1939. The meeting will be sponsored by the Division of Industrial Hygiene and the Division of Public Health Nursing of the Department of Health, State of Illinois, together with several collaborating organizations. The three day meeting includes the discussion of many topics in connection with industrial nursing and other related subjects. The sessions will be held in Room 106, College of Medicine, University of Illinois, 1853 West Polk Street; Chicago. Copies of the complete program may be secured from Dr. M.H. Kronenberg, Division of Industrial Hygiene, Illinois Department of Public Health, Chicago, Ill.
- 706 ANALYZING SILICOSIS CLAIMS. Labor Standards, 2, 8 (July-August, 1939).
An analysis of the silicosis claims allowed by the Ohio Industrial Commission for an approximate 2-year period (1937-39) showed that, of a total of 65 claims allowed, 33 or 50.8% originated in foundries; 24 or 36.9% in the ceramic industries; 5 or 7.7% in the cut stone industries and 3 or 4.6% in miscellaneous plants. The figures given do not necessarily indicate that silicosis hazards are more pronounced in the industries having the highest percentage of approved claims, since the extent of exposure, as represented by the number of persons employed, must be taken into consideration.
- 707 AN IMPORTANT LEGAL DECISION.
Mr. Theodore C. Waters, of the Foundation's Legal Committee, has given for the benefit of members of the Foundation the following memorandum concerning a recent decision by the U. S. Court of Appeals for the Second Circuit.
"The case of Grain Handling Company, et al., Appellants, v. Charles J. Sweeney and Kenneth G. McMenigal, Commissioner, Appellees, recently decided by the United States Circuit Court of Appeals for the Second Circuit, was an appeal involving the construction of the term, 'injury', within the meaning of Section 902, subsection 2 of Title 33, of the United States Code (Longshoremen's Act)."

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"The claimant, Sweeney, had been employed for twenty-five years as a 'grain scooper'; the last twelve years of this term was in the employment of the Grain Handling Company, Inc. His duties exposed him to considerable quantities of minute particles of dust. In 1918 he had contracted tuberculosis but had recovered, the disease remaining dormant until 1934, when he experienced difficulty in breathing, suffering a return of his former tuberculosis. On June 15, 1936, becoming totally disabled, he discontinued his employment and filed claim for compensation.

"Compensation was awarded by the Commissioner on the ground that his employment required him to 'work in thick grain dust, causing the latent tuberculosis condition to become active', and that, therefore, the injury sustained was an occupational disease.

"The opinion of the Court, filed by Judge L. Hand, held that the injury complained of was an occupational disease. Judge Swan, concurring, said:

"Although I am willing to concur in the judgment I cannot refrain from expressing my doubt whether the interpretation we are putting on the statute does not virtually read out of it the adjective 'occupational' which qualifies such diseases as are made compensable. In effect, we are holding that the lighting up of a latent tuberculosis by the breathing of grain dust creates an 'occupational disease' in the particular employee so affected, although 99 per cent of the workmen may never get tuberculosis as a result of laboring under the same conditions for equally long periods of time."

"Judge A.N. Hand, in a separate concurring opinion, said in part as follows:

"I think it is a fair inference from the proof that any condition of latent tuberculosis is likely to become active by working in grain dust. Many persons are subject to this infirmity and if such persons are likely to develop tuberculosis from working in dust the resultant condition would seem to be an occupational disease -- that is, a disease peculiar to and arising from the occupation."

In a letter accompanying the memorandum, Mr. Waters says:

"I feel that this case is the most important that has been decided by our Court upon the question as to what is an occupational disease. Its effect is to make compensable under 'general coverage statutes' those cases where the claimant has latent tuberculosis which becomes reactivated by an exposure to any kind of dust. Such construction of occupational disease statutes makes them general health insurance statutes."

(B) Papers on Dust, Dust Diseases & General Industrial Hygiene

- 708 THE PUBLIC HEALTH SERVICES IN RELATION TO INDUSTRIAL HYGIENE. W.D. Jenkins. J. Roy. Inst. Pub. Health & Hyg., 2, 178-86 (March 1939) (British).
It is stated that public health authorities should pay more attention to industrial hygiene than is now being done. Then, too, it is found that many recruits to industry are unfit and more effective health measures are necessary. The present rates of sickness and accident pay are found to be inadequate, especially at a time when the worker has additional expenditures. The practice of making physical examinations is commended, as it brings out the most important defects, but the requirements should be made to include the mining industry, not now covered by the laws.

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References to Recent Literature - 3.

- 709 THE PUBLIC HEALTH ASPECTS OF OCCUPATIONAL HYGIENE. H.F. Vaughn. Industrial Medicine, 8, 371-4 (September 1939).
Public health administrative services have passed through several distinct stages since their institution many years ago. The first changes were brought about by the discoveries of Koch and Pasteur when concepts of disease were altered considerably. Since then other distinct stages have developed which have depended upon the most acute problem at the time. During the present period increased stress is being laid to the control of the diseases being created by the advance of civilization and industry. That these new hazards can and should be controlled is a foregone conclusion. Industrial hygiene activities should be woven into the fabric of the permanent health safeguards of the community and not be classed as a temporary measure to be stressed for a short period and then forgotten.
- 710 THE PROBLEM OF MEDICAL SERVICE FOR THE SMALL INDUSTRIAL PLANT. M.N. Newquist. Industrial Medicine, 8, 387-90. (September 1939).
The reasons for less extensive medical service in small plants are many but the most important ones are: the idea on the part of small companies that medical service is a repair job as contrasted to a maintenance condition; the relatively high cost per capita to provide the service; and the lack of a suitable organization in most small plants to handle medical service. Most important single item for effecting medical service in these plants is the education of employers and employees as to the benefits, both financial and otherwise, of such a service. When this is done, most of the difficulties can be surmounted by some means or other.
- 711 MEDICAL SERVICES FOR MODERN INDUSTRY. H.E. Collier. Industr. Welfare, 21, 211-6, (June 1939). (British).
Adequate medical service should be built up by industry itself by its own service and by the extension of private practice and local hospitals. The author thinks it would be impractical and undesirable for state medical men to be given advisory and executive duties within the plants. At present medical service has been brought only to large factories, which in Great Britain, includes only 19% of the workers. It is possible that in the smaller factories group systems can be worked out.
- 712 WISCONSIN PHYSICAL EXAMINATION PROGRAM. Industrial Commission of Wisconsin, Madison. Bulletin, 22 pp. (1939).
In recognition of the fact that physical examinations play a part second only to engineering control in the improvement of industrial health, the Industrial Commission of Wisconsin has issued this small bulletin. It describes the principles recommended by the Commission and its Medical Sub-Committee on physical examination practice in industry. The bulletin covers most of the points to be considered by the industries and by the physicians, and it is hoped that the procedure will be followed as outlined, although it is recognized that inherent imperfections in the plan will need revision from time to time.
- 713 DISEASE AND ENVIRONMENT. E.A. Cheeseman, W.J. Martin and W.T. Russell. Biometrika, 30, 341-62 (January 1939). (British).
The relation between general mortality and density of population or overcrowding is well-known. For certain increasing ranges in density there is a corresponding increase in mortality, up to a point where further density changes do not seem to have an effect on further mortality changes. The bad effects of environment are particularly noticeable in childhood and in middle life. In childhood the effects are mainly seen in increased prevalence of infectious disease, while at the older age period there is general ill-health.

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References to Recent Literature - 4.

- 714 THE PERIODIC EXAMINATION. I. A GROUP STUDY IN DIAGNOSIS. H.S. Berkoff, Industrial Medicine, 3, 395-400 (September 1933).
Considerable impetus has been given in recent years to the idea of periodic physical examination with a view of correcting abnormalities while still in the pre-clinical stage or of establishing a hygienic routine conducive to optimum health. In general the whole population has lagged far behind industry and organized groups in this respect, the reasons for which are quite obvious. In an attempt to evaluate the reliability of such examinations, data is presented of a series of physical examinations in a group of department store employees taken over a period of 9 years. The completeness of the examinations was standard and comparable to most procedures of this type. The first diagnoses were compared to later diagnoses or to subsequent causes of death. The conclusion is reached that the diagnoses resulting from such types of physical examinations are approximately 70% correct, and it is significant that most of the errors were cases of malignancy, chiefly in inaccessible organs.
- 715 METHODS OF INDUSTRIAL HYGIENE PROCEDURE AND TESTING. G.C. Harrold. Am. Soc. Testing Materials Bulletin, No. 99, 19-21 (August 1939).
This discussion by the author describes the basic principles of testing methods in industrial hygiene practice. In this work the collection of the sample is probably the most important laboratory phase. Because of obvious and expected variations in results from day to day and even hour to hour, it is necessary to first select conditions that will give typical results. Because of this fact it is sometimes necessary to take numerous samples so that a correct average of conditions may be obtained. Atmospheric conditions, such as temperature, wind velocity and direction, and humidity, all have their effect on the results as do also the period of the day, the intensity of the activity at the location being examined. These items must all be given consideration in a thorough procedure of industrial hygiene evaluation of hazards. A short resume is given of different methods of dust and gas sampling together with the methods of reporting results and of expressing threshold values.
- 716 EVALUATION OF THE INDUSTRIAL HYGIENE PROBLEM OF ILLINOIS. Division of Industrial Hygiene, Department of Public Health, State of Illinois. Bulletin. 257 pp. (1939) Address: 1800 W. Fillmore St., Chicago.
This bulletin presents the results of a study, similar to those made recently in other states, to determine the industrial hygiene problems presented by industry throughout the State. A survey such as this is necessary in order to formulate an efficient and effective future program in industrial hygiene. The survey included the study of practically every industry in the State to determine the types of exposure, numbers exposed and methods of preventive measures in effect. The bulletin is composed largely of statistical material collected in the various industries; no conclusions are drawn but the data will show how future programs can be applied to benefit the greatest number of employees.
- 717 THE INFLUENCE OF INDUSTRY ON THE DEVELOPMENT OF RHEUMATISM. G.C. Pether. J. Roy. Inst. Pub. Health. & Hyg., 2, 438-40 (July 1939). (British).
The paper contains a general discussion of industrial factors--strain, jarring, chilling, excessive fatigue, chemical influences such as fluoride compounds, and improper diet--which contribute to the causation of rheumatism.
- 718 INDUSTRY AND RHEUMATISM. F. Fox. J. Roy. Inst. Pub. Health & Hyg., 2, 368-73 (June 1939) (British).
It is estimated that in England and Wales 3 million weeks of work are lost every year through rheumatic disease. The provision of pithead baths should help to lessen its incidence among miners. The coal-mining industry is contemplating the provision of centers for the treatment of rheumatism in connection with these baths, and the London Transport Board has a physical treatment center for its bus

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drivers. The author presses for the extended application of such preventive and curative measures, and for intensified research.

- 719 FACTORS IN INDUSTRIAL HEALTH. J.R. Rees. Industr. Welfare, 21, 171-6 (May 1939) (British).
A great part of the sickness which causes loss of time in industry is of psychological origin. Psychoneuroses commonly met with are anxiety, hysteria and obsessional states, but nowadays it is recognized that many of the well-known and supposedly physical disorders are largely determined or maintained by mental states. Some of these are gastric and duodenal ulcer, enlarged thyroid, heart irregularities and some of the pain in organic heart disease, colitis, asthma, and painful menstruation. Much neurosis may be precipitated by social conditions, including working environment. Anxiety-producing occupations must lead to a high incidence of neurosis and consequent sickness absenteeism. Fifty per cent of neuroses can be cured, but unfortunately psychotherapy takes much time.
- 720 INDUSTRY'S CHALLENGE TO THE NURSE. LaVonna Babb. Am. J. Pub. Health, 29, 1025-8 (September 1939).
There are a number of ways in which the industrial nurse can help in the preservation and improvement of the health standards of industrial employees. One of these is by instituting health educational programs and recreational programs where none exist. Others are by the contacts which can be made in homes, by following up the findings of annual physical examinations, and by helping to improve the sanitary conditions within the plants. Good discussions of all points are given by the author and all tend to emphasize that the nurse has a definite place in industry.
- 721 PHYSICAL MEDICINE AND INDUSTRY. M. Smart. J.Roy.Inst. Pub. Health & Hyg., 2, 419-32 (July 1939). (British).
Physical medicine includes such types of cases as minor strains of muscles, ligaments and other joint structures; more serious strains and sprains; atonic and wasted muscles following early arthritic changes and injuries; chronic rheumatism and fibrositis; adhesions. In the working class these types of ailment are of great importance and almost warrant the formation of special local clinics for their treatment. For them manipulative surgery and treatment of muscles by graduated contractions are the most successful methods. Adequate supervision of physical treatment in industry should be given more consideration.
- 722 SILICOSIS: A DIFFERENTIAL STUDY. H.P. Thomas, C.J. Koerth and Carl A. Nau. Industrial Medicine, 8, 376-80 (September, 1939).
Silicosis is called the oldest and most important of all industrial diseases. A few case histories are taken from the records of a veterans' hospital in Texas. Points in the diagnosis are described, most prominent of which is the inclusion of complete occupational history. There is an increasing demand for equitable legislation which will govern working conditions and compensation for disability, both total and partial. Pre-Employment and periodic physical examinations are essential to proper administration of the disability laws.
- 723 INTERESTING CASES OF SILICOSIS AND THEIR PREVENTION. Symanski. Zbl. f. Gewerbehyg. u. Unfall., 16, 139-41 (June 1939). (German).
The author describes very briefly four cases of silicosis and presents a roentgenogram of each. Two of the men had had very short exposures in sandblasting without protection. One of them, autopsied immediately after death, showed no signs of tuberculosis. The third man worked as a welder near an open sandblasting operation. The fourth was a builder of Siemens-Martin ovens; part of his work, carried out in a small room, consisted of breaking to proper size bricks of chamotte, magnesite and silica composition.

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- 724 THE ROENTGENOLOGIC DIAGNOSIS OF PNEUMOCONIOSIS (SILICOSIS) AND USE OF THE "ELECTRIC EYE" TO DETERMINE REGIONAL DENSITIES. L.C. Cole and W.G. Cole. Radiology, 33, 261-90 (September 1939).

This is an excellent paper on the diagnosis of silicosis from a roentgenological standpoint. The thorough treatment of the subject includes a discussion of the fundamental principles of x-ray diagnosis in general, technic of chest x-rays, both as to taking and studying of the film, in addition to the points to be considered in diagnosis. Characteristics of the stages of silicosis are covered in detail. Probably the most important single contribution is the introduction to the use of photo-cells to measure film density at different points. It was found that film density as recorded by a photometer varied considerably more than was apparent from casual observation. Charts of photometer readings at certain lung film locations form a particular pattern when plotted in the same order and charts of silicotic lungs were found to have a similar pattern. Of course much additional work will be necessary before the application of this fact can be an aid in silicosis diagnosis. Nevertheless the authors have opened up a new and interesting sidelight to x-ray technic.

NOTE: In an appendix to the paper the authors make some comments on paper roentgenograms that might be misinterpreted. They state that paper roentgenograms are inferior to films and they discourage the use of them in surveys of large groups of industrial employees. The reference is that any and all paper roentgenograms are inferior, regardless of technic. To prevent this misinterpretation we quote from Air Hygiene Foundation's Medical Bulletin No. II (June 1939), page 15, "If a large group of employees is to be examined and a part of this examination is a single roentgenogram of each employee, then it is less expensive and quicker to use paper in rolls than to use single pieces of x-ray film. Such a survey may be made with paper if the technical methods outlined in this report are used or if other methods are used which produce equal or better results. If paper is used for survey work in conjunction with apparatus and technic at least equal to those described above, the best interests of all parties concerned will be served if pathological and doubtful cases are referred for a more thorough radiological examination." In other words, paper roentgenograms can serve a useful purpose when proper treatment is given them.

- 725 THE SILICOSIS HAZARD IN MECHANICAL DENTISTRY. L.E. Siltzbach and J. Siegel. J. Am. Med. Assoc., 113, 1116-9 (September 16, 1939).

A case is presented of silicotuberculosis occurring in a dental mechanic whose only occupation during life consisted of polishing dentures. He had been at this work continuously for about 19 years. The normal abrasive for this work is pumice which is chemically a silicate, but in recent years a substitute "pumy" has been used extensively. It was this latter material that was used by the patient and upon examination it was found to contain 48% of free silica, and to have a different composition than true pumice. The patient had breathed sufficient dust over the period to cause extensive lung changes evident in x-ray and post mortem examination.

- 726 ELECTROCARDIOGRAM IN SILICOTICS. G. Schlönka. Med. Welt., 13, 287-91 and 357-9 (1939). (German).

The author examined electrocardiograms of many silicotics, some of whom had had two electrocardiograms made. He concludes that in silicotics "as a rule the type of electrocardiogram, compared with the normal changes, is displaced to the right and increases with lung changes." The displacement is caused by overstraining on the right heart. The effect, however, can be hidden or eliminated by various other circumstances as hypertonia, obesity, tuberculosis, etc., and this must be remembered in judging such cases.

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References to Recent Literature - 7.

- 727 SILICOSIS FROM EXTRACTION AND WORKING OF SANDSTONE IN THE PFALZ DISTRICT. A.V. Chossy. Arbeitsschutz, pp. 168-75 (1939). (German).
The distribution of ages in quarrymen and stonecutters shows that there are quite a few older men in the industry, attributed to the fact that in recent years operations in that industry have not been very active. Medical examinations of 100 quarrymen and 100 stonecutters indicates that silicosis develops slowly and is more common among stonecutters than among the quarrymen. Many men who had worked several decades had not developed the disease and the author concludes that other factors than dust play a large part in the etiology of silicosis.
- 728 FURTHER CONTRIBUTIONS TO THE ROENTGENOLOGICAL DIAGNOSIS OF ASBESTOSIS. E. Saupe. Arch. f. Gewerbepath., 9, 391-406 (1939). (German).
The author, whose recent (1938) atlas of asbestosis was based on the examination of 200 patients, has now examined an additional 420 asbestosis workers and in this paper presents interesting material on the diagnosis of the disease. The complaints and pulmonary changes noticeable by x-ray after only a few months work are caused by a bronchitis. The first signs of asbestosis may appear, however, after 9-10 months exposure. Tuberculosis is rare among German asbestosis workers and the author has encountered no case of lung cancer among those examined.
- 729 SURVEY IN SEVENTEEN CEMENT PLANTS OF ATMOSPHERIC DUSTS AND THEIR EFFECTS UPON THE LUNGS OF TWENTY-TWO HUNDRED EMPLOYEES. L.U. Gardner, T.M. Durkan, D.M. Brumfiel and H.L. Simpson. J. Ind. Hyg. & Toxicol., 21, 279-317 (September 1939).
The paper covers a survey of environmental conditions in 17 cement plants in the United States, and physical and roentgenological examinations of 2278 persons in an attempt to correlate medical and engineering findings. Finished cement contains practically no free silica, but some raw material dust has from 1 to 30%, and occasionally 60% free silica. Because of the variable character of most of the employee's occupations no definite correlations could be made between lung change and dust composition. The analysis of the data, however, indicates that prolonged inhalation of dust from finished cement produces such slight anatomic reaction that little or no abnormality is seen in the roentgenogram. The mixed dusts of the raw mills are probably responsible for a limited number of cases of well-marked linear exaggeration, non-disabling in character. Only 8 of the 2278 employees showed evidence of nodular fibrosis attributable to dust, and in 6 of these exposure to silica dust in previous exposure was presumably responsible. The incidence of tuberculosis and other chronic infections of the lungs was found to be less than that in the general population.
- 730 PULMONARY CHANGES IN CEMENT WORKERS. G. Girino and A. dell' Aquilo. Med. del. lavoro, 30, 97-110 (1939). (Italian).
After describing cement work and reviewing the literature, the authors report on their examination of 50 cement workers whose work of sacking cement involved a great deal of dust. Ten detailed case reports are presented with some roentgenograms. The workers suffered catarrh of the upper respiratory tract, their lungs showed signs of pneumoconiosis and several of the x-rays showed fibrosis and nodulation. Tuberculosis is rare and its course favorable. In some cases the heart was hypertrophic.
- 731 TUBERCULOSIS IN RELATION TO THE PNEUMOCONIOSES. W.E. Cooke. J. Roy. Inst. Pub. Health & Hyg., 2, 299-304 (May 1939). (British).
Evidence is accumulating that various silicate dusts are by no means innocuous, and it may be expected that silicatosis, by whatever mineral produced, will render the lungs less resistant to tubercular infection. Almost every industrial dust has been blamed as a cause of pneumoconiosis, often with no foundation in fact, e.g. the case of byssinosis, the coniosis attributed to cotton dust.

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References to Recent Literature - 8.

- 732 TUBERCULOSIS IN RELATION TO THE PNEUMOCONIOSES. H.M. Turner. J.Roy.Inst. Pub. Health & Hyg., 2, 381-94 (June 1939). (British).
In diseases of combined pneumoconiosis and tuberculosis, the latter plays the dominant part. In Sheffield, England, grinders form but 0.9% of the population, but they produce 6% of the infectious cases of tuberculosis in the city. A study of the age incidence of tuberculosis among several trades revealed that grinders and stone masons have a high tuberculosis incidence in middle-life, but that coal miners do not and are not exposed to a special tuberculosis hazard. Women are found to be more susceptible than men to tuberculosis in dusty work. They should be excluded and all male entrants to the trade should be thoroughly examined for the disease and should be refused if showing even obsolete tuberculous lesions.
- 733 INCIDENCE OF PULMONARY AND EXTRA-PULMONARY TUBERCULOSIS IN ANTHRACITE COAL MINERS. A.C. Cohen. Arch. Intern. Med., 63, 1117-22 (June 1939).
A survey at the White Haven (Pa.) Sanatorium, corroborates the established fact that pulmonary tuberculosis is more common in anthracite miners than in non-miners. In addition to this data, the author reports on the occurrence of extra-pulmonary tuberculosis in a series of autopsies. Only 20% of 50 anthracosilicotics with pulmonary tuberculosis had intestinal tuberculosis, while in 84 patients with non-anthracosilicotic pulmonary tuberculosis, it was present in 51 per cent. The degree of anthracosilicosis, rather than the age, determines the frequency with which intestinal tuberculosis occurs. The author explains the comparative rarity of intestinal tuberculosis in advanced anthracosilico-tuberculosis on the basis of: (1) chronicity of the pulmonary process, (2) the extensive pulmonary fibrosis, particularly the vascular sclerosis which tends to prevent the spread of tubercle bacilli. About the same characteristics were found in the incidence of laryngeal tuberculosis among the mining and non-mining groups.
- 734 EXPERIMENTAL INVESTIGATION OF PNEUMONIA CAUSED BY MANGANESE AND ITS RELATION TO PNEUMONIA FROM THOMAS SLAG. K.W. Joetten, H. Reploh and G. Hagemann. Arch. f. Gewerbepath., 9, 314-36 (1939). (German).
An effort is made to determine how the breathing of manganese dust relates to the incidence of pneumonia. In a letter to the authors, it is stated that the pneumonia rate is much higher in a small Norwegian village where the fumes from a manganese smelting plant spread over the area than in the surrounding vicinity. The rates were 32 per 1000 as compared to 4 per 1000 for the country. In their own experiments, mice and rabbits breathing manganese dust and infected with pneumococci showed increased mortality rates from pneumonia when compared to other mice. Additional mice dusted with 10% manganese and 90% limestone (the composition of slag dust) failed to show much difference between animals dusted with limestone alone. Altogether the tests to incriminate manganese are not convincing enough to be positive.
- 735 PHAGOCYTOSIS OF COAL AND STONE DUST IN VITRO. MORPHOLOGICAL CHANGES IN THE CULTIVATION OF MAKROPHAGES OF THE SPLEEN AFTER PHAGOCYTOSIS OF COAL AND QUARTZ DUST. W. Kasten. Arch. f. Gewerbepath., 9, 337-45 and 346-60 (1939). (German).
The author describes a carefully elaborated method of determining as exactly as possible the phagocytosis of various dusts. Coal dust is phagocytized more quickly and more completely than stone dust. In the second part are described cellular changes after phagocytosis. Quartz causes violent changes and vacuoles develop. Mature vacuoles unite to form one large one, filling the complete cell at last. The smaller the quartz particles, the more quickly and completely the process develops. In contrast to this, cells that have taken up coal dust do not show vacuole formation in such a degree but do show fatty degeneration. The author concludes that the malignity of quartz is caused by its chemico-physical effects on the tissues ("surface effect").

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References to Recent Literature - 9.

- 736 ROENTGENOLOGICAL EXAMINATION OF THE EXACT STRUCTURE OF INDUSTRIAL DUSTS. H. Gartner. Arch. f. Gewerbepath., 9, 377-90 (1939). (German).
The author surveys the literature, describes the instrument he employs and presents the results of his work. Illustrations of 16 minerals and 12 industrial dusts are included.
- 737 THE HEART IN ANTHRACOSILICOSIS. J.F. Giering and Robert Charr. J.Am.Med.Assoc., 113, 574-6 (August 12, 1939).
Congestive heart failure is a common occurrence in cases of far advanced anthracosilicosis. Of 25 miners studied in this series, 16 had anthracosilicosis without tuberculosis and nine with the disease. They ranged in age from 36 to 67 years and the duration of employment varied from 3 to 40 years. The electrocardiograms in the majority of instances showed myocardial damage. The authors feel that the electrocardiographic examinations are of distinct value in the study of anthracosilicosis and that these examinations together with the clinical and laboratory observations described in this report would be of value in recognizing early cardiovascular damage secondary to anthracosilicosis with or without complicating tuberculosis.
- 738 TOBACCO DUST AND THE HUMAN LUNG. Charles-Francis Long. Industrial Medicine, 8, 365-8, (September 1939).
Since 1865, when examinations were first made on the lungs of tobacco workers it has been the common belief that tobacco dust produced a harmful effect on the lungs. There have been a few investigations since that time but none has seriously indicated that tobacco was particularly harmful and none has completely freed tobacco of possible harmful effects. The author, medical director of a large tobacco company, reports here on the lung examination of over 1200 employees in addition to about 1000 control persons with no tobacco exposure. By comparing the results in these two groups and observing their similarity, it is concluded that pneumoconiosis (tabacosis) does not develop in the lungs of those who inhale tobacco dust, nor does this condition develop with extended exposure to the dust.
- 739 DISABLING MORBIDITY AMONG INDUSTRIAL WORKERS, FIRST QUARTER OF 1939. Wm.M. Gafafer. U.S. Pub. Health Reports, 54, 1554-6 (August 25, 1939).
An examination of the records shows that with respect to all sickness and non-industrial injuries the rate for the first quarter of 1939 is 25% above the corresponding rate for 1938, but is still 16% below that for 1937. The increase over the 1938 period is caused principally by the increase in the respiratory diseases. Of interest also is the decrease in the rate for hernia from 1.9 cases per 1000 in 1938 to 1.2 in 1939, a decrease of over one-third.
- 740 REST-PAUSES AND REFRESHMENTS IN INDUSTRY. J. Ramsey, R.E. Rawson and others. Nat. Inst. Industr. Psychology, Report No. 8, London, (1939). (British).
This report summarizes the results of an inquiry into the operation of rest pauses and mid-shift refreshments in over a thousand factories in Great Britain. At about one-third of the factories no rest periods were taken, official or unofficial. At about 15% the employees took unofficial rest pauses, and in the remainder (83%) they were officially allowed. Few employers introduce rest periods because of scientific experiment; most are influenced by other considerations, particularly the need of food by young employees during the morning shift. It is generally believed that the introduction of these periods has a good effect on efficiency.

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STANLEY A. LEE

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References to Recent Literature - 10.

- 741 FURTHER NOTES ON THE DISPERSABILITY OF MINE DUSTS. F.V.Tideswell and R.V. Wheeler. Trans. Instn.Min.Engrs. Lond., 97, 176-80 (April 1939). (British). It appears that the stone-dusts used in mines (to prevent explosions) are readily dispersed during an explosion and are thus able to play their part, provided they are properly exposed to the blast of the explosion. Stone-dusting should be done little and often. Stone-dust will not remain dispersible long if spread on a damp surface. Experiments show that water-repellent dust can be prepared from ground limestones with which is incorporated as little as 1/4% of palmitic or stearic acid.
- 742 DEVELOPMENT IN THE MEASUREMENT OF AIR-FLOW IN MINES. R. Poole and A.W. Leadbeater. Trans.Instn.Min.Engrs., Lond., 97, 225-42 (May 1939). (British). The paper deals with the application of the volometer to air measurement in mines. The total pressure difference required to give a full scale deflection of 75° on a sensitive volometer is of the order of 0.001 in. of water, and differences of 0.00001 in. can be read. The time-lag is small and readings can be taken very readily. A low range instrument can give velocities of the order of about 6 f.p.m.
- 743 THE CAMPAIGN AGAINST DUST IN DUTCH COAL MINES, AND THE VALUE ASCRIBED TO RESPIRATORS. A.H. Vossenaar. Arch. Malad. Profes., 2, 114-20 (1939). (French). Dust is generated during mining by drilling, by explosions and by transport of minerals. Modern pneumatic drills and mechanized transport raise far more dust than did older methods and the dust has become an important industrial hazard. Modern methods of dust control, the dust trap at the drill, water jets and water sprays, are described but it is stated that they are still unsatisfactory. Because it is believed that the smallest and most hazardous dust particles still remain in the air in spite of some of the control methods (probably the water sprays) it is concluded that respirators are necessary.
- 744 ABC'S OF INDUSTRIAL DUST CONTROL. PART III. PROBLEMS IN SPECIFIC INDUSTRIES. Roy P. Warren. Occup. Hazards & Safety, 1, 14-8 (September 1939). This paper, the third in a series of five, describes the essentials of dust control in foundries. Because dust production is not localized in foundries the importance of good general ventilation is stressed. A good criterion for the volume of air movement in foundries might be: for non-mechanized foundries--one air change every five minutes; for mechanized plants--an air change every three minutes. New buildings or contemplated changes in old ones should be made with this in mind. Many other points of common sense methods of preventing dust are discussed by the author. Shakeouts are probably the most difficult of the operations to control and must be handled properly. They should be exhausted if possible wherever necessary.
- 745 ARE YOU BUYING AN EXHAUST SYSTEM? PART 1. FIXING SUITABLE BRANCH PRESSURES AND OBTAINING WORKABLE PIPING. F.F. Kravath. Heat. & Vent., 36, 16-8 (August 1939). This article is the first of a series of three in which the author outlines methods to clarify the problems of purchasing an exhaust system. The author first condemns the requirement in many states of a 4 or 5 inch suction at the hood as a basis for design. He shows by simple calculations why this high static suction requirement is ridiculous and how it places an unnecessary burden on the purchaser of equipment. Some points on the selection of the type of piping, pipe gauges and method of joining sections are given with the thought in mind of the degree of permanency of the system. Round pipe is cheaper and stronger than rectangular section and should be used wherever possible. Flanged pipe is suggested as a more suitable form of jointing in spite of its slightly greater cost.

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- 746 ARE YOU BUYING AN EXHAUST SYSTEM? PART 2. FANS, FAN MOTORS AND FAN DRIVES. F. F. Kravath. Heat. & Vent. 36, 31-3 (September 1939).
See Preceding Abstract. The old style planing mill exhauster is the most prevalent type of fan in exhaust work, but it is being replaced slowly by the more modern, more efficient, forward curved or backward curved blade fans. In general the backward curved blade fan is the most efficient, runs at highest speed, is quietest. The forward curved or multivane fan is smallest in size for volume of air handled and is more efficient than the steel-plate, or planing mill exhaust-er. While newer fans offer slightly higher efficiencies, older fans, sometimes second hand, can be obtained for a fraction of the cost of a new one and this possibility should always be checked. Fan laws, which should be kept in mind when designing or buying are reviewed briefly. For ordinary work the squirrel-cage motor is the most practical polyphase motor, but others are described for use in particular instances. Belt driven connections are the most practical con-nections between motor and fan because of their flexibility when changes are desired.

(C) Papers on Industrial Poisons, Cancer, Dermatitis, Etc.

- 747 THE MENTAL MANIFESTATIONS OF SOME INDUSTRIAL ILLNESSES. H.E. Collier. Occup. Psychology, 13, 39-97 (1939) (British).
Industrial illness as well as all other illness has a psychological aspect in addition to the physical one. Some of the more prominent reactions to certain substances found in industry are discussed. Inhalation of fumes during spray painting may originate "unrest" among the men, disappearing with improved venti-lation. Many industrial solvent fumes create emotional disturbances. Carbon monoxide fumes sometimes lead to irresponsible actions. Mercury sets up irrita-bility, depression and sleeplessness and manganese attacks particularly the nervous system. Other psychological and neurological aspects of industrial ill-ness are described briefly.
- 748 A VAPOR-PRESSURE METHOD FOR ESTIMATION OF VOLATILE SOLVENTS. C.A. Couchman and W.H. Schulze. J.Ind.Hyg. & Toxicol., 21, 256-63 (September 1939).
A VAPOR-PRESSURE METHOD FOR DETERMINATION OF THE CONCENTRATION OF SOME ORGANIC SOLVENTS IN AIR. Kingsley Kay, G.M. Reece and Philip Drinker. J.Ind. Hyg. & Toxicol., 21, 264-9 (September 1939).
A NEW VAPOR-PRESSURE INSTRUMENT FOR DETERMINING ORGANIC SOLVENTS IN AIR. Leslie Silverman, G.M. Reece and Philip Drinker. J.Ind. Hyg. & Toxicol., 21, 270-8 (September 1939).
Chemical methods are ideal for estimating concentrations of volatile solvents in air, but their use is limited at the present time to a few of these compounds. Better physical methods, such as those described in the above papers are coming into more common usage, as they are much simpler both for field practice and laboratory analysis. The principal of each of the three methods described is the same, the difference being largely in the type of sampling apparatus used. All use dry ice for the freezing medium as the temperature is sufficiently low to take care of most solvents used in industry. The method consists in freezing out the solvent from a sample of contaminated air and measuring the vapor pres-sure when allowed to come to room temperature, having corrected for the always present water vapor pressure. The method described in the last paper is probably most adaptable to practical use as it has eliminated the use of a complicated source of suction and is self-correcting for water vapor pressure.

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References to Recent Literature - 12.

- 749 THE EFFICIENCY OF THE CONDENSATION METHOD FOR SAMPLING CERTAIN VAPORS. F.H. Goldman and J.M. DallaValle. U.S. Public Health Reports, 54, 1728-33, (September 22, 1939).
The condensation method, because of several advantages, has been widely used for the sampling of certain vapors in industrial hygiene practice. There are, however, several considerations not often given proper attention and which may have an effect on the efficiency of this type of analysis. The apparatus described here, on which the method was tested, consisted of U-tubes, 16 or 21 mm in size, immersed in a mixture of dry ice and methyl alcohol. The experiments indicate that for certain vapors, such as for example, water vapor or mercury vapor, the efficiency of collection is comparatively high. For other vapors, as bromine, the method and apparatus would not be applicable. The experiments indicate that the method has definite possibilities but must be tested against each substance for which it is to be used.
- 750 THE SOLUBILITY OF LEAD ARSENATE IN BODY FLUIDS. L.T. Fairhall. U.S. Pub. Health Reports, 54, 1636-42 (September 8, 1939).
Exposure to lead arsenate, as a result of its increased use as an insecticide, varies in form from the inhalation of lead arsenate dust by workers in plants manufacturing the material or in spraying of fruit trees, to the ingestion of lead arsenate by the consumer of sprayed foodstuffs. When ingested, the lead arsenate is broken down in the alimentary canal as shown by the different methods of excretion of the lead and arsenic components of the substance. Inhaled lead arsenate is exposed to a different sort of solvent action from that in the alimentary canal and this investigation was conducted to determine the solubility of the material in certain of the fluid media with which it comes in contact upon inhalation ingestion. It was found that lead arsenate is but slightly soluble in blood serum, the closest approximation to the fluid with which it comes in contact when inhaled, and is markedly soluble in saliva and gastric juice. This fact may account for the fact that workers inhaling lead arsenate spray and mist do not have the rapid absorption of lead that occurs following exposure to lead monoxide or lead carbonate.
- 751 LEAD IN HUMAN TISSUES. K.N. Bagchi, H.D. Ganguly and J.N. Sirdar. Indian J. Med. Res., 26, 935-45 (April 1939) (India).
Examination of lead by the dithizone method was carried out on a series of normal persons as well as on persons with known exposures to lead. The figures for normal lead are roughly similar to Kohoe's values, but are only a fraction of those reported by Tompsett and Anderson. Amounts in different organs of exposed persons was high in liver, kidneys, stomach and intestines and exceptionally high in the hair. Evidently hair of different colors absorbs differing amounts of lead. Lead in tissues of foetuses is smaller than that reported by other writers. No trace could be found in ovaries although lead was found in testes and placentas.
- 752 LEAD POISONING. Irving Kowaloff. Am. J. Dis. Child., 56, 764-74 (1938).
A case of lead encephalopathy is presented in which improvement was produced by adequate sedation and a diet high in phosphorus to which 30 cc. of a 10% solution of disodium phosphate was added daily. From the results of the treatment in the present case this would appear to be a rational method of decreasing the lead concentration of the blood.

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- 753 THE CARBON MONOXIDE HAZARD IN RELATION TO CALIFORNIA HIGHWAY ACCIDENTS. Industrial Hygiene Series, Dept. of Public Health, State of California. Investig. Report No. 8, 12 pp. (August 1939).
Further evidence of the prevalence and physiological action of carbon monoxide in small quantities is given in this report by the Industrial Hygiene Division of the California Department of Health. More than a thousand tests for carbon monoxide were made in automobiles driven under normal driving conditions in an effort to obtain what concentrations, if any, were prevalent under these conditions. The results showed that the atmospheres in 3% of the vehicles tested contained more than 0.01% (100 parts per million) which has been established as the upper limit for continued exposure. Most of the high concentrations could be traced to defective exhaust conditions on the vehicles. It is concluded that many of the otherwise inexplicable highway accidents may be caused by carbon monoxide asphyxiation which takes place quite readily in concentrations above the allowable limit.
- 754 METHYLENE BLUE IN CARBON MONOXIDE AND CYANIDE POISONING. J.Am.Med.Assoc. (Queries and minor notes) 113, 354 (July 22, 1939).
Methylene blue acts as a weak oxidizing agent in the tissues. In the blood it converts hemoglobin into methemoglobin which tends to combine with the cyanides diminishing their poisonous effects. In carbon monoxide poisoning, on the contrary, the increase of methemoglobin by methylene blue further decreases the oxygen carrying capacity and the substance is therefore harmful, not helpful.
- 755 DISEASES IN MOTOR GARAGES AND REPAIR SHOPS. H.G. Schmidt. Die Stadtereinigung, 31, 107, (March 10, 1939). (German).
Of 39,417 workers in automobile garages and repair shops who were treated in hospitals, 14, 019 were treated for poisoning by fumes. The lack of regulation as to garage and repair shop layout is responsible for so many cases attributable to bad ventilation.
- 756 COMBATING MERCURY POISONING. T. Zeiner. Glas. u. App., 20, 63-6 (1939). (German).
Slight chronic mercury poisoning, caused by working in rooms containing very small quantities of mercury vapor, its manifestations and recognition, sources of the poison, and activated carbon as a protective measure, are discussed.
- 757 DISEASE AMONG WORKMEN ENGAGED IN ELECTROLYTIC EXTRACTION OF ZINC. G. Rivelloni and G. Perpignano. Rass Med. Indust. 10, 240-25 (1939). (Italian).
A report is given of an extensive survey of the health conditions in a large zinc plant in Italy; consideration is given to the various occupations in the processes and to numerous physical examinations to determine the symptoms of exposure to the various materials. The symptoms described are classed as general and local. The former are headache, a feeling of weakness, due generally to absorption by the respiratory route, and digestive and alimentary disturbances. Most important local reactions are nasal symptoms which progress from smarting and itching to serous discharge, crust formation and, later, perforation of the septum. The action on the nose is thought to be due to zinc sulfate dust and sulphuric acid mist in the air and to zinc sulphate being carried directly to the smarting nose by hand.
- 758 FATAL POISONING FROM CHROMIC ACID. Goertz. Arbeitsschutz, pp. 183-4 (1939). (German).
Chromic acid is used to clean scales and rust from boilers. In performing such work, two workers got splashed in the face with the acid. One died of nephritis 2 weeks later. Another worker is reported to have died from absorbing the poison through a small wound.

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References to Recent Literature - 14.

- 759 CASES OF ARSENIC POISONING. P. Cristol, J. Fourcade, J. Ravoire and C. Bezenoch. Rev. Hyg. et Med. Prev., 51, 363-72 (May 1939). (French).
Several cases of arsenic poisoning are described. One was a severe dermatitis over the entire body; analysis of the skin gave a value of 150 mg. per kg. Another case was of a man living near a metallurgical plant that gave off quantities of arsenious anhydride. His most noticeable symptom was an edema of the genitals, which gradually spread to his arms and legs, and was severe enough to make him cease work. Hair and nails gave arsenic in amounts ranging from 64 to 230 mg. per kg. Two additional cases of polyneuritis of agricultural and vineyard workers are described.
- 760 OCCUPATIONAL INJURY FROM VANADIUM, THE ORIGIN AND SYMPTOMATOLOGY. Symanski. Arch. f. Gewerbepath., 9, 295-313 (1939). (German).
The use of vanadium has increased greatly in recent years. Reports of its effects on man vary. In the present paper the author describes the process of production of vanadium and ferro-vanadium. Workers who were exposed to the dust in a factory were examined, and it was found that the vanadium pentoxide was especially irritating to the mucous membranes. Conjunctivitis, rhinitis and especially bronchitis are very common among the workers. Gastritis occurs rarely and nervous disturbances were not seen.
- 761 GLYCEMIA IN CHRONIC POISONING FROM BERYLLIUM OXIDE. A. de Conciliis. Folia med., 25, 290-302 (1939). (Italian).
After reviewing the literature the author reports on experiments he performed on three rabbits. Beginning with subcutaneous doses of 1 mg. per day, he increased the dose gradually until after 50 days he was injected 8 mg. He studied the glycemia and the blood sugar curve and found various modifications caused by metabolic disturbances and especially damage to the liver.
- 762 QUANTITATIVE ANALYSIS OF PORPHYRINE BY THE SELENIUM PHOTO ELEMENT. G. Weiss. Klin. Wchnschr., 18, 575-6 (1939). (German).
Described is a method of measuring the fluorescence induced by the radiation of light on a selenium cell, which produces an electric current that is transferred to a galvanometer. Concentrations of porphyrine to 0.001 mg. can be measured in this manner.
- 763 SELENIUM POISONING ESPECIALLY SKIN CHANGES ACCOMPANIED BY SECONDARY PORPHYRIA. K. Halter. Arch. f. Dermat., 178, 340 (1938). (German).
The author reports a case of selenium poisoning in a man working in a glass plant where colored glass is produced. He had worked as a mixer and handled sodium selenite and elementary selenium, used for bleaching green glass. He first developed headaches, then irritation of the mucosa and after about two days, reddening and swelling of the uncovered skin followed. These symptoms appeared often and increased in severity. Clinical examination disclosed edematous erythema of the face and neck and several hard, infiltrated, ill-defined foci on the back of hands and fingers. There was an enlarged liver and porphyrine in the urine. No nervous or gastro-intestinal symptoms were present. The authors believe that the series of porphyrinurias was aggravated by the selenium porphyria which explains the kind and localization of the skin changes and is also considered the cause of hyperthyreosis. Inflammation of the nasal mucosa and conjunctiva is the direct result of the irritating action of the selenium as is the injury to the liver function.
- 764 DANGERS IN THE USE OF NAPHTHALENE. F. Dittrich. Arbeitsschutz, pp.164-5 (1939). (German).
A substance used for kindling fires is composed of wood shavings and naphthalene. The fumes of the latter bother the unaccustomed workers and irritate the skin. The chief danger is the substance's high inflammability.

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INDUSTRIAL HYGIENE

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References to Recent Literature - 15.

- 765 THE ACUTE AND SUB-ACUTE TOXICITY OF MORPHOLINE. T.E. Shea, Jr. J.Ind.Hyg. & Toxicol., 21, 236-45 (September 1939).
Morpholine, a secondary amine, is a highly alkaline colorless liquid, volatile at room temperature. It is used as a solvent, especially as an emulsifying agent for polishes and other mixtures, and it shows promise in syntheses characteristic of the secondary amino group. This paper reports on the previously uninvestigated physiological action of the substance. The minimum lethal dose of diluted morpholine for albino rats by ingestion is 1.6 gm. per kg. Daily dosings by mouth and skin absorption will produce death or permanent injury, principally to kidney, stomach and liver. Animal effects from exposure by inhalation are similar to those of ammoniacal gases. A concentration of 12,000 p.p.m. was slightly irritating to humans and probably intolerable for long periods of time. Vapor exposure in the tests did not exceed 42 hours so no evidence of cumulative effects could be given, but no injury is anticipated from repeated exposures to low concentrations.
- 766 HISTOLOGICAL ASPECTS OF EXPERIMENTAL OXALIC LITHIASIS BY ETHYLENE GLYCOL. M. Chiray, L. Justin-Besancon, G. Albot and J. Dieryck. Ann. d'annat. path., 16, 393-406 (April 1939). (French).
The authors fed rats different amounts of ethylene glycol, producing acute and chronic poisoning and photomicrographs are reproduced to demonstrate the histologic changes. There seem to be three kinds of chronic poisoning: a slow toxic nephritis, an oxalic lithiasis, and a chronic oxalic nephritis. These are discussed and described, this is the probable mode of action.
- 767 TOXICOLOGY OF TECHNICAL BLEACHING AGENTS--DIMETHYLPHthalate, DIBUTYLPHthalate, TRIORTHOCRESYLPHosphate AND TRIBUTYLPHosphate. H.Eller. Dissertation, Wurzburg, (1937).
TOXICOLOGY OF SOLVENTS--GLYCOLMONOACETATE, CYCLOHEXYLACETATE AND ETHYLGLYCOLACETATE. E. Rosser. Dissertation, Wurzburg, (1937).
Both authors investigated the toxicity of these substances used in lacquers. The experiments were carried out on white mice and on cats. Except for dibutylphthalate, which is practically harmless, all substances are capable of producing injury in exposed workers.
- 768 DERMATITIS FROM ORTHODICHLOROBENZENE. J.Am.Med.Assoc., (Queries and minor notes) 113, 1053 (September 9, 1939).
In the absence of patch tests or other similar diagnostic procedures, final acceptance of orthodichlorobenzene as the exciting factor should not be made. Nevertheless this industrial solvent may be regarded as a source of dermatitis if for no other reason than because of its capacity to remove the normal surface fat from the skin. In this respect its action is somewhat similar to carbon tetrachloride and other chlorinated hydrocarbons.
- 769 RECENT DEVELOPMENTS IN SOLVENT AND VAPOR DEGREASING. Carleton Cleveland. Metal Ind., 37, 411-4 (September 1939).
The latest methods and developments in vapor degreasing are described, and the paper should be of importance to those interested in degreasing practices. Nearly all the solvents used are toxic when breathed in heavy concentrations and the new methods now coming into practice are of interest because the modern degreasing machines are entirely enclosed, primarily because of the principle of operation, and exposures to the workmen near the machine are almost eliminated.

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References to Recent Literature - 16.

- 770 **ELECTRIC ARC WELDING AND IMPOTENCE.** J.Am.Med.Assoc. (Queries and minor notes) 113, 616 (August 12, 1939).
At one time or another most occupations have been suspected of being a factor in sexual impotence. Such suspicions endlessly recur in industry, and on occasion a few have been dignified by medical publications. Lately there has been apprehension regarding work in electrical fields, including welding, but the conclusions as to the detrimental effect are mostly unfounded. The same might also be true of non-occupational diseases such as typhoid or pneumonia. Functional impotence is related to the individual and evidences of it will not arise in an occupational exposure without other more characteristic features of poisonings.
- 771 **AN ATTEMPT TO INHIBIT THE DEVELOPMENT OF TAR-CARCINOMA IN MICE.** J.R. Davidson. Canad. Med. Assoc. J., 41, 223-5 (September 1939).
The author treated mice that has been exposed to carcinoma-producing tar with a diet of high vitamin content supplemented hypodermically with a filtrate of young normal active tissue. The mice, which usually succumb to the carcinoma-producing treatment, survived the exposure when on this diet and given these injections. The procedure was applied experimentally to two human subjects with beneficial results. The author interprets the results to mean that it is possible that carcinoma is a deficiency disease and that hope for the future lies more in prevention than in cure. Further research on the subject is to be continued.
- 772 **DERMATITIS AND OTHER INDUSTRIAL HAZARDS. A SUMMARY OF CAUSES AND PREVENTION.** Industrial Medicine, 8, 402-3 (September 1939), H.E. Collier.
A review is given of many of the specific and secondary causes of dermatitis in industry, although the list is too long to include each item. Industrial dermatitis is seldom due to a single cause and, in addition to the specific agent, other occupational and personal factors are almost always concerned. These factors are reviewed briefly. The fact that only one case might be disabled by a dermatitis is not proof that only one person has been affected. It is best, therefore, to examine all persons exposed to similar conditions. In a later paper by the author, more particular points will be outlined.
- 773 **METHODS OF SKIN CLEANING WITH SPECIAL REFERENCE TO REMOVING IMPURITIES MIXED WITH MACHINE OIL.** A. Prior. Zbl. f. Gewerbehyg. u. Unfall., 16, 137-9 (June 1939). (German).
Mineral oil containing metallic dusts may be extremely difficult to remove from the skin and the advantages and disadvantages of various methods of washing are discussed. Soap is inadequate and the author believes that its ineffectiveness results in many cases of industrial skin disease. Solvents used to cleanse the skin are bad for several reasons. Emulsions containing small amounts of solvents are advocated as being very effective, and harmless to the skin. A commercial product "Fracutan" is highly praised. It is a mixture of sodium salts of high molecular weight, sulfonated fatty acid esters, and sodium salts of fatty acid condensation products.
- 774 **CAUSALGIA AND MYOTONIA OF AN UPPER EXTREMITY AFTER ELECTRICAL INJURY. CURE BY EXTIRPATION OF THE STELLATE GANGLION.** J. Patrikios and N. Sbarounis. Rev. neurol., 69, 175-9 (1938). (French).
A streetcar conductor suffered an electric shock in the right arm from a three phase alternating current of 550 volts. Soon after the accident the arm had become stiff and swollen and examination showed edema of the right arm, as well as hyperemia, hyperhidrosis, hyperesthesia, and increased vasomotor and pilomotor irritability. After two months of little or no improvement the authors decided to extirpate the stellate ganglion, and following this operation the patient made complete recovery. Complete description is given of all findings before and after the operation.

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- 775 THE PIEZOGRAPHIC METHOD OF EXAMINING CARDIAC AND VASCULAR CHANGES IN THE COURSE OF EXCITEMENT. B. Lahy. Trav. humain, 7, 27-61 (1939). (French).
"Piezoelectricity" is a peculiarity of certain crystals and also of quartz to polarize themselves when exposed to mechanical forces. In the "piezograph" described, electrical changes in such a crystal are made visible and by connecting it with other apparatus, the author could record the pulse. In this manner were studied the pulse movements of persons exposed to certain psychic stimuli. Various types are found: those without change ("rigids"), those with normal modifications ("plastics"), those in which a return to the regular wave is preceded with oscillations ("oscillators"), and others marked irregularities ("inconstants") In the last category were 9 of 16 men who were accident-prone.
- 776 THE INFLUENCE OF AIR MOVEMENT AND ATMOSPHERIC CONDITIONS ON THE HEAT LOSS FROM A CYLINDRICAL MOIST BODY. A.J. Canny and C.J. Martin. J.Hyg., 39, 60-89 (January 1939). (British).
A rational formula for the heat-loss from a moist body is suggested. It takes into account the temperature of the evaporating surface. Results of experiments with a small moistened cylinder are given, showing the effect of wind on evaporation and on convection, when the evaporating surface is at constant temperature or when the internal temperature remains constant. The important effect of size and shape of the cooling body is emphasized. Observations are described showing the effect of varying internal temperature with constant environmental conditions. It is shown that if the wet-bulb temperature remains constant, considerable variations in the temperature of the dry bulb have only slight influence on the heat loss from the moist cylinder. The analysis of heat losses from a simple physical system presents no great difficulty, but the authors conclude that the most hopeful method of assessing the effect of air movement and atmospheric conditions on the heat-loss from the human body seems to be in terms of a subjectively determined standard such as the effective temperature scale.
- 777 THE HYPOTHALAMUS NUCLEI IN HEAT STROKE. L.O. Morgan and A.R. Vonderaho. Arch. Neurol. and Psychiat., 42, 83-91 (July 1939).
Regulation of temperature involves the hypothalamus, but implicates a number of cell groups rather than a single "center". Areas other than the hypothalamus may play a role.
- 778 TEMPERATURES ENCOUNTERED DURING EMPTYING OF BRICK KILNS. Oppermann. Arbeitsschutz, pp. 197-9 (1939). (German).
Measurements were made at breast and shoulder height when the chamber was being emptied. Unprotected mercury thermometers were used. Although regulations of the cooperative association allow such chambers to be entered only when temperatures are below 50°C, measurements showed cases of temperatures of 50 to 70°C. The author thinks that 50°C (122°F) is bearable.
- 779 IMPROVEMENTS IN THE GLOBE THERMOMETER. D.F. Vincent. J.Hyg., 39, 238-43 (May 1939). (British).
The time lag of a standard globe thermometer has been decreased from 25 minutes to 10 minutes or less by reducing the wall thickness of the globe to 0.002 in., by blackening the interior of the globe, and by the use of a special clinical thermometer. Mechanical agitation of the air inside the globe reduced the lag still further.
- 780 GLARE IN UNDERGROUND LIGHTING, A PRELIMINARY STUDY. W.H. McMillan and S. Homes. Trans. Inst. Min. Engrs. Lond., 97, 196-206 (April 1939). (British).
The paper is largely a dissertation on glare and brightness differences for the instruction of mining engineers. Polar curves are given showing that the glare from a miner's lamp is greatly reduced when the bulb is of "flashed" opal glass instead of clear glass.

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References to Recent Literature - 18.

- 781 PHYSIOLOGICAL STUDIES IN EXPERIMENTAL ASPHYXIA AND DROWNING. D.W. Longhead, J.M. Janes and G.E. Hall. Canadian Med. Assoc. J., 40, 423 (May 1939).
Experimental work on animals is described: charts show curves for heart rate, arterial carbon dioxide and oxygen during drowning, blood oxygen and carbon dioxide during asphyxiation and recovery. Emphasis is placed on importance of immediate efforts at resuscitation in cases of drowning and asphyxiation. These include clearing the throat of foreign matter, draining the lungs of fluid by lifting the body at the waist, Shafer artificial respiration and administration of an oxygen-carbon dioxide mixture, by tracheal catheter if necessary.
- 782 DUPUYTREN'S CONTRACTION AS AN OCCUPATIONAL DISEASE. L. Teleky. J.Ind.Hyg. & Toxicol., 21, 233-5 (September 1939).
Dupuytren's contraction is a contraction of the muscles of the palm causing a permanent flexion of one or more fingers. Like many other diseases or poisonings, it is the result of hereditary and environmental factors; both are of importance in this particular instance. Examination of "lustrirers" and "stretchers" in textile mills, limited to men over 40 who had worked from 15 to 20 years, showed the incidence of Dupuytren's contraction to be about 17%. This compared with 1% for men doing no heavy manual work. The results show that the disease can be of occupational or environmental origin in certain work. Factors and methods for the inclusion of the disease as an occupational disease are considered.
- 783 THE OCCURRENCE OF WEIL'S DISEASE AMONG MINERS IN THE WEST OF SCOTLAND. R.D. Stewart. J. Hyg., 39, 316-23 (May 1939). (British).
Sera from miners in the west of Scotland were tested for evidence of the occurrence of Weil's disease. Eleven cases were encountered in 1937 and 1938, of which only 5 showed jaundice. Ten cases of infection previous to 1937 were determined serologically; of these 8 were jaundiced. Evidence was obtained pointing to the occurrence of about 13 more cases. It is concluded that the occurrence of leptospiral infection appears limited at present, but that it is quite serious in certain areas. The available evidence suggests that the infections are due to one specific strain of leptospira.
- 784 ATMOSPHERIC POLLUTION, SOME OF ITS PROBLEMS. A.C. Monkhouse. Chem. & Indust., 58, 596-600 (June 24, 1939). (British).
This article covers the atmospheric pollution aspects of several specific industries. The writer first discusses the general aspects of air pollution, then the problems involved. A complete description of the processes of the petroleum industry and the accompanying pollution sources is given. The viscose industry and the waterproofing of fabrics by the cold cure process are treated similarly. The problem common to these three industries has been the disposal of sulfur compounds mainly hydrogen sulfide, and organic sulphur compounds. The dust aspect of air pollution is described with application to the cement industry. The paper concludes with a brief discussion of British legislation in regard to the industries considered.
- 785 THE INVESTIGATION OF ATMOSPHERIC POLLUTION: REPORT ON OBSERVATIONS IN THE YEAR ENDED 31ST MARCH 1939, 24TH REPORT. 117 pp.
GENERAL DEPOSIT TABLES, SUPPLEMENT. 124 pp. Department of Scientific and Industrial Research, Great Britain: H.M. Stationery Office, London. (1939).
The report, in two volumes, records the results of observations made by 88 cooperating bodies and the Department. On the whole there is a distinct fall in the amount of total solids deposited, and also in the deposit of tar. It appears that atmospheric pollution in Great Britain is diminishing. Smoke fogs appear to occur more frequently on Mondays, Tuesdays and Wednesdays than on other days in the week. A more extensive study is being carried on in one large city, Leicester, with the object of gaining more information upon which to base specific conclusions regarding forms of pollution.

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UNITED STATES AIRMAILS

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