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Barry Castleman Comments - Industrial Hygiene Digest of April 1952 with Abstract # 437, summarizing a German report that Pneumoconiosis in workers at a cosmetic and medical talc plant looked like Asbestosis.

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL --- decisions and trends

APRIL, 1952
(Vol. 16, No. 4)

INDUSTRIAL HYGIENE FOUNDATION
MELLON INSTITUTE
4400 FIFTH AVENUE -:- PITTSBURGH 13, PA.

INDUSTRIAL HYGIENE FOUNDATION

FOUNDATION FACTS

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

Volume 14 | April, 1952 | No. 4

NEW ADDITIONS TO FOUNDATION MEMBERSHIP

The following companies have recently affiliated with the Foundation:

Copperweld Steel Co.
Chromium Mining & Smelting Corp., Ltd.
Diamond Alkali Co.
Fostoria Glass Company
Mathieson Chemical Corp.
Pabst Brewing Company

TALKS BY STAFF MEMBERS

Dr. C. Richard Walmer, Managing Director, will discuss the administration of medical health programs at a training course in industrial relations sponsored by Industrial Relations Counselors, Inc., of New York, which is being held at the San Marcos Hotel, Chandler, Arizona, April 7 to 17. He will also serve as discussion leader for two seminar groups.

Mr. W.C.L. Hemeon, Engineering Director, presented a paper entitled "Design and Use of Equipment in Air-Pollution Measurements" at a meeting of the Pittsburgh Section of the Instrument Society of America, held on April 4.

FOUNDATION ACQUIRES ADDITIONAL SPACE

Mellon Institute has made available to the Foundation additional space consisting of two offices, a conference and library room, and a small laboratory. The Foundation is grateful to the Institute for these supplemental facilities, which are needed to provide for the expanding program of work and increased personnel.

INDUSTRIAL HEALTH CONFERENCE

The Industrial Hygiene Foundation will be well represented at the 1952 Industrial Health Conference, which will be held in Cincinnati, Ohio, April 19-26. The entire senior staff will attend the meetings and participate in numerous conferences and committee sessions.

REPRINTS AVAILABLE

Reprints are available upon request, of the paper entitled "Experimental Endogenous Lipoid Pneumonia," by Dr. Paul Gross, the Foundation's Research Pathologist, published in the American Journal of Pathology, 28, 211, (April, 1952).

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Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh 13, Pennsylvania

INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

365 Industrial Toxicology Laboratory.

DuPont plans to construct a $2 million Haskell Laboratory of Industrial Toxicology near Newark, Delaware. This will provide enlarged facilities for the company's industrial toxicological laboratory which has been located at the DuPont Experimental Station since 1935. The building is scheduled to be completed in about a year.

-- Chem. & Eng. News, March 17, 1952

366 National Air Pollution Symposium.

The second National Air Pollution Symposium, sponsored by Stanford Research Institute with the cooperation of the three leading California universities, will be held Monday and Tuesday, May 5 and 6, at the Huntington Hotel, Pasadena, California. The four sessions will deal with a status report on knowledge of atmospheric pollutants, fundamental chemistry and physics of the atmosphere, combustion as a contributor to air pollution, and biological aspects of air pollution.

367 State Industrial Safety Conference.

The Pennsylvania Conference on Industrial Safety will be held in Harrisburg, Pa., on Monday and Tuesday, May 19 and 20, 1952. The Conference will bring together leaders in industry, labor, and management for a two-day discussion of essential problems in industrial safety in all its phases. Information can be obtained from Hon. David M. Walker. Secretary, Department of Labor and Industry, 305 South Office Building, Harrisburg, Pennsylvania.

368 Conference on Public Health Statistics.

The University of Michigan School of Public Health offers the Second Conference on Public Health Statistics, for health directors, program directors, and public health statisticians, June 16 to 20, 1952.

* Abnormalities of humidity, Cyanides, Foodstuffs, Formaldehyde, Oil and solvent (combination exposure) and Zinc and compounds caused one each; Acids, Plating solutions (N.O.C.), Soap solutions glues, etc., Sulphur compounds (N.O.C.), and Synthetic resins and chemicals caused two each; Phenol and phenolic compounds caused four; Alkalies and Solvents (N.O.C.) caused five each; and nineteen were caused by Oils, fats and waxes.

** Brine, Chromic acid, Metal dust, and Penicillin caused one each; Rubber caused two; Synthetic resins caused three; Unstated caused four; and Cutting oils caused six.

LEGAL DEVELOPMENTS

370 Dermatitis--Laborer--Pre-existing Condition--Practice and Procedure.

Claimant, a laborer, had a skin ailment extending over a ten-year period. The issue of fact was whether or not his present condition grew out of his last employment or from previous employment with another employer. The court held that the board's fact findings in this regard would not be disturbed unless manifestly against the weight of the evidence and sustained the award. Matter of Bernhardt v. Curtis-Wright Corp., N. Y. Supreme Court, Appellate Div., Third Dept., January 9, 1952.--CCH

371 Longshoremen's and Harbor Workers' Compensation Act--Dermatitis--Baker--Recurrence of Previously Compensated Injury--"Injury" Defined.

Any attack of an occupational disease, whether an initial one or a recurrence following a symptom-free period, is an "injury" if it arises naturally out of the employment. The claimant suffered her second attack of dermatitis in December of 1946, became wholly disabled in January of 1947, and filed her claim in November of 1947. Since the claim was timely because it was filed within one year after the disease recurred, and since the term "injury" includes recurrence, an award of compensation benefits was proper and judgment denying them was reversed. Cadwallader v. Sholl, United States Court of Appeals, District of Columbia Circuit, No. 10,748, January 31, 1952. On rehearing. -- CCH

372 Silicosis--Miner--Employee v. Independent Contractor--Control of Work.

The claimant was an underground miner for 25 years prior to his disablement from silicosis in 1950. In 1946, while working for another mine, he signed a contract with the defendant company to inspect its mine, and in this job he was clearly an independent contractor. In 1947 he signed another contract with the defendant company agreeing to retimber the shaft of the company with "15 sets more or less," furnish the labor, look after the paying of all bills in connection with the labor, and obtain waivers of liens. Unlike the previous contract, however, there was no express language indicating the claimant was an independent contractor.

After the 15 sets were installed, the claimant and other miners completed another 60 sets, and although the contract only called for timbering the shaft, the record indicates that early in 1949, after the shaft was timbered, the claimant and others worked in a raise which was separate and apart from the shaft, laid rails in a tunnel, did mucking work, and helped to install a compressor, all under the direction and supervision of the company's superintendent.

The claimant also worked for about two months on a drift in the state of Colorado, where he had no control of the kind of work or the manner of performing it. On one occasion, the claimant significantly turned in an overtime slip when he worked a double shift. Under these circumstances, the Commission was not being arbitrary and capricious in concluding that the contract had been completed and that work elsewhere in the mine and in Colorado was contemplated and initiated under an employer-employee relationship. Award affirmed. Commission of Finance of Utah v. Industrial Commission of Utah. Utah Supreme Court, No. 7726, January 4, 1952. -- CCH

373 Silicosis--Granite Cutter--Three-Year Limitation--Statute Construed as to "Contraction" of Disease.

Silicosis, as an occupational disease under the Act, is contracted at the time when it manifests itself so as to interefere with bodily functions, and a granite cutter who was totally and permanently disabled by the disease at the beginning of 1949 was not barred by the three-year limitation when there was evidence to show that he had had the disease as early as 1944 but had not been affected by it. Yeager v. Delano Granite Works, Minnesota Supreme Court, No. 20, February 29, 1952. -- CCH

374 Silicosis--Stone Cutter Exposed to Dust for Less Than Two Years During Ten-Year Period Prior to Last Exposure--Right to Rehabilitation Benefits.

Unless an employee, not actually disabled but found to be affected by silicosis, has been exposed to the inhalation of silica dust in North Carolina for at least 2 years within the 10-year period prior to his last exposure, he is not eligible for rehabilitation benefits. Midkiff v. North Carolina Granite Corp., North Carolina Supreme Court, Feb., 27, 1952. -- CCH

INDUSTRIAL MEDICAL PRACTICE

375 Graduate Education for Physicians in Industrial Health and Occupational Medicine. A Report of Current Graduate Education in Nine Universities. O.T. Mallery, Jr., Ind. Med. & Surg. 21, 101-105, (March, 1952).

Despite the several available curriculums which allow the earning of a degree, part-time study of selected subjects, short-term courses, or fellowships in the field, only a limited number of physicians are presently engaged in graduate study. In the various universities offering a degree, the didactic studies are basically similar and in-plant training is required as part of graduate study. In most cases the graduate training now available is of recent origin and is still undergoing revision. New methods and plans for graduate education are being actively sought.

-- Cond. from Author's Summary

376 Orientation of the New Employee by the Health Division of an Atomic Energy Research Laboratory--A Four-Year Review. J.S. Felton. Ind. Med. & Surg. 21, 107-110, (March, 1952).

The components of an orientation program for new employees at an atomic energy research laboratory are reviewed, and the presentation of the Health Division is discussed in detail. In four years since the inception of the program, 129 separate presentations have been given to a total of 1535 individuals reporting to the Laboratory for employment. The course of the total health effort has been plotted more and more on a mental health approach, which has as its goal the realization of work as a satisfying experience for all. Other changes in program format, including multi-colored visual aids, and the distribution of a pamphlet on mental health, are described. Advantages accruing to the new employee are discussed.

-- Cond. from Author's Summary

377 Economics of Industrial Ophthalmology. I.H. Stolzar. Ohio State Med. J. 47, 654, (July, 1951).

In Ohio in 1949, 19% of the total of 270,000 compensation claims filed were for eye injuries including 170 claims for total loss of vision. The author outlines a program for industrial visual hygiene. Workers should be subjected to a complete ophthalmologic examination, which should include tests of muscle balance and visual field. Many active and incipient eye diseases can be detected in an examination. The program should be continuous; preemployment and annual examinations are a

necessity. Visual standards should be set-up for the various tasks, and employees should be assigned only to tasks consistent with their visual abilities. All employees subject to eye hazards should be required to wear safety goggles, but uncomfortable glasses will not be worn. Lecture sessions and posters will aid greatly in employee education. The expense of such a program will be justified by general improvement in employee performance. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

378 Vision Tests for Your Small Plant? Why Not?
E.L. Steinberg. Factory Mgmt. Maint. 110, 110-112, (Part I, Feb., 1952).

Even in small plants, benefits from increased production and less waste have followed the adoption of vision tests and measures to improve vision. Only five basic visual skills usually need to be measured; muscular balance, visual acuity, depth perception, field of vision, and color vision. Three types of instruments for vision tests are available; the ortho rater and the sight screener can only be rented; and the industrial telebinocular can be purchased.

379 Examination of Workers and Working Conditions in a Glass Fiber Factory.
J. Jindrichiva, V. Jensi, M. Sabatova and M. Pantucek. Pracovni Lekarstvi 3, 135, (June, 1951). (Czechoslovakian).

The authors examined the workers and the working conditions of a glass-fiber factory. The work is light and should be done mostly by women. There is no danger of pneumoconiosis, and when the protective measures and personal hygiene are maintained, the work hazards with methyl alcohol, trichloroethylene, and formaldehyde are limited to a minimum. It is necessary to keep the employees under continuous observation. A medical follow-up is, however, not sufficient; it is necessary to cooperate with the management, the workers' committee, and mainly with as many workers from the workshops as possible.
-- Arch. Ind. Hyg. & Occ. Med.

380 Skin Cancer of the Hand and Forearm. C.N.D. Cruickshank and A. Gourevitch. Brit. J. Ind. Med. 9, 74-79, (January, 1952).

An investigation of the patients treated for epithelioma of the hand and forearm at the United Birmingham Hospitals during the period 1941-1950 is reported. The results agree with those previously obtained in indicating a high incidence of this type of cancer among workers exposed to oils. A significantly large proportion occurs among metal workers, who are exposed to oil. The findings are compared with those of a previous similar investigation of scrotal cancer. It is the responsibility of industrial medical officers to ensure minimal exposure to carcinogenic agents.

381 Tomography in Anthracosilicosis. D. Belayew. Arch. Belges Med. Sociale et Hyg. 9, 197-199, (May-June, 1951). (In French.)

The value of tomography was tested with 200 Belgian coal miners. It has several advantages over ordinary x-ray procedure. The shadows are more opaque, the distribution of the nodules in pneumoconiosis is more extensive; the existence of voluminous nodules and coalescing areas is frequently brought to light; a diagnosis of pronounced emphysema was frequently brought to light. Tomography opens up an unexplored field regarding the bronchial tree, revealing thickness in the walls of the branches, or narrowing or enlargement, which would otherwise pass unobserved. -- Cond. from Bull. Hyg.

382 The Association of Varicose Veins with Industry. H.O. McPheeters. Wisc. Med. J. 50, 997, (October, 1951).

Complications that may develop from, or that are, associated with varicose veins may cause them to be a hazard in industry. Many examiners for large industrial plants will not accept for employment a person who has varicose veins, while others will take a chance that the veins are just large normal veins. Directions are given for adequate examination. With regard to compensation aspects, an injury that would be of little consequence normally may aggravate preexisting conditions and thus become serious and compensable. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

SKIN DISEASES AND BURNS

383 Industrial Dermatoses, and the Law: Suggestions for Improvement. E.F. Traub and D. Schultheis, Jr., New York J. Med. 51, 2005, (September 1, 1951).

The authors feel that better cooperation between employers, insurance carriers, and physicians treating patients with industrial skin lesions would eliminate many of the present shortcomings. They stress the following points: (1) careful histories, thorough examinations, and accurate reports; (2) learning how to testify properly; (3) avoidance of solicitation, accurate appraisal of disability, and treatment only by specialists; (4) properly adjusted fees; (5) trained personnel in responsible positions; (6) first examinations by physicians paid by the carriers to determine whether the case is compensable; and (7) formation of a board of three unbiased dermatologists, whose suggestions and opinions on medical testimony should be binding on the referee.
-- Cond. from Arch. Ind. Hyg. & Occ. Med.

384 The Problem of Consecutive Complicating Eruptions in Industrial Medicine. G.F. Emerson. New York J. Med. 51, 2015, (September 1, 1951).

The first of the two cases presented here is that of a woman who in 1944 was exposed to chemicals used in electroplating. Apparently, the solutions contained in the vats frequently wet her hands and forearms. After one month at this work, a dermatitis appeared on the exposed parts, and later the face and neck became involved also. She stopped work two months after the dermatitis first appeared. Since that time she has been under the care of dermatologists and general practitioners for varying intervals. Treatment has included roentgen therapy. The dermatosis has persisted to date continuously and is worse during the summer heat.

This patient and the other one, who suffered a welding burn in 1949 and was treated with a sulfonamide compound and later with penicillin, raise a number of questions concerned with workmen's compensation: Are such patients entitled to free treatment of skin lesions for the rest of their lives? Will the employer in whose plant the original skin lesion was acquired be liable for later doctor, hospital, and medicine bills? -- Arch. Ind. Hyg. & Occ. Med.

385 Printing Materials and Contact Dermatitis. Queries and Minor Notes. J. Am. Med. Assn. 148, 782, (March 1, 1952).

The question is: "A patient has contact dermatitis on the volar surface of the forearms. He handles hot lead in a printing shop. He is slightly sensitive to several foods; these have been eliminated. Are patch tests with lead advisable?" Type metal may cause dermatitis in susceptible persons. However, dermatitis in printers is more likely to be due to inks or to the various alkalies and solvents used to clean the type and presses. Patch tests may be performed with the metallic substances or with the inks, but not with the solvents.

386 Chromium Dermatitis. Queries and Minor Notes. J. Am. Med. Assn. 148, 877, (March 8, 1952).

The question is whether there is any protective measure against the irritant effect on the hands caused by the chromic acid preparation used in the engraving industry. Greasy barrier creams transfer fingerprints to the product. The best approach is through frequent lavings in weak reducing agents, such as 5% sodium hyposulfite, weak ascorbic acid, citrate, or tartrate solutions. No worker with open lesions should be permitted to be exposed. Individual susceptibility and sensitization are important. Planned desensitization is rarely practical, but spontaneous desensitization occurs commonly.

387 Condensation Plastics. Their Dermatological and Chemical Aspects. G.E. Morris. Arch. Ind. Hyg. & Occ. Med. 5, 37-43, (Jan., 1952).

Dermatitis caused in the manufacture of plastics comprises about 6% of the practice of the industrial dermatologist. The completely polymerized finished plastics are dermatologically "inert". The physician should be acquainted with the chemicals that the worker handles. The chemistry of the condensation plastics is presented. --Author's Summary

388 Occupational Leukodermia from Rubber Dust and Debris. S.J. Zakon and A.L. Goldberg. Arch. Dermatol. Syphilol. 64, 441-443 (July, 1951).

Oliver, Schwartz, and Warren (IHF Abst. 851, 1939) observed a number of patients (colored) with leukoderma due to contact with rubber. The causative factor in the rubber was traced to agarite-alba which is said to be monobenzyl ether of hydroquinone, and antioxidant used in the manufacture of rubber. The author observed nine cases of leukoderma in white patients who worked on asbestos pads and whose nails, face, and feet were covered with dust and debris containing agarite-alba rubber particles. Apparently a number of factors are needed to produce occupational leukoderma. These are: agarite-alba, and alkaline skin reaction, and perhaps an alcohol type of sweat. -- Biol. Absts.

CHEMICAL HAZARDS

389 Occupational Effects of Selenium. E. Holstein. Zentr. Arbeitsmed. & Arbeitsschutz 1, 102, (September, 1951). (In German).

Holstein discusses in general the chemical properties of selenium and of its compounds, the extent to which they may be adsorbed in the forms of dust and vapors by the human body, and selenium poisoning of workers employed in the glass, ceramic, and rubber industries, and in the manufacture of photoelectric apparatus, condensators, and rectifiers. Symptoms and signs of selenium poisoning are described.
-- Arch. Ind. Hyg. & Occ. Med.

The measure of a man's real character is what he would do if he knew he would never be found out.
-- Thomas B. Macaulay

390 Sulfur Dioxide Hazards. R. Freitag. Erdol. u. Kohle 4, 569, 579, (1951). (German).

Tolerance to sulfur dioxide is high (0.1 to 0.12 mg. per l.). Persons that are hypersensitive should not be permitted to work in its presence. Animal experiments gave the following results: quickly producing death 3-5 mg. per l.; later death 1.4-1.7 mg. per l. for 1/2 to one hour; 0.4-0.5 mg. per l. probably fatal; 0.17-0.64 mg. per l. tolerated. An accident in a sulfite cellulose factory is mentioned.

-- Chem. Absts.

391 Treatment of Nerve-Gas Casualties. J.R. Wood, P.F. Dickens, J. Rizzolo and M.W. Bayliss. U.S. Armed Forces Med. J. 2, 1609-1617, (November, 1951).

The nerve gases are a group of highly toxic chemical agents having a physiologic action like, but much more prolonged than physostigmine. They are readily absorbed through the respiratory tract, the skin, the eyes, and the gastrointestinal tract. Symptoms induced by incapacitating or lethal doses begin immediately and progress at a rapid rate. This paper considers the toxicity and pharmacology of the gases, the symptoms and diagnosis of poisoning, first aid measures, and treatment. Casualties contaminated with liquid nerve gases endanger unprotected personnel, and handlers of such patients should wear protective rubber aprons and gloves so long as there is any skin or clothing contact with the liquid agent. A gas mask is essential. A number of other precautions are discussed.

392 A Case of Optic Atrophy due to Delayed Lead Poisoning. C. Soprana. Med. Lavoro 42, 187-191, (May, 1951). (In Italian).

A workman subjected to lead exposure for five periods of about six months each, noticed some weakness of eyesight, which became serious four years later. Optic nerve atrophy was found in both eyes, with no apparent cause. On injection of magnesium sulfate to mobilize lead, porphyrinuria set in within 24 hours. This result strongly supported the view that the optic atrophy was a late effect of past lead poisoning.

-- Cond. from Bull. Hyg.

393 Determination of Porphyrins in Urine of Workers in Industries Using Lead. O. Frank and V. Lachnit. Wien. Z. inn. Med. 32, 413, (Sept., 1951). (In German).

The authors tested the use of deLangen and tenBerg's method for determining an increase of urinary coproporphyrins in 715 workers in lead industries, including plumbers, lead founders, painters, color grinders, enamel burners and compositors. A slightly increased porphyrin excretion was observed in 17 workers and a more pronounced increase in 12. Limit

values and positive results were checked by quantitative determinations. The maximum value found was 1.5 mg. Of the workers with slightly increased porphyrin, no one presented signs of lead poisoning; two of those with pronouncedly increased porphyrinuria exhibited symptoms. Sporadic basophilically stippled erythrocytes were demonstrated in blood streak preparations of three workers. No subjective or clinical evidence of increased lead was found in the other workers. With the reservation that other diseases may be responsible for increased porphyrin excretion, the described rapid method is particularly suitable for serial examinations of lead workers. -- Cond: from Arch. Ind. Hyg. & Occ. Med.

394 Effect of Sodium and Zirconium Citrates on Distribution and Excretion of Injected Radiolead. J. Schubert and Marcia R. White. J. Lab. Clin. Med. 39, 260-266, (February, 1952).

The results described in this paper indicate that the citrate ion has little or no effect on the immediate blood disappearance, organ distribution, or excretion of lead in rats. However, in rats injected with carrier amounts of lead labeled with radio lead Pb^{210} zirconium citrate caused over a threefold increase in the radiolead excreted during the first 24 hours and a decrease in the kidney concentration.

395 Lung Carcinoma in Nickel Workers. A.C. Løken. Tidsskr. Norske Laegefor No. 11, 375, (1950). (In Norwegian).

Three cases of pulmonary cancer in workers of a nickel refinery are mentioned. The patients were treated in the same surgical department within a short period of time. No other cases of pulmonary cancer had been diagnosed among the rest of the workers at the nickel refinery concerned. The workers are not, and have not been exposed to nickel carbonyl but have been exposed to dust and fumes of nickel and some other nickel compounds. -- Arch. Ind. Hyg. & Occ. Med.

396 Exposure to Silver Dust. Queries and Minor Notes. J. Am. Med. Assn. 148, 781, (March 1, 1952).

Some employees in a factory are exposed several days per year to high concentrations of silver dust, and occasionally to skin contact with silver nitrate. The query concerns methods of estimating silver in the urine and the possibility of systemic damage. The reply is that silver salts are toxic and fatalities have occurred, which may not be attributable to silver per se. Apart from the toxic properties of the salts, argyria, and possible dermatitis, the silver ion is regarded as harmless. A roughly quantitative method for determining silver in urine is described, but it has no great diagnostic value.

Candidate: A person who stands for what he thinks the people will fall for. --- Outdoor Industry

397 Vanadium Poisoning from Cleaning Oil-Fired Boilers. N. Williams. Brit. J. Ind. Med. 9, 50-55, (Jan., 1952).

Vanadium is found in crude oil ash in varying percentages, depending on the source of the oil; 45% in Venezuelan and 14% in Iranian oils, but much smaller in most American oils. Vanadium intoxication in eight men cleaning oil-fired burners, with no dust control or protection, is described. The method of investigation of the original complaints, the preventive measures instituted and the results achieved are discussed. The principal symptoms were severe coughing, fatigue, and a greenish coating on the tongue. In some cases vanadium was found in the urine, but no other abnormality was found in chest x-rays, electrocardiograms, or urine analysis. Successful preventive measures included doing part of the cleaning from outside the boiler, use of a water spray (in dismantling brick walls), and the use of respirators.

398 A Study of the Conditions Under Which Methanol May Exert a Toxic Hazard in Industry. G. Leaf and L.J. Zatman. Brit. J. Ind. Med. 9. 19-31, (January, 1952).

Owing to the slow elimination of methanol from the body, repeated exposures may result in accumulation and therefore a toxic hazard. The absorption and elimination of methanol were studied in man and checked by animal experiments. Over short periods the amount of methanol appears to be approximately proportional to concentration and duration of exposure. The rate of elimination is proportional to the concentration in the body. Only about 2% is eliminated via the respiratory and urinary routes. It was concluded that exposure to a methanol vapor concentration of about 3,000 ppm for eight hours a day may cause accumulation in the body and thus give rise to a toxic hazard. A maximum safe limit of 300 ppm is suggested. -- Cond. from Authors' Summary

399 Absorption, Distribution, and Elimination of Radioactive Carbon Tetrachloride By Monkeys Upon Exposure to Low Vapor Concentrations. D.D. McCollister, W.H. Beamer, G.J. Atchison and H.C. Spencer. J. Pharmacol. & Exper. Therap. 102, 112-124, 1951.

Rhesus monkeys inhaled air containing 46 ppm of radioactive carbon (C^{14}) labeled carbon tetrachloride for 139-300 minutes. About 30% of the inhaled carbon tetrachloride was absorbed. The highest concentration of deposited radioactive material was in the fat (7.94 times the concentration in the blood). C^{14} was found in the blood carbonate, exhaled carbon dioxide, and urinary urea and carbonate. Most of the radioactivity in the urine appeared to be present in a nonvolatile fraction other than urea, carbonate, or amino acids. This material was retained on anion-exchange resin and was converted to another unidentified substance by acid hydrolysis. The equivalent of at least 51% of the absorbed

carbon tetrachloride was eliminated in the expired air within 1800 hours. The remainder was excreted to a large extent in the urine and feces. In monkeys receiving skin exposures to radioactive carbon tetrachloride vapor for four hours negligible amounts of radioactive material were found in the blood and expired air. -- Chem. Absts.

400 A Clinical-Pathological Report of Eight Cases of Methyl Bromide Poisoning. J.H. Prain and G.H. Smith. Brit. J. Ind. Med. 9, 44-49, (Feb., 1952).

The results of poisoning by the inhalation of methyl bromide are described in an incident in which eight boys were exposed to the vapor, six of whom died. The main clinical features and post-mortem findings are given, and a note on the survivors two years after the accident.
-- Authors' Summary

401 Contribution to the Study of the Toxicology of Trichloroethylene. II. Results of Animal Experiments. R. Fabre and R. Truhaut. Brit. J. Ind. Med. 9, 39-43, (February, 1952). (French).

Both trichloroethylene and trichloracetic acid derived from it are deposited in the endocrine glands, kidneys, brain, blood and most of all in the spleen and lungs. This localization agrees with nervous symptoms observed in poisoning. In the blood, trichloroethylene, and to a less extent trichloracetic acid are fixed in the red corpuscles. This elective fixation explains the accumulation in the spleen. Sodium fluoride inhibits the transformation into trichloracetic acid. Trichloroethylene is eliminated rapidly in expired air and urine, while trichloracetic acid disappears much more slowly by the urinary route.
-- Cond. from Authors' Summary

402 Experimental Carbon Disulfide Poisoning. F. Krejck, Z. Marlo and B. Soucek. Pracovni Lekarstvi 3, 124, (June, 1951). (Czechoslovakian).

The authors were able to confirm that in rats and rabbits exposed for two to six hours at atmospheres containing 800 and 1500 gamma of carbon disulfide per liter of air the blood is saturated very rapidly with this compound; in approximately one, at most two hours, of exposure the carbon disulfide in the blood reaches a concentration given by a division coefficient of 2-3. Other body tissues are not saturated even after six hours of exposure. The fatty tissues retain carbon disulfide to a considerable degree, intestinal fat about three times as much as subcutaneous fat. All fatty tissues retain the compound tenaciously and release it slowly. The tissues of the nervous system, i.e., the brain, the spinal cord, and the peripheral nerves, retain the carbon disulfide differently and characteristically. The relation of the contents of free carbon disulfide in these tissues is 1:2:4.5. This distribution corresponds well with clinical observations. When the exposed animals are left in the open air, their tissues desaturate at varying rates: most quickly from the blood, then the fat, then the nervous system. The same equilibrium is maintained between them as during saturation. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

403 Three Cases of Chromic Myeloid Leukemia Due to Benzene. J. Bousser and S. Tara. Arch. Maladies Profess. 12, 399-404 (1951). (French).

One of the cases presented is an example of retarded benzolism. The man had worked for six years in an atmosphere containing considerable amounts of benzene fumes; symptoms did not appear until two years later. Benzene was found in the blood, with low red cell and very high (148,000 per cu. mm.) white cell counts. In the other cases benzene poisoning with similar blood effects occurred while the men were exposed and under medical supervision. Radiotherapy and transfusion were effective in two of the cases. The white cell count in one case moved from 10,000 up to 30,000. Such a count is interpreted as a sign of medullary irritation and may be the forerunner of aplastic anemia. The opinion is expressed that a white count over 10,000 should call for removal from all exposure to benzene fumes. -- Cond. from Bull. Hyg.

404 Severe Corneal and Conjunctival Injuries of the Palebral Fissure Area in Hydroquinone Workers. M. Krahnstover. Zent. Arbeitsmed. Arbeitsschutz 1, 75-80, (July, 1951). (In German).

Over a period of 20 years the author has examined about a dozen cases of ocular injury among workers for a firm manufacturing hydroquinone. Effects on the cornea and conjunctiva are described in detail. The less severe cases generally healed without sequelae, but three cases resulted in permanent severe reduction of visual acuity in spite of surgical treatment. Preventive measures are recommended.--Cond. from Bull. Hyg.

405 Toxicological Studies of Orthophenylphenol (Dowicide 1'). H.C. Hodge, E.A. Maynard, H.J. Blanchet, Jr., H.C. Spencer, and V.K. Rowe. J. Pharmacol. Exptl. Therap. 104, 202-210, (February, 1952).

Orthophenylphenol has a low acute oral toxicity for male rats; the LD^{50} found was 2.7 g/kg. Neither a 5% solution in sesame oil nor a 0.1% aqueous solution of the sodium salt caused either primary skin irritation or skin sensitization in human subjects. Rats maintained for two years on diets containing up to 0.2% o-phenylphenol showed no adverse effects; but when the diet contained 2% of the material, it caused slight retardation of growth, histological kidney changes, and the presence of small amounts of o-phenylphenol in the kidney tissue. Dogs showed no adverse effects from a diet containing 0.5 g. per kg. per day of o-phenylphenol over a period of one year. -- Cond. from Authors' Summary

406 Trinitrotoluene Poisoning in Tunnel Worker. G. Seland. Nord. Med. 46, 1170-1171, (August 1, 1951). (Swedish).

After 15 years' work as a tunneler, a 70-year old man developed aplastic anemia which led to death in one year. It had been his habit to carry explosive charges containing T.N.T. in his pockets. The anemia and other symptoms were of the same type as those found in trinitrotoluene poisoning. -- Author's English Summary, Bull. Hyg.

407 Tetryl Toxicity: A Summary of Ten Years' Experience.
B. B. Bergman. Arch. Ind. Hyg. & Occ. Med. 5, 10-20, (Jan., 1952).

The history, the properties, and the manufacture of tetryl are briefly reviewed. The sum of 10 years' experience with this explosive in relation to the toxic reactions is presented. It is most worthy of noting that during this period no case of suspected constitutional poisoning due to tetryl was encountered. The most troublesome reaction was the skin-sensitization phenomenon. Epidermal discoloration and effects on the respiratory tract and the gastrointestinal system are discussed, and a method of handling the patients is presented. The importance of recognizing psychoneurosis in tetryl workers is noted. No neurological, hematopoietic, or cardiovascular symptoms were observed. The hygenic problems associated with tetryl handling are reviewed, and the importance of examining workers before work and limiting exposure is stressed.
-- Author's Summary

408 Methemoglobinemia of Acute Aniline Intoxication in Experimental Animals and Human Beings: Cyanosis and Anemia Due to Heinz Bodies.
L. Ghiringhelli and C. Molina. Med. Lavoro 42, 125, (Apr., 1951). (Italian).

Four cases of acute poisoning from aniline dye through the use of shoes dyed black with aniline are described. In these cases the methemoglobin reached the level of 17 to 26 gm. per 100 cc. of hemoglobin. The results of experimental poisoning in dogs by means of subcutaneous injection of 30 mg./kg. of aniline, or intravenous injection of 10 mg./kg. of aniline were also reported. With the subcutaneous injection a methemoglobinemia which varied from 29 to 68%, and with intravenous injection a methemoglobinemia of 19.26%, was obtained. In both the cases of poisoning in man and those of experimental poisoning the cyanosis was proportional to the degree of methemoglobinemia. The methemoglobinemia disappeared rapidly from the blood. Heinz bodies were observed in the red corpuscles a few hours after poisoning. They increased in number even after the methemoglobin had disappeared from the blood. In all cases a slight anemia appeared which was not related to the intensity of the methemoglobinemia but to the abundance of Heinz bodies. --Arch. Ind. Hyg. & Occ. Med.

409 Carcinogenic Studies on Isopropyl-N-Phenyl-Carbamate. W. C. Hueper. Ind. Med. & Surg. 21, 71-74, (February, 1952).

Isopropyl-n-phenyl-carbamate is being manufactured for use as a weed killer in dust form. Its possibility as a carcinogenic agent was studied. The observations made in the different experiments in mice and rats support the negative results reported by Larsen. The observation time covered the greater part of the life span of the animals, and the chemical was administered by three different routes. It is pointed out that a carcinogenic reaction in man has not entirely been excluded.

410 An Experimental Inquiry into the Cause of Industrial Bladder Cancer. G.M. Bonser, D.B. Clayson and J.W. Jull. Lancet 261, 286-288, (August 18, 1951).

2-amino-1-naphthol conjugates have been identified in the urine of dogs and other species after the administration of purified beta-naphthylamine, a dye intermediate known to be a bladder carcinogen in man and the dog. The approximate correlation between the amounts of the conjugates in the urine and the incidence of bladder tumors in different species provides a possible explanation of the observed differing species susceptibilities. 2-amino-1-naphthol hydrochloride tested for local action on the bladder epithelium of the mouse, has been found to be a carcinogen of the same order of potency as 20-methylcholanthrene. -- Authors' Summary

411 The Toxicology of Dieldrin and Its Bearing on Field Use of the Compound. W.J. Hayes, Jr., F.F. Ferguson, and J.S. Cass. Am. J. Tropical Med. 31, 519-522, (1951).

Judging from experiments on nine species of laboratory animals, skin contamination of man with concentrates of the insecticide dieldrin would be hazardous; minor skin contamination with emulsions used in spraying might be tolerated without demonstrable damage. Crystalline dieldrin is absorbed by the unabraded skin almost or quite as readily as solutions in organic solvents. The effects on animals are listed; they are mostly neurological disorders. Animals killed by dieldrin do not usually show lesions sufficient to cause death. No injury has been found in workmen on limited operational programs. It appears that dieldrin can be used safely as an outside residual spray only by appropriately trained personnel. -- Cond. from Biol. Absts.

412 Selective Herbicides and Growth Substances. Pathologic Effects on Man During the Manufacture of the Ester of 2,4-D. M. Assouly. Arch. Mal. Profess. 12, 26-30, (1951). (French).

Workers employed in the manufacture of an ester of 2,4-dichlorophenoxyacetic acid complain of somnolescence with heaviness of the legs, irritation of the upper respiratory passages, gastralgia with loss of appetite, of a sweet taste in the mouth with increased salivation, a sensation of drunkenness, and hypersensitivity of hearing, the least sound causing them to jump. In animal experimentation it was shown that when 2,4-D was ingested or injected intravenously, high doses were required to produce intoxication. -- Biol. Absts.

413 Tissue Distribution, Accumulation and Elimination of the Isomers of Benzene Hexachloride. B. Davidow and J.P. Frawley. Proc. Soc. Exptl. Biol. Med. 76, 780-783, (April, 1951).

The four isomers of benzene hexachloride were found to be stored mainly in the adipose tissue of both rats and dogs, but some storage also occurs in other tissues. The gamma isomer was found to be the most

toxic after single doses, but the beta isomer has the highest chronic toxicity. The chronic toxicity of each isomer appears to bear a direct relation to storage in the adipose tissue. -- Cond. from Bull. Hyg.

414 Blood Cholinesterase Levels in Workers Exposed to Organo-Phosphorus Insecticides. J.M. Barnes and D.R. Davies. Brit. Med. J. 2, 816-819, (October 6, 1951).

The cholinesterase levels of 80 men and women exposed to organo-phosphorus insecticides in the field or factory have been determined. Three criteria of departure from normal variation of enzyme levels have been described. On the basis of these standards abnormal variations which are probably attributable to insecticide absorption have been recognized in 12 individuals. The departures from normality were very slight. No serious case of poisoning was observed. These observations emphasize the value of the test, and their significance in relation to the incidence of insecticide poisoning in field and factory workers is discussed. -- Authors' Summary

415 Health Hazards Associated with the Use of Airplanes for Dusting Crops with Parathion. F.R. Ingram. Am. Ind. Hyg. Assn. Quart. 12, 165-170, (December, 1951).

The use of aircraft for applying insecticides to crops is described with particular reference to California's experience in dusting with parathion. Atmospheric samples represented only potential exposures, since a gas mask is worn. Blood cholinesterase activity levels were determined at fifteen-day intervals. The tests constitute a valuable basis for estimating the efficiency of protection measures, and for recommending temporary change in work status. Methods and results of the tests are described. Individual safe practices are recommended.

-- Cond. from Author's Summary

416 Effects of Dimethyl and Diethyl Paranitrophenyl Thiophosphates on Experimental Animals. W.B. Deichmann, W. Pugliese, and J. Cassidy. Arch. Ind. Hyg. & Occ. Med. 5, 44-51, (January, 1952).

The toxicity of dimethyl paranitrophenyl phosphate was compared with that of the corresponding diethyl compound (parathion) in animal experiments. The toxicity of both compounds is increased by some solvents and decreased by others. A high degree of purification removes impurities which are more toxic than the compounds studied. The dimethyl compound is less toxic than the diethyl form, but it must be recognized that the dimethyl compound and its formulations are highly toxic. The safety measures recommended for parathion should be applied with equal vigor to insecticidal preparations containing the dimethyl homologue. Exposure by skin contact, inhalation, or ingestion must be carefully avoided.

-- Cond. from Authors' Summary

417 Ortho-Tricresylphosphate in Soft Igelit. Percutaneous Toxic Action. W. Borgmann and G.A. Hunold. Z. Hyg. Infektionskrank 133, 26-44, (1951). (German).

Tricresylphosphate is used to soften a polyvinyl chloride preparation under the name of Igelit, used for flexible tubing and wrapping material for food products and other materials. Technical tricresylphosphate is a mixture of its three isomers, of which the ortho form is most toxic. The ortho form comprises 30% of the commercial preparation. Experiments with rabbits showed that the phosphate can definitely be absorbed through the intact skin.

Particulars of the experiments and of the pathological results of the poison are fully presented. It was also found that human sweat and animal and vegetable fats can dissolve an appreciable amount of tricresylphosphate from softened Igelit. Such a material should not be used for the manufacture of articles which may come in contact with the skin. -- Cond. from Bull. Hyg.

418 Polyneuritis due to Parathion. H. Petry. Zent. Arbeitsmed. Arbeitsschutz 1, 86-89, (July, 1951). (German).

A case of polyneuritis in a worker with extensive exposure to parathion spray without respiratory protection is described. Treatment led to only partial recovery. -- Cond. from Bull. Hyg.

419 Toxic Chemicals in Agriculture: Report to the Minister of Agriculture and Fisheries by the Working Committee on Precautionary Measures Against Toxic Chemicals Used in Agriculture. H. M. Stationery Office.

This report calls attention to fatalities resulting from the use of insecticides, considers the protective measures now in use and recommends additional practices, especially in protective clothing and sanitation. An extensive summary of the report, abstracted from the Bulletin of the Committee on Pesticides of the A.M.A. is given in Arch. Ind. Hyg. & Occ. Med. 5, 174-176, (February, 1952).

420 Relative Toxicity of Insecticides. S.W. Simmons and W.J. Hayes, Jr., Soap & Sanit. Chem. 27, 148-150, (Dec., 1951).

A tabulation of accidental deaths caused by chemicals over the past ten years shows that (1) chemical poisoning occupies a minor place as a cause of death, and (2) that there has been no significant change in the rate of fatal chemical accidents, in spite of the introduction of new insecticides and other chemicals. Pesticides account for only 9% of chemical fatalities. This good safety record is due in part to intelligent enforcement of federal and state legislation, and in part to educational campaings. The toxicity of the various types of pesticides is reviewed. Proper vigilance will reduce the number of cases of poisoning.

421 Insecticides, Rodenticides, and Fumigants Employed in Public Health Activities. National Research Council, Division of Medical Sciences, Washington 25, D.C., (1952). Reprinted in Modern San. 4, 21-23, (Mar., 1952).

This is a selected list of pesticides which play an important role in public health activities, giving their common synonyms or trade names, chemical names, and formulae, together with notes on their mammal toxicity. This list was prepared by a subcommittee at the request of the Air Force field personnel and has been approved by the Committee on Sanitary Engineering and Environment for distribution to all interested workers in the field.

422 Toxicology and Hazard Record of the Newer Pesticides. F. Princi. Agr. Chemicals 7, 44-47, 97-103, (Jan., 1952).

The author discusses difficulties inherent in the assessment of toxicity of pesticides. It has been demonstrated many times that the results of animal experimentation cannot give reliable evidence on human toxicity. For instance nitrogen trichloride has been found injurious to dogs but there are no known cases of human poisoning. On the other hand, beryllium has failed to show in animals the same effects as on the human body. The only conclusive evidence, then, on toxicity to man rests upon clinical experience and reports of poisonings. The cases of poisoning by the other organic phosphates, organic mercury compounds, and chlorinated hydrocarbons have been mostly from either accidental or purposeful ingestion or from other accidental exposure involving gross carelessness.

That is particularly true of DDT, on which the reports are fullest. In the use of enormous quantities of pesticides, evidence of poisoning resulting from their use with ordinary care is almost nonexistent. There is no foundation for the sensational adverse publicity that has been given these materials.

423 A Contribution to the Study of Allergic Rhinitis of Occupational Origin. G. Mancioli. Rass. Med. Ind. 20, 21-37, (Jan.-Feb., 1951). (Italian).

Three cases of allergic rhinitis were found among 22 chromium workers exposed to chromate mists; the diagnosis of allergy was confirmed by a skin test. The author also examined 32 persons employed in flour mills, and found a positive allergic reaction to finely ground grain, but only six appear to have suffered from vasomotor rhinitis.

-- Cond. from Bull. Hyg.

424 Why Oxygen Pressure Has A Rapid Killing Effect. K. Leneggenhager. Z. Ges. Exper. Med. 116, 353-377, (1950). (German).

The subjective and objective symptoms due to an atmosphere of pure oxygen under a pressure of 4 to 6 atmospheres in rats, mice, frogs, flies, and men are described in detail. In men increased oxygen consumption

and carbon dioxide exhalation resulted, the body temperature rose approximately 0.5 degree, the blood carbon dioxide, sugar and pressure remained unchanged, while the pH fell from 7.564 to 7.491. Normal brain, liver, and kidney tissue had a strong reducing action, as evidenced by reduction of indigodisulfonic acid to the leuco base in less than 0.5 hour. Tissues of animals under oxygen pressure lost their reducing power. The data point to functional brain damage as the cause of death.--Chem. Absts.

INDUSTRIAL DUSTS

425 Silicosis of Sandstone Cutters in Switzerland. E. Burri. Z. Unfallmed. Berufskrankh. 44, 63-75, (Mar. 15); 134-157 (June 15, 1951). (German).

Although the quartz content of the sandstones worked in Switzerland is fairly high, the silicosis of stonecutters does not run a bad course. From 1933 to 1948, 86 stonecutters were found to have silicosis. The characteristic x-ray findings are: hard nodules, like calcifications, and later on, coatlike pleura indurations. Tuberculosis is the complication occurring most often. Despite silicosis and its complications, the sandstone cutters reach an age above the average of the Swiss population. Twenty contracted no silicosis in spite of long exposure to dust. As the workers are rather old when aware of the disease, they hardly ever change their occupation.

Medical and technical prophylactic measures are taken to protect the workers from silicosis, such as moistening the stones; but all work should be done in the open air or in huts equipped with air circulation.

-- Cond. from Bull. Hyg.

426 Tuberculosis and Anthraco-Silico-Tuberculosis Among Belgian Coal Miners. V. vanMechelen. Institute d-Hygiene des Mines, Hasselt, Belgium. Communication No. 84, 7 pp., (July 15, 1951). (French).

An examination of 49,216 miners brought to light 0.23% with active tuberculosis and 2.26% with healed tuberculosis of the lungs. These data suggest that tuberculosis is rare among Belgian working miners, owing possibly to the strict preemployment examination. Miners however, who have any respiratory trouble show a high incidence of tuberculosis. This infection is also frequent among those in an advanced stage of anthracosilicosis. BCG vaccination is not useful among those exposed to silica dust.

Freedom from further dust exposure does not improve prognosis if tuberculous infection is established. Medical supervision is required to detect early cases and to watch over those detected.

-- Cond. from Bull. Hyg.

427 Acute Silicosis in Alpine Tunnels. E. Grunwald and P. Minelli. Arch. Mal. Profess. 12, 321-323, (1951). (In French).

This report concerns three workers belonging to the same family who developed silicosis after comparatively short periods of exposure to dust while employed in tunnels in the Alps. The periods of exposure ranged from 2 years to 3 years and 4 months. There was no history of tuberculosis in the family, and all bacteriological tests were negative. All the cases were progressive and severe, and one man died while under observation. (No information is given as to the constitution of the dust hazard or its composition.) -- Cond. from Bull. Hyg.

428 Pneumoconiosis in Agate Grinders. H. Schramm. Zentr. Arbeitsmed. Arbeitsschutz 1, 105, (Sept., 1951). (German).

In a factory in southwestern Germany agate stones are ground with sandstone grinding wheels. Silicosis in all stages was observed in 29 of the 318 grinders examined. Those who had moderate or severe silicosis had been in the occupation 27 to 30 years. Some improvement in conditions has been achieved by better apparatus and by irrigation of the sandstones. but elimination of the dangerous dust can be more nearly attained by the substitution of artificial grindstones.
-- Cond. from Arch. Ind. Hyg. & Occ. Med.

429 Silicosis from Melting Bauxite. M.N. Krasnagorskaya. Gigiena i Sanit., No. 10, 26-28, (1951). (Russian).

Examination of working conditions at the sites of bauxite melting and production of silicon carbide revealed rather heavy dust formation during the operation. In several cases silicosis in various stages was detected, but no severe cases were found. Better ventilation is suggested.
-- Chem. Absts.

430 Aspects of the Silicosis Problem. P.F. Holt. (Abstract of Lecture). Nature 169, 306-307, (February 23, 1952).

The author reviews the theoretical aspect of silicosis, with attention to recent developments, such as the action of silica on proteins, the effect of alkalies, and the presence of organic silicon compounds in the tissues.

431 The Bone Marrow in Silicosis. G. Saita and C. DiNaro. Med. Lavoro 42, 201-210, (June-July, 1951). (Italian with English Summary).

Myelograms for 20 cases of silicosis were studied by means of sternal puncture. In pure silicosis the bone marrow is little affected. When tuberculosis is present, the myelogram is similar to that found in chronic infections. The various pathological features are described.
-- Cond. from Bull. Hyg.

432 The Cardiovascular Reactions of Silicosis and Anthracosilicosis. A Contribution to the Study of "Cor Pulmonale." F. Lavenne. Institute d'Hygiene des Mines, Hasselt (Belgium). Communication No. 83, 11 pp., mimeographed, (1951). (In French).

Cor pulmonale is a frequent complication of silicosis and anthracosilicosis, especially of the massive conglomerate type. Among the coal miners of South Wales with anthracosilicosis 23.7% died of right heart failure. Cor Pulmonale develops as a result of both pulmonary and cardiac insufficiency. It is frequently difficult to separate the pulmonary manifestations from the cardiac manifestations. The development and stages of cor pulmonale can be established by definite electrocardiographic, x-ray and clinical criteria. Some of these criteria are discussed by the author. Miners who have been exposed over a long period and whose lungs contain many "coal nodules" should be kept on the job, since pulmonary fibrosis is inevitable.

However, the heart and lungs of such miners should be examined at least once a year. In the determination of worker disability, electrocardiographic findings, as well as the use of the x-ray and computation of maximal breathing capacity, serve to establish the degree of pulmonary and cardiac pathologic change. -- Arch. Ind. Hyg. & Occ. Med.

433 The Action of Different Forms of Silica in Sensitized Animals. W. Koch. Frankfurter Z. Path. 60, 58-96, (1949). (German).

Animals were given repeated subcutaneous injections of quartz or colloidal silica, together with albumen, nucleic acid, or a specific antigen mixture called "Gripcalin." Animals were killed and examined from a few weeks up to 36 months. The tissue reactions are described in detail. With quartz, a foreign body granuloma is followed after a few weeks by necrosis which is complete after five months. Fibrosis is just visible after six months and very well developed after three years. Fat accumulates during the necrotic and early fibrotic stages, but little fat is seen in the late fibrotic stage.

When colloidal silica is administered, the early stages are the same but no fibrosis occurs up to 18 months. Cysts then develop, but not at the site of the injections. They may reach several inches in diameter. The cysts contain 4.4% silica; 92% protein and water, 3.5% lipoids and fats, and 1.1% other ash. The animals lose resistance to infection and die within a few months. A detailed but speculative discussion follows the report of the results. One chief point is that the action of the quartz is due both to foreign-body effect and silica solubility.

With colloidal silica, small amounts are completely removed; too large amounts lead to instantaneous death; intermediate doses as in the experiments described result in the formation of a complex between silica, fat, and protein. -- Cond. from Bull.Hyg.

434 Penetration of Dust Particles and Sites of Dust Stores in Pneumoconiosis. G. Mottura. Brit. J. Ind. Med. 9, 65-69, (January, 1952).

The author presents additional evidence in support of his theory that dust particles in the lungs are generally carried as such in the lymph stream and in the liquid on the surfaces and in the interstices of alveolar tissue, and not primarily by phagocytes. (IHF Absts. 77, 78, Jan., 1952).

435 Streptomycin Treatment in Silicosis with Tuberculosis. F. Lang. Mtt. der Med. Abt. der Suva, No. 27, 8 pp., (Jan., 1951). (German).

No beneficial effect followed streptomycin treatment of 25 out of 32 cases of silicosis with tuberculosis. In the other seven there was some improvement, but in only four was even partial working capacity restored. No reports are as yet ready on the effect of streptomycin combined with other drugs. -- Cond. from Bull. Hyg.

436 Experimental Asbestosis. W. Behrens. Schweiz. z. Allg. Path. u. Bakt. 14, 275-297, (1951). (In German).

Pure chrysolite asbestos was injected intraperitoneally and intratracheally into mice and rats. The fibers varied from 5 to 180 microns in length. Unsuccessful attempts to secure fibers of standard length are described. The general picture is one of non-specific focal fibrosis resulting from the introduction of foreign bodies. No solution or toxic action of the asbestosis could be demonstrated. Asbestosis bodies were not formed. The theories of the pathogenesis of asbestosis are discussed. -- Cond. from Bull. Hyg.

437 Pneumoconiosis Due to Talc. G. Kohler, G. Leopold, and W. Steyer. Z. Artzl. Fortbildung 45, 375-382, (July 15, 1951). (German).

A survey was made in a factory in Leipzig making talc powder for cosmetic and medical purposes, where until 1944 talc was the only mineral base used, although minor amounts of kaolin and colloidal silica were used for a time later. Among 28 workers one case of stage 2 pneumoconiosis and two of stage 1 were found after 19, 25 and 30 years exposure respectively. Clinical observations show little or no disability for stage 1, but emphysema, bronchitis, a reduced vital capacity, and a shortened apneic pause for stage 2.

The radiological pictures resemble asbestosis rather than silicosis. Working conditions and materials are described, and size distributions are given. Initial and annual x-ray checks are recommended. Modern exhaust ventilation has greatly improved dust control since 1940. -- Cond. from Bull. Hyg.

438 Pseudoasbestosis Bodies (So-Called Carborundum and Graphite Bodies). A. Glauser and J.R Ruttner. Experientia 7, 275-276, (1951). (German).

Curious bodies (pseudoasbestosis bodies) caused by the presence of the cubic modification of carborundum and of graphite in the lungs of a pencil factory worker are described. The substance surrounding the minerals showed the same physical and chemical qualitites as are reported in case of asbestosis bodies.--Authors' Summary in Biol. Absts.

439 Effect of Barium Sulfate Dust in Man. R. Camba. Med. Lavoro 42, 221-226, (June-July, 1951). (Italian).

A clinical and radiological study has been made of 14 workmen who had been employed for periods varying from 2 to 24 years in mining, grinding, and sacking barium sulfate in Sardinia. No obvious radiological evidence of pneumoconiosis was seen, but only clinical or radiological evidence of active or healed inflammatory disease of the respiratory system, including the pleura, not related to occupational causes.
-- Author's English Summary, Bull. Hyg.

440 The Experimental Production of Radiographic Shadows by the Inhalation of Industrial Dusts. Part II: Zircon ($ZrSiO_4$). H. E. Harding and T.A. Lloyd Davies. Brit. J.Ind. Med. 9, 70-73, (January, 1952).

Dense radiological shadows are produced by aggregates of phagocytosis containing zircon. Apart from phagocytosis and possibly slight small cell accumulation, there is no evident reaction to the presence of zircon in the lungs of rats. Since zircon is less toxic than silica (and possibly completely inert), and since animal experiments suggest that it is less readily inhaled into and/or retained in the lungs than the latter, it could provide a desirable substitute for silica.
-- Authors' Summary

PHYSICAL ASPECTS OF THE ENVIRONMENT

441 Sound, and Its Measurement. L. L. Beranek. Arch. Ind. Hyg. & Occ. Med. 5, 97-108, (February, 1952).

This paper is the first of a series read at a Conference on the Problems of Noise in Industry, held at Atlantic City, April 23, 1951. The principles of sound measurement are discussed. In order to approximate the response of the ear, it is necessary both to measure the sound level and to analyze the frequency of the sound. Also, three adjustments of the sound level measuring instruments are necessary

to cover the audible range. The sound-level meter, the analyzer, and recorder, and their accessories are described. Methods of reducing noise are discussed briefly.

442 Industrial Plant Environmental Study. C.R. Williams.
Arch. Ind. Hyg. & Occ. Med. 5, 108-112, (February, 1952).

There are many problems to be solved before adequate noise appraisals can be made in plants, and measurements at present must be in the nature of research. Portable frequency analyzers are in very short supply, and only an increased demand can correct that situation. There is little information on the sound levels and frequencies that can damage hearing, and our only hope is the accumulation of data in industrial plants. Important aspects of a noise survey include: (1) study of details of construction of the plant; (2) obtaining sound-level data throughout the plant at fixed stations; (3) detailed studies of individual noise sources; and (4) study of noise sources in an attempt to determine precisely what is responsible for each of the various frequency band levels. In addition, audiometric studies of exposed individuals should be conducted simultaneously with the noise survey wherever possible.

443 Estimating Percentage Loss of Hearing. H.A. Carter.
Arch. Ind. Hyg. & Occ. Med. 5, 113-116, (Feb., 1952).

The author discusses the method of estimation of hearing loss adopted by the American Medical Association in 1942, and described by him at that time, (IHF Abst. 367, 1944). Now after nine years its limitations are beginning to appear, and further examinations of the method, including the compensation aspects, are being made by several organizations.

444 Noise Safety Criteria. K.D. Kryter.
Arch. Ind. Hyg. & Occ. Med. 5, 117-120, (Feb., 1952).

Three criteria for noise safety are necessary; (1) for voice communications; (2) for deafness; and (3) for nonauditory work output. Values for the limiting sound level suggested are 40, 85 and 100-110 decibels under specified conditions of pressure and frequency. However, especially for deafness effects, the spectrum of a noise must be analyzed, and the value given may be revised upward for certain frequencies. The ordinary factory noise at the level given can be tolerated with no detrimental physiological or psychological effects, except possible ear damage, when the worker is adapted to the noise.

445 Ear Lesions Caused by Acoustic Trauma. S.R. Guild.
Arch. Ind. Hyg. & Occ. Med. 5, 121-123, (February, 1952).

The normal anatomy of the ear and pathologic cases are described with the assistance of a number of slides. The primary lesion caused by acoustic trauma is the destruction of the hair cells of the organ of Corti. It may be confined to a few outer hair cells or may include a large portion of the outer and inner cells with damage to the supporting parts. Changes may also occur in the ganglion cells and nerve fibers. All these changes are irreversible.

446 Clinical Aspects of the Problems of Noise in Industry. H.P. House.
Arch. Ind. Hyg. & Occ. Med. 5, 124-128, (February, 1952).

The diagnosis of early acoustic trauma is not difficult. Audiometric tests will reveal a characteristic dip in the frequency of 4000 cycles per second long before the patient becomes aware of symptoms referable to his ear. The differential diagnosis of more advanced acoustic trauma, after the patient becomes aware of his hearing loss is more difficult. Therefore preemployment and routine periodic audiograms are essential not only to establish an accurate diagnosis, but much more important, to detect acoustic trauma at the earliest possible moment in order that protective measures may be instituted. -- Author's Summary

447 Noise and Noise Reduction: Control Methods Applied. W.D. Boynton.
Arch. Ind. Hyg. & Occ. Med. 5, 129-137, (February, 1952).

The author discusses the fundamentals of noise measurement and effects and describes the methods of noise reduction used in a particular factory. Installation of sound-absorbing materials only restricted the spreading of noise. Enclosing the machines made access difficult. Analysis of noise from parts of the machines located local sources and in many cases substitution of less noisy parts was found practicable.

448 The Legal Aspects of Occupational Deafness. N.S. Symons.
Arch. Ind. Hyg. & Occ. Med. 5, 138-156, (February, 1952).

The author presents a number of compensation cases in which deafness was involved, coming under the jurisdiction of the New York State law. They illustrate a number of problems involving inconsistencies of the law and difficulties in assessing disability. The author maintains that the intent of law is to provide compensation only where there is actual disability, in spite of court decisions to the contrary. Several unanswered legal problems are presented. "We should seek a solution which is fair to the individual, to industry, and to the public. If this be our goal, I am confident that the answer to the problem of noise in industry will not be long delayed."

449 The Noise Problem in Industry. H. T. Walworth. Am. Ind. Hyg. Assn. Quart. 13, 17-22, (March, 1952); also Tenn. Ind. Hyg. News 9, 1-7, (January, 1952).

The author calls attention to a number of problems to be solved in order to evaluate the physiological effect of noise. He shows that in the broadest meaning of industrial hygiene, the measurement and control of noise is one of its proper functions. Before permissible noise levels are established, the factors of frequency and individual susceptibility are to be considered, and at present the data on those points are insufficient to develop standards. The methods of noise measurement are described, including frequency analysis, and their limitations are discussed. The basic methods of noise control include substitution of products manufactured by quiet processes, segregation of noisy processes, and the use of ear protectors.

So far the factors of comfort, efficiency, and cost of ear protectors have not been generally evaluated, but they are being studied. Industrial hygienists should acquire a knowledge of the basic principles involved in noise control.

450 How to Baffle Plant Noise. Anon. Occ. Hazards 14, 47, 70, (Mar., 1952).

In a particular machine shop, noise was greatly reduced by hanging a series of baffles from the ceiling. They consist of rigid acoustical panels of fibrous glass, one-half inch thick and measuring 2 by 4 feet, enclosed in plastic film, and hang about 5 feet apart. Noise has been reduced 35% on the average and the men converse in normal tones throughout the area.

451 Influence of General Hypoxia on Local Cold Injury. J. Pichotka, R. B. Lewis and U. C. Luft. Texas Rep. Biol. & Med. 9, 601, (1951).

Observations on frostbite suffered in aircraft and on mountains indicate that the incidence and severity of local cold are greater at high altitudes than at sea level. General hypoxia was suspected as a contributing cause, and animal experiments were conducted to test that possibility. It was found that hypoxia only during exposure and up to thirty minutes before exposure did not affect the extent of necrosis. However, hypoxia present after local cold injury increased the extent of resulting damage, in direct relation to the period of hypoxia. This effect may be due either to local oxygen deficiency or to impairment of the peripheral circulation. When hypoxia also preceded the cold injury, the outcome varied and the difference must be attributed to secondary factors.

-- Cond. from Arch. Ind. Hyg. & Occ. Med.

RADIOACTIVITY AND X-RADIATION

452 Industrial Radiation Hazards in New York State. May R. Mayers. Monthly Rev., N. Y. State Dept. Labor 31, 11-12, (Feb.-Mar., 1952).

In addition to radium dial painting operations, there are several industries in New York State which involve exposure to radiation and which will be investigated by the Division of Industrial Hygiene. They include the use of the x-ray and fluoroscope in inspection of spark plugs and inspection of plastic moldings, fluoroscopes in shoe stores, and the radioactive static eliminator. Each of these applications is briefly described.

453 Recommended Safe Practice for Radium Dial Painting Plants. Anon. Monthly Rev., N. Y. State Dept. Labor 31, 5-8, (Feb.-Mar., 1952).

The recommendations, outlined in some detail, represent a minimum of precautions necessary to conform with accepted practice for the safe handling of radioactive luminous materials, and the prevention of radium poisoning. The recommendations include housing and equipment, good housekeeping, routine plant inspections, radiation measurements, ventilation, lighting, personal hygiene, medical supervision, and safety standards.

454 Permissible Dosage and Considerations of Calculated Risk. C. F. Behrens. U. S. Atomic Energy Commission, (NP-3546), 21 pp., (July 2, 1951).

Pathological, hematological, and genetic effects of radiation are reviewed. Permissible limits are discussed from the standpoint of cumulative effects of minimal amounts over long periods of time, occasional exposures of patients in clinical radiology, the effects of an atomic bomb burst, continued effects from an atomic bomb due to contamination by fission products or resulting from induced radiation, exposures involved by purposeful contamination by radiological warfare agents, and exposures incidental to operation of nuclear reactors, more especially when and if employed under conditions when adequate shielding may not be practicable. Calculated risk exposures are discussed and compared with permissible dosage ranges.

Internal hazards from radioactive isotopes are discussed briefly. A table of permissible dosage determinations for both external and internal radiation exposures is included. -- Nuclear Sci. Abstr.

455 The Use of Small Protection Films for the Estimation of the Doses Received on the Fingers and Hands During Radium Manipulations. T. M. Robb and R. E. Ellis. Brit. J. Radiol. 25, 100-102, (Feb., 1952).

A method of measuring the finger and hand doses received during radium operations, both medical and physical, using small standard x-ray film packs, is described. The initial results are also published.
-- Authors' Summary

456 Dosages Received by Patients During X-Ray Diagnostic Examinations. F. Wachsmann. Fortschr. Gebiete Rontgenstrahlen 75, 728-733, (December, 1951). (German).

The dosages received by patients during routine x-ray examinations were measured; the values found agree with those known from earlier investigations by other authors. Even with modern radiography techniques the dosages given are sometimes considerable. Thickening of the filter was found to be a possible means of dosage reduction. A nomograph is given with the aid of which dosage determinations can be made easily and quickly. -- Author's Summary in Nuclear Sci. Absts.

457 The Hazard Involved in the Use of Carbon-14. H. E. Skipper. Nucleonics 10, 40-44, (Feb., 1952).

Carbon-14 is the isotope most generally used in laboratories. When used with caution and as an experimental tool, it is considered nonhazardous. Evidence and new data to support this conclusions are presented with a discussion of the nature of the hazard. Only a small amount of radioactive carbon from inhaled carbon dioxide is stored in the tissues. When barium carbonate dust is inhaled, the radioactive carbon is converted quickly to carbon dioxide.

458 The Treatment of Post-Irradiation Infection. C. P. Miller, Carolyn W. Hammond and Marianne Tompkins. Atomic Energy Commission, (AECU-1816), 16 pp., (no date).

These experiments seem to demonstrate that generalized infection played a significant role in the death of mice exposed to moderate doses of total-body x-radiation. Infection was caused by bacteria belonging to the intestinal flora. Treatment with antibiotics reduced the mortality to a significant degree; and, among the antibiotics tried, streptomycin was the most effective. Next in order of effectiveness were chloroamphenicol, aureomycin, and terramycin, among which there was no demonstrable difference in therapeutic value. -- Nuclear Sci. Absts.

459 The Hazard of Radiation. A.E. Heustis and D. Van Farowe. Radiology 57, 832-836, (Dec., 1951).

The Division of Industrial Health of the Michigan Department of Health made a study of the operation of fluoroscopic and x-ray installations in the eleven state mental hospitals, in an effort to determine whether personnel were being subjected to hazardous amounts of radiation. The results of the investigation are tabulated and fourteen factors to be considered in eliminating such hazards in hospitals are given.

-- Nuclear Sci. Absts.

ENVIRONMENTAL MEASUREMENTS

460 Determination of Oxidizing Impurities in the Atmosphere. E. Effenberger. Z. Anal. Chem. 34, 106-109, (1951). (German).

The oxidizing effects of ozone, nitrogen peroxide, and chlorine were studied by passing the gases through buffered solutions of potassium iodide. The effect of reducing the pH value of the potassium iodide solution was studied. The increase in oxidizing power was particularly noticeable with nitrogen peroxide. On the basis of the different oxidizing effects it was possible to work out a simple method of determining each gas but when three of the gases are present it is necessary to set up three simultaneous equations, after working at three different pH values.

-- Chem. Absts.

461 Determination of Carbon Monoxide in Air. T. Kani. Japan. J. Pharm. & Chem. 23, 293-298, (1951).

A method for the determination of small amounts of carbon monoxide in air is described. Any acid, alkali, and organic gases that might form carbon dioxide in the presence of heated hopcalite are initially removed by passage through bromine water, potassium hydroxide solution, 98% sulfuric acid, or activated charcoal. Purified air thus obtained is heated to 120°, is led through a tube filled with hopcalite, and the resultant carbon dioxide is absorbed in 2 cc. of 0.02 N barium hydroxide solution. The residual barium hydroxide is titrated with 0.02 N oxalic acid and the amount of carbon monoxide in the sample is calculated from the amount of alkali required for neutralization. One cc. of 0.02 N barium hydroxide is equivalent to 0.224 cc. carbon monoxide at standard conditions. The analysis of 350 cc. of sample containing 0.01 to 0.005% carbon monoxide takes about 1.5 to 2 hours.

-- Cond. from Chem. Absts.

462 Acid-Bleached Fuchsin in Determination of Sulfur Dioxide in the Atmosphere. P.F. Urone and W.E. Boggs. Anal. Chem. 23, 1517-1519, (October, 1951).

Steigmann's colorimetric method for determining sulfur dioxide was modified to make it better applicable to small quantities in air. Ten liters of air are passed through 10 mls. of a solution of 5% glycerol in 0.1 N sodium hydroxide solution in a midget fritted-glass bubbler, at 20 liters per hour. An aliquot of the solution is mixed with the indicator solution, containing basic fuchsin, sulfuric acid and formaldehyde. After 30 minutes, the extinction of the solution is read in a colorimeter or spectrophotometer at a wave length of 580 millimicrons, and compared with a standard curve. Interfering substances are eliminated by precipitation with mercuric chloride. Concentrations of 0.01 ppm may be determined by this method.

463 The Determination of Small Amounts of Tetranitromethane in Air. V.B. Vouk and O.A. Weber. Brit. J. Ind. Med. 9, 32-38, (Jan., 1952).

A study of methods of determining tetranitromethane showed that the Sievers reaction with some modifications may serve as an excellent method for small quantities in air. Essentially the method consists of collecting the vapor in ethanol, adjusting the pH to 6 by addition of pyridine, adding benzidine solution, making up to volume, and reading with a spectrophotometer at a wave length of 400 millimicrons. Tetranitromethane can be determined in amounts of 2 micrograms per ml. with a probable error of not more than 1.3%, if the procedure is followed closely.

464 Industrial Atmosphere: III. Determination of Phenol in the Atmosphere of Factories Producing Phenolformaldehyde Resins. J. Roubal and Zdrazil. Pracovni Lekarstvi 3, 148, (June, 1951). (In Czechoslovakian).

A method for the polarographic determination of phenol in air is described. The method is being applied for the determination of phenol in the air of press rooms where bakelite is being processed and for the determination of phenol contamination of the air in the process of pressing motor-car-brake linings. The results of these analyses are given.

-- Arch. Ind. Hyg. & Occ. Med.

465 Electric Analysis of Aerosols. M. Pauthenier and R. Challande. Compt. Rend. 231, 114-115, (July, 1950). (French).

Aerosol is made to flow through an electric field, essentially constant throughout the annular space between a wire and a cylinder. The potential difference between the two causes a glow discharge. Particles transported by aerosol obtain an electric charge and are precipitated on the

inner cylinder wall at a rate determined by the particular size and the number of particles per unit volume of aerosol. This principle is said to be used in an apparatus for studying industrial atmosphere.

-- Atm. Poll. Bull.

PREVENTIVE ENGINEERING

466 Design of Exhaust Systems for Granite Dust. F.H. Stebbins. Sheet Metal Worker 42, 43-45, (July, 1951); 43-45, (Sept., 1951); 43, 46-49, (Nov., 1951).

A granite dust collecting system is described and illustrated. Features include a chip trap, a flanged hood, an intake hood, and a hood surrounding the bush hammer. The construction of hoods and pipes is discussed, including dampers and blast gates, and a suggested design for hood supporters. The selection of a separator is also discussed.

467 Observation and Control of Dust in Foundry Dressing Operations. I. Control of Dust. R.F. Ottignon. II. Observation of Dust. W.B. Lawrie. Paper 1008 to Inst. Brit. Foundrymen, 20 pp., (1951).

The paper describes new methods of observation and control of the dust cloud generated during these operations. It describes the application of local exhaust ventilation to the dressing of small and medium size castings. The results indicate that increased efficiency may be attained by using an air jet to control the direction in which the dust cloud flows.

-- Atm. Poll. Bull.

468 Artificial Fog for Improving Atmosphere in Mines. G. Marcello. Securitas, pp. 106-108, (July-August, 1950).

The author gives an accout of experiments recently carried out while driving a mine road in order to isolate the gases and dust resulting from shot-firing by means of an artificial fog composed of a mixture of air, glycerin, and water. The article gives details of the appliance used and on the shifting of the fog screen during different phases of work. The experiments are being continued in Italy to perfect the system and to extend its application.

-- Atm. Poll. Bull.

469 Dust Suppression by Water Infusion in Coal Mines, Working and Economic Results. W. Thomae. Bergb. Rundschau 3, 107-112, 168-172, (March; April, 1951). (German).

The paper gives a detailed account of experience with water infusion in a Ruhr mine since 1949. The equipment is briefly described. Detailed evaluation of the results was difficult because of frequent changes in conditions, but the average result was a 75% reduction of total dust at the coal-face and transfer points and a 55% reduction of the fine dust in the return air. -- Cond. from Bull. Hyg.

470 Dry Suction Apparatus to Combat Silicosis. W. Owsiany. Bergb. Rundschau 3, 119-120, (March, 1951). (German).

The article describes and illustrates the use of this dust extractor which is used in pneumatic drilling. It is a kind of vacuum cleaner which sucks the dust produced in drilling through bores immediately below the crown of the drill into a large container where the dust is deposited. The air is filtered through several layers of fabric and discharged into the working room. The suction is produced by compressed air injector. The dust is either caught dry in a large paper bag suitable to hold about 80 feet of drillings or alternatively the dust may be caught in water and later discharged as sludge. Changing of bags must be done by specially trained personnel. The normal model serves two drills simultaneously and it can be used in a horizontal position in narrow development ends. A greater use of this dust extractor is recommended. -- Bull. Hyg.

471 Dust Control by the "Salt" Process. H. Spies. Gluckauf 87, 248-253, (Mar. 17, 1951). (German.

In a number of German coal mines, dust control is effected by covering the floor, walls, and roof with a layer of salt about 1-1/4 inches thick. The layer is periodically moistened by spraying. Part of the salt dissolves and crystallizing out again it comes to the surface by efflorescence and consolidates any dust that has settled out in the meantime. The salt is applied to the walls and roof by spraying in two stages, the first with a mixture of salt with 5% of lime. The process has been found very successful over a number of years. It is claimed to give protection against explosion, fire, and silicosis hazard. Stone dusting may be unnecessary if the salt process is used, and experiments to test this possibility are under way.
-- Cond. from Bull. Hyg.

COMMUNITY AIR HYGIENE

472 Pollution Control. Chemical Engineering Report. Chem. Eng. 58, 111-158, (May, 1951).

A group of papers reviewing various phases of water and air pollution is presented. The section on air pollution includes the following subjects: waste products causing air pollution by L.. Silverman;

effect of weather conditions and topography by M. Sittenfield; filters by W.O. Vedder; types of collectors by C.E. Lapple; electrical precipitators by W.T. Sproull; sonic agglomeration by G. Kiddoo; and odor removal by K.A. Bownes.

MANAGEMENT ASPECTS

473 The Importance of Human Relations Research for Industrial Productivity. R.L. Kahn. Manufacturing Management Series, No. 200, pp. 15-28, (1952). American Management Assn., 300 West 42nd St., New York 36,

A study of the relation of the foreman's attitude and qualifications to productivity revealed that production is definitely higher when: (1) the foreman appears to his men to have superior planning ability; (2) the supervisor spends more time in supervision and less in production work; (3) the foreman has had supervisory training; (4) the supervisor is employee-centered rather than production-centered; (5) the foreman is helpful and understanding when his men do a poor job; (6) the group takes pride in the work; and (7) when there is group solidarity.

474 Hours of Work and Rest and Annual Holidays in Dangerous and Unhealthy Occupations. Internat. Labour Rev. 64, 325, (October, 1951).

The report contains an analysis of regulations adopted by different countries (as national legislation) to provide more favorable conditions for adult male workers employed in dangerous and unhealthy occupations. The measures employed are discussed under the following headings: (1) Hours of work. The purpose of legislation here is to reduce the time of exposure to hazardous conditions by limiting daily and weekly working hours. Overtime work is prohibited in some countries, while in others it is permitted, subject to strict conditions. (2). Weekly rest. Its value is recognized, and one free day is now given to practically all workers. (3). Annual holidays. Extra time is allowed, and sometimes more than one holiday a year is given. The holiday may be spent in special resorts. At least one country forbids giving cash compensation in lieu of the holiday.

-- Arch. Ind. Hyg. & Occ. Med.

475 Practical Problems of Nurses Working Alone in Industry. Louise Candland. Nursing World 216, 32-35, (Jan., 1952).

A nurse should not accept a position in industry where she will work alone until she has had several years of varied experience under supervision and has gained experience in carrying out her own program. A number of suggestions are given regarding interviews on seeking and

entering employment, duties, equipment, space, and sources of information. A number of reported faults of nurses are listed, also several failings of employers in dealing with nurses, including: (1) low income; (2) failure to set up proper job classifications for industrial nurses and to accept the standards of nursing service recommended by industrial nursing associations; (3) failure to allow time and expenses to attend professional meetings and to purchase nursing literature; and (4) failure to provide adequate medical supervision.

476 Training and Work at the Lighthouse. The Lighthouse of the New York Association for the Blind, 111 E. 59th St., New York 22, N.Y., 22 pp., (1951). Available at the above address.

This booklet describes the rehabilitation program of this organization. Training in handicrafts, instruction in Braille, a part-time work center, commercial training, and newsstand training are features of the program. A total of 414 blind persons trained at the Lighthouse and employed in industry are listed, in addition to 398 employed or supervised at the Lighthouse.

ACCIDENTS AND PREVENTION

477 The Human Approach to Safety in the Chemical Laboratory, Workshop and Plant. L.J. Burrage. Research 5, 62-66, (February, 1952).

The author, who is director of a large research laboratory, describes the system of training and assimilating new assistants, with the aim of making them take a personal interest in the work and cooperate with others. Safety instruction is an integral part of this training. Workmen are interested and instructed in a similar manner. "The aim of any safety organization must be the creation ofsuch a state of affairs that every man or woman is his or her own safety officer." In some departments that situation has been achieved. Features of the safety program include painting safety equipment green, the use of attractive safety booklets, and display of safety equipment with photographs of persons dressed in the equipment.

478 Warren Petroleum Corporation Propane Fire and Explosion, Port Newark, N.J., July 7, 1951. Report by The National Board of Fire Underwriters, 85 John St., New York 38, N.Y., and The Fire Insurance Rating Organization of N.J., 31 Clinton St., Newark 2, N.J., 12 pp., (1951).

Seventy propane storage tanks of 30,000 gallons individual water capacity were ruptured as a result of the fire and explosions at the Propane

Storage Terminal of the Warren Maritime Corporation. There were no deaths, but three men were critically injured. Two tanks were ruptured and buildings damaged on adjoining property. The total damage was over a million dollars. This report relates the story of the fire and its possible causes. The results of the investigation brought out several points worthy of consideration for safety in future installations.

They include thermal insulation of large tanks, water spray systems with remote control, subdivision of long transfer lines by remotely controlled shut-off valves, staggered arrangement of tank batteries and appropriate fire walls.

MISCELLANEOUS

479 Leptospirosis in England and Wales. J.C. Broom. Brit. Med. J. 2, 689-697, (Sept. 22, 1951).

Leptospirosis, or Weil's disease, is a parasitic infection to which agricultural, sewerage, and coal-mine workers are exposed. A short review is given of the history and classification of the genus leptospira, the distribution of different species, and of the diseases they produce in different domestic animals. An analysis of 465 cases calls attention to its high incidence among agricultural workers and the number of infections contracted while bathing. The incidence among miners has been reduced by improved hygiene and other causes. The investigation included 54 cases of canicola fever, a similar disease, and the differences between the two are discussed. Improvement of methods of diagnosis are considered. The use of penicillin is ineffective. Preventive methods are discussed.

480 Leptospiral Meningitis. Report of a Case Resembling Swineherd's Disease Due to Leptospira Pomona in the United States. T.B. Krouse and M.M. Sigel. Ind. Med. & Surg. 21, 121-123, (March, 1952).

A case of meningitis in a handler of diseased swine carcasses is presented. L. pomona was the most likely etiologic agent of this meningitis, as evidenced by a rise in agglutination titer against this organism. In view of the previously unsuspected incidence of leptospiral infections due to Leptospira icterohemorrhagiae and canicola, attention is called to this additional species as a cause of infection in this country. Leptospira pomona must be considered in the differential diagnosis of aseptic meningitis, particularly when the occupational history suggests close contact with animals such as horses, cattle and swine, or their products. -- Authors' Summary

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