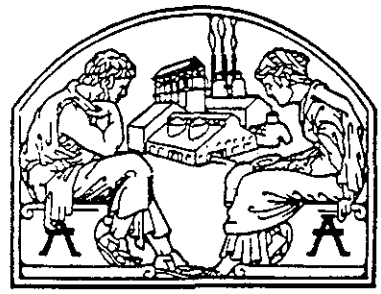
MWBB-0013678



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.

03119009

PLAINTIFF'S EXHIBIT
IHF-165
Blumberg No. 5113

IN THE ARCHIVES
NOVEMBER 1999

IN THE AIR AMES November 1, 2000

MWBB-00113679

JOHN FRANCIS McMAHON

1903-1950

03119010

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.

MWBB-0013680

UNIVERSITY ARCHIVES Nov 6 1990

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.

03119011

MMBB-0013681

UNITED STATES NAVY MEDICAL DEPARTMENT LIBRARY

TABLE OF CONTENTS

	Page
News Items	1
Occupational Disease Statistics	4
Legal Developments	5
Books, Pamphlets and Notices	6
Industrial Medical Practice	8
Chemical Hazards	10
Industrial Dusts	13
Physical Aspects of the Environment	16
Radioactivity and X-Radiation	17
Environmental Measurements	18
Preventive Engineering	19
Community Air Hygiene	20
Management Aspects	21
Accidents and Prevention	23
Miscellaneous	26
Index	27

03119012

September, 1950
Vol. XIV
No. 9

Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh 13, Pa.

MWBR-0013682

UNDER ARMS NOVEMBER 1950

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.

03119013

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

NWRB-0013683

1015 Employ the Physically Handicapped Week.

The President proclaimed the week beginning October 1, 1950 as National Employ the Physically Handicapped Week. The general purpose of the effort is to encourage community action to enlist the widest public interest in additional employment opportunities for the physically handicapped.

-- Social Legislation Information Service

NOV 6 1950

1016 Tax Exemption of Charitable and Educational Organizations.

The tax-revision bill (H.R. 8920) dealing with the taxation of the unrelated business income of charitable, educational, and certain other tax-exempt organizations was passed by the House and is being revised by the Senate Finance Committee. The committee has agreed to the House-passed provisions for taxation of such unrelated business income, with clarifying amendments to protect the exclusion of associations or conventions of churches (such as Southern Baptist Convention); "thrift shops"; work done for United States, state, and local governments; research done by universities and hospitals; and exclusion of capital gains. The committee also approved the House-passed provisions with respect to taxes on lease-backs, with clarifying amendments, and taxes of feeder corporations.

-- Social Legislation Information Service

1017 ASTM Forms Committee on Sampling and Analysis of Atmospheric Pollution.

The Board of Directors for the American Society for Testing Materials has authorized the formation of a new technical committee on sampling and analysis of atmospheric pollution. Louis C. McCabe, chief of Air and Stream Pollution, U.S. Bureau of Mines, has accepted the temporary chairmanship of the new committee. In authorizing the committee, the board stated that the society will not consider the problems of specifying limitation of pollution, nor such other related matters as biological and health problems.

-- Chemical and Engineering News

INDUS. HYG. ASSOC. J.

1018 Dr. Loyal A. Shoudy.

Dr. Loyal A. Shoudy, medical director of Bethlehem Steel Company, died August 30 at St. Luke's Hospital, Bethlehem, Pa. A pioneer in industrial medicine, Dr. Shoudy had been with Bethlehem Steel since 1914. Bethlehem's medical department was organized by him and developed under his leadership. He gained among colleagues a reputation as one of the country's most skilled practitioners in hand surgery and the treatment of fractures. He became internationally known for his work to reduce heat exhaustion among industrial workers, and for the introduction of the standard salt tablet. He was vitally interested in First Aid training, and his "Outline of First Aid" has become widely used as a basis for employee education. Apart from his work in industrial medicine, Dr. Shoudy was very active in promoting the welfare and education of the young. He served for ten years as president of the Bethlehem Area, Boy Scouts of America, and later became their Honorary President. Dr. Shoudy was a charter member and twice president of American Association of Industrial Physicians and Surgeons; Fellow of American College of Surgeons; Fellow of American Public Health Association; vice president and director of the National Safety Council; member of American Iron and Steel Institute.

03119014

MWBB-0013684

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)

UNITED STATES STEEL
NOVEMBER 1950

03119015

MWBB-0013685

IN REPLY REFER TO: AIR/AMS
INDUSTRIAL HYGIENE DIGEST

OCCUPATIONAL DISEASE STATISTICS

1021 Occupational Disease Statistics.

	Conn.[2] Aug. 1950	Ind.[2] Aug. 1950	Mich.[2] Jul. Aug. 1950	Ohio[1] Apr. May-June 1950	Totals
Carbon monoxide poisoning		1			1
Chemical poisoning (NOC)				8	8
Dermatitis	33*	9	41	644	727
Hernia			15		15
Lead poisoning			4	27	31
Lung diseases (NOC)				31	31
Miscellaneous			3	183	186
Pneumoconiosis	1		24		25
Silicosis		2	31	113	146
Skin diseases (NOC)				32	32
Tuberculosis (due to contact)				23	23
Undulant fever		2			2
Unresolved lipoid pneumonia	1				1
Total	35	14	118	1061	1228

(1) Occupational Disease Cases Reported to the Industrial Commission. There were 351,539 days lost, including 71 deaths from lung diseases, 2 from chemical poisoning and 6 from other occupational disease claims.

(2) Occupational Disease Cases Reported to the Health Department.

* Organic dust, dyes and inks, Oil and solvent (combination exposure), phenol and phenolic compounds and turpentine caused one each; Solvents (NOC) caused two; Poisonous plants caused three; Oils, Fats and Waxes caused fourteen; and nine were caused by undetermined hazards.

03119016

MWBB-0013686

UNDOCUMENTED ALIEN LIES

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

03119017

MWBB-0013687

BOOKS, PAMPHLETS AND NOTICES

1026 Pneumoconiosis. Beryllium, Bauxite Fumes, Compensation. Leroy U. Gardner Memorial Volume, Sixth Saranac Symposium. A.J. Vorwald, Editor. Paul B. Hoeber, Inc. 49 East 33rd St., New York 16, N.Y. 659pp. (1950). $10.00.

This volume, reporting the Symposium held in 1947, is dedicated to Dr. Gardner, especially appropriate because he planned the conference before his death. The 39 papers presented are given in full. Twenty-nine of the papers are concerned with beryllium. Sections of the discussion, of several papers each, deal with the history and industrial aspects of the problem, the acute disease, the chronic or delayed disease, toxicity studies in connection with atomic energy production, and experimental aspects. A bibliography of 684 references is included. In addition, there are three papers on Shaver's disease, which occurred in workers exposed to fumes from the electric furnaces used in production of fused alumina, and seven on compensation for occupational disease, dealing with latest laws and practices. Space does not permit dealing with the authors separately, but the volume constitutes an important addition to the literature on beryllium poisoning. -- F. F. Rupert

1027 Handbook on Aerosols. Chapters from the Summary Technical Report of Division 10, National Defense Research Committee, selected and published by the United States Atomic Energy Commission. 147pp. (1950). For sale by Supt. of Documents, U.S. Government Printing Office, Washington 25, D.C., 60 cents.

Many of the problems in the atomic energy program involve the handling of small particles in the form of aerosols. Problems that arose in the successful treatment of radioactive wastes in that form necessitated fundamental study of aerosols. The problem of waste disposal is not unique to the atomic energy industry, but the permitted tolerances are much lower when the waste materials are radioactive. The book consists of 11 chapters by 7 authors, dealing with various aspects of aerosols. The subjects include: the absorption wave, general meteorological principles, mincrometeorological instruments (anemometers, wind direction recorders, thermocouples, etc.), general properties, stability, formation, optical properties, and filtration of aerosols, measurement of particle size, and size distribution, methods of testing smoke filters, and travel and persistence of aerosol clouds. There is much material whose value is not confined to the radioactive field. -- F. F. Rupert

1028 Control of Radiation Hazards in the Atomic Energy Program. United States Atomic Energy Commission. 230pp. (July 1950). For sale by Supt. of Documents, U.S. Government Printing Office, Washington 25, D.C., 55 cents.

This book presents the procedures used for radiation control in various phases of preparation and use of isotopes, about which several papers

03119018

NWBB-0013688

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

UNCLASSIFIED NOVEMBER 1999

03119019

NWBB-0013689

1030 Annual Digest of State and Federal Labor Legislation, Nov. 15, 1948 and December 31, 1949. U.S. Dept. of Labor, Bur. of Labor Standards, Bull. No. 118, 140pp. (1950). For sale by Supt. of Documents, Washington 25, D.C. 35 cents.

This booklet covers the State and Federal legislation enacted on all phases of labor relations during the period. Each of the 44 States and Hawaii improved their workmen's compensation laws, principally by increasing benefits. Over half the states liberalized their unemployment insurance laws. A number of other developments on the part of one or more States are also reported.

INDUSTRIAL MEDICAL PRACTICE

1031 The Study of the Workroom Environment. J.J. Bloomfield. Ind. Hyg. Newsletter (U.S. Public Health Service) 10, 3-7 (Sept. 1950).

This is the first of a series of articles on fundamental principles and practices of industrial hygiene, and is one of a series of lectures by the author given in Rio de Janeiro in 1949. Since industrial hygiene is still in a developmental stage in Brazil, the lectures were necessarily basic material. Methods of making reconnaissance survey are described briefly, with examples taken from a number of industries. The more detailed survey is then described, with the extensive study of mercurialism in the hatters' fur-cutting industry as an example. In this, certain recommendations for prevention of exposure were made, but several years after the study a new process avoiding the use of mercury was developed and is now used entirely in this country.

1032 Pneumoconiosis in Coal Miners. J.C. McVittie. Postgraduate Med. J. 25, 618-631 (Dec. 1949).

The author reviews the literature relating to the recognition of coal miners' pneumoconiosis as an industrial disease. It was first described by Gregory in 1831, but no further detailed study of the disease was made until early in the present decade. A compensation scheme based upon the recognition of the disease was introduced in 1943. A discussion is given of methods of diagnosis and the need for care and experience in reading pneumoconiosis x-rays. Recently it has been found that the relationship between disability and x-ray evidence of disease is very uncertain.

-- Condensed from Bull. Hyg.

1033 The Connection between Silicosis, Bronchitis and Bronchial Asthma. H. Trautmann. Beitrage z. Silicose-Forschung 4, 13-28 (1949) German.

The incidence of bronchitis among the working miners in the Buer district of Westphalia, was found to be fairly low. It becomes a serious complication,

03119020

NWDB-0013690

UNDOCUMENTED ADDITIONAL

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.

03119021

MWBB-0013691

1037 Marie Strumpel's Arthritis. J.C. McCauley. Compens. Med. 3, 19-22 (June 1950).

Marie Strumpel's arthritis is a progressive ankylosing disease of the spine, principally in young white males, involving the sacro-iliac and other joints. The course of the disease and its treatment are discussed. It has occurred to some extent in soldiers. Like other forms of arthritis, it is possible that trauma may aggravate pre-existing disease and introduce compensation problems.

CHEMICAL HAZARDS

1038 Distribution and Fate of Cadmium in the Animal Body. A.M. Potts and others. Arch. Ind. Hyg. and Occ. Med. 2, 175-188 (August 1950).

Inhaled cadmium chloride is highly concentrated in lungs and liver. Injected cadmium chloride is highly concentrated in liver and kidneys, but when followed by BAL is highly concentrated in kidney and urine. Cadmium sulfide does not leave the lung in appreciable quantity. When BAL is administered before exposure, most of the inhaled cadmium chloride is trapped in the lung, and mortality is much increased. Administration of BAL after exposure saves the lives of up to 100 per cent of the animals, although the lung content of cadmium is not altered. Here renal cadmium excretion becomes equally significant with intestinal secretion. The effects of BAL, as noted, can be understood in terms of a decreased (or increased) concentration of cadmium ion in lung tissue with attendant damage to critical enzyme systems.

-- Authors' Conclusions

1039 Action of Dimercapto-2, 3 propanol in Certain Intoxications with Arsenic Compounds. Jean Delga. Ann. Pharm. Franc. 8, 106-110 (1950).

The necessity of giving BAL intramuscularly after cutaneous application of lewisite is pointed out. By this method it proved life-saving in most of 51 rabbits. BAL was ineffective in subcutaneous poisoning of guinea pigs with arsenic trioxide. It had a certain protective effect in oral poisoning provided the absorption had not proceeded too far.

-- Chem. Absts.

1040 Studies of the Toxic Action of Gallium. H.C. Dudley, Katherine E. Henry and B. F. Lindsley. J. Pharmacol. Exptl. Therap. 98, 409-417 (Apr. 1950).

Studies on the toxicity of gallium include the effects of injected gallium lactate on larger animals, the toxic action of gallium citrate on many different species of animals and the changes in blood and urine of rabbits receiving toxic doses of gallium citrate.

-- Condensed from Nuclear Sci. Absts.

03119022

HWBB-0013692

NOW CLASSIFIED UNCLASSIFIED

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.

UNCLASSIFIED

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

03119023

MWBB-0013693

essential lung constituents containing the above functional groups rather than to liberation of hydrochloric acid. -- Biol. Absts.

1045 Acute Effects Upon the Lungs of Dogs of Large Intravenous Doses of Alpha-Naphthyl Thiourea (ANTU). C.K. Drinker and Ester Hardenbergh. Am. J. Physiol. 156, 35-43 (1949).

Dogs under nembutal anesthesia and given intravenously 1 ml./kg. of 2 per cent alpha-naphthylthiourea (ANTU) in propylene glycol developed fatal pulmonary edema. The first evidence of changes leading to edema was an increased flow of lung lymph. Greater rate and minute volume of breathing followed. Blood gas analyses indicated that the hyperpnoea of rapidly developing pulmonary edema was peripheral in origin. Detailed protocols are given for two typical experiments. - Authors' Summary -- Biol. Absts.

1046 The Toxic Effects of Solvents. J.E. Silson. Compens. Med. 3, 11-18 (June 1950).

This is a general discussion of the toxic effects of solvents, with consideration of chloroform, benzene and carbon tetrachloride as typical examples.

1047 Is Pure Oxygen Breathing in a Regenerative Apparatus Harmful to Health? F. Hollman. Drager-Hefte 216, 4635 (May-June 1950). Translated with comment by W. Hancock, Coll. Guard. 181, 167-170 (Aug. 17, 1950).

The author reviews the work on possible toxicity of oxygen, including animal and human experimentation. Some confusion has arisen in interpreting the experimental results because some tests were made with the subjects at rest and some while doing hard work. The author concludes: "Symptoms of oxygen poisoning must be expected at intensive work at the earliest after seven hours, so that even in the BG 170/400 (Drager apparatus) there is no danger to health by oxygen breathing...Summarizing, we can say that from the research results over the last 50 years, with the use of BG 170/400 we can conclude that the danger of poisoning does not arise, either with circulatory apparatus with one to three hours' duration of use, or with the BG 170/400 with a use of seven hours, at an average working output..... It must, however, be also stated that we are not far off the danger limit with the length of use of the BG 170/400. At an increase of oxygen supply and an attendant prolongation of the time of use of regeneration equipment, it will be necessary to research afresh into the problem of oxygen poisoning." The translator presents this work in confirming his statements in earlier papers.

1048 Limits of Flammability and Ignition Temperatures of Phthalic Anhydride. G.W. Jones and M.G. Zabetakis. Bur. Mines Rept. of Invest. 4671, 7pp. (March 1950).

The temperature limits of flammability of air saturated with phthalic-anhydride vapor were found to range from 140° to 193° C. (barometric pressure, 733 to 739 mm. Hg.). These values give a lower limit of flammability of 1.7 per cent and an upper limit of 10.4 per cent by volume of the vapor in air. The same temperature limits of flammability were obtained for the crude

HWBB-0013694

NOVEMBER 1950

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 LDso 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 ABSTRACTS

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.

03119025

NWBB-0013695

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 questioned 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 Conclusions

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. 4624, 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,"

03119026

MMBB-0013696

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 better 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

03119027

MWBB-0013697

particles takes place. It is highly probable that the silicic acid as liquid colloid, perhaps also in molecular form, plays an essential part in bringing about silicosis. Further researches are being carried on.

-- Bull. Hyg.

1058 Crystallography and Silicosis. F. Zrenner. Beitrage z. Silikose-Forschung 4, 29-47 (1949) German.

The introduction of x-ray analysis of crystalline substances used in connection with the problems of silicosis is likely to aid in the prevention of the disease. Theoretical considerations on various aspects of the subject are discussed. -- Condensed from Bull. Hyg.

PHYSICAL ASPECTS OF THE ENVIRONMENT

1059 Observations on the Effect of Locomotive Haulage on Environmental Conditions in Mines. A.E. Crook. Trans. Inst. Mining Engineers 109, 147-161 (Nov.1949).

The greatly increased use of diesel or battery locomotives underground prompted this study of the rate of production of heat and water vapor, and of noxious gases, by diesel locomotives, and of heat by trolley locomotives. The rise in wet-bulb temperature with the diesel is about twice that with the trolley locomotive. The dry bulb temperature of the air is raised to about the same extent in both types of locomotive because the diesel uses much of its waste heat to cool its exhaust gas by the evaporation of water. When these locomotives are used on level roads the temperature increments are small, but they are appreciable on adverse gradients. Compressed air locomotives may have to be considered in deep and hot mines. The diesel locomotive gives off oxides of nitrogen, which must be diluted below the harmful level of concentration. The need for a high standard of inspection and maintenance for these locomotives is emphasized.

-- Condensed from Bull. Hyg.

1060 Occupational Deafness. C. Meano. Med. d. Lavoro 40, 210-218 (Aug.-Sept. 1949) Italian.

Examinations were made of workers in heavy metal and engineering processes in a factory in Milan. The nature of the lesions is discussed with reference to the literature. Emphasis is placed on preventive measures, in view of the uncertainty of success of treatment in loss of hearing produced by trauma resulting from industrial noise. Prevention includes factors relating to the worker and to the environment. Use of protective devices is advised. Treatment for certain conditions is recommended.

-- Condensed from Bull. Hyg.

03119028

NWBB-0013698

UNITED STATES NOVEMBER 1950

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)

03119029

HWBB-0013699

1063 Scattered Radiation Due to Atmospheric Fog and Secondary Diffusion. F. Moller. Mettalurg. Rundschau 1, 212-215 (Jan.-Feb., 1948). Abstracted in Applied Mech. Revs. 2, 141 (June 1949).

By comparing the measured distribution of the scattered radiation in a hazy and dusty atmosphere with the theory of the scatter of light by small particles, it has been found that the majority of the small droplets in the atmosphere have radii of about 10^{-4} mm. This agrees with the size generally accepted for the particles forming the nuclei of condensation for the saturated vapour contained in the air. The biggest dust particles thus do not seem to have an influence on the distribution of the scattered radiation. To make sure that the measured values of this distribution are not affected by secondary diffusion, a calculation was carried out which showed that secondary diffusion has only a minor influence on the distribution of the scattered radiation, thus indicating that the above conclusions are basically correct.
-- Atm. Poll. Bull.

1064 Laboratory Studies on the Removal of Plutonium from Laundry Wastes. J.F. Newell and others. Atomic Energy Commission Unclassified Documents--837, nd. 2pp. Nuclear Sci. Abstr. 4, 633 (July 31, 1950).

The document which is in abstract form is reproduced in its entirety in the reference last given. It deals with studies made on the treatment of wastes from the laundry for contaminated clothing at Los Alamos. Results of the studies indicate that the plutonium removal objective can be attained either chemically or biologically. Simplicity of operation and volume of sludge to be disposed of seem to favor biological treatment. Other problems remain to be studied. -- Condensed from Nuclear Sci. Abstr.

1065 The Role of the Doctor in Atomic Defense. S.Warren. Chicago Med. Soc. Bull. 52, 1051 (June 10, 1950).

The text of a speech presented before the Annual Clinical Conference of the Chicago Medical Society is given. It is a review of the general problems of a medical nature which will arise in the event of an atomic detonation in the air, on the ground, or under water. The need for all medical personnel to familiarize themselves with the events and emergency treatments, including rapid diagnosis, is emphasized.
-- Nuclear Sci. Abstr.

ENVIRONMENTAL MEASUREMENTS (ANALYTICAL PROCEDURES AND METHODS)

1066 A New Sensitive Method of Estimation of Carbon Monoxide in Blood. H. Rossmann. Klin. Woch. 27, 280-282 (April 15, 1949) German.

The author describes a method of estimating carbon monoxide in the blood by absorption of infra-red rays in gas mixtures, which he considers more exact than spectroscopic analysis. A very high degree of accuracy can be obtained by the method. The whole process of extraction of carbon

03119030

NWBB-0013700

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.

03119031

NWBB-0013701

1071 The Use of Dust Respirators in Coal Mines. S.J. Pearce. Bur. Mines Inf. Circ. 7561 6pp (March 1950).

This circular is intended to answer complaints regarding dust respirators by discussing the various factors relating to the proper use of dust respirators in general and in coal mines in particular. The construction, functioning, choice, fitting, and maintenance of dust respirators are discussed. It is pointed out that dust respirators are not to be used as a substitute for dust-control measures. -- Condensed from Author's Introduction and Summary

COMMUNITY AIR HYGIENE

1072 Atmospheric Pollution. Anon. British Coal Utilisation Research Association Quart. Gaz. 9, 2-10 (1950).

This is a general paper on atmospheric pollution in England and the steps taken to reduce it. Among the subjects discussed are: grit as an air pollutant and its collection; source and effect of hygroscopic nuclei; effect of weather conditions; formation of sulfuric acid; and use of pulverized fuel ash.

1073 The Foundry and Air Pollution. J.P. Ahern. Foundry 77, 194-197 (Oct. 1949).

Cupola operation is so spectacular and noticeable that foundries are the first to be blamed for atmospheric pollution in their neighborhood, whereas other industries, weather and topography may have much greater actual effects. Thorough surveys before enacting legislation are expensive, but legislation prepared without knowledge of actual conditions and proper standards may be hostile to the foundry industry and others. Several examples of such legislation are cited. Suggestions are given for dust and fume reduction. Foundries should be represented in any committees to take action in suppression of air pollution.

1074 Sulfur from California Hydrogen Sulfide. J.C. Albright. Petroleum Engr. 21, C-7-10, (Aug. 1949).

The author describes a process of removing hydrogen sulfide from waste gases from oil processing and converting it into elemental sulfur. Concentrated diethanolamine solution absorbs the gas in the scrubbers. The diethanolamine is then steam stripped to release the hydrogen sulfide, which is then dried in shell and tube units. The gas is then burned with a deficiency of air, with the products passing through a cyclone to remove the elemental sulfur, and then through two catalyst beds to react the sulfur dioxide formed in the combustion with hydrogen sulfide. An overall yield of 98.5 per cent elemental sulfur is reported.

03119032

HWBB-0013702

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.

03119033

NWBB-0013703

1078 Measurement of Work-Life Expectancy. S.L. Wolfbein. Monthly Labor Rev. 71, 193-195 (Aug. 1950).

Tables of working life of men have been developed in the Bureau of Labor Statistics. A detailed description of these Tables and an analysis of the pattern of working life derived from them is presented in the Bureau of Labor Statistics Bulletin No. 1081, which will be reviewed in a future Digest. This paper discusses the general implications of the report. With the increase in life expectancy and adoption of a retirement age, the average man can expect 5.7 years of retirement, which is double the expectation in 1940. By 1960 the period will be accordingly longer; this is the nub of the problem of old-age dependency. The Tables also have their applications to the young. The life work span varies greatly in different industries, and the Tables show in which the labor force is predominantly young or old. Comparisons between rural and urban workers, and between races, are also made. Rural workers begin earlier and retire later than the urban; nonwhite men begin earlier and leave work earlier. The length and pattern of working life is constantly changing. A future volume will present similar statistics for women.

1079 Influence of the Unusual on Plant Medical Activity. Ruth E. Arndt. Ind. Med. and Surg. 19, 384-386 (Aug. 1950).

Minor illnesses and injuries cause a greater loss of time from work in small plants than do the major events causing dispensary visits. The number of visits, due to minor ailments, is increased by rumors of lay-offs, domestic problems, feelings of inadequacy on the part of the workers, indifference or disaffection, and changes in management. Most of these affects were demonstrated by graph. The industrial nurse can aid both management and labor to correction of the "human caused" factors leading to loss of production time. She should gain the confidence of the worker, but need not disclose confidential information when making recommendations for job change. -- Condensed from Author's Summary

1080 Some Industrial Aspects of Aging. E. Clague. Arch. Ind. Hyg. & Occ. Med. 2, 189-195 (Aug. 1950).

The author discusses the two aspects of the problem of the aging worker: retirement and pensions, and continued employment. An expanded social security program, plus union-industry pensions, should solve the problem for those who wish to retire. For those who continue working, many employers have found that providing easier jobs when necessary is a satisfactory answer. However, changes in employment due to going out of business, technological changes, and other reasons create a hardship among older workers. "It is clear, then, that the employment problem of the older worker goes beyond the individual firm and the individual union. A full solution of the problem requires a large scale development of jobs suited to the capabilities of the older people and the working out of systematic means of getting them into these jobs."

03119034

MWBB-0013704

INDUSTRIAL HYGIENE ABSTRACTS

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".

03119035

HWBB-0013705

1084 Pressure-Relieving Capacities of Diaphragms and Other Devices for Venting Dust Explosions. J. Nagy, J.E. Zeilinger and I. Hartmann. Bur. Mines Rept. of Invest. 4636, 15pp. (January, 1950).

Experience and research have shown that an effective way to reduce structural damage from explosions is to provide adequate pressure-relief vents in the walls of equipment and buildings within which explosions might occur. In general, free or unrestricted openings represent the most efficient type of vent. However, in many manufacturing operations it is impractical to use free vents, and it becomes necessary to cover the openings with diaphragms or blow-out disks, hinged panels, or other devices, in order to give protection against weather changes, to prevent the efflux of dusts or vapors from equipment during normal operations, or for other reasons. The present report describes recent experiments that were made to determine the relative effectiveness of an unrestricted vent and 22 types of closures, including various paper, cloth, and metal-foil diaphragms, hinged doors or panels, and several kinds of scored and unscored glass panes. The tests showed that many of the vent closures were effective in releasing the explosions rapidly during their incipient stage, so that the development of destructive pressures was prevented. Vents of this type should prove useful in safeguarding industrial equipment from severe explosion damage. The experiments disclosed that the venting capacities of the diaphragms are approximately inversely proportional to their static bursting strengths.
-- Authors' Introduction

1085 Two Devices to Prevent Electric Arcs with Airdox Operations in Coal Mines. F.J. Gallagher. Bur. Mines Inf. Circ. 7515 5pp. (Sept. 1949).

Recent development of an insulating coupling and a reinforced rubber-jacketed tubing virtually eliminate arcing at the face and also the possibility of electric shock when using Airdox for coal breaking. The rubber-jacketed tubing is more easily coiled and uncoiled than the copper tubing, and should last longer, although the rubber tubing has not been in use long enough to permit drawing sweeping conclusions as to its length of life. The mining company responsible for the developments has used them with good results for a considerable time. -- Condensed from Author's Conclusions

Supersonic Airflow Slide Rule.

A slide rule for computing supersonic airflow functions has been developed by Lisbeth Crowell, research engineer of the Franklin Institute, Philadelphia 3, Pa. It is said to afford an easy, accurate, and rapid means of computing transonic and supersonic airflow relations. Details are given in the April, 1950 issue of The Journal of the Franklin Institute. -- Aminco Laboratory News, (July 1950).

03119036

NWBB-00137706

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

UNITED STATES NOVEMBER 1950

03119037

MWBB-0013787

NOVEMBER 1950

MISCELLANOUS

1089 Industrial Health in the Undergraduate Medical Curriculum. May R. Mayers. Arch. Ind. Hyg. & Occ. Med. 2, 123-133 (Aug. 1950).

The increasingly urgent need to provide more training in industrial health, more particularly in the occupational diseases as clinical entities, for the medical student is discussed. There are two distinct educational problems: (1) clinical instruction for the diagnosis and treatment of occupational diseases, and (2) instruction in industrial health as a branch of public health. The first should be taught as an integral part of clinical medicine, and in the second those matters of practical concern to the practicing physician should be stressed. Medicolegal training should also have a place in the curriculum. It is not necessary to lengthen the medical curriculum to include these subjects, if they are judiciously substituted into the existing curriculum. For demonstrating cases of the more unusual occupational diseases, it is suggested that preparing motion pictures and distributing them to medical schools may prove practicable.

1090 Control of Odors. E.R. Weaver. National Bureau of Standards Circular No. 491, 12pp. (Apr. 17, 1950). For sale by Supt. of Documents, Government Printing Office, Washington 25, D.C., 10 cents.

The Circular deals briefly with industrial odors and the common methods for their control:dilution, dispersal, burning, adsorption, solution, and chemical action. Odors in households and places of business are considered more fully. The methods used in industry are the only effective ones here also, although some are impractical or expensive in the home. The so-called deodorants, which either (1) mask the odor, (2) dull the sense of smell, or (3) irritate the olfactory organs, are shown to have only temporary effects, and the irritants, especially ozone, may be injurious. The author does not believe that chlorophyl is useful in deodorization. For control of odors in sick rooms and hospitals, the author recommends sufficient ventilation. The treatment of the entire subject is admittedly brief, and the author recommends McCord and Witheridge's book (See I.H.F. Abstract 280, March 1949) for a fuller discussion.

IN REG. ABBR. AMES

1091 Eighty-sixth Annual Report on Alkali, etc., Works, by Chief Inspectors, for 1949. (1950). H.M. Stationery Office, London. 1 shilling. Abstracted in Coll. Guard. 181, 183-186 (Aug. 17, 1950).

A large proportion of the report deals with "spoilbanks" (dumps) at coal mines, especially regarding fires. The problem has not as yet been solved. The copious use of water is recommended, but that is likely to cool only the surface, leaving smoldering fires at a depth. Suggestions are also given for avoiding excessive emission of sulfur dioxide.

03119038

NWBB-0013/08

INDUSTRIAL HYGIENE ABSTRACTS November 1950

INDEX

Aerosols
  Handbook (Bk. Rev.) 1027
  sampling 1067
Air Pollution
  and foundries 1073
  effects on teeth 1075
Aging
  industrial aspects 1080
Alkali, Etc., Works
  annual report 1091
ANTU, toxicity 1045
Arsine poisoning and BAL 1039
Arthritis
  and compensation 1036
  Marie Stumpel's 1037
Asbestosis 1053
Atomic defense
  role of doctor 1065
Atomic Energy program
  control of hazards (Bk. Rev.) 1027
Atomic Weapons
  effects (Bk. Rev.) 1028
Atmospheric pollution 1072
Beryllium
  effect on phosphatases 1042
  Saranac symposium (Bk. Rev.) 1025
Beryllosis 1041
Cadmium
  distribution in body 1038
Carbon monoxide
  determination in blood 1066
Compensation board
  and physician 1034
Deafness
  occupational 1060
Dusts
  from mine cars 1055
  inert 1050
  in mines 1056
Dust explosions
  venting devices 1084
Dust Measurements 1068
Dust removal by wet drilling 1069
Dust respirators
  in coal mines 1071
Electric arcs in mining,
  prevention 1085
Employee problems
  management approach 1077
Explosion
  South Amboy 1083
Gallium
  toxic action 1040
Hydrogen sulfide 1074
Industrial health education 1089
Industrial hygiene surveys 1031
Industrial medicine
  selling to profession 1035
Labor Legislation
  state and federal (Bk. Rev.) 1030
Medical service and human
  factors 1079
Mines
  health and safety in 1086
Mine dust
  reducing 1054
Mine locomotives
  effect on environment 1059
Mine ventilation in South Wales 1070
Odor control 1090
Oxygen poisoning 1047
Parathion poisoning 1043
Phosgene and diphosgene
  mechanism of action 1044
Phthalic anhydride
  flammability 1048
Plutonium
  removal from foundry wastes 1064
Pneumoconiosis
  in coal miners 1032
  and legislation 1082
  from various dusts 1052
  pathology 1051
Quaternary ammonium compounds
  toxicity 1049
Radiation
  due to atmospheric fog 1063
Radiation hazards
  in fire emergencies 1062
Radiation materials as
  air pollutants 1061
Rehabilitation
  tuberculous 1081
Safety
  labor-management cooperation 1076
  in churn drilling 1088
Safety in coal mines
  in Ruhr 1087
Silicosis
  bronchitis and asthma 1033
  crystallography and 1058
  electron microscopy in 1057
Solvents
  toxic effects 1046
Work-life expectancy 1078

03119039