

IN RE: ABRAMS

November 1992



HW86-0020745

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

NOVEMBER, 1965

(Vol. 29, No. 11)

INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

4400 FIFTH AVENUE -- PITTSBURGH, PA. 15213

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IN RE: ABRAMS November 1992

REQUIRES ACTION

HWBB-0020746

INDUSTRIAL HYGIENE FOUNDATION
OF AMERICA, Inc.

Legal Series, Bulletin No. 7



REHABILITATION

4400 Fifth Avenue
Pittsburgh, Pennsylvania
1965

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INTRODUCTION

Workmen's Compensation has always provided promise of financial savings for successful programs of prevention and, although apparently not generally recognized, there are definite financial benefits to be realized by industry from successful rehabilitation efforts.

This Bulletin has been prepared with the assistance of Mr. W. Scott Allan, who addressed the 30th Annual Meeting of Industrial Hygiene Foundation on October 21, 1965*. A savings of \$2,500,000+ in the cases of 250 injured employees as a result of rehabilitation, or an average savings of \$10,000 per employee was reported by one insurance carrier** in the discussion of Mr. Allan's paper. In view of significant financial benefits, which accrue to the employer in such cases, it would certainly appear "penny wise and pound foolish" to limit medical and rehabilitation costs in individual cases, jeopardizing successful recovery and return to gainful employment.

A plan is being formulated to provide a measure of progress in rehabilitation within the Foundation's membership on an annual basis. Persons responsible for employee rehabilitation in interested Foundation member companies are hereby requested to complete and return the tear sheet on page 5. In this way, we hope to establish an effective channel to obtain information needed to define present trends and document future progress.

* W. Scott Allan: "Progress in Rehabilitation of the Injured Worker".
AMA Arch. Environmental Health 12 (April, 1966).

** Justin B. Harris, Secretary, General Reinsurance Corp., New York.

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1.

BACKGROUND OF REHABILITATION IN WORKMEN'S COMPENSATION

As early as 1916, the annual proceedings of the International Association of Industrial Accident Boards and Commissions (IAIABC) were filled with references to the key role of rehabilitation in Workmen's Compensation administration.

The first nationwide public effort in rehabilitation was the vocational training program begun in 1918 under the Smith-Sears Veterans' Rehabilitation Act. This was a law designed to train disabled veterans for jobs, a concept which was the essence of later efforts in connection with the disabled civilian worker.

Despite the early promise of a restorative philosophy and practice in the care of industrial injuries under Workmen's Compensation however, medical care for industrial injuries and occupational diseases has continued to focus on the acute phase, especially the surgical phase; administrative attention in the Workmen's Compensation agencies has concentrated on liability and disability determinations; legal representation has cultivated an atmosphere of adversary contention; and employers and carriers have limited their rehabilitation activity primarily to the more dramatic and unusually costly case.

A LOOK AT THE RECORD

In 1949 and 1950, industrial accidents contributed about 6% of those helped through Federal-State vocational rehabilitation: by 1954, this percentage fell to 2% and has remained there since.

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2.

State experience was similar. New Jersey was 16% in 1950, but had fallen below 6% by 1959. California, in its report for 1959, reported only 313 of 1,026 or 30% of injured workers needing vocational rehabilitation were actually helped.

In 1956, an IAIABC survey reported that of 21 states utilizing rehabilitation centers for work injury cases, "Not more than two or three use these centers for as many as 20% of the injured workers off work over 90 days". In 1960, it stated that in the past 10 years, despite all recommendations, no jurisdiction had established a specialized center. In 1959, the Association of Rehabilitation Centers reported 16% of referrals to 61 major centers reporting were Workmen's Compensation cases from insurance companies. By 1964, such referrals had dropped to 5%.

A FEW BRIGHT SPOTS EXIST

It is, however, true that an increasing number of major insurance carriers writing Workmen's Compensation coverages and health insurance coverages have studied, adopted and practiced effective programs of rehabilitation as applied to their own cases. There has been an evident increase in understanding by industrial management of the feasibility of hiring or re-hiring, and properly placing the handicapped worker.

A CHALLENGE TO INDUSTRIAL HYGIENE FOUNDATION

Interested members of Industrial Hygiene Foundation, representing industry generally, should consider the following steps to improve rehabilitation of injured employees in the work force:

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1. We should make certain that all who could benefit are processed into satisfactory rehabilitation programs.

2. We should urge business management to accept rehabilitation as an integral part of management planning, human engineering, industrial relations practice, conditioning against recurrent injury; preventing chronic absenteeism; relocating the older or misplaced worker; and of reducing the over-all impact of disability problems which presently afflict the worker and present a heavy cost burden to industry.

3. As citizens, as professionals in the health field, and as advisers to business management, we should provide our communities and our employers with sound guidance in establishing and effectively using rehabilitation services. This implies medical awareness of what cases can be helped, how and where; community facilities whose approach is practical; insurance carrier knowledge and utilization; sound administrative practices on the part of Workmen's Compensation, public health and vocational rehabilitation agencies. Knowledge necessarily must precede action and nowhere is this more acutely evident than in rehabilitation activity or the lack of it.

4. We should use our combined best efforts to redirect the thrust of Workmen's Compensation administration in the direction of a thoughtful concern for the restoration of the injured worker to maximum productivity, with the least amount of lost time from his job and the greatest degree of physical recovery attainable. If this could be our primary goal, rather than the amount and character of monetary benefits, with endless dispute over liability and disability issues in the hearing room or in the courts, the whole climate of our oldest form of social insurance would be certain to change for the better.

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4.

Reflections, and a caveat: industry is literally "on trial" to make modern techniques and services available to each and every worker who has the slightest chance of benefiting from them.

Two decades or more ago, Arthur Larson and others offered the challenge of a revised concept in the field of industrial injury—a Workmen's Restoration law instead of a Workmen's Compensation law. The suggested shift in emphasis was aimed at both philosophy and practice, including the difference in actual terminology as applied to the system. These principles are still valid—perhaps more so than ever before. A number of major conferences and educational studies have re-emphasized the desirability, indeed the necessity, for such a new approach. It might well prove to be the salvation of our state Workmen's Compensation system, of our private system of insuring the risk of occupational injury and disease and our selective process of obtaining medical care for workers.

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IN RE: ABRAMS November 1992

TEAR SHEET

Return to: Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh, Pa. 15213

1. We are interested in participating in a program to improve utilization of rehabilitation services within the Foundation and to help reverse the apparent general downward trend in this regard, if possible.

Yes ☐

No ☐

2. Name of company: _____

3. Names and titles of employee relations managers wishing to assist in this study:

(Name)

(Title)

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INDUSTRIAL HYGIENE FEATURES

A preliminary report on psychiatric emergency services is given in Abst. No. 1055.

Artificial respiration and artificial circulation are discussed in Abst. No. 1057.

Abst. No. 1061 reports on corn oil in the treatment of ischemic heart disease.

Abst. No. 1071 describes the surgical treatment of pulmonary emphysema.

Cutaneous lesions associated with internal malignancy are discussed in Abst. No. 1073.

Data concerning human botulism due to commercial products are presented in Abst. No. 1083.

Abst. No. 1088 investigates the absorption of beryllium from the gastrointestinal tract.

Abst. No. 1091 studies the toxicity of niobium salts.

Information on the percutaneous toxicity of metal compounds is given in Abst. No. 1092.

Consult Abst. No. 1094 for further information from percutaneous absorption.

Details on phosphamidon poisoning are presented in Abst. No. 1101.

See Abst. No. 1103 for particle size distribution of settled dust.

Abst. No. 1108 gives a study of respiratory symptoms and ventilatory capacities among rope makers.

A report of sarcoidosis in a beautician is given in Abst. No. 1112.

A discussion of the neurologic hazards of diving is given in Abst. No. 1116.

A report on cataract incidence in radar workers is given in Abst. No. 1117.

FOUNDATION FACTS

ANNUAL MEETING. The 30th Annual Meeting held at Mellon Institute, Pittsburgh, Pa. October 20-21 was attended by nearly 400 representatives of industrial management and the health professions. Transactions of the meeting have been accepted for publication in the April issue of AMA Archives of Environmental Health. The experimental program provided for Joint Technical Conference and Management Conferences, with more time for discussion following each talk. From comments received at the meeting, and in subsequent correspondence, reaction was favorable. Next year's program is presently under consideration. Any suggestions should be made to the Managing Director.

NEW MEMBERS ELECTED TO THE BOARD OF TRUSTEES. At the Annual Membership Meeting on October 20, three new trustees were elected to the Board: Mr. L. W. Binger, Minnesota Mining & Manufacturing Co., Mr. Frederick H. Deeg, American Mutual Insurance Alliance, and Dr. Roy L. Gibson, Gulf Oil Corp.

REHABILITATION. At the Annual Meeting Mr. W. Scott Allan, Assistant Vice President, Liberty Mutual Insurance Co. and President of National Rehabilitation Association, identified an alarming downward trend in utilization of rehabilitation for the benefit of injured workers. It is hoped that Foundation Legal Series Bulletin No. 7, presently in distribution, will help correct this situation. A good example set by the Foundation's members could go far in helping motivate industry generally into improved programs of rehabilitation.

ENGINEERING DISCUSSIONAL. Dates have been set for the next annual Engineering Discussional January 11-13, 1993. Invitations to member companies are in the mail. In order to stimulate discussion, attendance will be limited to 100 participants from the Foundation's membership and all comments will be "off the record."

DR. PAUL GROSS, a member of the American Conference of Governmental Industrial Hygienists Threshold Limit Values Committee, attended a meeting of the committee in Washington, D.C. on November 15 and 16. Dr. Gross has also been invited to attend and participate in the Quebec Asbestos Mining Association's Occupational Health Study-Conference in Antigua, which will be held November 21-27.

03121989

INDUSTRIAL HYGIENE DIGEST
Literature and News

NEWS ITEMS

1039 New Publication—"Spotlight on Safety".

A new publication devoted to safety and published by the New York State Department of Labor has been acclaimed by safety experts and the public in general, Industrial Commissioner M. P. Catherwood announced today. It is a four-page printed publication titled "Spotlight on Safety." In an introduction to the first issue of "Spotlight," Commissioner Catherwood wrote: "Among the many responsibilities of the New York State Department of Labor none is more important than safeguarding the occupational safety and health of the worker. This new publication is dedicated to the task of focusing attention on this all-important subject. Since the latter part of the 19th Century, the Department of Labor has been protecting workers in New York State in two ways: by providing safety education and engineering services and by enforcing occupational safety and health laws." "Spotlight on Safety" is distributed free to interested persons. Names may be placed on the mailing list by writing to the Office of Public Information, New York State Department of Labor, State Office Building Campus, Albany, New York 12226.

1040 Influenza Report.

The Public Health Service Advisory Committee on Immunization Practices regarding influenza immunization and control in the civilian population reported that although type A viruses may predominate in 1965-1966, the presence of type B influenza in the United States and its prevalence in Europe in 1964-1965, increases the expectation of type B outbreaks in 1965-1966 in the United States. Annual immunization was generally recommended for persons in groups who experience high mortality from epidemic influenza. The Committee said vaccination should begin as soon as practicable after September 1 and ideally should be completed by mid-December. "It is important that immunization be carried out before influenza occurs in the immediate area since there is a two week interval before the development of antibodies."

-- J. Am. Med. Assn. 193, adv.p.16 (July 19, 1965)

1041 Sulfur Oxide Pollution Abatement.

According to Vernon G. MacKenzie, chief of the U.S. Public Health Service Division of Air Pollution, 23,000,000 tons of sulfur dioxide are produced by the activities of man annually, 80% of which result from combustion of coal and oil. As the need for electric power increases, the sulfurous air pollution problem will grow unless control measures are perfected and employed. There are very encouraging developments in this area, he told the 1965 Annual Meeting of Air Pollution Control Association, particularly at large fuel-burning installations such as steam electric generating plants. Use of tall stacks to disperse stack gas pollutants before they reach ground level has become almost standard in these installations. The technique for removal of sulfur dioxide gases, which are now under development here and abroad, appear to offer great promise. Among these techniques are the alkalized alumina process, which converts sulfur dioxide into elemental sulfur; the vanadium pentoxide process, the end product of which is dilute sulfuric acid; and the activated carbon process, which yields a relatively concentrated sulfuric acid.

-- Air Cond. Heat. & Vent. 62, 6 (Sept. 1965)

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- Dec. 6-7 American Society for Testing and Materials, Committee D-12 on Soaps and other Detergents, New York, N. Y.
- Dec. 6-8 Chemical Specialties Manufacturers Association, Washington, D. C.
- Dec. 6-9 Seminar on Chest Disease Problems in Coal Miners, University of Maryland, College Park, Md.
- Dec. 7-8 Pharmaceutical Manufacturers Association, Chicago, Ill.
- Dec. 26-30 American Assoc. for the Advancement of Science, Annual Meeting, Berkeley, Calif.

LEGAL DEVELOPMENTS

1047 Safety Hazards in Mines.

The Department of the Interior would control safety hazards in metal and nonmetallic mineral mines under a bill approved by the House. H.R. 8989 would give the Secretary of the Interior, after consultation with an advisory committee, authority to set rules and regulations covering health and safety in all mines from which minerals other than coal or lignite are extracted. Minerals which present radiation hazards would be exempt because they are covered by the Atomic Energy Act. The Department of the Interior would have authority to inspect the mines to see if hazards exist and authority to shut down those mines deemed to be unsafe.

-- Chem. Eng. News 43, 35 (Sept. 13, 1965)

1048 Lead Contamination in the Atmosphere.

Two probes of lead contamination in the atmosphere are slated for this fall. The Senate Special Subcommittee on Air and Water Pollution, headed by Senator Edmund S. Muskie (D.-Me.) will hold hearings on the problem "within a few months". The U.S. Public Health Service plans to hold a technical symposium on the effects of lead contamination in the atmosphere sometime this fall. Controversy over the atmospheric level of lead, mainly from automobile exhausts, was sparked by Dr. Clair C. Patterson of California Institute of Technology. He charged that lead pollution in the air has reached alarming proportions. Both the Lead Industries Association and an earlier Public Health Service report contend that the lead content in the air does not constitute a health hazard at this time.

-- Chem. Eng. News 43, 23 (Sept. 27, 1965)

1049 Indemnities for Atomic Accidents.

The government program of indemnities for atomic accidents has been extended by Congress. The Price-Anderson Act, under which the Government provides indemnities up to \$500 million to cover the cost of an accident at an atomic power plant, has been extended to June 30, 1977. The act was slated to expire June 30, 1967. The only opposition to the extension came from the coal industry, which charged that the indemnity program is an unfair subsidy for atomic power.

-- Chem. Eng. News 43, 23 (Sept. 27, 1965)

1050 Labeling Regulations on Pesticide Safety Claims.

New labeling regulations on pesticide safety claims are now in effect. The U.S. Department of Agriculture (USDA) order, first proposed in February, bans use of such broad statements as "noninjurious", "harmless", or "safe". But it allows labels to carry more limited claims as "nontoxic to humans or pets" when backed by data proving to the department's satisfaction that the agent is safe under "any reasonable" circumstances. No label can simultaneously carry statements of warning and safety. USDA officials say the ruling is the last in a series of 24 interpretations to the Pesticide Act of 1964.

-- Chem. Eng. News 43, 19 (Sept. 6, 1965)

03121993

1054 Emissions from Sulfuric Acid Processes.

Atmospheric Emissions from Sulfuric Acid Manufacturing Processes is the title of a cooperative study project of the Manufacturing Chemists' Association and Public Health Service. The 107-page paperbound book (PHS Publication No. 999-AP-13) is available from the Publication Office, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio 45226.

-- Chem. Eng. News 43, 84 (Sept. 13, 1965)

INDUSTRIAL MEDICAL PRACTICE

1055 A Psychiatric Emergency Service: A Preliminary Report. J. B. O'Regan.
Can. Med. Assn. J. 93, 691-695 (Sept. 25, 1965).

An emergency service for psychiatric patients was organized in a general hospital owing to the increasing need for such a service. Its main functions have been to screen cases, to offer short-term treatment, and to provide immediate consultation facilities to general practitioners and clinical experience to students, interns and residents. Of 133 patients, 40% were diagnosed as psychotic and 35% as neurotic. The commonest presenting symptoms were anxiety and depression. Approximately 40% were treated by the staff of the emergency service, 40% were sent back to the general practitioner for treatment, and 20% were transferred to a mental hospital. It is concluded that this type of service can provide immediate and effective consultation and treatment for psychiatric emergencies, and is a very useful teaching facility, especially for students and physicians not intending to specialize in psychiatry.

-- Author's abst.

1056 Preventive Psychiatry: The Psychiatric Team as Consultant to the Public Health Nurse.
M. A. Menzies. Can. Med. Assn. J. 93, 743-747 (Oct. 2, 1965).

Various forms of collaboration between the disciplines of public health and psychiatry are briefly reviewed and a 25-year-old mental health program of the Vancouver Health Department is described. The public health nurse has prime responsibility in all children with emotional disorders. She is supported by a psychiatric team which provides active treatment and educational and consultative help for the nurse and the school. During the year 1963, six social workers had 2,357 contacts with nurses and school personnel but only 1,049 treatment interviews. Of 401 children referred to the psychiatric team, 138 received active clinic treatment, 141 remained under supervision by the public health nurse, and 122 were referred elsewhere. In addition, 1,330 children were identified as "mental hygiene cases" in the caseload of the 170 public health nurses in the community. By close coordination, the public health nurse and the psychiatric team can enhance each other's contributions to community mental health.

-- Author's abst.

1057 Artificial Respiration and Artificial Circulation: Training Experiences—Principles and Practice of Emergency Resuscitation and Post-Resuscitation Care. J. Brook, M. H. Brook, and J. F. Lopez. Can. Med. Assn. J. 93, 387-397 (Aug. 28, 1965).

A training program in the newer methods of treatment of acute cardiopulmonary emergencies which was developed at the University Hospital, University of Saskatchewan, is reported. Artificial respiration by the chance rescuer, primary and secondary resuscitation, and post-resuscitation measures involving the use of special drugs and equipment by trained personnel are described. Figures and tables designed for wall-mounting and ready reference in an emergency situation are presented. Firstaid ventilatory adjuncts for use by trained personnel are classified and critically appraised, and the propriety of their use is emphasized. A plea is made to the medical profession and allied agencies to assume the responsibility of spreading knowledge of the new techniques more widely. Unless effective treatment is instituted early enough to prevent death or permanent anoxic damage to heart and brain, follow through therapy will often be fruitless.

-- Authors' abst.

03121995

- 1062 Coxsackie A10 Virus Infection Among Infectious Hepatitis Contacts. J. A. Embil, Jr., et al. Can. Med. Assn. J. 93, 740-742 (Oct. 2, 1965).

During an outbreak of infectious hepatitis at a housing development, Coxsackie A10 virus was recovered from the stools of 45 different contacts and from the blood of four others. Caution should be exercised in attributing an etiological role to any given isolate of a Group A Coxsackie virus in view of the widespread distribution of these organisms. Nevertheless, the recovery of Coxsackie A10 viruses from the blood and stools of contacts with hepatitis cases appears to warrant record. -- Authors' abst.

- 1063 Bronchopulmonary Effects of Tobacco and Related Substances. I. Bronchoconstriction and Bronchodilatation: Influence of Lung Denervation. D. M. Aviado and M. Samanek. Arch. Environmental Health 11, 141-151 (Aug. 1965).

In the anesthetized dog, the administration of cigarette smoke or nicotine aerosol to one lung initiated the following biphasic responses: (a) initial bronchoconstriction involving the vagus nerve; and (b) subsequent bronchodilatation involving the sympathetic nervous system. The mechanisms for bronchodilatation have not been identified but it is reasonable to suspect the release of catecholamines from the adrenal medulla and direct stimulation of the sympathetic ganglia. One bronchoconstrictor mechanism has been identified consisting of a vagal reflex initiated from the airways. There are 41 references. -- Authors' summary

- 1064 Bronchopulmonary Effects of Tobacco and Related Substances. II. Bronchial Arterial Injections of Nicotine and Histamine. M. Samanek and D. M. Aviado. Arch. Environmental Health 11, 152-159 (Aug. 1965).

In the anesthetized dog, the bronchial arterial injection of nicotine into the right lung elicits three mechanisms: (1) bronchoconstriction of the same side which is mediated via the parasympathetic ganglia in the airways and is blocked by hexamethonium chloride; (2) bronchoconstriction of the other side which is entirely a reflex mediated via the vagus nerve; and (3) a delayed bronchodilatation which is abolished by an adrenergic blocking drug for the beta receptors which mediate bronchodilatation. Histamine elicits 1 and 2 and it is proposed that histamine release may be the basic mechanism for the bronchoconstriction mechanisms activated by nicotine. Seven references are listed. -- Authors' summary

- 1065 Bronchopulmonary Effects of Tobacco and Related Substances. III. Axon Reflexes Elicited From the Visceral Pleura. M. Samanek, D. M. Aviado, and G. W. Peskin. Arch. Environmental Health 11, 160-166 (Aug. 1965).

The application of histamine and nicotine solution to the visceral pleura of the anesthetized dog elicited the following mechanisms: (a) interlobar vagal reflex bronchoconstriction mediated via intact vagus; (b) interlobar reflex bronchoconstriction, probably an axon reflex involving the peripheral preganglionic vagal fibers; and (c) intralobar reflex bronchoconstriction, probably an axon reflex involving the vagal ganglia in the lung. All three reflexes are mechanisms blocked by the pleural administration of lidocaine. There are four references. -- Authors' summary

- 1066 Bronchopulmonary Effects of Tobacco and Related Substances. IV. Bronchial Vascular and Bronchomotor Responses: Their Suggested Defense Function. M. Samanek and D. M. Aviado. Arch. Environmental Health 11, 167-176 (Aug. 1965).

Several axon reflexes involving sympathetic postganglionic nerves are reported in the anesthetized dog with perfusion of the bronchial arterial and pulmonary artery of one lobe. They are: (a) bronchodilatation following inhalation of cigarette smoke and bronchial arterial injection of nicotine; (b) bronchial arterial vasoconstriction following the same two procedures, and (c) pulmonary vasoconstriction from inhalation of cigarette smoke and bronchial arterial injection of histamine. The identification of these as axon reflexes is based on their persistence after acute denervation but disappearance after chronic denervation of the lung. The functions of these sympathetic axon reflexes and of the previously reported vagal axon reflexes are to reduce the amount of substances absorbed from the lung and to maintain an adequate ventilation-perfusion ratio. Eight references are listed. -- Authors' summary

lesion resulted in marked improvement. Five patients with multifocal emphysema and progressive space occupation in one focal area suffered from severe dyspnea and poor general health. The space-occupying lesion was removed by lobectomy. The results, measured by pulmonary function tests and subjective improvement, were rewarding in most cases. No patient with multifocal emphysema but without a space-occupying lesion underwent operation. -- Authors' abst.

- 1072 Bronchiolar Emphysema (Diffuse Bronchiolectasis)—So-Called Muscular Cirrhosis of the Lungs. J. H. Fisher. *Can. Med. Assn. J.* 93, 681-684 (Sept. 25, 1965).

Eleven autopsied cases of bronchiolar emphysema are reported. In all, both lungs were involved. Their pleural surfaces were finely bosselated, presenting an appearance resembling that of the liver in Laennec's cirrhosis. The lungs were firm, they cut with increased fibrous resistance, and the cut surfaces were honeycombed with cysts. Microscopically, the cysts originated in terminal bronchioles. Their walls were thickened with fibrous tissue, elastic fibers and prominent smooth muscle. Areas of lung parenchyma were replaced by fibrous tissue rich in elastic fibers. The etiology of this disease is unknown. Inherent weakness of the myoelastic wall of the respiratory bronchiole, hypoplasia of the distal segment of the respiratory unit, and superimposed recurrent respiratory infections probably are essential in its pathogenesis. The pulmonary changes cause interference with hemorespiratory gaseous exchange. Death was due to respiratory failure in seven cases, to cardiac failure in three and to superimposed staphylococcal pneumonia in one. -- Author's abst.

SKIN DISEASES AND BURNS

- 1073 Cutaneous Lesions Associated with Internal Malignancy. P. Telner and J. E. Adam. *Can. Med. Assn. J.* 93, 358-363 (Aug. 21, 1965).

Examination of the skin may provide valuable clues to the diagnosis of internal malignancy. Acanthosis nigricans and dermatomyositis, while rare, indicate the presence of systemic cancer in a high percentage of cases. Dermatomyositis appears to arise from an immunoallergic response to the tumor via some antigen-antibody mechanism. Common skin eruptions, e.g. urticaria, erythema multiforme, pruritus, erythroderma, epidermophytosis and herpes zoster, while not commonly associated with cancer, should lead the physician to look for other signs of malignancy. Skin cancer (Bowen's disease and basal cell carcinoma) is often associated with internal malignancies. This association may be due to a genetic susceptibility to cancer or to a deficient immunoallergic response. The distinctive morphology of the infiltrates of lymphomas, reticulum cell sarcoma and leukemias enables the trained observer to make a clinical diagnosis which is frequently confirmed by subsequent laboratory studies. There are 18 references.

-- Authors' summary

- 1074 Acquired Porphyria Cutanea Tarda. Report of a Case Successfully Treated by Phlebotomy. A. Koval, C. W. E. Danby, and H. Petermann. *Can. Med. Assn. J.* 93, 537-540 (Sept. 4, 1965).

Currently, the porphyrias are classified in four main groups: congenital porphyria, acute intermittent porphyria, porphyria cutanea tarda hereditaria, and porphyria cutanea tarda symptomatica. The acquired form of porphyria (porphyria cutanea tarda symptomatica) occurs in older males and is nearly always associated with chronic alcoholism and hepatic cirrhosis. The main clinical changes are dermatological, with excessive skin fragility and photosensitivity resulting in erosions and bullae. Biochemically, high levels of uroporphyrin are found in the urine and stools. Treatment to date has been symptomatic and usually unsuccessful. A case of porphyria cutanea tarda symptomatica is presented showing dramatic improvement of both the skin lesions and porphyrin levels in urine and blood following repeated phlebotomy. Possible mechanisms of action of phlebotomy on porphyria cutanea tarda symptomatica are discussed. -- Authors' abst.

03121999

- 1080 The Differential Diagnosis of Common Black Tumours of the Skin. R. Jackson.
Can. Med. Assn. J. 93, 658-661 (Sept. 18, 1965).

The clinical characteristics of various black skin tumours have been presented. Seboreic keratoses and pigmented nevi are the most common black skin tumours—all black lesions are not malignant melanomas. Clinical examination—a study of the living gross pathology—of these tumors when properly performed will provide an accurate diagnosis in over 90% of cases. Biopsy of all suspicious lesions is mandatory.

-- Author's summary

- 1081 First-Aid Cooling of the Fresh Burn. T. C. King and J. M. Zimmerman.
Surg. Gynecol. Obstet. 120, 1271-1273 (June, 1965).

The effect of early postburn cooling on the development of capillary permeability and tissue edema was determined in several hundred burns inflicted by various experimental means upon animals. The results of the study indicate that 80% to 85% of the edema which follows a burn develops within the first 30 minutes after the injury. Some edema formation, however, does continue until the third hour. It appears that surface cooling inhibits the change in capillary permeability and the subsequent formation of edema. If this is the case, the authors suggest that surface cooling be instituted as soon as possible after the injury and continued for at least 30 minutes. This may bring better results in treatment of burn cases and it may decrease mortality.

-- J. Am. Med. Assn. References & Reviews

- 1082 The Effect of Anesthesia on Energy Exchange in Third Degree Burns. C. F. Roe, J. M. Kinney, and C. S. Blair. Surg. Gynecol. Obstet. 120, 1207-1212 (June, 1965).

Two severely burned patients underwent operative procedures under a general anesthetic. During the operation both experienced marked hypothermia, hypotension, and a fall in oxygen consumption. The primary cause of many of these changes is probably the abnormally high rate at which burned patients lose heat. Normally, this heat loss is compensated for by reflex shivering and peripheral vasoconstriction. Anesthesia abolishes these reflexes and consequently, there is a rapid fall in body temperature. The early narrowing of the pulse pressure and subsequent fall in blood pressure can be related to the dilation of peripheral blood vessels which were previously constricted, possibly to plasma volume changes resulting from cooling, and to the direct depressant action of the anesthetic agents on the myocardium. The marked reduction in oxygen consumption appears to be related to the transition from active muscular shivering to the state of muscular flaccidity which exists under anesthesia.

-- J. Am. Med. Assn. References & Reviews

CHEMICAL HAZARDS

- 1083 Human Botulism due to Commercial Products. R. W. Reed, C. A. Butas, and R. J. Gall.
Can. Med. Assn. J. 93, 244-247 (Aug. 7, 1965).

Two cases of botulism occurred in Montreal following the ingestion of commercially canned liver paste. A toxigenic, proteolytic strain of *Clostridium botulinum* type B was isolated from the paste in which type B toxin was also demonstrated by animal protection tests. One patient died undiagnosed about 45 hours after eating several liver-paste sandwiches. The second developed diplopia, dysphagia, speech difficulty and weakness 18 hours after ingestion of three bites of a sandwich. All symptoms progressed until admission to the hospital where he was treated with 160,000 units of divalent botulinum AB antitoxin over a 72-hour period. Recovery was complete. The need for readily available supplies of both diagnostic and therapeutic botulinum antitoxin to meet such an emergency is stressed.

-- Authors' abst.

- 1084 Effect of Sodium Fluoride on Tumor Growth. A. Taylor and N. C. Taylor.
Proc. Soc. Exptl. Biol. Med. 119, 252-255 (May, 1965).

In 54 tests involving 991 mice bearing transplanted tumors and 58 tests including 1,817 tumor-bearing eggs, data were obtained which indicated a statistically significant acceleration of tumor tissue growth in association with comparatively low levels of sodium fluoride.

-- J. Am. Med. Assn. References & Reviews

- 1089 Trace Elements in Six Water Systems of the United States. R. C. Kroner and J. F. Kopp. J. Am. Water Works Assn. 57, 150-156 (Feb. 1965).

The spectrographic measurement of trace elements in surface waters of the United States has been performed routinely by the USPHS Water Pollution Surveillance System since 1958. Data from six major water systems (Mississippi, Missouri, Ohio, Columbia, and Colorado Rivers and the Great Lakes) for a five-year period have been summarized. The tables include information on ranges of concentrations found and the frequency of detection for 17 elements. The paper also discusses briefly the sources of trace elements and their significance. Sample collection, preparation, and analytical procedure are also described. There are 11 references.

-- Public Health Eng. Absts.

- 1090 Trace Elements in Human Tissue. Part III. Subjects From Africa, the Near and Far East and Europe. I. H. Tipton, et al. Health Physics 11, 403-451 (May, 1965).

Central values and an estimate of variation about the central values are given for 24 trace elements and the ash per cent of dry weight of samples of 10 different tissues of 162 adult subjects from outside the continental United States. When groups of adult males from different geographical locations were compared, essential elements showed little geographical variation, but those elements for which no role is known showed significant geographical difference. There are 19 references.

-- Public Health Eng. Absts.

- 1091 The Toxicity of Niobium Salts. W. L. Downs, et al. Am. Ind. Hyg. Assn. J. 26, 337-346 (July-Aug. 1965).

The acute and sub-acute toxicity of potassium niobate and niobium pentachloride has been investigated. Single intravenous doses of 20 mg. Nb/kg or less to rats, rabbits, and dogs were not fatal. The LD₅₀ (seven-day) value for mice and rats given in a single intraperitoneal injection of potassium niobate was 13 and 92 mg. Nb/kg, respectively. The oral LD₅₀ (seven-day) value for the rat was 725 mg. Nb/kg. Renal injury was observed in all species following parenteral injection at doses ranging from 20 to 50 mg. Nb/kg. Repeated intraperitoneal injections of niobium pentachloride or potassium niobate of 30 mg. Nb/kg resulted in renal injury and death. Dietary levels as high as 1% of either compound were ingested by rats, for a seven-week period, without effect. The nephrotoxic action of niobium was not observed when the niobium salt was complexed with ascorbic acid prior to injection.

-- Authors' abst.

- 1092 Percutaneous Toxicity of Metal Compounds. A Comparative Investigation of Guinea Pigs. J. E. Wahlberg. Arch. Environmental Health 11, 201-204 (Aug. 1965).

In previous investigations the percutaneous absorption rate of metal compounds in guinea pigs was determined by an isotope technique ("disappearance measurements"). To obtain some idea as to whether this absorption is important toxicologically, percutaneous (exposure area 3.1 sq. cm.) and intraperitoneal toxicity were determined. The same vehicle and concentrations, animals of the same weight, and the same exposure areas were used as for the isotope experiments. After a method suitable for metal compounds had been developed, the final comparison of these metals was made with one concentration: 2.0 ml. of 0.239 M aqueous solutions supplied to skin depots. After an observation period of three weeks the following order of precedence for metal compounds was obtained (the figures in parentheses are the number of dead animals per 20 exposed: Potassium mercuric iodide (K₂HgI₄) showed the highest toxicity (18); next came three compounds with 11-13 dead animals mercuric chloride (HgCl₂) (13), sodium dichromate (Na₂Cr₂O₇) (12), cobaltous chloride (CoCl₂) (11); last were five compounds with 0-4 dead animals sodium chromate (Na₂CrO₄) (4), cadmium chloride (CdCl₂) (3), chromic chloride (CrCl₃) (1), zinc chloride (ZnCl₂) and silver nitrate (AgNO₃) (0). With few exceptions there was good agreement between observed and expected mortality on the basis of known absorption rates and the intraperitoneal toxicity.

-- Author's summary, modified

03122003

- 1096 Warfarin Intoxication From Percutaneous Absorption. B. Fristedt and N. Sterner.
Arch. Environmental Health 11, 205-208 (Aug. 1965).

One case of warfarin (3- (alpha-phenyl-beta-acetyethyl)-4-hydroxycoumarin (compound 42)) intoxication is described in which absorption through the skin is considered to have occurred. The percutaneous absorption of warfarin was investigated in rabbits and guinea pigs. The investigations showed that, in repeated handling of warfarin, and presumably of other coumarin derivatives, percutaneous absorption can occur to an extent sufficient to cause intoxication. During extermination of rats and the poisoning of other animals absorption through the skin of the exterminators may occur.

-- Authors' summary

- 1097 Chronic Toxicity of Polyphenyl Mixtures. A. Petkau and J. Hoogstraaten.
Am. Ind. Hyg. Assn. J. 26, 380-387 (July-Aug. 1965).

In rats the ingestion of Santowax OM, a mixture of terphenyls used as a coolant, and OMRE High Boilers over prolonged periods inhibits weight gain and leads to anemia and kidney and liver damage. At a daily dietary intake of 350 mg./kg. or more, Santowax OM produces degenerative changes in the nephron; the OMRE High Boilers at a daily dietary intake of 33 mg./kg. or more cause histiocytic infiltration and cirrhotic changes in the liver.

--Authors' abst.

- 1098 Pyridium Poisoning. H. J. Wander and D. J. Pascoe.
Am. J. Diseases Children 110, 105 (July, 1965).

A 15-month-old girl ingested 8 gm. of phenylazopyridine hydrochloride (Pyridium). Five hours after ingestion, methemoglobinemia occurred and was satisfactorily treated with methylene blue. Later, an anemia, presumed to be hemolytic in origin, hepatotoxicity, and a suspected renal toxicity were observed. This entire spectrum of toxic manifestations was previously reported only in the experimental animal. Methemoglobinemia and experimental phenylazopyridine hydrochloride toxicity are reviewed, and the treatment is discussed.

-- J. Am. Med. Assn. References & Reviews

- 1099 Organo-Chlorine Insecticide Content of Human Adipose Tissue in Southeastern England
J. Robinson, et al. Brit. J. Ind. Med. 22, 220-229 (July, 1965).

One hundred specimens of human body fat, 50 necropsy and 50 biopsy, were collected in 1964 from a semi-rural area in southeastern England. The specimens were analyzed by two methods and the concentrations of seven organo-chlorine insecticides were determined. The results of the two analytical methods were in good agreement. Endrin and heptachlor epoxide were not detected in any of the specimens analyzed for these compounds. The average concentrations of lindane, op'-DDT, and op'-DDE were very small: 0.015 ppm, 0.03 ppm, and 0.02 ppm respectively. The average concentration of HEOD* in the 100 specimens of fat (no significant difference in the means of the necropsy and biopsy fats was detected) was 0.21 ppm, as in the 1961 survey. The average concentration of total equivalent-DDT (DDT+DDE) in the 50 necropsy fats was 3.9 ppm, as compared with 2.2 ppm in 1961. In the biopsy fats the average concentration for males was 4.9 ppm, and for females 3.4 ppm. One method was suitable for the separate determination of pp'-DDT and pp'-DDE. The average concentration of pp'-DDT was 1.0 ppm in the 100 necropsy and biopsy fats. The average concentration of pp'-DDE was 2.2 ppm in the 50 necropsy fats, and 3.1 ppm and 2.0 ppm in male and female biopsy fats respectively. The variability of the concentrations of these compounds in the necropsy specimens was generally greater than in the biopsy specimens. No significant differences were found which were attributable to age or to the cause of death. It is considered that the amounts found of these compounds do not constitute a hazard to the population sampled in this survey. The design of surveys to determine the concentrations of organo-chlorine insecticides in man is discussed.

-- Authors' abst. modified

*HEOD is the major component of technical dieldrin and it is also a biochemical conversion product of the major component in technical aldrin.

IN RE: ABRAMS November 1992

HWBB-0020761

on industry. Dustfall samples were collected at various locations throughout San Bernardino County and examined for particle-size distribution. In order to obtain reliable data, fairly large samples had to be collected in a short time. A 12 foot square plastic sheet was found suitable for sample collection. Particle size determinations were made with both coulter counter and the Bahco micro-particle classifier. The two methods yielded comparable results. It was found that settled dust particles for all practical considerations were all greater than 30 microns in equivalent diameter. Regulations based on these findings are being developed.

-- Authors' abst.

- 1104 Contributions of Electron Microscopy to Occupational Health. M. Hite.
Am. Ind. Hyg. Assn. J. 26, 374-379 (July-Aug. 1965).

The use of the electron microscope is becoming more widespread in laboratories throughout the world, including those serving the various disciplines of environmental health. As a result, practicing industrial hygienists may have opportunities to use the instrument. This paper points out some of the areas in which the electron microscope has been employed in the solution of problems in the field of occupational health.

-- Author's abst.

- 1105 Re-entrainment of Particles from a Plane Surface. M. Corn and F. Stein.
Am. Ind. Hyg. Assn. J. 26, 325-336 (July-Aug. 1965).

The authors have studied the adhesion of spherical glass particles and fly ash to glass and metal substrates using an ultracentrifuge or air at high velocity to achieve particle removal. Adhesion forces increased with increased particle size and ambient air relative humidity, but decreased with increased surface roughness. By properly charging the surface, adhesion could be increased or decreased. Boundary layer theory was used to calculate air drag acting on adhering particles subjected to a high-velocity air stream. Increased time of exposure did not increase particle removal in a centrifugal force field, but it did have this effect with high-velocity air. This result was interpreted on the basis of turbulent eddies penetrating the laminar sublayer to reach adhering particles. Alternately, adhering particles could create turbulence in their immediate vicinity.

-- Authors' abst.

- 1106 Reproducibility of Aerosol Photometer, Midget Impinger, and Membrane Filter Counts for Limestone and Coal Dusts. W. O. Bianconi and F. W. Thomas.
Am. Ind. Hyg. Assn. J. 26, 362-365 (July-Aug. 1965).

The curves of error for dust counts were developed for counts made by aerosol photometer, midget impinger, and membrane filter procedures. The interrelation of counts by different procedures were studied. With limestone dust, the counts by the aerosol photometer were most reproducible and those by midget impinger were least reproducible. The type of dust and the particle size affected the comparability of counts by the different procedures.

-- Authors' abst.

- 1107 Combination of Electrical and Mechanical Dust Collecting. W. Barth.
Staub 24, 441-444 (Nov. 1964). German.

The processes in electrical and mechanical dust removal are dealt with and relationships for calculation of the collection efficiency are set up. Some fundamental differences existing between electrical and mechanical dust are examined in detail. Under comparable conditions it was found that for small particles electrical dust collection was superior to mechanical collection while for larger particles mechanical collection was superior. A combination of electro filters and mechanical dust collecting plants are meaningful and advantageous only in special cases.

-- APCA Absts.

- 1108 Study of Respiratory Symptoms and Ventilatory Capacities Among Rope Workers.
D. F. Munt, et al. Brit. J. Ind. Med. 22, 196-203 (July, 1965).

In a rope works handling manila, sisal, and St. Helena hems, the prevalence of respiratory symptoms and the change in forced expiratory volume (FEV_{1.0}) during the work shift were studied in a group of 41 women and 41 men who represented 93% of the population at risk. Dust

- 1111 Problems of Byssinosis. (Foreign Literature Survey). E. TS. Andreeva-Galanina and T. G. Iakubovich. *Gigiena Truda i Professional Zabolevaniya* 8, 38-43 (1964). Russian.

The article offers a review of foreign literature on etiology, pathogenesis, classification, and symptomatology of byssinosis. Although the symptomatology of the affection was described almost as early as a century ago and the term "byssinosis" was adopted as far back as 1875, there is today no concerted opinion as to the etiology of byssinosis. A number of authors consider byssinosis to result from mechanical irritation of respiratory passages with cotton dust and also to come as a reaction to a histamine-like substance contained in the vegetal fraction of cotton dust and as an allergic response to the fungal and bacterial metabolite contaminating cotton dust. All the authors consider byssinosis to be a specific affection. The bibliography consists of 22 non-Russian references to the literature.

-- APCA Absts.

- 1112 Sarcoidosis in a Beautician. E. U. Herrero, H. H. Feigelson, and A. Becker. *Am. Rev. Resp. Dis.* 92, 280-283 (Aug. 1965).

A report is presented of a case of transient pulmonary infiltrations and mediastinal lymphadenopathy in a young beautician with a history of heavy exposure to hair sprays. A diagnosis of sarcoidosis was made and was confirmed by a lung biopsy. The disease regressed after approximately one year. Routine chest roentgenograms on 115 beauticians revealed no pulmonary lesions. An analysis of the questionable existence of thesaurosis as a clinical entity caused by inhalation of hair sprays is presented.

-- Authors' summary

- 1113 The Correlation of Dust Exposure with Progression of Radiological Pneumoconiosis in British Coal Miners. J. R. Ashford, J. W. J. Fay, and C. S. Smith. *Am. Ind. Hyg. Assn. J.* 26, 347-361 (July-Aug. 1965).

A sample of some 30,000 men working at 25 selected collieries distributed throughout the British coalfields is being examined over a period of upwards of ten years. Continuous measurements of environmental conditions are being made at all the collieries, and medical surveys, including radiological examinations, are carried out at intervals of about five years. The present paper shows how the progression of pneumoconiosis as revealed by the radiological examinations is correlated with the individual estimates of dust exposure. The main principles on which the methods of correlation are based are described and it is shown how the available data may be employed to determine "safe levels of dustiness".

-- Authors' abst.

- 1114 Report and Recommendations of the Working Group on Asbestos and Cancer. Geographical Pathology Committee of the International Union Against Cancer (UICC). *Brit. J. Ind. Med.* 22, 165-171 (July, 1965).

The Geographical Pathology Committee of the International Union Against Cancer (UICC) convened a Working Group on October 22 to 23, 1964 in New York to discuss evidence of an association between exposure to asbestos dust and cancer. Forty delegates from eight countries attended, and separate panels on epidemiology, pathology and experimental pathology, and physics and chemistry met and, at the final session, under the chairmanship of Dr. Harold Stewart (USA) prepared the Report and Recommendations published in the present article.

-- Preface to paper

- 1115 The Effect of Feldspar, Mica, and Loess on the Development of Experimental Silicosis. P. Tripsha. *Gigiena Truda i Professional Zabolevaniya* 8, 18-23 (1964). Russian.

By means of endotracheal inhalation and intravenous introduction, the author studied the action of feldspar, mica, and loess, on albino rats. Upon endotracheal administration the reaction of the lungs to all the substances was similar and only weakly indicated. Upon intravenous administration the effect of these silicates differed significantly from that of endotracheal introduction. In the study of the diverse reaction during the administration of mica, feldspar, and loess, it was best manifested that mica was endowed with a much greater capacity to cause fibrosis. It was found that loess reduced the fibrogenic properties of silica in the lungs and that it possessed a weaker fibrogenic and proliferative activity than the other silicates.

-- APCA Absts.

wet-bulb temperature, both groups had heart rates of 130 to 140 beats/min. and rectal temperatures of 101°F. The women still sweated less. The results demonstrate the fact that females react more severely on exposure to severe heat and work conditions. Once acclimatized, however, the temperature and circulatory reactions of both sexes are similar, but women sweat less than men.

-- J. Am. Med. Assn. References & Reviews

RADIOACTIVITY AND X-RADIATION

- 1121 Action Levels in Medical Treatment of Radiation and Radioactivity Exposure. T. A. Lincoln. Am. Ind. Hyg. Assn. J. 26, 400-403 (July-Aug. 1965).

Medical treatment of the worker accidentally overexposed to radiation is not an appropriate area for action levels. Special medical problems for which action levels might be considered include the handling of the pregnant employee who works in the radiation area, the handling of cases of skin and wound contamination, work restrictions on individuals with internal contamination, and the need for a slit lamp biomicroscopy to detect lens opacities. The medical justifications for action levels are briefly reviewed, and the general practices of medical departments in 17 AEC contractor installations are reported. In general, AEC contractor physicians resisted the idea of using a prescribed exposure level to determine a medical decision. The one area where an action level could be tied to a specific exposure level was the application of restrictions for individuals receiving internal contamination. However, this difficult problem was being handled in many different ways in the installations surveyed.

-- Author's abst.

- 1122 A Simple Analytical Method for Isolating Low-Level Alpha Activity of Americium-241 from Plutonium in a Routine Urinalysis Procedure. D. L. Bokowski. Am. Ind. Hyg. Assn. J. 26, 413-418 (July-Aug. 1965).

Plutonium is extracted by thenoyltrifluoroacetone and americium is isolated from the residue. Excess sodium hydroxide redissolves aluminum hydroxide while coprecipitating americium on lanthanum hydroxide. Trivalent americium is oxidized to the hexivalent americyl ion which is stabilized by the addition of ammonium fluoride. After reduction to the trivalent state, the purified americium is recovered by coprecipitation with radiopure cerium. The cerium fluoride is counted in a low-background proportional alpha counter. The method is effective for quantitative separation of americium from the lanthanides, other actinides, iron, and aluminum. Sensitivity is sufficient to detect activities as low as 0.50 disintegration per minute.

-- Author's abst.

ENVIRONMENTAL MEASUREMENTS

- 1123 Comparison of Auto Exhaust Emissions in Two Major Cities. A. H. Rose, Jr., et al. J. Air Poll. Control Assn. 15, 362-366 (Aug. 1965).

Exhaust emissions from automobiles in a low-altitude city are compared with emissions from autos in a high-altitude city (Denver, Colorado). The comparison is based on samples collected from 35 cars driven under actual road conditions in each city. Results are discussed on the basis of carbon monoxide, carbon dioxide and hydrocarbon concentrations versus average route speeds and on pounds of carbon monoxide, carbon dioxide and hydrocarbons, emitted per mile, versus average route speed.

-- Modified from Authors' abst.

03122011

- 1128 Field Experience in Measuring Hydrogen Sulfide. M. D. High and S. W. Horstman.
Am. Ind. Hyg. Assn. J. 26, 366-373 (July-Aug. 1965).

Hydrogen sulfide was measured in a kraft pulp mill community continuously for a six-month period with American Iron and Steel Institute (AISI) tape samplers with lead-acetate-treated filter tape. Two-hour hydrogen sulfide values ranged from zero to near 100 parts per billion. To evaluate validity of the results, simultaneous samples were collected and analyzed by the methylene blue procedure for three two-week periods. Similar results were obtained from the two methods of analyses. In addition, the presence of hydrogen sulfide and the general levels of pollution were determined through exposure of silver specimens. Results compared favorably with quantitative results. The procedures and results of the tests are presented. -- Authors' abst.

- 1129 A Comparison Study of Various Types of Ozone and Oxidant Detectors Which Are Used for Atmospheric Air Sampling. I. Cherniack and R. J. Bryan.
J. Air Poll. Control Assn. 15, 351-354 (Aug. 1965).

Four continuous automatic analyzers for measurement of atmospheric levels of ozone were used in a calibration and field study. These were: (1) a colorimetric instrument based upon detection of iodine released from neutral potassium iodide reagent, (2) a coulometric instrument utilizing the polarization current as a measurement of iodine released by ozone in a cell contacted by potassium iodide reagent, (3) a galvanic cell measuring bromine release by ozone, and (4) an ultraviolet photometer. Some ozone determinations by the manual rubber cracking procedure were included. After calibration with ozone the average relative response to atmospheric ozone levels for each instrument was determined using the colorimetric oxidant analyzer as an arbitrary standard. These responses ranged from 77% for the galvanic cell, 90% for the photometer. The instrument of choice for any given application would seem to be governed by requirements for precision specificity, portability, reliability, and ease of operation.

-- Authors' abst.

- 1130 A Dynamic Method for Mercury Vapor Detector Calibration. G. O. Nelson, W. Van Sandt, and P. E. Barry. Am. Ind. Hyg. Assn. J. 26, 388-393 (July-Aug. 1965).

An apparatus has been designed to facilitate the calibration of mercury vapor detectors. Known volumes of pure air, and air saturated with mercury are mixed and introduced in a Lucite box which houses the meter under study. Calibration points are then obtained by adjusting the mercury vapor and air dilution ratios. Mercury concentrations are checked chemically by collecting the vapor in acidified potassium permanganate and analyzing by a dithizone extraction method.

-- Authors' abst.

- 1131 Determination of Traces of Ethylenimine Monomer in Samples of Air. T. R. Crompton.
Analyst 90, 107-111 (Feb. 1965).

Ethylenimine monomer is highly toxic and has an appreciable vapor pressure. It is necessary, therefore, when ethylenimine is handled on a plant or laboratory scale, to prevent entry of this substance into the atmosphere, with the risk of subsequent inhalation. Ethylenimine reacts with the sodium or potassium salt of 1,2-naphthaquinone-4-sulfonic acid to produce a colored chloroform-soluble complex. A spectrophotometric method based on this reaction is described for determining ethylenimine in concentrations down to 1 ppm v/v in air samples.

-- Public Health Eng. Absts.

PREVENTIVE ENGINEERING

03122013

- 1132 Firesafe Design: Protection Against Fire Originating Within the Building. H. E. Nelson.
J. Am. Soc. Safety Eng. 10, 17-26 (Oct. 1965).

The purpose of this paper is to put down for critical observation some basic facts and logic which, the writer believes, form the foundation for determining design features necessary to protect persons and property from damage when fire breaks out in a building. This paper is

booths, drying ovens, and spreaders, including all types of coating and impregnating operations and criteria used in the examination of applications for registration of retail neighborhood dry-cleaning establishments including coin-operated dry-cleaning establishments. Technical data sheets relative to required data for review of submitted applications have been developed.

-- Author's abst.

- 1137 Air Pollution From the Use of Fuel—Current Status and Future of Particulate Emission Control. J. J. Schueneman. *Natl. Engr.* 69, 11-12 (March, 1965).

Air pollution arising from combustion of fuels is discussed in terms of current regulations and future trends in particulate emission control by governmental agencies. Comparisons of regulations in various selected cities, federal facilities, and ASME model ordinances are made. A figure shows the ranges of allowable pounds of particulate per million Btu of heat input from fuel-burning installations. Predictions of future regulations are made.

-- Public Health Eng. Absts.

- 1138 Economics, Engineering and Air Pollution in the Design of Large Chimneys. F. Nelson and L. Shenfeld. *J. Air Poll. Control Assn.* 15, 355-361 (Aug. 1965).

A discussion of the methods used to determine the most economic design of chimney for a new thermal power station or large industrial plant is presented, with the objective that ground level concentration of pollutants will be kept to a minimum. Attention is paid to the geography and climatology of the site, with special reference to the frequency and height of inversions and the prevailing wind direction and speed. A method is illustrated in using a large thermal power station as an example. The maximum sulfur dioxide concentrations at ground level are computed for several chimney heights and gas exit velocities. The values of these sulfur dioxide concentrations, the capital cost of the chimney, the pumping costs, and the gas pressures within the chimney are considered in selecting a suitable chimney height and a gas exit velocity which will meet most economically the stated objective. The paper deals primarily with chimneys for industrial or power boiler plant of maximum continuous rating greater than 450 million Btu/hr. (about 450,000 lbs. of steam/hr.), or to chimneys serving furnaces burning fuel at a maximum rate greater than 50,000 lbs./hr. of coal, or 30,000 lbs./hr. of oil. For chimneys serving plants with smaller heat inputs, chimney selection by reference to Clean Air Act 1956, Memorandum on Chimney Heights is suggested.

-- Authors' abst.

- 1139 How the Federal Government Looks at Air Pollution. J. J. Schueneman. *Mod. Castings* 47, 43-45 (March, 1965).

The provisions of the Clean Air Act of 1963 are discussed in terms of the role of the Federal Government in air pollution control. Pollutants arising from foundry operations, present control methods, and current regulations are discussed. Trends in future regulations of the foundry industry are cited. The foundry industry is called upon to do its share in air pollution research and control along with others in cooperation with the Federal Government in this new phase of air pollution control.

-- Public Health Eng. Absts.

- 1140 Apparent Rate Constants and Activation Energies for the Photochemical Decomposition of Various Olefins. F. C. Alley, G. B. Martin, and W. H. Ponder. *J. Air Poll. Control Assn.* 15, 348-350 (Aug. 1965).

The photochemical reaction of various olefins and nitrogen dioxide was studied under conditions of controlled temperature, pressure, and humidity in a 200 liter stirred glass reactor. The hydrocarbon concentration in the reactor during four and five hour irradiation periods was monitored with a flame ionization chromatograph. Reaction rate constants, based on three consecutive first order reactions, were calculated for reactor temperatures of 20, 25, 30, and 35°C. Activation energies for the three consecutive reactions were calculated from the Arrhenius equation. Branched and straight chain olefins were studied at initial concentrations of 5.0 to 10.0 ppm.

-- Authors' abst.

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ADDRESSES OF JOURNALS ABSTRACTED

Air Cond. Heat. & Vent.
Air Conditioning Heating and Ventilating
The Industrial Press
93 Worth St.
New York, N.Y. 10013

Am. Ind. Hyg. Assn. J.
American Industrial Hygiene Association Journal
14125 Prevost
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American Journal of Diseases of Children
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122 E. 55th St.
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J. Air Poll. Control Assn.
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4400 Fifth Ave.
Pittsburgh, Pa. 15213

J. Appl. Physiol.
Journal of Applied Physiology
9650 Wisconsin Ave.
Washington, D.C. 20014

J. Am. Med. Assn.
The Journal of the American Medical Association
535 N. Dearborn St.
Chicago, Ill. 60610

J. Am. Soc. Safety Eng.
Journal of the American Society of Safety Engineers
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Chicago, Ill. 60602

J. Am. Water Works Assn.
Journal of the American Water Works Association
2 Park Ave.
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J. Econ. Entomol.
Journal of Economic Entomology
Entomological Society of America
1530 P St.
Washington, D.C. 20005

J. Gas Chromato.
Journal of Gas Chromatography
Preston Tech. Abstr. Co.
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HWBB-0020768

IN RE: ABRAMS November 1992