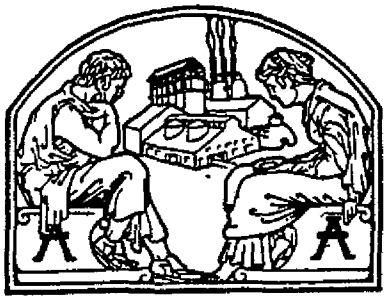

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends

SEPTEMBER, 1950
(Vol. 14, No. 9)

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

JOHN FRANCIS McMAHON

1903-1950

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 non-profit association of industries for the advancement of healthful working conditions.

Vol. 12 September, 1950 No. 9

JOHN FRANCIS McMAHON, 1903-1950

At noon on September 15, while at his desk, John F. McMahon was stricken with a coronary occlusion that caused immediate death.

He joined the staff of Industrial Hygiene Foundation in 1936 shortly after its formation and his ambitions and career became one with the Foundation. In 1942 he was made Managing Director of the Foundation and Administrative Fellow of Mellon Institute. His unbounded energy and outstanding leadership were rewarded by the growth and prominence of the Foundation in the field of occupational diseases and industrial hygiene and by a place of eminence for himself. His many forceful articles on industrial health have induced the serious attention of industrialists, scientists, publishers, educators, underwriters, and personnel specialists.

Dr. E.R. Weidlein, Director of Mellon Institute, paid the following tribute to him: "For the past decade he was a front leader in demonstrating the essentiality of conserving and developing human resources in the industries, in strengthening occupational humanics, in inducing the building of better places to work. He was indeed a foremost and most successful exponent of the promotion of executive and worker health in industry. His loss is irreparable."

According to Dr. W.A. Hamor, Mr. McMahon's adviser for fourteen years in the Institute: "His great concentrative and synthesizing power, his dynamic personal force, his keen judgment and foresight, his high sensitiveness to human values put the life into the Foundation's structure. I was his close friend and will never forget his fairness, sincerity, perseverance, inspiring executive strength, open-mindedness and sense of humor, all of which are unparalleled in my experience."

Born in South Waverly, Pa., in 1903, John McMahon attended schools at Sayre, Pa., and then graduated with a B.A. from the University of Notre Dame in 1928. From 1929 to 1931, he served as a reporter on the New York Sun. For the next two years he was assistant to James T. Grady, public relations director for Columbia University, the American Chemical Society, and other technical organizations. In 1932, Mr. McMahon came to Pittsburgh as night editor of the Associated Press. After a four-year stint with the AP, he joined the Industrial Hygiene group at Mellon Institute to attend to public relations.

He was a member of the American Management Association; American Industrial Hygiene Association; A.T.A.E.; Pittsburgh Personnel Association; General Health Council Western Pennsylvania Safety Council (Board member); Pittsburgh Playhouse (Board Member); University Club (Pittsburgh); Western Pennsylvania Historical Society; Pennsylvania Governor, Notre Dame Foundation; Serra International; and the Chemists Club (N.Y.) During World War II he served as Chairman, Public Relations, War Finance Committee (Bond Drive), Western Pennsylvania.

Mr. McMahon is survived by his widow, Mrs. Ruth B. McMahon, and by two sons, John F., 14 and Michael B., 11.

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Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh 13, Pa.

INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

1013 Symposium on Orthopedic Appliances.

The Third Annual Symposium on Orthopedic Appliances, sponsored by the Sarah Mellon Scaife Foundation's Multiple Fellowship on Orthopedic Appliances at Mellon Institute, together with the University of Pittsburgh School of Medicine, met at Mellon Institute during the week of September 18. Over 120 brace-makers, orthopedic surgeons, physio-therapists, and related specialists attended formal lectures and visited a series of clinics and demonstrations. The theme of the Symposium itself was "Rehabilitation." It was evident in the surgical clinics in which total treatment of the patients was presented, from surgery through brace-fitting and rehabilitation procedures. It was re-emphasized by Dr. Edward Weidlein, Director of Mellon Institute, in pointing out that the goal of the Institute has been "research for human welfare," and it was finally stated by Dr. Thomas Parran, who pointed out how the extremes of the "medical spectrum": Prevention and Rehabilitation, are impinging increasingly upon the established center of the "spectrum": Diagnosis and Treatment.

1014 Deferment Policy for College Students.

Local Selective Service Boards have received instructions from Washington that they may consider the following conditions when all three exist in the case of any registrant as warranting consideration for occupational deferment: (1) The registrant has completed at least one academic year of a full-time course of instruction at a college, university or similar institution of learning. (2) The college or university at which the registrant last completed an academic year of a full-time course of instruction certifies that the registrant's scholastic standing placed him among the upper half of his class. (3) The local board is satisfied by the record of the registrant's actions in making normally required arrangements that he had fully intended prior to August 1, 1950, to enroll in a full-time course of instruction at a college, university or similar institution of learning for the academic year ending in the Spring of 1951. A full-time graduate student may be considered as having met conditions (1) and (2) above if it is certified by the college that in his last undergraduate year of a full-time course of instruction the registrant's standing placed him among the upper half of his class. When an assistantship in teaching or research is a requirement in the course being taken, the graduate student qualifies as a full-time student.

-- Social Legislation Information Service

1019 Dr. Shaffer Succeeds Dr. Shoudy at Bethlehem.

Floyd E. Shaffer, M.D., has been appointed medical director of Bethlehem Steel Company, succeeding the late Dr. Loyal A. Shoudy. Dr. Shaffer, who holds an M.D. degree from Johns Hopkins University, 1914, has been with Bethlehem since 1917. After spending two years at the Company's plants at Bethlehem and Lebanon, Pa., he was transferred to Sparrows Point as plant surgeon for both steel plant and shipyard operations. When the Baltimore Dry Docks was acquired in 1921 and the Bethlehem-Fairfield yard was organized in 1941, he was also placed in charge of the medical department for those operations. In 1948 he was transferred to Bethlehem as assistant medical director.

1020 ILO Session Planned on Dust Diseases.

Geneva.... The Governing Body of the International Labour Organisation has approved in principle the convening of an international conference to consider ways and means of preventing pneumoconiosis, or lung diseases caused by the absorption of dust. This meeting was recommended by the Third International Pneumoconiosis Conference held at Sydney, Australia, in March. The forthcoming meeting will, in particular, consider measures for the prevention of pneumoconiosis from the viewpoint of the physicist, chemist and engineer. The data and agenda of the session will be fixed by the Governing Body at a forthcoming meeting. -- ILO News Service

Editor's Note: Theodore F. Hatch of the Foundation's staff and the Graduate School of Public Health, University of Pittsburgh, was an official American delegate to the Australian meeting.

Protection Against Atomic Bomb.

An atomic bomb shelter, to be built into the sub-basement of a projected 21 story office building in New York (260 Madison Ave.) is believed the first recognition by metropolitan builders that such protection is needed in that area. Supports of the shelter will be so designed that they will withstand a complete collapse of the building above it. To be about 24,000 square feet in size, the shelter is planned for 4,000 people, estimated as the maximum number of tenants and visitors that may be in the building at any one time. Blowers will be provided to exhaust from the shelter any initially deposited contamination, in the event of an atomic bombing, while special emergency exits to permit free movement, should regular exits be blocked, are part of the disaster planning.

-- Atomic Energy Newsletter -- (Aug. 29, 1950)

LEGAL DEVELOPMENTS

1022 Connection Between Employment Trauma and Fatal Diabetes.

Although the employee had been severely bruised and had sustained a fractured leg when a rock fell upon him from the roof of a coal mine thirteen days before his death from diabetes, medical testimony indicated that death resulted from a condition not attributable to the accident, and the Board's denial of compensation was affirmed. Akemon v. Harlan-Wallins Corp. Kentucky Court of Appeals. May 19, 1950. -- CCH

1023 Injury v. Disease--Disability as Result of Mumps Rather than Accident.

Shortly after the claimed accident (negatived by the testimony of a co-worker) the plaintiff was hospitalized with a serious case of mumps; his failure to mention this fact to other doctors subsequently consulted tended to impair his credibility, and in fact these doctors admitted that the condition found by them could be due to mumps with complications. The judgment based on the conclusion that plaintiff had failed to discharge the burden of proof was affirmed. Vercher v. Liberty Mutual Insurance Company. Louisiana Court of Appeal, Second Circuit. No. 7469. May 31, 1950. -- CCH

1024 Silicosis--Miner--Incapacitation for Any Remunerative Employment--Injurious Exposure.

The Industrial Accident Board erred as a matter of law in not finding that the claimant, a miner and screening plant operator, had been injuriously exposed to silica dust and that he was not incapacitated because of silicosis from performing any work in any remunerative employment. There is no essential difference in meaning between the term "total disability" used in the compensation statutes and the phrase "incapacitated from performing any work in any remunerative employment" used in the silicosis statute. Carlson v. Small Leasing Co. Idaho Supreme Court. No. 7617. June 26, 1950. -- CCH

1025 Silicosis--Molder--Personal Injury Caused by Gradual Accumulation of Foreign Matter--Intention to Continue Working Not Indicative of Capacity.

A molder who contacted silicosis during forty-three years time as an employee of the defendant is entitled to partial disability under the Workmen's Compensation Act. A gradual accumulation of foreign matter within the body which renders a person incapacitated for work becomes a compensable injury. McKeon's Case. Massachusetts Supreme Judicial Court. July 3,1950. -- CCH

have been previously published. Besides general principles, the subjects include: radiation safety in production operations, safe handling of radioisotopes, control of radiation in research and development, control of hazards at weapons tests, the AEC program for radiation control, detection instruments for radiation protection, and costs of radiation protection. Another chapter brings the major developments in the field up to June, 1950. Ten appendices deal with a number of related reports and information.

-- F. F. Rupert

1029 The Effects of Atomic Weapons. Prepared for and in cooperation with the U. S. Dept. of Defense and the U. S. Atomic Energy Commission, under the direction of the Los Alamos Scientific Laboratory. J.O. Hirschfelder, Chairman, Board of Editors. 456pp. For sale by Supt. of Documents, U.S. Government Printing Office, Washington, D.C. $1.25. (1950).

This volume is the first to give a connected account of atomic bomb explosions and their effects, and of what can be done in case of explosion. About thirty authors have contributed to the book, but the whole has been edited and coordinated so that it gives the impression of a single work. It begins with the principles of nuclear fission and of the bomb, and shows how the enormous amount of energy is derived. The calculations based on a "nominal" atomic bomb such as used in Japan show that for practical purposes it is equivalent to 20,000 tons of TNT. The following cases are considered: (1) An A-bomb bursting about 2000 feet in the air; (2) an A-bomb bursting several feet under water; (3) a penetration A-bomb bursting 40 to 50 feet underground; (4) radiological warfare in which highly radioactive materials from atomic piles are dusted or sprayed over a city to make it uninhabitable; and (5) combinations of two or more of the methods. The damage following an A-bomb attack occurs from the following causes, in the order of their extent: (1) physical damage from air blast, ground, and underwater shock; (2) thermal radiation and incendiary effects; (3) initial nuclear radiations; (4) residual nuclear radiations and contamination. Each of these forms of damage is considered fully, beginning with fundamental and mathematical principles, and then reporting actual damage in the Japanese explosions, with an estimate of what would be expected in the United States. A chapter deals with measurement of nuclear radiations, and is followed by one on decontamination. Finally, effects on personnel and protection of personnel are considered. Practicality is the book's keynote; it suggests only measures that can be carried out with "reasonable" amounts of time, money and effort. Extreme undertakings such as dispersion of cities and construction of vast underground facilities, are beyond its scope. The estimate of damage to property and personnel is based on the "nominal" A-bomb, but a table gives figures based on various larger sizes. The book will be followed by a country-wide blueprint which was handed to the Council of State Governments in Chicago, September 8, and a report on protection for the individual citizen is due later. The present volume will also be printed by two commercial publishers soon. -- F. F. Rupert

The future belongs to the thing that can grow, whether it be a tree or a democracy. -- Kenneth D. Johnson

however, in cases of severe silicosis and the incidence may reach 60 or even 70 per cent in retired miners on compensation. The asthmatic type of bronchitis is uncommon and its incidence does not increase in the advanced stages of silicosis. It can be shown that the development of silicosis follows its usual course in asthmatic patients. This refutes the idea that bronchial asthma has a limiting influence on the development of silicosis. -- Condensed from Bull. Hyg.

1034 Relation between the Medical Profession and the Workmen's Compensation Board. W.M. Weeden. Compens. Med. 3, 23-29 (June 1950).

The author describes the operation of the New York State compensation act, with discussion of some of the unsolved problems pertaining to compensation. Differences in interpretation of the law arise in many cases from lack of knowledge on the part of physicians, and the Commissions should educate the profession in the field of compensation medicine to the point where they will recognize that the carrier desires the best medical advice and not necessarily favorable opinions. Then there would no longer be "carriers' physicians" or "claimants' physicians." The new Disability Benefit Law is discussed briefly.

1035 Selling Industrial Medicine to the Medical Profession. E. Buyniski. Arch. Ind. Hyg. & Occ. Med. 2, 144-147 (August, 1950).

Industrial medicine is faced with several problems. The number of young physicians entering the profession is low because other fields seem to offer greater inducement. Industrial medicine is also struggling to gain recognition from the private doctors. A plan is presented which can be adopted by industrial medical departments to attract new blood into the profession and at the same time promote a better understanding between industrial and private medicine. -- Author's Summary

1036 Arthritis and Compensation Medicine. W.B. Rawls. Compens. Med. 3, 39-45 (June 1950).

Arthritis is one of the diseases that cause difficulty in adjustment of compensation claims. In the author's opinion injury does not cause arthritis but may aggravate a pre-existing arthritis, and on the other hand, healing may be delayed by the presence of arthritis. Compensation has to be judged in such cases according to the nature and severity of the injury and the time before the onset of the arthritis. Similar questions arise in patients with osteoarthritis: bursitis, myositis and fasciitis are diseases on which there is no general agreement as to cause or nature, and compensation problems may be involved with them also. Neuritis and chest wall pain are also considered. The author has used x-ray therapy for various forms of arthritis successfully, except in case of knee, wrist, ankle or finger joints. The effects of ACTH and Cortisone are as yet doubtful.

1041 Beryllosis. F. Borbely. Schweiz. med. Wochschr. 80, 323-326 (April 1, 1950) (in German.)

This is a general review of the subject of beryllium poisoning, especially as it occurs in industrial work involving beryllium. After a historical introduction, the clinical symptoms of beryllosis are described and the case material consisting of several hundred cases observed in Germany, the United States, and Russia is summarized. Over 40 literature references. -- Nuclear Sci. Absts.

1042 Inhibition of Phosphatases by Beryllium and Antagonism of the Inhibition by Manganese. K.P. DuBois, K.W. Cochran, and Marcella Mazur. Science 420-422 (Oct. 21, 1949).

The inhibitory action of beryllium on the phosphatases activated by magnesium and calcium was studied in several tissues. The results showed pronounced inhibitory action by beryllium on the magnesium-activated tissues, the serum phosphatases being the most sensitive of those studied. Manganese sulfate in various concentrations decreased the inhibitory action of beryllium. A similar action was found with cobalt and nickel. The results of the experiments support the hypothesis that beryllium interferes in biological reactions in which magnesium and calcium participate. The ability of manganese to counteract the inhibitory effect of beryllium on phosphatases "in vitro" suggest a possible line of treatment for beryllium poisoning. Experiments in this connection are in progress.
-- Condensed from Bull. Hyg.

1043 Cholinesterase Test Aid in Diagnosis of Parathion Poisoning. W.L. Garlick. Ind. Hyg. Newsletter (U.S. Public Health Service) 10, 11 (September 1950).

A number of deaths have resulted from the failure to recognize and protect plant and field workers from the toxic effects of organic phosphate materials (TEPP, DFP, and parathion) used as insecticides. The clinical manifestations produced by the absorption of these chemicals are easily recognized. Cholinesterase determination, when properly performed and interpreted, corroborates diagnosis. Treatment is specific with atropine, and otherwise symptomatic.

1044 The Mechanism of Action of Phosgene and Diphosgene. A.M. Potts, F.P. Simon and R.W. Gerard. Arch. Biochem. 24, 329-337 (1949).

A colorimetric method for the direct determination of phosgene showed instantaneous reaction of phosgene when homogenized with lung tissue. A micromanometric method for determining the amount of hydrolysis of diphosgene demonstrated the ability of compounds with free amide, hydroxyl, and sulfhydryl groups to compete with water for diphosgene. Seventy-seven compounds were measured, and some protect yeast fermentation against destruction by diphosgene. Animals exposed to ketene die in pulmonary edema indistinguishable grossly and microscopically from that caused by phosgene. Because of these facts and others cited from the literature the authors believe that the lethal action of phosgene and diphosgene is due to acylation of

phthalic anhydride. The temperature limits obtained with 74° naphthalene were 76° and 120° C. (barometric pressure, 737 to 745 mm. Hg.). The ignition temperatures of pure phthalic anhydride, crude phthalic anhydride, and 74° naphthalene in air were found to be 580, 588, and 515° C., respectively. The ignition temperatures of the same materials in oxygen were found to be 556, 478, and 492° C., respectively.

-- Authors' Conclusions

1049 Surface Active Quaternary Ammonium Compounds as Disinfectants. O. Kylin. Svensk Bryggeritidskr 64, 257-269 (1949) Swedish.

The toxicities of some quaternary ammonium salts were investigated. The LD_{50} of oral alkylbenzyldimethyl-ammonium chloride (benzalkonium chloride) for Wistar rats is about 0.35 g./kg. Rats were given up to 0.25 per cent of benzalkonium chloride in the food for ten weeks without effect on body weight. However, in the group given the highest concentration, the frequency of diarrhea was very high. The chronic oral toxicity appears to be very low so that there is little danger as long as the material is employed with some caution by the food industry. Complete hemolysis of a 10 per cent suspension of red corpuscles is caused by quaternary ammonium compounds even at concentrations of 10^{-4} to 10^{-5}. The substances are also toxic to the skin when applied in concentrations of 0.1 per cent. The mechanism of the bactericidal effect appears to be due to their surface activity and toxicity. The precipitation of bacteria appears to be dependent upon a certain relation between the quantity of bacteria and detergent.

-- Biol. Absts.

INDUSTRIAL DUSTS

1050 Effects of So-Called Inert Dusts. A.J. Vorwald. Arch. Ind. Hyg. & Occ. Med. 2, 140-143 (Aug. 1950).

Although a substance may be inherently inert, certain factors may operate to cause pulmonary change or interfere with function. Among these are change in character from heating, presence of an excessive amount in the lung, long exposure, and state of the respiratory tract. Also, the inert material may carry harmful organisms. Mixed with harmful dusts, its effect may be beneficial in that it may coat or neutralize the effect of the injurious dust. The lung appearance after inhaling inert dust and its removal by phagocytes are described.

1051 The Pathology of Pneumoconiosis. J. Gough. Postgraduate Med. J. 25, 611-618 (Dec. 1949).

In this review various authorities are quoted concerning types of pneumoconiosis caused by exposure to coal dust, silica, graphite, beryllium, aluminum, carborundum, cotton dust and sugar cane dust. The lesions of classical silicosis, of silicosis combined with tuberculosis and of coal workers' pneumoconiosis are described. -- Condensed from Bull. Hyg.

1052 Other Lung Diseases Due to Dust. A.T. Doig. Postgraduate Med. J. 25, 639-649 (Dec. 1949).

A review is given of the effects on the lungs of various dusts, mainly mixed dusts. These often contain a proportion of silica and it is questionable whether their effect can be attributed to it. Among these dusts are those derived from carborundum, aluminum, graphite, iron, tin, manganese oxide, and beryllium. The mode of action of vegetable dusts is obscure, although a variety of pneumoconioses have been attributed to them.

-- Condensed from Bull. Hyg.

1053 Asbestosis. H. Wyers. Postgraduate Med. J. 25, 631-638 (Dec. 1949).

Asbestos and talc are the only two silicates which have been shown to produce pneumoconiosis. Gardner, in 1938, suggested, on the basis of animal experiments that the effect produced by asbestos was mechanical, since it was produced only by long fibers. A later authority made the observation that workers exposed to very short-fiber asbestos were not affected by it. Asbestosis was officially recognized as an industrial disease in 1930. The condition is thought to be due to blocking of the finer bronchioles by long fibers which seem to irritate the bronchial wall and cause fibrosis. Tuberculosis and carcinoma of the lungs may follows, as complications. Recognition of the disease, and precautions which have been taken have lessened its severity and incidence.

-- Condensed from Bull. Hyg.

1054 A Review of Dust-Allaying Practices at Working Faces in Some Bituminous Coal and Lignite Mines. J.J. Forbes, R.K. Franklin and S.T. Reese. U.S. Bur. Mines Inf. Circ. 7566 29pp (May 1950).

Data on dust-allaying practices were compiled from the reports of Federal inspectors on 1,637 bituminous coal and lignite mines in 23 states, employing nearly 300,000 men. Most of the information is presented in tabular form. It is shown that approximately one-third of the mines employing 25 or more men provide no protection, or inadequate protection, against dust from the working face. In a still greater number of mines, the dust produced during loading and transportation is not being allayed effectively. Rock-dusting will reduce the dust explosion hazard in such mines, but dust allaying will reduce the explosion and pneumoconiosis hazard and provide better visibility. Generally dust allaying was practiced to a greater extent in mechanical-loading mines than in hand-loading mines with fewer workmen. Mines employing less than 25 men were not included in the study, but probably dust allaying is not practiced in many of them.

-- Condensed from Authors' Summary and Conclusion

1055 Shuttle-Car Tire and Roadbed Study. R.H. Nicholas, J.S. Whittaker, D.D. Dornenburg, J.P. Harmon and W. Bank. Bur. Mines Rept. of Invest. 4625. 22pp. (December 1949).

The investigation revealed that "hard rock lug" tires had a kneading action that mixed calcium chloride more rapidly and effectively with the floor material, thus tending to diminish one potential source of dust. Shuttle cars equipped with "smooth tread" tires steered harder, tended to remain in depressed tire tracks, or remained bogged in "chuck holes,"

whereas cars equipped with "hard rock lug" tires steered easier in loose floor material and climbed out of deep tire tracks or chuck holes with relative ease. The smooth tires tended to slip or skid where the grades were heavy or the floor was wet, whereas the rough tires maintained a bette grip on the road. The amounts of dust stirred into the air by the two types of treads on roadways treated with calcium chloride appeared to be of the same order of magnitude. This dust was only a minor factor in the air-borne dust content of the air. No differences were observed in the life of each type of tire, but it must be noted that the tests were of too short duration to draw sweeping conclusions. -- Authors' Summary

1056 The Physiological Response to Dust from Mine Locomotive Traction Material. L.T. Fairhall, B. Highman, and V.B. Perone. Pub. Health Repts. 65, 1003-1020 (Aug. 11, 1950).

The use of sand as traction material for mine locomotives has been considered a potential health hazard. The purpose of this study was to determine the relative safety of possible substitute materials. Guinea pigs were injected intraperitoneally with suspensions of the various powdered materials or dusts. It has been noted, in some instances, that there is a correlation between the severity of the peritoneal reaction in guinea pigs and the pulmonary response in man. Among the materials tested which produced a moderate cellular reaction were Lyon Mountain ore tailings, slag No. 4 and traprock No. 3088. These materials also appear to have the requisite hardness, commercial availability, and other properties suitable for use as traction material.

-- Condensed from Authors' Summary and Conclusions

1057 Electron Microscopy in Silicosis. E. Beintker and R. Meldau. Beitrage z. Silikose-Forschung No. 5, 27pp. (1949) German.

The authors describe the results of examination with the electron microscope of the mineral residues from portions of the lungs of two Ruhr coal miners, and from a case in which talc dust was found in the lungs. The blood from a case of silicosis was also examined. The method is described of preparation of the lung sections, by treatment with hydrogen peroxide, centrifugation, washing, dialysis, and treatment with various reagents. The preparation of the sample of blood was by a modified method. The appearances of the mineral residues under the electron microscope are described and, with the aid of 31 electron photomicrographs at magnifications from 11,600 to 50,000 diameters, processes of disintegration in the non-coal particles are shown, whereas, in contrast, the coal particles are seen to retain an unbroken outline. Further, minute droplets were seen to be heaped up, apparently from destruction of silicates and not shown by the coal particles. These appearances, established here for the first time by electron microscopy, have not been observed in mineral particles which have not passed through the human body. From the appearances observed it follows, at least in the lungs of Ruhr coal miners, that quartz has disappeared, as well as other minerals, through a special kind of attack which shows itself in the form of minute droplets, and that new particles of silicic acid, as a rule in colloidal form, are found which appear to be derived from a solution. Thus it is proved that solution of

RADIOACTIVITY AND X-RADIATION

1061 Ionizing Radiation Materials as Air Pollutants. A. Wolman. Arch. Ind. Hyg. and Occ. Med., 2, 134-136 (Aug. 1950).

A review is given of some of the corrective measures which have been supervised by the Atomic Energy Commission for the treatment of harmful waste materials which result from the laboratory and production operations of the United States atomic energy program. Problems which require further study are listed. A "Monograph on Aerosols" is to be published by the Commission. A table gives the best estimate known at the present time of maximum permissible atmospheric concentrations of certain ionizing radiation materials.

1062 Radiation Hazards of Radioactive Isotopes in Fire Emergencies. An Introductory Report. Published and distributed by International Association of Fire Chiefs, Midston House, 22 East 38th St., New York 16, N.Y. 10pp. (June 1950).

This pamphlet deals with situations in which firemen may be called to put out a fire where radioactive materials are used or stored. The radioactive materials neither contribute to the cause of a fire nor intensify combustion. However, a certain amount of radiation is continuously emanating from them and may present a hazard to fire fighting personnel. The principles of radioactivity are discussed briefly and the most common radioactive elements are listed with some of their properties. The purpose of protective measures to minimize radiation hazards are: (1) to prevent ingestion, inhalation, or entrance by other means into the body of radioactive materials; and (2) to prevent firemen from receiving excessive amounts of external radiation. The first calls for suitable breathing equipment and care of scratches and other injuries. The second can be achieved by limiting time of exposure and proximity to the materials as much as possible. Interim safety rules are recommended, including supplying information about the presence and quantity of radioactive materials and various details pertaining to monitoring and care of protective equipment.

Smoke Screen.

In the boiler room of one of its generating stations Consolidated Edison of N. Y. recently installed a TV screen--but strictly in line of duty. The screen shows the flow of smoke from the giant smoke stacks on which the video camera is focused. The boiler foreman orders whatever adjustments have to be made to curtail excess smoke.

-- The Foreman's Letter, (Aug. 23,1950)

monoxide from the blood and the analysis takes about 15 minutes and can be applied to the exact estimation of hemoglobin and methemoglobin in blood and also to tissue fluids. -- Condensed from Bull. Hyg.

1067 Sampling of Liquid Aerosols by Wires, Cylinders, and Slides, and the Efficiency of Impaction of the Droplets. H.D. Landahl and R.G. Herrmann. J. Colloid Sci. 4, 103-136 (April 1949).

A method of sampling aerosols is presented, which relies on the measurement by chemical analysis of the amount deposited by a cloud on selected surfaces. With such a method a source of power is not needed; moreover, it is not necessary to prepare samples for microscopic examination. Wires, cylinders or slides may be used as collecting surfaces. The theory and the factors influencing accuracy are discussed at length, and numerous results are given.

1068 A Few Methods for Dust Measurements. R. Meldau. Tonind.-Ztg. 74, 66-71 (1950). German.

The author shows tentative standards of the German Engineers Institute for size determinations, chemical analysis, and color adsorption of dusts and gives graphical symbols for their identification. -- Chem. Absts.

PREVENTIVE ENGINEERING

1069 Experiments on the Bruck-Vigliani Method for the Aspiration of Drilling Dust in Mines. G. Montesano. Med. d. Lavoro. 40, 251-253 (Oct. 1949). Italian.

The Bruck-Vigliani attachment for a pneumatic drill consists of a special wool filter, through which air is aspirated by means of a venturi ejector operated by compressed air from the mine supply. Air is drawn from the bottom of the hole being drilled, through the axial channel in the drill steel which is otherwise used for feeding water. A comparison was made, by taking thermal precipitator samples of air-borne dust, between dry drilling, with the aspiration attachment in operation, and wet drilling with water injection through the hollow steel. In both cases very much less dust was recorded than is usual when drilling in the absence of suppressive measures. The Bruck-Vigliani appliance was at least as effective as wet drilling in decreasing the production of dust. No indication is given of the lifetime of the filter. -- Bull. Hyg.

1070 Routine Ventilation Surveying in South Wales Anthracite Mines. E.M. Smith. U.S. Bur. Mines Inf. Circ. 7530, 11pp (Oct. 1949).

This report describes the practice of a large British anthracite mining company in carrying out a routine program of ventilation surveying. Very few companies make complete surveys. The data collected include pressure and velocity measurement, from which are calculated pressure drops, zonal resistances, and other derived data, and methane content.

1075 Effects of Air Pollution on Oral Structures. J.M. Dunning. Arch. Ind. Hyg. & Occ. Med. 2, 137-139 (Aug 1950).

After considering a number of air pollutants that affect teeth, especially in industrial air, the author presents this summary: "Detailed knowledge of industrial hazards to the oral structures is at present so scanty and the chance so great that the dentist can be a valuable scout for the medical team that I feel no hesitation in urging that dentists be included in all the public health teams doing epidemiologic work such as that at Donora. An additional reason for having a dentist on the team is that he can appraise the level of nonoccupational dental disease in the area."

MANAGEMENT ASPECTS

1076 Labor-Management Cooperation for Safety, Report of Committee, President's Conference on Industrial Safety. H.C. Zulauf, Chairman. Bull. No. 121, Bur. of Labor Standards, U.S. Dept. Labor. 4pp. (1950).

Generally existing patterns of labor-management cooperation are: (1) joint safety committee or council with company and union representatives; (2) a safety program conducted in a unionized plant by management with worker cooperation but without a committee; and (3) worker cooperation and participation in a nonunion plant. The industrial accident can be solved only by full cooperation between employer and employee at all levels. Based on these premises the following fundamental principles are presented: (1) safety primarily is the legal and moral obligation of the employer, who must have a sincere and continuing interest in the safety of employees; (2) cooperation in the safety program is the moral obligation of the employee; and (3) the labor union is also under moral obligation to cooperate in accident prevention. Under each heading several forms of cooperation are listed.

1077 A Management Approach to Problems of Individual Adjustment. A.B. Gates. Arch. Ind. Hyg. and Occ. Med. 2, 202-226 (Aug. 1950).

The author traces the development of employee-company relations since the beginning of the century, with numerous false starts and conflicts, but all the while leading to better progress and understanding. Empahsis is now placed on better understanding of the employee as a human being and especially of his tensions and their source. He gives an account of a series of talks to supervisors, illustrated with slides, giving the fundamentals of leading and understanding workers. A number of the slides deal with worry, its causes and how to deal with it. These lectures were given at the Eastman Kodak plant at Oak Ridge where the large number of new employees intensified the problem.

1081 Rehabilitation of the Tuberculous in Philadelphia. A Study of the Program of Rehabilitation in Philadelphia for a Ten-Year Period July 1, 1939 to July 1, 1949. Gertrude K. Langton, R.D. Wagner and P. Meier. Am. Rev. Tuberc. 62, 190-208 (August 1950).

An analysis of the background and disposition of 305 tuberculous patients, listed as "closed rehabilitated" cases, was made to evaluate the rehabilitation program, initiated as a joint project of an official and a voluntary agency. The criteria for referral to the Bureau of Rehabilitation was arrested disease, with satisfactory prognosis, educational background, and intelligence showing promise of successful employment. The direct cost for each patient averaged $408. Cost of administration is difficult to determine. Despite certain limitations, the program of rehabilitation is considered a wise investment and there is evidence that it is being expanded. -- Condensed from Authors' Summary

1082 Legislation and Pneumoconiosis. C.L. Sutherland. Postgraduate Med. J. 25, 650-657 (Dec. 1949).

A brief history of the Workmen's Compensation Act as applied to pneumoconiosis is given, tracing it from its inception in 1906 to its replacement by the National Insurance (Industrial Injuries) Act 1946. There follows a short account of the evolution and present position of legislation affecting the various conditions described in the previous papers. -- Bull. Hyg.

ACCIDENTS AND PREVENTION (FIRE AND EXPLOSION HAZARDS, ETC.)

1083 The South Amboy Port Explosion. Report by National Board of Fire Underwriters and Fire Insurance Rating Organization of New Jersey. 29pp. (1950).

This report is directed principally to the prevention of recurrence of similar disasters, and thereby, to the preservation of life and property. The possible causes of the disaster are discussed and a number of safety measures suggested. Attention is directed to the importance of providing proper security at waterfront facilities handling explosives and securing adoption of an adequate explosives ordinance for cities. Other suggestions include the necessity for preventing excessive explosive concentrations during handling, rigid control over the types of explosives which are manufactured and transported by common carriers, prevention of careless handling and mixing of certain types of explosives, checking of working conditions, enforcing security regulations, and providing adequately segregated ports for explosives handling. The establishment of a Port Warden, along with the enactment of municipal ordinances by local governments will promote the needed protection from fire and explosion. Preplanning for emergency action in disasters under the current civil defense programs is recommended. -- Condensed from "Summary".

1086 Report of the Health and Safety Division, Fiscal Year 1949. J.J. Forbes and W.J. Fene. U.S. Bur. Mines, Inf. Circ. 7562 51pp (April 1950).

The activities of this Division during the year were directed toward the study, evaluation, and control of harmful or hazardous exposures in the mineral industries. About 16,000 gas and dust samples were analyzed during the year. A large number of studies of various kinds were carried on -- dust concentration and composition, rock structure and roof control, investigation of carbon monoxide explosions, spontaneous heating of carbonaceous shales, testing of respiratory protective devices, mine ventilation, safety organization, flood prevention, etc. Many hazards were brought to light that were overlooked or ignored by management, labor, and State mine inspectors. The conditions thus found resulted in greater effort on the part of all concerned to avoid unfavorable publicity, and stimulated the activities of safety committees, unions, and management.

-- Condensed from Authors' Summary and Conclusions

1087 Conditions and Practices at Coal Mines in the Ruhr District of Western Germany. J.B. Benson, H.E. Sanford and R.W. Stahl. U.S. Bur. Mines, Inf. Circ. 7549, 48pp. (Feb. 1950).

This is a general study of mining conditions and practice in the Ruhr district based on extensive surveys. Much of the material bears more or less directly on safety and health. The picture regarding both safety and health shows much less accomplished than in this country. There is little rock dusting, little effort at prevention of silicosis, and consequently much silicosis. There is much lacking in safety measures, no safety organizations of employees and officials have been established, and no safety meetings are held. Nearly all miners are trained in first aid, but the supply of equipment is inadequate. Training courses for prospective miners are now common, and the graduates of these courses have better safety records than those without the training.

1088 Safety Practices in Churn Drilling at Morenci Branch, Phelps Dodge Corp. Morenci, Ariz. A.A. Sharp and A.D. Look. Bur. Mines Inf. Circ. 7548, 23pp. (January 1950).

Although mechanical failures occur on rare occasions, the majority of accidents around churn drills are caused by human errors. The code of safe practice described herein points out the obvious hazards of operation and serves as a guide for safe procedure, which, if followed, will eliminate many of the unsafe acts that result in accidents. Familiarity with the code is obtained by frequent review, and safety consciousness, so necessary for accident prevention, is encouraged by a continuing safety program in which each individual has an active part. -- Authors' Conclusion

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