

IN RE: AIRAMIS NOVEMBER 1992



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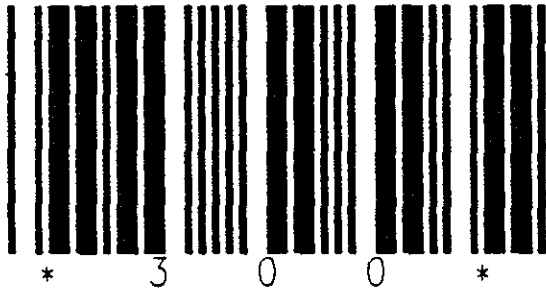
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IN RE: ABRAMS

November 1992

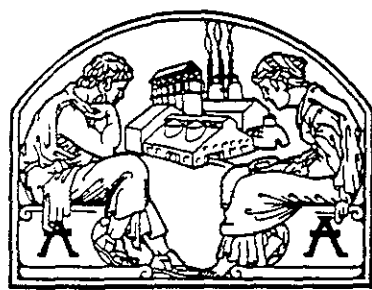
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IN THE ABSTRACTS
NOVEMBER 1952



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Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends

FEBRUARY, 1952

(Vol. 16, No. 2)

INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

4400 FIFTH AVENUE -- PITTSBURGH 13, PA.

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FOUNDATION FACTS

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

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Volume 14

February, 1962

No. 2

DR. D.C. BRAUN APPOINTED MEDICAL DIRECTOR

Dr. Daniel C. Braun, a national authority on industrial health, and an engineer as well as a physician, has been appointed Medical Director of Industrial Hygiene Foundation and a Senior Fellow of Mellon Institute. He will also serve on the staff of the University of Pittsburgh Graduate School of Public Health as lecturer on occupational health. Dr. Braun, who had been medical director of the Pittsburgh Coal Company since 1944, is widely known for his activities in industrial medicine at educational, civic, municipal and medical society levels. He was adviser to Westinghouse Electric Corporation in its supervisory health program.

Dr. Braun, a 1937 graduate of the University of Pittsburgh School of Medicine, was associated with the late Dr. Grover C. Weil, a pioneer in industrial medicine and surgery. Dr. Braun is a fellow of the American Medical Association, the American College of Chest Physicians, The American Academy of Occupational Medicine, and the Pittsburgh Academy of Medicine. He is also a director of the Industrial Medical Association and a member of the American Industrial Hygiene Association, The American Institute of Mining and Metallurgical Engineers, and both the Allegheny County and Pennsylvania State Medical Societies.

As Medical Director of Industrial Hygiene Foundation, Dr. Braun takes over the position held by Dr. Walmer prior to and after his appointment to Managing Director.

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MR. HATCH SELECTED FOR STATE HEALTH BOARD

Theodore F. Hatch, the Foundation's Laboratory Director, has been selected by Governor Fine to serve as the engineer member of the newly-created Pennsylvania Advisory Health Board. This Board will advise with the State Secretary of Health on further advancements of local and state health services. Prof. Hatch's wide knowledge of the fields of occupational hygiene and industrial health engineering will be a valuable asset to the State through his service on this board.

MR. HEMEON SPEAKS AT CONFERENCE ON AIR POLLUTION

Mr. W.C.L. Hemeon, the Foundation's Engineering Director, will present a paper on "Measurement of Atmospheric Pollution" on February 18 at the Governor's Conference and Exhibit on Atmospheric Pollution, which is being held at Trenton, N. J.

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INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

152 State Meetings on Air Pollution.

A two-day statewide conference and exhibit on air pollution will be held in Trenton, N.J. on February 19 and 20. The sponsors include state departments, municipal groups, and several industrial associations. Another two-day program on air pollution control will be sponsored on May 27 and 28 by the Engineering Institutes of the University of Wisconsin at Madison, Wisconsin. The program is planned for municipal staff employees, building engineers, and industrial personnel concerned with the interpretation of smoke ordinances and the solving of air pollution problems.

--Air Repair, February, 1952

153 Air Pollution Prevention Meeting.

The 1952 annual meeting of the Air Pollution and Smoke Prevention Association of America will be held in the Statler Hotel, Cleveland, from June 9 to 12. The tentative program includes discussion of welfare hazards, problems in several industries, meetings of smoke inspectors and of several committees, and educational trips in the Cleveland area.

--Air Repair, February, 1952

154 Experimental Cancer Machine at University of California.

The University of California School of Medicine has put into operation the most powerful x-ray apparatus in the world for studying cancer. The machine, a 70 million volt medical synchrotron, is part of the \$500,000 radiological laboratory. The synchrotron was built to test the possibility that ultra-high energy x-rays may be more effective in treating deep-seated tumors than those of lower energy.

The new facility contains, in addition to the synchrotron, a variety of equipment and laboratories that are essential to work with the machine.

-- Chem. & Eng. News, Jan. 28, 1952

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155 Fluoridation of Water Supplies.

The Councils on Pharmacy and Chemistry and on Foods and Nutrition, of the American Medical Association, have approved the fluoridation of public water supplies as a method of reducing dental caries. That procedure has been adopted in 140 cities in 33 states. The report states that no difficulty has been experienced ~~from~~ the treatment except possible mottling of the tooth enamel, and that is almost negligible when the fluoride content of the water is one part per million, the concentration recommended. However, the use of products high in fluorides should be avoided when the water has been fluorinated. Also, in hot weather when much water is consumed, a lower concentration of fluorides may be necessary to prevent tooth mottling. -- J. A. M. A., December 1, 1951

156 Radium Poisoning Claims 41st Victim.

Newspapers of December 3 reported the death of Mrs. Florence C. Casler, 51, at East Orange, N. J., a former employee of the U. S. Radium Corp. In 1918 and 1919 she was one of a number engaged in painting watch and clock dials with radium paint, and, like the others, habitually moistened the paint brush with her lips. According to Dr. Harrison S. Maitland, Essex County Medical Examiner, the radium ingested in that process had remained latent in her system until 1950, when she developed bone cancer which eventually caused her death. She is reported to be the 41st victim of radium poisoning from that cause. Three others had died from bone cancer and the remaining 37 from blood poisoning. In addition to Dr. Maitland, Prof. Louis Hempelmann of the Atomic Energy Commission and Dr. Robley D. Evans have actively followed the progress of these cases and have conducted and published studies on delayed effects of radium poisoning.

The trouble with a lot of workers is that they do not make use of the safety equipment that the good Lord gave them. Here is what we have on hand to prevent accidents:

Eyes to see danger.
Ears to hear warnings.
Feet to get away from danger.
Brains to know when danger is near.

They all add up to keeping alert--an attitude that prevents almost all accidents. --Tenn. Ind. Hygiene News, October, 1951

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OCCUPATIONAL DISEASE STATISTICS

157 Occupational Disease Statistics

	Conn. ¹ Dec., 1951	Ind. ¹ Jan. 1952	Ohio ² Aug., 1951	Wisc. ¹ Dec., 1951	Total
Allergy				2	2
Blood poisoning				1	1
Carbon monoxide poisoning		1		1	2
Chemical poisoning			3		3
Dermatitis	74*	9**	337	28	448
Fumes				4	4
Lead poisoning			6	1	7
Lung diseases			14		14
Miscellaneous			132		132
Silicosis	1		37	1	39
Skin infection			5	3	8
Skin irritation				3	3
Talc pneumonitis		1			1
Throat irritation (oil)				1	1
Tuberculosis due to contact			6		6
Undulant fever	<u>1</u>	<u>1</u>	<u>—</u>	<u>—</u>	<u>2</u>
Total	76	12	540	45	673

1. Occupational disease cases reported to the Industrial Commission. There were 105,615 days lost; as well as 15 deaths. Thirteen of these deaths occurred from lung diseases, and two were caused by chemical poisoning.

2. Occupational disease cases reported to the Board of Health.

* Dust-inorganic, Dyes and inks, Fumigants, insecticides, disinfectants, (N.O.C.) (undetermined), Paints and lacquers, Plating solutions (N.O.C.), Tar and allied substances, and Turpentine caused one each; Acids, Foodstuffs, Phenol and phenolic compounds, and Soap solutions, glue, etc., caused two each; Alkalies and Dust-organic caused three each; Synthetic resins and chemicals caused five; Oil and solvent (combination exposure) caused six; Solvents (N.O.C.) caused seven; and Oils, fats and waxes caused thirty-four.

** Mica, Sand and Rubber caused one case each; Miscellaneous, Oil and wool caused two cases each.

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LEGAL DEVELOPMENTS

November 1951

Silicosis--Watchman--Minimal Exposure to Silica Dust on Surface of Mine--Statute of Limitations.

Where a watchman's exposure to silica dust while working on the surface of a mine from 1945 to 1949 was minimal both as to length of periods of exposure and quantity of dust inhaled during such periods, and where he had worked underground as a miner almost continuously for 8 years prior to 1945, the court upheld a finding that the condition of his lungs did not result from any exposure occurring during the time he was employed as a watchman. As a result, his claim, made in 1949, was barred by the statute of limitations. Medical testimony also upheld the finding that the claimant was only partially disabled and that he did not terminate his employment following an examination by a medical panel. Judgment denying benefits affirmed. Shumaker v. Hunter Lease and Gold Hunter Mines, Inc., Idaho Supreme Court, No. 7743, November 30, 1951. -- CCH

159 Silicosis--Miner--Concentrated Exposure to Dust in First Employment--Statute of Limitations--Minimal Exposure in Second Employment.

The inhalation of sand dust during a second mining employment of more than 4 years, even though only for a short time each day, constitutes an injurious exposure to the hazards of silicosis where his lungs had been "loaded" by exposure for 28 years in another mining employment and every additional exposure might have aggravated the latent disease. Since the claimant did not become disabled, or ever discover that he had silicosis, until the first employer was protected by the three-year limitation statute, the claim against that employer was dismissed and the second employer alone stood liable for the payment of benefits. Affirmed. Johnstown Coal & Coke Co. v. Dishong, Maryland Court of Appeals No. 24, Dec. 5, 1951.--CCH

160 Silicosis--Miner--Time of Filing Claim.

A miner who has known for some years that he has been ill, but whose ailment has not been diagnosed as silicosis, is not barred by the statute of limitations where he files his claim within a week of his first notification of the presence of the disease. The miner had worked in various mines for a period of 49 years, 24 years of that time after he had first noticed signs of illness. Seven years before he was notified that he had silicosis he had been obliged to stop work, but the doctors who examined him during the seven year period diagnosed his ailment as asthmatic

bronchitis, then a non-compensable disease. It was not until he had a hospital examination that the true nature of the disease was disclosed. Consolidation Coal Co. v. Dugan, Maryland Court of Appeals, No. 5, October 31, 1951.

-- CCH

161 Silicosis--Quarry Worker--Time of Notice to Employee--Statute of Limitations Construed.

Where a statute provides that "the time of notice of an occupational disease shall run from the date that the employee has been advised by competent medical authority that he has the same," the fact that the employee had been examined in 1940, and that some evidence of silicosis had been found then, does not effect the "time of notice" to him. It was not until the employee's examination in 1948 that there was any evidence that he was definitely told that he was suffering from silicosis. Previous to that time, any statements made to him regarding silicosis had been vague. Although disablement existed from the time the employee quit work in 1945, such disablement, for the purpose of notice and claim for compensation, should date from the time the employee was notified by competent medical authority that he had silicosis. The claim, having been filed within a year of that time, is not barred. Autrey v. Victor Mica Co., North Carolina Supreme Court, No. 236, November 7, 1951.

-- CCH

162 Bronchitis--Exposure to Vanadium Oxide Dust--Plant Welder--Right to Make Timely Protest to Adverse Finding.

A claimant of occupational disease benefits, or his employer, is entitled to make a timely protest to an adverse finding by the State Compensation Commissioner and entitled to an opportunity to introduce evidence and be heard before such commissioner makes a final order. Here in a memorandum not sent to claimant or employer, the Medical Board expressed an opinion that the claimant's present bronchial condition was in no way connected with exposure to vanadium oxide dust a year and a half earlier. Two days later the commissioner entered an order denying compensation and transmitted it to the claimant and employer by letter, but failed to notify the claimant and employer of the time allowed for filing an objection to such finding. Reversed and remanded. Miles v. State Compensation Commissioner, West Virginia Supreme Court of Appeals, No. 10,407, October 16, 1951.

-- CCH

163 Silicosis Accompanied by Tuberculosis--Extent of Disability--Statute Construed.

The statutory definition of silicosis in the third stage does not exclude an allowance of compensation to an employee for third stage silicosis even though the silicosis alone is not of itself sufficient to produce

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total permanent disability and may actually have resulted from tuberculosis independently of silicosis. Such a holding is also in keeping with legislative intent throughout the history of the Occupational Diseases Act. Award affirmed. Sloan v. State Compensation Commissioner, West Virginia Supreme Court of Appeals, No. 10,380, October 9, 1951. -- CCH

164- Wrongful Death Action--Gas Worker Asphyxiated on Relief Assignment--
Employer's Failure to Stress Hazards of Employment--Assumption of Risk--
Fall in Vent Pit.

Unless so obvious as to be observed by anyone exercising ordinary care, an inexperienced employee does not assume the risk from hazards of the employment of which he is ignorant and in regard to which he has not been given reasonable instructions, even though they are ordinary hazards of the employment. In affirming a \$12,000 verdict for a gas worker who was asphyxiated, the court also held that in the absence of any direct proof as to how the death occurred, the manner of its occurrence may be shown by circumstantial evidence from which the jury may infer both the manner and the cause of the accident. Oklahoma Natural Gas Co. v. Harlan, Oklahoma Supreme Court, No. 34,740, December 26, 1951. -- CCH

BOOKS, PAMPHLETS AND NOTICES

165- No Time to Grow Old. New York State Joint Legislative Committee on Problems of the Aging, 94 Broadway, Newburgh, N. Y. T. C. Desmond, Chairman. 316 pp., (1951).

Senator Desmond's brief preface describes the changes taking place in the attitude of industry and other groups toward the old age problem as a "quiet revolution." The report of the committee, which follows, deals with many phases of this revolution, including attitude of industrialists toward living and keeping older workers, the accomplishments of religious and other organizations, and progress in social security, housing, recreation and mental hygiene. The effects of war and of inflation are discussed. The twelve principles for the aged which the committee lists are: purposeful activity, utility, social acceptance, growth, opportunity, freedom of choice, non-segregation, individualization, diversity, self-reliance, local responsibility, and early preparation.

An important part of the committee's work is the awakening of public opinion, education of employers and conducting of research. The statements of a number of industrial leaders are quoted. The report is followed by a large number of papers by various authors, dealing with special fields.

Among the diverse subjects are group insurance and employment, the Massachusetts non-discrimination law, the future of social security, public health education problems, recreation clubs, and local, statewide and nationwide planning for the aged. The problem of the elderly woman is discussed by several authors. -- FFR

- 166 Compendium of Meteorology. T.F. Malone, editor. American Meteorological Society, Boston, Mass., 1334 pp., (1951). Price \$12.00.

Meteorology is becoming of increasing importance in air pollution studies. This volume is a treatise on all phases of meteorology, written by over 100 specialists, under the direction of a committee of seven. A chapter on atmospheric pollution, by E. Wendell Hewson is of special interest. Among the other subjects included are radiation, meteorological optics, atmospheric electricity, cloud physics, the upper atmosphere, general and local circulation, weather forecasting, climatology, biological and chemical meteorology, mechanics of pressure systems, instruments, and laboratory investigations. -- FFR

- 167 Lectures Presented at the Inservice Training Course in Radiological Health. University of Michigan, School of Public Health, February 5-8, 1951. Ann Arbor, Mich., 139 pp., (1951). Price \$3.00.

This course included 21 lectures on various phases of radiation protection, applications of isotopes, peacetime uses of atomic energy, permissible exposure, and related subjects of interest, by a number of authorities in the field. The lectures are reproduced in full. -- FFR

- 168 Industry and Tropical Health. Proceedings of the First Industrial Tropical Health Conference, Sponsored by the Harvard School of Public Health, December 8-10, at Boston, Mass. Published by the Harvard School of Public Health, 316 pp., (1951). Price \$10.00.

The numerous papers presented at this conference are presented in an attractive and well illustrated volume. The first sections deal with industrial health in the various tropical regions. Then follow discussions of general subjects including organization of industrial health services, antibiotics, nutrition, current research at Harvard, infectious diseases and problems of control, and industrial health hazards. While many accomplishments are outlined, it is evident that tropical health is a problem that will require progress for many years to come. -- FFR

- 169 Alcoa--An American Enterprise. C.C. Carr. Rinehart & Co., Inc., New York, N.Y., 292 pp., (1952). Price \$3.50.

This book presents the history of aluminum and of the Aluminum Company of America, beginning with Hall's discovery of the process for

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making aluminum at a low cost. The company's progress is then related, including the Goernment anti-trust suits, competition by other companies, Alcoa's accomplishments in the two world wars, and other interesting features. -- FFR

INDUSTRIAL MEDICAL PRACTICE

170 A Study of Influenzal Vaccination at an Industrial Plant.

G.P. Eddy. Ind. Med. & Surg. 21, 15-16, (January, 1952).

A statistically significant difference in the incidence of influenza was found in favor of an immunized group as compared with a non-immunized group. However, there was no apparent effect on the morbidity of the disease once it had occurred in the immunized group. The authors feel that the difference in absenteeism rate warrants further use of influenzal immunization in industry. The use of a vaccine of a strain of virus from patients in the early stages of an epidemic would be ideal but impractical because of the time element. -- Cond. from Author's Conclusions

171 Dental Study of Employees of Five Lead Plants.

E. R. Aston. Ind. Med. & Surg. 21, 15-20, (January, 1952).

Dental lesions in workers exposed to lead are manifested in the following manner: (1) the deposition of lead in the gingival tissue and buccal mucosa; (2) heavy deposits on the teeth under the gingivae showing concentration of lead; (3) the effect on the soft tissues and supporting structures producing gingivitis and resorption of the alveolar tissue; (4) discoloration and dissolution of enamel caused by acid mists; (5) storage of lead in tooth structure; and (6) poor general dental conditions.

However, the author's tests show that the last two are not as severe nor as prevalent as has been generally supposed. The author makes a number of recommendations for an oral health program including preplacement and periodic examinations and diagnosis, emergency treatment, and education in the care of teeth.

172 Psychiatric Casualties in Industry. J.D. Moriarty.

Ind. Med. & Surg. 20, 538-540, (December 22, 1951).

One predictable result of the current national emergency is an increase in psychiatric casualties in industry. Suggestions are presented for techniques for better job selection, screening of misfits, and early

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detection of psychiatric illnesses. The industrial physician and the nurses must have sufficient practical knowledge to detect early symptoms of psychoses and to give "psychiatric first aid" in minor conditions. Some important psychosomatic conditions, like peptic ulcer, coronary "accidents" and hypertension, are briefly discussed, and emphasis is laid on the fatigue syndrome which is common among executives.

-- Cond. from Author's Summary

- 173 Objectives and Recommendations for Education in Industrial Health. Report of the Education Committee, American Industrial Hygiene Association, April, 1950. Accepted by Board of Directors, April, 1951. Am. Ind. Hyg. Assn. Quart. 12, 180-182, (December, 1951).

The fundamental recommendations are for thorough training in the sciences in the undergraduate course and at least one year of graduate work including both formal education and practical training. The emphasis in graduate instruction should depend on the particular type of work contemplated, and it should be given in universities where graduate work in the various sciences is offered.

Graduate education should be at an academic level equivalent to first-class training in medicine and engineering. It would lead to advanced degrees such as Doctor of Science or Doctor of Philosophy, rather than specific degrees such as Doctor of Industrial Hygiene. Short courses and refresher courses for other professions are also desirable, and should be included in the curricula of medical and public health schools. Graduate education for physicians and nurses is not included in the scope of the report.

- 174 The Industrial Nurse and the Four Freedoms. Florence R. Weiner and Marion S. Mayne. Nursing World 215, 576-578, (December, 1951).

The four freedoms are: freedom from a sense of insecurity; freedom from a sense of insignificance; freedom from emotional impoverishment, and freedom from self-accusation. Lack of any of these freedoms in a worker may interfere with his efficiency in an emergency such as a disaster. The nurse has a part to play in developing these freedoms as far as possible, and she must decide what her part is and when to refer the worker to other sources for more specialized care.

- 175 The Detection of Pneumoconiosis in Belgian Coal Mines. The Technique of Radiology and Standardization of Industrial Classification Recognized by the Institute of Hygiene in Mines at Hasselt. D. Belayew. Rev. Med. Miniere 3, 160-166, (1950). (In French).

In order to obtain best results from radiography it must be used with standardized technique and apparatus, so that films taken after long intervals may be fairly comparable in clearness of definition and depth of

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color. Also, the shadows must be classified and named on an agreed plan, such as the letters used for classification in the Belgian mines. Nevertheless, the same observer may classify a film differently at the second or third reading. Tomography is a great aid in determining the contours of a tuberculous lesion. A method is presented for picturing the industrial history of each miner: each process has its own indicator, which appears in black for coal and red for rock work; for each year of work an indicator is added to his industrial picture. Thus a glance at the picture shows at what work and for how long any man has been employed.

-- Cond. from Bull. Hyg.

- 176 Rehabilitation of Persons with Pulmonary Dust Disease. O.A. Sander. Arch. Ind. Hyg. & Occ. Med. 4, 541-548, (December, 1951).

Dust prevention and protection from respiratory infection are important in checking dust diseases, and aluminum therapy may prove to be of value. Means of lung ventilation are at least of temporary service. However, the author's thesis is that if progressive pathologic involvement of the lung is prevented and the worker is reassured that he has little to fear, rehabilitation need never be discussed. Several cases are reported to illustrate that point. When workers with pneumoconiosis are found, by medical and x-ray examination, the first thought should never be to remove them from their jobs at once, unless they have active tuberculosis.

Their dust intake should be reduced to a minimum, and they should be reassured that their lung changes will not progress to a dangerous state with the improved dust control. Fear caused by well-meant but exaggerated advice has caused more disability than the lung lesion itself. Saving workers from a state of semi-invalidism by reassurance and optimism, and keeping them at their jobs, are in the author's opinion, the most important phases of rehabilitation of those with pulmonary dust disease.

- 177 The Work of the International Labour Organization in Occupational Health. A. Grut. Brit. J. Ind. Med. 8, 199-205, (October, 1951).

The activities and progress of the ILO are described. Recommendations to national health authorities have been made on lead and phosphorus poisoning, anthrax, medical inspections of factories, notification of occupational diseases, medical training and health education, medical examination, vocational guidance, industrial hygiene, workmen's compensation, rehabilitation, pneumoconiosis, and protection against other health risks. The principal publications include the encyclopedia on Occupation and Health, and technical monographs. An outline of problems for the future is given.

- 178 The World Health Organization and Occupational Health. S. Forssman. Brit. J. Ind. Med. 8, 206-208, (October, 1951).

A short survey is given on the general activity of World Health Organization, the specialized agency for health problems of the United

Nations. The scope of occupational health is discussed, and a survey of present and future activity of WHO in the field of occupational health is given.
-- Author's Summary

- 179 The Institute of Occupational Health in Helsinki. L. Noro.
Arch. Ind. Hyg. & Occ. Med. 4, 597-601, (December, 1951).

The organization and activities of this institution, partly supported by the Finnish government, are described.

SKIN DISEASES AND BURNS

- 180 Dermatitis of the Hands in Industry. N.N. Epstein and J.R. Allen. Calif. Med. 75, 300-304, (October, 1951).

Three hundred and thirty-eight patients were referred for opinion as to whether a dermatologic condition was due to occupational causes. The answer was affirmative in two-thirds of the cases. Of 2260 patients seen in ordinary private dermatological practice, about 9% had lesions on the hands. Of 128 patients with contact dermatitis considered to be of industrial origin, 121 or 94.5% had lesions on the hands. Establishing industrial responsibility in cases of suspected occupational dermatitis of the hands is difficult, but in most cases a just conclusion can be reached by following certain guides.
-- Authors' Summary

- 181 Nickel and Cobalt Dermatitis. A. Rostenberg, Jr. and A.J. Perkins. J. Allergy 22, 466-474, (September, 1951).

Sources of exposure to nickel and cobalt are listed. The role of nonspecific factors, such as humidity, dust, and irritants is discussed. A case in which a man was sensitive to nickel and cobalt and to a smaller extent to gold is described. It was shown that nickel gives a reaction only when it is in soluble form. An example of a lymphangitic reaction to an intradermal test with a simple chemical is given. The cross reactivity of nickel and cobalt is considered and its importance from the practical standpoint emphasized.
-- Cond. from Authors' Summary

- 182 Cutaneous Hypersensitivity Due to Beryllium. A Study of Thirteen Cases. G.H. Curtis. Arch. Dermatol. & Syphl. 64, 470-482, (October, 1951).

An investigation from the standpoint of allergic eczematous-contact type dermatitis was conducted in 13 cases of dermatitis caused by

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beryllium compounds in two beryllium extraction plants in Cleveland. The clinical, histological, and experimental criteria for establishing the dermatitis as an allergic-eczematous type were fulfilled. Spontaneous flare-ups were obtained in 8 of 16 control persons who had never been exposed to beryllium compounds. The beryllium ion is believed to be the sensitizing allergen. Beryllium fluoride possesses the capacity to sensitize the skin to a high degree, which accounts for the high incidence of dermatitis among workers in the fluoride process of beryllium extraction. For patch tests 1 to 2% solutions of various beryllium salts are suitable. It is suggested that mucous-membrane manifestations and possibly acute pneumonitis may be allergic reactions to beryllium compounds.

-- Cond. from Author's Summary

183. Dermatological Problems among Pharmaceutical Workers. J.E. Dalton and J.D. Peirce. Arch. Dermatol. & Syphl. 64, 662-675, (Dec., 1951).

In a two-year study of employees of a large pharmaceutical establishment, there were 74 cases of nonoccupational dermatitis and 24 of occupational dermatitis. The causes of nearly all the cases of occupational dermatitis were equally divided between biological agents, mostly penicillin, and a variety of chemical compounds. Studies of many of the cases were made.

184. Bronchial Asthma, Urticaria, and Allergic Rhinitis from Tannic Acid. T.G. Johnston, A.G. Cazort, H.N. Marvin, R.B. Pringle, and J.M. Sheldon. J. Allergy 22, 494-499, (November, 1951).

A case of allergy to tannic acid and gallic acid is reported. Symptoms have occurred from both ingestion and inhalation of tannic acid. The presence of antibodies to tannic and gallic acids has been demonstrated by means of direct skin testing and by the Prausnitz-Kustner technique. The fact that reagins have been demonstrated to both tannic and gallic acids and were absent to resorcinol would suggest that the antigen in our patient has a trihydroxyphenyl configuration. The fact that simple chemical compounds such as tannic and gallic acids can be potent allergens raises the question of the possibility of other simple chemicals as the etiological cause for heretofore unexplained allergic diseases.

-- Authors' Summary

185. Melanopathy of the Skin and Poikiloderma by Burned Oil. C.L. Meneghini. Rass. Med. Ind. 20, 1-8, (1951). (In Italian).

A case of melanopathy of the skin with poikiloderma caused by handling burned oil is described. Clinical symptoms of the patient are said to agree with classic descriptions of occupational dermatitis which have been ascribed by other authors to tar, mineral oils, and various derivatives.

-- Bull. Hyg.

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- 186 Dermatitis Venenata from Butesin Picrate Ointment.
F. Ronchese. Ind. Med. & Surg. 20, 555, (Dec., 1951).

Several cases of dermatitis from butesin picrate ointment have been described in the literature. Therefore simpler preparations such as boric acid ointment and vaseline, which have been proved successful, should be used rather than butesin picrate and other remedies which have occasionally caused dermatitis.

- 187 A New Local Treatment for Burns. P.E. Spangler.
U.S. Armed Forces Med. J. 3, 105-114, (Jan., 1952).

The treatment consists essentially of the application of a gel composed of partially hydrolized casein, sodium lactate, and sodium lauryl sulfate, followed by a four-ply, coarse-meshed gauze impregnated with zinc acetate. Full directions are given for the treatment. Twenty-two cases are described briefly. Although the author's experience was limited, he recommends the method as superior to any other local treatment, on the basis of easy and quick application, rapid amelioration of pain and distress, greatly reduced incidence of infection, prevention of loss of serum, use of the injured member, easy transportation, healing of first and second degree burns in 5 to 12 days, self-debriding of third degree burns in 12 to 14 days, and minimum scarring.

CHEMICAL HAZARDS

- 188 Absorption and Excretion of Inhaled Fluorides. G.H. Collings, Jr.,
R.B.L. Fleming and R. May. Arch. Ind. Hyg. & Occ. Med. 4,
585-590, (December, 1951).

Experiments on human subjects demonstrated an increased excretion of fluorides after exposure to atmosphere containing either gaseous or particulate fluorides. It was indicated that the two forms are equally well absorbed by the lungs. Under conditions of usual industrial work in which 8 hours of work are followed by 16 hours of freedom from exposure, it is to be expected that the rate of fluoride excretion will have returned practically to normal before the next shift begins.

-- Cond. from Authors' Summary

- 189 The Chylomicron Count as an Indicator of Phosphorus Poisoning. A Study Using Experimental Animals. R.B.L. Fleming and G.H. Collings, Jr. Arch. Ind. Hyg. & Occ. Med. 4, 567-572, (December, 1951).

No significant changes were found to occur in the fasting base-level chylomicron counts of either phosphorus-poisoned animals or controls as compared with normal values. In rats acutely or chronically poisoned with phosphorus, early and reproducible changes occurred in the chylomicron counts made four hours after return to food. The four-hour A.R.F. counts altered by phosphorus tend to return to normal when phosphorus administration has continued over long periods. This return may indicate a developing tolerance for phosphorus, but such tolerance is quickly lost on cessation of phosphorus administration. The four-hour A.R.F. chylomicron count should be studied for possible usefulness in the detection of phosphorism.

-- Authors' Summary

- 190 Preliminary Observations on Toxicity of Elemental Selenium. R.H. Hall, S. Laskin, P. Frank, E.A. Maynard, and H.C. Hodge. Arch. Ind. Hyg. & Occ. Med. 4, 458-464, (November, 1951).

When the fume produced by the vacuum evaporation of elemental selenium is inhaled, an acute toxic response was produced in the lungs of rats. Rats, guinea pigs, and rabbits exposed for short times (up to 16 hours) to atmospheres containing about 30 mg. Se/cu. m. in the form of selenium dust exhibited mild interstitial pneumonitis, but few other pathological changes. Little evidence of toxicity was observed when 10 adult rats were given intraperitoneally a suspension of powdered gray selenium in doses up to 1000 mg. per kilogram of body weight. Powdered gray selenium gave no evidence of primary irritation or of sensitization when applied to the skin of guinea pigs.

-- Authors' Summary

- 191 The Control of Beryllium Oxide in the Ceramic Industry. A.J. Breslin. Am. Ceram. Soc. Bull. 30, 395-398, (Nov., 1951).

For several years a number of plants have been operated under contract to the Atomic Energy Commission to supply beryllium materials for Commission projects. No cases of beryllium poisoning have occurred at the plants which have been operated in compliance with Commission recommendations. A review of the methods employed at these plants reveals that the essential elements of an adequate health program are:

- (1) carefully planned operations with a minimum of manual handling;
- (2) sound local exhaust ventilation; (3) dust monitoring; (4) rigorous housekeeping; and (5) enforced personal hygiene.

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- 192 Chronic Cadmium Poisoning. E.W. Baader.
Deut. Med. Wochschr. 76, 484-487, (April 6, 1951). (In German).

The article includes a review of the literature, an original account of cases observed by the author, and a detailed description of a fatal case. Chronic poisoning has been recognized for only about a decade. The author found 11 workers with over 8 years' employment in an accumulator factory in which they were exposed to cadmium dust. Nearly all had complained of "cadmium sniffles" with nose-running, itching and soreness, and reduction or absence of the sense of smell. In half the patients the nasal mucous membrane was atrophied and often the teeth were discolored. Other findings were increase in sedimentation rate, proteinuria, emphysema, catarrh, bronchitis, dyspnea, night sweats, and loss of weight.

In the fatal case, most of those symptoms were found, with cyanosis of the lips three years after exposure had ceased. Later severe pains in the back, shoulders and abdomen, cyanosis and severe dyspnea were noted, and the patient died four years after leaving the occupation. At autopsy cadmium was found in all the organs examined, the greatest amount in the liver and kidneys; and fatty degeneration of the liver, toxic nephrosis, and segmental distention of the jejunum were discovered, in addition to lung changes. The presence of cadmium in the tissues long after the last exposure and the marked clinical and pathological findings characterize chronic cadmium poisoning as a serious occupational disease.

-- Cond. from Bull. Hyg.

- 193 Lead Poisoning in the Printing Industry. O.G. deOliveira and T. Calvacanti. Mem. Inst. Oswaldo Cruz 48, 125-142, (1950). (Portuguese).

The authors have estimated degrees of exposure of various occupations in the printing industry. The average lead concentrations in the air vary according to the work and to the distance from the source of contamination. Typical figures are: 0.1 mg. per 10 cu.m. near the typists; 0.4 mg. in type cleaning; 8.4 mg. near the heating vessels; 0.04 mg. at the entrance to the building; 15.9 mg. near the vat when the contents are stirred and the scum removed; 0.13 to 0.37 among hand compositors; and only 0.01 to 0.05 among the monotypists. Remedies consist in better ventilation and frequent examination of blood and urine.

-- Cond. from Bull. Hyg.

- 194 Lead Poisoning in the Printing Industry. G. Prosperi.
Rass. Med. Ind. 19, 281-287, (Nov.-Dec., 1950). (In Italian).

The examination of 875 medical record cards required by Italian law in the printing industry led to the following conclusions: (1) the risk of lead poisoning in the printing trade has steadily diminished and is now slight, due to enforcement of control measures; (2) these control measures

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must be carefully continued and especially applied to the smaller establishments; (3) there is some evidence that printers are more liable to ordinary diseases, but their relation to the lead hazard has not been adequately investigated; and (4) a comprehensive national insurance plan is advocated to meet the need of a much wider application of industrial medicine, prevention and medical welfare. -- Cond. from Bull. Hyg.

- 195 The Effects of Sodium Citrate in Lead Poisoning and Lead Absorption: Lead Poisoning. D.O. Shiels, W.C. Thomas and G.R. Palmer. Med. J. Australia 2, 886-892, (December 16, 1950).

The authors administered 4 to 5 grams of sodium citrate in 1 to 2 oz. of water three times a day to a group of 9 patients with lead poisoning, and assessed the value of this treatment by various criteria. Symptoms were said to be promptly relieved, a significant increase in urinary lead was observed, and the ratio of large lymphocytes plus monocytes to small lymphocytes was increased. Although some of these effects might have followed removal from a lead hazard, the authors are confident that improvement was more pronounced and more rapid because of the citrate therapy. -- Cond. from Bull. Hyg.

- 196 Chronic Mercury Poisoning in Men Repairing Direct-Current Meters. P.L. Bidstrup, J.A. Bonnell, D.G. Harvey and S. Locket. Lancet 261, 856-861, (November 10, 1951).

The incidence of chronic mercury poisoning was investigated in men repairing D.C. meters in the London area. Symptoms or signs of chronic mercury poisoning were found in 27 men out of the 161 men examined. All 27 were engaged in repairing D.C. meters. Five cases are described. No case was detected among the 57 men employed on the testing of meters or repair of A.C. meters. The concentration of mercury in the atmosphere varied with location, time of the year, and presence of exhaust ventilation.

As high as 1660 micrograms of mercury per cu.m. was recorded near the work benches, and as high as 229 micrograms per cu.m. in the general atmosphere. The incidence of poisoning varied according to the concentration of mercury vapor. Simple measures for prevention of mercury poisoning are described. Application of these measures reduced greatly the atmospheric concentration and incidence of poisoning.

- 197 The Dangers of Mercury in the Chemical Industry. G. Frede. Deut. Gesundheitswesen 5, 1459-1464, (Nov. 16, 1950). (In German).

The suggestion is made that a number of cases of slight, usually unrecognized poisoning may occur in those exposed to atmospheres containing even minute amounts of mercury. In the chemical works of which the author is medical officer, 46 workers are considered to have such

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cases, although there have been no notifiable cases in 32 years. The main symptoms are muscular tremor, abnormal flushing and sweating, dermatographia and increased tendon reflexes. The amount of mercury found in 24-hour specimens of urine varied from 4 to 48 micrograms per liter. Many analyses of the air in different parts of the factory are recorded. (The values are not given in the abstract.) A list of the precautions that should be taken in all places where mercury may be a risk is given. Regular chemical analyses of the air and urine of workers are recommended. Thorough clinical examinations of newcomers and of all exposed workers semiannually should be made. -- Cond. from Bull. Hyg.

- 198 Characteristics of Molybdenum as an Industrial Poison.
O. Ya. Mogilevskaya. *Gigiena i Sanit.* No. 12, 18-22, (1950). (Russian).

Dust of molybdenum metal, brown molybdenum dioxide, molybdenum trioxide, and ammonium paramolybdate causes only transitory irritation of mucosa in white mice after an intensive one-hour dusting. Repetition over 30 days brings out toxic symptoms from the trioxide and the paramolybdate, and little toxicity from the metal and the dioxide. Periodic medical examinations are recommended for workers with molybdenum compounds. -- Chem. Absts.

- 199 Cytologic Changes Following Intravenous Injection of Thorium Dioxide.
W.R. Christensen and S.C. Sommers. Atomic Energy Commission (AECU-1535). 7 pp., (no date).

An attempt was made to induce malignant changes in the reticulo-endothelial systems of rats following intravenous injection of colloidal thorium dioxide. After 15 months no gross changes of those systems were observed by x-ray examination. Microscopic studies showed changes that were considered of pre-cancerous significance.

-- Cond. from Nuclear Sci. Absts.

- 200 Late Effects of Thorium Dioxide in Man. C. Cassel, J.M. Ruffin, R.J. Reeves and L.D. Stoddard. *Arch. Internal. Med.* 88, 42-50, (1951).

Three patients were studied, 17, 16, and 13 years, respectively, after thorium dioxide administration. While the presence of thorium dioxide could still be demonstrated, no effect on hemopoiesis, hepatic function, or general health was disclosed. -- Chem. Absts.

- 201 Toxicity of Di-(Acetyl Cyanide). J.F. Treon, F.R. Dutra, and J. Cappel. *Arch. Ind. Hyg. & Occ. Med.* 4, 573-584, (December, 1951).

Details of lethal dosage and pathological effects from oral ingestion, skin contact and inhalation on rats, rabbits and guinea pigs are presented. The minimum lethal dose orally varies from 11 to 30 mg. per kg.

- 202 Fumigation with Ethylene Oxide. Precautionary Measures. Great Britain, Home Office, 12 pp., (1951). H.M. Stationery Office, London, Price 6d.

Liquid ethylene oxide is highly flammable and explosive in a wide range of concentrations in air sometimes at fairly low temperatures. Cylinders containing the gas have also been known to explode, probably owing to polycondensation. The gas is also toxic, severely so at high concentrations. This pamphlet describes toxic effects in detail and gives directions for determination of small quantities of ethylene oxide and for precautionary measures. -- Cond. from Bull. Hyg.

- 203 The Toxicity of Methylal. F.L. Weaver, Jr., A.R. Hough, B. Highman and L.T. Fairhall. Brit. J. Ind. Med. 8, 279-283, (October, 1951).

Animals exposed to highly toxic concentrations of methylal often developed severe fatty changes in the liver, kidney and heart, and inflammatory changes in the lungs. Low concentrations generally produced no significant pathologic changes. The LD50 value of methylal for male laboratory animals was found to be 57 mg./l. (18,354 ppm). The threshold appears to be about 11,300 ppm. It would appear that a reasonable safe working concentration for workers continuously exposed to methylal vapour for an eight-hour working day would be 1000 ppm. -- Authors' Summary

- 204 The Effect of Benzene and of Carbon Tetrachloride on the Concentration of Certain Vitamins, Fat, and Nitrogen in the Liver of the Rat. M.E. Shils, Margaret Wolke, Grace Marks, L.J. Goldwater and A. Berg. Brit. J. Ind. Med. 8, 284-287, (October, 1951).

The effects of moderate subcutaneous doses of benzene and of carbon tetrachloride administered over a period of nine days have been investigated with respect to changes in the concentration and total content of thiamin, riboflavin, niacin, vitamin A, fat, and total nitrogen in the livers of rats. Carbon tetrachloride caused a marked increase in liver weight and liver fat. On the other hand, there was a significant decrease in the concentration of the vitamins and nitrogen per gram of liver. Benzene treatment had no significant effect on the concentration of vitamins, but was associated with a slight decrease in nitrogen concentration and some increase in liver weight.

The total amounts of the water-soluble vitamins in the livers of the rats treated with about the same as in the livers of the benzene and control groups. Total vitamin A was greater in the two treated groups than in the controls, but the increases were not proportional to change in liver fat. Histologically, the changes in nutrient concentration in the livers of the rats treated with carbon tetrachloride were associated with marked fatty infiltration and necrosis of the central half of the liver lobule. Only minor changes were found due to benzene treatment.

-- Cond. from Authors' Summary

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- 205 A Study of Exposure to Benzidine and Substituted Benzidines in a Chemical Plant. A Preliminary Report. J.W. Meigs, R.M. Brown and L.J. Scarini. Arch. Ind. Hyg. & Occ. Med. 4, 533-540, (Dec., 1951).

A study was made in a chemical plant in which workers were exposed to the dye intermediates, benzidine, dichlorbenzidine, dianisidine, and ortho-tolidene. A microchemical method based on quinone foundation was used for measuring these substances. Air samples taken in the press room contained concentrations of quinonizable substances (expressed as benzidine) ranging up to 0.087 mg. per cu.m. Excretion of the benzidines was studied by measuring the concentration of quinonizable substance in urine samples from workers and controls.

The results, and those of skin absorption tests showed that skin penetration, in addition to inhalation, may play an important role in worker exposure. A correlation was found between contamination of underclothing and glove linings and urinary concentration. Frequent change of clothing and strictly enforced personal hygiene led to lower and more uniform excretion of the benzidine compounds.

-- Cond. from Authors' Summary

- 206 Aldrin Poisoning in Man. Report of a Case. E.J. Spotta. Arch. Ind. Hyg. & Occ. Med. 4, 560-566, (Dec., 1951).

Aldrin (hexahydrohexachlorodimethanonaphthalene) is a recently developed insecticide which has been used for the control of boll weevils. The first known case of human poisoning from aldrin is reported. A man drank the equivalent of 25.6 mg. of aldrin per kg. body weight. The effects included generalized convulsions, relieved by heavy doses of barbiturates, hematuria and albuminuria for 18 days, and hyposthenuria for two months. An electroencephalogram revealed generalized cerebral dysrhythmia which disappeared in five months. Experimentally the LD₅₀ of aldrin ranges from 44 to 99 mg. per kg. body weight. The histopathologic changes consist of renal tubular degeneration and ganglion cell degeneration with neuronophagia and hepatic necrosis. Symptomatic treatment consists in immediate removal of the poison from the port of entry, barbiturate control of convulsions, and treatment of renal and hepatic damage. In this case recovery is apparently complete.

- 207 Toxic Effects of Various Doses of Kerosene Administered by Different Routes. J.A. Richardson and H.R. Pratt-Thomas. Am. J. Med. Sci. 221, 531-536, (1951).

The toxic effects of kerosene were determined in dogs and rabbits by intragastric, intravenous, intraperitoneal, and intratracheal administration, by introduction into a segment of the small intestine, and by stomach tube. On intratracheal injection, kerosene killed rabbits and dogs, respectively, in doses as low as 0.25 and 1 cc. per kg. body weight.

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With administration by stomach tube, as much as 30 cc. per kg. was nonlethal for dogs (lethal dose not determined), while 35 cc. per kg. was fatal for rabbits. Consideration of dosage and degree of lung damage indicated that aspiration is the most serious and usual feature of kerosene poisoning as it occurs clinically. -- Chem. Absts.

- 208 A Case of Melanoderma and Poikiloderma due to Lubricating Oil.
M.C. Luigi. *Rass. Med. Ind.* 20, 1-8, (Jan., Feb., 1951). (In Italian).

A case of allergic reaction to fumes of mineral oil is described. The fumes arose from a drier heated above 90°C., in which magnetic plates were dried after being dipped in the oil. The symptoms included red patches on the face, neck, and hands, with swelling, itching, and burning. A condition resembling bronchial asthma was also present. The symptoms reappeared on returning to work after a 7 months absence. The acute condition then slowly subsided, leaving dull red, brownish patches showing a fine network of telangiectasis. The skin of the eyelids and lips was pale and thin, with patches on the lips. Other signs included thickening of the vocal chords, pleural adhesions, and some bronchopulmonary congestion. A patch test to mineral oil was positive. -- Cond. from Bull. Hyg.

- 209 Control of Occupational Cancer in Industry. J. Korbler. *Arhiv. Hig. Rada* 1, 310-315, (1950). (Yugoslavian with English Summary).

Korbler stresses the growing importance of the study of occupational cancer. The discovery of carcinogenic substances in tar has shown that a large number of cancer cases can be classified as occupational disease. Korbler has studied the precancerous and cancerous diseases among industrial workers. Incidence of cancer in both soot and metal industries has been examined. Observations are confirmed, showing that workers employed in the lead industry seldom suffer from cancer. In industry, cases of cancer were reported where the causative carcinogenic substance could not be determined. Thus cancer of the lower lip occurred among women in connection with their spinning, where the thread is passed through the mouth to be moistened by saliva. It seems that the mechanical irritation is not the only cause leading to cancer, but that the material used for spinning contains carcinogenic substances, although no mineral oil was employed. -- Chem. Absts.

- 210 The Carcinogenic Action of Flax. J. Korbler and P. Frank. *Arhiv. Hig. Rada* 2, 1-18, (1951). (In French).

In a district in Autria, cancer of the lower lip in women is more prevalent than normally. These women, when spinning, are in the habit of moistening the thread between the lips in such a way that the lower lip is more injured than the upper lip. On the hypothesis that cancer is

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caused or aggravated by a specific irritant in the linen thread, the author conducted experiments in which the macerated linen thread was suspended in saline solution and injected beneath the skin of mice. The mortality was high; 45 died during the first month. Three of the survivors developed malignant tumors. In one, linen fibers were seen in the middle of the tumor, and a metastasis showing active mitosis of the cells was found in the lung. The possible nature of the irritant is discussed but no definite conclusion is reached. -- Cond. from Bull. Hyg.

INDUSTRIAL DUSTS

- 211 The Present Status of Silicosis. L.T. Fairhall. Ind. Health Monthly 11, 169-170, (Nov., 1951). Occ. Health 12, 3, 6, (January, 1952).

The author presents a picture of the present state of the knowledge of silicosis by reviewing briefly 36 of the most significant papers and publications that have appeared, nearly all within the last three years. The first installment deals with theories of the cause of silicosis, and the second with diagnosis and incidence in various industries. In conclusion, he writes, "In general, it may be said that owing to better protective measures the proportion of cases of silicosis occurring in industry in comparison with the number of workers exposed has diminished within the present generation. Nevertheless, silicosis remains one of the most important diseases of industry."

- 212 Industrial Hygiene Survey of Cemetery Memorial Industry. W.H. Magill. Missouri Ind. Health Bull. 9, 1-3, (Sept., 1951); 1-4, (Dec., 1951).

The survey included 72 shops in Missouri, employing 151 persons engaged in stone-cutting operations, varying from lettering, designing, and engraving, to complete manufacture of monuments. The survey did not include quarrying operations. Granite from various sources is used and varies from 15 to 41% free silica. Sandblasting was conducted in enclosed booths with a window for observations. Many of the booths were not dust-tight and glass windows were not always used. Exhaust was usually provided, but was not always sufficient. Sand was used as the blasting agent in the majority of establishments. Even when the booth was tight and exhaust sufficient, the collected sand was usually sifted without sufficient protection.

Work involving pneumatic hand tools is necessarily done without using a booth, and exhaust ventilation and respirators should be provided. Wetting the work with turpentine should be practiced when no exhaust

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ventilation is used. These precautions were observed in only a minority of the workplaces. The dust concentration was above the maximum allowable in 60 to 100% of the work locations, except outside the booths with glassed windows. Allowance must be made for the intermittent nature of the work; however, the presence of silicosis in at least eight employees shows that protection should be furnished to a considerably greater degree. No physical examinations were made, but the eight employees had a fibrosis which had been diagnosed as silicosis. The recommendations include periodic examination, well constructed booths, adequate exhaust systems, and respirators and face protection where needed.

Changes in Respiratory Function among Silicotics. L. Parmeggiani and A. Pinerolo. *Med. Lavoro* 41, 237-242, (1950). (In Italian).

Expiratory and inspiratory volumes were measured in 40 normal subjects and 20 silicotics. The subjects were asked to inhale and exhale for 10 seconds through a resistance into a Benedict barometer after a forced inspiration and a forced expiration. No relationship between the degree of silicosis and the decrease in respiratory ability was observed, with a few exceptions. There was a greater correlation between expiratory ability and the degree of the disease. The expiratory ability is independent of inspiration. Both are independent of the vital capacity but correlate respectively with complimentary air and reserve air. It is suggested that expiratory ability is influenced mostly by the degree of emphysema and that inspiratory ability is influenced by the degree of bronchospasm.

-- Biol. Absts.

Estimation of Work Capacity of Silicotic Patients with the Aid of Oximetry. C. Mieville. *Praxis* 40, 504, (June 14, 1951).

Changes in oxygen saturation of arterial blood were measured by means of the Coleman oximeter in 22 cases of silicosis. Arterial hypoxemia was observed in only one case when the patient was at rest. Observations during muscular activity in the other 21 cases, in which effort was measured by an ergometer, gave indications in about half of the cases. Although oximetry has its limitations, it has the advantage of being a simple method which may be of great value for serial pulmonary functional tests in certain industries. Periodical oximetric examinations of patients with silicosis entailing oxygen unsaturation on effort will make it possible to determine fairly judiciously the ratio of their work incapacity according to the progressive aggravation of their pulmonary insufficiency.

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

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- 215 Medical Prophylaxis of Silicosis. P. Zeglio.
Rass. Med. Ind. 20, 65-105, (1951). (In Italian).

The author reviews the various theories concerning the use of aluminum in the prophylaxis of silicosis and discusses the effectiveness and dangers of this treatment. Consideration is given to the fact that many impurities exist in commercial aluminum dust. His own investigations with the use of hydrated alumina gel are explained. The advantages of this form of aluminum are said to be the absolute purity with which it can be produced and the evenly divided aerosol by which it can be disseminated. Animal experimentation showed that this aluminum aerosol retarded the development of silicosis in guinea pigs and that the alumina gel itself was innocuous. -- Biol. Absts.

- 216 Differential Diagnosis of Siderosis and Silicosis. L.E. Hamlin.
Ind. Med. & Surg. 21, 1-4, (January, 1952).

The principal factors to be considered in evaluating occupational conditions in the diagnosis of siderosis and silicosis are: (1) investigation of the character and components of the dust; (2) quantitative determination of the harmful elements present; (3) estimation of the size of the dust particles; (4) length of exposure to harmful dusts; and (5) constancy of the exposure. A table presents side by side the conditions deciding the diagnosis, including occupational history, data from industrial hygiene surveys, physical examination, gross and microscopic pathology, and roentgenograms.

- 217 Tuberculosis in Anthracosilicosis. P.A. Theodos and B. Gordon. Am. Rev. Tuberc. 65, 24-47, (Jan., 1952).

The clinical features of tuberculosis complicating anthracosilicosis in an unselected group of 637 and 113 non-disabled hard coal miners are presented in detail. A total of 112 were found to be tuberculous, (97 active, inactive or healed 7, probably tuberculous 8). The data indicate that complicating tuberculosis should be suspected when the symptoms are abrupt in onset, and become progressively exaggerated, when localized moist rales are present, and when the roentgenogram reveals asymmetry, coalesce; or cavitation. The presence of tuberculosis is definitely correlated with age, length of exposure, and extent of anthracosis.

Tuberculosis is most commonly associated with third-stage silicosis; it is most prevalent during the fourth and fifth decades of life. The possible prevalence of tuberculosis may be 12 to 15%, rather than the extremes of 3 to 75% as suggested in the literature. Approximately two-thirds of the patients die within three years after the development of tuberculosis. Treatment is symptomatic, and sanatorium care may prolong life in selected cases. -- Cond. from Authors' Summary

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- 218 A Morphological Study, with the Electron Microscope, of Particles of Asbestos Found in the Air. P. Lepine and O. Croissant. Ann. Inst. Pasteur 80, 305-308, (March, 1951). (In French).

Six samples of airborne dust from workplaces in Quebec where asbestos is used were examined with the electron microscope after removal of all but the most minute particles. The dust was found to contain crystalline needles, smaller in size but similar to those seen in an ordinary microscope; these needles comprised 65 to 75% of the particles. The remainder consisted of amorphous particles, mostly of serpentine. The needles had a diameter of 0.028 micron; they occurred in bundles about 0.85 micron or more in diameter. Such particles could readily gain access to the alveoli and undergo phagocytosis, with formation of the tissue lesions seen in asbestosis. Photomicrographs of the particles are shown.

-- Cond. from Bull. Hyg.

- 219 Experimental Asbestosis in Rats. J. M. Smith, I. D. P. Wootton, and E. J. King. Thorax 6, 127-136, (June, 1951).

A study has been made of the effect of particle size on the production of lung fibrosis in rats by asbestos. Short-fiber asbestos (2.5 microns) caused only a moderate peribronchial fibrosis, whereas long-fiber asbestos (15 microns) caused well-marked interstitial fibrosis resembling that seen in the human disease. Alumina injected together with asbestos of varying particle size increased the fibrosis produced.

-- Authors' Summary

- 220 The Problem of Pneumoconiosis, Including a Report on the Lung of a Slate Worker. W. Ceelen. Beit. z. Silikose-Forschung No. 13, 3-15, (1951). (In German).

The paper gives a stimulating but somewhat speculative discussion of the silicotic process as seen by a pathologist, followed by the description of the appearance of a slate miner's lung. According to the author's hypothesis, quartz acts first as a physical poison by absorption, and later as a chemical poison by solution. The typical reaction in silicosis, the hyalinization of nodules, is due to precipitation of protein, possibly according to some antigen-antibody mechanism. The worker in question had been exposed to dust of slate containing about 30% quartz for 28 years. He had been refused certification for silicosis, but died of pneumoconiosis. Widely disseminated fibrosis of the lungs, reticular and nodular, was present, and especially an enlargement and solidification of the hilar and peribronchial lymph nodes which had led to a constriction of the main artery. The tissue appearance is described in detail.

-- Cond. from Bull. Hyg.

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- 221 Synthetic Molding Sands as a Means of Reducing Silicosis Risk.
K.G. Schmidt. Staub 23, 462-478, (December, 1950). (In German).

This paper discusses the silicosis risk in the foundry industry. A recent survey of 94 men exposed to dust in a foundry in the Ruhr area showed one case of stage 3 silicosis, three of stage 2, and 17 of stage 1. Foundry sands contain from 0.5 to 8% of quartz of respirable size. Much more fine quartz may be produced by shattering of coarse grains after casting and fettling. Furthermore, all foundry sands contain clay, and on heating, the kaolin in the clay is converted to mullite and free silica. The author believes the silica from this source to be a major hazard. It is known that synthetic foundry sand which contain bentonite have great technical advantages over natural sands, and it is claimed that they are also better from the silicosis point of view. Washing used sand to remove fine particles should be generally introduced, and general good house-keeping and isolation of processes of heavy dust production are recommended.

-- Cond. from Bull. Hyg.

- 222 Graphite Pneumoconiosis. F.A. Jaffe. Am. J. Pathol. 27, 909-918, (September-October, 1951).

In a case of pneumoconiosis due to the inhalation of graphite, the lung showed a granulomatous reaction, characterized by areas of fibrosis, necrosis, and cavitation, with obliterative changes in blood vessels and bronchi. Large numbers of giant cells were present throughout the lesions, many of which contained asteroid bodies. The total silica content of the lung tissue was within normal limits. It is believed that the lesions in the lung are attributable to the graphite itself and not to admixed silica.

-- Author's Conclusions

RADIOACTIVITY AND X-RADIATION

- 223 Stray X-Rays from Electron Beam Instruments and Some Biological Implications. S.D. Larks. Am. Ind. Hyg. Assn. Quart. 12, 175-179, (December, 1951).

The industrial oscillograph and the electron microscope are shown to be sources of radiation in dangerous quantities unless they are properly shielded. The effects of prolonged irradiation at the formerly accepted tolerance dose of 0.1r per day include drops in the white blood cell and lymphocyte counts and acceleration of the aging process. The evidence for leukemia and for skin damage as the result of low intensity radiation is

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quite impressive. It must be remembered that the effects of radiation are cumulative, including those of different types of radiation and of short periods of intensive exposure added to the continued periods of low exposure.

- 224 Studies of Health Hazards in Industry. Radiation.
J.J. Bloomfield. Occ. Health 12, 7-9, (Jan., 1952).

Continuing the series on health hazards, this paper deals with the effect of radiation, including infrared, ultraviolet, x-rays, and other types. A table of maximum permissible tissue dose limits for the various types of radiation is included.

- 225 Will Radioactivity Have to Be Considered as a Pollution Index in the Future?
Georges van Beneden, Bull. Centre Belge Etude et Document Eaux,
No. 8, pp. 477-482, (1950). (In French).

The author reports on the numerous problems arising in conjunction with the disposal of radioactive waters and gases. The mechanism of the spontaneous destruction of radioactive elements and of the distribution of fission products in water is discussed and compared with the behavior and composition of radioactive mineral waters. An explanation is attempted of the physiologic processes affected by radiation from radioactive materials; the most serious effects are seen in the disturbance of the protein metabolism by radioactive elements of long half-life carried in contaminated waters. The possible fixation of radioactive components by conventional water-purification methods is proposed as a subject for future study.

-- Chem. Absts.

- 226 The Use of Lead Shot for Protection from Gamma Radiation.
A. Nightingale. Brit. J. Radiology 24, 568-571, (Oct., 1951).

Cavity walls filled with small lead shot may safely be used instead of solid lead, at least at thicknesses above 1.4 in., for personnel protection against gamma rays. They are not suitable for shielding fixed objects such as photographic material. The diameter of the lead shot should not be greater than the effective diameter of the source.

-- Author's Summary, Nuclear Sci. Absts.

- 227 The Ventilation of an Atomic Energy Laboratory. R.E. Holmes.
Refrig. Eng. 59, 755-759, 808, 810, (August, 1951).

Protection from radioactive dangers is assured only if the ventilation system is designed to provide a flow of uncontaminated air, first over the worker, then into a protective enclosure, such as a hood or cave which contains the work and source of contamination, then into prefilters where

most of the harmful materials are caught before the air carries them into the exhaust ducts. The details of a ventilating system embodying those principles are discussed.

- 228 Radiochemical "Cold" Laboratories. F.C. Henriques, Jr.
 Pub. Health Eng. Absts. 31, 6, (March, 1951). (Author's Abstract).

If a "cold" laboratory is defined as one in which not more than 100 microcuries of ordinary isotopes is handled, no special consideration in designing the laboratory is needed. That quantity should suffice for most types of chemical investigations.

In the "cold" laboratory the radioactive isotope must be treated as any poisonous material, such as potassium cyanide. It has the advantage over an ordinary poison of ease of detection; simple detection equipment, such as thin-windowed Geiger tubes should be available for both personnel and area monitoring. It is permissible to admix activity of this level with inactive identical compounds and wash it down the sink. One of the major problems is contamination of the "cold" laboratory which results from traffic of personnel and equipment that originates in the "hot" laboratory. This can be prevented best by strict enforcement of the following rules: one-way traffic of all supplies from the "cold" laboratory to the "hot" laboratory, and rigid enforcement of monitoring before leaving the "hot" area, where personnel contamination levels must be reduced to appropriate limits, not only for health considerations but also to eliminate the possibility of contamination of subsequent experiments in the "cold" laboratory. -- Cond. from Author's Summary

- 229 Atomic Bomb Injury: Mechanical Injuries. F.A. Simeone.
 J. Am. Med. Assn. 147, 1658-1663, (December 22, 1951).

This paper is one of a series requested by the Council on National Emergency Medical Service to inform the medical profession on problems pertaining to civil defense. The various types of injuries and their treatment are discussed. The general conclusions are: (1) the wounds are no different from those incurred in warfare or in civilian accidents, except for complications by burns or ionizing radiation, and the principles of treatment are the same; and (2) the injuries occur in overwhelming numbers together with widespread destruction of facilities for medical care, so that extensive plans must be made before disaster comes.

A correspondent suggests, apropos of a recent note on cloud-seeding, that future optimists will have to amend the old saying to-----
 "Every cloud has a silver iodide lining." Chem. & Eng. News