



INDUSTRIAL HYGIENE DIGEST

Literature Abstracts

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

Industrial Health News



Issued Monthly By

INDUSTRIAL HYGIENE FOUNDATION

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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.

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Trustees Fix Annual Meeting Dates for Nov. 15-16

At the Spring meeting of the Foundation's Board of Trustees, held in New York on May 18, the dates for the Ninth Annual Meeting of Members of Industrial Hygiene Foundation were set for November 15 and 16. As in past years, the meeting will be held at Mellon Institute, Pittsburgh, the Foundation's headquarters.

Industrial executives and industrial health specialists associated with member companies are invited to reserve these dates and to send program suggestions and comments on live questions for possible coverage at the meeting. It is tentatively planned to have panel sessions on both mornings. One of these will likely be a continuation of the 1943 panel on "Putting the Disabled Veteran Back to Work," a discussion which proved of great practical worth. More than 2000 copies of this discussion have been distributed, and almost every mail brings requests for copies from companies, manufacturers associations, governmental bureaus and veterans organizations.

Please mark your calendar now for NOVEMBER 15 and 16.

New Membership Information Circular

More than 265 companies and associations hold membership in Industrial Hygiene Foundation at the present time. Meanwhile, some 60 Federal and State Agencies, Foreign Governments, Universities, etc. subscribe to the Foundation's publications. (Subscriptions are limited to such groups.)

An up-to-date list of members and subscribers is contained in a Membership Information Circular which has just been issued. A short summary of membership services is given together with a list of Foundation publications. Also listed are officers, committees, etc. A copy of the circular is being sent to each member with the current INDUSTRIAL HYGIENE DIGEST. Additional copies are available upon request.

Please see that your associates are fully familiar with the Foundation and with the membership services to which your company is entitled.

News Briefs

J. Dewey Dorsett, a trustee of Industrial Hygiene Foundation and a member of the Legal Committee, has just been elected General Manager of the Association of Casualty and Surety Executives, 60 John Street, New York, N. Y.

Says the Medical Director of a large industrial concern with plants in many states: "I have discussed X-ray findings with hundreds of employees and I have yet to find an unfavorable reaction...."

Workers in the shell forge department of a Pittsburgh plant quit work over demands for more fans, claiming the department was "too warm."

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INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

542 New Union Activities - Management Aid or Competition?

This article includes a brief description of the Medical Research Institute, supported by the United Automobile Workers (CIO) and staffed by 3 full-time physicians, six part-time consulting specialists and other employees. The Institute diagnoses but does not treat ailments. Its work is basic research into the causes and cures of industrial ailments and other problems of industrial health, hygiene and safety. It seeks to cooperate with kindred medical research organizations sponsored by management or any other interests. A typical project of the Institute is a continuing study of the health of welders. The results of such investigations are used by the union in grievance and contract proceedings; but the Institute is ready to turn over its findings to competent management medical authorities without resort to conventional dispute machinery. (The model clauses covering health, safety, etc., proposed by the Institute for inclusion in UAW contracts were given in an earlier Digest.) -- Modern Ind. 7, 46-50 (Feb. 15, '44)

543 A Fatal Case of Ethylene Chlorohydrin Poisoning.

A workman in a Los Angeles manufacturing plant, while cleaning trays upon which rubber strips were stored, used a petroleum hydrocarbon solvent of the kerosene range. The supply of the solvent being temporarily exhausted, the man then used anhydrous ethylene chlorohydrin for the same purpose. He was careful to wear impervious rubber gauntlets. The room was large and well ventilated, but he was exposed to the vapors of the solvent. When after 2 hours the workman became very ill, he was taken to the dispensary and 6 hours later removed to the hospital where he died, 11 hours after he first started to use the solvent. The man was 61 years of age and in excellent physical health up to the time of this illness. It was found upon investigation that he had been exposed to an average concentration of vapor of about one milligram per liter of air (305 p.p.m.). Autopsy of the deceased, evaluation of the exposure and duplication of the exposure in laboratory animals with similar pathological findings, led to the conclusion that death was due to anhydrous ethylene chlorohydrin, proving that the solvent is dangerous even in relatively low vapor concentration. -- Industrial Hygiene Division, U. S. Public Health Service, Bethesda 14, Md. (April 1944)

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544 Chest X-Ray Surveys in Industry.

The Department of Tuberculosis Control of the Connecticut State Tuberculosis Commission in cooperation with state and local health departments is now offering to Connecticut industries an opportunity to have all employees receive an X-ray of the chest. Facilities include a mobile X-ray unit housed in a trailer and manned by 2 X-ray technicians, a nurse, and clerical help. The charge is \$1.00 per X-ray. Surveys have been conducted the last 2 years in about 70 industrial concerns. In the survey 2.3% of the employees examined were found to show X-ray evidence of significant adult type of tuberculosis. In 0.8%, sanatorium care was needed. A number of other chest diseases were also discovered. The data are presented in a table. -- P. E. Phelps, Conn. Ind. (Feb. 1944)

545 New Welding Mask.

The Pullman-Standard Car Manufacturing Company has developed a new type welding mask, which has been tested under the severest conditions and found to afford complete protection. The mask consists of a standard welder's hood, inside which is fitted a compressed air unit which directs an outward flowing spray of air surrounding the wearer's nose and mouth. The device prevents fumes from being drawn into the mask, avoids drafts on the face and eyes, and at the same time prevents sweating and soiling of the eyes. -- Ind. Mod. 13, 14 (Apr. 1944)

546 Carbon Monoxide Poisoning.

Carbon monoxide caused the death of 509 people in the Italian tunnel disaster on March 3. Overloading caused the train to stop in a tunnel where the engine fumes resulted in mass asphyxia. -- Chem. Age (Mar. 18, 1944)

Legal Developments

547 "Occupational Disease" Amendments.

The 1943 amendment to Michigan's compensation law is often called the "all inclusive" law because it provides that disabling occupational disease is found to be compensable when it is established that such disease arose out of and in the course of employment with no restrictions as to the particular type of employment. As an example, an employee, not a miner, working with silica dust could not receive compensation for disabling silicosis by the old law but can under the new amendment. According to the procedure established, an employee makes a claim to the Department of Labor and Industry. If the employer admits the disability and occupational origin of the disease, compensation begins at once. If he admits disability but not occupational origin, a deputy commissioner takes testimony and makes an award in accordance with the evidence presented. If the employer does not admit the existence of an occupational disease, a medical commission is appointed, and the report of at least two of the members is final so far as the existence of the occupational disease is concerned, and final disposition of the case rests with the deputy commissioner. In 1943, 103 medical commissions were appointed. In 41 cases they affirmed the presence of the occupational disease; in 11 it was denied, and various reasons caused discontinuation of the proceedings in the others. The revision of the law is increasing the number of cases coming before the department. -- C. H. Mahoney

548 Employer's Negligence as Cause of Silico-Tuberculosis.

In an action for damages for the wrongful death of an employee as the result of silico-tuberculosis which was the result of continued exposure to silica dust in the course of his employment, it was not erroneous to overrule the employer's demurrer to the complaint predicated on the ground that the cause of action was barred by the statute of limitations prior to the employee's death, since the Court ruled adversely to this contention in Wilson v. Jackson Hill Coal, etc, Co. (1911) 43 Ind. App. 180, 95 N.E. 589. It was not erroneous to give an instruction to the jury in the words of the statute since the statute does not say or imply that an employer must remove ^{from dust} all dust/circulating machinery. Where an employer fails to furnish safety devices (exhaust fans, here) in violation of a common law statute, the fact that the employee continues to work for the employer, knowing that the employer is negligent in that respect, does not constitute contributory negligence on the part of the employee. The employer's contention that it did not know that breathing the air in its place of work would cause silicosis does not relieve it of liability since it was bound to know the danger thereof by its duty to provide exhaust fans, which duty it failed to perform and which therefore constituted negligence per se. An instruction, that if the employee contracted silicosis in the course of his employment and that if such silicosis rendered the employee more susceptible to tuberculosis, claimant is then entitled to compensation, is not erroneous since that instruction did not hold that tuberculosis can be contracted by breathing silica dust. -- N. O. Nelson Manufacturing Corporation v. Dickson. Indiana Appellate Court. No. 17, 176. March 21, 1944 (CCH)

549 Bodily Assault as Constituting an Accident Arising Out of the Employment.

Where an employee teased or jested with another employee about his work repairing broken equipment brought to him by the jester, and the second employee assaulted the jester and bit off a portion of one of the jester's ears, although a willful assault may be said not to be an accident so far as the aggressor is concerned, to him, who is not the aggressor, there exists the unexpected factor necessary to constitute an accident as contemplated by the Workmen's Compensation Laws. Since the jest produced an effect which does not ordinarily follow and cannot be reasonably anticipated from use of the means adopted and since it produced an effect which the actor did not intend to produce, he cannot be charged with the design of producing it. Since the altercation and injury had to do with the carrying and repairing of crankshafts which involved the duties of both men, the accident arose out of the employment. -- Lanford v. Clinton Cotton Mills. South Carolina Supreme Court. Opinion No. 15, 639. April 13, 1944. (CCH)

550 Ordinary Disease of Life.

An employee who is suffering from such an ordinary disease of life to which the general public is exposed outside of employment, to wit, peptic ulcers, is not entitled to share in the workmen's compensation fund where he has failed to show that the disease followed as an incident to and in its inception was caused by a hazard to which the employee was subjected in the course of his employment. Kobbe v. Workmen's Compensation Bureau of the State of North Dakota. North Dakota Supreme Court. No. 6919. March 24, 1944. (CCH)

Book Reviews and Notices

- 551 Tuberculosis, Labor and Management: A Guide to Industrial Relations. Prepared by L.A. Doppler, Ph.D., Dir., Industrial Relations, National Tuberculosis Assoc. Paper. pp. 82. New York: National Tuberculosis Association, 1944. Because tuberculosis is most prevalent in the wage earning class, it is an

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industrial health problem and can be met better by cooperation of management, employees and physicians than by charity or governmental regimentation. Case finding by universal X-raying is the first step. This pamphlet is a practical guide to the ways in which this beginning can be made. It tells how to approach management, unions, the public, governmental agencies involved and the medical profession to secure acceptance. Recent changes in industrial medicine, of which the contribution of the Council on Industrial Health of the American Medical Association is noted, and the spread of collective bargaining, with greater recognition of the need of health measures by organized labor, have helped to smooth the way for tuberculosis surveys. Estimates of the cost of such surveys are given, the relation to workmen's compensation explained and a program of conducting surveys set forth, all accompanied by references to the sources of further information. The result is a helpful, practical guide for any worker in this field.

Industrial Health Hazards and Their Effects

- 552 Occupational Disease of the Lungs in Boiler Sealers. L. Dunner. Brit. J. Radiol., 16, 287-290 (Oct. 1943)

The symptoms of lung disease in boiler sealers due to the dust inhaled during the sealing and their duration bear no relation to the time spent in this work. Like chronic bronchitis or emphysema, severe pains in the chest or dyspnoea made some sealers give up their work. X-ray findings are not uniformly distributed all over the lungs; one lung alone may be affected. X-ray films are shown giving the types of mottling, nodular infiltration and diffuse fibrosis seen in this occupational disease.

- 553 Studies on Commercial Air Line Pilots. M. Clinton, Jr., & G.W. Thorn. War Med., 4, 363-375 (Oct. 1943)

Data are presented on 21 commercial air line pilots with regard to flying experience, physical examinations, psychiatric interviews, and metabolic studies. Special attention was given to those tests which might reflect any alteration in adrenal function. No conclusive evidence of alterations in adrenal function, as measured by chemical analysis of the blood, Wilder tests, intravenous dextrose tolerance tests, and 17-keto steroid excretion measurements was encountered.

- 554 Health Hazards Connected with Solvents Used in Shoemaking. W. Schweisheimer. Hide and Leather and Shoes, 106, 13 (1943)

Petroleum naphtha, alcohol, benzene, toluol, acetone, ether, and acetates all offer potential health hazards to workers in the shoe factory. Various definite precautions that can be instituted are discussed.

- 555 Trade Dermatitis, with Particular Reference to Baker's Eczema. F. Jager. Arch. f. Gewerbepath. u. Gewerbehyg., 11, 579-587 (Dec. 31, 1942); Bull. Hygiene 18, 348-349 (Oct. 1943) (German)

The clinical pictures of cases of baker's eczema are described. Typical reactions show dry scaling changes with some patchy moist areas. Sometimes partial lichenification, deep infiltration, wider spread of the lesions and marked seasonal variations suggested the importance of endogenous factors. Both observations and skin tests showed the primary causes to be dough, flour, salt, bran, acid

fruit juices, oatmeal and sandust. Long hours, overwork, strain and worry all have an unfavorable influence on the course of the disease. Incidence seems to be increased in age groups showing hormone imbalance.

- 556 Food Poisoning in State's War Industry Plant Cafeterias and Restaurants. J. E. Perkins and M. R. Mayers. N. Y. State Ind. Bull., 23, 66-68 (Feb. 1944)

A number of outbreaks of food poisoning have occurred in war plants having large and well organized cafeterias, where it has been possible to make careful studies to ascertain the cause. The danger is greater in the large majority of plants having no organized lunch service, and food is dispensed by private persons not so well experienced in sanitation. The great danger is from direct infection and from toxins from bacterial action, and outbreaks of infection have occurred from contact of food with the ulcerated hand of a food handler and from coughing and sneezing. Next to avoiding infection altogether is preventing the growth of bacteria by cooling; so the prime requisites are refrigeration and cleanliness. The precautions recommended by the Division of Communicable Diseases of the New York State Board of Health are quoted: (1) only well individuals with no sores on their hands, arms or faces should have anything to do with the preparation and serving of the food; (2) hot water, soap and paper towels should be readily available; (3) all food capable of causing trouble should be prepared as soon before serving as possible; (4) if storing and reheating are necessary, the food should be rapidly cooled by refrigeration after original preparation, kept adequately refrigerated until just before the dinner, and then again made piping hot just before serving; (5) all food left over from one meal which is to be served at a second should be promptly refrigerated, and kept adequately refrigerated (under 50° F); and (6) have adequate dishwashing facilities.

- 557 Incidence of Ill-health in the Tobacco Industry. H. Liebich. Arch. f. Gewerbe-path. u. Gewerbehyg., 11, 632-643 (Dec. 31, 1942)

A statistical review of the cases of illness occurring in two tobacco factories in South Germany, with special reference to the possible influence on sex disorders in women. An earlier investigation produced no evidence that nicotine had any deleterious effect on pregnancy or childbirth. The present investigation was approached by an analysis of the figures for premature births, abortions, births and still-births among 314 women. The results confirmed those of the former study. No definite relationship between the length of time of occupation and occurrence of anomalies was established. The percentage of certified illnesses in the tobacco industry was twice as high for women as for men, which was attributed to the cumulative exhaustion caused by combined factory and domestic work. These women were also suffering from malnutrition. The illnesses of the 314 women investigated were considered no more frequent than in the general female population of South Germany.

- 558 The Solubility of Lead Borosilicates in Tissue Fluid. P. L. Beebe and F. S. Mallette. J. Ind. Hyg. & Tox., 26, 109-112 (April, 1944)

Experimental animals were exposed to spray mists of lead-containing fritted glass ceramic colors for a period of about 60 hours. Exposure chamber concentrations of lead averaged 0.035 milligrams per liter of air. The liver and bones of the exposed animals showed a much higher lead content than those of the control animals. The lungs of exposed animals showed a progressive decrease in lead content with increase in time from the last exposure. These studies indicate that lead silicates in the form of ceramic colors are soluble in animal tissue fluid. -- Author's summary

- 559 Health Injuries in Electro-welders. J. Gramer. Arch. f. Gewerbepath. u. Gewerbehyg., 11, 644-685 (Dec. 31, 1942) (German); Bull. Hyg. 18, 847-848 (Oct. 1943) Known dangers to health of electro-welders include those caused by the electric current, radiant heat, gases and fumes, and ultra-violet irradiation. Symptoms are most frequently respiratory catarrh, followed by excessive perspiration, gastric and nervous symptoms, with rheumatism showing the lowest incidence. Physical signs are less marked, pharyngitis being most common, also conjunctivitis, blepharitis, skin irritation, bronchitis, thyroid enlargement, and epigastric tenderness. The urine shows increased urobilinogen. An overstimulation of the erythropoietic system and to a lesser extent of the leukopoietic system occurs in almost one-third of the cases. A few lung variations have been observed, resembling silicosis but considered only as results of "broncho-pneumonic irritation." A decrease in sexual potency is also noticed, but the evidence is not definite.
- 560 The Morbidity of Metal Workers in Prague. S. Tschauder. Arch. f. Gewerbepath. u. Gewerbehyg., 11, 619-631 (Dec. 31, 1942) (German); Bull. Hyg. 18, 846 (Oct. '43) This is a review of the morbidity from non-specific disorders of health in metal workers. Conditions of work and the hazards of autogen and electro-welding are described. In autogen welding the chief risks are injury to the eyes and burning; in the electro process the risks are from exposure to metallic fumes and oxides arising from the metal of the electrode or its covering. In general the health disorders may be grouped as respiratory affections, gastric and intestinal disorders, skin affections, eye injuries, and wounds, burns, abrasions, etc.
- 561 Health Hazards in Soldering Operations. II. Machine Soldering. Illinois Lab. Bull., 4, 20-22 (Nov. 30, 1943) The tin conserving solders containing a higher percentage of lead are more hazardous because the higher working temperature results in more oxidation of the metal. When these solders are used, only the best control program will prevent a dangerous concentration of lead in the air. Where control was barely adequate with 30 per cent lead solder, it may be absolutely inadequate after changing to a solder containing 70 per cent or more of lead. This change results in higher working temperatures and frequently additional gas torches requiring more complete hood enclosure and more attention to maintenance of good housekeeping. -- Author's summary.
- 562 Health Hazards Encountered in the Manufacture of Synthetic Rubber. R. H. Wilson, J. A. M. A., 124, 701-703 (March 11, 1944) (1) Butadiene is a light narcotic poison with no apparent danger to light exposures. (2) Styrene is to be considered as a toxic compound. Mild exposures do not produce any pathologic effect. Heavy exposures may cause permanent damage, but so far this has not occurred. (3) Acrylonitrile is extremely toxic both from vapor toxicity, and from toxic absorption. Even mild exposures are dangerous. (4) Other compounds used in the manufacture of synthetic rubber are to be considered toxic and precautions taken in their handling. (5) Treatment of exposed cases is chiefly symptomatic. (6) All operating personnel should receive thorough preemployment examination and a complete periodic check-up every three months. (7) Adequate ventilation is to be supplied at all times. (8) Constant inspection of all equipment should be maintained. (9) Personal and group safety equipment should be supplied and their use enforced. -- Author's summary.
- 563 Toxicity of General Purpose Synthetic Rubbers. Anon. Rubber Age 54, 423 (Feb. '44) The Division of Pharmacology, Food & Drug Administration, Federal Security Agency, is conducting chronic toxicity and irritation experiments using general

purpose synthetic rubbers (GR-S, GR-M and GR-I). An interim report recently made to the Office of the Rubber Director is quoted in full. No toxic signs developed on feeding the ground rubbers to rats to the extent of 1% of their diet, and no foreign body reaction followed subcutaneous implantation with these rubbers in guinea pigs. The conclusion is drawn, so far as the experiments have gone, that the rubbers may be deemed safe for use in seals in food containers, and in comparable applications where synthetic rubbers is not altered in composition. With regard to the use of phenyl beta naphthylamine as an antioxidant. It is known that beta naphthylamine can cause bladder tumors, but there is no information at present on phenyl beta naphthylamine. Other derivatives of beta naphthylamine have been extensively studied and have given no evidence that they are carcinogenic. On account of the doubt on this point the use of alpha naphthylamine and diphenylamine derivatives is suggested rather than those of beta naphthylamine. The warning is given that since the results obtained on the rubbers studied are incomplete, the entire responsibility for the use of the information in the manufacture of products for sale to the public rests solely with the rubber manufacturer.

- 564 Study of the Manufacture of Textiles in the City of Santiago. A. Forero and G. Thomas. Rev. Chilena de. Hyg. y Med. Preventiva, 5, 329-385 (March, 1943) (Spanish) 282 industrial establishments were visited, including large and small textile factories; in which 8,670 male and female workers are employed. Hazards were found in raw materials, in work rooms, chiefly in card and dye rooms and at the grinding machines and in faulty protective devices. A critical study is made of the methods and means of protection employed in Chile, with suggestions for improvement. Foreign legislation covering byssinosis and occupational dermatosis is explained. -- Condensed from author's summary.

- 565 A Table of Common Hazardous Chemicals. Seventh Edition. National Fire Protection Association. 31 pp. (1944)

This table has been developed by the N.F.P.A. Committee on Hazardous Chemicals and Explosives, in cooperation with the American Chemical Society. It represents the most authoritative information available to date. The 1944 revision includes data on a number of chemicals not previously in general commercial use, which are now widely used in war industry. Included in the table are data on 98 hazardous chemicals with respect to their fire hazard, life hazard, recommended storage, and proper methods of fire fighting, with recommendations as to suitable extinguishing agents for fires in chemicals which cannot be fought with water by ordinary methods because of chemical reaction with water. The "flash point", "explosive range" and "ignition temperatures" are given for those chemicals where such information is essential. Oxygen helmets are advised for use in the presence of gases dangerous to life. Copies of this table may be obtained from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., at thirty cents a copy.

- 566 Oil Dermatitis. G. I. Griffiths. J. Royal Inst. Pub. Health and Hygiene, 6, 255-256 (Nov. 1943)

Three types of reaction are described: (1) an acnoid infection of the hair follicles, (2) a folliculitis, or (3) a surface dermatitis. It has been shown that sensitive individuals develop erythema if a piece of oil-soaked lint is placed on the skin for a few hours. Cases occur most commonly on the hands, wrists, and forearms. Mild cases are found to respond to daily ultra-violet irradiation, combined with the application of E.S.T.F. Ointment (Martindale) and calamine lotion; suspension from work is unnecessary. But with more complicated cases, antiseptic lotion is applied, suspension from work is essential, and transfer to other work

on recovery is recommended. Various oils and recommendations for the worker are discussed.

- 567 Actual Causes of Certain Occupational Dermatoses. J. V. Klauder. Arch. Derm. and Syph. 48, 579-600 (Dec. 1943)

A study was made of 1,113 cases of cutaneous diseases in patients claiming compensation, of which 527 were diagnosed as occupational in origin. The causes of the occupational dermatoses were divided into the following groups: (1) trauma and accidental injury, (2) primary irritants (acids, alkalis, non-aqueous solvents), (3) cleansing agents applied to the skin, (4) sensitizing substances, (5) petroleum products, and (6) wet work (water alone, soap and water, and alkaline salt detergents). In addition there were cases of occupational folliculitides caused by chlorinated hydrocarbons, vegetable oils and dusts.

- 568 Foreman, Spare Those Hands. G. E. Morris. Industry, 9, 15, 16, 32 (April, 1944)

Causes of industrial dermatoses are the indiscriminate use of sulfonamide ointments, the use of harsh cleansing agents, the handling of alkalis, and the use of solvents. Many workers develop rashes which are not due to their occupation, such as athlete's foot, shingles, scabies. Eruptions may be caused by ringworm, scabies or pediculi. Common agents for therapy of industrial dermatoses are given. The author advises remaining at a job long enough to develop an immunity. In case of failure a change of job must be made.

- 569 New Developments in Industrial Dermatoses. L. Schwartz. Penna. Med. J., 47, 559-561 (March, 1944)

Among the new industrial skin irritants which have been discovered are: (1) the rubber antioxidant monobenzyl ether of hydroquinone, which can cause leukoderma, (2) the photosensitizing action of brom-fluorescein, a dye used in indelible lipstick, (3) the synthetic resins and the plasticizers used in nail polish and in wrist watch straps, which can cause sensitization dermatitis, and (4) the new fabric finishes for making fabrics waterproof, flameproof and mildewproof. Twenty eight states now have coverage under their compensation laws for occupational and related contact dermatoses, medical schools have inaugurated under-graduate and post-graduate courses in these subjects, and dermatologists are now recognizing that occupational dermatoses are a specialty in dermatology. The possibility that the cause of many eczemas may be sensitivity to environmental substances, the cure, and the building of immunity by exposure are considered.

- 570 Brucellosis: A Preliminary Report of Cases Treated with Radioactive Colloidal Manganese. O. W. Schreiner. Ind. Med., 12, 840-842 (Dec. 1943)

Brucellosis in man has grown in prevalence in the United States from one case in 1905 to a serious public health problem today. Its protean nature and multitude of symptoms make diagnosis very difficult, if not impossible in some instances. The prevention of brucellosis in man depends on four factors: (a) pasteurization of milk and cream; (b) eradication of brucellosis in domestic animals, chiefly cattle and swine; (c) prophylactic vaccination of all persons coming in contact with either the cultures or with the disease in animals; and (d) public health education of animal husbandmen to the dangers from contact with infected animals, and of the general public to the danger of consuming raw milk and other unpasteurized dairy products. Researchers have been unable to develop an effective treatment to date. The author's experience leads him to believe that Colmetanese opens up a new therapeutic approach to this problem. His therapy has had a decidedly beneficial effect in all cases in which he has used it, and there have been no apparent toxic reactions or intolerances shown. -- Author's summary.

- 571 The Persistence of Heat Acclimatization in Man. A. Henschel, H. L. Taylor, and A. Keys. *Am. J. Physiol.*, 140, 321-325 (Dec. 1, 1943)
(1) The performance of muscular work in dry heat was studied in 24 normal young men. The diet, environment and work routine were carefully controlled during the stay in the heat. (2) Comparisons were made between the performances in the heat on two occasions of 2 days each separated by from 1 to 4 weeks of cold weather. (3) Work pulse rates, rectal temperatures and, to a lesser degree, vasomotor stability tests showed that heat acclimatization persists during at least three weeks of cold weather. The benefit conferred by this acclimatization is important for this time but the advantage decreases from week to week. -- Author's summary.
- 572 Failure of the Sweat Mechanism in the Desert. (Thermogenic Anhydrosis) J. Wolkin and others. *J.A.M.A.*, 124, 478-482 (Feb. 19, 1944)
The syndrome of failure of the sweat mechanism in the desert, which the authors describe, stands out clearly from the hitherto accepted concepts which identify only heat stroke, heat exhaustion and heat cramps. The early recognition of the syndrome is of paramount importance, since its proper management demands immediate removal from excessive heat. Often there has been a tendency to regard this group as merely forms of heat exhaustion and to return these soldiers to duty with only the admonition to continue oral salt intake. Salt is not indicated and believed of no value. It is stressed that such patients require avoidance of exposure to excessive heat until the sweat function has returned to normal. Even after recovery one should be inclined to oppose their return to similar climatic conditions. -- From author's conclusion.
- 573 Industrial Noise - Its Analysis and Interpretation for Preventive Treatment. D. A. McCoy. *J. Ind. Hyg. & Tox.*, 26, 120-123 (April, 1944)
If preventive action against the noise hazard in industry is to be initiated and success in its application is to be expected, certain fundamentals must be recognized. Details of the survey are concerned with the use of the sound level meter, the decibel and weighting dials, the taking of noise level readings and the basis for keeping records or charts. Factors that determine the interpretation of the noise hazard survey are: (1) The sound intensity, (2) The total time and periods of exposure, (3) The type of ear defender and constancy of its use, (4) A distinction as to the type of noise -- continuous or interrupted, (5) The immediate environment from an acoustical standpoint, including the method of operation, (6) The physical status of exposed employees, (7) The frequency of the noise. -- Condensed from author's summary.
- 574 Good Light, Fewer Accidents. W. H. Kahler. *Factory Man. & Main.*, 102, 116-119 (April, 1944)
The effects of brightness, contrast, size of objects, time, and glare on possibility of accidents are discussed.
- 575 Hazards to Skin of Ultraviolet Therapy. *Queries and Minor Notes*, *J.A.M.A.*, 124, 471-472 (Feb. 12, 1944)
The question concerns a statement by a lecturer that the use of ultraviolet rays often cause skin ulcers. Some skins are sensitive to sunlight, burning instead of tanning and developing epitheliomas after long exposure. It is not generally realized that excessive exposure to ultraviolet lamps used in therapy may produce the same results. However, there is no danger from industrial ultraviolet lighting, because the rays are absorbed by glass.

- 576 Hazards of Carbon Monoxide. F. S. Rossiter. Ind. Heat. 1943); 11, 36-68, 128 (Jan. 1944); 11, 388-392 (March 1944); 11, 552-556, 612 (Apr. 1944)

Hazards from carbon monoxide in industry, commercial establishments, and homes are discussed in this series of articles. Over a 10-year period (1926 to 1936) 46,925 deaths from carbon monoxide have been reported in the United States. Sources of the gas in the home and in motor vehicles and the need of inspection and preventive measures are discussed. In industry, the greatest number of cases occur in blast furnaces, but gas producers, smelters, open hearth furnaces, foundries, coke works, brick kilns, boiler houses, gas-engine rooms, welding operations, felt hat manufacture, coal mining and pressing with gas irons make large contributions. Repeated daily slight exposures decrease susceptibility. When the source of carbon monoxide is removed, elimination from the blood begins and is usually complete in 8 to 10 hours, and surviving victims recover within several days. No permanent alteration of the corpuscles ensues, but brain degeneration sometimes follows extreme exposure. There is no basis for the belief that various other diseases are caused by carbon monoxide exposure. Symptoms after various degrees of exposure and the relation to various possible after-effects are discussed. No proof of chronic poisoning has been established. Preventive measures are outlined, including use of the blower type of air supply, the self-contained oxygen apparatus and the canister type mask. The ordinary war gas mask will not protect against carbon monoxide. Treatment is discussed briefly, including removal to fresh air, Schaefer prone method of artificial respiration, use of the resuscitator, keeping warm, massage of the muscles, and in the after treatment, absolute rest, tonics, nourishing food and fresh air, and injection of hypertonic saline solution or glucose in cases of edema of the brain.

- 577 The Increase in Basal Metabolism and Blood Pressure after Carbon Monoxide Poisoning. H. Weil. Klin. Wochschr., 21, 250-253 (1942) (German)

A case is reported of a miner in whom carbon monoxide poisoning was followed by considerable aggravation of already existing nervous symptoms and by a rather large increase in blood pressure and basal metabolism which persisted for more than ten years. In spite of the increase in basal metabolism, there was no loss in body weight. The effects were connected with disturbances of central nervous origin which can be produced by carbon monoxide poisoning.

- 578 Exposure to Fluorides in Magnesium Founding. E. J. Largent and I. F. Ferneau. J. Ind. Hyg. & Tox., 26, 113-116 (April, 1944)

Spot samples of urine collected from men engaged in magnesium founding were analyzed for fluorine. The fluorine content of the samples showed that exposure is occurring in some foundry areas but not in others. In some cases fluorine is undoubtedly being stored, but the rate of storage is thought to be relatively low.

- 579 Arsine, Stibine, and Hydrogen Sulfide-Accidental Industrial Poisoning by a Mixture. C. A. Nau, W. Anderson, and R. E. Cone. Ind. Med., 13, 308-310 (Apr. '44)

This article presents the pathological and medical aspects of the cases of industrial poisoning whose causes are discussed in Abstract 580. The author's conclusions follow: (1) Toxic and hazardous exposures may occur accidentally and go undiagnosed if the nature of the operations and potential reactions is not understood, (2) The hemolytic effect is the most outstanding finding resulting from exposure to the mixture of gases encountered, (3) The specific phenomena of chronic poisoning are to be studied.

- 580 Arsine, Stibine, and Hydrogen Sulfide - Accidental Generation in a Metal Refinery. C. U. Dernehl, F. M. Stead and C. A. Nau. *Ind. Med.*, 13, 361-362 (April, 1944)
Three workers in a metal refinery were poisoned recently by a mixture of the three gases arsine, stibine and hydrogen sulfide. The gases were liberated when water was added to a hot dross containing metallic aluminum and compounds of arsenic and antimony. Laboratory studies under similar conditions showed that the addition of water to the hot dross causes the formation of nascent hydrogen which reacts with the arsenic, antimony and sulfur to form arsine, stibine and hydrogen sulfide. The reaction requires an elevated temperature for the production of amounts of these gases adequate to be detected by the use of lead acetate and silver nitrate solutions.
- 581 Selenium Poisoning. A. L. Moxom and M. Rhian. *Physiol. Rev.*, 23, 305-337 (Oct. 1943)
The acute toxicity of selenium is by action on the central nervous system, and death is due to respiratory failure. Falling blood pressure is due to action on the splanchnic nervous system. First signs are nervousness and fear, followed by vomiting, then quietness and somnolence. Respiration becomes difficult, leading to dyspnea, followed by opisthotonus, tetanic spasm, clonic spasm, falling blood pressure, and respiratory failure. Subacute and chronic poisoning results in nervous disorders, small local hemorrhages into the intestines, severe ascites, liver and splenic damage, emaciation, apathy, and a progressive anemia. The blood chemistry also shows changes. In cases of selenium poisoning there is a volatile, very odoriferous compound on the breath, claimed to be methyl selenide. The effects of various factors on selenium poisoning are discussed, and the review is very complete, with an excellent, long bibliography.
- 582 Comments on "Radium Painting". W. C. L. Hameon. *Ind. Med.*, 13, 360-361 (Apr. '44)
In connection with Morse and Kronenberg's paper on hazards of radium painting (Abst. 174, Feb. 1944), and the earlier paper by Evans (Abst. 1008, Oct. 1943), it is suggested that in common with other writers they have not given sufficient consideration to the possibility that most of the radium found in the bodies of workers is obtained by inhalation rather than by ingestion. In support of his view, he points to the author's statement that relatively large amounts of paint were found in ventilating ducts and fans. Further he considers it improbable that as much paint would be ingested after thorough washing of the hands as might easily be inhaled over a period of a few days. Regarding the adequacy of the safety limit for radon he shows from the author's data that the concentration of radon found does not approach the higher safe limit suggested (10⁻¹⁰ curies per liter), and only twice exceeded the more conservative limit of 10⁻¹¹ curies per liter. Further control by ventilation to the more conservative limit is very easily obtained. The reexamination of safe limits proposed by Morse and Kronenberg then, would be of only academic interest.
- 583 Metal Fume Fever in the Crushed Stone Industry. J. W. Hammond. *J. Ind. Hyg. & Tox.*, 25, 117-119 (April, 1944)
A metal fume fever hazard in the crushed stone industry occurs when linings, mantles, and dies of crushers are filled and secured with zinc metal. The metal contains from 1.75 to 2 per cent lead impurity. The pouring of this metal does not constitute a hazard, but when the worn manganese steel lining is removed by cutting with an oxygen-acetylene torch, maximum fume concentrations in mg. per cubic meter were found to be: total 870, zinc 580, manganese 25.6, and lead 2. Where no control measures are used the 1 to 3 hour exposure to these concentrations causes severe temporary illness.

- 584 Injuriousness of Aluminum Dust to the Lungs. II. Jotten and Eichhoff. Reichsarbeitsblatt, 22, III, Arbeitsschutz, 342-343 (1942) (German)
The results of animal experiments show that aluminum dust is not harmless but can be the cause of serious lung damages leading to chronic desquamating pneumonia. Aluminum dust does not produce a silica-like action on the lungs.

- 585 Effects of Magnesium Fire Bombs on the Eye. Queries and Minor Notes, J.A.M.A., 124, 676 (March 4, 1944)

The accidental entry of magnesium spicules into the eye may lead to a gas formation, and the extent of injury probably would be determined by the location. Magnesium bodies on the surface of the eye would not produce pockets of gas, but recent experiments indicate that the proteolytic action of this metal makes such a foreign body of greater consequence than that from some other metals, such as steel. The location of foreign bodies of magnesium may prove difficult, since the metal is non-magnetic and only slightly opaque to X-rays. Eye protection for workers in magnesium is highly desirable, and prompt treatment in case of accident is in order. References on the subject are given.

- 586 A new Antitode for Lead. L. Zancan. Atti, Soc. Med.-Chir. Padova, 18, 210-216, (1940) (Italian)

When freshly precipitated lead phosphate is shaken with a 10 per cent solution of sodium pyrocatecholsulfonate, lead is demonstrable in the filtrate. When a solution of lead nitrate is mixed with disodium phosphate in the presence of sodium pyrocatecholsulfonate there is no precipitation of lead sulfate even though the proportions are one molecule lead salt to 22 molecules of the sulfonate. Cattle serum was mixed with a 0.00372 molecular solution of lead nitrate, until precipitation appeared. The addition of 0.047 molecular solution of sodium pyrocatecholsulfonate prevents this precipitation. The precipitation formed in the serum by a lead nitrate solution can be redissolved by addition of the sulfonate. Sodium pyrocatecholsulfonate acts antagonistically to lead salts on isolated frog heart. When rats were injected subcutaneously with a 0.495 per cent solution of sodium nitrate together with a 7 per cent solution of the sulfonate there is an inhibition of the deposit of lead sulfate under the skin and a rapid resorption of lead salts. When rabbits received an intravenous injection of a lethal dose of lead nitrate, and after no longer an interval than 3 minutes a corresponding dose of sodium pyrocatecholsulfonate the animals survived. This method was recommended for the treatment of lead poisoning.

- 587 Is the Inhalation of Formal Vapors Dangerous? Preventive Measures. A. Lahille. Ann. hyg. publ., ind. sociale, 19, 222-225 (1941). (French).

Data on existing animal experiments with air containing formal (formaldehyde) are given. Moistening gas masks with a 20% ammonium carbonate solution or better with a freshly prepared mixture of a solution of 2 gms. sodium hydroxide plus 10 gms. sodium carbonate in 200 cc. water with a 1.5-fold diluted 8-10 volumes per cent solution of hydrogen peroxide is recommended.

- 588 Observations on the Ingestion of Methyl Cellulose and Ethyl Cellulose by Rats. W. Deichmann and S. Witherup. J. Lab. & Clin. Med., 28, 1725-1727 (Nov., 1943).

Methyl and ethyl cellulose have potential usefulness as thickening and binding agents in pharmaceutical and food industries. This paper is the report of an investigation to test deleterious effects of these substances by feeding them to rats over a considerable period of time. The daily ingestion of methyl cellulose amounting to about 0.44 gm. per rat or of ethyl cellulose amounting to about 0.18 gm. per rat produced no signs of illness. No evidence was found of any significant physiological abnormalities, nor of significant gross or microscopic abnormalities in the tissues of the animals. It is concluded that the feeding of methyl and ethyl cellulose in these concentrations is harmless to rats.

- 589 The Question of the Toxicity of Trichloroacetonitrile (Tritox) and Sulfur Dioxide. W. Liese. Chem. Zentr., 1, 2713 (1941). (German).
Comparative tests on mice showed that Tritox is tolerated in somewhat higher dosage than sulfur dioxide. As much as 2.9 g./cu.m. is relatively well tolerated while sulfur dioxide is fatal in a concentration of 2.76 g./cu.m.
- 590 Fatal Methyl Bromide Poisoning. J.W. Miller. Arch.Path., 36, 505-507(Nov.1943).
The case of fatal poisoning reported presents a definite history of exposure to methyl bromide alone in a refrigerator car filled with hay. The duration of exposure was between 5½ and 7½ hours to a concentration of methyl bromide that was known to be approximately 8160 p.p.m. 14 hours before the patient's entrance into the car. He was unconscious when found; muscular control was impaired throughout the entire time he survived. The significant pathological changes were extensive pulmonary edema, seropurulent pneumonia in small foci, acute bronchitis and early fatty degeneration of the liver.
- 591 Three Cases of Poisoning by Irrespirable Gases: Phosgene from Trichlorethylene, Nitrogen Dioxide, Carbon Dioxide with Reduction of Oxygen. E.H. Derrick and D.W. Johnson. Med. J. Australia, 2, 355-358 (October 30, 1943).
The case of poisoning by phosgene from trichlorethylene occurred in a dry-cleaning workman under conditions where ventilation was inadequate, the average concentration of trichlorethylene vapor in the room being 488 p.p.m. The patient involved was an inveterate smoker, and had been seen smoking in the dry-cleaning room. If air containing the vapor comes in contact with flames, welding arcs, or burning tobacco (as when drawn through a lighted cigarette), the trichlorethylene may be decomposed with formation of phosgene. On post-mortem examination the lungs were intensely edematous, like filled sponges; the bronchi were full of frothy fluid. The right auricle was distended with blood; the liver and kidneys were congested. (Editor's note: Research a few years ago by Elkins in this country tended to prove that significant amounts of phosgene could not be formed in the light of burning cigarettes.) The second case involves a laborer who succumbed to nitrogen dioxide ^{fumes from} from blasting gelatin and the third an employee in a food products plant who entered a vat previously used for storing fermented malt. Carbon dioxide asphyxiated him.
- 592 Benzene Hazards in the Leather Industry. W. Schweisheimer. Hide & Leather & Shoes, 106, 30 (1943).
Benzene poisoning is a disease affecting the blood forming tissues, eventually resulting in a disease of blood cells. The large majority of cases of benzene poisoning is due to inhalation. Precautions to avoid benzene poisoning include the use of exhaust ventilation, fresh air in the work rooms, use of substitutes where possible, gas masks for limited exposures and emergencies, gloves and aprons for those workers using liquid benzene, the periodic testing of the air in workrooms for concentration of benzene, and regular blood examination of the workers.
- 593 Condition Resembling Hematuria in Munition Workers. J.L. Waterman, S.W. Litzenberger and M. Schiff. U.S. Naval Med. Bull., 42, 247-250 (January, 1944).
(1) A case of excretion of a red dye in the urine producing an appearance similar to hematuria, in a munition worker, is described. (2) In vitamin-deficient animals, a similar dye excretion can be produced experimentally following TNT intoxication. (3) A previous case of similar dye excretion in another vitamin-deficient munition worker has been reported. He also responded to vitamin

therapy. (4) It is believed that munition workers can be protected from toxic damage by adequate prophylactic administration of vitamins. Questioning as to diet, alcoholism and habits should be part of the routine physical examination of these workers. (5) From the urological standpoint, an additional condition to be differentiated from hematuria is presented. -- Author's summary.

- 594 X-Ray Mottling of Lungs from Iodized Poppyseed Oil. Queries and Minor Notes. J.A.M.A., 124, 472 (Feb. 12, 1944)

In an X-ray examination following inhalation of a quantity of lipidol (iodized poppy oil) a doctor's lungs gave all indications of pneumonia, and subsequent films a year or more later led to the same diagnosis, but no symptoms were present. Such cases are rather frequent. Chemically unsaturated oils, such as cod liver oil, or the paraffin base oils, such as mineral oil, do produce reactions known as "lipid pneumonia" and paraffinomas. The chemically saturated oils, such as lipidol, apparently produce no tissue reaction, and where there are no symptoms the supposed pneumonitis simply comes from the fine drops of lipidol residue remaining in the lungs.

- 595 A Case of Silicosis Caused by Wheat Dust. T. F. Heatley, D. Kahn, and C. R. Rex. J.A.M.A., 124, 980-981 (April 1, 1944)

A workman employed for eight years in an atmosphere thick with dust from wheat (loading and unloading cars) presented a roentgenogram typical of advanced silicosis without evidence of tuberculosis. Examination of the dust gathered at his working places showed that 20.25 and 31.55 per cent of the particles were between 1 and 44 microns in size. The silica content of these particles was 19.96 and 9.96 per cent. A second examination, made two years later, showed that the fibrotic process in the lungs had progressed, although there had been no further exposure to silica-containing dust. At present, Jan. 11, 1944, he is completely incapacitated. -- Author's summary.

- 596 Radiological Appearances in the Development of Coal Miner's Pneumoconiosis. E. A. Aslett, T. W. Davies and T. I. Jenkins. Brit. J. Radiol., 16, 308-313 (Oct., 1943)

An attempt is made to trace the development and progression of coal miner's pneumoconiosis in 27 anthracite miners who had been previously X-rayed in 1938. It appears that simple nodulation may develop into coalescent nodulation. Coalescent nodulation, multiple fluffy shadows, and apical homogeneous shadows, may develop into massive shadows. Apart from the specific, solid lesions of anthracite miners' pneumoconiosis, there develops in the more advanced cases a diffuse, streaky fibrosis, which by scarring and contraction, may be a factor in the production of general emphysema. The tomograph cases were few, but clearly demonstrated that the disease may be more advanced than appears on the straight X-ray film. This advance in the disease is probably due to the drawing together of nodules to form increasingly compact lesions, which eventually become massive shadows.

- 597 Massive Conglomerate Lesion of Silicosis Differentiated from Pulmonary Neoplasm. R. A. Rondich & M. R. Cmiel. J. Thoracic Surg., 12, 686-696 (Oct., 1943)

Massive conglomerate lesions of silicosis are usually due to the presence of associated infection, and these lesions may be mistaken for neoplasm. The need for exact roentgenological interpretation is of utmost importance for prognostic, medicological and surgical purposes.

- 598 The Effect of Silica and Feldspar Dusts on Susceptibility to Lobar Pneumonia. A. M. Baetjar and F. J. Vintinner. *J. Ind. Hyg. & Tox.*, 26, 101-108 (Apr., 1944)
Exposure of rats to high concentrations of very fine silica or feldspar dust in the air increased the resistance of rats to lobar pneumonia, produced by intra-bronchial inoculation with Type I pneumococcus organisms suspended in mucin. This result occurred whether the dust exposure was for only a few days or was of sufficient duration to produce a marked pneumoconiosis or silicosis. The effect of dust on lobar consolidation was further demonstrated by experiments in which the pneumococci were suspended in a broth inoculum, and in which a septicemia was the primary reaction rather than a lobar pneumonia. Under these conditions exposure to dust, although offering no protection against invasion of the blood stream and death, increased the resistance of the lungs to local attack by the pneumococci.
- 599 Sudden Death of an Agricultural Laborer After Spreading Basic Slag. R. Koch. *Arch. f. Gewerbepath. u. Gewerbehyg.*, 11, 686-695 (Dec. 31, 1942) (German)
Respiratory disease associated with the grinding of basic slag, and manufacture of artificial fertilizers was included in the list of scheduled diseases in Germany in 1942, but was not extended to agricultural laborers. The case is reported of the death of a laborer, who had been spreading basic slag. Certain circumstances suggested murder, but autopsy showed the cause of death to be purulent bronchitis and early broncho-pneumonia. Old caseating tuberculous lesions were present; the remaining organs showed only early toxic degeneration. Particles of basic slag were demonstrated microscopically in the bronchi. The author states that basic slag pneumonia is not a specific disease like silicosis, but the particles constitute a source of both mechanical and chemical irritation of the lungs, predisposing to bacterial infection which may cause fatal pneumonia, especially in susceptible individuals.
- 600 Concentration of the Carcinogenic Material in a Venezuelan Spindle Oil by Simultaneous Molecular Distillation and Chromatographic Adsorption. J. M. Twort and R. Lyth. *J. Hyg.*, 43, 248-251 (1944)
Some concentration of the carcinogenic material in this oil was obtained by distillation. Further concentration was accomplished by subjecting the strongest distillates to chromatographic adsorption (detailed technique to be published elsewhere). The best distillates were about twice as strong as the original oil. The material obtained by chromatic adsorption was about five times as strong in carcinogenic power as the distillate treated. During adsorption, large amounts of colorless, low-refractive index, almost inert material of low viscosity was separated from the colored active material. The most active material is highly viscous at room temperature, but its activity depends on the presence of crystalline solids.
- 601 The Effect of Trinitrotoluene of the Formed Elements of the Blood. H. M. Brill, E. Cone, Jr., and K. E. Wilson. *U.S. Naval Med. Bull.*, 42, 241-247 (Jan. 1944)
(1) TNT has been shown by many investigators to have deleterious effects on the formed elements of the blood, but these findings have not been substantiated by the writers. (2) A transitory initial leukocytosis accompanied by a moderate eosinophilia is produced in TNT handlers, which in no way affects the well-being of the worker. (3) No other changes were noted in the formed elements of the blood. (4) Proper hygienic measures apparently have succeeded in holding to a minimum any manifestation of TNT poisoning among the workers included in this study. (5) The Webster test is apparently an unreliable guide in detecting

early TNT toxicity. (6) The fears previously attached to the handling of trinitrotoluene are without basis provided proper precautionary measures are instituted for the safety of the worker. -- Author's summary.

Methods of Detection and Determination

- 602 A Thermal Anemometer for Low Velocity Flow. R. A. Seban and others. Transactions of the A.S.M.E., 65, 843-846 (Nov., 1943)
This article describes a thermal anemometer constructed of two brass spheres each having a single junction of copper-constantin thermo couple circuit embedded within it. The spheres are 1 inch and $\frac{1}{2}$ inch in diameter. The largest sphere has a heater coil by means of which it is heated and then allowed to cool. The difference in temperature between the spheres is recorded by a potentiometer. The instrument shows uniform calibration from 15 to 3000 f.p.m. Beyond 100 f.p.m. free-convection effects become small. The instrument is non-directional because of its spherical form.
- 603 A Counting Method for the Determination of Small Amounts of Radium and of Radon. L. F. Curtiss and F. J. Davis. J. Research, Nat. Bur. Standards, 31, 181-195 (Sept., 1943)
A method for determining small quantities of radon is described, in which the alpha particles from the radon and RaA and RaC are counted in an ion-counting chamber. Details of an arrangement for automatically making a printed record of the hourly totaled count are given. Advantages of this method over that using an ionization chamber with electrometer are discussed. -- Author's abstract.
- 604 A specific Color Reaction of Cyanamide and Ferriheme with Notes on the Mechanism of Action of Certain Tissue Poisons. R. D. Barnard. J. Am. Pharm. Assoc., Sci. Ed., 33, 24-28 (Jan., 1944)
Cyanamide reacts with ferrihemoglobin (methemoglobin) to form a derivative analogous to ferrihemoglobin cyanide and belonging to the class of compounds previously described as ferrihemides. This compound and its derivatives were studied from three angles: (1) The ferrihemochromogens can be used in a qualitative test for cyanamide outside the blood system (as in fertilizers) and catyl pyridinium ferrihemochromogen was selected as the best reagent. However, cyanamide has no effect on any of the physiologically occurring blood pigments, similar to that of cyanide, and hence cyanamide cannot be detected in the body by this means. (2) The action of cyanamide on the hemoglobin derivatives lends support to a theory of the asphyxiant nature of hydro-acid anions of low ionic volume (hydrocyanic, hydrofluoric, hydrazoic etc.) (3) It is suggested that certain components of the vitamin B complex owe their physiologic properties to their ability to coordinate with ferriheme. Additional results, bearing more directly on cyanamide in the body and its detection, are promised.
- 605 Detection of War Gases - Hydrogen Cyanide and Chloropicrin. P. F. Fenton. J. Chem. Education, 21, 92 (1944)
Air contaminated with hydrogen cyanide is aspirated through a silica gel-ferrous sulphate tube. Twenty per cent potassium is added to wet the silica gel and

the tube heated. A few drops of ferric chloride in concentrated hydrochloric acid is added giving a Prussian blue reaction. Silica gel-dimethylaniline tubes are used as a field test for chloropicrin. A bright yellow-orange color develops. A 10- or 20- ml. glass syringe is suggested in place of the rubber pressure bulb for aspirations.

- 606 A Compact Field Apparatus for Determination of Lewisite or Mustard Gas. J. W. Kouten, J. B. Shohan and W. F. Munn. Ind. & Eng. Chem. Anal. Ed., 16, 255-256 (April, 1944)
Apparatus, procedure, sensitivity and advantages of the test are discussed.

Control Methods

- 607 Combating and Removal of Obnoxious and Harmful Waste Gases, Particularly Sulfur Dioxide, Hydrogen Sulfide and Carbon Disulfide from Staple Fiber and Rayon Mills. H. Vihlein. Chem.-Ztg., 67, 12-14 (Jan. 6, 1943) (German)
The increasing number of rayon and staple fiber mills presents new odor trouble problems from gases formed in the precipitating bath of the spinning machines. Enclosure of the machines in glass casings and provision of special exhausts for sucking off the gases and discharging them into the open are means for protecting the workers. Present chemical means used to render the gases odorless and harmless before their discharge are aimed chiefly at a recovery of chemicals in the waste gases and are only 75 to 80% efficient in removing malodorous contents. By burning the hydrogen sulfide and carbon disulfide to sulfur dioxide according to the author's method, a 100% removal is claimed possible. The resulting sulfur dioxide can be treated with calcium carbonate by Buedenbender's method and completely converted to calcium sulfite, a valuable product in the chemical industry.
- 608 Plastics - Prevention of Fire Hazards. R. R. Fleck. Fire, 36, 129-130 (1944)
Thermoplastic materials are more hazardous than thermosetting plastics. Cellulose acetate plastics, once ignited, may burn vigorously, particularly if they have been plasticized with a high-boiling material, such as dimethyl phthalate. Methyl methacrylate will burn quietly at first and then more vigorously as the polymer depolymerizes under heat. The fire hazard from static electricity built up in thermoplastics during polishing and other operations is discussed.
- 609 Gas Training School Reduces Hazards in Steel Industry. J. C. Foster. Steel, 113, 90-92 (Dec. 27, 1943)
A training course is given selected employees of Bethlehem Steel Co., in the use of gas protective apparatus, so that they will be accustomed to it in time of emergency. A special building provided for the school is equipped with a smoke chamber in which the students carry on regular tasks in gas that is harmless but very irritating. A class room is separated from the chamber by large windows, providing for observation as well as verbal instruction. The course requires 3 1/2 hours per day over a 5-day period. The results have been highly satisfactory.
- 610 Air Flow at Discharge of Fan-Pipe Lines in Mines. Part II. Effect of Size and Shape of Pipe and of Adjacent Walls on Velocity and Entrainment Ratios. G. E. Mulvey. U. S. Bur. Mines. Rept. of Invest. 3730, 30 pp. (Nov. 1943)
Important empirical research on the velocity characteristics of air streams issuing from pipes or nozzles. The ratio of entrained air to primary air supply, the

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ratio of center-line air velocities to face velocity at the nozzle, angle of expansion of the moving air stream are some of the factors considered in their relation to such other quantities as distance from point of discharge, aspect ratio of the nozzle and dimensions of the enclosure. The title is misleading since its application may be much broader than in mines.

- 611 Air Filters for Control of Air-Borne Bacteria. J. M. DallaValle. Heat & Vent., 41, 54-58 (April, 1944)

Bacterial counts were made in a building with recirculation of air from a chamber containing a high concentration of B subtiles. The bacteria were collected by sucking through a funnel with its mouth over a petri dish. The bacterial count was reduced markedly when the air was passed through paper type dust filters. Other types of filters removed bacteria with varying degrees of efficiency, from 85% for oil-coated steel wool to 32% for glass fabric. No reliable data have been obtained for electrostatic precipitators, ultra-violet rays and chemical germicides.

- 612 Toxicology in Relation to War Industries. J. C. Rice. Merck Rep't., 53, 28-30 (April, 1944)

The author considers briefly the various poisons used in war industries, especially the explosives, solvents and machine-tool industries, with methods of entry into the body, pathology and symptoms. In preventive measures, the following is suggested as applying to practically the entire field: (1) clean, adequately ventilated working quarters; (2) scrupulous cleanliness of the workmen; (3) periodic, non-discretionary change and washing of clothing; (4) proper control of temperature and humidity; (5) routine mandatory physical examinations; (6) supervision by an enthusiastic, up to date medical officer, and (7) protective clothing and skin lotions for special applications. The use of these methods and the measurement of their relative efficiency introduce difficulties which have not so far been solved. One difficulty in investigating any method of bacteria removal is that each type of organism requires a different medium. The science of controlling air-borne bacteria requires further development before general claims are made for it. No occupied space can be made bacteria-free, but dust-filters and precipitators can greatly reduce the number. While studies must continue the use of air-borne bacteria control should not wait upon them. The evidence so far produced shows conclusively that air-borne bacteria are the cause of many common diseases, and that most of these bacteria can be controlled.

- 613 Control and Collection of Industrial Dusts: IV, Cloth Collectors. E. D. Powers. Rock Products, 6, 66-68 (1943)

Cloth filters are generally used when a high collection efficiency is required for a fine, dry, non-tacky dust which is to be recovered in a dry state. They are more expensive than cyclones but less expensive than electrostatic precipitators, being competitive with wet scrubbers.

- 614 Control and Collection of Industrial Dusts: V, Baffle-type Collectors. E. D. Powers. Rock Products, 6, 70-72 (1943)

Hot or sticky dusts prevent successful operation of baffle-type collectors; their efficiency lies between the low-efficiency cyclones and the cloth filters and high-efficiency cyclones. They can be applied ideally where the collector can be operated off the draft of a stack already in place and where the dust particles are of such a size that the collection efficiency will be high or a medium high collection efficiency is satisfactory.

Industrial Medical Practice

- 615 "Cold Vaccines" and the Incidence of the Common Cold. L. C. McGee, J. E. Andes, C. A. Plume and S. H. Hinton. J.A.M.A., 124, 555-557 (Feb. 26, 1944)
Three oral vaccines and two vaccines for parenteral administration currently offered as prophylaxis against the common cold were given clinical trials in a group of industrial and office workers during the October to April season of 1941-2 and 1942-3. No clearly evident protection against the cold and related acute respiratory infections can be demonstrated in the results of this clinical trial at mass immunization. The indiscriminate use of cold vaccine now available is not the answer to the problem of industrial absenteeism due to acute respiratory infections. -- Authors' summary.
- 616 Employment and Accidents in the Mineral Industries. W. W. Adams. Chapter (reprint from Minerals Yearbook, 1942.) U. S. Bureau of Mines. 11 pp. (1943)
Obtainable from Supt. of Documents, Washington, D. C., price - 5 cents.
The Minerals' Yearbook will be withheld from general distribution during the war in accordance with Government censorship requirements, but this chapter is reprinted on account of the need of all information on this subject. The causes of accidents are frequently listed, and are an old story to safety engineers, but it must be emphasized again that their chief cause is the small amount or complete absence of thought given to the importance of accident prevention by those who do not have safety thrust upon them every day. Until the safety engineer occupies a position in his organization equal to and not under that of the production engineer, industrial workers will continue to be killed and injured by preventable accidents, and the rehabilitation of needlessly injured persons will remain a major and serious problem demanding the attention of governmental and other agencies. In 1942 between 2 and 4 million man-days were lost from accidents in the mineral industries alone, causing "temporary" injuries, i.e. in which no part of the body was lost. "Permanent" injuries are considered equivalent to the loss of 6,000 work days for each employee. In the coal mining industry alone, from the average production of 4.9 tons per man per day, it can easily be calculated that the loss of time from "temporary" injuries alone represented a production loss of 15 or 20 million tons of coal in 1942. An even larger loss, not confined to 1942, must be charged in addition for deaths and permanent disabilities caused by accidents. In the face of such losses, which have continued for many years, there can be little doubt that accident prevention is one of the most important problems facing the nation. In addition to this timely and emphatic presentation which has been quoted and condensed from the author's summary, statistics and graphs show the number and frequency of accidents in the entire industry, and a number of paragraphs present figures for each branch of the field. No data on occupational diseases is included.
- 617 Insure Workers' Health! A. M. Fisher. Forbes Mag., 53, 15-16 (Jan. 15, 1944)
In a plea for health insurance for employees, the author briefly describes a few plans in actual operation, and summarizes the benefits as follows: "Happier employees, because they are secure from a major gnawing fear; healthier employees, because they can afford proper care and rest during illness and convalescence;

a way of giving your people a break, even in these days of wage stabilization, which the War Labor Board and the Treasury Department, and everyone else, will approve heartily; assuming a cost of \$30 per employee, a tax credit of about \$18,000, leaving \$12,000 as the net cost to you of giving 1000 families in your community a fine example of how liberal free enterprises can be made to work by itself without politicians and without red tape. Aside from these immediate and obvious benefits, you will be achieving a new status as a bona fide member of the growing fraternity of liberal-minded and liberal-acting business men."

618. Occupational and Non-occupational Diseases. C. F. N. Schram. Ind. Med., 13, 220-222 (March, 1944)

The text of a lecture by the author presents in an absorbing manner some points of view derived from his own experience. He calls attention to the difficulty of deciding between occupational and non-occupational diseases and to the fact that a disease may be occupational under one set of circumstances and non-occupational under another. So much more has been done about occupational disease that it is no longer of great significance either from the point of view of lost time or number of cases. Six causes of occupational disease are listed, which sometimes overlap or exist in combinations. Several illustrations stress the importance of a careful diagnosis of cases which might be wrongly considered as "occupational poisoning." In the case of dermatoses a so-called "triad" furnishes a criterion for diagnoses. ("Contact with a certain substance produces it; removal of the contact clears it up, and recontact reproduces it.") A hazard to workers from handling hydroquinone is discussed briefly. A tanning of the eye in the palpebral tissue sometimes results in partial loss of vision. The importance of preventive treatment is recognized and illustrated.

- 619 Industrial Management and the Medical Department. I. D. Jenkins. Clinics, 2, 536-547 (1943)

Subjects discussed are the basic considerations which management must recognize in developing an industrial medical department and some guiding considerations in forming a new program or re-vamping an old one.

- 620 The Management of Certain Aspects of Gas Poisoning with Particular Reference to Shock and Pulmonary Complications. M. S. Siegal & M. Aisner. Ann. Intern. Med., 20, 219-227 (1944)

Directions are given for preventing or combating shock, including: (1) treatment early as possible; (2) rest flat in bed; (3) administration of 100% oxygen; (4) avoiding excessive infusion of plasma; and (5) avoiding use of digitalis, epinephrine, caffeine and strychnine. Pulmonary complications are treated as follows: (1) attempt bronchial relaxation with aminophylline, dilaudid as a sedative, and potassium iodide and vaporized sprays of neosynephrin to control cough; (2) positive pressure inhalation of oxygen or oxygen and helium; and (3) tracheotomy to be considered when tracheal edema is evident.

- 621 Industrial Medical Provisions for Various Sizes of Plants, Both Personnel and Physical Equipment. C. D. Selby. N. Y. State J. Med., 43, 2163-2165 (Nov. 1943)

Medical service cannot be crowded into small plants. It must work its way in, expand slowly, and must pay its way. The key to the introduction of medical service in small plants is in the medical profession and the "know how" of the doctors who are available. The advice to management with respect to personnel and equipment is to employ a doctor who knows the medical problems of industry and to give him a reasonably free rein. The advice to the doctor is to start with a minimum of space, personnel and equipment, and build slowly.

- 622 Waltham's Employee Health Plan for Smaller Industries. R. F. Wheeler. Industry, 9, 37-39 (April, 1944)

The industrial health program worked out by the Waltham (Mass.) District Nursing Association solves problems of plants too small to maintain medical staffs. The visiting nurse acts in an advisory capacity, referring workers to doctors in the community, who in most cases have been designated plant physicians, employed on a call basis. Satisfactory experience on the part of the Nursing Association and its clients prompts the suggestion that the plan may serve as a model for other manufacturing communities.

- 623 Gynecological Examinations in Industry. F. D. Gibson. Ind. Med., 13, 349-350 (April, 1944)

Four hundred and seven pre-employment pelvic examinations were made at the United Aircraft Corporation to determine whether or not gynecological examinations should be required as a prerequisite for certain types of employment. A large amount of pelvic pathology was found and is discussed. The plan adopted at the United Aircraft Corporation for gynecology in industry is presented. -- Author's summary.

- 624 Physical Examinations Pay Dividends. W. H. D. Hinchman. Eng. News - Rec., 130, 372-373 (March 11, 1943)

Pre-employment physical examination of prospective construction workers on a big ordnance plant in Indiana saved manpower by classifying employees according to physical qualifications, and helped first-aid and accident treatment because of available case histories. -- Author's summary.

- 625 Medical Service in Industry - Industrial Physical Examinations. Council on Industrial Health. J.A.M.A., 123, 557-558 (Oct. 30, 1943)

The authors present an outline, covering general procedures to be followed in industrial physical examinations. Articles of equipment, which are necessary or desirable, are listed. Records are discussed with respect to Content, Coding, and Preservation and Use. An example of a form, said to be a composite of many used successfully in industry is reproduced.

- 626 Industrial Dental Service. Industrial Health Series No. 3, Metropolitan Life Insurance Co., 1 Madison Ave., N. Y., N. Y. 40 pp.

The American Dental Association has formulated minimum standards for industrial dental service and has sponsored the establishment of a national association of industrial dentists. Recent surveys indicate the types of industrial service most generally found. These range from a simple visual inspection of mouth conditions to an almost complete dental service, including examinations, X-rays, and a wide range of treatment. The employer pays for the simplest type of service and it is usually compulsory. In other types, the cost is shared by the employer and the employees. A feature of some plans is the free choice by the employee of the dentist who is to render the treatment, although part of the cost is paid by the employer. The prevention, so far as is possible, of industrial injury to the mouth and teeth of workers is an important function of the industrial dentist. Study and control of occupational hazards, where they are found to exist, is always indicated. -- Condensed from summary.

- 627 The Surface Treatment of Burns. G. H. A. Clowes, C. Lund and S. M. Levenson. Ann. Surg., 118, 761-779 (Nov., 1943)

This report gives a comparison of results of tannic acid, silver nitrate, triple dye, and vaseline or boric ointment as surface treatments in 150 cases. Skin

healing of second degree burns of all areas, except the back, took place a few days earlier if ointment or triple dye were used than if tannic acid was used. Skin healing of second degree burns of the back took place a few days earlier if vaselined gauze or boric acid ointment were used for treatment than if either tannic acid-silver nitrate, or triple dye were used. All the patients who died and many of those who lived with third degree burns of ten per cent area, or more, showed infection, severe loss of weight, and critical metabolic disturbances including azotemia, hypoproteinemia, anemia, and abnormally high losses of nitrogen. Areas treated with vaselined gauze became free of slough and were grafted earlier than areas treated with the other two methods.

- 628 Treatment of Shock, with Special Reference to Use of Heat and Cold. W. H. Cole. Arch. Phys. Therap., 24, 670 (Nov., 1943)
Cole shows that the application of heat as practiced in the treatment of shock has been proved to be erroneous and actually damaging to the patient. Ordinarily thermal therapy may be ignored, since room temperature, with perhaps the application of a single blanket as utilized in the postoperative wards of a hospital, will be the most favorable circumstances from the standpoint of heat or cold.
- 629 N. P.'s Excellent Workers. Anon. Sci. News Letter, 45, 267 (Apr. 22, 1944)
Most men discharged from the army for neuropsychiatric disability will make excellent workers in essential war jobs, but need some consideration on the part of employers and care in placement. The type of person who cracks up in military life is nearly always an over-conscientious sort of person. They should not be rushed into work, should not be given too much responsibility at the beginning, and should be given continuous, active and pleasant work. Exposure to sudden noise should be avoided for those over-sensitive to noise. Employers should be guided more by the man's work record before he went into the army than by any account of his illness or experience in service.
Anon. Milwaukee Med. Times, Quoted in
- 630 The Doctor and the Veteran. Pgh. Med. Bull., 33, 315, 317 (Apr. 15, 1944)
The first step in the successful handling of rehabilitation is proper medical attention after injury. The soldiers are getting that, according to all reports. On sufficient recovery the men should be returned home rather than to a government hospital, and the second step is their return to normal conditions, including return to business or industry. This program will demand the maximum cooperation between patient, doctor and employer. The veteran's family doctor has an important part to play in his readjustment.
- 631 Physical Therapy in the Rehabilitation Program. R. Kovacs. Merck Rep't., 53, 4-8 (April, 1944)
The author describes the use of physical therapy in rehabilitation, including thermal measures, mechanical measures, and electrotherapy, and their application to arthritic conditions, peripheral vascular disease, pulmonary conditions, and convalescent cases. He predicts the use of physical therapy on a large scale and states that it must become an integral part of every general practitioner's therapeutic resources. Also, other specialists should investigate the possible application of physical therapy in their fields.
- 632 A Practical Program for Human Rehabilitation. H. A. Vonachen. Mech. Eng., 66, 178, 204 (March, 1944)
The author's company has been working on rehabilitation of handicapped employees, partly to gain experience for the time when larger numbers of handicapped veterans return for work. The Peoria Plan, developed by the community, consists of an

executive committee with representatives of all the interests of various groups in the community, with subgroups to consider various phases. The general points outlined are: (1) now is the time to organize; (2) a well-organized program in each company is necessary; (3) a survey of jobs is essential; (4) employees of small groups can participate because of firsthand knowledge of their jobs; (5) production, safety and absentee records of the handicapped are above average; (6) state compensation laws can be changed to benefit the program; (7) classification of handicapped individuals should be clarified; (8) "war neurosis" cases will benefit from quick employment, with special attention to individual cases; (9) a booklet is being prepared describing the plan.

- 633 Nutrition of the Industrial Worker in the United States and Abroad. R.A. Gortner. N.Y. State Med. J., 44, 56 (Jan. 1, 1944)

It has been observed that production is highest after meals, and workers who omit breakfast produce at a lower level during morning hours than do those who eat 3 meals. In terms of specific nutrients the following are most frequently inadequately obtained among workers: ascorbic acid, riboflavin, calcium, vitamin A, and thiamin. The main factors are poor food habits, ignorance, poverty, and inefficiency in equitably distributing food. Britain and Germany were far ahead of us in recognizing and dealing with the problem of adequate nutrition for industrial workers.

- 634 A Respiratory Chamber for Chronic Exposure to Gases. A. T. Miller, Jr. J. Lab. & Clin. Med., 28, 1854-1858 (Dec., 1943)

A respiration chamber and gas train for chronic exposure to carbon monoxide are described. The assembly is automatic in operation and requires no attention during an 8-hour exposure period. The slight modifications necessary for adapting the chamber to the use of other toxic gases are described. -- Author's summary.

- 635 Protecting the Factory Worker Against Skin Infection. C. Nielsen. Am. Perfumer & Ess. Oil Rev., 46, 43-44 (April, 1944)

The author discusses the requirements for a satisfactory protective ointment, summarizing them as follows: (1) it should leave over the skin a dry protective film unaffected by water, flexible, and readily removable with hot water and soap; (2) it should contain a skin conditioner that will not only guard the skin against moderate surface damage, but also help to restore the flexibility to a dry skin, and thus reduce the danger of infection; (3) it should be able to withstand perspiration and to absorb the bulk of it without sealing the horn cells; (4) it should reduce the radial heat of the skin, giving a cool sensation when applied; and (5) it should contain a non-irritating antiseptic agent that will have a bacteriostatic action against germs carried onto the skin by dirty rags, and that, combined with the oils and waxes in the product, will also have a healing action on an already irritated skin.

- 636 The Prophylactic Effect of a Colloid Material on the Skins of Mice Painted with Various Types of Carcinogenic Agents. J. M. Twort and R. Lyth. J. Hyg., 43, 251-255 (1944)

The active ingredients of the colloid material "SD₂" were 30 per cent tetrachloroethylene and 10 per cent oleum pini. SD₂ delayed the advent of tumors when used in conjunction with benzopyrene, gas tar or shale oil. Its protective value excelled that of lanolin when used with benzopyrene or gas tar but was less when used with shale oil. The incorporation of 25 per cent of lanolin in

SD₂ made it less effective except when used with shale oil. Skins rendered hyperplastic by the application of benzopyrene gave a higher yield of tumors when subsequently treated with the colloid than when left untreated.

- 637 The Differential Heart Sound Meter - A New Method of Detecting Early Physiological Changes Due to Toxic Chemicals, Etc. J. H. Foulger and P. E. Smith, Jr. Ind. Med., 13, 287-294 (April, 1944)

The early physiological effects of exposure to toxic chemicals can be detected by the study of: (a) Changes in the damping of certain components of the first heart sound. (b) Changes in the average frequency of components of the first heart sound. (c) Changes in distribution of energy in heart sounds. Exposure to concentrations of toxic chemicals of low physiological activity causes an increase in the three conditions given above, while prolonged action of concentrations of minimal activity or acute action of higher concentrations of chemicals is attended by a decrease of the same conditions. The changes produced by the absorption of toxic chemicals can be produced also by malnutrition, disease and fatigue and the changes are greater if two or more of these factors operate simultaneously. A newly devised apparatus for the measurement of the distribution of energy in heart sounds can be used to study physiological changes in man as well as in dogs and small experimental animals. -- Condensed from author's summary.

- 638 Intraocular Foreign Bodies in Peace and War and the Problem of Their Removal. A. I. Pokrovski. Vestnik Oftalmologii, 22, 5 (1943) (Russian)

This paper compares 125 cases of perforating eye injuries in war time with as many industrial eye injuries of peace time. In all cases the presence of the foreign body was confirmed by roentgenograms. The discussion concerns the percentage of foreign bodies found to be magnetic in pre-war and war-time cases, methods for removing foreign bodies in peace time and war time, and the necessity of early removal. The importance of careful and detailed localization is stressed, since the majority of the intraocular foreign bodies are non-magnetic.

- 639 Proper Placement of Women in Industry. F. A. Barlow. J.A.M.A., 124, 687-691 (March 11, 1944)

General principles observed in training women employees and in pre-employment physical examinations and the "Follow-up" are set forth. The value of classifying women workers endocrinologically is considered.

- 640 Health Maintenance Program for Women in Industry. M. R. Burnell. J.A.M.A., 124, 683-687 (March 11, 1944)

A detailed outline of a health maintenance program for women is given, which is based on an experience of many years of successful employment of women in industry. Considerable space is devoted to a discussion of emotional adjustments and the part that can be played by a girl's counselor and a matron service. Also a portion of the medical director's time should be set aside each day for consultation with employees requesting it.

- 641 Specific Problems of Women in Industry. H. C. Hesselstine. J.A.M.A., 124, 692-697 (March 11, 1944)

Women can work efficiently in many industries but, because of physiologic behavior peculiar to them, attention to their peculiarities should reduce the amount of absenteeism and also protect the obstetric and gynecologic health of the individual. Some agency, private or governmental should support studies on pregnant states, menopausal symptoms and menstrual abnormalities in relation to employment,

and the data so obtained should be compiled and analyzed. From such a basis the employees would benefit by gains for their welfare and the employer should benefit by reduction of absenteeism. The industrial physician would be aided by specific findings, and the private physician could prescribe more reliably for his employed patients. -- From author's summary.

- 642 Working Conditions for Female Employees. M. H. Kronenberg. J.A.M.A., 124, 677-683 (March 11, 1944)

The employment of women in industry has involved a revision of personnel and employment policies and extensive plant alterations. The latter include changes in machine design, provisions for seating at work, when practicable, regulations in regard to weight lifting, work clothes and personal protective equipment, sanitary and washing facilities should be provided. Rest periods are one method for control of fatigue. Lunch rooms are essential to good hygiene and the lunch period should be adequate. Other subjects considered are transportation and housing, non-occupational and occupational illnesses, including susceptibility to dermatitis and toxic exposures, and the higher incidence of accidents among women employees. Laws regarding prohibited employment and hours of work are discussed.

- 643 Causes of Sickness Absenteeism Peculiar to Women in Industry. F. L. Smith. Ind. Med., 13, 217-219 (March 1944)

Absences and time lost on account of female disorders have not reached an alarming magnitude in our industrial situation, accounting for an average loss of 4 hours and 41 minutes per year for each woman employee. For each 1000 women we can expect to send home 28 cases a year because of menstrual disorders. Shop women have a higher frequency of absences because of female disorders than office women, but the rate of time lost is about the same for the two groups. Office women have a higher rate of both absences and time lost because of non-malignant tumors and cysts of the female organs. Menopausal absences appear earlier among office women than among shop women. Women in industry are apparently not particularly affected by female disorders. -- From author's conclusions.

- 644 A study of Absenteeism Among Women. S. Wyatt and others. Printed and published by H. M. S. Stationery Office, London. Pamphlet. 12 pp. Price 2 d. net (1943)
- This report gives an account of a limited study of absenteeism among women carried out on random samples of the personnel at two Royal Ordnance Factories. It was concerned with the amount and distribution of absenteeism among women, rather than with its causes. The inquiry covered a period of six weeks. The fact that absences were not regularly recurrent, but varied suggests the need for a study of the personal causes of absenteeism. Married women lost more time than single women, in longer periods. Full week absences were due mainly to sickness. Absenteeism was highest on the morning shift. It was highest on Saturday and low on pay day. Younger women lost more time than older women. These conclusions are based on results obtained from only two factories and should not be regarded as representative of conditions in industry as a whole.

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