

Literature Abstracts

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Industrial Health News



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INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

1001 Dramatizing the Effect of Absenteeism.

Company managements are displaying considerable ingenuity in trying to impress employees with the effect upon production of the aggregate days lost through absenteeism. One such method was recently reported by the California Shipbuilding Corporation. At an ironical celebration one noon, the keel of a slave ship, "The Absentee," in the form of a long black piece of plywood, was laid in the presence of large numbers of employees. Addresses were made by men representing Hitler, Hirohito and Mussolini expressing their joy that, as a result of absenteeism during the past fourteen months, twelve cargo ships that should be sailing the sea have not been built. In his speech, "Hitler" announced that the Absentee Workers Association has 2,000 men laying off the job every day, with the result of nearly five million man hours lost. "That," he said, "is the equivalent of not building twelve freighters for the United States and is the same thing as providing the Axis with the same amount of merchant shipping." The man representing Mussolini stated that to become a paid-up member of the gang in good standing an employee only had to lay off the job a day or two. Oratory from "Hirohito" was made difficult because he had trouble with a mouthful of store-made buck teeth. At first the thousands of yard workmen were vastly amused by the satire; when they returned to work they were not laughing. -- Management Record, 5, 12 (January, 1943).

1002 Silicosis Record.

Since silicosis became compensable in Ohio on July 31, 1937, a total of 1,144 silicosis claims have been filed with the Industrial Commission. Of this number 489 have been allowed, 517 disallowed and 138 are still pending. During December, 1942, 17 silicosis claims were approved and compensation awarded and an equal number were disallowed. -- Ohio Ind. Comm. Monitor, 16, 8 (January, 1943).

1003 Employment of Young Persons.

safeguards for the health, welfare and education of American youth whose services are being demanded by the war program were advanced by a statement of policy approved by the War Manpower Commission and signed by Paul V. McHutt, Chairman, and released for publication February 7. Among the restrictions on the employment of youth under 18 years of age, the following are of special interest. They may be employed: (a) in work suited to their age and strength,

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avoiding all occupations that are hazardous to health or welfare; (b) where provision is made for adequate meals and rest periods or time, and facilities therefor, adequate sanitary facilities, and safeguards for health and safety; (c) for periods suited to their health and strength, and in no case for more than 8 hours a day or 6 consecutive days, with exceptions applying to farm work and seasonal employment, and (d) during hours of day not detrimental to their health or welfare.

234 Buffalo District Committee for Industrial Health.

The above committee, a subcommittee of the Council Committee on Public Health and Education of the Medical Society of the State of New York, consists of men and women in the medical profession, in management and in labor who will map out a program for immediate action toward better industrial health. Among physicians, the committee seeks to develop interest in industrial medicine, to rally volunteers willing to sacrifice some time on it and to emphasize medicine's responsibility toward the industrial worker as a factor in winning the war. In educating management, factual material on savings and increased output through better industrial health procedures will be available. Regarding labor, the committee will try to develop an educational program on industrial health in the labor unions. A plant survey has been started, and several local industrial health problems are being considered. Ind. Hyg., (U.S.P.H.S.), 3, 5-6 (February, 1943).

235 Campaign Launched for Eye Safety.

To check the increasing number of eye injuries among workers in war industries, Secretary of Labor Perkins has appointed an Eye Saving Section of the National Committee for the Conservation of Manpower in War Industries. Harry Guilbert of Chicago, Director of Safety for the Pullman Company has been named chief of the new section. "Eye injuries cause a substantial part of the temporary time losses due to work accidents," Secretary Perkins said. "Experience has demonstrated that such injuries can be prevented by the consistent use of protective lenses and adequate control of operating hazards ... Observation of the Department's safety experts in more than 20,000 war plants during the past two years indicates a substantial increase in the volume of this type of injury. In one plant employing 30,000 workers the record reveals, 1,750 eye injuries in a recent month, 62 of them being described as serious." Secretary Perkins has assigned M.M. Bowman, safety specialist of the Department at Cleveland, to assist Mr. Guilbert.

Legal Developments

236 Phlegmasia Alba Dolens. Resulting From Pneumonia Suffered by Store Employee. Imposed to Changing Temperatures in Building in Course of Employment. Lack of Evidence to Show Proximate Cause.

This appeal is from a judgment in favor of the defendant in an action brought to recover damages alleged to have been caused by defendant's failure to furnish a safe place of employment, for fraud in depriving plaintiff of his action for damages, and on a contract to pay the plaintiff's salary during his disability.

Plaintiff was employed in defendant's store. The plaintiff's work included the maintenance of department stock from supplies in the stockrooms, replenishing and changing sales counters, work in the offices, window trimming and display arrangement, inventory work in the offices and stockrooms, and going back and forth among and in the departments, offices and stockrooms. The plaintiff

complained of the cold near the entrance doors and in the display windows. He suffered with a cold, was tired and rundown, and on December 16, 1936, he had a fever and fainted. He was sent home and confined to his bed with pneumonia. Three weeks later, the doctor discovered he was afflicted with phlegmasia alba dolens, an inflammatory condition in the veins of both legs. Dr. Storey testified that "overwork and sudden changes of temperature are contributing factors in the production of pneumonia," but that "one can contract pneumonia without a cold"; that phlebitis is one of the complications of pneumonia, and that the cause of plaintiff's pneumonia would be "purely guess work." Before the plaintiff can recover he must show affirmative evidence that the defendant has been guilty of some act of negligence, and it must appear that the injury claimed was the natural and probable consequence of the negligence. There was no direct evidence that the plaintiff's contracting of pneumonia was occasioned by being exposed to changing temperatures while in defendant's employ, and whatever evidence there was, left the matter uncertain and showed that the cause of plaintiff's pneumonia was purely guess work. There was no evidence to sustain plaintiff's claim. Defendant makes the point that if the plaintiff ever had cause of action based upon negligence, it became barred by the two year period of limitations. The plaintiff contends that the defendant is estopped from claiming the benefit of the statute because of fraud, and on the further ground that the defendant promised him his salary during his disability; that he relied upon the promise and forbore to sue; and that, consequently, he was within the six year statute of limitations. There is no evidence of fraud, nor any that the defendant concealed or attempted to conceal any facts or that it misled the plaintiff. Neither is there evidence justifying a finding that the parties entered into a contract to pay the plaintiff's salary throughout his life. Judgment affirmed. Moscall v. W.T. Grant Company. U.S.C.C.A. Decided January 25, 1943. (CCH).

237 Death of Carpenter Caused by Heat Stroke. Heat Stroke as Being Within Meaning of Workmen's Compensation Act.

Smith a carpenter by trade, was employed by respondent. He was engaged in some work on the roof of the building under construction, sawing and nailing sheeting. He was apparently in good health. At noon, Smith walked across the roof of the building, leaned over toward the foreman and suddenly "slumped." Smith was laid down on a level place. A physician arrived in ten or twelve minutes. He testified that when he arrived Smith was dead, but "his body was still warm and he had perspiration about his face and hands." Dr. Bruce, the physician who responded to the emergency call and examined the deceased, diagnosed the cause of death as "an acute heart failure." The only medical testimony offered by appellants was that of Dr. Eaddy, who gave his opinion as to the cause of death from hypothetical questions propounded. He testified that Smith died of heat stroke. Respondents claimed, and the Circuit Court held, that the testimony of Dr. Eaddy was without probative value. The fact that the other two physicians and many laymen do not share the opinion advanced by Dr. Eaddy would not destroy the probative value of this testimony, although it was a consideration to be weighed by the fact-finding body. The Circuit Court held that if there had been sufficient evidence reasonably tending to sustain the finding of fact that death occurred from a heat stroke, such death would be an accident within the meaning of the Compensation Act. The rule supported by the weight of authority is that heat prostration which results from the employee's engaging in the employment, whether due to unusual or extraordinary condition or not, is to be deemed an accidental injury within the meaning of the statutes. Such an injury is accidental in that it is unforeseen and unexpected. Judgment reversed and the award is sustained. Smith et al. v. Southern Builders, Inc. et al. So. Car. Sup. Ct. Decided January 13, 1943. (CCH).

238 Lead Poisoning Causing Death of Painter. Liability of Employer for Aggravation of Deceased's Prior Dormant Condition as Victim of Lead Poisoning.
Deceased had been a house painter for defendant about eighteen months when he became suddenly ill with abdominal pains, nausea and fever, all symptoms of lead poisoning. He consulted a physician near his place of employment and after a few days he called in a local doctor who treated him a short time and then sent him to the Anderson County Hospital. There he lingered hopelessly for weeks and despite diagnosis and treatment by several physicians developed further typical symptoms, neuritis and mental deterioration until his death. All of the physicians agreed upon the basic diagnosis of lead poisoning. The case resolves itself into whether the deceased was exposed in his employment to the taking of lead into his system, and whether he did so take it, in such quantity and under such circumstances as to constitute an accident, causing his acute illness and subsequent death. The Commission so found. As a part of his work, deceased scraped and brushed off old paint, subjecting him to the inhalation of the resulting dust containing lead. If the inhalation of lead in unusual quantities occurred during the period of employment of the deceased by Mathews Mill by accidental means, then it matters not that such unusual and accidental inhalation merely aggravated deceased's prior dormant condition as a victim (if he was) of lead poisoning, for such aggravation, resulting in death, would make the latter compensable. Judgment of the lower court is affirmed. Strawhorn v. J.A. Chapman Construction Company, et al. So. Car. Sup. Ct. Decided January 22, 1943. (CCN).

239 Total and Permanent Disability. Employee Poisoned by Ammonia Gas or Sewer Gas from Sump Tank at Meat Packing House.
Plaintiff instituted this suit under the Workmen's Compensation Act for total and permanent disability due to an injury he received in an accident arising in the course and scope of his employment. Defendant is a wholesale packing company. Plaintiff, who had been assisting a mechanic of defendant corporation in overhauling and putting in shape all mechanical equipment in the plant, was ordered to bail out the sump tank, used as a drainage tank for the purpose of collecting water and grease on the floor into which washing powder and ammonia drained with the other refuse. Plaintiff entered the tank and was standing on the ladder where he could dip the bucket in the fluid to empty it into a barrel provided for that purpose. After approximately fifteen minutes his fellow laborer called to him and receiving no reply he discovered plaintiff still standing erect on the ladder with one hand grasping it, his body perfectly stiff and, "He had a peculiar look on his face." He was pulled out of the tank and placed on the floor on some sacks. Plaintiff was perfectly stiff and unconscious. Artificial respiration was successful in starting plaintiff to breathe again and soon thereafter he was raised to his feet again but could not stand. Plaintiff was carried to the sanitarium, where he remained for seven days under the treatment of a physician chosen and paid for by defendant. Plaintiff complained of dizziness and severe pains in his chest, stomach and between his shoulder blades; that when he coughs a severe pain strikes him and cuts his breath off. At the time of trial his cough had grown much worse. It is certain that plaintiff has not performed any labor of any kind since the accident and claims he is not physically able to do so. Plaintiff walks when necessary but always using a stick or cane. Plaintiff alleged the accident was caused by inhaling ammonia gas. The doctor who treated plaintiff never treated him for poison gas but considered him a malingerer. The medical testimony is very unsatisfactory. Judgment is reversed for plaintiff. Collins v. Armour & Company, Ltd. La. Ct. of App., 2d Cir. Decided December 14, 1942. (CCN).

Heat Exhaustion Resulting in Death of Boiler-Maker. Repairs as Being Not Without Course of Employment.

Decedent, a boiler-maker, was repairing a steam boiler for the defendant and while replacing tubes inside the boiler, it is alleged that he was overcome by heat exhaustion. Defendant's business was the sale of road and paving materials. Decedent, whenever called by defendant, charged for his services at an hourly rate. He was carried on defendant's payroll and was covered by a policy of Workmen's Compensation insurance along with all of defendant's employees; defendant also made payments on his behalf under the Unemployment Compensation Law and the Social Security Act. However, this is not conclusive evidence of an employer-employee relationship. If not made a part of an employer's business, repairs are a proper subject for an independent contract. Decedent's occupation or business was distinct from that of the defendant. He was paid by the job on an hourly basis by all of the industrial concerns where he worked and was not in the regular employ of any of them. In his relation with the defendant he was employed to accomplish a definite result, i.e., to repair a particular boiler and not to make repairs generally. Defendant did not supervise the work nor reserve the right of supervision. Therefore, the employment of claimant's husband was independent and the relation was that of contractee and contractor and not master and servant. Order reversed and judgment directed to be entered in favor of defendant. Bradley v. Chester Materials Company et al. Penna. Superior Ct. Decided February 1, 1943. (CCH).

241 Occupational Diseases. Silicosis as Primary Cause as Distinguished from Immediate Cause. Lowering of Vitality Not Compensable Under Act.

This is a claim for workmen's compensation for total disability for death alleged to have been caused by silicosis, filed under the Workmen's Occupational Disease Compensation Act. The finding of the Board was for the claimant, widow of deceased, Howard Stauffer. Stauffer had worked as a moulder. His occupation exposed him to the hazard of silicosis, and he was advised to change his occupation. He was not disabled or laid off because of silicosis, but was unable to work because of what was afterwards diagnosed as streptothricosis, which was the cause of his death. Medical testimony is clear and undisputed that Stauffer died of the streptothricial infection; that this infection was not caused by or brought about by the silicosis from which he was suffering in a serious stage, except that the silicosis lowered his resistance. It is well established in our workmen's compensation law that an accident, or an infection that results from it, which merely lowers the injured employee's vitality and resistance to germ diseases, rendering him more susceptible to them and less able to combat the disease, is not compensable as respects disability or death resulting from a germ disease or infection not directly caused by the accident. There is no competent testimony to support the findings of fact on which the award rested, and from which the board determined that silicosis was the primary cause of death. Judgment reversed for the defendants. Stauffer v. Hubley Manufacturing Company et al. Penna. Superior Ct. Decided January 28, 1943. (CCH).

242 Occupational Disease. Death of Spinner Resulting from Carbon Disulphide Gas Poisoning.

This appeal is from a judgment on an award for compensation arising under the Occupational Disease Compensation Act. The Occupational Disease Compensation Act contemplates disease or injury resulting to the employee from the slow and gradual effects of certain named poisons in any occupation involving direct contact with them, or exposure to them - among them, poisoning by carbon bisulphide. Claimant's husband was employed by the defendant as a spinner for seven years; during all that time the defendant, in its process of manufacturing rayon, used, and still uses, carbon disulphide, which is a deadly poison. He became totally disabled, and died. The testimony includes testimony by Dr. Max Trumper, a

bio-chemist and toxicologist. There is sufficient evidence to establish the finding that the occupation in which the decedent was engaged involved daily contact with and exposure to carbon disulphide fumes; that carbon disulphide is a poisonous liquid; that carbon disulphide is a severe neuro poison, toxic in nature, and has an irritating effect on the lung tissues; that death was accelerated by carbon disulphide poisoning. As the findings are based on competent, substantial and sufficient testimony, and they sustain the conclusions of law which support the award, the judgment is affirmed. Plaugher v. American Viscose Corp. Penna. Superior Ct. Decided January 28, 1943. (CCH).

Industrial Health Hazards and Their Effects

- 243 Occupational Hazards in the Aircraft Industry. K. Kay. Occup. Hazards, 5, 10-11, 24-26 (February, 1943).
The various health hazards in the aircraft industry are discussed briefly. They include: (1) painting operations; (2) solvents; (3) degreasing; (4) sandblasting; (5) welding operations, and (6) aircraft dermatitis.
- 244 Silicosis in a Chert-Miner. C.W. Evans. Brit.Med. J., 2, 636 (November 28, 1942).
Chert is a hard rock or flint stone containing amounts of silica varying from 30% to 90%, which is used for grinding pottery materials. The mines at Bakewell, Derbyshire are the greatest source of supply. The case is reported of a miner of chert, who had worked over 30 years, during which occupation he had been exposed to much dust. When first examined by X-ray his chest showed a perfect picture of silicosis. Symptoms were dyspnoea cough with sputum and tiredness. No tubercles was detected. The case is claimed to be the first undisputed instance of silicosis due to chert.
- 245 Silicosis. E.P. Scarlett. Canadian Med. Assoc. J., 47, 468-472 (November, 1942).
The author discusses and defines the problem of silicosis in a generalized way as to etiology, pathogenesis, clinical aspects, course and complications, tuberculosis, dusts other than silica, and treatment. He emphasizes the importance of dust particles other than free silica and calls attention to the difficulties in making a diagnosis.
- 246 Silicon Dioxide in Guinea Pig. Inoculation for Tuberculosis. Harriet Hollon and others. Am. Rev. Tuberc., 46, 568-573 (November, 1942).
367 specimens of tuberculosis cultures were inoculated into guinea pigs in duplicate. 322 aspirations of lymph nodes were made on inoculated guinea pigs that had received silica with the inoculum, of which 32% were positive. 94 aspirations were made on the routine animals of which 34% were positive. Of the total number of guinea pigs inoculated in duplicate, 25.9% were positive by both methods, 2.0% by the silica method only and 1.1% by the routine method only. While silica aids in the development of tuberculous nodules, the results suggest caution in its application to routine procedure. -- Author's summary.
- 247 Hazards to Women Employed in War Plants on Abrasive-Wheel Jobs. U. S. Department of Labor, Women's Bureau, Special Bulletin No. 7. (1942).
The pamphlet states the problem to be one of seeing that protective methods, already well developed, are employed in abrasive-wheel jobs, and notes the effects of this type of work on women as compared with men. A brief description

of grinding, polishing, and buffing processes is given, with a review of the hazards involved and the preventive methods which may be used. Some of the poisons to which abrasive-wheel workers may be subject are listed, and a description of an adequate dust exhaust system is given.

- 240 Bagassosis. Further Notes of Four Cases. J.A. Gillison and F. Taylor. Brit. Med. J., 577-578 (November 14, 1942).

Bagassosis is a lung disease caused by inhaling the dust of bagasse, the stems of sugar canes. The clinical picture is of interest. Before the onset of acute symptoms, and incubation period of from two to four months occurred, during which the workers were exposed to the dust. Then the acute stage of the illness came on suddenly and was characterized by dyspnoea, violent coughing of several days' duration, with the ejection of dark, foul smelling sputum, and retrosternal pain, which was aggravated by movement. For months great weakness persisted, with depression, loss of weight, anorexia and intolerance to exercise. In all cases the illness was severe and prolonged, but no compensation could be claimed as the disease is not a scheduled one. In two cases a difficulty in interpreting the X-ray pictures arose, as the men had once been miners and the appearance, suggestive of silicosis in the reticular stage, might have been due to the effect of coal dust. No fatality has been reported.

- 249 Concentration of Atmospheric Metal Fumes in Non-Ferrous Foundries. Wisconsin State Board of Health, Industrial Hygiene Unit. Mimeographed 16 pp.

A study of a representative group of 15 non-ferrous foundries in Wisconsin was made from the fall of 1940 to the next summer. Samples totaling 752 for lead and 681 for zinc were taken with electrostatic precipitators. Lead and zinc were determined by dithizone methods. Samples were usually taken at a central point near the molding and pouring floor and one point near the furnace, often simultaneously. An average of summer and winter results showed concentrations of atmospheric lead of over 1.5 mg. per 10 cu. m. of air in 11 of 15 furnace sections and in 11 of 14 pouring sections. Seven of each averaged over 3.0 mg. per 10 cu. m. The average winter concentration was about 3 times as high as in summer, but even in summer 4 furnace sections and 6 pouring sections had average lead concentrations above the toxic limit. In only one case was the zinc concentration above the toxic limit of 150 mg. zinc per 10 cu. m. of air. A large share of atmospheric lead and zinc is liberated during pouring. Even when alloys are as low as 0.1 or 0.2% lead the toxic limit for lead can easily be exceeded. Lead tends to be carried out of the metal along with zinc fumes. The following recommendations are made: (1) hoods for all furnaces; (2) an exhaust hood for fumes liberated during skimming; (3) crucibles or ladles should be pulled rather than pushed; (4) a conveyor line with pouring done at one spot which can be well exhausted; (5) if the last is not practicable, positive ventilation should be provided; (6) vacuum cleaners for dust removal; and (7) complete periodical physical examinations. A number of charts and tables present the data.

- 250 Dangers of Sulfur Dioxide to Refrigerator Worker. Queries & Minor Notes. J.A.M.A. 121, 302 (January 23, 1943).

A refrigerator service man frequently brings his hands into contact with sulfur dioxide, which stains his hands and causes discomfort. It is asked what chemical will neutralize the irritant after exposure. Protective gloves interfere with manipulation of fingers. Reply -- The chief danger from sulfur dioxide is from freezing. The skin may blanch, but there is no staining. Sulfur dioxide is often dissolved in oil, and the staining mentioned may come from grime in the oil. No chemical application can be expected to overcome chilling, but irritation may be prevented by the application, before and while working, of a small quantity of hydrous wool fat or similar material, preferably with some mild alkali such as sodium bicarbonate. It is best to avoid contact.

- 251 The Influence of Acid Fumes Upon the Teeth of Workers in Pickle, Accumulator and Acid Works in Westphalia. W. Ludwig. Arch. Gewerbepath., 11, 298-310 (December 31, 1941). (German).

In some plants in three industries there is a sufficient concentration of strong acids to be injurious to workers' teeth. The industries are pickling of metals, manufacture of accumulators, and acid manufacture. The pickling bath is usually heated to 60°C, and droplets of the acids (sulfuric and hydrochloric) condense in the air. Respiratory passages, skin and teeth are affected. The teeth become sensitive to temperature changes, brown, sharp and brittle, causing lesions of the tongue. The author calls this condition necrosis rather than caries as there is no bacterial infection. The effects show increasing severity from the 1-5 year period to the 10-20 year period, when it reaches its peak, and then falls, probably because only the most robust persons continue in the industry. In the storage battery plants the acid fumes arise when charging. Marked superiority in the condition of workers' teeth at one of the three plants surveyed was evidently due to slower charging and better ventilation. There is little acid hazard in sulfuric acid manufacture, because it is conducted in a nearly closed system. The only exposure occurs when workers weld leaking seams or cleaning the chambers. Masks are worn for these operations. Good ventilation is necessary and an ample supply of toothbrushes and alkaline tooth powder should be provided at all factories where acid fumes or sprays are present. This condition of the teeth should be classed as an occupational disease.

- 252 Some Occupational Diseases of a Shell-Loading Plant. J.H. Eddy, Jr. and A.S. Tomb. Tri State Med. J., 14, 2751-2752, 2764 (1942).

The authors describe toxic reactions to TNT, tetryl, ammonium nitrate and smokeless powder, and discuss preventive measures.

- 253 Exposure to Fumes from Hot Nitroglycerin. Queries & Minor Notes. J. A. M. A., 121, 552 (February 13, 1943).

Several persons have suffered rather severe toxicity from nitroglycerin fumes, on to the extent of a spinal cord lesion, and the composition of the fumes is asked. Nitroglycerin only is present at 50°C, but above 100° and up to the explosion point increasing quantities of nitrous fumes are present. Both are dangerous when inhaled. As little as 2 mg. of nitroglycerin may cause severe poisoning. The most common symptom of nitroglycerin poisoning is severe headache, and others are nausea, visual disturbance, flushed face, tachycardia, lowered blood pressure and excitability even to the point of mania. Some degree of habituation occurs, but it persists only a few days. Some workers apply nitroglycerin to their clothing to continue the tolerance, but such a practice is not to be recommended, on account of effects on other people, and because chronic effects are thus masked. Real prevention must center around control of exposure through elimination of skin contact and vapor inhalation, and alcoholic consumption should be rigidly avoided.

- 254 Toxicity of Two Organic Thiocyanate Insecticides. R.J. Main and H.B. Haag. Ind. Med., 11, 531-533 (November, 1942).

The acute and chronic toxicities of Altrasene solutions of two organic thiocyanates and a mixture of both, used as insecticides, have been established on several species of animals by different modes of administration. The results indicate that both No 60 and the mixture of Lethane 384 Special are definitely less toxic than Lethane 384, which apparently has been a satisfactory and safe insecticide. From these studies it would appear that if properly used there should be no health hazard in the practical employment of Lethane 384 Special as a spray insecticide. -- Authors' summary.

Benzene Poisoning in Industry. R.H. Wilson. J. Lab. & Clin. Med., 27, 1517 (September, 1942).

An example is given of the greatly increased hazard from benzene due to war work. A factory in the rubber industry had been using small quantities of benzene for years, without health damage. With the advent of large war orders and increasing use of synthetic rubber, workers came to the company hospital with complaints of malaise, nausea and vomiting, and a few with bleeding. Blood counts on the 1,104 persons using benzene showed mild blood changes and slight absorption in 88 and severe blood changes and symptoms of severe benzene intoxication in 25, of whom 9 were hospitalized and 3 died. The small number of deaths was believed to be due to the extreme amount of treatment received, consisting of whole blood and bone marrow transfusions and liver, iron, calcium, phosphorus, yellow bone marrow and multiple vitamin therapy. Preventive measures include adequate ventilation and constant medical supervision including frequent blood examinations. The air should be tested frequently and the ventilation should keep the benzene concentration below 100 parts per million. No one with a leucocyte below 5000 or above 13000 should work in a benzene department. A urinary sulfate test after 10 days of employment should not show a ratio below 50. A drop of 25% in any blood component is also sufficient reason for removal from the department.

226 The Metabolism of Mononitroparaffins. III. The Concentration of Nitroethane, Nitrite and Nitrate in the Blood of Rabbits During Exposure by Inhalation and Oral Administration. E.W. Scott. J. Ind. Hyg. & Tox., 25, 20-25 (January, 1943).

The concentration of nitrate and nitrite increased gradually in the blood of rabbits during exposure to nitroethane by inhalation or oral administration. There was a definite correlation between the concentrations of nitrate and of nitroethane in the blood of animals exposed by inhalation. Other primary and secondary nitroparaffins also form nitrite when injected into the animal organism. The only tertiary nitroparaffins studied failed to cause an increase in blood nitrite after its injection, and it is presumed that this compound does not undergo oxidative splitting in the body. -- Author's summary.

227 Acute Experimental Aniline Intoxication. E.B. Clark, J. Van Loon and R.W. Morrissey. J. Ind. Hyg. & Tox., 25, 1-12 (January, 1943).

The effects of acute aniline intoxication in the dog are reported. The most important action is the production of methemoglobinemia and thus indirectly the effects of oxygen deficiency on the various physiological systems. The mechanism and quantitative effects of various degrees of methemoglobin anoxia are described. Due to its sensitivity to oxygen lack the central nervous system shows the greatest depression. The direct actions of aniline are demonstrable under conditions permitting high concentrations in the blood. Smaller doses produce transient central nervous and circulatory stimulation. However, very large doses cause circulatory depression and cardiac arrhythmias. The relative roles of the methemoglobin anoxia and the direct actions of aniline are discussed. -- Authors' summary.

228 Toxicology of Acrylonitrile (Vinyl Cyanide). III. Determination of Thiocyanates in Blood and Urine. A.H. Lawton, T.R. Sweeney and H.C. Dudley. J. Ind. Hyg. & Tox., 25, 13-19 (January, 1943).

1. A method is presented for the accurate determination of small amounts of thiocyanate in biological fluids. 2. Dogs exposed for 4 hours to 24, 40, and 60 p.p.m. acrylonitrile in air show a significant increase in serum thiocyanate immediately following the exposure period and a significant increase in urinary thiocyanate content 24 to 48 hours following the exposure period. 3. Recommendations are made for the use of serum and urinary thiocyanate determinations on workers exposed to acrylonitrile so as to discover cases of dangerous absorption of the nitrile. -- Authors' summary.

- 259 Trichlorethylene Degreasers. Indiana State Board of Health, Bureau of Industrial Hygiene, Mimeographed pamphlet, 12 pp.
The properties of trichlorethylene are listed, and various processes of degreasing are described briefly, including dipping, wiping, the vapor, vapor-spray, hot liquid-vapor and hot-liquid-cold-liquid-vapor processes, with diagrams illustrating the last four. Symptoms are listed, and safe practices and standard recommendations are given. In summary, it is stated that, used carefully and in properly designed and operated equipment, trichlorethylene is entirely safe. Standard degreasing equipment installed and operated in accordance with the manufacturer's instructions does not present a definite health hazard. Remedial measures are indicated: (1) if the odor of trichlorethylene is distinctly noticeable; (2) if the solvent consumption is more than about 2 gallons per square foot of tank area per hundred pounds of operation; (3) if the atmospheric concentration of trichlorethylene is more than 200 parts per million.
- 260 Fluorine Poisoning Due to Flue Gases and Dust From a Superphosphate Works. Determination of the Fluorine Content of the Deposits on Plants, in Water, Hay and Bones. M.E. Stas. Chem. Weekblad., 38, 585-593 (1941).
A review of the literature is given. Plants in the vicinity of superphosphate works were examined for fluorine, calcium and phosphorus content, as well as water from ditches. In a cow 8.5-9.5 mg. of fluorine were found per 1 g. of bone ash, whereas the normal content in various regions of Holland amounts to 0.25-lmg.
- 261 Fluorine Poisoning as the Result of Atmospheric Pollution by a Superphosphate Works. M.J.N. Schuurman. Chem. Weekblad., 38, 533-534 (1941).
A careful investigation showed that the dissemination of small amounts of fluorine by factories injured the health of nearby grazing cattle and also could lower the milk production. Water samples obtained a distance of 100 m. from a superphosphate works, showed 2 mg. fluorine per l. A crude phosphate that was treated had a fluorine content of 3%; the resulting superphosphate still contained 1% fluorine. A kg. of grass absorbed 0.2 mg. fluorine if chiefly superphosphate was scattered.
- 262 Studies on the Physiological Effects of Sulfamic Acid and Ammonium Sulfamate. A.A. Ambrose. J. Ind. Hyg. & Tox., 25, 26-28 (January, 1943).
1. The acute toxicity of sulfamic acid and ammonium sulfamate has been determined in rats following intraperitoneal and oral administration. Sulfamic acid after intraperitoneal injection is considerably more toxic than ammonium sulfamate. After oral administration in doses of 1.6 grams per kilogram - sulfamic acid was fatal to 25% of the rats, while ammonium sulfamate caused no fatalities.
2. The continued oral ingestion of sulfamic acid or ammonium sulfamate to female white rats for 105 days caused an inhibition in growth rates of rats on concentrations of 2%, but no effect on 1%, in the diet of the respective compounds. Retardation of growth on the 2% level was not due to restricted food intake since food consumption of these animals was as great as, or greater than, that of the controls.
3. Sulfamic acid, after subcutaneous injection in rats, on the conjunctiva of rabbits, and after cutaneous application on humans was definitely irritating, while ammonium sulfamate did not produce any irritation.
4. Circulation and respiration were not seriously influenced by the compounds after intravenous injection of 100 mgm. per kilogram.
5. From these studies it appears, therefore, that sulfamic acid and ammonium sulfamate present no serious health hazards, but that sulfamic acid is definitely more toxic by all modes of administration. -- Author's summary.

Industrial Hygiene Problems in Recovery of Non-Ferrous Metals from Scrap.
Illinois Labor Bull., 3, 4-6, 9 (November 30, 1942).

This article, written primarily for factory operators and smelters is a thorough review of the hazards involved in handling non-ferrous scrap metals. The lead hazard is considered and methods of control are outlined. The need for good housekeeping is emphasized and effective exhaust ventilation is recommended rather than the use of filter respirators, whose proper use is difficult.

261 Industrial Poisoning Associated with Drosses. Quarries & Minor Notes, J.A.M.A. 127, 1079 (November 28, 1942).

Two men employed in a plant reclaiming drosses showed mild symptoms of multiple transient joint pains, neuritis, bleeding gums, a general malaise, and anorexia. Results of examination are negative except for slight drop in hemoglobin and red cell count. The men are in contact with tellurium, antimony, sulfur and chlorine. Lead, arsenic, and zinc are common impurities in many metals, and the type and amount of these impurities may vary daily in a metal dross reclaiming plant. Antimony poisoning is suggested by the symptoms, but there are too few cases in this country to warrant a definite diagnosis as such. Good ventilation and the wearing of respirators are essential for dross workers. References for antimony poisoning in the literature are given.

265 A Case of Lead Arsenate Poisoning with Recovery. H.H. Kilgore and P.S. Rhoads. J. A. M.A., Clin. Notes. 27, 1125 (December, 1942).

A careful enumeration is made of the history and symptoms of a fruit farmer who had developed lead arsenate poisoning from using the substance as a spray. The results of determinations of the lead and arsenic content of the hair, finger-nails, and urine are given. The treatment, which comprised chiefly tri weekly intravenous injections of sodium thiosulfate and extensive vitamin therapy is described. After seven weeks of the treatment the patient, who had been exposed to the poison for 30 years, was convalescing rapidly.

266 Encephalopathy from Inhaling Fumes from Burning Storage Battery Boxes. W.D. McNally. J. Ind. Hyg. & Tox., 25, 29-30 (January, 1943).

The careless disposal of battery boxes which results in their being used as a source of fuel has too frequently caused illness and death from lead poisoning. One such instance is described, in which a colored woman burned battery boxes in her range, became ill with numerous symptoms of lead encephalopathy, and died in less than two months after the first exposure. Numerous blood and tissue changes were found in autopsy. Industrial physicians who are consultants to industries engaged in smelting battery plates should inform their employers of the danger involved in discarding used battery boxes in public dumping grounds where the indigent class may acquire them for fuel. Health departments of the various states should enforce a rule prohibiting the discarding of used battery boxes in public places.

267 Experimental Investigations in Lead Poisoning. H. Wanick. Arch. Gewerbepath. Gewerbehyg., 11, 58-76 (1941).

Oral doses of white lead were administered daily to rabbits until 0.25 g. per kg. body weight had been given. The animals died between the 8th and 16th days. The administration of 2 g. of glucose and 0.5 unit of insulin increased slightly the number of red cells, hemoglobin and body weight as compared with the control group, but did not affect the duration of life. In another group 1 cc. of cam-pelon (liver extract) was injected daily along with the oral doses of white lead. Such treatment increased the duration of life of the animals as well as the erythrocyte count hemoglobin volumes. The number of rabbits used for each experiment was small (mostly 3 to 5).

- Effect of Chronic Lead Poisoning on Arterial Pressure in Dogs. P.J. Fouts and I.H. Page. Am. Heart J. 24, 329-331 (September, 1942).
The belief that chronic lead poisoning leads to arterial hypertension was tested by experiments on dogs. No hypertension was produced by administration of lead to dogs, even when over long periods of time and in large amounts.
- Although extensive American experience has never shown any such effects as are described in the four following abstracts, they are presented for information, as representing the ideas of the German authors quoted.
- Remarks on the Clinical Pathology and Pathogenesis of the Aluminum Lung. G. Goralowski and R. Jaeger. Arch. Gewerbepath. 11, 102-105 (1941). (German).
Early investigators concluded that aluminum dust does not injure the lungs. However, in the present German aluminum powder industry the aluminum is crushed more finely and the addition of fat is now avoided. The resulting increased production of dust and the absence of the protecting film of fat, which prevents the formation of aluminum hydroxide, cause greater damage to the lung. The aluminum lung allegedly develops rapidly and may be fatal after only 8 months exposure. The aluminum lung is a very special illness and should not be confused with the use of aluminum dust to check silicosis, which is a different problem.
- 270 Pulmonary Disease Caused by Aluminum Dust. Koolsch. Beitr. Klin. Tuberk., 97, 688-693 (1942).
In opposition to Goralowski and Jaeger, who view the causes of aluminum dust lungs as being based on chemical conditions the author believes mechanical factors primarily to be responsible, including unsatisfactory ventilation of industrial workrooms on account of blackout rules, prolonged work periods and untrained workers. Over 150 cases are described.
- 271 Clinical Examination of the Aluminum Lung. G. Goralowski. Arch. Gewerbepath., 11, 108-116 (1941). (German).
Case histories of four men working in an aluminum powder factory are presented. The working times were 1½, 3, 7 and 16 years. Examination by auscultation and percussion gave only scanty findings. The sedimentation of the blood was normal or only slightly accelerated. Dyspnoea and lymphocytosis were present and spontaneous pneumothorax was observed in 3 cases. No tubercle bacilli were found. X-ray pictures were made of every patient, which the author judges show characteristic changes similar to silicosis.
- 272 Colloid-Chemical and Histo-Chemical Studies on the Question of Lung Damages by Aluminum Dust. R. Jaeger and F. Jaeger. Arch. Gewerbepath., 11, 117-130 (1941). (German).
The authors' experiments show that aluminum ions originate from powdered aluminum in contact with 1% neutral sodium chloride solution at normal room temperature. Fresh colloiddally dispersed hydrated aluminum hydroxide and some specially prepared hydroxide, known as "Verolte" compound, give an irreversible compound with the albumin of the tissues, which destroys the vital function of the cells. The authors demonstrated such compounds in slices of "aluminum lungs," and also showed in vitro that those compounds precipitate and tan albumin and so form a layer of tanned gelatin around the aluminum dust particles. This layer, however, is permeable to sodium chloride, and is therefore non-protecting. The effect continues and the layer thickens. They reason from these results that in the lungs the aluminum dust comes in contact with the tissue fluid which contains sodium chloride. In this environment the reaction aluminum-aluminum ion arises and therefore compounds develop which precipitate and tan albumin. In addition, products of this reaction are formed which cause the albumin to swell and to be dissolved. This continuous reaction explains the often rapid progress of the

changes in the lungs following excessive inhalation of aluminum dust. The authors present a theoretical explanation of the combined action of silica and alumina.

- 273 Luminous Paints. Protection of Workpeople. Lancet, 628-629 (May 23, 1942).
As long ago as 1923, women workers in the United States developed rarefying osteitis of the jaw from applying luminous paint to watch dials, using fine camel hair brushes which they pointed with their lips. Now that instruments with luminous dials are needed by the Armed Forces, and especially by the R.A.F., the danger to those employed on this work has been anticipated and a code of regulations called the Factories Luminising (Health and Safety Provisions) Order, 1942 has been issued. The regulations are rigorous and protection is assured; by limiting hours of work; by requiring cleanliness; by adequate ventilation; by wearing protective clothing, such as overalls, hair-coverings, rubber aprons and gloves, all of which must be washed daily; by insistence upon washing before meals; and by periodic medical examinations. Stores of luminous compound must be carefully safeguarded.
- 274 Industrial Dermatitis. S. Horner. Proc. Royal Soc. Med., 35, 701-706 (September, 1942).
Brief consideration is given to various causes. Radioactive substances, friction, overtreatment, and harsh cleaners are indicated, in addition to chemicals. Preventive means include: (1) selection of personnel; (2) protection by ventilation, splash guards, protective clothing and barrier substances on the skin; (3) inspection; and (4) cleanliness. The special features of dermatitis caused by chlorinated naphthalene waxes, non-ulcerating concentrations of chromic acid, beta radiation, aircraft glues, and uretropine accelerators are mentioned. The need for practicing dermatologists to have a personal acquaintance with plant conditions is emphasized.
- 275 Halowax Acne. Queries & Minor Notes. J.A.M.A. 121, 471 (February 6, 1943).
The inquiry concerns a patient who has handled degaussing cables daily, and has a stubborn acneform condition. His wife has some of the same lesions. The cables consist of metal strands wrapped with halowax, essentially trichloronaphthalene and chlordinophenyl, as an insulator and water- and fireproofing agent. Halowax acne is common among persons who work with these cables and do not take the recommended preventive measures. Members of the family who handle or wash the soiled clothes of workers have also developed such acneform lesions. Treatment consists in preventing exposure by exhaust ventilation and by protective ointments, daily change to clean work clothes (cleaned at the factory) and compulsory supervised shower baths after work. The individual lesions are best treated by incision. A strong cleansing solution should be used for the face. Yellow atrophy of liver has occurred in severe cases, and liver function tests are advised for the patient. Several references to papers on halowax acne are given.
- 276 Cutting Oils and the Skin. C. Leggo. Ind. Med., 12, 102-108 (February, 1943).
The author gives a general discussion of dermatitis from cutting oils, describing the oils and the disease, and discussing care of the oil, classification of skins as to sensitivity, and protection of the worker, including cleanliness, protective creams and protective clothing.
- 277 Industrial Dermatitis. H.S. Redgrove. Soap, Perfumery, Cosmetics. 15, 600-602 (1942).
This general paper on dermatitis calls attention to difference in sensitivity of skins, and the possibility of dermatitis from harsh cleaning agents. Protective formulas are recommended.

- Prevalence of Dermatitis in 1942. Anonymous. Ohio Ind. Comm. Monitor. 16, 11 (February, 1943).
Reports of claims filed during the past year (in Ohio) show a marked increase in dermatitis over preceding years, the claims totaling 3,309 against 2,034 for 1941. This increase is very probably due to the large number of new workers. The type of dermatitis showing the greatest increase is that caused by contact with oils. More care should be taken to maintain preventive measures -- good housekeeping, protective clothing, clean oil, and skin creams.
- Prevention of Skin Irritation from Lime Dust. J.A.M.A. Queries & Minor Notes. 117, 861 (November 7, 1942).
Men working in an industrial plant which uses large quantities of lime frequently suffer lime burns of the skin. Goggles, filter-masks and gloves afford protection, but the men will not wear protective clothing on the trunk because of the heat. For treatment boric or benzoic acid, with or without cornstarch are recommended as better than base emollients only. Reference is made to a discussion of protective ointments by Schwartz in "Medical Clinics of North America" for July, 1942. The following methods are advised: maintain a high order of personal cleanliness, remove lime dusted clothing at the end of the work period; remove lime from the skin after work; use petrolatum coated plugs in the ears if necessary to prevent aural dermatitis. If lime dermatitis appears, contact with lime should be avoided for the time being.
- Erythema from Welding. Queries & Minor Notes. J.A.M. A. 121, 162 (January 9, 1943)
Erythema and even vesicles resembling sunburn have been reported among welders, on the uncovered portions of the skin. This is said to be due to the actinic rays of the electric welding arc which are generated, especially in "flashes." The treatment consists in wearing clothing through which the light rays will not penetrate or in applying protective ointments containing light screens - for instance a zinc ointment with 10% tannic acid and 5% methyl salicylate.
- The Lethal Effect of Triethylene Glycol Vapor on Air-Borne Bacteria and Influenza Virus. O.H. Robertson and others. Science, 97, 142-144 (February 5, 1943).
In an extensive series of experiments, marked bactericidal action was obtained with dilutions of 1 gram of glycol in 100 million to 200 million cc. of air. Tests on the oral toxicity of triethylene glycol for monkeys and rats and exposure of the animals for prolonged periods of time to its vapors are being undertaken.
- Methyl Bromide as a Fumigant for Foods. H.C. Dudley and P.A. Neal. Food Res., 7, 421-429 (1942).
Animal feeding experiments demonstrated that milled cereal products fumigated with one pound of methyl bromide per 1000 cubic feet will probably offer no risk when such food is consumed.
- Anthrax: A Review of Sixty Cases. H. Gold. Arch. Int. Med., 70, 785-821 (November, 1942).
Because of the statement that the source of infection of several of the cases of anthrax in this review is of industrial origin quotations from the author's summary will be of interest to industrial hygienists. Sources of infection, yearly occurrence, distribution, clinical course and methods of treatment are discussed. In 31 cases, anti anthrax serum in large amounts (200-2,000 cc.) was administered intravenously, and only one death occurred. In 42 cases, treatment was with sulfonamide compounds, with excellent results in 39 cases. If a patient fails to respond after three days of treatment with sulfonamide compounds, anti-anthrax treatment should be given. Use of the sulfonamide compounds is preferable, because they are easier to administer, their use shortens the period of hospitalization and disability, and they are economical. - From Author's summary.

Bibliography on Electrical Safety, 1930-1941. American Institute of Electrical Engineers. 16 pp. 1942. Obtainable from American Institute of Electrical Engineers Headquarters, 33 W. 39th St., New York, N.Y., at 50¢. This bibliography includes a list of applicable standards, specifications and safety codes. The bibliography is divided into the following sections: (1) electrical accidents and their causes; (2) accident prevention methods; (3) safety codes and standards; (4) effects of electric shock, and (5) resuscitation.

Weil's Disease: Incidence, Diagnosis and Treatment; Report of Two Cases. D.W. Hooper. Penn. Med. J. 45, 1295 (September, 1942).

The author suggests that the disparity between the incidence figures for Weil's disease and those given for certain European and Asiatic countries may be lack of interest in the disease here, failure to make accurate diagnoses and neglect in reporting cases. Comparative figures show 10 to 15 times as many cases in small European countries as in the United States. The figures for the United States would be increased if suspected cases were thoroughly investigated by modern laboratory methods. The medical profession must become "Weil's" disease conscious if it is to diagnose these cases. The author suggests methods of and places for searching for the leptospiras if they do not appear in their usual habitat. The disease should be reportable, and listing of immune serum donors is suggested.

- 236 The Improvement of Heat Tolerance in Man. B. Schlegel. Klin. Wochschr. 20, 506-510, (1941).

The adrenal cortical hormone (I), when administered to persons exposed to high temperatures, relieved the subjective symptoms and caused an increased excretion of water and salt by the skin and a stabilization of the circulation. The heart muscle is apparently the point of attack. A discussion of the prophylactic use of (I) and salt in conditions due to heat is given. The only effective method for administering (I) for prophylactic use in heat injuries, is by injection.

- 237 Resuscitation. F.S. Hossiter. Ind. Med., 11, 479-481 (October, 1942).

The author explains the dangers of permanent brain damage after 10 minutes anoxia and the fact that artificial respiration, if initiated early, is shorter and more often successful. Artificial respiration should be continued for 12 hours unless rigor mortis has set in. He explains in detail both the Shafer and the older Sylvester methods, and considers the former superior. The pulmator and the E and J resuscitator can be used successfully during prone pressure or if the victim is unconscious. The author has had no experience of lung injuries or other objectionable features.

- 238 Night Vision and Night Blindness. W.J. Hope-Robertson. New Zealand Med. J., 41, 159-166 (August, 1942).

After emphasizing the present importance of night vision, the author describes methods of measuring illumination and points out that deficiency in illumination greatly increases the liability of industrial workers to accidents. The difference between day and night illumination is enormous, but the eye is able to increase its sensitivity at least 50,000 times within an hour. Visual purple, Vitamin A and related compounds are discussed, as are also the distinction between rods and cones and the distinction between scotopic and photopic vision. The complex subject of pre-adaptation is discussed, including value of pre-adaptation of watchmen, and the use of pre-adaptation glasses. Methods of measuring night visual capacity, and causes of night blindness are summarized.

Methods of Detection and Determination

Identification of Lead in Bone Tissue. L.T. Fairhall. Pub. Health Repts., 58, 177-183 (February 5, 1943).

A method for positive identification of lead in bone tissue has been evolved which permits detailed investigation of the lead deposit. The process consists of decalcification of the bone section (preferably sawed lengthwise) by a saturated solution of sulfur dioxide. No lead is lost in the process. Sections cut in paraffin are treated with xylene, alcohols and water and are finally immersed in an acetic acid solution of potassium chromate, slowly developing a deposit of lead chromate crystals. These are best studied under a polarizing microscope. Quantities of lead much too small for x-ray detection are revealed by this method. Examination of bone prepared by this method shows that while the epiphyseal portion of bone is rich in lead, particularly in the early stages of lead absorption, deposition occurs throughout the compact tissue on all surfaces over which blood passes. X-ray studies of the bones of lead-poisoned animals indicate that the amount of lead, whether segregated or diffused, even in the absence of calcium, is insufficient to be revealed by ordinary x-ray photography. Deposition of lead was shown to occur in the fat cells of the red marrow. Lead storage in the bone tissue occurs first as colloiddally dispersed and finally as segregated crystalline masses.

120. Microdetermination of Lead by Dithizone. K. Bamback and R.E. Burkey. Ind. & Eng. Chem., Anal. Ed., 14, 904-907 (November, 1942).

A method for the determination of lead is given in detail. In it are incorporated the latest refinements in the use of dithizone as well as an improved method of eliminating bismuth. Separation of lead from bismuth both of which combine with dithizone in the first extraction from alkaline solution, is accomplished by stripping the lead from the dithizone extract with a potassium acid phthalate-hydrochloric acid buffer solution at pH3.4. The bismuth remaining in the chloroform-dithizone extract is discarded. The method effects a 25% saving in the working time. Ten references are given.

201 The Determination of Zinc in Plant Material. A. Walkley. Australian J. Exper. Biol. & M.Sc., 20, 130-147 (September, 1942).

The method described consists essentially of a wet ashing procedure dithizone extraction and polarographic determination. It can easily be modified for the determination of zinc for industrial air or tissue analyses, and is applicable to the range 3 to 300 micrograms.

202 Spectrographic Analysis of Rat Tissue for Ingested Vanadium. E.P. Daniel, E.M. Houston and M.W. Kies. Ind. Eng. Chem., Anal. Ed., 14, 921-922 (November, 1942).

A spectrographic method for the quantitative estimation of vanadium in limited amounts of biological material is presented. Chromium is employed as an internal standard in the arc spectrum and use is made of standard reference curves established by plotting the ratios of line blackening produced by standard solutions of vanadium and chromium against the concentrations of vanadium. The spectrum lines, vanadium 3185.406 angstrom, and chromium 3188.0 angstrom were measured by means of a non-recording densitometer. From a number of ashed tissues analyzed for vanadium, blood samples taken from rats fed three different levels of this element were chosen to illustrate the applicability of the method. -- Authors' summary.

Control Methods

- 293 Dust Control in Hard Headings. A. Nelson. Colliery Guard., 165, 729-733 (December 18, 1942).

The dust control measures adopted in the mines of Amalgamated Anthracite Collieries, one of the large British coal mining companies, are described. Every hard heading in its collieries is regularly inspected and supervised by a staff of trained investigators. The inspection includes (1) dust sampling to determine concentration, duration of exposure, size distribution of particles and nature of the dust, and (2) instrumental tests to determine temperature, humidity, cooling power, effective temperature, quantity and quality of the air at the face, presence of carbon dioxide and methane, and quantity of oxygen. For ventilation the blowing system is generally most effective but in particular points a combination of blowing and exhaust is used. The major operations in hard headings, namely drilling, blasting and loading, are investigated through weekly cycles, by time studies and dust sampling. Water, properly and freely used, is effective at controlling dust at its source, but is not so effective in trapping fine dust particles once they have escaped into the atmosphere. The Hay mist projector and other atomizers remove a considerable portion of the dust, but they are far from a complete solution as the finer particles escape. Workmen are not permitted to return to the face after blasting until the whole volume of contaminated air has been replaced by clean air. It has been found impracticable to lay down uniform standards for all hard headings, particularly with regard to quantity of ventilation, cooling power and effective temperature. With reservations which are discussed, the following limiting standards have been objectively fixed for the company's hard headings: (1) dust concentration during any activity, 12.7 million particles per cubic foot, under 10 micron size, as measured by the konometer; (2) effective temperature between 55 and 70°F; (3) cooling power (dry kata) above 7; (4) quantity and velocity of air must not cause discomfort from warmth or cold; (5) in normal cases blowing ventilation should be used, but if the dry temperature is below 63° the exhaust system may be preferred, with the inlet within 5 feet of the face. A specimen form for inspection reports is given. Cooperation of management and individual workers to maintain effective dust control is stressed.

- 294 Use of Wetting Agents in Reducing Dusts Produced by Wet Drilling in Basalt. J.A. Johnson. U. S. Bur. of Mines, Rept. of Inves., No. 3678 27 pp. (Jan., 1943). This report describes tests in wet drilling in which two unnamed wetting agents were added to the water. They were found to reduce the quantity of dust more effectively than when water alone was used. A 0.2% wetting-agent solution was found much more effective in wetting the particles than a 0.1% solution and about equally as efficient as a 0.5% solution. A flow of 1.7 gallons a minute through the drill steel appears to be a critical rate above which little additional improvement is secured, whether water alone or a wetting agent solution is used. Even when two sprays totaling 2.6 gallons per minute were used on the same drill, the results were little better than at 1.7 gallons per minute. At the latter rate the average dust concentration was kept well below 5 million particles per cubic foot of air with water alone, and usually 40 to 50% lower with an 0.2% wetting agent solution. A slightly faster drilling speed is attainable with the wetting agents. During the experiments the fan delivered about 600 cubic feet of air per minute to the heading where one drill was operating. In practice adequate pressure should be made at the drills, and water flow and ventilation should be checked periodically.

A New Type of Filter for Dust Work. Monmouthshire and South Wales Coal Owners Assoc., 6th Report of the Coal Dust Research Committee. (D.A. Hann, Chairman) 10 pp. (October, 1942).

An investigation was made to determine the feasibility of employing filters to filter dust in coal mines, since water sprays cannot be used where weathering of rocks occurs. After a number of experiments the filtering medium chosen consisted of a mixture of coal beans and grain, enclosed between rectangular inner and outer cages, the inner cage serving as inlet, and containing a single mist projector. This device removed 93% of the dust by weight in the laboratory experiments, and over 80% by weight in a full-scale test at a loading station. However, comparison of particle counts with the konimeter did not show as spectacular reduction as the weight ratios, because the larger particles were more thoroughly removed than the fine and more harmful dusts. There are serious limitations to the efficiency of the konimeter and the use of the thermal precipitator for size frequency determinations might have given more enlightening results.

206 Federal Mine Inspection Progresses. D. Harrington. Am. Labor Legislation Rev., 32, 163-167 (December, 1942).

The article discusses the results of the first year of coal mine inspection, instituted to supplement the mine inspection work of the various states. Inspections are very thorough and the response of labor and management has been gratifying. In addition to inspection, other duties of the inspectors include investigating accidents, examining seals around mine fires, and assisting in the administration of the Federal Explosives Act. Although the value of the program for the brief time since its inception is difficult to estimate it appears to have produced an increased consciousness for safety methods. The number of coal mine accidents has remained about the same, while accidents in American industry as a whole have increased about 20%.

207 The Theory and Practice of Pneumatic Conveying. J.M. DallaValle. Heat. & Vent., 32, 28-32 (November, 1942).

The basic principles and laws of pneumatic conveying are reviewed, and emphasis is placed on industrial ventilation applications. A description of the types of systems in use is given, together with the principal formulas.

208 Air Sterilization with Glycol Vapors. Queries & Minor Notes. J.A.M.A. 121, 301 (January 23, 1943).

A newspaper publisher asks whether using a small portion of one of the glycols, incorporated into the ventilating system of the building, would sterilize the air and lessen the incidence of respiratory infections among employees. The reply is that the research on the use of glycol vapors for sterilization has not yet reached the point where practical application can be advocated. In particular any possible harmful effects on men and animals must be studied very thoroughly, and experiments on that point are now being conducted. There are also unsolved mechanical problems, such as the question whether the glycol vapor can be so introduced as to obtain adequate concentrations in all parts of an enclosed air space. Abstract Nos. 557 & 681 (1942) deal with bactericidal action of glycols.

209 Control and Treatment of Nitrous Fume Poisoning. Anonymous. Ind. Hyg., (U.S. Nat. Health Service), 3, 6-7 (February, 1943).

A conference on nitrous fume poisoning was held in Cincinnati on January 23 by representatives of explosive manufacturers and several interested U. S. Government bureaus. Suggested engineering control measures were: (1) ventilation; (2) adequate exits; (3) proper storage of material. Several medical control measures were suggested: (1) pre-employment examinations including chest x-rays including persons with certain respiratory conditions; (2) prompt report of

exposures and referring the worker to the hospital; (3) recommended treatment for workers showing symptoms of poisoning, including burning of throat or chest, lassitude, pallor, cyanosis and abnormal breathing. The treatment includes absolute rest, keeping warm, supplying oxygen if necessary, liquid diet, recording of blood pressure and pulse at regular intervals, study of the blood picture. If pulmonary edema is developing, the following recommendations include bleeding, plasma administration, oxygen, glucose intravenously, and trial of mercury diuretics and adrenal cortical hormones. Prohibitions include morphine (allonal or luminal may be used), cardiac stimulants and soda.

Industrial Medical Practice

- 300 Why We Employ Aged and Handicapped Workers. Edsel Ford. Sat. Evening Post. 815, 16-17 (February 6, 1943). Abstracted by special permission of The Saturday Evening Post, copyright 1943, by The Curtis Publishing Company. Mr. Ford begins his article with the observation that, unlike the soldier at the combat line who must be a sturdy physical being, the man at home on the production line may be physically handicapped and still be a splendid soldier. Due to the manpower pinch, recognition of the usefulness of the physically impaired individual is spreading to all industries and services of the country. The Ford Company is one of a number of firms who have long believed in and practiced the utilization of physically handicapped workers. In the River Rouge area 11,163 men, or more than 10% of all men employed there, suffer from various disabilities. These include men partially or totally blind, epileptics, men with organic heart ailments, cripples of various sorts, etc. They all receive full pay and the company feels that the men give full value for their wages; the only assistance to them has been the discovery of tasks which would develop their usefulness. This group do not expect nor receive special considerations although their fellow workers are cooperative, particularly in providing assistance in transportation. The policy of the company toward the problem of age as a factor in employment is stated on the basis of findings of a survey which shows the age groupings in communities where Ford plants are operated. More than 45% of the employees in their company are above 40 years of age, which is appreciably higher than the average throughout the country. Since the age median of the nation is rising, industry must emphasize the employment of persons 40 years old and upward or else the younger people will have to support themselves and their elders. Constructive activity keeps men and women from growing feeble and becoming economic liabilities. The use of greater mechanical horse power enables an older man to perform tasks which required the strength of a young man to perform by hand. Older men are not as fast nor as strong as the 20-30 year group but this is more than compensated by their experience, maturity, coolness, and accuracy.
- 301 The Physically Handicapped in Industrial Establishments of the Government. V.K. Harvey and E.P. Luongo. J. Am. Med. Assoc., 121, 100-107 (January 9, 1943). A joint commission representing the Civil Service Commission, the Vocational Rehabilitation Division, Office of Education, and the Council of Personnel Administration has been established to provide fuller information about the employment of handicapped persons and an extensive survey is being made. The resulting information is being coded according to the system of job classification established by the U.S. Employment Service. The manual will be in loose-leaf form subject to modifications. The usefulness of persons with various handicaps is discussed at length, in the light of the information obtained in the survey. Placement of women is a part of the picture.
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- 302 Man 'em Working. Anonymous. Urol. & Cutan. Rev., 44, 542 (August, 1942).
The safest person to have in the factory or office, as far as spreading syphilis is concerned, may well be the man with a positive Wasserman reaction who is taking treatment. He is both non-infectious and immune. Those who have never had the disease may acquire it and become the focus from which it spreads. It is folly, therefore, to discharge persons about whom the facts are known while retaining those about whose health nothing is known. Strikes in defense plants enrage the public on account of the wasted time and slowing down of production. The public should be equally enraged about the waste and delay due to venereal diseases. To discharge a man for having a positive Wasserman reaction looks more like punishment than an attempt at reasonable sanitation. Physicians and employers should join in an effort to minimize the lost hours. Employees should be instructed and safeguarded, and treated when necessary.
- 303 Employment of Epileptics. W.G. Lennox and S. Cobb. Ind. Med., 11, 571-575 (December, 1942).
It is difficult for an epileptic to be accepted for industrial work, even with the labor shortage, on account of the prevailing ignorance about epilepsy and fear of liability in case of accident. A review of the laws of various states demonstrates the need of provisions by which the epileptic may work at his own risk in the event that injury is the result of a seizure.
- 304 Broader Horizon. K.V. Banta. Manpower Rev., (January, 1943). (Manpower Review is a periodical circulated only among War Manpower Commission officials, but copies of this paper have been distributed for publication.)
Traditionally the blind have had jobs as broommakers, tuberculosis patients have been assigned light outdoor work and the person who has lost a leg has been a crossing watchman, although the experience of each would qualify him for entirely different work. However, the occupational horizon of the physically handicapped is now gradually being broadened. To those charged with their guidance, all jobs are jobs for the handicapped. Achieving that objective will require an intensive and carefully executed job analysis program. Analysis should be made under actual conditions and not based on memory or hypothetical conditions. A chart of physical factors involved in each job greatly facilitates the analysis, and a typical chart is presented. Another device is the compilation of job families for the handicapped. These job families have been drawn up around a limited number of types of handicaps and point to the jobs which are possible choices for persons with these physical impairments. These job families are valuable as guides only, as physical capacity must also be considered. More and more types of handicapped are being utilized in the war effort. Fuller utilization, however, will only come through carefully and intelligently applied job analysis.
- 305 Problem of Absenteeism in Relation to War Production. D. Evans. Monthly Labor Rev., 56, 1-9 (January, 1943).
Absenteeism is a matter of growing concern to those entrusted with the responsibility for war production. One large plant reports current absence rates at 4.8% for men and 7.4% for women; another, 5.2 and 8.5% respectively. These figures are typical. In most reports the rate is higher for women. Absenteeism also tends to be higher among older workers, and increases as the work week is lengthened. Causes of involuntary and voluntary absenteeism are discussed. The chief causes of strictly involuntary absenteeism are sickness and accident. Borderline causes include long hours, housing shortages, transportation difficulties, shopping necessities, and visits to doctors, dentists and lawyers. An important factor in purely voluntary absenteeism is the worker's morale, high wages (with qualifications), overtime for Saturday and Sunday irrespective of absence on other days (now discontinued). The subject of high wages, however, requires qualification. Remedies for involuntary and borderline absenteeism

have been frequently discussed - health programs, plant meals, cooperation in housing and transportation programs, etc. Voluntary absenteeism can be controlled by reminding the worker of the importance of the job, and by requiring written reasons, with dismissal when absences become excessive. Disapproval by fellow workers is an important deterrent, and in some cases unions and labor committees have been effective.

- 306 Absenteeism in Commercial Shipyards, 1942. E.V. Kennedy. Monthly Labor Rev., 65, 211-222 (February, 1943).

Absenteeism in commercial shipyards fluctuated around 7 or 8% from April through October 1942. This is equivalent to 4 hours per week for each wage earner. In yards along the Atlantic, Pacific and Gulf Coasts absenteeism rates were higher than in yards in the Great Lakes and Inland areas. The rates varied greatly from one yard to another and from month to month. In general, large yards had higher rates of absenteeism than small yards; this fact may explain the geographical differences. The discussion of causes and remedies follows the same course as many other papers, but fairly definite reports on the extent of absenteeism from various causes are presented. Poor housing, bad transportation and the necessity of recruiting inexperienced workers were considered the major causes. Sickness and accident did not play a large part. High earnings did not seem to be a major cause, as absenteeism fluctuated without much relation to wages. Weather is an important factor in the shipbuilding industry, as much of the work is outside. Two companies reduced absenteeism by aid in securing houses and by securing shuttle train service. One reduced weekly hours from 58 to 48 and thereby reduced absenteeism by 50%.

- 307 Absenteeism and Mortality in the Portland Cement Industry, 1941. Portland Cement Assoc., September, 1942. Mimeographed, 43 pp.

This annual report is the seventh issued by the Association, and covers the calendar year 1941. The field covers 56 cement plants, employing nearly 10,000 persons. The data are presented in 26 tables and 6 charts. The rate for all respiratory illnesses is lower than in the preceding year, with the exception of a slight increase in influenza and grippe. For comparison with other industries, the data from only the plants in the Middle Atlantic and East North Central states are used, because the industries reporting to the U.S. Public Health Service are confined to those localities. In only two groups of respiratory illnesses - bronchitis and chest colds, and pneumonia - is the rate higher for the cement industry. The rates in the cement industry are definitely lower for influenza diseases of the pharynx and tonsils, and miscellaneous diseases including sinus and upper respiratory illnesses. In another comparison, the frequency of respiratory illnesses is tabulated by months in the cement industry and in a group of employees in various industries. Based on the yearly rate the cement industry is 3.1% higher over the year, higher in the first and fourth quarter of the year and lower in the second and third quarters. The influenza epidemic raised the rate for that illness, especially among outdoor workers. The rate for pneumonia among outdoor workers dropped over 50%. Burner's had a 14% higher respiratory illness rate than in 1940. The mortality for respiratory illnesses fell from 1.02 to 0.30. In digestive diseases, there has been a general improvement in those of short duration. Diseases of the heart and coronary arteries are significantly lower than at any time in the last 6 years. Rheumatism, neuralgia and neuritis had a lower frequency than any time within the last 2 years, except for illnesses of less than 8 days. More cancer, however, is noticed. Mortality from heart, artery, and nervous system decreased. The most severe injuries to workmen away from home exceed plant injuries by nearly 2½ to 1. In injuries lasting less than 8 days, the ratio is 6½ to 1. Many additional details are given.

- 309 First Aid for the Industrially Injured. C. Leggo. Ind. Med., 11, 481-482 (October, 1942).

First aid work in factories should be supervised by physicians connected with the plants, even though only with "on call" agreements, if law suits because of inadequate or unjustified treatment are to be avoided. Adequate supplies, in the hands of a graduate of a Red Cross course are important but not entirely sufficient. The physician, the management, and the insurance company should see that minimum standards are observed.

- 310 Vital Statistics, Standard Oil Company (New Jersey) and Affiliated Companies: A Ten Year Review, 1932-1941. R.C. Page. Med. Bull. (processed), Standard Oil Co., 8, 236-291 (September, 1942).

During the ten-year period, over a million persons were under the direct supervision of the medical department. The average disability per worker per year was 4.79 days. Venereal diseases played no major role in time lost, but the number of cases especially in parts of Venezuela and Colombia, assumes large proportions. The use of sulfonamides for gonorrhea has greatly improved the situation. All cases of syphilis are hospitalized during the infectious stage. As long as the employee cooperates the management is not informed of his trouble; if not, he is recommended for discharge. Employees appreciate the interest shown in their behalf, and not only cooperate in connection with treatment but also work efficiently.

- 310 Disabling Mortality Among Industrial Workers, Second Quarter of 1942. W.M. Gafafer. Pub. Health Repts., 57, 1620-1622 (October 23, 1942).

During the second quarter and first half of 1942 the pneumonia rate continued relatively high. Diseases of the stomach, except cancer and diarrhea and enteritis, show notable increases in frequency. The rates for these two cause groups for the second quarter, and for the first half, are the highest recorded for the years 1933-1942. They are compared with the corresponding means based on the years 1933-1942, and show excesses of 25% and 36% for the second quarter and the first half, respectively.

- 311 Medical Service Plans Outlined for Larger Industrial Plants of State. A.R. Smith. N.Y. State Ind. Bull., 22, 43-45 (January, 1943).

In the concluding paper of the series, the author first discusses excessive fatigue and its prevention. Causes within the plant include poor health, monotony, poor physical or psychological adaptation to job, excessive hours of work, irregular shifts, excessive speed, noise, vibration and concentration, heavy lifting, defective posture, defective ventilation and lighting, inadequate food and drinking water, inadequate sanitary facilities, and extremes of temperature. Additional non-occupational causes are traveling long distances to work in crowded conveyances, and home worries. The program for prevention of these causes covers quite a field, but a medical department which has carried out its proper functions will have gone far in its fatigue-prevention program. Rest periods should be obligatory, and a 10 to 15 minute period in mid-morning and mid-afternoon is satisfactory in most industries. Shift changes should be made infrequently, best at intervals of several months. In the schedule recommended by the Division of Labor Standards the shifts begin and end at noon, 8 PM and 4 AM. This arrangement effects a minimal displacement of the usual sleeping hours and no one would be compelled to sleep in the afternoon. Recommendations for eliminating other causes of fatigue include noise suppression by various means, good posture, change of job, solution of home difficulties, recreational activities and improvement of psychological attitudes. In the last three sections of the paper, occupational diseases, health education, and records are discussed very briefly. For health education, talks by the medical director and others, movies, leaflets and posters are recommended.

Medical Care for Small Industries. Anonymous. Ind. Hyg. (U.S. Pub. Health Service), 3, 4 (February, 1943).

In New York City a group of small industries has been considering a plan to provide medical care for their workers on a cooperative basis. The plan was drawn at their request by Group Health Cooperative, Inc., a non-profit medical insurance organization. The tentative plan includes in-plant services through full-time industrial physicians (one per 2000 employees) and nurses (one per 500 employees). The in-plant services would include emergency treatment of accidents and illness while on the job, pre-employment periodical and post-absence physical examinations, supervision of plant hygiene, and cooperation in safety programs in health education. The industrial physician would render only emergency treatment in compensation cases, and the patient would be free to choose his own physician for subsequent care, as the New York State law requires. Correlated with these services is provision by home and office care and diagnostic specialist service for non-industrial conditions. This service would be rendered by a panel of doctors, and the employee would have free choice of physician. He may also select his own physician to conduct physical examinations. This service would be financed by the employer at \$1.42 per month per employee. For each home visit the employee would pay the physician \$1.00. The same organization has in operation a plan for surgical, obstetrical and in-hospital medical care for \$9.60 a year for an individual or \$24 for a family.

- 313 Industrial Aspects of Peripheral Vascular Disease. L.N. Atlas. Ohio State Med. J., 39, 238-240 (March, 1943).

Peripheral vascular diseases or their complications, acquired as the result of industrial accidents are of considerable importance for several reasons. They are very disabling, and the disability frequently continues for a long time. However, there is not only the economic loss to consider, but the anatomical and functional integrity of the limb is also frequently at stake, and occasionally life itself is threatened. Finally, a significant percentage of these cases need never occur if persons suffering from peripheral arterial or venous disease were not permitted to work at jobs where the danger of injury, particularly to the feet and legs, constitutes a recognizable industrial hazard. The diseases considered are arteriosclerosis, arteritis, Raynaud's disease, pneumatic hammer disease, frost bite, traumatic spasm of the anterior scalene muscle, traumatic vasomotor dystrophy, varicose veins, effort thrombosis of the axillary vein, and traumatic thrombosis of the deep veins of the calf. Arteriosclerosis and arteritis are not in themselves occupational, but a local injury can aggravate the severity of either pre-existing disease. Individuals suffering from Raynaud's disease can not work where they are exposed to cold, or where their fingers are exposed to trauma or to irritating substances. Varicose veins are subject to traumatic complications. The remaining diseases may result directly from trauma and are often occupational. Treatment of each of the diseases is discussed.

- 314 Nature of the X-Ray Effect in Carbon Monoxide Recovery. J.A. Cameron. Proc. Soc. Exper. Biol. and Med., 50, 234-236 (1942).

Irradiation with x-rays accelerate recovery from carbon monoxide poisoning by increasing the depth and frequency of respiration. The effect appears to be on the respiratory centers. On rats and rabbits less than 8 days old the effect is not produced because of some difference in the activity of their respiratory centers.

- 315 Biochemical Control of Cancer. M. Copisarow. Edinburgh Med. J., 49, 425-428 (1941).

A review dealing with combined biotherapy and chemotherapy of cancer, and with industrial cancer and the purification of lubricating mineral oils. 30 references.

- Syphilis in Industry. Its Relation to Industrial Dermatoses. L. Schwartz and J. Markel. Dermatol. & Cutan. Rev., 46, 581-538 (September, 1942).
- On account of the wide scope of compensation laws, industry must provide a medical program not only to protect the employer against unjust claims but also to protect tertiary syphilitic employees from chemicals or working conditions which may aggravate syphilis or from industrial poisonings, such as from lead, carbon disulfide and nitro compounds, the symptoms of which may simulate those of tertiary syphilis. Therefore, preemployment physical examinations should include blood tests for syphilis. The determination of etiology is difficult, if not impossible, when symptoms later develop in the vascular or nervous systems of tertiary syphilitic workers. Employees handling compounds such as lead, which produces manifestations similar to tertiary syphilis symptoms should be examined once a year. Those handling food or food wrappings should also be examined once a year. Employees with latent syphilis or receiving active specific therapy should not be exposed to substances such as ether, alcohol, DNT, TNT or aniline, but they may be safely employed one year after treatment has been discontinued. Differentiation of skin manifestations of syphilis from industrial dermatoses is fully discussed.
- 317 Recommendations to State and Local Health Departments for a Venereal Disease Control Program in Industry. O.L. Anderson, and others. J.A.M.A., 120, 828-831 (November 14, 1942).
- The most effective venereal disease control program will be one in which the employer, the employee, the medical profession and the state and local health departments cooperate. The Advisory Committee to the U.S. Public Health Service on Control of Venereal Diseases, recently appointed, recommends such a program. It includes an educational program, examinations with results kept confidential, an employment policy under which other workers are protected and the diseased worker is not exposed to aggravating hazards. A conference and follow-up system is suggested.
- 318 Educational Social Hygiene. Extension to Industrial Employees for the Control of Gonorrhea and Syphilis. T.A. Storey. Ind. Med., 11, 411-414 (Sept., 1942).
- The American Social Hygiene Association concentrated its services in 1940 and 1941 on social problems of our armed forces, and is now focusing its attention particularly on social hygiene problems of men and women engaged in war industry. The approach to the problem may be made through (1) plant facilities; (2) community facilities; (3) labor organizations; (4) trade training courses, classes or schools; (5) public school and college student health programs.
- 319 Some Medical Problems of Vesicant Chemical Warfare Agents as Affecting Civilian Populations. L. Goldman. Bull. of N.Y. Acad. of Med. 19, 57-71 (January, 1943).
- The vesicant agents, chiefly mustard and lewisite, because of their toxicity, persistency and penetrability are responsible for most of the complexities of the scheme for the defense of civilian populations against chemical warfare. The physician is a very important part of this defense scheme. He must secure special training in the medical aspects of chemical warfare to carry out his role. Such training programs are available at present. Little is known of the theories of the action of vesicants. A great deal is known of their toxicology and pathology and of their specific prophylaxis. The treatment of the resulting lesion is purely symptomatic, namely that of a vesiculo-bullous, resistant and pruritic dermatosis with strong sensitizing properties. Mustard and lewisite dermatitis are not strange or mysterious maladies to the dermatologist. For those vesicants with systemic poisoning components, such as the arsenical compound, lewisite, therapy for this systemic phase should be given also. Decontamination of an individual will be done most effectively by the individual himself. The evacuation of the actual casualty must be done in a different mode from other warfare

casualties since all cases contaminated by vesicants are dangerous to handle. In the technical phases of decontamination the physician will have the help of a trained non-medical gas officer and the industrial physician will have the help of his plant gas officer. The educational program of the physician must also include measures to prevent psychoneuroses which would be expected in large civilian groups. With his knowledge of the principles of prevention and therapy, the trained physician will be able to cope with any new agents which may be used. In all these ways, the physician will learn the real role of chemical warfare against civilians and will avoid acquiring for himself and consequently spreading by teaching, those factors of overemphasis, exaggerations, panic and fears, all reactions so earnestly desired by enemy propaganda services. -- Author's conclusions.

- 120 Placement and Health Maintenance for Women in Industry. M.R. Burnell. Ind.Med., 11, 521-523 (November, 1942).

It is of importance that women receive a thorough physical examination before being placed at work. Motherhood remains the chief function of this great group of employees. When the emergency is over and many of them have returned to their homes, industry should know that every possible precaution was exercised to protect that function. Therefore an accurate knowledge of their physical condition is necessary at all times, and definite programs of health maintenance must be rigidly followed.

- 121 Safety and Health Problems of Women in Industry. Anonymous. Labor Inf. Bull., (U.S. Dept. of Labor), 9, 5-7 (December, 1942).

Women are no more inherently liable to accidents than men. Inexperience is a fruitful cause of accidents, and great numbers of women in war industries are inexperienced. They should be trained on a non-production basis rather than learn the technique of the new occupation in the course of production. Safety clothing is essential, and the worker's cooperation and judgment on clothing should be enlisted rather than by arbitrary rule. The whole problem of safety of women workers hinges on good supervision. A woman on the administrative staff will often solve problems where women workers are concerned. Home occupations must be considered as a factor in fatigue.

- 122 Women in Industry. Safe Practice Bull., No. 107. National Safety Council. 3 pp.

The general headings of the pamphlet are: (1) selection and placement of workers; (2) training; (3) supervision; (4) accident prevention; (5) occupational disease, and (6) mental and physical health. In connection with selection and placement, pre-placement physical examinations should always be given. The examining physician should have full information regarding the duties to be performed and should consider fitness in connection with the examination. In the section on accident prevention, suitable adjustments of machines and safety clothing are considered as factors in safety. Limits for heavy lifting, set by various industries and states, are discussed. The question of fatigue is also to be considered. There is no authoritative information on greater sensitivity of women to occupational diseases than men, but both women and men should be protected from unsafe quantities of toxic materials. Exposure of pregnant women to lead, carbon monoxide, carbon disulfide, nitrobenzene, mercury, benzene and carbon tetrachloride should especially be avoided. Factors in mental and physical health are morale, sanitation, and good housekeeping. Women personnel advisers are of assistance in some companies, and in any case frequent interviews are helpful.

- Women in Industry. E.W. Logan. Pittsburgh Med. Bull., 32, 210-212 (March 13, 1943).
- About 68.49% of the employees of the Bell Telephone Company of Pennsylvania are women, which is an increase of 8% since Pearl Harbor. The company believes that success in employing women is due to the fact that they must meet the same physical requirements as men, and that when employed they receive the same consideration. Women physicians, employed by the company examine female applicants and also examine women employees who are absent from work more than 7 days because of illness or accident. Treatment to employees is only emergency in nature, and they are referred to the family physician if further medical care is needed. The medical staff pays particular attention to placement of handicapped employees. Special treatment is given to applicants with correctible defects.
- 324 Feeding Workers for Health and Efficiency. I.O. Dodge. Industry, 8, 18-22, 40, 42 (February, 1943).
- The purpose of the article is to arouse interest in nutrition as an aid to improved industrial health. Due to the manpower shortage it is essential to make the most efficient use of available man and woman power by providing the proper food to help offset nutritional deficiencies that sap the physical strength and undermine the mental outlook. Employers as well as laborers should consider the subject of dietetics. Suggested means for meeting the need are: (1) sound nutritional programs in the cafeteria, preferably plant owned; (2) mid-meal supplementary feedings; (3) educating the housewife in the preparation of better box lunches or the sale of box lunches in plants where there are no cafeterias; (4) use of the "Oslo" meal which could be put up outside the plant; (5) education of the worker in nutritional values by showing films prepared by manufacturers or insurance companies; (6) use of posters. The distinction is made between nutritionists, who motivate better nutritional habits by teaching their importance and dietitians, who secure improved nutritional health by feeding the proper food.
- 325 Dietary Conditions in Industry. R. Goodhart. J.A.M.A. 121, 93-96 (Jan. 9, 1943).
- The author discusses the results of several surveys of factory cafeterias and rolling kitchens and food carts, with regard to the nutritional value of the meals obtained. The food with proper nutriment and vitamin content was selected by a minority of employees, 25% at best. In some cases milk and fruit juices were not chosen on account of higher prices for them than for soft drinks. Even when that factor was not present, they were not bought as much as they should be. Nutritional deficiencies have been found in a number of workers. The remedy lies in education of employees in food values.
- 326 Nutrition Increases Production at Serval. Anonymous. Institutions Mag., 12, 15, 30 (January, 1943).
- New features introduced at the factory cafeteria of Serval, Inc. included attractive renovation, publicity of the slogan "Eat to Beat the Devil," and a "Victory" lunch, consisting of meat, salad, vegetable, milk and bread and butter, for 25 cents. Desserts are also obtainable but the food value of the Victory lunch is publicized. A weekly drawing prize also encourages workers to buy the Victory lunch. The cafeteria now serves meals at 29 different lunch periods. The total volume of milk sold increased 80%. Absenteeism has been reduced by 16% over a similar period last year, and the accident record has been lowered.
- 327 Psychology and Industrial Nutrition Programs. L.S. Selling. Ind. Med., 12, 69-73 (February, 1943).
- Industrial nutrition programs are discussed from the standpoint of the psychologist. It is the duty of the plant physician, not only to see that the food supplied at cafeterias contains the proper nutrients but also to educate the personnel with regard to proper nutrition, and to urge so far as possible that

the food brought from home be wholesome. Provision should be made, if possible, for a well-balanced meal at the plant, sufficiently cheap and appetizing to challenge the habit of bringing lunch from home; if not, some means of supplementing the home lunch should be provided so that the worker will be stimulated to eat the needed food elements that are naturally omitted. The various mental factors, such as attitudes traditions, interests and habits of the workers should be taken into consideration, in order to provide meals which will appeal to them and which will at the same time carry the nutritive elements that will be of most value.

329. Report of the Bureau of Industrial Hygiene (State of Connecticut). A.S. Gray, Director. 58th Report of the Connecticut State Dept. of Health, pp. 61-113 (1941). This report fully presents the results of the routine work of the Bureau, with statistics, for the fiscal year ended June 30, 1941. A total of 540 surveys were made, in greatly varied fields, 16 educational publications were prepared, and 38 lectures and 4 radio talks were given. Recommendations from the surveys benefited over 6300 workers. A total of 620 cases of occupational diseases was reported.
329. Occupational Diseases and the Industrial Accident Commission of Maryland. J.A.M.A., Current comment, 120, 686 (October 24, 1942). The First Annual Report of the Medical Board for Occupational Disease, Maryland Industrial Accident Commission, purported to be the first document of its kind in this country clarifies a situation brought about by the lack of information about many important professional relationships in the administration of workmen's compensation. This report gives not only statistical analyses, but also abstracts of all claims heard, the observations of the Medical Board and the final opinion of the Workman's Compensation Commission itself. The abstracted case reports and the opinions of the Medical Board should be of value to students of compensation and the medical profession at large.
330. Industrial Medical Practice. W.I. Clark. Ind. Med., 11, 510-513 (November, 1942). A brief history of the development of health service for factory workers is followed by an analysis of such a service emphasizing three fields: industrial hygiene, industrial practice, and industrial toxicology. Health service in its relationship to the plant's engineering, safety engineering and employment departments is discussed, together with the various duties involved in medical supervision. A list of the minimum requirements for a proper medical service in industry as given by the American College of Surgeons and a second list of provisions needed to make this service entirely adequate, conclude the article.
331. Public Health and Medical Relationships in Industrial Health. O.J. Johnson. Am. J. Pub. Health. 32, 1157-1163 (October, 1942). The importance of industrial hygiene, "preventive industrial health" is not yet generally comprehended. Single groups, including the practising medical profession, nurses, management and labor have not yet the right standpoint towards prevention. It is often believed that the "Outline of procedure for physicians in industry" of the A.M.A. applies only to large institutions. The author discusses the responsibilities of the physician, the nurse, health officers, workers and employers.

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