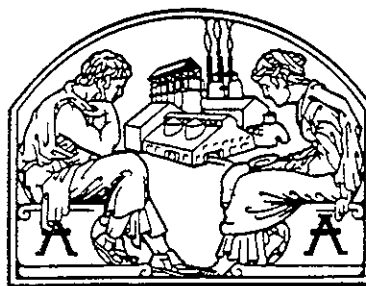


IN RE: ABRAMS November 1992



MWB-0013863

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends

JANUARY, 1951

(Vol. 15, No. 1)

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

HWBB-0013864

Vol. 13

January, 1951

No. 1

Two New Members Added to Board of Trustees

Two new members have been added to the Board of Trustees of Industrial Hygiene Foundation--Alan M. Scaife, T. Mellon & Sons, and Carl B. Pollock, Vice President in Charge of Production, Allegheny-Ludlum Steel Corporation.

Preventive Engineering Committee Adds New Members

The following new members have been added to the Preventive Engineering Committee:

K.F. Spence, Chief Engineer, Funkhouser Company

W.H. Thomas, Chief Engineer, Pittsburgh Coke & Chemical Company

C.F. McElwain, Works Manager, International Business Machines Corp.

C.W. Schwenzfeier, Jr., Technical Manager, Brush Beryllium Company

Dr. Yant Elected President of A.S.S.E.

Dr. William P. Yant, Director of Research and Development, Mine Safety Appliances Company, has been elected President of the American Society of Safety Engineers for 1950-1951. Dr. Yant is a Trustee of the Foundation and also is a member of both its Research Advisory Council and Chemical and Toxicological Committee.

H. H. Schrenk Elected Secretary of A.S.T.M. Committee

H. H. Schrenk, Foundation Research Director, has been appointed Secretary of the recently formed Committee D-22 on methods of atmospheric sampling and analysis of the American Society for Testing Materials.

Dr. Walmer on Western Trip

Dr. Walmer, Managing Director of the Foundation, is making a trip to the West Coast to look into various problems of member companies. His itinerary includes stops at Worland, Wyoming; San Francisco and Los Angeles, California; Denver, Colorado, and Ogden, Utah.

Transactions of Annual Meeting

Good progress is being made in the preparation for publication of the Transactions of the 1950 Annual Meeting, and it is hoped that copies will be available for distribution to members in the relatively near future.

Dr. David's Keynote Address Very Well Received

The many requests for preprints of Dean David's Keynote Address, "The Human Side of Business," are indicative of the keen interest in this subject.

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03119042

IN RE: ABRAMS
November 1950

IN RE: ABRAMS
November 1992TABLE OF CONTENTS

	<u>Page</u>
News Items.....	1
Occupational Disease Statistics.....	3
Legal Developments.....	4
Books, Pamphlets and Notices.....	6
Industrial Medical Practice.....	9
Skin Diseases and Burns.....	15
Chemical Hazards.....	18
Industrial Dusts.....	26
Physical Aspects of the Environment.....	29
Radioactivity and X-Radiation.....	30
Environmental Measurements.....	32
Preventive Engineering.....	33
Community Air Hygiene.....	34
Management Aspects.....	35
Accidents and Prevention.....	37
Miscellaneous.....	39
Index.....	40

03119043

INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

1 AEC Offers Four Fellowships in Industrial Medicine.

The U. S. Atomic Energy Commission will offer four fellowships in industrial medicine for the 1951-52 academic year, continuing a special fellowship program begun last September. The program is administered for the AEC by the Atomic Energy Project of the School of Medicine and Dentistry, University of Rochester, Rochester, N.Y., and fellows are selected by a committee headed by Dr. James H. Sterner, Associate Medical Director of the Eastman Kodak Company and Consultant in Industrial Health to the AEC. Applications for the 1951-52 fellowships should be submitted by March 1, 1951 to: A.E.C. Fellowships in Industrial Medicine, Atomic Energy Project, School of Medicine and Dentistry, University of Rochester, Rochester, N.Y.

2 Industrial Hygiene in Hawaii.

An attractive 32 page booklet has been issued by the Hawaii Bureau of Industrial Hygiene describing the various fields of activity of the Bureau, with numerous illustrations displaying protective and preventive measures.
-- Ind. Hyg. Newsletter, U.S.P.H.S., (Jan., 1951).

3 Health Manpower Requirements Study

A pilot study of health manpower requirements has been undertaken by the University of Pittsburgh at the request of the National Security Resources Board. This study aims to provide the techniques for the final extensive study elsewhere. It will be conducted by the Graduate School of Public Health with the cooperation of the Allegheny County Medical Society, acting with the approval of the Medical Society of the State of Pennsylvania and the Hospital Council of Western Pennsylvania. It is expected that this study will help get an accurate means of evaluating the medical needs of this country under emergency conditions. It will answer such questions as: How much of the surrounding area depends upon Pittsburgh for physician and other health care? What are the basic medical demands of the population of such an area? What are the factors in emergency situations which increase or decrease these demands?
-- Pitt Quarterly

03119044

November 1951

IN RE: ABRAMS

4 Berylliosis Fatal to Gardner, Famed for Meson Work at U. of California.

Berylliosis, contracted seven or more years ago, proved fatal last week to Eugene Gardner of Berkeley, California, one of the country's outstanding young nuclear physicists. Dr. Gardner believed that he contracted the lung poisoning ailment while working with beryllium ceramics at the University of California radiation laboratory between 1941 and 1943. In those early days of atomic research, when beryllium compounds had only recently come into use, their danger had not yet been fully recognized. Physicians attending him found that the beryllium poisoning had been complicated by tuberculosis. Although his illness was diagnosed in 1945, he continued to work. His announcement in 1948, with C. M. G. Lattes, Brazilian atomic scientist, of the discovery of the first artificially produced mesons in the huge cyclotron at the University of California, won him world-wide attention.

Charities Reap Reward from Accident Reduction.

In February, 1949, Admiral Moreell, President of Jones & Laughlin Steel Corporation, announced that savings from reduction of accidents, compared with the average record over the five-year period, would be donated to health and welfare activities in the communities where J. & L. operates. As a result of the savings realized from the first year's practice of the new plan, checks totaling \$69,050.00 were distributed in December. These checks, ranging in value from \$100 to \$13,775, were given to the various hospitals and welfare agencies in J. & L. communities. These agencies were chosen by management and employee representatives in each plant.

-- J. & L. Men and Steel, Jan., 1951

5A Deere and Company Establishes Industrial Hygiene Section.

Deere and Company has announced the establishment of an Industrial Hygiene Section in the Department of Industrial Health and Hygiene. Mr. S. C. Rothmann, well known to workers in this field has been appointed Director of this section. He will be in charge of the Industrial Hygiene Laboratory being established and will conduct surveys of environmental conditions in the various factories. The Industrial Hygiene Section will assist other units of the Company with respect to working conditions, materials, and processes which may have some effect on healthful conditions under which employees work. Mr. Rothmann will report to the Medical Director, Dr. Neff.

03119045

OCCUPATIONAL DISEASE STATISTICS

6 Occupational Disease Statistics.

	Conn. ² Dec. 1950	Ind. ² Dec. 1950	Mich. ² Oct. Nov. 1950	Ohio ¹ Sept. 1950	Wisc. ² Nov. 1950	Totals
Allergy					1	1
Burns					1	1
Carbon Monoxide Poisoning					2	2
Carbon Tetrachloride Poisoning					1	1
Dermatitis	41*	15	27	203	31	317
Eye Infection					1	1
Fumes					5	5
Hernia			11			11
Inflammatory Condition			2			2
Lead Poisoning	1	1	2	3		7
Lung Infection					1	1
Miscellaneous			10	128		138
Silicosis	1	3	31	34	1	70
Skin Infection					4	4
Skin Irritation					2	2
Tuberculosis (due to contact)				10		10
Pneumoconiosis			6			6
Pyelo-nephrosis, Acute (chlorinated hydrocarbons)	1					1
Undulant Fever					1	1
Total	44	19	89	378	51	581

(1) Occupational Disease Cases reported to the Industrial Commission.
There were 99,927 days lost, including one death reported from chemical poisoning, eleven from lung diseases, and two from other occupational disease claims.

(2) Occupational disease cases reported to the Health Department.

* Chromium and compounds, Dust - organic, Rubber chemicals, and Soap solutions, glue, etc., caused one each; Alkalies caused two; Solvents (N.O.C.) caused three; Synthetic resins and chemicals caused six; Oils, fats and waxes caused twenty-four; and two were caused by undetermined hazards.

03119046

IN RE: ABRAMS November 1992

HWBB-0013868

LEGAL DEVELOPMENTS

Silicosis--Statute of Limitations--Workmen's Compensation Law as Bar to Suit for Violation of Labor Law.

The court dismissed the complaints of fourteen workers who brought this suit against their employer on the basis of an alleged violation of the labor law. Although all of the claimants were partially disabled from silicosis, the court held that since September 1, 1935, the Workmen's Compensation Law was an exclusive remedy for silicosis cases. The court also indicated that suits for partial disability could not be maintained since the Workmen's Compensation Law also acted as a bar in these cases even though compensation would not be awarded for less than total disability. It was held also that the statute of limitations would bar any action for damages for a cause of action arising prior to September 1, 1935. Cope v. General Electric Company, New York Supreme Court, Special Term, Part III. 124 N.Y.L.J. 1059. -- CCH November 3, 1950.

Byssinosis Claim--Failure to Establish Exposure to Hazard--Denial of Examination.

Aside from technical and procedural reasons why the claimant was not entitled to a reopening of his case arising from his claim for probable byssinosis plus tuberculosis, the Commission's finding that he had not been exposed to the hazards of the disease while working for the employer rendered irrelevant its failure to accord him an examination to discover whether in fact he suffered from the disease. Gale v. Zaban's Mattress & Box Spring Co., Virginia Supreme Court of Appeals, No. 3746. November 27, 1950. -- CCH

Accidental Injury--Inhalation of Paint Fumes--Lead Poisoning, Nephritis Hypothesis--Good Cause for Late Filing--Inability to Employ Counsel.

Inability to employ counsel to take the case may be found to constitute good cause for delay in filing a claim. In this case, the evidence that nephritis caused the death did not require that judgment be rendered in favor of the carrier. Although the widow's case was not wholly based on a hypothesis that the decedent died of lead poisoning (so that failure to prove exposure to lead was not fatal to the claim) and although there was some evidence that inhalation of paint fumes was connected with the illness, the lack of testimony as to the effect of the fumes on the human body and the failure to show an injury in the course of employment required that the case be remanded for new trial. Gulf Casualty Company v. Hughes, Texas Court of Civil Appeals, Ninth Supreme Judicial District, Beaumont. No. 4683. April 27, 1950. Rehearing denied, May 11, 1950. -- CCH

03119047

IN RE: ABRAMS November 1950

- 10 Tuberculosis--Aggravation of Pre-Existing Condition--Printing Foreman--Medical Testimony--Fumes from Melted Metal.

The claimant was a foreman in a printing establishment. He testified that on opening the door of a melting pot in which there was some flux in the melted metal, he sustained a prolonged coughing spell caused by the fumes. A medical examination indicated that the claimant was suffering from tuberculosis. There was firmly expressed medical opinion that the coughing spell induced by the fumes caused sufficient trauma to reactivate a previously existing tuberculosis disease. The board accepted this proof as the basis for its award. There was also testimony from an impartial medical specialist who expressed the opinion that the described coughing spell did not aggravate the existing disease. In this regard, the court concluded that it was not bound to follow the views of the impartial witness and that there was substantial evidence to support the findings of the board. Matter of Kogan v. Schoen Printing Company. New York Supreme Court, Appellate Division, Third Department. 276 App. Div. 935. January 18, 1950. -- CCH

- 11 Chronic Bronchitis and Pulmonary Emphysema--Contracted in Course of Employment--Permanent Disability.

Appeal by the employer and its insurance carrier from decisions of the Workmen's Compensation Board and its award to claimant of compensation for permanent partial disability due to an occupational disease. The findings are that the claimant is afflicted with chronic bronchitis with accompanying pulmonary emphysema which partially permanently disables him, and that he contracted it because of the nature of his employment by the employer appellant and was disabled thereby while so employed. The court held that these findings were sustained by competent evidence. Award affirmed. Matter of Derin v. C. E. Sheppard Co., New York Supreme Court, Appellate Division, Third Department. 276 App. Div. 935. January 18, 1950. -- CCH

- 12 Federal Employers' Liability Act--Silicosis--Statute of Limitations--Date of Employment Termination v. Date of Diagnosis as Controlling.

In an action under the Federal Employers' Liability Act to recover damages for the plaintiff's contraction of silicosis, the three-year limitation period runs from the time the employee leaves the employment in which he was exposed to silica dust rather than from the date on which the condition was diagnosed as silicosis. Farrar v. St. Louis-San Francisco Railway Company, Missouri Supreme Court, Division Number Two. No. 41,900. November 13, 1950. -- CCH

03119048

IN RE: ABRAMS November 1992

BOOKS, PAMPHLETS AND NOTICES

Eyes and Industry. Hedwig S. Kuhn. Second Edition. The C. V. Mosby Co., St. Louis. 378 pp. (1950). Price \$8.50.

The first edition, published in 1944, was titled "Industrial Ophthalmology." Numerous references at the end of each chapter, nearly all dated since that time, testify to the great amount of work involved in the revision. In the first four chapters are considered visual testing, visual standards, and corrective programs. The remainder of the book is concerned with injuries and protection. A chapter on industrial eye injuries caused by solid bodies is contributed by A. C. Snell, and other chapters consider injury by chemicals and radiation, especially by ultraviolet and in welding. The effect of illumination is discussed at length, and a chapter dealing with the blind in industry is of special interest in showing what can be accomplished in employment of the blind. An appendix deals with standard methods, forms, and specifications. Methods and apparatus are shown in numerous illustrations, and in the chapter on illumination a number of examples of good and bad lighting are shown. -- F. F. Rupert

14 Atmospheric Turbulence. O. C. Sutton. John Wiley & Sons, Inc. New York. 107 pp. Price \$1.50.

Atmospheric turbulence, especially near the ground, is of importance in industrial spheres in relation to atmospheric pollution, as well as of economic and military significance. The author treats turbulence near the surface as a branch of mathematical physics. -- F. F. Rupert

15 Handbook of Human Engineering Data for Process Engineers. Prepared by Tufts College Institute for Applied Experimental Psychology. Tech Report--SDC 199-1-1, Nav Exos P-643, U. S. Dept. Commerce, Office of Technical Services.

Human engineering is defined as "engineering design in relation to man's anatomical, physiological and psychological capabilities and limitations." Its objective is to develop a system of engineering analysis whereby, in the course of design the demands upon the human operators of machines or other structure will be anticipated and worked out so as not to exceed human capacities to perform under them. The definition implies that man's capabilities and limitations can be described in the quantitative terms of engineering and employed in full partnership with the laws governing functional design. The purpose of the book is to bring together a considerable body of laws, quantitative data and other information pertaining to man's pattern of response to environmental stress and to present it in usable form by designing engineers, and, in particular, to indicate to engineers the limits of human capacity which must be met if the potential capacities of the machine are to be met without hazard to the operator. This concept of human engineering is relatively new, being largely an outgrowth of war experience in the design of weapons. The degree to which human performance

03119049

November 1950

IN RE: ABRAMS

NWBB-0013871

can be reduced to engineering design terms is, therefore, limited at the present time. In recognition of this, the authors have prepared the present volume in the form of a loose-leaf book with the several sections arranged so that they can be expanded as new information is made available.

The scope of coverage is indicated by the titles of the eight parts which make up the volume: The Human Machine; The Human Body; Vision; Audition; Skin Sensitivity and Proprioception; Motor Responses; Physiological Conditions as Determinants of Efficiency; Intelligence. The detailed discussion under each main heading is generally divided into two sections: (1) basic concepts and characteristics and (2) factors influencing human efficiency in respect to each of these characteristics. In other words, the man is first considered and then the environment. The subject matter is reduced, so far as possible, to graphs, tables of data or other quantitative material.

Numerous examples are given in each part as well as a bibliography for future readings. Most of the illustrative material comes from military experience and the industrial engineer must, therefore, translate the subject matter for himself into industrial terms. A little study and reflection will yield many examples from industry to which the information in this Handbook can be applied with useful results. More importantly, it will suggest many opportunities for a further development of human engineering with primary orientation toward industrial rather than military operations. It is especially to be recommended to engineers concerned with the design of high-speed automatic machines which may impose psycho-physiological rather than the more elementary physiological stress upon the operator.

-- T. F. Hatch

- 16 The Aged and Society. A Symposium on the Problems of an Aging Population. Industrial Relations Research Association, 704 S. Sixth Street, Champaign, Illinois, 237 pp. (December, 1950). Price \$3.00.

This book includes 15 papers by as many authors on various phases of the problem of the aged. The field covered is much broader than that of employment, but some of the papers deal directly with the aging worker and they all have a bearing on that subject. Each paper is a thorough discussion of its field. Among those of most direct industrial application are: "The Older Worker in the Labor Market" by O. Pollak; "The Role of Industry in Relation to the Older Worker" by J. Douglas Brown; "Union Policies and the Older Worker" by S. Barkin; "Self-Provision for the Aged" by E.H. Moore; "Retirement Age and Social Policy" by S. H. Slichter; "The Contribution of Psychology" by N. W. Shock; "The Employability of Older People" by A. T. Welford and D. Speakman; and "The Mental Health of Older Workers" by O. Kaplan.

-- F. F. Rupert

- 17 Tables of Working Life. Length of Working Life for Men. Bulletin No. 1001 U. S. Dept. of Labor, Bur. of Labor Statistics, 74 pp. (1950). For sale by Supt. of Documents, U. S. Govt. Printing Office, Washington 25, D.C. Price \$.40.

Nearly all of this publication is devoted to statistics of the working life of males as of 1940, with abridged tables covering the period 1940-47. Formulas are given for calculating the number of men and man years in the

03119050

IN RE: ABRAMS November 1992

labor force remaining at various periods, mortality rates and accessions to and separations from the labor force. -- F. F. Rupert

Industrial and Safety Problems of Nuclear Technology. M. H. Shamos and S. G. Roth, editors. Harper & Bros., 49 E. 33rd Street, New York 16, N.Y. 368 pp. (1950). Price \$4.00.

This volume is an outgrowth of a three-day conference sponsored by the Atomic Energy Commission and New York University's Division of General Education, and contains the papers presented at that conference. The first section deals with United States Atomic Energy Commission Activities, and includes the following papers: "Horizons for Atomic Energy" by G. Dean; "Status of Non-Military Atomic Energy Development" by W. E. Kelley; "Contracts with the United States Atomic Energy Commission" by W. K. Maher; and "Patents and Inventions Under Contracts of the Atomic Energy Commission" by H. R. Mayers. Part II, entitled Radiochemistry and Isotopes, consists of papers on: "Fundamental Particles and Rays" by S. A. Korff; "Electronuclear Apparatus" by G. K. Green; "Radioactive Materials" by W. E. Winsche; "Isotopes, Present and Potential Uses" by P. C. Aebersold; and "What Radioisotopes Can Mean to Industry" by C. Rosenblum. In Part III, The Radiochemical Laboratory, are papers on "A Typical Radiochemical Laboratory" by T. Lanahan; "Instrument Problems of the Radiochemical Laboratory" by V. L. Parsegian, J. S. Balderston, and D. S. Ballantine; and "Planning and Evaluating Industrial Tracer Experiments" by S. E. Eaton. Part IV deals with Hazards, Safety, and Insurance, and includes the following: "General Health Problems and Safety Procedures" by F. Western; "General Hazards of Nuclear Radiation" by G. Failla; "Evaluation of Radiation Hazards and Their Control" by B. S. Wolf; "Waste Materials in the United States Atomic Energy Program" by A. Wolman and A. E. Gorman; "Insurance Problems Associated with Atomic Energy Use" by J. D. Dorsett; and "Atomic Energy and the Fireman" by E. J. Kehoe. The volume is concluded with two panel discussions on "Technological Problems" and on "Impact of Atomic Energy upon Insurance and Safety."

-- F. F. Rupert

Public Health Engineering. Vol. 2, E. B. Phelps, with W. D. Tiedman. John Wiley & Sons, 440 - 4th Avenue, New York 16, N.Y. 213 pp. (1950). Price \$4.00.

This volume deals with food; particularly with the principles of sanitation which, applied to the production, handling, and distribution of food have direct public health significance. Two foods, milk and shellfish, have been selected for exhaustive treatment because of the special problems involved. The subject of garbage collection is handled from a new viewpoint.

-- F. F. Rupert

Model Code of Safety Regulations for Underground Work in Coal Mines for the Guidance of Governments and of the Coal-Mining Industry. International Labour Office, Geneva. 102 pp. (1950). Obtainable from International Labour Office, Washington Branch, 1825 Jefferson Place, N.W., Washington 6, D.C. Price \$2.00.

Work on this code was begun in 1937, and after interruption by the war, was carefully scrutinized and revised by a Tripartite Technical Conference

03119051

HMBB-0013873

IN RE: ABRAMS November 1952

of delegates from 15 coal mining countries held at Geneva in 1949. It does not involve any binding obligations; governments and industry can make such use of it as they think fit in developing their own safety codes. The provisions of the code cover every possible phase of coal mining where safety may be involved, under the general headings of plans, means of access and egress explosives, shotfiring, supports, haulage, transportation, winding, ventilation, precautions against firedamp and coal dust, miner's lamps, fire and flood prevention, shaft sinking, electricity, machinery and plant, first aid, duties of officials, procedure after accidents, and safety organization.

-- F. F. Rupert

INDUSTRIAL MEDICAL PRACTICE

- 21 Miniature Radiography, Especially Its Use in the Campaign Against Silicosis. H. Buckup. Sonderbeilage z. Arbeitsschutz 3; 27-30 (1949). German.

The advantages in the saving of films and technician's time, in the use of mass radiography are considered to have been clearly demonstrated in Germany where the technique has been used for large groups of school children and factory workers. The examination of no less than 33,000 films of workers in the porcelain and mining industries showed that it was possible to make correct diagnoses not only in stage II but also earlier. The roll film technique has also been found valuable in tuberculosis and silico-tuberculosis in factories where it is especially important to recognize active and open tuberculosis. The full size film is considered essential for the detection of early lung changes in the radiograph.

-- Condensed from Bull. Hyg.

- 22 The Failure of Antihistaminic Drugs to Prevent or Cure the Common Cold and Undifferentiated Respiratory Disease. A. E. Feller and others. New England J. Med. 242, 737-744, (1950).

No beneficial prophylactic or therapeutic effect was produced by antihistaminic drugs in naturally occurring respiratory infections, nor in colds developing after experimental inoculation of volunteers with nasal secretions from a donor with a cold. A number of antihistaminic preparations were used, including several that have been widely advertised under trade names.

-- Cond. from Chem. Absts.

- 23 Tripeleannamine Hydrochloride in the Treatment of the Common Cold. R. R. Beard, S. S. Kroopf and M. F. Leeds. Arch. Ind. Hyg. and Occ. Med. 2, 196-201, (August, 1950).

In a group of industrial employees of superior intellectual and educational status, tripeleannamine hydrochloride (pyrabenzamine hydrochloride) and a placebo were administered alternately to persons complaining of colds.

03119052

IN RE: ABRAMS November 1992

Records suitable for analysis, over a six months period, were obtained, 94 for the placebo group and 140 for the tripeleennamine group. No difference was shown in the two groups, with respect to objective signs, but definite symptomatic improvement was reported by 62 percent of the tripeleennamine patients, compared with 45 per cent of those given placebos. Side actions of drowsiness, nausea or vertigo, moderate to marked in degree, were reported by about 8 per cent of those who took the drug, while moderate or severe drowsiness was reported by only about 4 per cent of those treated with the placebo. Too few patients were treated in the first hours of symptoms to permit evaluation of the merits of early treatment. However, those treated in the second twelve hours of treatment did as well as those treated in the first twelve hours. There was evidence, though inconclusive, that severe cases were more likely to benefit from tripeleennamine hydrochloride. There was no appreciable difference between the two groups with respect to absence from work.

-- Cond. from Authors' Summary and Conclusions

Summary: Cortisone and ACTH in Clinical Medicine. R. G. Sprague. Proc. Staff Meetings of the Mayo Clinic 25, 500-502, (August, 1950).

The entire issue of these Proceedings consists of a number of papers on the effect of cortisone and of ACTH in the treatment of various diseases, which are summarized briefly in this paper. Their use is still in an experimental stage; it is agreed that they are not to be considered as "cures," that they do not affect the primary irritant, but they are capable of inducing a wide variety of physiologic or pharmacologic alterations, some of which are favorable, and some which are relatively unimportant, while still others may impose a hazard on the patient. The areas of possible therapeutic usefulness of these drugs are becoming more clearly defined. It appears that the so-called collagen diseases and a variety of allergic or hypersensitive states are conditions in which these hormones offer the greatest therapeutic promise. The question of unwanted effects limiting their effects is still under investigation. (Editor's note--ACTH is now being used on cases of beryllosis.)

Sodium Thiomalate (Containing the Sulphydryl Group SH) Used as a Substance to Protect Against Poisoning by Mercury, Arsenic, Lead and Halogen Hydrocarbons. M. F. Meidinger, Arch. d. Mal. Profess. 10, 42 (1949) In French.

Rabbits were employed to test the value of sodium thiomalate as used against various poisonings. The following deductions are drawn: Sodium thiomalate was found superior to formaldehyde sodium sulfoxylate and 2,3-dimercaptopropanol (BAL) in protecting against mercurialism. It was superior to BAL in preventing and curing arsenical poisoning. It gave protection against a toxic dose of lead acetate administered intravenously. It also exerted a protective influence against poisoning by carbon tetrachloride. In addition to these protecting powers sodium thiomalate exerted a diuretic action in the rat when a dose of six mg. per hundred grams of body weight was injected subcutaneously. These experiments definitely indicate that as a protective agent sodium thiomalate is superior to its thio-acid homologs.

-- Bull. Hyg.

03119053

IN RE: ABRAMS November 1992

- 26 A Controlled Industrial Study of an Analgesic Compound, Edrisal with Codeine. C. F. Long, Ind. Med. & Surg. 19, 446-448, (September, 1950).

We report on a group of 500 employees treated for various different pain-producing syndromes. Two hundred and fifty were offered a new compound, Edrisal with codeine. Two hundred and fifty took a standard compound, P.A.C. with codeine. As nearly as possible, like syndromes were compared. The compounds were given in alternate rotation, and the patient had no knowledge of any difference in formula. Pain was completely abolished in 87% of those given Edrisal with codeine, and in 83% of those receiving P.A.C. with codeine. Sleep was more often disturbed in the P.A.C. with codeine group than in the patients given Edrisal with codeine. Spontaneous favorable comment occurred almost twice as frequently among the Edrisal group as among the P.A.C. recipients. In pain due to trauma, headache and miscellaneous pain syndromes Edrisal with codeine gave 5 to 8% better results than P.A.C. with codeine. In severe dysmenorrhea we had 85% success in overcoming pain and only 9% loss of a work shift using Edrisal with codeine as compared to 100% failure for pain and a 100% lost-time rate in our previous series treated with plain Edrisal.

-- Author's Summary

- 27 Quantitative Patterns in Industrial Medicine. H. B. Burr. Ind. Med. & Surg. 19, 489-493, (October, 1950).

This study of disability causes and medical visit incidence at the Chrysler Plants is presented as typical of American industry. A number of factors are considered. A low rejection rate in the preplacement examination (under 3%) does not increase the incidence of medical visits. The incidence, however, is affected by (1) proximity of medical departments to employees; (2) pulchritude and personality of nurses; and (3) medical department policy. The number of visits is reduced by requiring written permission from the supervisor. The incidence of occupational disease is negligible--less than 1%. Two-thirds of the total treatment were for injuries, of which 65% involved the hand and 15% the eye. In general, the smaller the plant, the greater the frequency of medical visits. Accident-proneness was demonstrated; it was also noted that accident-prone individuals are frequent visitors for non-injury conditions. It is possible that injury and illness in these people may come from a common underlying cause. The subject should have top priority on the agenda of industrial medicine. The greatest factor in incidence of injury in relation to occupation is proximity to machinery. Elimination of mechanical hazards has decreased the severity incidence of lost time disabilities.

- 28 A Study of the Efficiency of Groups of Ex-Miners Disabled by Pneumoconiosis Employed in Light Industries in South Wales. J.A.P. Treasure, Brit. J. Social Med. 3, 127-138, (July, 1949).

It was found that the difference between the disabled men and a control group of fit men (matched for age distribution) was not sufficiently marked to be statistically significant in absence, either for certified or uncertified sickness. The subjective opinions collected confirmed the fact

that the employers were not conscious of any difference. No difference in industrial behavior could be detected between men in receipt of weekly compensation and those who had compounded for a lump sum. The study is confined to a small number of small groups. The factories studied are not regarded as exceptional. -- Cond. from Bull. Hyg.

Some Social Aspects of Sickness Absenteeism. L. Noro. Med. Bull. (Standard Oil Company (N.J.) 10, 282-286, (July, 1950).

The incidence of sickness absenteeism is influenced by sex, age, marital status, length of working time, shift or night work, working conditions, management and group morale, wages, location of job, seasons, sick leave pay, control, and use of leisure time. The author participated in a study of sickness absenteeism among a group of 210,000 workers in various occupations and social groups in Finland. The incidence in Finland is practically the same as in the United States, about 8 to 10 days per person. The rate for state and communal employees are uniformly higher than in private industry, apparently because of increased social security in the first group. Workers in rural areas lose fewer working days than do urban employees. A comparison of rates among Finnish State Railroads from 1938 to 1947 show that improvements in living and working conditions, increased medical care, etc., has increased sickness absenteeism instead of reducing it.

The Private Practitioner and Industrial Medicine. M. R. Burnell. J. Mich. Med. Soc. 49, 566, (May, 1950).

The author stresses the joint responsibility of physicians in private practice and industrial medical departments in carrying out effective health maintenance programs. He discusses some of the fields in which the functions of the plant physician complement those of the private practitioner. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

The Role of the Industrial Nurse in Plant Sanitation Programs. Veronic Donnelly. New York State Dept. of Labor Monthly Rev. 29, 29-32, (August, 1950), 33-35, (September, 1950).

The preparation of the nurse should be such as to enable her to cooperate with the plant physician and the State Industrial Hygiene Departments in making suggestions to management concerning sanitary control. The recommended requirements for the items included under plant sanitation are briefly summarized. These are: (1) housekeeping; (2) water supply and drinking facilities; (3) eating facilities; (4) rest rooms for women; (5) toilet facilities; (6) wash and locker-room facilities; (7) waste collection and disposal. Control of atmospheric contamination is primarily a responsibility of the industrial hygiene engineer, but the plant nurse or physician may sometimes need to bring to management's attention the need for referral of problems of ventilation, illumination or noise to the outside specialist. Check lists are given to guide the nurse in recording her observations.

03119055

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1992
November
IN RE: ABRAMS

- 32 Industrial Sickness Absenteeism. Males and Females, 1949, and Males, First and Second Quarters, 1950. W. M. Jafafer, Pub. Health Repts. 65, 1556-1561, (November 24, 1950).

In 1949 the slight downward tendency in sickness causing absences of eight days and over continued as a whole and for every general class of disease, except that females had a slight increase in non-respiratory, non-digestive diseases, spread over several diseases in that classification. In the first half of 1950 there was a decided increase (44.2 over 32.8 per 1000) in respiratory diseases in males over the preceding very good year, but it was a decrease below the five year average of 46.1. The tendency in digestive and in non-respiratory, non-digestive diseases was much less noticeable.

- 33 Doctor and Workman. A. Meiklejohn. Brit. J. Ind. Med. 7, 105-116, (July, 1950).

The author first defends the industrial physician, who is accused of having exaggerated views of the relative importance of industrial diseases as causes of incapacity and death. The rest of the paper deals with silicosis, showing that it is still a major unsolved problem in Great Britain. "At present in Britain these (pneumoconioses) constitute a major social and economic disaster. Due to their character, no substantial benefits from preventive measures can reasonably be expected during the next decade; a generation of workmen is already damaged, and the tragic record must abide its passing." In South Wales, where silicosis is most frequent, 50 miners leave the pits each week on account of certification of pneumoconiosis. With additional departures from the industry the entire population of the pits must be replaced every ten years. The apparent extent of pneumoconiosis in the remainder of Great Britain is fortunately much lower. The remedy proposed by a number of authorities and to some extent carried out is to institute universal pre-employment and periodic examinations and to discharge and find other work for workmen showing evidences of advanced or moderate silicosis. With this plan the author strongly disagrees, and he presents his views in a masterly and searching analysis.

The following are his arguments against the plan: (1) Despite numerous recommendations, nowhere in Great Britain has an adequate system of examination been established. Results where it has been attempted are disappointing. (2) The cost of a really efficient series of x-ray examinations would be prohibitive. It has been shown that only the best types of films give sufficient detail to permit the recognition of early silicosis, thus ruling out the methods of most mass surveys. Even when the films are adequate, experts disagree on their interpretation. Moreover there are not sufficient skilled radiologists to give adequate interpretations of readings on the large scale necessary. (3) In the Union of South Africa the system for examination of white workers is satisfactory, and that for natives is slowly approaching an equal standard. In Johannesburg they have the advantage of a consolidated field. There would be great difficulty and expense in carrying out a similar plan in Great Britain. A similar system exists in three mining camps in Canada, but the report on its operations is not enthusiastic. (4) It is difficult for a displaced miner to find other

03119056

IN RE: ABRAMS November 1950

employment and he is not at home in other employment. He therefore suffers a loss in morale. (5) A campaign of radiographic examinations in South Wales brought on a dust disease phobia. The author then makes the following recommendations: supreme efforts should be directed to the control of pneumoconiosis through dust suppression rather than that of the pneumoconiotic through earlier diagnosis. The medical service of the National Coal Board should be extended, and boys entering the industry should have careful pre-employment examinations, including chest x-rays. No workman should be suspended from his occupation unless actively tubercular. "In conclusion, medical service of men at work represents one of the most powerful ideas in medicine today, but for such specialized methods as periodical medical examination the time is not yet come in every field of employment.

Small Industries in Georgia Advocate Cooperative Industrial Health Centers.
L. M. Petrie and J. W. Lemon. Trux (March, 1950); Ind. Hyg. Newsletter, U. S. Public Health Service, 10, 5-6, (December, 1950).

The authors describe the Industrial Health Center plan, which is not confined to Georgia. Under this plan several small businesses may jointly agree to establish and support a cooperative health center adequately staffed and equipped and conveniently located. The cost is allocated among the participants according to services and number of workers. The minimum total number of workers that can be served economically is about 1000. The scope of services varies with the size of the population served, but the minimum personnel is one full-time physician, one nurse for each 300 employees (up to 1000), a trained first aid worker or nurse in each plant, and clerical help as needed. The services provided include (1) industrial health examinations for all employees, (2) selective placement, (3) emergency treatment, (4) professional nursing services, (5) other technical services, such as studies of safety hazards, and (6) adequate records. The cost is estimated as \$14.40 per capita for 1000 employees down to \$8.78 per capita for 5000 employees.

Exhaustion in the Young Business Executive. Diagnosis and Treatment.
S. A. Portis, I. H. Zitman and C. H. Lawrence. J. Am. Med. Assn. 144, 1162-1166, (December 2, 1950).

Fifty business executives under 50 years of age who sought medical care for various reasons and 55 similar subjects referred by their employers for routine check-up have been compared as to physical condition, laboratory observations, roentgenologic evidence of abnormality and emotional status. Fatigue was one of the outstanding complaints in the group of patients studied. It is often related to a disturbance of carbohydrate metabolism and to faulty dietary habits. Life situations play an important role leading to exhaustion in executives. A dietary and pharmacologic approach to the therapy of exhaustion has been suggested. The role of alcohol and tobacco has been discussed.

-- Authors' Summary

03119057

IN RE: AIRBORNE
November 1992

- 36 Industrial Hygiene and Therapeutics. M. T. Regnier, Semain d. Hop., Paris 75, 3073, (October 10, 1949). In French.

The therapeutic measures used in the treatment of various types of industrial poisoning are given. Poisoning from the following compounds is considered: heavy metals, irritant gases, carbon monoxide, carbon dioxide, hydrogen cyanide, hydrogen sulfide, carbon disulfide, methyl chloride, methyl bromide, the benzene hydrocarbons, aromatic nitro and amino derivatives, petroleum, coal tar products, sulfuric, nitric and hydrochloric acids, the alkali metals, chalk and cement. -- Arch. Ind. Hyg. & Occ. Med.

- 37 Industries Cooperate for Employee Health. Annette Rich. Nursing World 124, 524, 526, 531, (November, 1950).

Six industries in Hartford, Conn., with a total of 3500 employees, agreed in 1946 to cooperate in maintaining a full time medical service. The full-time physician divides his time among the plants, with a free hand as to methods of medical service. He gives preplacement and periodic examinations, maintains records, helps establish safety programs, and makes recommendations on rehabilitation. Each company employs at least one full-time registered nurse and maintains a dispensary. The plan has been successful. The participants now include five of the original six, and three others.

SKIN DISEASES AND BURNS

- 38 Examination of Silicotics with Special Reference to Oxygen Debt. O. Lehotan, Pracovni Lekarstvi 2, 61 (1950).

In view of the great scatter of the relative oxygen debt in normal healthy persons and in view of the difference in the norms according to the working conditions of the examined group, it is necessary to treat results obtained by this method of examination with great care. Under no circumstances should the oxygen debt be used alone to estimate respiratory deficiency. The behavior of the oxygen debt allows only an estimation of the over-all respiratory and circulatory factors, as well as other factors influencing the working capacity of the individual.

-- Adaptation of Author's Summary

- 39 A Dust Study of the Building Brick Industry in Indiana. J. F. Keppler and H. E. Bumsted. Arch. Ind. Hyg. & Occ. Med. 2, 735-741. (December, 1950).

A dust study was made involving 22 plants manufacturing common brick in Indiana. Two hundred ninety-six dust counts and 96 free silica determinations are reported. The dust counts varied from 5 to 7,000 mppcf. The free silica content of the clays and shales varied from 23 to 52 per cent while that of the settled dust varied from 20 to 47 per cent. The free silica figures are higher than have been reported in the literature for the industry. Dust control methods are suggested.

-- Authors' Summary

03119058

IN RE: ALIBRAINS
November 1952

- 40 An Evaluation of Barrier Creams in the Prevention of Industrial Dermatitis.
Sibyl Horner. Practitioner 164, 234-241 (March, 1950).

The author discusses the functions and types of barrier creams, reviews some of the recent work which has been done in Britain on their evaluation, gives examples of typical formulae, and indicates the industries in which barrier creams or protective "ointments" are required by law. It is pointed out that the use of barrier creams must be combined with a practical adaptation of the principles of "minimal contact" and strict observance of personal hygiene. -- Cond. from Bull. Hyg.

- Case of Industrial Arsenical Cancer Occurring for the First Time in Hungary, and a Comprehensive Analysis of It. G. Frank. Acta Dermato-Venereol 30, 163-172 (1950). In English.

A worker exposed daily to sodium arsenate for nine years, and to tar, fatty acids, and resins twice weekly, developed scaly patches on his skin after the end of exposure, and baso-spinocellular carcinomata on nose and scrotum after nine years. Bowen's disease was also found. The intact skin contained 0.3 mg. per cent arsenic, the patches affected with Bowen's disease 106.7 and the cancer of the scrotum 4.78. The urine, hair, and nails contained normal amounts of arsenic. Treatment with BAL reduced the arsenic content of the patches with Bowen's disease to 1.8 mg. per cent without changing the clinical picture. -- Chem. Absts.

- 42 Production of Cancer with Aniline and Aniline Derivatives.
H. Druckrey. Arch. Clin. Chir. 264, 45-55 (1950). In German.

To produce cancer in rats, approximately one thousand mg. of butter yellow was necessary, independent of the time period given (34-800 days) or the daily dosage (1-30 mg.). The action of smallest amounts of carcinogenic substances on the body cells was irreversible and was transferred to the next cell generation, accumulating throughout the entire life. Pure aniline and chrysoin had no carcinogenic activity. -- Chem. Absts.

- 43 Chemistry and Cancer--As Shown in Aniline Cancer. (L. Rehn)
K. H. Bauer. Arch. Clin. Chir. 264, 21-44, (1950). In German.

The multiplicity of carcinogenic agents in industry and laboratory showed that exogenic agents alien to the normal organism were the main cause of cancer in humans. The use of combinations of substances having mitogenetic activity in the chemotherapy of incurable cancer cases was reported. Extensive literature review. -- Chem. Absts.

03119059

IN RE: ABRAMS November 1992

- 44 Foot Fungus Disease. The Case for Organized Prophylaxis in Pithead Baths. Anon. Coll. Guard. 181, 419-420, (December 7, 1950).

Information on fungus disease of the feet (athlete's foot) is reviewed briefly, with special reference to its occurrence among miners. It is largely spread by dissemination of scales of infected skin on the floors of baths. Among remedies suggested are use of hard wood sandals, sterilized after use; complete and thorough drying of the feet followed by powdering; wearing of cotton socks changed frequently; and reporting of all suspicious skin lesions. Diagnosis must be made by physicians.

- 45 Leukemia in Radiologists in 20 Year Period. H. C. March. Am. J. Med. Sci. 220, 282 (September, 1950).

For the twenty year period, 1929-1948, inclusive, the over-all incidence of leukemia for non-radiologists is 0.51 per cent and for radiologists is 4.68 per cent. It is suggested that the increased incidence of leukemia in physicians as a whole (compared with the adult male white population) might be due to the same factor of exposure to ionizing radiation.

-- Cond. from J. Am. Med. Ass'n.

- 46 The Appraisal of Detergency through Radioactive Isotopes. C. P. McCord and R. L. Robertson. Ind. Med. & Surg. 19, 554-557, (December, 1950).

A method for the appraisal of detergency is described employing radioactive copper as the tracer agent. Application demonstrates significant differences in the properties of divers industrial detergents. It is emphasized that high detergency alone is never a suitable index for the over-all appraisal of a detergent. Preservation of the skin is a requirement equal in import to soil removal.

-- Authors' Summary

- 47 Experimental Ethylene Oxide Human Skin Injuries. R. J. Sexton and E.V. Henson. Arch. Ind. Hyg. & Occ. Med. 2, 549-564 (Nov., 1950).

The magnitude of the skin injury from ethylene oxide seems to be influenced and determined by the length of time of contact and the concentration. The most hazardous dilutions seem to be those in the 50 per cent range. It can be stated with confidence that pure anhydrous liquid ethylene oxide does not cause primary injury to the dry skin of man. Rapid vaporization of pure liquid ethylene oxide sprayed on the skin results in a freezing reaction of the skin. Repeated skin injury can result in such delayed sensitivity manifestations as the flare-up and spontaneous flare-up reactions.

-- Authors' Conclusions

- 48 Occupational Dermatoses. G. Bamber. Practitioner 164, 385, (May, 1950).

According to Bamber, dermatitis is the most common of the industrial dermatoses, but infections must not be overlooked. Anthrax still occurs in those who handle hides and wool, although, with the newer therapeutic measures, it is not so serious as it used to be. Other occupational infections

03119060

IN RE: ABRAMS November 1992

are erysipeloid in those who handle meat and fish; primary tuberculosis of the skin and a host of other diseases that may be transmitted from animals to the farm worker and the veterinary surgeon--cowpox, contagious pustular dermatosis, actinomycosis, ringworm. Yeastlike fungi attack the skin of confectioners and workers in sugar. After long-continued exposure to certain irritants, such as tar and ultraviolet radiation, the skin shows degenerative changes which may eventually become cancerous. Rarely, epitheliomas may develop rapidly on tar burns, and the author has seen several young men with scrotal epithelioma who had worked on low temperature carbonization retorts for less than three years. The author discusses the clinical features of some of the industrial lesions of skin and then takes up questions of diagnosis, prognosis, treatment and prophylaxis.

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

Cutaneous Arsenical Poisoning of a Grape Grower. J. Gate. Lyon Med. 183, 105-106, (1950). French.

A man handling arsenical sprays for seven years had ecchymotic pigment patches on his body. The urine contained 0.07 mg. per l. and hair 0.15 mg. per 100 g. of arsenic. After 20 intravenous injections of 1 g. sodium thiomalate, arsenic decreased in the urine to 0.03 mg. per l. and to 0.06 mg. per 100 g. in hair. The patches diminished also. -- Chem. Absts.

50: Occupational Dermatoses. P. Vitali, Med. d. lavoro 41, 136 (April, 1950). In Italian.

The regular use of barrier creams reduced in incidence of acne and folliculitis among workers exposed to cutting oils in a machine shop; reduced the incidence of ulcers and chromium dermatitis among workers in a chromium plating department; and also reduced the incidence of an eczematoid disease among workers employed in a varnish-spraying department.

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

CHEMICAL HAZARDS

51. Fourteen Observations on Zinc Fever. H. Ollivier and R. Brun. Arch. Malad. Professionnelles 10, 513-516, (1949). In French.

A batch of 44 men worked at applying hot flames to galvanized iron sheets which had also been covered with non-oxidizing paint, in confined spaces at the bottom of a ship. Zinc oxide fumes were generated and there were also slight traces of lead from the paint. Fourteen of the men experienced lachrymation, blood-stained sputum and some hours later, malaise, vertigo, nausea and vomiting. A rise in temperature, with chills was a night symptom. The attack was terminated with free sweating, and the men, though weak, were able to work the next day. The cases are typical of severe metal-fume fever.

-- Cond. from Bull. Hyg.

03119061

NOVEMBER 1992

ALBRAMS

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- 52 Poisoning with Hexamethylenediamine. C. Ceresa and M. DeBlasiis. Med. Lavoro 41, 78-85, (1950). In Italian.

Six guinea pigs were poisoned with daily doses of 0.02 g. hexamethylenediamine over 20 to 90 days. Three received daily 0.01 g. subcutaneously for 50 to 64 days and two 0.02 g. subcutaneously. The latter dose was fatal within 5 to 7 days. The animals showed loss of weight, a hemolytic type anemia with leucopenia, and degenerative changes most marked in the liver and kidneys, less in the myocardium. Hemorrhagic spots were found in the adrenals, and necrosis in the mucosa of the stomach and intestine. Hemolytic anemia observed in workers in a nylon factory may be attributed to hexamethylenediamine or adiponitrile. -- Chem. Absts.

- 53 Benzene Vapor Concentration in Environment of Rubber Industry. A. Capellini and P. Ciria, Med. d. lavoro 40, 269 (Nov., 1949). In Italian.

The authors determined the concentration of benzene vapors in the ambient air inhaled during working hours by several hundred workers employed in the manufacture of pneumatic rubber tubes, in the process of impregnating textiles and also in preparing the rubber-benzene solution employed in the manufacturing processes. Although the concentrations were higher than those allowed according to Anglo-Saxon standards, hematologic examination of a number of workers did not reveal any changes which could have been attributed to the action of the poisons. It is suggested that the human organism may be exposed without evident risk to benzene vapors in higher concentrations than those considered up to now as being the maximum allowable concentrations. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

- 54 Occupational Hazards in Sewage Handling Plants. Investigation Rept. No. 5 Occ. Health Bull., California Dept. of Public Health. Abstracted in Ind. Hyg. Newsletter 10, 15, (December, 1950).

A survey conducted by this organization in cooperation with others showed that the principal hazards were oxygen deficiency and hydrogen sulfide. Gasoline leaks, unsafe machinery and electrical work are the other possible troublemakers. Adequate ventilation--10 to 25 air changes per hour--obliviates the chemical and fire hazards. The mechanical hazards can be prevented by proper care of equipment.

- 55 Concentration of Benzene Vapor in Rubber Workshops. A. Capellini and P. Ciria, Med. d. lavoro 40, 269-276, (November, 1949). (In Italian).

Commerical benzene contains 84 per cent benzene, 13 per cent toluol and 3 per cent xylol and is widely used in rubber goods factories, in two of which the authors carried out their investigations. The benzol content in the atmosphere of the two factories was found to be somewhat higher than the maxima generally accepted as safe. This is given by the authors as between 0.10 and 0.60 mgm. per liter. Blood specimens were examined from

03119062

IN RE: ABRAMS November 1992

37 employees, 8 of whom gave hemoglobin readings of 70 to 76 per cent (normal minimum 80). There was no other evidence among the workers in the two factories, which suggested benzene poisoning.

-- Cond. from Bull. Hyg.

Acute Pulmonary Complications Following Inhalation of Chromic Acid Mist: Preliminary Observations of Two Patients Who Inhaled Massive Amounts of Chromic Acid. J. B. Meyers. Arch. Ind. Hyg. & Occ. Med. 2, 742-747. (December, 1950).

A brief review of the literature on systemic effects of chromic acid is presented. Two cases of acute chromic acid poisoning are reported, with the preliminary clinical findings. Inhalation of chromic acid mist can and does cause severe and prolonged pulmonary disease. -- Author's Summary

Health of the Benzol Plant Workers of the Tata Iron and Steel Co., Ltd. N. Khan. Proc. Soc. for Study Ind. Med. 1, 14-24, (1949).

A plant in India produces over a million pounds of motor benzene in a year by distillation and purification of wash oil, which absorbs benzene from coke oven gas. Some of the exposed workers were found to be anemic, although the general health was good and the socio-economic status was up to the average. All the findings are presented in a series of tables. Preventive measures include carrying on the process in a closed system, frequent physical and blood examinations, urinary sulfate tests and tests of the air to see that the concentration of benzene is kept below 100 p.p.m.

-- Cond. from Bull. Hyg.

Protein Metabolism in Experimental Trinitrotoluene Poisoning. L. Pecora, Folia Med. 32, 487, (1949). In Italian.

Weekly oral doses of 20 mg. trinitrotoluene caused about 50% decrease of the total protein in the plasma of rabbits referable chiefly to the albumin fraction. The fibrinogen was moderately reduced in most cases. The nonprotein nitrogen increased up to 50%, the amino acids were unchanged, and the uric acid showed a marked increase. -- Chem. Absts.

Capillary Fragility in Experimental Benzene Poisoning, Treated with Rutin Ascorbic Acid. L. Pecora, Folia Med. 32, 474, (1949). In Italian.

Vitamin C as well as rutin has a protective effect against hemorrhages in subacute benzene poisoning and this effect is enhanced by the association of both substances. Rutin has no influence on the course of intoxication. Ascorbic acid has a definite protective effect and causes longer survival. The effect of ascorbic acid is more marked against direct hemorrhages whereas rutin is more effective against the development of petechiae. This signifies that rutin has a more specific effect on the resistance of the capillary wall. -- Chem. Absts.

03119063

IN RE: ABRAMS November 1950

- 60 Peripheral Blood and Bone Marrow in Experimental Trinitrotoluene Poisoning. T. Sessa and O. Longo. *Folia Med.* 32, 656-682, (1949). In Italian.

A more detailed description of the work reported in an earlier paper, including more detailed hematological studies. (I.H.F. April, 1950, Abstract 469). --Chem. Absts.

- 61 Beryllium Intoxication. R. Truhaut, *Arch. d. Mal. Profess.* 11, 158, (1950). In French.

Truhaut reviews the subject and supplies seventy-four references through December, 1949. He includes the etiology of acute and chronic beryllium poisoning, the metallurgy and the industrial uses of the element and of its compounds, prophylaxis, and the toxicologic analysis of both air and biologic materials containing beryllium.

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

- 62 Beryllium Granuloma of Nose: Case Report. V. H. Kazanjian and A.T. Joseph. *Plastic & Reconstructive Surgery* 6, 156 pp. (August, 1950).

The authors describe the case of a man who developed a granulomatous lesion on the dorsum of the nose following laceration by a fluorescent bulb. The wound failed to heal, and it appeared ragged and inflamed. A biopsy specimen revealed a granulomatous reaction suggestive of both sarcoid and of tuberculosis. The lesion was completely excised, with a generous margin of normal skin about it and replaced with a full thickness graft taken from behind the ear. Care was taken to suture the graft to the normal skin margin. Examination of the resected specimen disclosed granuloma of the beryllium type. The graft was completely successful. There was no evidence of recurrence several months later. Beryllium granuloma is best dealt with by wide excision, the wound being grafted or primarily reapproximated, depending on its location.

-- J. Am. Med. Assn.

- 63 Berylliosis: Brief Discussion and Presentation of Case with Pulmonary, Digital and Axillary Node Involvement. R. A. Nachtwey, M. B. Dockerty, and C. H. Hodgson. *Minnesota Medicine* 33, 904 (September, 1950).

The present status of knowledge on berylliosis is summarized in this paper. A case report is given of a man who had worked with fluorescent lamps, blowing the glass and coating the tubes. Among the symptoms was an abnormally enlarged lymph node in the left axillary space. Microscopic examination revealed that it was a granuloma, and spectrographic analysis disclosed beryllium. The patient was advised to avoid all contact with beryllium powder or fumes and to avoid over-exertion. Failure to recognize berylliosis, which is an uncommon disorder, may result in serious damage to health or may cause death.

-- J. Am. Med. Ass'n.

03119064

IN RE: ABRAMS November 1950

- 64 Beryllium Poisoning. Harriet L. Hardy. Atomic Energy Commission
Unclassified Doc. 569 (Rev.), Tech. Information Bur., Oak Ridge, Tenn.

Dr. Hardy discusses the principal uses of beryllium and the history of beryllium toxicity. The current reports of toxicity indicate that the chief effect is pulmonary disease; in addition, involvement of eyes, nose, throat, skin, liver, kidneys, spleen, lymph nodes and probably bone have been noted. The most striking feature of chronic beryllium poisoning is the delay between time of exposure and onset of symptoms--eight years or more may elapse. At present less than two micrograms of beryllium per cu. m. of air for an eight hour day is the recommended concentration to protect against the disease. Conclusions of experimental studies carried on in animals are difficult to transpose to man. The mode of action and the exact nature of beryllium compounds which cause beryllium poisoning remains obscure.

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

- 65 Occupational Cancer in a Chromate Plant. An Environmental Appraisal.
H. G. Bourne and H. T. Yee. Ind. Med. & Surg. 19, 563-567, (Dec., 1950).

In the plant surveyed, there was more exposure to trivalent chromium in the form of chromite than to chromates. The lowest concentration in either form that is carcinogenically significant is yet to be determined. All the employees in the plant under study were exposed to measureable amounts. The conditions found can be controlled by utilizing known engineering methods, including ventilation, isolation, pure air under positive pressure where needed, good housekeeping, employee education, and respiratory protective devices.

-- Authors' Summary

- 66 Atmospheric Pollution in the Vicinity of a Chromate Plant. H. G. Bourne and W. R. Rushin. Ind. Med. & Surg. 19, 568-569, (December, 1950).

Coincidental with the survey reported in the preceding abstract, chromium concentration was determined in the air outside the plant. The concentration decreased gradually from 0.12 mg. per cu. m. at 100 feet downwind to 0.06 mg. per cu. m. at 2000. From that distance it dropped rapidly to 0.001 mg. per cu. m., or about the same as the blanks at 10,000 feet.

- 67 Pulmonary Carcinoma in Chromate Workers. Anna M. Baetjer. Arch. Ind. Hyg. & Occ. Med. 2, 487-516. (November, 1950).

Part I. A Review of the Literature and Report of Cases. A survey of the medical literature indicated that cancer of the respiratory tract has occurred in approximately 109 men in the chromate-producing industry, and in at least 11 men in the chrome pigment industry, mostly in the United States and Germany. In the United States the statistics indicate that the respiratory cancer rates are significantly higher in the chromate-producing industry than in industry as a whole, but there is no such indication for workers exposed to chromates in other industries. Some additional data on age distribution of the workers and period of exposure is given, but there is little known about the concentration of chromates

03119065

November 1992

IN RE: ABRAMS

in the plants. The materials suggested as responsible were the hexavalent chromium compounds in the form of dust, particularly sodium and potassium chromates and dichromates and zinc chromate. The mechanism of action is not known. Adequate laboratory experiments on this problem are lacking at present.

Part II. Incidence on Basis of Hospital Records. The number of chromate workers among the male lung cancer patients of two Baltimore hospitals during the past 15 to 20 years was compared with the number of chromate workers among other groups of male patients in these hospitals, selected as controls. Eleven of the cancer patients had had an occupational exposure to chromium compounds, ten in a local chromate-producing plant. None of the patients in the control groups reported chromium exposure. Statistical analysis indicated that the percentage of lung cancer patients who had been exposed to chromates was significantly higher than would be expected on the basis of the control hospitalized groups. Calculation on the basis of total percentage of chromate workers gave the same conclusion, which agrees with the results of the statistical study in the preceding paper.

-- Cond. from Author's Summary

- 68 Hepatic Lesions Produced by Lead in Rats Fed a High Fat Diet. H. Chiodi and A. F. Cardeza. Arch. Path. 48, 395-404, (1950).

This study was undertaken to investigate the occurrence of hepatic lesions in lead-poisoned rats fed on a high fat diet. The lead, which was given daily in doses of 2 cc. of 4.5 per cent lead acetate caused enormous dilatation of the stomach and severe diarrhea, going on to death in 6 to 19 days. The liver was enlarged, with increase in size of the hepatic cells with giant nuclei, the damage being similar to that caused by trinitrotoluene when rats are restricted to a high-fat diet. Casein and methionine prevent such damage to the liver, but casein acted only in the presence of yeast. When methionine and choline were added to the foregoing substances the rats survived in good condition. -- Cond. from Bull. Hyg.

- 69 Lead Hazard in an Enamel Plant. C. R. Ross. Ind. Health Rev. (Ontario) 2, 14, (1950).

Air samples by electrostatic precipitation obtained in an enamel factory give lead concentrations of 3.3 to 10.3 mg. per 10 cu. m., which are above the accepted safe limit of 1.5 mg. per 10 cu. m. The investigators did not believe that it represented a severe hazard because the dust consisted of large particles that settled easily. However, urine samples were found to contain more than 0.30 mg. of lead per liter, or twice the amount considered safe. One case of lead poisoning developed before control measures could be instituted. Several months later the use of lead bearing enamels at the plant was discontinued.

03119066

IN RE: ABRAMS November 1992

MMB-001388

- 70 Printing Industry and Hazard of Lead Poisoning. H. Lange, Monatsschr. f. Unfallh. 52, 109 (April, 1949). In German.

The author believes that the work of compositors at type-setting machines and of stereotypists is not dangerous, except where particular circumstances prevail. The temperature of the metal baths in printing shops is generally much lower than that at which volatilization of lead occurs. Other types of work in printing are shown to present no hazard. In suspected cases of lead poisoning the determination of lead in the blood, urine, and feces should be carried out repeatedly, since the results of a single examination are not always reliable. In a period of six years compensation was granted by the cooperative association of the printing trade to only six of 250,000 workers. A lead hazard is possible only under very unfavorable hygienic conditions in a shop, or with lack of cleanliness on the part of the workers. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

- 1 Lead Poisoning. H. S. Mathisen. Tids Norske Laegeforen 70, 80-82, (1950). In Norwegian.

A report on four cases of lead poisoning. Treatment with 2,3-dimercaprol (BAL) obviously aided the urinary elimination of the lead deposits in poisoned patients. The increased amount of lead excreted indicates the value of dimercaprol injections for diagnostic purposes. -- Chem. Absts.

- 72 Lead and Hypertension. H. Engel, Neue Med. Welt. 1, 528, (April 15, 1950). In German.

The author reviews the literature on the relationship of lead poisoning and hypertension. While there are contradictory opinions on most aspects of this problem it is almost generally accepted that the so-called "lead kidney" is a hypertensive, contracted kidney which differs from other nephroscleroses only in etiology. This type of renal disorder, according to some observers, is about three times as frequent in lead workers as in persons not exposed to lead. The role of the age factor and the length of exposure to lead has been studied, but a larger number of studies are necessary to establish this relationship of lead poisoning and hypertension. -- Cond. from Arch. Ind. Hyg. & Occ. Med.

- Plumbism and Heat Cures. C. Cavigneaux, Fuchs, and S. Tara. Arch. Malad. Professionnelles 10, 503-506, (1949). In French.

A patient with typical symptoms of lead poisoning also complained of lassitude and was unable to work. As an experiment he was treated with hot sulfur baths three times daily at a spa in the neighborhood and he was also given the water to drink. After two months treatment the patient declared himself well and returned to work in another month, with his old vigor. The blood picture had returned to normal. The treatment was to be tried out on a number of cases. -- Cond. from Bull. Hyg.

03119067

November 1950

IN RE: ABRAMS

- 74 The Effect of Dimercaprol on Lead Poisoning in Mice. A. B. Anderson.
Brit. J. Pharmacol. and Chemotherapy 4, 348-350. (December, 1949).

The purpose of this study was to estimate the effect of dimercaprol or BAL (2;3-dimercaptopropanol) on the retention of lead in chronic plumbism. The results of animal experiments, which are described, elicit the conclusion that BAL is of no use for the treatment of chronic lead poisoning. -- Cond. from Bull. Hyg.

- 75 Dimercaprol in Lead Poisoning. Letter to the Editor. A. B. Anderson.
Lancet 259, 309, (August 19, 1950).

Bastrup-Madsen's paper of the same title (I.H.F. abstract 1125, October, 1950) states in conclusion: "Dimercaprol must be regarded as a rational and effective means of increasing the excretion of lead in acute lead poisoning." The correspondent objects to that conclusion, averring that: (1) the lead-BAL complex is twice as toxic as lead; and (2) BAL does not produce appreciable deleading, although there is a transitory increase in excreted lead. He cites several authorities in support of his position.

- 76 Study of Philippine Workers Exposed to Lead Shows High Rate of Absorption.
G. D. Dizon and others. Ind. Hyg. Newsletter (U.S. Public Health Service) 10, 17-19, (December, 1950). (Full title of paper and original publication not given.)

In four plants in Manila producing batteries and other lead articles, the air lead concentration ranged from 0.14 to 2.48 mg. per cu. m., nearly all much above the permissible range. Ten of the twenty workers had definite complaints; twelve showed positive porphyrin in the urine, associated in most cases with excessive lead in the urine (above 0.15 mg. per liter). Blood examination showed that 88% have low hemoglobin content, 65% low red cell counts, and 4% high lead values in the blood. Medical and engineering controls are suggested.

- 77 Exposure to Carbon Monoxide. Queries & Minor Notes, J. Am. Med. Assn. 144, 975, (November 11, 1950).

A truck driver whose closed cab was heated by a charcoal burner felt ill after unloading at 8:45 A.M. and was taken to a hospital, where he died at 9 P.M. An autopsy showed 15% carbon monoxide saturation of the blood, congestion of the lungs, and marked sclerosis of the left coronary artery. The insurance company maintained that death was due to coronary occlusions and that they were not liable. The replicant states that heavy exposure to carbon monoxide can precipitate a fatal attack of coronary insufficiency when the condition is already noticeably serious. If the blood saturation with carbon monoxide was 15% at 9 P.M., it must have been extremely high soon after the exposure.

03119068

IN RE: ABRAMS November 1992

- 78 Death Lurks in Carbon Black Tank. Anon. Ohio Ind. Com. Monitor 23, 163-165, (December, 1950).

An accident is reported in which three men were killed and two seriously injured by carbon monoxide poisoning in an empty carbon black storage tank at the General Tire and Rubber Company's plant in Akron. A small quantity of carbon black somehow became ignited and was burning without flame in the bottom of the tank, unknown to the men or others. After removal of the bodies and survivors, no carbon monoxide was found in the section of the tank in which they had been, but on closing the port and leaving the tank until next day a dangerous quantity was found, as well as in other sections of the tank.

- 79 The Influence of Cold on the Effects of Carbon Monoxide. K. W. Jotten. Arch. f. Hyg. u. Bakt. 132, 3-10 (1950). In German.

When working with heat exchangers on explosion motors, the escape of carbon monoxide gases must be expected. Particularly in refrigerating chambers, this may result in acute or chronic intoxication of the personnel while such symptoms do not occur under normal temperature conditions. In animal experimentation, the increased influence of low temperatures on the carbon monoxide effect could be proved. The use of CO absorbing gas masks (Drager-Lubeck) is recommended as well as the introduction of fresh air into the refrigerating chambers. Also, the elimination of personnel susceptible to toxic exhaust gases is suggested. -- Author's English Summary

- 80 Carbon Monoxide Poisoning in Mines. T. K. Elliott. Coll. Guard. 181, 195-200, (August 24, 1950). (Abstract).

This paper reviews the subject comprehensively, including sources of carbon monoxide in mines, chemical properties, effects on man and on birds, symptoms, diagnosis, and treatment, with a rather full discussion of the last subject.

INDUSTRIAL DUSTS

- 81 Action of Aluminum Dust on Animal Organism. M. G. Ivanova and I. S. Ostrovskaya. Gigiena i Sanit. No. 4, 21-27 (1950). In Russian.

In experiments with rats and rabbits, involving either inhalation of aluminum dust, its introduction into tracheae in physiological-solution suspensions or intravenous injections of such suspensions, it was clearly shown that an "Aluminosis" results; this is a form of respiratory disease, involving malformations in the respiratory organs which progress even after termination of administration of the dust. Pathologic changes in the kidneys and occasionally in other organs were also found. The use of aluminum dust against silicosis is therefore highly questionable. -- Chem. Absts.

- 82 Study of the Excitability of Respiratory and Sympathetic Vasopulmonary Centers in Silicotics. D. Santenoise, J. Mattei, A. Perret and M. Roche. Arch. d. Mal. Profess. 2, 277, (1950). In French.

Decreased excitability of the respiratory and sympathetic vasopulmonary centers was observed in silicotics. Inhalation of air containing as much as 4 to 8 per cent carbon dioxide was required to stimulate their respiratory centers. These subjects showed an impairment of chemical and reflex mechanisms regulating respiration which interfered with the regulation of pulmonary circulation under stress. Following excitation, the pulmonary ventilation diminishes in silicotics, whereas it increases in the normal person. Silicotics also respond by pulmonary vasoconstriction. This decreased excitability leads to a tendency toward anoxia and dyspnea. Decreased excitability of the respiratory center may possibly precede radiological evidence of silicosis. It is suggested that such subjects may have a predisposition to silicosis. -- Arch. Ind. Hyg. & Occ. Med.

- 83 Comparative Animal Experiments on the Effect of Freshly Broken and So-Called "Old" Quartz from Silicotic Lungs. J. R. Ruttner. Ztschr. f. Unfallmed. u. Berufskrankh. 43, 66-73 (March 15, 1950). In German

It results from morphological investigations in the field of silicosis that even after having remained for decades in the human tissue, quartz does not lose its specific silicogenic effect. This statement can be ascertained by animal experiment, as it is easily possible to produce small silicotic nodules with quartz from silicotic lungs. Such silicotic nodules experimentally set are not to be differentiated from those produced by pure, recently broken quartz under the same experimental conditions. There is, therefore, no difference in efficacy between so-called old quartz and that freshly broken. -- Author's English Summary

- 84 Silicotigenic Effect of Siliciferous Minerals with Respect to Solubility of Silica (Silicon Dioxide). L. Peretti, Med. d. Lavoro 40, 97 (April, 1949) In Italian.

This paper is largely polemic. The author discusses Policard's concept of the etiologic mechanism of silicosis, with which he partly agrees. He believes that the question of the effect of silicate dust without free silica is still open, and will be decided only by additional studies. More details are given in the abstract in Arch. Ind. Hyg. & Occ. Med. 2, 606, (November, 1950).

- 85 Silicosis, Queries and Minor Notes. J. Am. Med. Assn. 144, 510, (October 7, 1950).

A query concerns the possibility that silicosis might be caused by spraying cores in a foundry with magnesium silicate. Since silicosis is attributable solely to silica, "magnesium silicate" would not produce silicosis unless the native minerals, such as talc and asbestos, which are

03119070

IN RE: ABRAMS November 1992

comprised within the term "magnesium silicate" contain silica as an impurity. The writer suggests that it might prove helpful to determine the extent of free silica in the magnesium silicate and, if this is substantial, the amount of free silica in the atmosphere.

86 Stannic Oxide Pneumoconiosis. C. C. Dundon and J. P. Hughes. Am. J. Roentgenol and Rad. Therapy 63, 797, (June, 1950).

Dundon and Hughes observed in a man aged 72, with carcinoma of the prostate, an unusual chest roentgenogram, consisting of uniform mottling of both lung fields by discrete, fine, dense shadows. There were no respiratory symptoms, and the vital capacity was 85 per cent of normal. A history of exposure to dust and fumes from a detinning furnace for a period of 18 years was obtained, this exposure having terminated in 1930, 18 years prior to examination. The microscopic appearance of the lungs was that of moderate anthracosis. A thin lung slice revealed on a roentgenogram dense perivascular, peribronchial and subpleural shadows. Examination of incinerated sections under polarized light disclosed compact accumulations of bright yellowish brown particles, which were soluble in hydrochloric acid in the presence of powdered zinc and gave a positive spot reaction for tin. Spectrographic analysis disclosed abnormally large amounts of tin in the lungs. A pattern identical with that of stannic oxide (SnO_2) was obtained by roentgen-ray diffraction analysis of dried lung tissue powder. The lungs contained 1.46 per cent stannic oxide (dry weight), and the ash was composed of 13.4 per cent stannic oxide. The authors conclude that inhalation of stannic oxide for long periods produces benign, symptomless pneumoconiosis but no fibrosis. Stannic oxide is radiopaque, and accumulation of particles in the regions of perivascular, peribronchial and subpleural lymphatics produces sharp shadows on the chest roentgenogram. Tin deposited in the lungs in this form is nontoxic systemically. -- J. Am. Med. Ass'n.

87 Respiratory Tracts of Alabaster Workers of Volterra, Italy. M.S. Manfredi, Sett. Med. 37, 193, (April 30, 1949). In Italian.

A clinical and roentgen study and tests of the respiratory functions were made on 30 normal workers in alabaster. They were between the ages of thirty and forty and had worked with alabaster (gypsum) since early youth. The respiratory tract showed a moderate chronic bronchitis with emphysema. -- Arch. Ind. Hyg. & Occ. Med.

88 The Asbestosis Problem in Slovakia. K. Holoman, Pracovni Lekarstvi 2, 69, (1950).

At present not a single case of asbestosis of the lungs has developed in three plants which were investigated. This is due to the short exposure to dust-containing fibres of the majority of the workers, and also to the use of raw and wet asbestos, which allows only long and less noxious fragments to be suspended in the atmosphere. Control examinations after longer periods of time will show whether certain suspected roentgenologic findings have an anatomic basis due to asbestos or are due to other causes.

-- Adaptation of Author's Summary

03119071

IN RE ABRAMS November 1953

- 89 Pulmonary Fibrosis as an Occupational Disease Illustrated with an Example of Pulmonary Fibrosis in a Corundum Factory. K. W. Jotten and H. Gartner. *Arbeitsschutz* 1, 11-16, (March, 1948). In German.

This article continues the discussion on the nomenclature of dust diseases which the authors had raised in a previous paper. They have arranged in diagrammatic form all the forms of dust diseases of the lungs which can be regarded as essentially due to mineral dusts. Three large classes of dusts are distinguished according to the resulting tissue reactions. In the first class are manganese and slag oven dusts which produce an inflammatory tissue reaction. In the second are the free silica and the complicated asbestos silicates which cause a reticulin or collagen tissue reaction. The third class, formerly regarded as inert is now being investigated in connection with corundum manufacturing processes. A number of instances of "dust lungs" in corundum workers are discussed. Corundum has been regarded as harmless, but now a finely nodular pulmonary fibrosis is recognized which is attributable to sillimanite associated with an amorphous silica as occurring in the group of workers in electric ovens. Its relation to the German industrial insurance regulations is questioned.

-- Cond. from Bull. Hyg.

- 90 Q Fever in California; II Recovery of Coxiella Burnetii from Naturally-Infected Air-Borne Dust. P. D. DeLoy, E. H. Lennette, and K. B. DeOme. *J. Immunol* 65, 211 (August, 1950).

Coxiella burnetii, the causal organism of Q fever, was found in California in the milk of infected dairy cattle, sheep, and goats. Since many human cases of Q fever could not be traced to the use of raw milk nor to contact with dairy animals, it is considered possible that infection may arise from air-borne dusts which have been contaminated with the body secretions or excreta of infected live stock. *Coxiella burnetii* was recovered from dust-laden air on a dairy and on a sheep ranch in California. Another explanation for the outbreak of sporadic cases of Q fever may be found in the air-borne dissemination of the rickettsiae.

-- Cond. from J. Am. Med. Ass'n.

PHYSICAL ASPECTS OF THE ENVIRONMENT

- 91 The Psychiatric Aspect of Miners' Nystagmus--II. E. S. Stern, *Brit. J. Ophth.* 34, 385, (June, 1950).

The statement in a previous paper that miners' nystagmus is a disorder of emotional and not of organic origin has been further confirmed. There was found to be a direct relation between the payment of compensation and the occurrence of nystagmus among miners in America, Germany, and Great Britain. To determine the precipitating cause of the complaint a standard

03119072

IN RE: ABRAMS November 1992

psychiatric examination was carried out on thirty-five patients. The breakdown was usually due to the difficulty of the work or to an anxiety resulting from the hazards of the work. Psychosis, psychoneurosis, domestic upsets, or dissatisfaction with the work were other factors responsible for miners' nystagmus. The author explains the manner in which the anxiety is converted into physical hysterical symptoms. The suggestion that potency phantasies are involved explains the miners sense of hostility to the community and the nature and frequency of mining disputes. The study has shed light on the nature of the miner and his industrial relations.

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

⁹² The Ears of Industry. R. Corhart. Arch. Ind. Hyg. & Occ. Med. 2, 534-541, (November, 1950).

The basic task of industrial otology is to preserve hearing against industrial hazards. Currently, hearing loss due to intense sound is probably the major industrial threat to the ears. Noise deafness possesses a typical and identifiable pattern of progression. It is characterized by some reversibility, and individuals vary in their susceptibility to it. Methods of prevention include quieting the working environment, insuring the use of protective devices and discovering the noise-susceptible individual early. A careful and consistent program of auditory testing and job placement is essential for appropriate protection of both the employer and the worker.

-- Author's Summary

⁹³ Effect of Ultraviolet Rays on Eyes. Letter to Editor by Hedwig S. Kuhn. Ind. Hyg. Newsletter (U.S. Public Health Service) 11, 6, (Jan., 1951).

Dr. Kuhn takes exception to statements in a bulletin issued by a State Health Department (New Mexico) warning welders of the dangers of severe exposure to ultraviolet rays. The statements reflect a widely held erroneous impression. It is known that ultraviolet rays do not penetrate to the lens of the eye; very few rays penetrate even the cornea, and those few do not get past the aqueous humor. Infrared rays cause cataract on severe exposure over years, but it has been proved again and again that ultraviolet rays affect only the most careless welder.

RADIOACTIVITY AND X-RADIATION

⁹⁴ Civil Defense against Atomic Warfare. A Selected Reading List. Prepared for the National Security Resources Board by the United States Atomic Energy Commission. 24 pp. (March, 1950). Price 10 cents from Supt. of Documents, Washington 25, D.C.

This pamphlet lists 410 publications on various aspects of defense against atomic weapons including protection from radiation and therapy of radiation illness.

03119073

NOVEMBER 1950
ABRAMS
TIN 1951

- 95 Possibility of Protecting Living Organism against Roentgen Rays by Chemical Means. A. Forssberg, Acta Radiologica 33, 296-327, (March-April, 1950). In Swedish.

Forssberg reports attempts to protect the living organism against the effects of roentgen rays. He shows that when cysteine is added to bacterial cells immediately before irradiation, the culture is partly protected against radiation injury. Other substances containing the sulphhydryl (SH) group act similarly, but related substances which do not contain the sulphhydryl group do not. When cysteine is injected into the skin of guinea pigs, loss of hair is largely prevented with doses of rays which without the administration of cysteine would result in loss of hair.

- 96 Planning a Small Radioisotope Program. G. W. Reid and O. M. Bizzell. Ind. Med. & Surg., 19, 549-553, (December, 1950).

Adequate preliminary training is essential if one is to avoid pitfalls encountered in the design of radioactive laboratories, purchasing of equipment, and drawing of false conclusions from experiments. All aspects of the planned program should be investigated thoroughly before any definite action is taken. Budgetary considerations can be met by careful program planning, careful design of the laboratory, and judicious selection of equipment. Suggestions are given for equipment, including cost, also for the health physics and waste disposal angles.

- 97 Costs of Radiation Protection. Eighth Semiannual Report to Congress of the Atomic Energy Commission. Summary. Nucleonics 7, 73-76, (September, 1950).

The various items entering into the cost of protection of personnel in a plant using radioactive material are discussed. It is estimated that it is 177% more costly to perform certain routine processing operations with radioactive materials than with non-radioactive material; or by a different calculation, nearly two-thirds of the total cost of operations in a radioactive plant goes to radiation protection. Depreciation of equipment makes up a large portion of this excess. The cost of research is also greatly increased. Naturally the comparison differs greatly according to plant size and type of work.

- 98 Executive Planning--If an A-Bomb Falls. R. M. Ballinger. Studies in Personnel Policy, No. 108. National Ind. Conference Board. 19 pp. (1950). Available to companies associated with N.I.C.B. and educational institutions at \$1.00.

This pamphlet gives comprehensive suggestions for action when an atomic bomb falls. They are based on publications of the Atomic Energy Commission, especially "The Effects of Atomic Weapons."

03119074

November 1950

IN RE: ALCAMS

ENVIRONMENTAL MEASUREMENTS
(Analytical Procedures and Methods)

Identification of Particles in Los Angeles Smog by Optical and Electron Microscopy. R. D. Cadle, Sylvan Rubin, C. I. Glassbrook, and P. L. Magill. Arch. Ind. Hyg. & Occ. Med. 2, 698-715, (December, 1950).

Technics involving the optical and the electron microscope were used to identify particles collected from Los Angeles smog. Several well known methods, such as thermal precipitation, impaction and settling, were used for sampling. Charged particles were collected on charged microscope slides. The over-all composition of the material collected was studied by chemical-microscopic methods. The identity of individual particles was determined by studies of the optical properties and by depositing reagents on the particles by means of micropipets controlled by micromanipulator. Tarry materials, oily and aqueous droplets, and crystals which were mainly ammonium sulfate were collected from Los Angeles smog. Hexagonal crystals tentatively identified as fluorides were occasionally observed. Settling technics were particularly convenient for collecting samples to be studied with the electron microscope. Particles which appeared to have been originally droplets containing dissolved solids, and droplets of a relatively nonvolatile oil, were observed with the electron microscope. The methods described should be applicable to many studies of air pollution.

-- Authors' Summary

Determination of Small Amounts of Hydrogen Sulfide and Carbon Disulfide in Air. C. J. Snijders. Chem. Weekblad 46, 343-345, (1950). In Dutch.

Ten liters of air is slowly passed through five wash bottles in a portable apparatus (described). The first two bottles each contain 10 ml. of a solution of 10 g. bismuth chloride, 80 mls. 12 normal hydrochloric acid, and 0.5 g. gelatin per liter; the other three bottles each contain 10 mls. of normal alcoholic potash. After the aspirating operation, the contents of the first two bottles are diluted to 500 ml. with a 0.5% solution of gelatin, and the extinction of the solution is measured. The contents of the other three bottles are similarly diluted and examined. Blank determinations are run. The results are read from a standard graph.

-- Chem. Absts.

Polarographic Determination of Lead in Urine. R.W.R. Baker. Biochem. J. 46, 606-612, (1950).

A polarographic method is given in detail, with a modification for low lead concentrations. In a few normal urines less than 60 gamma were found per 24 hours. By the modified procedures as low a lead concentration as 50 gamma per l. can be determined. The study indicates that BAL causes an increase in the excretion of lead in the urine.

-- Chem. Absts.

03119075

PREVENTIVE ENGINEERING

- 102 Massachusetts Plants Collaborate to Control Dusty Operations. H. Bawley and R. J. Chamberlin. Ind. Hyg. Newsletter (U. S. Pub. Health Service) 10, 9, (December, 1950).

The authors give a brief account of the accomplishment of the Massachusetts Division of Occupational Hygiene, in cooperation with the manufacturers, in correcting a dusty condition. The panning operation in wire-covering plants gives rise to a high talc dust concentration. An average count of 150 million particles per cubic foot was reduced to below 20 M.P.C.F. by use of an appropriately designed exhaust system, which is described. Cooperation of the engineers of the various plants with the State representatives and with each other contributed greatly to the success of the project.

- 103 Stack Gas Cleaning. M. W. First. Am. Ind. Hyg. Assn. Quart. 11, 206-214, (December, 1950).

The common methods of cleaning--by inertial forces, filtration, wet scrubbing, and electrostatic forces--are discussed, with reference to specific devices and to the conditions wherein each type gives the best results. Since particles under 5 microns are more difficult to remove, their agglomeration to larger particles are desirable. Agglomeration methods are described, including the Venturi scrubber and supersonic methods. In conclusion: "This discussion of air cleaning methods and devices may be summed up with the observation that the tools now available for the cleaning of stack effluents are adequate for the job when applied with sound engineering. Research, of which there is a great deal going on at the present time, will undoubtedly point the way to more effective methods in the future."

- 104 Recirculation from Industrial Exhaust Systems. A. C. Stern and D.P. O'Neil. Heat. Pip. & Air Cond. 22, 112-121, (November, 1950).

Recirculation of exhaust air to the workroom conserves heat during cold weather. However, there should be no recirculation of any process effluent which could be detrimental to the health and well-being of persons employed in the workroom. There are two control systems based on outdoor temperature. The on-off control system is simpler, but modulating control gives a lower net annual recirculation, which should not in general exceed 15%. Recirculation from small unit separators is generally not justifiable. The use of secondary air cleaners of the filtering type in modulating control systems adds a factor of safety and is recommended. The suction plenum system of modulating control is preferable to the pressure plenum system because it allows a tertiary air cleaner to be used. The per cent

recirculation is nearly a linear function of the temperature. It is proposed that recirculation be limited to one-half the total hourly building transmission plus infiltration load, or over 500,000 Btu per hour, whichever is greater. -- Cond. from Editor's and Author's Summaries

Final Progress Report: Harvard University, AEC Contract No. AT-30-1-Gen.-238.
L. Silverman, M. W. First, G. S. Reichenbach, Jr., and Philip Drinker.
NYO-1527, (February 1, 1950). 65 p.

Results of basic laboratory research on methods of increasing particle size and aggregation by condensation from sprays or other suitable means are reported. Data and techniques used for limited number of field studies of performances of various dust and fume collectors are included. 28 references. --Nuclear Sci. Absts.

The Control of Certain Health Hazards Encountered in Underground Metal Mines. E. C. J. Urban. Am. Ind. Hyg. Assn. Quart. 11, 201-205, (Dec., 1950).

The author presents a general discussion based on the study of a number of metal mines. Current ventilation standards derived from long experience in those mines and others are presented. A chart shows typical dust concentrations in the years 1900 to 1920, when there was no dust control program, and their decrease with the adoption of improved ventilation, wet drilling, and other improvements.

COMMUNITY AIR HYGIENE

A Report of the Atmospheric Concentrations of Sulfur Dioxide in St. Louis-1950. J. J. Schueneman. Industrial Hygiene Section, Division of Health, City of St. Louis, 19 pp. (1950).

St. Louis was one of the cities included in a sulfur dioxide survey conducted by the Foundation (then the Air Hygiene Foundation of America) in 1936 and 1937. During 1950 the St. Louis health authorities made a similar survey, as part of a comprehensive program, to determine how much improvement has been made by the smoke regulation program. The method was the same as in the earlier survey, with slight modifications; the number of stations was reduced to 9 in summer and 14 in winter, all corresponding to stations of the earlier survey and all confined within the city limits. The total number of tests per station was 27 in winter (February and March) and 21 in summer (June and July). The concentrations of sulfur dioxide found, averaged 83% lower in winter, and 73% lower in summer, than they were in 1936-1937. The reduction has probably been brought about by enforcement of smoke regulating ordinances and by increased use of oil and gas as fuel. The tables show some coordination of sulfur dioxide.

03119077

IN RE: AIR ABRAHMS
November 1952

concentration with wind direction (from the east and the more developed sections), lack of visibility, smoke, and humidity (lowest at humidities over 69%). Results apparent to the public include lack of "sulfury sensation" in the city air, better keeping of paint, less surface deterioration of stone and metals, and better plant life.

- 108 Stack Disposal of Chemical Waste. C. A. Gosline.
Arch. Ind. Hyg. & Occ. Med. 2, 621-630, (Dec., 1950).

An attempt has been made to show how dispersion characteristics of stack effluents vary. The degrees to which concentration varies with time are important. The stack effluents are not always present at a point even when the point is directly downwind from the source of contamination. Data are shown to demonstrate that stack disposal can be adequate in spite of the poor dispersion conditions that are known to occur. The characteristics of dispersion have been discussed in light of the effects on phases of the problem, such as site selection, planning, legal aspects and research in the medical field. It is admitted that exceptions may be taken to some of the concepts. The methods are offered to benefit those in industry at present grappling with the problem and who perforce must adopt measures now to solve their present problems. As it becomes available, additional information will be extremely beneficial, but the lack of undiscovered information should not prevent industry from taking a practical approach to treating the complexities involved in stack disposal as a means to eliminate or minimize air pollution. -- Author's Summary

MANAGEMENT ASPECTS

- 109 Changing Patterns in Human Relations. D. McGregor, Conference Board Management Record, National Industrial Conference Board, Inc., 247 Park Avenue New York 17, N.Y. Vol. 12, pp. 322-323, 366-368, (Sept., 1950).

On the frontiers of industrial progress are management pioneers who have recognized line responsibility as the best principle and used it to advantage, and who have accepted a high order of responsibility for human relations and welfare at the level of the individual company. The latter is becoming the only alternative to close government regulation. Both these principles lead to a third: obtaining the cooperation of the employee by making him take a direct interest in the work, rather than bend him to management's will by threat or bribery. These pioneers "are aware that human beings--even uneducated workers--have capacities which, if effectively utilized, will put the automatic factory in the shade. They are discovering that when these capacities are utilized, there is a striking shift in the direction of employee effort." Examples are in Given's "bottom-up management," (see I.H.F. abstract 848, August, 1949), and several others that have been described. The author warns that any scheme of line responsibility and employee participation must come from management's new

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November

IN RE: AIR AM'S

conception of its job, its beliefs about human behavior and motivation, its sensitivity to human needs, and its confidence in human capacity and ability. The mere grafting of a selected group of personnel policies onto an organization will not bring about a new pattern of human relations. That has happened in many cases and has led to failure. "Management's philosophy creates a climate within which successful human relations will flourish or wither, regardless of the particular personnel policies adopted."

- 110 Principles of Plant Protection. Industrial Security Division, Office of Manpower, Munitions Board, Dept. of Defense. 24 pp. (August 1, 1950).

The purpose of this pamphlet is to provide a uniform guide of plant protection measures for use by management of vital war industries and the armed forces. It is emphasized that the primary responsibility for protection rests with management. The principal hazards are classified as espionage, sabotage, and enemy attack, the last including atomic and other bombs, guided missiles, and toxic agents. The next chapter deals with internal security, and the final one with minimizing the effects of enemy attack.

- 111 Problems of the Older Worker. Symposium. Employment Security Rev. 17, 3-16, (Dec., 1950).

This is a collection of short articles written by authorities on the subject. The first, "National Conference on Aging Sparks Drive for Older Workers," by A. J. Abrams, is a report on that conference, held August 13 to 15 at Washington. "A Local Office Faces the Older Worker Problem" by Mildred Werden tells about a study conducted in the employment offices of five states. In selected cases, as opposed to a control group, special attention was given to the qualifications of each applicant by a number of examiners, and individual or group interviews were sought. Counseling, however, was the most effective technique. A follow-up survey confirmed the belief that success in obtaining work for the older person was made more probable by this procedure. G. E. Bowman, in a shorter paper, "Older Workers Are Employable," lists a number of jobs for older workers filled by his agency, leading him to the same conclusion as in the preceding paper. W. Mirengoff, in "Older Worker Employment--Benefit or Burden," thinks that we are now moving to a tighter labor market, and therefore the older applicant will fare better than in the last few years. On the other hand, Sarah E. Turk, in "The Older Worker in a Stringent Labor Market," points out that older workers do not necessarily benefit by a stringent market; they do only when the preliminary examination is conducted as thoroughly and placements are made as carefully as in other times. Otherwise poor selections are often made and the employer becomes more skeptical about employment of elderly workers rather than less. "As an Aging Worker Sees It" by H. D. Wheeler urges putting yourself in the aging worker's place to understand his needs and problems.

03119079

- 112 Operation Rehabilitation. F. Gingras and M. Mongeon.
Ind. Health Rev. (Ontario) 2, 1-5, (October, 1950).

The author describes and criticizes the process of rehabilitation, especially as conducted in Canadian hospitals. His main point is the need for greater attention to the social and final adjustment of the patient. A department of physical medicine rehabilitation is needed. Often the problem is that of training the patient for a new occupation. Social and financial rehabilitation should include consultation with the patient's family as well as with the patient. A physical medicine rehabilitation center could be built in a short time without too much cost.

ACCIDENTS AND PREVENTION

- 113 Properties of Flammable Liquids, Gases and Solids. Loss Prevention Bull. No. 36.10. Factory Mutual Engineering Division, 184 High St., Boston 10, Mass., 12 pp., (1950).

This bulletin gives pertinent data concerning the fire and explosion hazards of nearly 700 flammable materials, including over 200 that were not listed in the last publication in 1945. The data were obtained from various sources, and include open and closed cup flash point, explosive limits in air, auto-ignition temperature, susceptibility to spontaneous heating, specific gravity, vapor density, melting and boiling points and suitable extinguishing agents.

- 114 Studies in Occupational Morbidity: Part III. I. Sutherland, C. G. Harris, and A. Smithers. Brit. J. Ind. Med. 7, 140-144, (July, 1950).

An analysis has been made of all accidents reported to the surgeries (medical departments) of two factories from July to December, 1947. The average population of the factories was 4,285 (excluding staff). The number of accidents reported was 5,292. In factory A the number per 100 employee-months was 14.5 for males and 8.9 for females. In factory B the rates were 49.4 and 49.1 respectively. The difference is undoubtedly due to the different types of work undertaken. In each factory there was a definite pattern in the rates according to age, differing markedly from the age-pattern of sickness rates. They were high for the youngest workers and dropped, at first rapidly and then more slowly, with increasing age. The rate was greater during morning than afternoon hours, suggesting that with a nine-hour day (approximately) the necessity for adaptation to work at the beginning of the day causes more accidents than fatigue at the end. The types of injury are analyzed. In factory A, 7 per cent of the recorded accidents were reported later than the day of occurrence, and 2.6 per cent were septic when reported. In factory B the corresponding figures were only 2 per cent and 0.5 per cent.

-- Authors' Summary and Conclusions

03119080

IN RE: ALBRAMS
November 1950

HWBB-0013902

- 115 Work Injuries in the United States During 1948. Bull. No. 975, Bur. of Labor Statistics, U. S. Dept. of Labor, 19 pp. (March, 1950). For sale by Supt. of Documents, Washington 25, D.C., price 15 cents.

For the first time since 1940 the annual toll of disabling work injuries fell below 2 million in 1948, in spite of relatively steady employment. The number of injuries and most rates, however, were still well above the levels prevailing in 1938 to 1940. Fatalities were estimated at 16,500, a 3% reduction from 1947. Permanent partial disabilities decreased by 7%; while the permanent total remained at 1,800. The data are classified by industry and by parts of the body. The injury rate in lumbering, though still high, underwent the greatest reduction. Variations, usually small, between the rates for 1948 and the preceding years, are presented and discussed.

- 116 Injury Rates in Manufacturing, Second Quarter, 1950. Anon. Labor Inf. Bull. 71, 567-571, (November, 1950).

Since 1944 the injury frequency rates in manufacturing decreased from the first to the second quarter of the year by one to five per cent. In 1950, however, there was instead a rise of 4%. On the other hand, the rate for the second quarter was 2% below last year's record. The total number of injuries for that period was 9% above that for the first quarter of 1950 and 4% above that for the second quarter of 1949. The rates are tabulated according to particular industries. Major increases were found in the manufacture of batteries, steel barrels, kegs, drums and packages.

- 117 Cathode Ray Tubes. Data Sheet D-EE 1. National Safety Council. Nat. Safety News 62, 28, 29, 70-72, (December, 1950).

The cathode ray tube is a vacuum receiving tube now used extensively in television, radar, etc. The processes of construction and exhaustion are described. The principal hazards are mechanical, involving the danger of glass breakage and implosion. Special precautions in handling reduce these hazards. Hydrofluoric acid is used in etching the inner surface prior to introducing the fluorescent material, and the danger of skin burns and inhalation must be considered. Coatings now used are almost all, if not all, beryllium free. The danger from x-ray radiation is very remote.

- 118 Survey on Causes and Prevention of Cotton Fires. N.B.F.U. Research Report No. 8, National Board of Fire Underwriters, 85 John St., New York 7, N.Y. Committee on Fire Prevention and Engineering Standards. 34 pp. (1950). Obtainable at above address or at branch offices.

Cotton as collected from the field and processed is particularly exposed to fire hazard, especially with habitual carelessness usually prevalent. Three to four bales out of every thousand have been lost by fire. External sources arise mostly from smoking violations, carelessness with matches, and poor yard management and housekeeping. Less easily

03119081

IN RE: ABRAMQ November 1993

controllable causes include: friction in the gin from extraneous materials such as nails, defects in the saws, and "motes" or unmatured seeds; electrostatic influences; faulty drying systems; ignition by waste disposal burners; friction fires from bale-bands in box cars; breakage of ties and buckles. "Fire-packed bales" are bales in which a fire starts from one of a number of sources, but remains smoldering through subsequent treatment and transportation until it breaks out unnoticed and may cause great damage. Remedies are suggested for these sources, including detection and extinction of fire packed bales; but education and improvements in housekeeping are the most fundamental remedies.

- 119 Work Accidents in Food Processing. Research and Statistics Bull. No. 7, Workmen's Compensation Board, State of New York, (Mary Donlon, Chairman) 51 pp. (1950).

This booklet is a companion to those issued recently by this Board dealing with other groups of industries. Statistical data are given and an extensive analysis of the data is made.

MISCELLANEOUS

- 120 The Contribution of Charles Turner Thackrah, English Pioneer in the Field of Industrial Health. Arch. Ind. Hyg. & Occ. Med. 2, 517-528, (Nov., 1950).

This is a biographical sketch of a man who pioneered in industrial hygiene in England early in the nineteenth century, and who had an influence on its growth in the United States.

- 121 Occupational Carcinogenesis. M. W. Goldblatt, Practitioner 164, 404, (May, 1950).

The author discusses the factors predisposing to "spontaneous" development of tumors. He shows that the clinical and pathological features of occupational and "spontaneous" tumors are more or less identical. This is the more evident in that the occupational tumor may appear many years after all demonstrable vestige of the carcinogenic hazard has disappeared. Occupational carcinogenesis is considered in relation to the occupations in which it is observed. The skin cancers produced in animals by means of polycyclic hydrocarbons are discussed. The relation between carcinogenesis in man and in animals has not been determined. The carcinogenic effects of roentgen rays, of radioactive substances, of aromatic amino compounds and of several other substances, such as chromates, beryllium, and the industrial materials which produce blood diseases simulating neoplastic disease are also considered.

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

03119082

November 1950

IN RE: ABRAMS

INDEX

<u>Absenteeism</u>		<u>Chromic acid mist</u>	
sickness		pulmonary effects	56
statistics	32	<u>Coal mines</u>	
social aspects	29	safety regulations	
<u>Accident statistics</u>	114	model code	20
<u>Accidents in food processing</u>	119	<u>Cold</u>	
<u>Aged and Society, The (Bk. Rev.)</u>	16	common	
<u>Air borne dust</u>		antihistaminic drugs	22
infected	90	common	
<u>Aluminum dust</u>		tripelennamine	23
effect on lung	81	<u>Cortisone and ACTH in medicine</u>	24
<u>Arsenical poisoning</u>		<u>Cotton fires</u>	
cutaneous	49	causes and prevention	118
<u>Asbestos in Slovakia</u>	88	<u>Dermatitis</u>	
<u>Atmospheric turbulence</u>		barrier creams	40
(Bk. Rev.)	14	<u>Detergency</u>	
<u>Atomic bomb</u>		appraisal	
action after	98	by isotopes	46
<u>Atomic warfare</u>		<u>Dust collection report</u>	105
civil defense	94	<u>Dust control in wire coating</u>	102
<u>Benzene</u>		<u>Dust study in brick industry</u>	39
exposure	57	<u>Edrisal</u>	
<u>Benzene poisoning</u>		industrial study	26
capillary fragility	59	<u>Ethylene oxide</u>	
<u>Benzene vapor in</u>		skin injuries	47
rubber industry	53	<u>Exhaust systems</u>	
rubber workshops	55	recirculation	104
<u>Berylliosis</u>	63	<u>Eyes and Industry (Bk. Rev.)</u>	13
<u>Beryllium granuloma</u>	62	<u>Fatigue in executives</u>	35
<u>Beryllium poisoning</u>	64, 61	<u>Fibrosis</u>	
<u>Cancer</u>		occupational	89
from aniline	43, 42	<u>Flammable materials, tables</u>	113
industrial arsenical	41	<u>Foot fungus disease</u>	44
<u>Carbon monoxide</u>		<u>Gypsum effect on</u>	
and coronary sclerosis	77	respiratory tracts	87
effects of cold	79	<u>Handbook of Human Engineering</u>	
in carbon black tanks	78	Data (Bk. Rev.)	15
poisoning in mines	80	<u>Hexamethylenediamine</u>	
<u>Carcinoma in</u>		poisoning	52
chromate workers	67	<u>Human relations</u>	
<u>Cathode ray tubes</u>	117	patterns	109
<u>Chromate plant</u>		<u>Hydrogen sulfide and carbon</u>	
survey	65	disulfide	
survey of vicinity	66	determination in air	100

03119083

INDEX (Continued)

<u>Industrial and safety problems</u>	18	<u>Pneumoconiotic miners</u>	
<u>Industrial deafness</u>	92	reemployment	28
<u>Industrial hygiene and therapeutics</u>	36	<u>Public health engineering</u>	19
<u>Industrial medical service</u>		<u>Radiation protection</u>	
cooperatives	37	costs	97
for small industries	34	<u>Radiography</u>	
<u>Industrial medicine and private practitioner</u>	30	miniature	
<u>Industrial medicine</u>		for silicosis	21
in coal mines	33	<u>Radio-isotope program</u>	96
survey	27	<u>Rehabilitation</u>	112
<u>Injuries</u>		<u>Sanitation programs</u>	
industrial		industrial nurse	31
1948	115	<u>Sewage</u>	
<u>Injury rates</u>		plants	
second quarter	116	hazards	54
<u>Lead</u>		<u>Silicates and pneumoconiosis</u>	84
absorption		<u>Silicosis</u>	85
Phillipine workers	76	<u>Silicosis and</u>	
determination		oxygen debt	38
polarographic	101	excitability of nerve centers	82
<u>Lead and hepatic lesions</u>	68	from old and new quartz	83
<u>Lead and hypertension</u>	72	<u>Smog</u>	
<u>Lead hazard</u>		identification of particles	99
in enamel plant	69	<u>Sodium thiomalate as protective</u>	25
<u>Lead poisoning</u>	71	<u>Stack disposal of waste</u>	108
BAL treatment	75, 74	<u>Stack gas cleaning</u>	103
heat cure	73	<u>Sulfur dioxide</u>	
printing industry	70	in St. Louis	107
<u>Leukemia in radiologists</u>	45	<u>Symposium</u>	
<u>Metal mines</u>		older workers	111
hazards	106	<u>Tables of working life</u>	17
<u>Nystagmus</u>		<u>Thackrah</u>	
psychiatric aspect	91	Charles Turner	120
<u>Occupational cancer</u>	121	<u>Trinitrotoluene poisoning</u>	60
<u>Occupational dermatoses</u>	50, 48	<u>Trinitrotoluene poisoning and</u>	
<u>Plant protection</u>		protein metabolism	58
principles	110	<u>Ultraviolet rays</u>	
<u>Pneumoconiosis</u>		on eyes	93
stannic oxide	86	<u>X-Rays</u>	
		protection by chemical means	95
		<u>Zinc fever</u>	
		cases	51

NWBB-0013906

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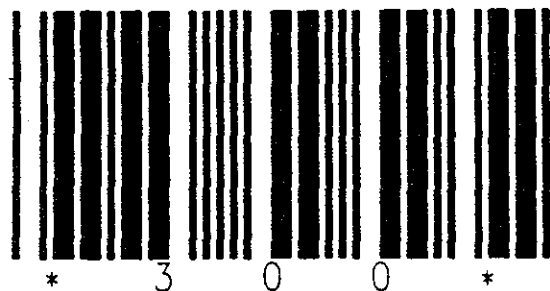
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November 1992

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